

Appendix

1.1 Survey English translation (note: not the final version of the survey)

Survey: Management practices that support the beauty of biodiversity in the swiss Alps



The original scientific Braunvieh

This survey is meant for all managers in Sömmerungs-areas and mountain zones III and IV dealing with pastoral animal husbandry. Specifically I am looking for people responsible for pasture and animal management, basically people who are spending a lot of their working time outside.

Hello, my name is Jonas Hendricks (see the picture below, with Malina the Jersey cow), some of you from Schwarzssee area might already know me. For all those who do not: I am from Germany and doing a study for my master thesis on the local knowledge of biodiversity in the Sömmerungsgebiet and the mountain area in general in the Kanton Fribourg and the Naturpark Gantrisch in Kanton Bern.



I believe that the mountains in Switzerland are so beautiful and diverse because of the agricultural management practices that exist since hundreds of years. It's not just beautiful for the people there but also home to wild and domestic animals, plants, insects, mushrooms etc. I assume that there is a lot of knowledge about animals and plants, biodiversity, particularly by farmers who shape these landscapes. However, this knowledge based on local experience is currently ignored or not valued enough, so I would like to shed light on it and raise awareness about positive farming practices that protect and enhance biodiversity.

In the end of September and beginning of October I sat together with some farmers (mostly from Plaffeien and Plasselb regions) to discuss the topic and to design with them this survey you are now reading. We have made it easy to handle and will take you between 10 and 20 minutes (highly dependent on your commentaries), so I would like to invite you to grab a cup of tea, coffee, or a glass of wine and I will serve you a menu of questions, that will take shorter to answer than eating dinner. First I shall start with an aperitive, which will consist of questions to your background and about your farm. After that the main dish, which will consist of more specific questions of frequency of encounters or observations of different plants and animals, will be served hot. For desert the topic will be about management practices connected to biodiversity. I would kindly ask you to finish the meal/questionnaire (weather will be bad, if not). As an optional extra, the platter of cheese, I would ask for your knowledge of a group of species of your choice. In this final section you can also leave any further comments you like.

For those who are doing the survey on paper: I will send a bottle of wine, from the vineyard of my parents from Mosel river in Germany, as a prize to the person with the most beautiful (and most easily readable!) handwriting. For the people doing it online: I will have a simple lottery with the same prize. But please do the survey only once, same chances for everyone!

The survey on paper will be distributed and collected by Bauernverband Fribourg and Naturpark Gantrisch and will be absolutely anonymous. Only me and my supervisor Elisa Oteros-Rozas (from Universitat Oberta de Catalunya - elisa.otersorozas@gmail.com) will have access to the data and the final thesis will not contain any information that can be traced back to an individual. If you have any questions you can write me an Email anytime: Jonas.Hendricks@UGent.be or give me a call (or a Whatsapp): +491603059358

By participating and finishing the whole "menu" you will be helping raising awareness for functional ecosystems through adapted management practices, as well as supporting me in my education. So thank you very much!

Aperitivo – Background (multiple boxes can be ticked, as it makes sense)

This background information will be analyzed to check about possible similarities and differences between farmers, based on your profiles.

1) Socio-demographics relation to the farm

Age: _____ years

Gender (please select just one): female male divers don't want to answer

Mother language (please select just one): French Swiss/German other: _____

Years of experience in farming (general): _____ years

Years of experience (Sömmerung seasons/Summers in Sömmerungs area and management in Bergzone III and IV): _____ years

Experience on current pastures: _____ years

Family background: farming with alp farming without alp other

How would you describe your job?: Äpler:in mountain farmer Herder other: _____

When do you live in the hut? I live up in the hut the whole summer I commute

What proportion of your income comes from of agricultural work (approx.): 1/4 1/2 3/4 4/4

How would you consider your interest in environmental protection?:

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
None	A little	interested	very interested

How special would you say is the biodiversity in the alpine area is?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Not special at all	A little special	special	Absolutely unique

Learning for alpine farming:

Type: Farmers' school Äpler:in training Father Mother Grandparents other family members neighbours books internet other: _____

Can you specify which one of these is or was the most influential on you?

Type: Farmers' school Äpler:in training Father Mother Grandparents other family members neighbours books internet other: _____

Frequency of additional training/use of extension services: _____ hours per year

2) Description of the area and pasturelands

Location(s) of farm/hut and its pasture:

Name of hut/stable/s: 1st hut: _____ 2nd higher hut: _____

Name of valley: _____

Name of municipality: _____

Pasture area size total: _____ ha

Normalstöße: _____

Hight of pastures: lower: _____ m higher: _____ m

Classification pastures: mountain zone III mountain zone IV Sömmerungs area

How can you reach your pastures? Paved road gravel road 4x4 path on foot/horse

Who owns the pastures where your animals graze?: Me, I am the owner Another private owner I rent them I am on lease A Cooperative I am part of the Municipality other: _____

Owner of animals managed: private yourself private other cooperation other: _____

Are there nature protection areas close-by? Yes no

If yes, what? Hochmoor Flachmoor Forest protection area Amphibienlaichgebiet Auen other _____

What type of ecosystems are there in or around your pastures? Magerwiese/weide Fettwiese/weide Streuflächen Brache Forest River/pond/water surface Rocky landscapes

3) Description of the farm/operation itself (practices, animals, products)

Farming activity: only summer all year

Type of animals:

Milk-cows amount: _____ Race: _____

Mothercows amount: _____ Race: _____

Cows (meat) amount: _____ Race: _____

Sheep amount: _____ Race: _____

Goats amount: _____ Race: _____

Horses amount: _____ Race: _____

Pigs amount: _____ Race: _____

Poultry amount: _____ Race: _____

Other: _____ Race: _____

If you have cows for milk, do you use concentrated fodder as supplement? Yes No

What do you produce?: Milk Rearing cows Wool Meat Cheese other dairies other: _____

Which types of machinery do you use?

None or only hand-held devices

Light (motor mower, light tractor)

Heavy (circular mower, heavy tractor, mulcher, stone grinder etc.)

How do you fertilize? Liquid manure Dung no fertilization other: _____

Any type of special activities (lebendige Traditionen) like Tavillonage/Shingles, "Wetterbüächli" etc.?

Did you introduce some innovations like digitalization of certain processes, working with drones etc.?

Are you taking part in Landschaftsqualitätsprojekten? Yes No

% of BFF2 area on pastures: _____ %

Organic management: Yes certified yes uncertified no

How would you describe your farming activity:

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
intensive	Mostly intensive	Mostly extensive	extensive

Type of weed management:

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Manual	Mostly manual	Mostly chemical	Chemical

Very important: Please answer the questions without looking things up. The survey is not designed that all species are known by everyone, also not all species are present everywhere in the region, so please don't worry about giving "wrong" answers or not having seen certain species. I am asking for your honest observations.

Main course – frequency of single species of interest in the last 5 years on our pastures

Flora, multiple boxes can be ticked



Riesen-Bärenklau (*Heracleum mantegazzianum*)

Have you ever seen this plant? yes no

If yes, how frequently do you encounter this species in your pasturelands: not present less than 1% of my pasturelands (very scarce) 2-10% of my pasturelands (relatively common) more than 10% of my pasturelands (very common)

Which properties does the plant have (please tick as many as needed): none edible for humans palatable for animals medicinal for humans medicinal for animals decorative spiritual poisonous Neophyte invasive protected weed Indicator plant

please describe: _____

In the last 10 years the population: rose decreased stayed the same

Bärwurz (*Meum athamaticum*)

Have you ever seen this plant? yes no

If yes, how frequently do you encounter this species in your pasturelands: not present less than 1% of my pasturelands (very scarce) 2-10% of my pasturelands (relatively common) more than 10% of my pasturelands (very common)

Which properties does the plant have (please tick as many as needed): none edible for humans palatable for animals medicinal for humans medicinal for animals decorative spiritual poisonous Neophyte invasive protected weed Indicator plant

please describe: _____

In the last 10 years the population: rose decreased stayed the same

Große Brennnessel (*Urtica dioica*)

Have you ever seen this plant? yes no

If yes, how frequently do you encounter this species in your pasturelands: not present less than 1% of my pasturelands (very scarce) 2-10% of my pasturelands (relatively common) more than 10% of my pasturelands (very common)

Which properties does the plant have (please tick as many as needed): none edible for humans palatable for animals medicinal for humans medicinal for animals decorative spiritual poisonous Neophyte invasive protected weed Indicator plant

please describe: _____

In the last 10 years the population: rose decreased stayed the same

Optional Commentary (Connections, Anomalies, Observations):



Blauer Eisenhut (*Aconitum napellus*)

Have you ever seen this plant? yes no

If yes, how frequently do you encounter this species in your pasturelands: not present less than 1% of my pasturelands (very scarce) 2-10% of my pasturelands (relatively common) more than 10% of my pasturelands (very common)

Which properties does the plant have (please tick as many as needed): none edible for humans palatable for animals medicinal for humans medicinal for animals decorative spiritual poisonous Neophyte invasive protected weed Indicator plant please describe: _____

In the last 10 years the population: rose decreased stayed the same



Wiesensalbei (*Salvia pratensis*)

Have you ever seen this plant? yes no

If yes, how frequently do you encounter this species in your pasturelands: not present less than 1% of my pasturelands (very scarce) 2-10% of my pasturelands (relatively common) more than 10% of my pasturelands (very common)

Which properties does the plant have (please tick as many as needed): none edible for humans palatable for animals medicinal for humans medicinal for animals decorative spiritual poisonous Neophyte invasive protected weed Indicator plant please describe: _____

In the last 10 years the population: rose decreased stayed the same



Blütenköpfchen

Einjähriges/Gewöhnliches Berufskraut (*Erigeron annuus*)

Have you ever seen this plant? yes no

If yes, how frequently do you encounter this species in your pasturelands: not present less than 1% of my pasturelands (very scarce) 2-10% of my pasturelands (relatively common) more than 10% of my pasturelands (very common)

Which properties does the plant have (please tick as many as needed): none edible for humans palatable for animals medicinal for humans medicinal for animals decorative spiritual poisonous Neophyte invasive protected weed Indicator plant please describe: _____

In the last 10 years the population: rose decreased stayed the same

Optional Commentary (Connections, Anomalies, Observations):



Sumpf-Kratzdistel (*Cirsium palustre*)

Have you ever seen this plant? yes no

Have you ever seen this plant? yes no

If yes, how frequently do you encounter this species in your pasturelands: not present less than 1% of my pasturelands (very scarce) 2-10% of my pasturelands (relatively common) more than 10% of my pasturelands (very common)

Which properties does the plant have (please tick as many as needed): none edible for humans palatable for animals medicinal for humans medicinal for animals decorative spiritual poisonous Neophyte invasive protected weed Indicator plant please describe: _____

In the last 10 years the population: rose decreased stayed the same



Acker-Kratzdistel (*Cirsium arvense*)

Have you ever seen this plant? yes no

If yes, how frequently do you encounter this species in your pasturelands: not present less than 1% of my pasturelands (very scarce) 2-10% of my pasturelands (relatively common) more than 10% of my pasturelands (very common)

Which properties does the plant have (please tick as many as needed): none edible for humans palatable for animals medicinal for humans medicinal for animals decorative spiritual poisonous Neophyte invasive protected weed Indicator plant please describe: _____

In the last 10 years the population: rose decreased stayed the same



Aufrechtes Traubenkraut (*Ambrosia artemisiifolia*)

Have you ever seen this plant? yes no

If yes, how frequently do you encounter this species in your pasturelands: not present less than 1% of my pasturelands (very scarce) 2-10% of my pasturelands (relatively common) more than 10% of my pasturelands (very common)

Which properties does the plant have (please tick as many as needed): none edible for humans palatable for animals medicinal for humans medicinal for animals decorative spiritual poisonous Neophyte invasive protected weed Indicator plant please describe: _____

In the last 10 years the population: rose decreased stayed the same

Optional Commentary (Connections, Anomalies, Observations):



Echtes Johanniskraut (*Hypericum perforatum*)

Have you ever seen this plant? yes no

If yes, how frequently do you encounter this species in your pasturelands: not present less than 1% of my pasturelands (very scarce) 2-10% of my pasturelands (relatively common) more than 10% of my pasturelands (very common)

Which properties does the plant have (please tick as many as needed): none edible for humans palatable for animals medicinal for humans medicinal for animals decorative spiritual poisonous Neophyte invasive protected weed Indicator plant please describe: _____

In the last 10 years the population: rose decreased stayed the same



Jakobs-Kreuzkraut (*Senecio jacobaea*)

Have you ever seen this plant? yes no

If yes, how frequently do you encounter this species in your pasturelands: not present less than 1% of my pasturelands (very scarce) 2-10% of my pasturelands (relatively common) more than 10% of my pasturelands (very common)

Which properties does the plant have (please tick as many as needed): none edible for humans palatable for animals medicinal for humans medicinal for animals decorative spiritual poisonous Neophyte invasive protected weed Indicator plant please describe: _____

In the last 10 years the population: rose decreased stayed the same

Optional Commentary (Connections, Anomalies, Observations):

Fauna



Auerhuhn (*Tetrao urogallus*)

Have you ever seen this bird? Yes no

How frequently do you encounter this animal (also traces of presence) on your land (approximately): every day once a week once a month once a year once in 5 years never

Does it have any properties, uses or interests for human activity? Edible poisonous dangerous if attacks indicator of weather changes medical use invasive autochthonous protected pleasure for watching indicator of certain environment characteristic please describe:

In the last 10 years the population: rose decreased stayed the same



Steinadler (*Aquila chrysaetos*)

Have you ever seen this bird? Yes no

How frequently do you encounter this animal (also traces of presence) on your land (approximately): every day once a week once a month once a year once in 5 years never

Does it have any properties, uses or interests for human activity? Edible poisonous dangerous if attacks indicator of weather changes medical use invasive autochthonous protected pleasure for watching indicator of certain environment characteristic please describe:

In the last 10 years the population: rose decreased stayed the same



Bartgeier (*Gypaetus barbatus*)

Have you ever seen this bird? Yes no

How frequently do you encounter this animal (also traces of presence) on your land (approximately): every day once a week once a month once a year once in 5 years never

Does it have any properties, uses or interests for human activity? Edible poisonous dangerous if attacks indicator of weather changes medical use invasive autochthonous protected pleasure for watching indicator of certain environment characteristic please describe:

In the last 10 years the population: rose decreased stayed the same

Optional Commentary (Connections, Anomalies, Observations):



Dreizehenspecht (*Picoides tridactylus*)

Have you ever seen this bird? Yes no

How frequently do you encounter this animal (also traces of presence) on your land (approximately): every day once a week once a month once a year once in 5 years never

Does it have any properties, uses or interests for human activity? Edible poisonous dangerous if attacks indicator of weather changes medical use invasive autochthonous protected pleasure for watching indicator of certain environment characteristic please describe:

In the last 10 years the population: rose decreased stayed the same



Eurasischer Luchs (*Lynx lynx*)

Have you ever seen this animal? Yes no

How frequently do you encounter this animal (also traces of presence) on your land (approximately): every day once a week once a month once a year once in 5 years never

Does it have any properties, uses or interests for human activity? Edible poisonous dangerous if attacks indicator of weather changes medical use invasive autochthonous protected pleasure for watching indicator of certain environment characteristic please describe:

In the last 10 years the population: rose decreased stayed the same



Alpenmurmeltier (*Marmota marmota*)

Have you ever seen this animal? Yes no

How frequently do you encounter this animal (also traces of presence) on your land (approximately): every day once a week once a month once a year once in 5 years never

Does it have any properties, uses or interests for human activity? Edible poisonous dangerous if attacks indicator of weather changes medical use invasive autochthonous protected pleasure for watching indicator of certain environment characteristic please describe:

In the last 10 years the population: rose decreased stayed the same

Optional Commentary (Connections, Anomalies, Observations):



Feldhase (*Lepus europaeus*)

Have you ever seen this animal? Yes no

How frequently do you encounter this animal (also traces of presence) on your land (approximately): every day once a week once a month once a year once in 5 years never

Does it have any properties, uses or interests for human activity? Edible poisonous dangerous if attacks indicator of weather changes medical use invasive autochthonous protected pleasure for watching indicator of certain environment characteristic please describe:

In the last 10 years the population: rose decreased stayed the same



Gämse (*Rupicapra rupicapra*)

Have you ever seen this animal? Yes no

How frequently do you encounter this animal (also traces of presence) on your land (approximately): every day once a week once a month once a year once in 5 years never

Does it have any properties, uses or interests for human activity? Edible poisonous dangerous if attacks indicator of weather changes medical use invasive autochthonous protected pleasure for watching indicator of certain environment characteristic please describe:

In the last 10 years the population: rose decreased stayed the same



Mauereidechse (*Podarcis muralis*)

Have you ever seen this animal? Yes no

How frequently do you encounter this animal (also traces of presence) on your land (approximately): every day once a week once a month once a year once in 5 years never

Does it have any properties, uses or interests for human activity? Edible poisonous dangerous if attacks indicator of weather changes medical use invasive autochthonous protected pleasure for watching indicator of certain environment characteristic please describe:

In the last 10 years the population: rose decreased stayed the same

Optional Commentary (Connections, Anomalies, Observations):



Zauneidechse (*Lacerta agilis*)

Have you ever seen this animal? Yes no

How frequently do you encounter this animal (also traces of presence) on your land (approximately): every day once a week once a month once a year once in 5 years never

Does it have any properties, uses or interests for human activity? Edible poisonous dangerous if attacks indicator of weather changes medical use invasive autochthonous protected pleasure for watching indicator of certain environment characteristic please describe:

In the last 10 years the population: rose decreased stayed the same



Alpensalamander (*Salamandra atra atra*)

Have you ever seen this animal? Yes no

How frequently do you encounter this animal (also traces of presence) on your land (approximately): every day once a week once a month once a year once in 5 years never

Does it have any properties, uses or interests for human activity? Edible poisonous dangerous if attacks indicator of weather changes medical use invasive autochthonous protected pleasure for watching indicator of certain environment characteristic please describe:

In the last 10 years the population: rose decreased stayed the same



Kreuzotter (*Vipera berus berus*)

Have you ever seen this animal? Yes no

How frequently do you encounter this animal (also traces of presence) on your land (approximately): every day once a week once a month once a year once in 5 years never

Does it have any properties, uses or interests for human activity? Edible poisonous dangerous if attacks indicator of weather changes medical use invasive autochthonous protected pleasure for watching indicator of certain environment characteristic please describe:

In the last 10 years the population: rose decreased stayed the same

Optional Commentary (Connections, Anomalies, Observations):



Aspiviper (*Vipera aspis aspis*)

Have you ever seen this animal? Yes no

How frequently do you encounter this animal (also traces of presence) on your land (approximately): every day once a week once a month once a year once in 5 years never

Does it have any properties, uses or interests for human activity? Edible poisonous dangerous if attacks indicator of weather changes medical use invasive autochthonous protected pleasure for watching indicator of certain environment characteristic please describe:

In the last 10 years the population: rose decreased stayed the same



Schachbrettfalter (*Melanargia galathea*)

Have you ever seen this animal? Yes no

How frequently do you encounter this animal (also traces of presence) on your land (approximately): every day once a week once a month once a year once in 5 years never

Does it have any properties, uses or interests for human activity? Edible poisonous dangerous if attacks indicator of weather changes medical use invasive autochthonous protected pleasure for watching indicator of certain environment characteristic please describe:

In the last 10 years the population: rose decreased stayed the same



Kleine Moosjungfer (*Leucorrhinia dubia*)

Have you ever seen this animal? Yes no

How frequently do you encounter this animal (also traces of presence) on your land (approximately): every day once a week once a month once a year once in 5 years never

Does it have any properties, uses or interests for human activity? Edible poisonous dangerous if attacks indicator of weather changes medical use invasive autochthonous protected pleasure for watching indicator of certain environment characteristic please describe:

In the last 10 years the population: rose decreased stayed the same

Optional Commentary (Connections, Anomalies, Observations):



Alpenschrecke (*Anonconotus alpinus*)

Have you ever seen this animal? Yes no

How frequently do you encounter this animal (also traces of presence) on your land (approximately): every day once a week once a month once a year once in 5 years never

Does it have any properties, uses or interests for human activity? Edible poisonous dangerous if attacks indicator of weather changes medical use invasive autochthonous protected pleasure for watching indicator of certain environment characteristic please describe:

In the last 10 years the population: rose decreased stayed the same



Alpenbock (*Rosalia alpina*)

Have you ever seen this animal? Yes no

How frequently do you encounter this animal (also traces of presence) on your land (approximately): every day once a week once a month once a year once in 5 years never

Does it have any properties, uses or interests for human activity? Edible poisonous dangerous if attacks indicator of weather changes medical use invasive autochthonous protected pleasure for watching indicator of certain environment characteristic please describe:

In the last 10 years the population: rose decreased stayed the same

Extra question of interest:

What kind of changes did you notice with insects in general in the last 10 years?

In the valley area (< 1000 m): more less no changes

In the alpine area (1000 – 2000 m): more less no changes

Other observations (i.e.: more stinging insects on the mountain etc.):

Optional Commentary (Connections, Anomalies, Observations):

Desert – Structures and biodiversity

What is the first thing you think of when you hear biodiversity? _____

1. Leaving dead wood in the forest or on the pasture increases species diversity: Agree
partly agree partly disagree disagree
2. Single trees of regionally adapted species increases species diversity: Agree
partly agree partly disagree disagree
3. Fighting problem plants increases species diversity: Agree
partly agree partly disagree disagree
4. Using herbicides to get rid of problem plants increases species diversity: Agree partly
agree partly disagree disagree
5. Draining moor areas increases species diversity: Agree
partly agree partly disagree disagree
6. Leaving natural water structures the way they are increases species diversity: Agree
partly agree partly disagree disagree
7. The use of heavy machinery linked to homogenized landscapes decreases species diversity: Agree
partly agree partly disagree disagree
8. Leaving thorn-bushes on the pastures and meadows decreases species diversity: Agree
partly agree partly disagree disagree
9. Leaving Erlen on the pastures and meadows severely decreases species diversity: Agree
partly agree partly disagree disagree
10. Fertilising a pasture with a lot of Löwenzahn growing increases species diversity: Agree partly
agree partly disagree disagree
11. Fertilising clover meadows decreases species diversity: Agree
partly agree partly disagree disagree
12. High output races of animals increase species diversity through their eating habits: Agree
partly agree partly disagree disagree
13. Mowing the meadows very often decreases species diversity: Agree
partly agree partly disagree disagree
14. Usage-mosaic through divers pasture times and intensities increases species diversity: Agree
partly agree partly disagree disagree
15. Fertilization with liquid manure is increasing species diversity more than with dung: Agree
partly agree partly disagree disagree

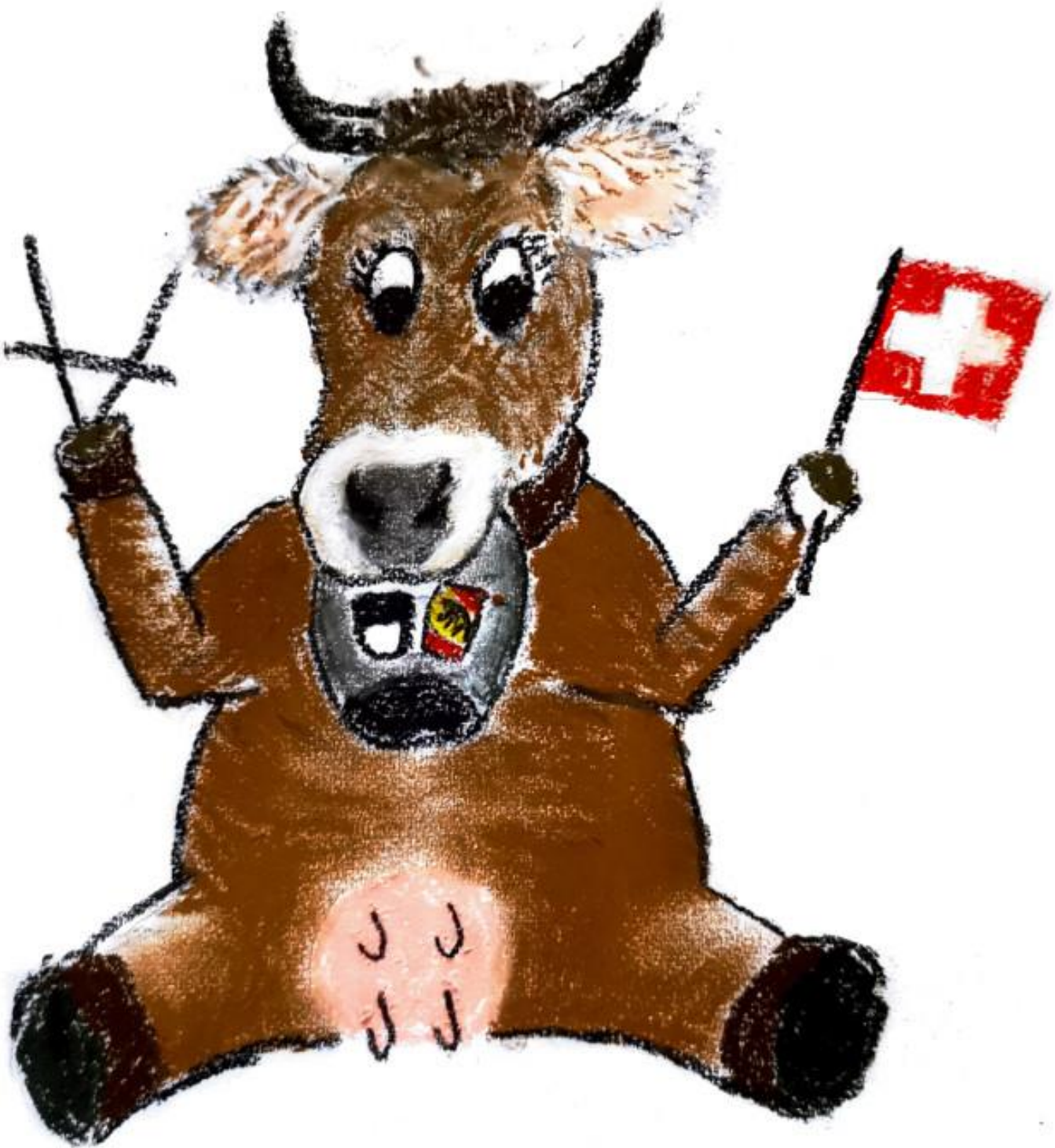
Thank you very much for participation and all the best!

I also would like to invite you to a group meeting in April 2022 (I will notify about place and time), if you like, to discuss the results of the survey and exchange ideas. Participation will of course also be completely voluntary! At that occasion there will be real food and drinks. Please let me know, if you might be interested in joining, so I can plan better before hand.

I hope I can finish the work by the end of August 2022 and then a summary of the thesis will be available online, certainly through the website of Naturpark Gantrisch.

1.2 Survey German (final version)

Umfrage zur Schönheit der Artenvielfalt in den Schweizer Alpen, ermöglicht durch die Alp-Bewirtschaftung



Das Original Wissenschafts-Braunvieh

Die Umfrage richtet sich an alle Bewirtschafter:innen im Sömmerungsgebiet sowie in den Bergzonen III und IV, die Nutztiere halten und diese sömmeren. Ich suche im Prinzip nach den Leuten, die für die Tiere und die Weiden verantwortlich sind, also alle diejenigen, die sich viel draußen auf den Weiden und im Berggebiet aufhalten.

Hallo zusammen, mein Name ist Jonas Hendricks (auf dem Bild unten mit Malina einer Jersey Kuh). Einige von euch aus der Gegend Schwarzsee oder Jaun kennen mich eventuell schon. Für alle anderen: Ich komme aus Deutschland und schreibe derzeit meine Master-Abschlussarbeit zum Thema lokales Wissen über Biodiversität im Sömmerungs- und Berggebiet. Die Studie findet im Kanton Fribourg und im Naturpark Gantrisch im Kanton Bern statt.



Die Idee dahinter ist, dass das Berggebiet in der Schweiz aufgrund der Bewirtschaftung, die es in der Form seit Jahrhunderten gibt, so schön und divers ist. Es ist nicht nur für die Menschen, die sich dort aufhalten angenehm, sondern auch für alle Haus- und Wildtiere, Pflanzen, Insekten, Pilze usw., also alles was dort lebt. Also möchte ich erfragen wieviel Wissen über Artenvielfalt vorhanden ist bei den Leuten, die aktiv die Bergwelt durch die Bewirtschaftung mit Kühen, Rindern, Ziegen, Schafen, Pferden, Lamas oder auch durch andere Landschaftsgestaltung aktiv formen.

Ich gehe davon aus, dass viel Wissen vorhanden ist, welches durch langjährige Erfahrung, durch familiäre Überlieferung, aber auch durch Ausbildung und Weiterbildung erlangt wurde und welches derzeit meiner Meinung nach nicht genug wertgeschätzt wird. Daher ist das Ziel dieser Studie diesen Umstand einer breiteren Öffentlichkeit zugänglich zu machen, damit die gute fachliche Praxis in der Bergbewirtschaftung mehr Anerkennung erfährt.

Ende September und Anfang Oktober habe ich mich mit einigen Bewirtschafter:innen zusammen gesetzt (die Meisten aus der Region Plaffeien und Plasselb), um das Thema zu besprechen und mit ihnen diese Umfrage, die Sie gerade lesen, zu gestalten. Wir haben sie simpel gestaltet und es wird schätzungsweise zwischen 15 und 20 Minuten dauern (ganz stark von Ihren Kommentaren abhängig). Daher will ich Sie an dieser Stelle dazu einladen, sich einen Kaffee oder Tee oder auch ein Glas Wein zu holen, und ich werde ein Menu an Fragen servieren, das kürzer zu beantworten ist als ein Abendessen dauert. Zuerst gibt es einen kleinen Aperitif, der aus Fragen zu Ihrem Hintergrund und ihrem Betrieb bestehen wird. Dann folgt der Hauptgang, welcher aus spezifischeren Fragen zur Häufigkeit bestimmter Tiere, Pflanzen und Insekten heiß serviert wird. Als Nachtisch kommen Fragen zu Strukturen und der Bewirtschaftungspraxis in Bezug zur Artenvielfalt auf den Tisch. Ich bitte darum, alles zu beantworten, ansonsten gibt es, wie allgemein bekannt, schlechtes Wetter. Als ein Extra gibt es ganz zum Schluss noch die optionale Käseplatte, wo ich nach Details zu Artengruppen ihrer Wahl fragen werde. Diese Seite kann auch genutzt werden, um Kommentare, Kritik, Ideen usw. aufzuschreiben.

Für alle, die an der Umfrage auf Papier teilnehmen: Ich werde eine Flasche Wein, vom Weingut meiner Eltern an der Mosel an die- oder denjenigen mit der schönsten (und leserlichsten!) Handschrift senden. Für alle die online an der Umfrage teilnehmen wird es eine Lotterie mit demselben Preis geben. Aber bitte nehmen Sie nur einmal an der Umfrage teil, für alle die gleichen Chancen!

Die Umfrage auf Papier wird vom Bauernverband Fribourg und vom Naturpark Gantrisch ausgeteilt und eingesammelt und ist komplett anonym. Nur ich und meine Betreuerin Elisa Oteros-Rozas (Universität Oberta de Catalunya – elisa.oterorozas@gmail.com) werden Zugang zu den Daten haben und die Abschlussarbeit wird keine Informationen beinhalten, die auf Sie persönlich zurückschließen lassen. Wenn Sie irgendwelche Fragen haben,

können Sie mir jederzeit mailen an: Jonas.Hendricks@UGent.be oder mich anrufen (auch Whatsapp): +491603059358

Mit Ihrer vollständigen Beantwortung der Umfrage helfen Sie mehr Aufmerksamkeit für nachhaltige Wirtschaft durch angepasste Bewirtschaftung zu generieren und auch mir helfen Sie bei der Beendigung meiner Ausbildung. Also vielen, vielen Dank!

Aperitif – Hintergrund (mehrere Boxen können angekreuzt werden, so wie es Sinn ergibt)

Die Hintergrundinformationen werden untersucht werden, um zu überprüfen, ob es mögliche Gemeinsamkeiten und Unterschiede zwischen den Bewirtschafter:innen über Artenvielfalt gibt.

1) Sozio-demographische Fragen in Verbindung zur Alpwirtschaft

1. Alter: _____ Jahre
2. Geschlecht: weiblich männlich ich möchte diese Frage nicht beantworten
3. Muttersprache: Französisch Schweizerdeutsch/Deutsch andere: _____
4. Erfahrung in der Landwirtschaft generell: _____ Jahre
5. Bewirtschaftungserfahrung im Sömmerungsgebiet und in den Bergzonen III und IV: _____ Jahre
6. Erfahrung auf den derzeit bewirtschafteten Weiden: _____ Jahre
7. Familienhintergrund: Landwirtschaft mit Alp Landwirtschaft ohne Alp anderer
8. Als was würden Sie Ihren Beruf beschreiben: Äpler:in Berbauer:in Hirt:in Bewirtschafter:in
Bestößer:in Anders: _____
9. Wohnen Sie auf der Alp im Sommer? Wohne auf der Alp Wohne im Tal und ich pendele regelmäßig
10. Wie groß ist der Anteil Ihres Einkommens durch landwirtschaftliche Tätigkeiten in % vom Gesamteinkommen (ungefähr): 25 % 50 % 75 % 100 %
11. Wie hoch ist Ihr Interesse an Naturschutz? (bitte nur ein Kreuzchen.) Kein Interesse
Wenig Interesse Interesse ist da Stark interessiert
12. Wie besonders ist die Artenvielfalt in den Alpen für Sie? (bitte nur ein Kreuzchen.) nichts
Besonderes ein wenig besonders etwas Besonderes Absolut einzigartig
13. Ausbildung in Bezug auf Alpwirtschaft: Landwirtschaftsschule Alpkurse Vater Mutter
Großeltern andere Familienmitglieder Nachbarn Bücher Internet andere: _____

Was war am Einflussreichsten? Landwirtschaftsschule Alpkurse Vater Mutter Großeltern
 andere Familienmitglieder Nachbarn Bücher Internet andere: _____

Wie häufig nutzen Sie Weiterbildungen durch Verbände, Genossenschaften, landwirtschaftliche Beratungszentren etc.? _____ Stunden pro Jahr

2) Beschreibung des Gebiets und der Weiden

Standort der Alp, Ställe und der Weiden (falls nur eine Alp bewirtschaftet wird, bitte bei „untere“ eintragen):

14. Name der Alp: untere: _____ obere: _____

15. Tal, wo sich der Bergbetrieb befindet: _____

16. Gemeinde: _____

17. Weidefläche: _____ ha

18. Normalstöße: _____

19. Höhe der Weiden: von _____ m ü.M. bis _____ m ü.M.

20. Klassifikation der Weiden: Bergzone III Bergzone IV Sömmerungsgebiet

21. Wie ist Ihre Alp zu erreichen? asphaltierte Straße Weg 4x4 Route Fußweg/mit Pferd

22. Wird Agrotourismus betrieben? Buvette Übernachtungsmöglichkeiten nein, keine Gastwirtschaft

23. Wem gehören die Weiden auf denen die Tiere grasen? Mir, ich bin der Besitzer Einem anderen privaten Besitzer Ich pachte die Weiden Einer Genossenschaft, wo ich Mitglied bin Der Gemeinde sonstiges: _____

24. Wem gehören die Tiere: Mir privat Privat jemandem anderen

25. Gibt es Naturschutzgebiete in der Nähe? Hochmoor Flachmoor Waldschutzgebiet Amphibienlaichgebiet Auen Trockenwiesen/weiden andere: _____

26. Welche Ökosysteme gibt es auf dem bewirtschafteten Gebiet:

Magerwiese/weide Fettwiese/weide Streueflächen Brache Wald Wasserflächen (Bäche, Teiche etc.) Felslandschaften

3) Beschreibung der Bewirtschaftung

27. Bewirtschaftung der Tiere von Ihnen: nur Sömmerung ganzjährig

28. Tiere: Milchkühe Anzahl: _____ Rasse: _____

Mutterkühe Anzahl: _____ Rasse: _____

Rinder Anzahl: _____ Rasse: _____

Schafe Anzahl: _____ Rasse: _____

Ziegen Anzahl: _____ Rasse: _____

Pferde Anzahl: _____ Rasse: _____

Schweine Anzahl: _____ Rasse: _____

Geflügel Anzahl: _____ Rasse: _____

Andere Nutztiere? _____

29. Falls Sie Milchkühe halten, wird zugekauftes Kraftfutter als Ergänzung verwendet? Ja Nein

30. Was wird auf der Alp produziert? Milch Tiere für Fleisch Jungviehaufzucht Käse andere Milchprodukte anderes: _____

31. Welche Arten von Maschinen werden verwendet?

Keine oder nur Handgeräte

Leichte Maschinen (kleiner Balkenmäher, leichter Traktor etc.)

Schwere Maschinen (Mulcher, Steinfräsen, schwere Traktoren, Kreiselmäher etc.)

32. Wie wird gedüngt? Gülle Mist keine Düngung anders: _____

33. Gibt es spezielle Aktivitäten, oder lebendige Traditionen wie Tavillionage/Schindeln oder ein „Wetterbüächli“ etc., die durchgeführt werden? Falls ja, welche?

34. Gibt es Innovationen, wie Digitalisierung bestimmter Prozesse oder Arbeit mit Drohnen etc., die Sie eingeführt haben? _____

35. Sind sie Teil der Landschaftsqualitätsprojekte? Ja Nein

36. Anteil in % an BFF2 Fläche auf den bewirtschafteten Gebieten: _____ %

37. Bio-Landwirtschaft: Ja zertifiziert Ja ohne Zertifizierung Nein

38. Art der Problempflanzenbekämpfung

Mechanisch Eher mechanisch Eher chemisch chemisch

Ganz wichtig: Bitte beantworten Sie die folgenden Fragen ohne, etwa im Internet oder in Büchern nachzuschauen. Die ausgesuchten Spezies kommen nicht überall in der Region vor, daher machen Sie sich bitte keine Sorgen um „falsche“ Antworten oder um Arten, die Sie nicht gesehen haben. Ich frage nach Ihren ehrlichen Beobachtungen.

Hauptgang – Frequenz und Veränderungen einzelner Spezies

Flora, mehrere Boxen können angekreuzt werden, wie es Sinn ergibt



Große Brennessel (*Urtica dioica*)

Haben Sie die Pflanze schon mal gesehen? Ja Nein

Falls ja, wie häufig treffen Sie sie auf ihren Weiden an: nie
weniger als 1% der Weiden (selten) 2 – 10 % meiner Weiden
(verbreitet) mehr als 10 % meiner Weiden (sehr häufig)

Welche Eigenschaft hat die Pflanze (mehrere Kreuze möglich)?

Essbar schmackhaft fürs Vieh Heilpflanze für Menschen

Heilpflanze fürs Vieh dekorativ spirituell giftig

Neophyt heimisch invasiv geschützt

Problempflanze Zeigerpflanze

bitte beschreiben Sie: _____

Entwicklung in den letzten 10 Jahren: vermehrt vermindert
keine Veränderung



Bärwurz (*Meum athamaticum*)

Haben Sie die Pflanze schon mal gesehen? Ja Nein

Falls ja, wie häufig treffen Sie sie auf ihren Weiden an: nie
weniger als 1% der Weiden (selten) 2 – 10 % meiner Weiden
(verbreitet) mehr als 10 % meiner Weiden (sehr häufig)

Welche Eigenschaft hat die Pflanze (mehrere Kreuze möglich)?

Essbar schmackhaft fürs Vieh Heilpflanze für Menschen

Heilpflanze fürs Vieh dekorativ spirituell giftig

Neophyt heimisch invasiv geschützt

Problempflanze Zeigerpflanze

bitte beschreiben Sie: _____

Entwicklung in den letzten 10 Jahren: vermehrt vermindert
keine Veränderung



Einjähriges/Gewöhnliches Berufskraut (*Erigeron annuus*)

Haben Sie die Pflanze schon mal gesehen? Ja Nein

Falls ja, wie häufig treffen Sie sie auf ihren Weiden an: nie
weniger als 1% der Weiden (selten) 2 – 10 % meiner Weiden
(verbreitet) mehr als 10 % meiner Weiden (sehr häufig)

Welche Eigenschaft hat die Pflanze (mehrere Kreuze möglich)?

Essbar schmackhaft fürs Vieh Heilpflanze für Menschen

Heilpflanze fürs Vieh dekorativ spirituell giftig

Neophyt heimisch invasiv geschützt

Problempflanze Zeigerpflanze

bitte beschreiben Sie: _____

Entwicklung in den letzten 10 Jahren: vermehrt vermindert
keine Veränderung

Optionale Kommentare (Zusammenhänge, Auffälligkeiten, Beobachtungen):



Blauer Eisenhut (*Aconitum napellus*)

Haben Sie die Pflanze schon mal gesehen? Ja Nein

Falls ja, wie häufig treffen Sie sie auf ihren Weiden an: nie
weniger als 1% der Weiden (selten) 2 – 10 % meiner Weiden
(verbreitet) mehr als 10 % meiner Weiden (sehr häufig)

Welche Eigenschaft hat die Pflanze (mehrere Kreuze möglich)?

Essbar schmackhaft fürs Vieh Heilpflanze für Menschen
Heilpflanze fürs Vieh dekorativ spirituell giftig
Neophyt heimisch invasiv geschützt
Problempflanze Zeigerpflanze

bitte beschreiben Sie: _____

Entwicklung in den letzten 10 Jahren: vermehrt vermindert
keine Veränderung



Wiesensalbei (*Salvia pratensis*)

Haben Sie die Pflanze schon mal gesehen? Ja Nein

Falls ja, wie häufig treffen Sie sie auf ihren Weiden an: nie
weniger als 1% der Weiden (selten) 2 – 10 % meiner Weiden
(verbreitet) mehr als 10 % meiner Weiden (sehr häufig)

Welche Eigenschaft hat die Pflanze (mehrere Kreuze möglich)?

Essbar schmackhaft fürs Vieh Heilpflanze für Menschen
Heilpflanze fürs Vieh dekorativ spirituell giftig
Neophyt heimisch invasiv geschützt
Problempflanze Zeigerpflanze

bitte beschreiben Sie: _____

Entwicklung in den letzten 10 Jahren: vermehrt vermindert
keine Veränderung



Sumpf-Kratzdistel (*Cirsium palustre*)

Haben Sie die Pflanze schon mal gesehen? Ja Nein

Falls ja, wie häufig treffen Sie sie auf ihren Weiden an: nie
weniger als 1% der Weiden (selten) 2 – 10 % meiner Weiden
(verbreitet) mehr als 10 % meiner Weiden (sehr häufig)

Welche Eigenschaft hat die Pflanze (mehrere Kreuze möglich)?

Essbar schmackhaft fürs Vieh Heilpflanze für Menschen
Heilpflanze fürs Vieh dekorativ spirituell giftig
Neophyt heimisch invasiv geschützt
Problempflanze Zeigerpflanze

bitte beschreiben Sie: _____

Entwicklung in den letzten 10 Jahren: vermehrt vermindert
keine Veränderung

Optionale Kommentare (Zusammenhänge, Auffälligkeiten, Beobachtungen):



Acker-Kratzdistel (*Cirsium arvense*)

Haben Sie die Pflanze schon mal gesehen? Ja Nein

Falls ja, wie häufig treffen Sie sie auf ihren Weiden an: nie
weniger als 1% der Weiden (selten) 2 – 10 % meiner Weiden
(verbreitet) mehr als 10 % meiner Weiden (sehr häufig)

Welche Eigenschaft hat die Pflanze (mehrere Kreuze möglich)?

Essbar schmackhaft fürs Vieh Heilpflanze für Menschen
Heilpflanze fürs Vieh dekorativ spirituell giftig
Neophyt heimisch invasiv geschützt
Problempflanze Zeigerpflanze

bitte beschreiben Sie: _____

Entwicklung in den letzten 10 Jahren: vermehrt vermindert
keine Veränderung



Echtes Johanniskraut (*Hypericum perforatum*)

Haben Sie die Pflanze schon mal gesehen? Ja Nein

Falls ja, wie häufig treffen Sie sie auf ihren Weiden an: nie
weniger als 1% der Weiden (selten) 2 – 10 % meiner Weiden
(verbreitet) mehr als 10 % meiner Weiden (sehr häufig)

Welche Eigenschaft hat die Pflanze (mehrere Kreuze möglich)?

Essbar schmackhaft fürs Vieh Heilpflanze für Menschen
Heilpflanze fürs Vieh dekorativ spirituell giftig
Neophyt heimisch invasiv geschützt
Problempflanze Zeigerpflanze

bitte beschreiben Sie: _____

Entwicklung in den letzten 10 Jahren: vermehrt vermindert
 keine Veränderung



Jakobs-Kreuzkraut (*Jacobaea vulgaris*)

Haben Sie die Pflanze schon mal gesehen? Ja Nein

Falls ja, wie häufig treffen Sie sie auf ihren Weiden an: nie
weniger als 1% der Weiden (selten) 2 – 10 % meiner Weiden
(verbreitet) mehr als 10 % meiner Weiden (sehr häufig)

Welche Eigenschaft hat die Pflanze (mehrere Kreuze möglich)?

Essbar schmackhaft fürs Vieh Heilpflanze für Menschen
Heilpflanze fürs Vieh dekorativ spirituell giftig
Neophyt heimisch invasiv geschützt
Problempflanze Zeigerpflanze

bitte beschreiben Sie: _____

Entwicklung in den letzten 10 Jahren: vermehrt vermindert
keine Veränderung

Optionale Kommentare (Zusammenhänge, Auffälligkeiten, Beobachtungen):

Fauna (alle Fragen beziehen sich auf den Zeitraum von Anfang Mai bis Ende Oktober)



Auerhuhn (*Tetrao urogallus*)

Haben Sie den Vogel schon mal gesehen: Ja Nein

Falls ja, wie häufig treffen Sie den Vogel (auch Spuren von Präsenz) auf Ihren Weide an (ungefähr): jeden Tag einmal pro Woche einmal pro Monat einmal im Jahr einmal in 5 Jahren nie

Welche Eigenschaften hat er? Essbar gefährlich beim Angriff
Zeiger für Wetterveränderungen medizinische Nutzen
invasiv heimisch geschützt Freude am Anschauen
Zeiger für bestimmte Umwelt Gegebenheiten
bitte beschreiben Sie: _____

Entwicklung in den letzten 10 Jahren: vermehrt vermindert
keine Veränderung



Steinadler (*Aquila chrysaetos*)

Haben Sie den Vogel schon mal gesehen: Ja Nein

Falls ja, wie häufig treffen Sie den Vogel (auch Spuren von Präsenz) auf Ihren Weide an (ungefähr): jeden Tag einmal pro Woche einmal pro Monat einmal im Jahr einmal in 5 Jahren nie

Welche Eigenschaften hat er? Essbar gefährlich beim Angriff
Zeiger für Wetterveränderungen medizinische Nutzen
invasiv heimisch geschützt Freude am Anschauen
Zeiger für bestimmte Umwelt Gegebenheiten
bitte beschreiben Sie: _____

Entwicklung in den letzten 10 Jahren: vermehrt vermindert
keine Veränderung



Bartgeier (*Gypaetus barbatus*)

Haben Sie den Vogel schon mal gesehen: Ja Nein

Falls ja, wie häufig treffen Sie den Vogel (auch Spuren von Präsenz) auf Ihren Weide an (ungefähr): jeden Tag einmal pro Woche einmal pro Monat einmal im Jahr einmal in 5 Jahren nie

Welche Eigenschaften hat er? Essbar gefährlich beim Angriff
Zeiger für Wetterveränderungen medizinische Nutzen
invasiv heimisch geschützt Freude am Anschauen
Zeiger für bestimmte Umwelt Gegebenheiten
bitte beschreiben Sie: _____

Entwicklung in den letzten 10 Jahren: vermehrt vermindert
keine Veränderung

Optionale Kommentare (Zusammenhänge, Auffälligkeiten, Beobachtungen):



Eurasischer Luchs (*Lynx lynx*)

Haben Sie das Tier schon mal gesehen: Ja Nein

Falls ja, wie häufig treffen Sie das Tier (auch Spuren von Präsenz) auf Ihren Weide an (ungefähr): jeden Tag einmal pro Woche
einmal pro Monat einmal im Jahr einmal in 5 Jahren
nie

Welche Eigenschaften hat es? Essbar gefährlich beim Angriff
Zeiger für Wetterveränderungen medizinische Nutzen
invasiv heimisch geschützt Freude am Anschauen
Zeiger für bestimmte Umwelt Gegebenheiten
bitte beschreiben Sie: _____

Entwicklung in den letzten 10 Jahren: vermehrt vermindert
keine Veränderung



Alpenmurmeltier (*Marmota marmota*)

Haben Sie das Tier schon mal gesehen: Ja Nein

Falls ja, wie häufig treffen Sie das Tier (auch Spuren von Präsenz) auf Ihren Weide an (ungefähr): jeden Tag einmal pro Woche
einmal pro Monat einmal im Jahr einmal in 5 Jahren
nie

Welche Eigenschaften hat es? Essbar gefährlich beim Angriff
Zeiger für Wetterveränderungen medizinische Nutzen
invasiv heimisch geschützt Freude am Anschauen
Zeiger für bestimmte Umwelt Gegebenheiten
bitte beschreiben Sie: _____

Entwicklung in den letzten 10 Jahren: vermehrt vermindert
keine Veränderung



Gämse (*Rupicapra rupicapra*)

Haben Sie das Tier schon mal gesehen: Ja Nein

Falls ja, wie häufig treffen Sie das Tier (auch Spuren von Präsenz) auf Ihren Weide an (ungefähr): jeden Tag einmal pro Woche
einmal pro Monat einmal im Jahr einmal in 5 Jahren
nie

Welche Eigenschaften hat es? Essbar gefährlich beim Angriff
Zeiger für Wetterveränderungen medizinische Nutzen
invasiv heimisch geschützt Freude am Anschauen
Zeiger für bestimmte Umwelt Gegebenheiten
bitte beschreiben Sie: _____

Entwicklung in den letzten 10 Jahren: vermehrt vermindert
keine Veränderung

Optionale Kommentare (Zusammenhänge, Auffälligkeiten, Beobachtungen):



Zauneidechse (*Lacerta agilis*)

Haben Sie das Reptil schon mal gesehen: Ja Nein

Falls ja, wie häufig treffen Sie das Reptil (auch Spuren von Präsenz) auf Ihren Weide an (ungefähr): jeden Tag einmal pro Woche einmal pro Monat einmal im Jahr einmal in 5 Jahren nie

Welche Eigenschaften hat es? Essbar gefährlich beim Angriff
Zeiger für Wetterveränderungen medizinische Nutzen
invasiv heimisch geschützt Freude am Anschauen
Zeiger für bestimmte Umwelt Gegebenheiten
bitte beschreiben Sie: _____

Entwicklung in den letzten 10 Jahren: vermehrt vermindert
keine Veränderung



Alpensalamander (*Salamandra atra atra*)

Haben Sie den Salamander schon mal gesehen: Ja Nein

Falls ja, wie häufig treffen Sie den Salamander (auch Spuren von Präsenz) auf Ihren Weide an (ungefähr): jeden Tag einmal pro Woche einmal pro Monat einmal im Jahr einmal in 5 Jahren nie

Welche Eigenschaften hat es? Essbar gefährlich beim Angriff
Zeiger für Wetterveränderungen medizinische Nutzen
invasiv heimisch geschützt Freude am Anschauen
Zeiger für bestimmte Umwelt Gegebenheiten
bitte beschreiben Sie: _____

Entwicklung in den letzten 10 Jahren: vermehrt vermindert
keine Veränderung



Kreuzotter (*Vipera berus berus*)

Haben Sie das Reptil schon mal gesehen: Ja Nein

Falls ja, wie häufig treffen Sie das Reptil (auch Spuren von Präsenz) auf Ihren Weide an (ungefähr): jeden Tag einmal pro Woche einmal pro Monat einmal im Jahr einmal in 5 Jahren nie

Welche Eigenschaften hat es? Essbar gefährlich beim Angriff
Zeiger für Wetterveränderungen medizinische Nutzen
invasiv heimisch geschützt Freude am Anschauen
Zeiger für bestimmte Umwelt Gegebenheiten
bitte beschreiben Sie: _____

Entwicklung in den letzten 10 Jahren: vermehrt vermindert
keine Veränderung

Optionale Kommentare (Zusammenhänge, Auffälligkeiten, Beobachtungen):



Schachbrettfalter (*Melanargia galathea*)

Haben Sie das Insekt schon mal gesehen: Ja Nein

Falls ja, wie häufig treffen Sie das Insekt (auch Spuren von Präsenz) auf Ihren Weide an (ungefähr): jeden Tag einmal pro Woche einmal pro Monat einmal im Jahr einmal in 5 Jahren nie

Welche Eigenschaften hat es? Essbar gefährlich beim Angriff
Zeiger für Wetterveränderungen medizinische Nutzen
invasiv heimisch geschützt Freude am Anschauen
Zeiger für bestimmte Umwelt Gegebenheiten
bitte beschreiben Sie: _____

Entwicklung in den letzten 10 Jahren: vermehrt vermindert
keine Veränderung



Alpenbock (*Rosalia alpina*)

Haben Sie das Insekt schon mal gesehen: Ja Nein

Falls ja, wie häufig treffen Sie das Insekt (auch Spuren von Präsenz) auf Ihren Weide an (ungefähr): jeden Tag einmal pro Woche einmal pro Monat einmal im Jahr einmal in 5 Jahren nie

Welche Eigenschaften hat es? Essbar gefährlich beim Angriff
Zeiger für Wetterveränderungen medizinische Nutzen
invasiv heimisch geschützt Freude am Anschauen
Zeiger für bestimmte Umwelt Gegebenheiten
bitte beschreiben Sie: _____

Entwicklung in den letzten 10 Jahren: vermehrt vermindert
keine Veränderung

Extra-Frage zu den Insekten:

Wie hat sich generell die Anzahl der Insekten in den letzten 10 Jahren verändert?

Anzahl in den Talgebieten (< 1000 m): weniger mehr keine Veränderungen

Anzahl in den Berggebieten (1000 – 2000 m): weniger mehr keine Veränderungen

Sonstige Auffälligkeiten (z.B. mehr oder weniger stechende Insekten usw.):

Optionale Kommentare (Zusammenhänge, Auffälligkeiten, Beobachtungen):

Nachtisch – Strukturen und deren Effekt auf die Artenvielfalt

Was ist das Erste was Sie mit Biodiversität in Verbindung bringen (ein Wort)? _____

1. Totholz im Wald oder auf der Wiese zurückzulassen steigert die Artenvielfalt:
Einverstanden teilweise Einverstanden teilweise Ablehnung Ablehnung
2. Einzelbäume regional angepasster Arten steigern die Artenvielfalt:
Einverstanden teilweise Einverstanden teilweise Ablehnung Ablehnung
3. Moorflächen zu entwässern verringert die Artenvielfalt:
Einverstanden teilweise Einverstanden teilweise Ablehnung Ablehnung
4. Naturbelassene Wasserstrukturen verringern die Artenvielfalt:
Einverstanden teilweise Einverstanden teilweise Ablehnung Ablehnung
5. Dornbüsche stehen zu lassen verringert die Artenvielfalt:
Einverstanden teilweise Einverstanden teilweise Ablehnung Ablehnung
6. Erlen stehen zu lassen verringert die Artenvielfalt:
Einverstanden teilweise Einverstanden teilweise Ablehnung Ablehnung
7. Düngung einer Wiese/Weide mit viel Bewuchs durch Löwenzahn oder Wiesenkerbel steigert die Artenvielfalt:
Einverstanden teilweise Einverstanden teilweise Ablehnung Ablehnung
8. Düngung einer Wiese/Weide mit viel Bewuchs durch Klee verringert die Artenvielfalt:
Einverstanden teilweise Einverstanden teilweise Ablehnung Ablehnung
9. Hochleistungstierrassen (z.B. Holstein etc.) steigern die Artenvielfalt durch deren Fressgewohnheiten:
Einverstanden teilweise Einverstanden teilweise Ablehnung Ablehnung
10. Ein Bewirtschaftungsmosaik durch diverse Bewirtschaftungszeiträume und Intensitäten steigert die Artenvielfalt:
Einverstanden teilweise Einverstanden teilweise Ablehnung Ablehnung

Vielen Dank für die Teilnahme an der Umfrage und ich wünsche noch alles Gute!

Alle Teilnehmenden würde ich auch noch gerne zu einem Treffen im April 2022 (Ich werde noch über Ort und Zeitpunkt informieren) einladen, um die Ergebnisse der Umfrage zu diskutieren, da ich denke, dass Ihre Meinung dazu sehr wichtig ist. Die Teilnahme ist vollkommen freiwillig. Bei der Gelegenheit wird es auch richtiges Essen und Trinken geben. Bitte lassen Sie mich wissen, ob Sie eventuell an der Teilnahme interessiert sind, damit ich etwas besser planen kann.

Ich hoffe ich kann dann die Arbeit bis Ende August 2022 abschließen und eine Zusammenfassung der Arbeit in „normaler“ Sprache online verfügbar machen, auf jeden Fall durch die Website des Naturpark Gantrisch.

1.3 Survey French (final version)

Enquête : Pratiques de gestion qui favorisent la beauté de la biodiversité dans les Alpes suisses



La vache scientifique de la rasse brune

Cette enquête s'adresse à tous les responsables des zones d'estivage et des zones de montagne III et IV qui s'occupent d'élevage pastoral. Plus précisément, je cherche des personnes responsables de la gestion des pâturages et des animaux, c'est-à-dire des personnes qui passent une grande partie de leur temps de travail en l'extérieur.

Bonjour, je m'appelle Jonas Hendricks (voir la photo ci-dessous, avec Malina la vache Jersey), certains d'entre vous de la région de Lac noir et Jaun me connaissent peut-être déjà. Pour tous ceux qui ne me connaissent pas : Je viens d'Allemagne et je fais une étude pour ma mémoire sur les connaissances locales de la biodiversité dans la zone d'estivage et la zone de montagne en général dans le canton de Fribourg et le Parc naturel de Ganttrisch dans le canton de Berne.



Je pense que si les montagnes suisses sont si belles et diversifiées, c'est grâce aux pratiques de gestion agricole qui existent depuis des centaines d'années. Elles ne sont pas seulement belles pour les gens qui y vivent, mais elles abritent aussi des animaux sauvages et domestiques, des plantes, des insectes, des champignons, etc. Je suppose que les agriculteurs, qui façonnent ces paysages, possèdent de grandes connaissances sur les animaux et les plantes, ainsi que la biodiversité. Cependant, ces connaissances fondées sur l'expérience locale sont actuellement ignorées ou pas assez valorisées. J'aimerais donc les mettre en lumière et sensibiliser aux pratiques agricoles positives qui protègent et améliorent la biodiversité.

Fin septembre et début octobre, j'ai rencontré quelques agriculteurs (principalement des régions de Plaffeien et Plasselb) pour discuter du sujet et concevoir avec eux l'enquête que vous êtes en train de lire. Nous avons fait en sorte qu'elle soit facile à manipuler et qu'elle vous prenne entre 15 et 20 minutes (cela dépend fortement de vos commentaires). Je vous invite donc à prendre une tasse de thé, de café ou un verre de vin et je vous servira en guise de repas quelques questions. Je commencerai par un apéritif, qui consistera en des questions sur vos antécédents et sur votre exploitation. Ensuite, le plat principal, qui consistera en des questions plus spécifiques sur la fréquence des rencontres ou des observations de différentes plantes et animaux, sera servi chaud. Pour le dessert, nous nous intéresserons à vos pratiques de gestion concernant la biodiversité. Je vous demande de bien vouloir terminer le repas/questionnaire. En option, le plateau de fromage, je vous demanderais vos connaissances sur un groupe d'espèces de votre choix. Dans cette dernière partie, vous pouvez également laisser des commentaires supplémentaires si vous le souhaitez.

Pour ceux qui répondent au questionnaire sur papier : J'enverrai une bouteille de vin, provenant du vignoble de mes parents situé sur la rivière Mosel en Allemagne, comme prix à la personne ayant la plus belle (et la plus facilement lisible !) écriture. Pour les personnes qui participent en ligne : Je vais organiser une simple loterie avec le même prix. Mais s'il vous plaît ne faites le sondage qu'une seule fois, les mêmes chances pour tous !

L'enquête sur papier sera distribuée et collectée par l'Union des Paysans Fribourgeois et le Parc naturel de Ganttrisch et sera absolument anonyme. Seuls moi et mon superviseur Elisa Oteros-Rozas (de

l'Universitat Oberta de Catalunya - elisa.otereroszas@gmail.com) auront accès aux données et la thèse finale ne contiendra aucune information pouvant être rattachée à un individu. Si vous avez des questions, vous pouvez m'écrire un courriel à tout moment : Jonas.Hendricks@UGent.be ou me téléphoner (ou me joindre par Whatsapp) : +491603059358

En participant et en terminant tout le "repas", vous contribuerez à la sensibilisation aux écosystèmes fonctionnels par des pratiques de gestion adaptées, et vous me soutiendrez dans mes études. Alors merci beaucoup !

Apéritif - Informations générales (plusieurs cases peuvent être cochées, si cela a un sens)

Les informations de fond seront examinées afin de vérifier s'il existe des similitudes et des différences entre les administrateurs en termes de connaissances empiriques sur la biodiversité.

1) Données sociodémographiques relatives à l'exploitation agricole

1. L'âge : _____ ans
2. Sexe : féminin masculin je ne souhaite pas répondre à cette question
3. Langue maternelle : Français Suisse/Allemand autre : _____
4. Expérience dans l'agriculture en général : _____ années
5. Années d'expérience avec saisons d'estivage et gestion dans les zones de montagne III et IV :
_____ années
6. Nombre d'années passées sur les pâturages actuellement utilisés : _____ années
7. Le contexte familial (parents, grand-parents) : Agriculture avec alpage
Agriculture sans alpage autre
8. Comment décririez-vous votre profession : Älpler:in/Peuple alpin Paysan.ne de montagne
Pasteur.rice.s Berger.ère.s Agriculteur.rice.s autre: _____
9. Où résidez-vous durant l'estive ? Sur l'alpage
dans la vallée et je fais régulièrement des aller-retours
10. Quelle proportion de votre revenu provient du travail agricole (approximativement) :
25 % 50 % 75 % 100 %
11. Comment considérez-vous votre intérêt pour la protection de l'environnement ?
Aucun un peu d'intérêt intéressé très intéressé
12. A quel point pensez-vous que la biodiversité dans les Alpes est particulière ?
Pas du tout un peu particulière unique

13. Où avez-vous appris.e l'agriculture alpine ? École d'agriculture Cours d'alpage Père
Mère Grands-parents autres membres de la famille Voisins Livres Internet
autre : _____

Pouvez-vous préciser lequel d'entre eux vous a ou vous influence le plus ?
École d'agriculture Cours d'alpage Père Mère Grands-parents
autres membres de la famille Voisins Livres Internet autre : _____

A quelle fréquence utilisez-vous des formations continues organisées par des associations,
des coopératives, vulgarisation agricole etc. : _____ heures par année

2) Description de la zone et des pâturages

Emplacement de l'alpage, des étables et des pâturages (si un seul alpage est exploité, veuillez
l'indiquer sous "inférieur") :

14. Nom de l'alpage : inférieur : _____ supérieur : _____

15. Vallée, où se trouve l'exploitation de montagne : _____

16. Municipalité : _____

17. Pâturages : _____ ha

18. Pâquier normal : _____

19. Élevage des pâturages : inférieur : _____ m supérieur : _____ m

20. Classification des pâturages : Zone de montagne III Zone de montagne IV Zone de
l'estivage

21. Comment rejoignez-vous votre alpage ? Rue goudronnée Chemin Route 4x4
à pied/avec cheval

22. L'agrotourisme est-il pratiqué ? Buvette Possibilité d'hébergement
non, pas de restauration

23. Qui est propriétaire des pâturages où paissent vos animaux ? Moi, je suis le propriétaire Un
autre propriétaire privé Je loue les pâturages Une coopérative dont je fais partie La
municipalité autre : _____

24. Propriétaire des animaux gérés : Moi, je suis le propriétaire Privé quelqu'un d'autre

25. Y a-t-il des zones de protection de la nature à proximité ? Tourbière haute marais
Réserve forestière site de reproduction de batraciens Zone alluviale
Prairie et pâturages sec autre : _____

26. Quel type d'écosystèmes y a-t-il dans ou autour de vos pâturages ?
Prairies maigres Prairies grasses Surfaces à litière Jachère Forêt
Espace aquatique (Ruisseau, étang etc.) Rocheux

3) Description de la ferme/exploitation elle-même (pratiques, animaux, produits)

27. Gestion des animaux par vos soins : seulement l'estivage tous l'année

28. Animaux : Vaches laitières Nombre : _____ Race : _____

Vaches allaitantes Nombre : _____ Race : _____

Bovins Nombre : _____ Race : _____

Moutons Nombre : _____ Race : _____

Chèvres Nombre : _____ Race : _____

Chevaux Nombre : _____ Race : _____

Porcs Nombre : _____ Race : _____

Volaille Nombre : _____ Race : _____

Autres bétails ? _____

29. Si vous avez des vaches laitières, utilisez-vous des concentrés achetés comme complément ? Oui Non

30. Que produit-on sur l'alpage ? Lait Bétails pour la viande Élevage du jeune bétail
Fromage autres produits laitiers autres : _____

31. Quels types de machines utilisez-vous ?
Aucune ou uniquement des appareils manuels
Machines légères (petite tondeuse à barre, tracteur léger, etc.)
Machines lourdes (broyeurs, girobroyage, tracteurs lourds, faucheuses rotatives, etc.)

32. Comment fertilisez-vous ? Lisier Fumier aucun fertilisation autre : _____

33. Existe-t-il des activités spéciales, ou des traditions vivantes comme le tavillionage ou un "Wetterbüächli" (un livre pour documenter la météo) etc., Si oui, lesquelles ?

34. Y a-t-il des innovations que vous avez introduites, comme la numérisation de certains processus ou le travail avec des drones, etc.

35. Sont ils en lien avec des projets de qualité du paysage ? Oui Non

36. Pourcentage de surfaces de promotion de la biodiversité (Niveaux II) dans les zones exploitées :
_____ %

37. L'agriculture biologique ? Oui certifié Oui sans certification Non

38. Type de lutte contre les mauvaises herbes :
Mécaniquement plutôt mécaniquement plutôt chimiquement chimiquement

Très important : Veuillez répondre aux questions sans chercher sur Internet ou des livres. Les espèces sélectionnées ne sont pas présentes partout dans la région, ne vous inquiétez donc pas de "mauvaises" réponses ou d'espèces que vous n'avez pas vues. Je vous demande de me faire part de vos observations sincères.

Plat principal - Fréquence et variations des différentes espèces

Flore, plusieurs cases peuvent être cochées, comme, si cela a du sens



Grande Ortie (*Urtica dioica*)

Avez-vous déjà vu la plante ? Oui Non

Si oui, à quelle fréquence le rencontrez-vous dans vos pâturages ?

jamais moins que 1% de mes pâturages (rare) 2 – 10 % de mes pâturages (diffuse) plus que 10 % de mes pâturages (très souvent)

Quelle est la caractéristique de la plante (plusieurs choix possibles) ?

Comestible apprécié pour le bétail Plante médicinale pour les humains Plante médicinale pour le bétail décorative spirituelle toxique Néophyte indigène invasive protégé mauvais herbe plante indicatrice
veuillez décrire : _____

Evolution au cours des 10 dernières années : augmenter réduit pas de changement

Fenouil des Alpes (*Meum athamaticum*)

Avez-vous déjà vu la plante ? Oui Non

Si oui, à quelle fréquence le rencontrez-vous dans vos pâturages ?

jamais moins que 1% de mes pâturages (rare) 2 – 10 % de mes pâturages (diffuse) plus que 10 % de mes pâturages (très souvent)

Quelle est la caractéristique de la plante (plusieurs choix possibles) ?

Comestible apprécié pour le bétail Plante médicinale pour les humains Plante médicinale pour le bétail décorative spirituelle toxique Néophyte indigène invasive protégé mauvais herbe plante indicatrice
veuillez décrire : _____

Evolution au cours des 10 dernières années : augmenter réduit pas de changement

Vergerette annuelle (*Erigeron annuus*)

Avez-vous déjà vu la plante ? Oui Non

Si oui, à quelle fréquence le rencontrez-vous dans vos pâturages ?

jamais moins que 1% de mes pâturages (rare) 2 – 10 % de mes pâturages (diffuse) plus que 10 % de mes pâturages (très souvent)

Quelle est la caractéristique de la plante (plusieurs choix possibles) ?

Comestible apprécié pour le bétail Plante médicinale pour les humains Plante médicinale pour le bétail décorative spirituelle toxique Néophyte indigène invasive protégé mauvais herbe plante indicatrice
veuillez décrire : _____

Evolution au cours des 10 dernières années : augmenter réduit pas de changement



Commentaires optionnels (relations, anomalies, observations):



Aconit (*Aconitum napellus*)

Avez-vous déjà vu la plante ? Oui Non

Si oui, à quelle fréquence le rencontrez-vous dans vos pâturages ?

jamais moins que 1% de mes pâturages (rare) 2 – 10 % de mes pâturages (diffuse) plus que 10 % de mes pâturages (très souvent)

Quelle est la caractéristique de la plante (plusieurs choix possibles) ?

Comestible apprécié pour le bétail Plante médicinale pour les humains Plante médicinale pour le bétail décorative spirituelle toxique Néophyte indigène invasive protégé mauvais herbe plante indicatrice

veuillez décrire : _____

Evolution au cours des 10 dernières années : augmenter réduit pas de changement



Sauge des prés (*Salvia pratensis*)

Avez-vous déjà vu la plante ? Oui Non

Si oui, à quelle fréquence le rencontrez-vous dans vos pâturages ?

jamais moins que 1% de mes pâturages (rare) 2 – 10 % de mes pâturages (diffuse) plus que 10 % de mes pâturages (très souvent)

Quelle est la caractéristique de la plante (plusieurs choix possibles) ?

Comestible apprécié pour le bétail Plante médicinale pour les humains Plante médicinale pour le bétail décorative spirituelle toxique Néophyte indigène invasive protégé mauvais herbe plante indicatrice

veuillez décrire : _____

Evolution au cours des 10 dernières années : augmenter réduit pas de changement



Cirse de marais (*Cirsium palustre*)

Avez-vous déjà vu la plante ? Oui Non

Si oui, à quelle fréquence le rencontrez-vous dans vos pâturages ?

jamais moins que 1% de mes pâturages (rare) 2 – 10 % de mes pâturages (diffuse) plus que 10 % de mes pâturages (très souvent)

Quelle est la caractéristique de la plante (plusieurs choix possibles) ?

Comestible apprécié pour le bétail Plante médicinale pour les humains Plante médicinale pour le bétail décorative spirituelle toxique Néophyte indigène invasive protégé mauvais herbe plante indicatrice

veuillez décrire : _____

Evolution au cours des 10 dernières années : augmenter réduit pas de changement

Commentaires optionnels (relations, anomalies, observations):



Cirse de champs (*Cirsium arvense*)

Avez-vous déjà vu la plante ? Oui Non

Si oui, à quelle fréquence le rencontrez-vous dans vos pâturages ?

jamais moins que 1% de mes pâturages (rare) 2 – 10 % de mes
pâturages (diffuse) plus que 10 % de mes pâturages (très souvent)

Quelle est la caractéristique de la plante (plusieurs choix possibles) ?

Comestible apprécié pour le bétail Plante médicinale pour les
humains Plante médicinale pour le bétail décorative
spirituelle toxique Néophyte indigène invasive
protégé mauvais herbe plante indicatrice

veuillez décrire : _____

Evolution au cours des 10 dernières années : augmenter réduit

pas de changement



Millepertuis perforé (*Hypericum perforatum*)

Avez-vous déjà vu la plante ? Oui Non

Si oui, à quelle fréquence le rencontrez-vous dans vos pâturages ?

jamais moins que 1% de mes pâturages (rare) 2 – 10 % de mes
pâturages (diffuse) plus que 10 % de mes pâturages (très souvent)

Quelle est la caractéristique de la plante (plusieurs choix possibles) ?

Comestible apprécié pour le bétail Plante médicinale pour les
humains Plante médicinale pour le bétail décorative
spirituelle toxique Néophyte indigène invasive
protégé mauvais herbe plante indicatrice

veuillez décrire : _____

Evolution au cours des 10 dernières années : augmenter réduit

pas de changement



Séneçon de Jacob (*Jacobaea vulgaris*)

Avez-vous déjà vu la plante ? Oui Non

Si oui, à quelle fréquence le rencontrez-vous dans vos pâturages ?

jamais moins que 1% de mes pâturages (rare) 2 – 10 % de mes
pâturages (diffuse) plus que 10 % de mes pâturages (très souvent)

Quelle est la caractéristique de la plante (plusieurs choix possibles) ?

Comestible apprécié pour le bétail Plante médicinale pour les
humains Plante médicinale pour le bétail décorative
spirituelle toxique Néophyte indigène invasive
protégé mauvais herbe plante indicatrice

veuillez décrire : _____

Evolution au cours des 10 dernières années : augmenter réduit

pas de changement

Commentaires optionnels (relations, anomalies, observations):

Faune (toutes les questions se rapportent à la période allant de début mai à fin octobre)



Grand Tétrás (*Tetrao urogallus*)

Avez-vous déjà vu cet oiseau : Oui Non

Si oui, à quelle fréquence rencontrez-vous l'oiseau (y compris des traces de présence) dans vos pâturages (approximativement) :

chaque jour un fois par semaine un fois par mois un fois par année un fois en 5 ans jamais

Quelles sont ses caractéristiques ? Comestible dangereux en attaque indicateur météorologique utilité médicinale invasive indigène protégé agréable à observer indicateur d'une certaine caractéristique de l'environnement veuillez décrire : _____

Evolution de la population au cours des 10 dernières années : augmenter réduit pas de changement



Aigle royal (*Aquila chrysaetos*)

Avez-vous déjà vu cet oiseau : Oui Non

Si oui, à quelle fréquence rencontrez-vous l'oiseau (y compris des traces de présence) dans vos pâturages (approximativement) :

chaque jour un fois par semaine un fois par mois un fois par année un fois en 5 ans jamais

Quelles sont ses caractéristiques ? Comestible dangereux en attaque indicateur météorologique utilité médicinale invasive indigène protégé agréable à observer indicateur d'une certaine caractéristique de l'environnement veuillez décrire : _____

Evolution de la population au cours des 10 dernières années : augmenter réduit pas de changement



Gypaète barbu (*Gypaetus barbatus*)

Avez-vous déjà vu cet oiseau : Oui Non

Si oui, à quelle fréquence rencontrez-vous l'oiseau (y compris des traces de présence) dans vos pâturages (approximativement) :

chaque jour un fois par semaine un fois par mois un fois par année un fois en 5 ans jamais

Quelles sont ses caractéristiques ? Comestible dangereux en attaque indicateur météorologique utilité médicinale invasive indigène protégé agréable à observer indicateur d'une certaine caractéristique de l'environnement veuillez décrire : _____

Evolution de la population au cours des 10 dernières années : augmenter réduit pas de changement

Commentaires optionnels (relations, anomalies, observations):



Lynx boréal (*Lynx lynx*)

Avez-vous déjà vu cet animal : Oui Non

Si oui, à quelle fréquence rencontrez-vous l'animal (y compris des traces de présence) dans vos pâturages (approximativement) :

chaque jour un fois par semaine un fois par mois un fois par année un fois en 5 ans jamais

Quelles sont ses caractéristiques ? Comestible dangereux en attaque indicateur météorologique utilité médicinale invasive indigène protégé agréable à observer indicateur d'une certaine caractéristique de l'environnement
veuillez décrire : _____

Evolution de la population au cours des 10 dernières années :
augmenter réduit pas de changement



Marmotte des Alpes (*Marmota marmota*)

Avez-vous déjà vu cet animal : Oui Non

Si oui, à quelle fréquence rencontrez-vous l'animal (y compris des traces de présence) dans vos pâturages (approximativement) :

chaque jour un fois par semaine un fois par mois un fois par année un fois en 5 ans jamais

Quelles sont ses caractéristiques ? Comestible dangereux en attaque indicateur météorologique utilité médicinale invasive indigène protégé agréable à observer indicateur d'une certaine caractéristique de l'environnement
veuillez décrire : _____

Evolution de la population au cours des 10 dernières années :
augmenter réduit pas de changement



Chamois (*Rupicapra rupicapra*)

Avez-vous déjà vu cet animal : Oui Non

Si oui, à quelle fréquence rencontrez-vous l'animal (y compris des traces de présence) dans vos pâturages (approximativement) :

chaque jour un fois par semaine un fois par mois un fois par année un fois en 5 ans jamais

Quelles sont ses caractéristiques ? Comestible dangereux en attaque indicateur météorologique utilité médicinale invasive indigène protégé agréable à observer indicateur d'une certaine caractéristique de l'environnement
veuillez décrire : _____

Evolution de la population au cours des 10 dernières années :
augmenter réduit pas de changement

Commentaires optionnels (relations, anomalies, observations):



Lézard des souches (*Lacerta agilis*)

Avez-vous déjà vu ce reptile : Oui Non

Si oui, à quelle fréquence rencontrez-vous le reptile (y compris des traces de présence) dans vos pâturages (approximativement) :

chaque jour un fois par semaine un fois par mois un fois par année un fois en 5 ans jamais

Quelles sont ses caractéristiques ? Comestible dangereux en attaque indicateur météorologique utilité médicinale invasive indigène protégé agréable à observer indicateur d'une certaine caractéristique de l'environnement
veuillez décrire : _____

Evolution de la population au cours des 10 dernières années :

augmenter réduit pas de changement



Salamandre noire (*Salamandra atra atra*)

Avez-vous déjà vu cette salamandre : Oui Non

Si oui, à quelle fréquence rencontrez-vous la salamandre (y compris des traces de présence) dans vos pâturages (approximativement) :

chaque jour un fois par semaine un fois par mois un fois par année un fois en 5 ans jamais

Quelles sont ses caractéristiques ? Comestible dangereux en attaque indicateur météorologique utilité médicinale invasive indigène protégé agréable à observer indicateur d'une certaine caractéristique de l'environnement
veuillez décrire : _____

Evolution de la population au cours des 10 dernières années :

augmenter réduit pas de changement



Vipère péliade (*Vipera berus berus*)

Avez-vous déjà vu ce reptile : Oui Non

Si oui, à quelle fréquence rencontrez-vous le reptile (y compris des traces de présence) dans vos pâturages (approximativement) :

chaque jour un fois par semaine un fois par mois un fois par année un fois en 5 ans jamais

Quelles sont ses caractéristiques ? Comestible dangereux en attaque indicateur météorologique utilité médicinale invasive indigène protégé agréable à observer indicateur d'une certaine caractéristique de l'environnement
veuillez décrire : _____

Evolution de la population au cours des 10 dernières années :

augmenter réduit pas de changement

Commentaires optionnels (relations, anomalies, observations):



Demi-deuil (*Melanargia galathea*)

Avez-vous déjà vu cet insecte : Oui Non

Si oui, à quelle fréquence rencontrez-vous l'insecte (y compris des traces de présence) dans vos pâturages (approximativement) :

chaque jour un fois par semaine un fois par mois un fois par année un fois en 5 ans jamais

Quelles sont ses caractéristiques ? Comestible dangereux en attaque indicateur météorologique utilité médicale invasive indigène protégé agréable à observer indicateur d'une certaine caractéristique de l'environnement
veuillez décrire : _____

Evolution de la population au cours des 10 dernières années :
augmenter réduit pas de changement



Rosalie des Alpes (*Rosalia alpina*)

Avez-vous déjà vu cet insecte : Oui Non

Si oui, à quelle fréquence rencontrez-vous l'insecte (y compris des traces de présence) dans vos pâturages (approximativement) :

chaque jour un fois par semaine un fois par mois un fois par année un fois en 5 ans jamais

Quelles sont ses caractéristiques ? Comestible dangereux en attaque indicateur météorologique utilité médicale invasive indigène protégé agréable à observer indicateur d'une certaine caractéristique de l'environnement
veuillez décrire : _____

Evolution de la population au cours des 10 dernières années :
augmenter réduit pas de changement

Question supplémentaire sur les insectes :

De manière générale, comment le nombre d'insectes a-t-il évolué au cours des dix dernières années ?

Nombre dans les zones de plaine (< 1000 m) : moins plus pas de changement

Nombre dans les régions de montagne (1000 – 2000 m) : moins plus pas de changement

Autres particularités (par ex. insectes plus ou moins piqueurs, etc.) :

Commentaires optionnels (relations, anomalies, observations):

Dessert - Les structures et pratique et leur effet sur la biodiversité

Quelle est la première chose que vous associez à la biodiversité (un mot) ? _____

1. Laisser du bois mort dans la forêt ou dans la prairie augmente la diversité des espèces
D'accord un peu d'accord pas trop d'accord pas d'accord
2. Les arbres isolés d'espèces adaptées à la région augmentent la diversité des espèces
D'accord un peu d'accord pas trop d'accord pas d'accord
3. L'assèchement des marais réduit la diversité des espèces
D'accord un peu d'accord pas trop d'accord pas d'accord
4. Des structures hydrauliques naturelles (Ruisseau, étang etc.) réduisent la diversité des espèces
D'accord un peu d'accord pas trop d'accord pas d'accord
5. Ne pas couper des buissons d'épineux réduit la diversité des espèces
D'accord un peu d'accord pas trop d'accord pas d'accord
6. Ne pas couper d'aulnes réduit la diversité des espèces
D'accord un peu d'accord pas trop d'accord pas d'accord
7. Fertiliser une prairie/un pâturage, ou il-y-a beaucoup de pissenlits ou de cerfeuil des prés augmente la diversité des espèces : D'accord un peu d'accord pas trop d'accord pas d'accord
8. La fertilisation d'une prairie/d'un pâturage, ou il-y-a beaucoup de trèfle réduit la diversité des espèces
D'accord un peu d'accord pas trop d'accord pas d'accord
9. Les races d'animaux à haut rendement (par exemple : Holstein etc.) augmentent la biodiversité par leurs habitudes alimentaires : D'accord un peu d'accord pas trop d'accord pas d'accord
10. Une variation des périodes et des intensités d'exploitation augmente la diversité des espèces
D'accord un peu d'accord pas trop d'accord pas d'accord

Merci beaucoup pour votre participation à l'enquête et je vous souhaite encore bonne chance !

J'aimerais également inviter tous les participants à une réunion en avril 2022 (je vous informerai du lieu et de la date) afin de discuter des résultats de l'enquête, car je pense que votre avis est très important. La participation est bien sûr entièrement volontaire ! À cette occasion, il y aura aussi de la vraie nourriture et des boissons. Merci de me faire savoir si vous êtes éventuellement intéressés d'y participer, afin que je puisse mieux planifier.

J'espère pouvoir terminer le travail d'ici fin août 2022 et mettre en ligne un résumé du travail en langue "normale", en tout cas par le biais du site web du parc naturel de Gantersch

2. Code book/Coding tree

Name	Description	Files	References
Absolute language	All words or sentences that are pointing to extreme conclusions	9	30
Additional information	All information that is relevant but I was not asking about directly and cannot say if its relevant or not	7	13
BD conservation	Code categorie: that includes all information given that is in the context of BD conservation	18	266
Attitude on BD	Sub-Code: all attitudes towards BD and its state and conservation mentioned	17	69
Attitude on CC	Sub-Code: all attitudes towards climate change mentioned, perceptions, connections, discourses etc.	12	23
Attitude towards environment conservation	Sub-Code: all feelings and perceptions towards BD and nature conservation mentioned ex- or implicitly	16	67
Ideas for Improvement	Sub-Code: all ideas mentioned to improve scientific work in the context of BD protection in Switzerland	8	40
Visions for the future	Sub-Code: very general and only positive estimations for a future development of swiss alpine farming and BD context.	15	41
Visions to improve BD	Sub-Code: all ideas mentioned how to improve BD conservation: what could be done, what should be done in future in Switzerland with a focus on the alpine agricultural regions.	11	26
Environment	Code category: about all information that is connected to rural landscape contexts that are influencing the operation or are perceived influential to the operation or on BD contexts	17	188
Aquatic structures	Sub-code: every information mentioned about water	12	32
Climate	Sub-code: all information where weather and climate is mentioned	14	31
Forest areas	Sub-code: all information where forests and its dynamics are mentioned, including shrubs	9	16
Infrastructure	Sub-Code: all information where manmade structures are mentioned	12	37

Name	Description	Files	References
Mountains	Sub-Code: all information where the context is mountain regions differentiated to flat lands and soil properties are mentioned	13	40
Pastures	Sub-Code: all information where general properties of pasturing land is mentioned	10	16
Protected areas	Sub-Code: all information where protected areas are specifically mentioned, also words that are implying protection	11	13
Indigenous words	Use of indigeneous words that are considered exclusive to alpine farming practices, which exhibit local knowledge more related to experience knowledge and less to education. Included are especially words in swiss dialect with no german equivalent.	8	20
Key words in context	Words in context of either BD or farming in the Alps that are considered special to these topics but are not counted as "indigenous words" which exhibit more educational, formal types of knowledge.	8	17
Knowledge in context of BD	Code category: all stated, perceived and implied knowledge that is connected with BD conservation or perceptions.	18	242
Factors influencing alpine farmers knowledge on BD	Sub-Code: all factors mentioned ex- and implicitly that have a perceived influence on farmers knowledge on BD	16	74
Knowledge increasing	Sub-Code: all perceptions mentioned that imply a current increase in farmers knowledge on BD and its context	11	15
Knowledge lost	Sub-Code: all perceptions mentioned that imply a current decrease in farmers knowledge on BD and its context	11	14
Perceived state of knowledge	Sub-Code: state of farmers knowledge on BD that is clearly perceived by the interviewees, meaning talking about someone else or generalising	14	48
State of knowledge	Sub-Code and category: State of farmers knowledge on BD that is clearly individual and can be traced to a single person	13	59
Knowledge on amphibia	Sub-code: all information received about amphibia	2	3
Knowledge on athropodes	Sub-code: all information received about arthropodes	4	5
Knowledge on birds	Sub-code: all information received about birds	4	4

Name	Description	Files	References
Knowledge on mammals	Sub-code: all information received about mammals	5	8
Knowledge on plants	Sub-code: all information received about plants	12	27
Knowledge on reptiles	Sub-code: all information received about reptiles	2	3
Structures and BD	Sub-Code: all knowledge of farmers on BD stated that is clearly connected to the influence of structures (natural and man-made) on BD	13	30
Perceptions on BD	Code category: all other perceptions that are not about knowledge in the context of BD conservation and its state	18	520
Actions perceived influential on BD	Sub-Code: all farming and landscape management activities mentioned that are perceived influential on BD	16	101
Perceived beneficial factors	Sub-Code: all external factors mentioned (very much connected to environment) that are perceived influential on BD	14	53
Perceived connections	Sub-Code: all perceived connections mentioned between activities and consequences for BD and vice versa, cause and effect relationships, explanations for phenomena, as well as connections between different dimensions of BD mentioned.	13	108
Perceived influence of structures on BD	Sub-Code: perceptions mentioned that focus on structures and their effect on BD.	15	58
Perception of BD state	Sub-code and category: All information about the perceived state of biodiversity in Switzerland with a focus on the alpine areas. All information that is clearly displaying a perception of a state of a population of living species or in general the state of BD, also statements about diversity that are estimated present in current times.	18	108
Mushrooms	Sub-code: all information received about perceptions about mushrooms	3	3
Perception Amphibia	Sub-code: all information received about perceptions of amphibia	3	3
Perception Arthropods	Sub-code: all information received about perceptions of arthropodes	7	13
Perception Birds	Sub-code: all information received about perceptions of birds	7	11

Name	Description	Files	References
Perception Mammals	Sub-code: all information received about perceptions of mammals	7	17
Perception Plants	Sub-code and category: all information received about perceptions of plants	8	17
Medical herbs	Sub-code: all information received about perceptions of medical plants	3	3
Weeds	Sub-code: all information received about perceptions of weeds	8	21
Perception Reptiles	Sub-code: all information received about perceptions of reptiles	1	2
Perceptions of changes	Observations of interviewees if and how biodiversity (populations, size, behaviour etc.) and structure that influences biodiversity has changed in recent years in Switzerland, as well as other factors that might have an influence on it. Generally the dynamics of certain mentioned states in the context of BD perceptions	17	89
Personality	Code category: containing all information that has to do with the interviewed person themselves and can only be connected to that individual	18	589
Attitude towards society	Sub-Code: all personal attitudes mentioned that are displaying a certain idea towards society in general including its policies.	14	68
Attitude food economy	Sub-Code: all personal attitudes mentioned that concern the food economy like the food industry and generally everything that is involved with sale and distribution of foodstuffs.	8	13
Attitude of externals towards farmers	Sub-code and category: All perceptions, feelings and ideas externals mention about farmers knowledge and skills in connection with biodiversity conservation in the alps.	11	98
Estimation farmers knowledge	Sub-Code: all estimations by externals, not directly involved with alpine farming themselves mentioned that is concerning the perceived knowledge of farmers on BD, maybe merge with "perceived state of knowledge".	9	22
Farmers characters judgement	Sub-Code: all mentions of a general characterisation of farmers characters including stereotypes and generalised experiences, clearly not individual	7	33

Name	Description	Files	References
Attitude of farmers towards externals	Sub-Code: all attitudes mentioned by farmers towards people affiliated with alpine farming but not actually practicing themselves, like scientists, extension services, nature parks, farming schools etc.	11	31
Attitude towards colleagues	Sub-Code: all attitudes that are visible from farmers towards other farmers and from externals towards other externals.	13	53
Identity	Sub-Code: all information that can describe the interviewees personal identification in the society.	13	39
Influences on operations	Sub-Code: all personal attitudes, identities, motivations, visions that are having an actual influence on the persons behaviour.	13	71
Motivations	Sub-Code: all things mentioned that are connected as a ideological driver to do activities that are connected to farming and BD conservation.	14	75
Perceived problems	Sub-Code: all problems mentioned that are perceived problematic for BD conservation or farming practices in the context of BD conservation.	16	140
Practices of alpine farming	Code Category: All practices mentioned that may influence or are perceived to influence biodiversity, as well as general characteristics of alpine farming	18	1073
Characterisation farm	Sub-Code and category: all info on actual farming practices	17	476
Animal movements	Code: all info concerning general animal movements	13	44
Employees	Code: all info that is connected to employees on alpine farming operations	12	27
Farm income	Code: all info that is connected to actual income of alpine farming operations	14	38
Fertilisation pastures	Code: all info that is connected to soil fertilisation practices on alpine farming operations	13	27
Infrastructure on farm	Code: all info that is connected to structures and infrastructures with alpine farming operations	11	24
Living situation	Code: all info that is connected to living, housing, human movement on alpine farming operations	14	27
Location	Code: all info that is connected to spatial attributes of alpine farming operations	14	39

Name	Description	Files	References
Machinery	Code: all info that is connected to use of machinery on alpine farming operations	15	43
Ownership	Code: all info that is connected to ownership issues on alpine farming operations	10	20
Pastures	Code: all info that is connected to the pastures of alpine farming operations	12	37
Production	Code: all information that is connected to production properties of alpine farming operations	15	67
Size of the farm	Code: all information that is connected to the scale and size of alpine farming operations	10	23
Use of concentrated fodder	Code: all information that is connected to the use of concentrated fodder on alpine farming operations	5	5
Weed control	Code: all information that is connected to weed-control and generally practices with problematic plants on alpine farming operations	14	52
Cooperations	Sub-Code and category: all cooperations in the context of alpine farming operations mentioned	17	73
Formal cooperations	Code: all formal cooperations mentioned	16	58
Informal cooperations	Code: all informal cooperations mentioned	8	10
Direct payments	Code: all information concerning direct payments/contributions that get paid by the state as subventions for alpine farming	16	69
Innovations	Code: all information that is about innovating alpine farming practices	10	15
Knowledge on operations	Sub-Code and category: all information where gathering and exchange of knowledge on operations of alpine farming are displayed	16	130
Education	Sub-Code: all information about knowledge that is gathered exchanged or taught in a formal organised educational manner	15	43
Exchange	Sub-Code: all information concerning informal exchange activities between alpine farmers	11	22

Name	Description	Files	References
Experience	Sub-Code: all information concerning knowledge acquired through work experience and not through formal educational processes	14	63
Perceived changes farming practices in the past	Sub-Code: all perceived changes mentioned by interviewees concerning the alpine farming practices in the past	17	85
Perception of future development in alpine farming practices	Sub-Code: all information where perceptions of future development of the alpine farming in Switzerland was mentioned	15	46
Plans for the operation	Code: all planning for future concerning their farming operations by the interviewees	7	13
Tourism	Code: all information that is connected to tourism in the alpine area	11	15
Traditional ecological knowledge	Code: all Knowledge that can be interpreted as local specific or with traditional heritage like old production techniques etc.	13	39
Work characteristics	Code: all properties of work mentioned that plays an influential role in running an alp	15	108
Scientific practices BD	Code category: All information that is connected with scientific practices and biodiversity conservation efforts	14	63
Historic development of scientific work on BD in alps	Code: all information about the development of scientific practices in Switzerland about BD	5	7
Perceived state of scientific accomplishments	Code: all information where the current scientific work is valued	12	48
Socio-demographics	Code category: All information accounting to background of the person and the perception of bigger more general influential structures, that might have an influence on how biodiversity in the Alps is perceived.	18	407
Communication efforts	Code: all information that has to do with communication within and between different actors in the context of alpine farming and BD	15	60
Community	Code: all information given that is connected to community issues in the alpine area in Switzerland	12	28
Differentiation of alpine farmers	Code: all information concerning different characteristics and profiles of alpine farmers, strongly generalising not on an individual	14	24

Name	Description	Files	References
Economics	Code: all information on economic circumstances in the context of BD conservation and alpine farming	13	42
Family background	Code: all information about individuals family background and its influence on alpine farming operations and BD conservation	13	32
Migration	Code: all information about migration in the context of alpine farming and biodiversity conservation	7	13
Personal relationship towards alpine farming	Code: background of interviewees personal relationship to alpine farmers, esp. the externals	10	14
Politics	All information concerning information about political topics that have an influence on human activities in the alps and thus an influence on biodiversity	17	76
Professional occupation	Code: all information on activities people are earning money with, that is not alpine farming	16	43
Public opinions	Code: perceived public opinions about topics connected to alpine farming and BD conservation	15	55
Swiss identity	Code: information that was identified as Swiss specific, national mentality etc.	4	9

3. LEK as reported by Äplers

LEK state	<p>Eagles are responsible for reduced population numbers of marmots and wood grouses. Hedges, field-fruit-trees, extensive pastures, dead wood, stone piles, branch piles and single trees were described by one farmer as the most important structural elements for BD in alpine farming.</p> <p>Heavy machines have a negative effect on soil properties, the soil in the alpine areas is better due to being unable to work with them.</p> <p>Heavy machines have a negative impact on plant species diversity.</p> <p>One farmer reported generally no lack of knowledge about the environment and BD and neither about management practices.</p> <p>Better infrastructure leads to the use of machinery and landscape homogenisation.</p> <p>New high yielding cow races are not eating the pastures clean, leading to the necessity of more weed management.</p> <p>Generally farmers displayed a very heterogenous knowledge of different species in the alpine area.</p> <p>Even on a small scale with light machines, they are harmful for BD.</p> <p>Lizards were observed to like lose stone walls and piles as a habitat.</p> <p>Open trenches were observed to be a habitat for fireflies and salamanders hunting in the water.</p> <p>You should dig/clear trenches from bottom up so that the small animals can hide in the little side streams.</p> <p>Moles were considered useful as they dig up the humus and make the soil fertile.</p> <p>Weasels were observed as a curiosity.</p> <p>Even though one farmer did never see a lynx he could determine lynx tracks in his area and had an exchange with a game keeper about lynx killing deer.</p> <p>Gämsblindheit (chamois blindness) was noted by one farmer being an infectious disease "rampant" in the area and he heard information that it might spread to cows. The reason why Gämsblindheit is an issue was guessed to be the lack of natural predators that would select the weak animals as prey.</p> <p>Small patches of thistles are not so dangerous in spreading quickly but big patches lead to an explosion of the population if not taken care of before seeding.</p> <p>Goats are eating thistles making weed management easier. Goats cut the thistles at the very bottom with their teeth and then they chew the thistle backwards in their mouths to not get stung.</p> <p>You can chaff thistles and feed them to cows.</p> <p>Currently there is problems with blueberries and the vinegar fly, where the berries go soft.</p> <p>Piles of brushwood are good for small game, like porcupines.</p> <p>A shrub cutting place is supposed to be on top of the hill so that composted material can fertilise the soil downstream.</p> <p>Ferns were considered useful in very dry weather, as grass can grow in the shade of the fern leaves.</p> <p>Mulching machinery was pointed out as being the worst for BD.</p> <p>Road constructions through meliorations were connected to land consolidation.</p> <p>Publications from the BfU were described as "very rich and very demanding to study". Generally it was noted that publications concerning alpine farming are too theoretical and the connection to implementation is missing often: "I have studied the documents (BfU) and I am theoretically not up to date and I would have to get it explained to me to find the connection between theory and practice."</p> <p>One farmer reported that he collected all the free brochures from the BfU from the last 15 years.</p>
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One farmer very knowledgeable and well informed about environment and its connections reported himself not knowing plants by name.

During wet periods cows should be in the stable to not destroy the pastures.

If the thistles would get completely eradicated the common blue would have no habitat anymore.

Experience knowledge was described as absolutely necessary for pastoral alpine farming with an estimate of 20 years of experience necessary to manage an alp properly.

Guideline and book knowledge was questioned as the experience with one farmer for example showed that mowing ferns for 3 consecutive years 3 times each year was not sufficient to eradicate them, even though it was stated that in the guidelines for weed management. The white hellebore (Weißer Germer) in literature assessed as poisonous is ok to eat for his cows and gets grazed completely.

Weed control was described as an almost philosophical topic.

The white hellebore was assessed as not problematic even if it is not getting grazed as it is not creating much shade, being an upwards growing plant and is not spreading quickly.

Camphor was assessed as problematic because of the shade it creates by its flat growing characteristics.

The higher the altitude the less management you can do and also less management is necessary as the environmental limitations are much tighter.

Generally knowledge about plants was described as management related: The plant that creates the most work is also then one farmers know best, which can differ depending on locations.

One farmer said that most important structures for BD are: as diverse as possible, trees, stones, wet areas, swamp, and streams. A highly divers landscape in general. Locations with limestone was considered rich in BD, while locations with silicate rocks were assessed as BD poor.

Knowledge was reported to be dependent on farmers interests, pointing to predominantly voluntary knowledge acquisition.

The pleasure that species diversity creates for farmers was a topic proposed by one farmer: "And when, you can ask yourself that: Do I enjoy that diversity and if you do it would be great doing something for it, for that you feel joy. And if through that the whole world gets rescued, that would of course be a nice side effect."

To view BD not only from a technocrat point was considered important.

The sense behind the diversity was questioned by multiple farmers: "Tell me what is the sense of a tick in an ecosystem?"

Manure was considered very important for the humus layer of the soil and beneficial for the plant diversity.

Big striking animals and birds were most observed by farmers. Most farmers could say changes of behaviour or population size with deer, chamois, lynx, wolf, marmots, rabbits, squirrels, weasels, predatory birds etc. populations.

Multiple farmers noted a lack of knowledge about BD topics.

LEK was universally reported to be highly dependent on the location where this was gathered.

Generally none of the farmers interviewed had a specific knowledge of names of plants, even though they often knew the traits of them.

Structures were assessed as habitats for animals, partly with quite specific knowledge about singular dependencies: i.e that the goldfinch needs thistles for its habitat.

One farmer stated knowledge is existing with topics related to management and biodiversity coming from requirements for direct payments.

Most recent BD knowledge from training classes was mentioned, like wildlife corridors and Vernetzungsprojekte.

One farmer noted the necessity to constantly develop further with additional trainings. Education with farmers was described as an constant process through self-criticism and reflection to always try to improve management that is necessary to stay competitive demanding "lifblood" for the process.

The farmers association, the multi-purpose cooperation and the farmers club were mentioned as two places to exchange information and socialise.

The trade press was mentioned as an important source for information too.

The ability to improvise was mentioned as very important for pastoral alpine farming. Multiple farmers reported learning crafts like cheese making auto-didactic.

One of the more alternative farmers stated that experiences through a gap year (Wanderjahre) were very important to him and his management of the alp.

Keeping calm was described by one farmer as the most important attitude you have to have with pastoral alpine farming. Nervousness was reported to be transmitted onto the animals which is bad in critical situations as being economical with energy is important in those situations and in general: "The knowledge when I am able to keep calm to save energy, for the time when the window is opening again. Instead of doing some things, there are situations when you better stay in your bed."

Exchange between farmers was reported to not be all positive.

All farmers from Fribourg region noted that there are currently not many problems with invasive species.

Putting the animals in the stable regularly was assumed to be the reason for not having to many problems with weeds as there is less pressure on the pastures.

Goat management was described as essential as they are eating everything away from the pasture also fruit trees that you would like to grow.

Using pasturing times on different meadows to favour certain species of plants was described as difficult to manage, even though the theoretical knowledge is there.

Some damage to the pastures if they are locally confined were reported to be good for species diversity.

Management practices from experience often correlate with scientific recommendations and state programmes unknowingly as one farmer said: "I did that basically voluntarily without being compensated with money just because ... I did it like that. At certain spots I let more intensive grazing happen, other plots I was managing more cautiously."

Knowledge exchange usually happens in informal contexts with most farmers interviewed.

One farmer reported that camphor grows on nutrient rich soil most likely where the cows like to lie down. Fighting camphor in that context was assessed as non-sensical as the cows would not eat grass there anyway because it is covered in manure, leading to not much loss of pasture through camphor.

Cows were reported to eat some camphor.

One farmer noted even with the use of mineral fertiliser the plant diversity did not suffer on one alp he visited.

Plants most observed by farmers were described as weeds that take pasture away. Most information given through official channels like associations, cooperation and trainings are concerned with productivity related topics, not so much about environment and BD in particular, the only exception to that was reported to be the nature park in the area.

	<p>To find employees knowledgeable about non-common alp animals, like horses was described as difficult as not only people need to know how to handle them but also need to know about alp management.</p> <p>Multiple farmers mentioned older people being more knowledgeable about environmental properties: "I find it always interesting to talk to older farmers. They sometimes know..., for example one time one of them said to me: well in the past the source was going through there and then we noticed that that was very smart. We did that too now (socketing the source), like formerly. They knew where the water was flowing, where there are water veins."</p> <p>Composted manure is much better for plant diversity and the soil than slurry.</p> <p>No lack of knowledge was reported by one farmer.</p> <p>One farmers noted the problem with wet pastures as: "(...) the cow when it is wet is not only eating with one mouth but also with four feet destroying four times as much fodder."</p> <p>Pasture management through fences instead of driving animals was assessed not necessarily worse for BD.</p> <p>Leaving willows standing to stabilise Flysch soil and contain the water to keep it from sliding underneath swampy areas.</p>
LEK changes	<p>Thistles were predominantly a plant growing in the valley areas, with the warmer climate they are moving up to higher altitudes (Höhensteigen) creating problems as a fast spreading weed.</p> <p>The use of agro-chemicals was propagated in farmers schools excessively in the past (still in 2008), today this is less the case.</p> <p>Knowledge through experience is lost since the last 20 years increasingly because alp employees are changing the location more often, esp. with cooperatively organised alps.</p> <p>Pasture management guidelines have changes from mowing up to the forest border in the past to maximise the production to leaving some shrubs between forest and pasture.</p> <p>Changes with LEK need time.</p> <p>Predominant use of slurry today, which is worse for humus creation than manure, albeit a trend to more use of manure was reported.</p> <p>Passing on LEK in the family was described as not a problem, with farmers not having family members taking over they reported more worries that this knowledge will be lost.</p> <p>Most important experience factor if the farmers came from a pastoral family was usually the father or grandfather.</p> <p>Agricultural politics was assessed by one farmer as the biggest influencing factor on knowledge.</p> <p>The time of mowing pastures is pushed backwards compared to the past, to protect the spread of seeds of a diversity of flowers.</p> <p>With pastoral alpine farming kids should already start learning about it hands on to generate knowledge about this profession and for life.</p> <p>The calmness of being on an alp is getting lost in one farmers opinion as he reported everyone being in a hurry and stating that this is an increasing trend.</p> <p>Actually living on the alp and not commuting was reported to be contributing to this calmness as it makes you more independent from weather events.</p> <p>In the past people were more self-sufficient doing many jobs themselves instead of paying someone else to do it, pointing to professionalisation and specialisation in pastoral alpine farming.</p>

	<p>Learning alpine pastoral farming in the whole just through working experience was reported by all farmers not growing up in a farmers family.</p> <p>One farmer reported wanting to try blaze management in the next season even though it is forbidden.</p> <p>Loss of LEK was reported to be not of one farmers concern as there exists a new homepage where those management practices can be archived.</p> <p>Knowledge about conservation was reported to be stemming from a farmers father.</p> <p>“New” knowledge was assessed to be taken up reluctantly by alpine farmers in Sensebezirk. While the farmers in the flat were quicker to adapt.</p> <p>A combination of education and direct payments was assessed as the most promising way of changing management practices for pastoral alpine farmers.</p> <p>A lack of knowledge about management practices and environmental changes was reported by one farmer.</p> <p>One farmer noted that a balance between productivity and environmental training would be ideal, not to concentrate too much on one topic respectively.</p>
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4.1 Älplers' question catalogue

Freie, vorherige und informierte Zustimmung

„Lokale Eindrücke der Artenvielfalt im alpinen Raum aus der Perspektive der pastoralen Landwirte“

Jonas Hendricks ist Masterstudent an der Universität Gent, der Universidad de Córdoba und der Humboldt Universität Berlin im Rahmen des IMRD (International Master in Rural Development) und führt ein Projekt zur Ermittlung lokalen ökologischen Wissens in Bezug auf Biodiversität im Bereich der Bergbauern und Sömmerungsbetriebe durch. Das wissenschaftliche Ziel besteht darin Wissen über Biodiversität der Landwirte im alpinen Bereich, im Rahmen von globalen Veränderungen zu ermitteln und in Bezug zu in der Gegend erhobenen wissenschaftlichen Daten zu setzen, um eventuelle Übereinstimmungen zu überprüfen. Dabei soll die Wahrnehmung des Zustandes und der Veränderungen der Artenvielfalt aufgenommen werden. Ein Schwerpunkt liegt dabei auch auf dem Verständnis von sozio-demographischen und wirtschaftlichen Aspekten, die eventuell die Wahrnehmung beeinflussen.

Der zeitliche Rahmen zum Verfassen der Masterarbeit erstreckt sich von Ende September 2021 bis Ende Juni 2022. Methodisch umfasst die Studie vier Teile: 1. Recherche in der Literatur; 2. Qualitative Datenaufnahme im Rahmen von halb-strukturierten (Leitfaden gestützten) Interviews; 3. Quantitative Datenaufnahme im Rahmen von einer Umfrage und 4. Einer Focus-Gruppe am Ende mit Teilnehmern aus den qualitativen und quantitativen Studien, um die Ergebnisse zu diskutieren. Die strukturierte Umfrage soll im Sensebezirk, Kanton Fribourg und angrenzenden Bezirken erhoben werden. Teilnahme an der Forschung ist streng freiwillig. Sowohl Einzelpersonen als auch Kollektive werden dies mit freier, vorheriger und informierter Zustimmung tun. Jeder Forschungsteilnehmer oder -teilnehmerin hat das Recht die Teilnahme jederzeit zu beenden. Es wird keine individuellen Zahlungen oder Anreize geben, es wird jedoch davon ausgegangen, dass die Teilnahme auf immaterielle Art und Weise von dieser Studie profitieren können, da es das Ziel ist lokales Wissen der Älpler:innen, sowie der Bergb:äuerinnen für eine breitere Schicht zugänglich zu machen. Die im Rahmen dieser Studie gewonnenen Daten werden für die wissenschaftliche Forschung verwendet und unter keinen Umständen für kommerzielle Zwecke genutzt. Die Daten aus diesem Projekt werden nicht verkauft, geteilt oder an Dritte übermittelt, die diese für andere Zwecke als Forschung gebrauchen könnten. Die erhobenen Daten werden sicher gespeichert und Zugriff ist nur Jonas Hendricks und seiner wissenschaftlichen Betreuerin Elisa Oteros-Rozas (Universität Oberta de Catalunya) zugänglich. Die Daten sind absolut vertraulich und alle Namen werden durch Codes ersetzt. Die erhobenen Daten werden nicht für andere Zwecke verwendet als die Masterarbeit und eine eventuelle wissenschaftliche Publikation. Dieses Projekt wird privat finanziert und es gibt keine Institutionen, die an der Forschung finanziell beteiligt sind.

Bei Fragen zum Projekt oder zu den Verfahren wenden Sie sich bitte an die folgende E-Mail-Adresse: jonas.hendricks@ugent.be oder per Telefon: +491603059358

Für wen ist der Fragenkatalog?

Es wurden zwei Fragenkataloge ausgearbeitet, um von Älpler:innen, Bergb:äuerinnen und Expert:innen mit Bezug auf die Alpwirtschaft in der Schweiz zu den Themen Biodiversität, Soziales und Kulturelles beantwortet zu werden. Es wird darauf hingewiesen, dass die Interviews semi-strukturiert aufgebaut sind, also nicht alle Fragen allen Teilnehmern der Studie gestellt werden. Falls weitere Anregungen, Anmerkungen und Ideen, die nicht im oder zum Kontext des Fragenkatalogs auftauchen, aber von den Teilnehmenden als wichtig erachtet werden, bestehen, werden diese gerne während des Interviews aufgenommen. Das Interview wird ca. 1 bis 1,5 Stunden in Anspruch nehmen (abhängig von Interviewpartner:in).

(für mich: Anfangen mit Hypothese, dass Älpler und Bergbauern viel wissen über die Umwelt und Artenvielfalt in ihrer Gegend und ich hier nicht als „Spezialist“ auftrete, sondern nach ihrem Wissen und ihren Meinungen frage, da sie sich tag täglich damit auseinandersetzen, dann nochmal kurz erklären wieso und warum ich das hier

mache: ihr Wissen wertzuschätzen und zu verbreiten, sagen wenn sie eine Frage für dumm oder unsinnig halten, dass sie das sagen sollen und wir das überspringen mit Begründung. Auch erklären, dass ihre Antworten hier mit in das Design der Umfrage mit einfließen werden und sie so aktiv die Umfrage mitgestalten können und ich ihnen das Survey vorab, wenn gewünscht als Kontrolle gerne schicken würde. Hinweisen, dass alles freiwillig ist und sie (was ich nicht hoffe) die Teilnahme an der Studie jederzeit beenden können)

1. Teil Einleitung

Könnten Sie kurz ihren Beruf, den Betrieb beschreiben und was sind ihre Motivationen? Wo sind Ihre Weiden? Durch was zeichnen sie sich aus (Art und Anzahl an Tieren, Trend wo geht's hin? Bewegungen der Tiere?, Unterschiede auf dem Hof, nicht auf dem Hof?, Verkauf?

Haben Sie eine Nebentätigkeit, wenn ja welche? Wie groß ist in etwa der Teil des Einkommens durch die Tätigkeit in der Landwirtschaft? (100%, 50% usw.)

Wie und von wem haben Sie gelernt eine Alpwirtschaft/einen Bergbauernhof zu leiten? Gab es Kurse, oder eine andere Arte der Ausbildung? Falls ja, welche? Seit wann und wie intensiv arbeiten Sie auf einer Alp/Bergbauernhof?

Sind Sie Teil einer Kooperative, Vereinigung oder Gewerkschaft?

Wie ist ihre Familie organisiert? Gibt es Angestellte?

Wie beeinflussen persönliche Einstellungen die Wirtschaftspraxis? (Beispiel, ökologisch, bio-dynamisch, intensiv, extensiv, Benutzung von Maschinen, oder Versuch zu vermeiden)

Was denken Sie macht eine:n Äpler:in und eine:n Bergb:äuerin aus? (Praxis, Identität, Neigungen/Abneigungen)

Welches Wissen gab es bei Älpler:innen/Bergb:äuerinnen in der Vergangenheit und ist Ihrer Meinung nach am aussterben oder schon verloren gegangen?

Was machen Sie anders als ihre Vorgänger:innen?

Wie tauschen Sie Wissen/Erfahrungen über Bewirtschaftung und Landschaftspflege aus?

Befürchten Sie, Sie könnten Ihr Wissen nicht weitergeben können?

2. Teil Eindrücke der Hintergründe und Veränderungen

Welche Veränderungen sind Ihnen im Bereich der alpinen Landwirtschaft und in der Landschaftspflege aufgefallen?

Welche Veränderungen sind Ihnen in Ihrer Gegend im Landschaftsbild, im Klima, bei physischen Strukturen, bei der Artenvielfalt, bei der sozialen und ökonomischen Struktur oder in anderen Bereichen aufgefallen?

Was sind Ihrer Einschätzung nach, die Gründe für genannte Veränderungen?

Wie schätzen Sie den Zustand der Biodiversität im alpinen Raum in der Schweiz im Moment ein? – Warum ist das so? Was denken sie sind die Hauptgründe für einen Rückgang der Artenvielfalt?

3. Teil Biodiversität

Was ist das Erste was sie mit Schutz der Artenvielfalt assoziieren (falls Wolf als Antwort, bitten diesen später zu besprechen)?

Welche Tätigkeiten haben Sie, die die Artenvielfalt auf verschiedenen Ebenen beeinflussen (positiv und negativ) (Mähzeitpunkt, Maßnahmen Strukturverbesserung -erhaltung, usw.)

Ich werde eine Umfrage erstellen, in der Antworten aus einer Liste ausgewählt werden können, um das Wissen zur Artenvielfalt (Pflanzen, Tiere, ...) zu ermitteln und wie die Population und die Verteilung sich verändert. Das Interview wird helfen die Umfrage zu gestalten.

Welche Wildtiere fallen Ihnen am meisten im Alltag auf? Warum? Gibt es eine Art oder eine Gruppe, bei der Sie große Veränderungen in den letzten Jahren beobachten konnten (auch zwischen Individuen, also größer, kleiner, Farbe, usw.)? Welche? Wie? Wieso

Das gleiche bei Pflanzen ...

Andere Spezies? Pilze z.B.?

Welche Strukturelemente denken Sie sind wichtig für die Artenvielfalt? Warum? Welche Veränderungen konnten Sie in den letzten Jahren beobachten? Wie? Warum?

Wie wichtig ist Ihnen Umweltschutz, nachhaltiges Wirtschaften und Erhalt der Artenvielfalt? Machen Sie aktiv etwas dafür?

Werden Sie durch private oder staatliche Programme bei der Anwendung von biodiversitätsfördernden Maßnahmen unterstützt? Wie? Um was zu machen?

4. Teil Vorschläge und Einblicke

Welche Praktiken, Strategien, Maßnahmen ... sind Ihrer Meinung nach gut für die Artenvielfalt im Bereich der Alpen? Strukturelemente? Diversität? Extensives Wirtschaften?

Zum Erhalt der Artenvielfalt, was denken Sie sollten für Maßnahmen ergriffen werden? In welcher Größenordnung? Von wem?

Wo sehen Sie im Moment den größten Handlungsbedarf, um Artenvielfalt zu schützen?

Was halten Sie von den Meliorationsmaßnahmen und Strukturveränderungen der Schweizer Regierung?

Denken Sie es gibt in der Gegend einen Mangel an wissenschaftlichem Wissen über die Artenvielfalt? Oder über etwas anderes im Bereich Ihrer Bewirtschaftung oder im Bereich der Umweltveränderungen, die Sie erwähnt haben?

Wie und unter welchen Umständen wären Sie bereit ihre Beobachtungen an Programme für die Artenvielfalt weiterzugeben?

5. Teil Methodik der Studie

Welche Indikatoren denken Sie würden sich eignen, um das LEK der Älpler:innen und Bergb:äuerinnen zu messen und mit wissenschaftlichen Ergebnissen zu vergleichen? (Beispiel: Zusatzindikatoren der ALL-EMA, verschiedene Ebenen von Indikatoren, ...)

Wie könnte ich Älpler:innen und Bergb:äuerinnen motivieren, um an der Umfrage teilzunehmen?

Haben Sie Erfahrung mit Aufnahmen der Artenvielfalt durch Älpler:innen und Bergb:äuerinnen in der Gegend? Wenn ja, welche? Können Sie mir etwas empfehlen, was eingebunden werden könnte? (Beispiel: das Punktesystem der IPSuisse in Kooperation mit der Vogelwarte)

Welches Format (betreut oder unbetreut, online, telefonisch, ...) sollte die Umfrage haben, um einen möglichst großen Teil der Älpler:innen und Bergb:äuerinnen zu erreichen?

Als partizipativer Prozess was würden Sie sich wünschen, dass ich zum Thema Artenvielfalt in die Untersuchung mit aufnehme? Wo ist der Knackpunkt ihrer Meinung nach?

Was sehen sie die Zukunft der Alpen, des Landschaftsbildes und der Bewirtschaftung? Positiv? Negativ? Warum?

6. Teil Abschluss

Habe ich Ihrer Meinung nach etwas Wichtiges zu dem Thema ausgelassen? Wenn ja was?

Gibt es von Ihnen Kommentare, Anregungen, Ideen, Kritik?

Haben Sie gute Ratschläge, die Sie mir mit auf den Weg geben möchten?

4.2 External's question catalogue

Freie, vorherige und informierte Zustimmung

„Lokale Eindrücke der Artenvielfalt im alpinen Raum aus der Perspektive der pastoralen Landwirte“

Jonas Hendricks ist Masterstudent an der Universität Gent, der Universidad de Córdoba und der Humboldt Universität Berlin im Rahmen des IMRD (International Master in Rural Development) und führt ein Projekt zur Ermittlung lokalen ökologischen Wissens in Bezug auf Biodiversität im Bereich der Bergbauern und Sömmerungsbetriebe durch. Das wissenschaftliche Ziel besteht darin Wissen über Biodiversität der Landwirte im alpinen Bereich, im Rahmen von globalen Veränderungen zu ermitteln und in Bezug zu in der Gegend erhobenen wissenschaftlichen Daten zu setzen, um eventuelle Übereinstimmungen zu überprüfen. Dabei soll die Wahrnehmung des Zustandes und der Veränderungen der Artenvielfalt aufgenommen werden. Ein Schwerpunkt liegt dabei auch auf dem Verständnis von sozio-demographischen und wirtschaftlichen Aspekten, die eventuell die Wahrnehmung beeinflussen.

Der zeitliche Rahmen zum Verfassen der Masterarbeit erstreckt sich von Ende September 2021 bis Ende Juni 2022. Methodisch umfasst die Studie vier Teile: 1. Recherche in der Literatur; 2. Qualitative Datenaufnahme im Rahmen von halb-strukturierten (Leitfaden gestützten) Interviews; 3. Quantitative Datenaufnahme im Rahmen von einer Umfrage und 4. Einer Focus-Gruppe am Ende mit Teilnehmern aus den qualitativen und quantitativen Studien, um die Ergebnisse zu diskutieren. Die strukturierte Umfrage soll im Sensebezirk, Kanton Fribourg und angrenzenden Bezirken erhoben werden. Teilnahme an der Forschung ist streng freiwillig. Sowohl Einzelpersonen als auch Kollektive werden dies mit freier, vorheriger und informierter Zustimmung tun. Jeder Forschungsteilnehmer oder -teilnehmerin hat das Recht die Teilnahme jederzeit zu beenden. Es wird keine individuellen Zahlungen oder Anreize geben, es wird jedoch davon ausgegangen, dass die Teilnahme auf immaterielle Art und Weise von dieser Studie profitieren können, da es das Ziel ist lokales Wissen der Äpler:innen, sowie der Bergb:äuerinnen für eine breitere Schicht zugänglich zu machen. Die im Rahmen dieser Studie gewonnenen Daten werden für die wissenschaftliche Forschung verwendet und unter keinen Umständen für kommerzielle Zwecke genutzt. Die Daten aus diesem Projekt werden nicht verkauft, geteilt oder an Dritte übermittelt, die diese für andere Zwecke als Forschung gebrauchen könnten. Die erhobenen Daten werden sicher gespeichert und Zugriff ist nur Jonas Hendricks und seiner wissenschaftlichen Betreuerin Elisa Oteros-Rozas (Universität Oberta de Catalunya) zugänglich. Die Daten sind absolut vertraulich und alle Namen werden durch Codes ersetzt. Die erhobenen Daten werden nicht für andere Zwecke verwendet als die Masterarbeit und eine eventuelle wissenschaftliche Publikation. Dieses Projekt wird privat finanziert und es gibt keine Institutionen, die an der Forschung finanziell beteiligt sind.

Bei Fragen zum Projekt oder zu den Verfahren wenden Sie sich bitte an die folgende E-Mail-Adresse: jonas.hendricks@ugent.be oder per Telefon: +491603059358

Für wen ist der Fragenkatalog?

Es wurden zwei Fragenkataloge ausgearbeitet, um von Äpler:innen, Bergb:äuerinnen und Expert:innen mit Bezug auf die Alpwirtschaft in der Schweiz zu den Themen Biodiversität, Soziales und Kulturelles beantwortet zu werden. Es wird darauf hingewiesen, dass die Interviews semi-strukturiert aufgebaut sind, also nicht alle Fragen allen Teilnehmern der Studie gestellt werden. Falls weitere Anregungen, Anmerkungen und Ideen, die nicht im oder zum Kontext des Fragenkatalogs auftauchen, aber von den Teilnehmenden als wichtig erachtet werden, bestehen, werden diese gerne während des Interviews aufgenommen. Das Interview wird ca. 1 bis 1,5 Stunden in Anspruch nehmen (abhängig von Interviewpartner:in).

(für mich: Anfangen, dass sie mit Ihren Antworten aktiv das Design der Umfrage beeinflussen und ich gerne, falls möglich Ihnen das Survey vorab zur Kontrolle schicke, und außerdem aufklären, dass sie das Protokoll ihres Interviews fordern können und jederzeit die Teilnahme an der Studie beenden können und falls irgendwas sein

sollte jederzeit mich kontaktieren, außerdem sagen, dass Interview aufgenommen, transkribiert wird und Daten sicher aufbewahrt werden ...)

1. Teil Einleitung

Was ist ihr beruflicher Hintergrund?

Was würden Sie als Ihre Expertise/Fachgebiet bezeichnen?

Was für einen Bezug haben Sie zu den Älpler:innen /Bergb:äuerinnen?

2. Teil Ökologisches Wissen der Älpler:innen /Bergb:äuerinnen

Wie würden Sie die verschiedenen Profile der Akteure in der alpinen Landwirtschaft unterscheiden? - Wie würden Sie diese beschreiben?

Wie hoch würden Sie das Wissen der Älpler:innen /Bergb:äuerinnen über Artenvielfalt und dessen Dynamik einschätzen? Über welche Spezies/Taxa denken Sie wissen sie am meisten?

Welche Einflussfaktoren denken Sie existieren auf das lokale ökologische Wissen der Älpler:innen /Bergb:äuerinnen?

Wie schätzen Sie die Dynamik des Wissens ein? - Was hat sich in der Vergangenheit getan? - Was ist ihre Einschätzung für die Zukunft?

Wird das lokale ökologische Wissen im Bereich der Biodiversitätsforschung in der Region bereits verwendet? (Beispiel: Ergebnis-orientierte Direktzahlungen)

Gibt es Maßnahmen dieses Wissen aktiv zu fördern bzw. konservieren?

3. Teil Methodik der Studie

(für mich: kurze Erklärung der Umfrage für Kontext: wozu brauch ich die Antworten eigentlich?)

Welche Indikatoren denken Sie würden sich eignen, um das LEK der Älpler:innen und Bergb:äuerinnen zu messen und mit wissenschaftlichen Ergebnissen zu vergleichen? (Beispiel: Zusatzindikatoren der ALL-EMA, verschiedene Ebenen von Indikatoren, ...)

Haben Sie Erfahrung mit Aufnahmen der Artenvielfalt durch Älpler:innen und Bergb:äuerinnen in der Gegend? Wenn ja, welche? Können Sie mir etwas empfehlen, was eingebunden werden könnte? (Beispiel: das Punktesystem der IPSuisse in Kooperation mit der Vogelwarte)

Denken sie die derzeitigen 5-jährigen Intervalle der ALL-EMA sind ausreichend, um Artenvielfalt auf Agrarflächen im alpinen Raum zu messen? Falls nicht, wie lange sollten die Intervalle sein? Falls ja, warum? (z.B. IPBES Ziele und Empfehlungen)

Welches Format (betreut oder unbetreut, online, telefonisch, ...) sollte die Umfrage haben, um einen möglichst großen Teil der Älpler:innen und Bergb:äuerinnen zu erreichen?

Wie könnte eine möglichst große Stichprobe erreicht werden?

4. Teil Eindrücke der Hintergründe und Veränderungen

Welche Veränderungen sind Ihnen im Bereich der alpinen Landwirtschaft und in der Landschaftspflege aufgefallen?

Welche Veränderungen sind Ihnen in Ihrer Gegend im Landschaftsbild, im Klima, bei physischen Strukturen, bei der Artenvielfalt, bei der sozialen und ökonomischen Struktur oder in anderen Bereichen aufgefallen?

Was sind Ihrer Einschätzung nach die Gründe für genannte Veränderungen?

Wie schätzen Sie den Zustand der Biodiversität im alpinen Raum in der Schweiz im Moment ein? – Warum ist das so? Was denken sie sind die Hauptgründe für einen Rückgang der Artenvielfalt?

5. Teil Artenvielfalt

Wie schätzen Sie die Qualität des Biodiversitäts-Monitorings in der Schweiz ein? - Was könnte verbessert werden?

Wie könnte eine Kooperation zwischen Älper:innen/Bergb:äuerinnen und Wissenschaftlern/Experten Ihrer Meinung nach effektiv gefördert werden?

Nach welchen räumlichen Aspekten würden sie Biodiversitätsmonitoring skalieren?

Wie könnte ein kleinteiligeres Monitoring über Agrarflächen zur Verbesserung der Artenvielfalt beitragen?

Könnte Citizen Science dazu beitragen das Monitoring zu verbessern?

Welche Vorteile und Nachteile würden Sie in der Einbeziehung von lokalem ökologischen Wissen beim Monitoring der Artenvielfalt sehen?

Was sollte im Großen getan werden, um den Zustand der Artenvielfalt zu verbessern?

Denken Sie im alpinen Raum wird derzeit nachhaltig gewirtschaftet?

Wie schätzen Sie die aktuellen Verknüpfungen von Direktzahlungen an Biodiversitätsmaßnahmen ein? – wird lokales Wissen berücksichtigt?

6. Teil Vorschläge und Einblicke

Was ist Ihre Meinung zu den Meliorationsmaßnahmen der Schweizer Regierung im Bezug zu Biodiversitätsmaßnahmen? (strukturelle Veränderungen)

Wie denken Sie könnten Äpler:innen/Bergb:äuerinnen zu einer Verbesserung der Umwelt mit Bezug auf die Artenvielfalt in der Schweiz im Rahmen von globalen Veränderungen, wie zum Beispiel des Klimawandels, beitragen?

Was sehen sie die Zukunft der Alpen, des Landschaftsbildes und der Bewirtschaftung? Positiv? Negativ? Warum?

5. Teil Abschluss

Habe ich Ihrer Meinung nach etwas Wichtiges zu dem Thema ausgelassen? Wenn ja, was?

Gibt es von Ihnen Kommentare, Anregungen, Ideen, Kritik?

Haben Sie gute Ratschläge, die Sie mir mit auf den Weg geben können?

5.1 Externals' transcripts

[E7]

What is your professional background? How did you get to your position here?

So I am Agronomist, ETH, then made a Phd in plant sciences, then post-doc in England in the subject theoretical ecology, then worked at EAWAG (Institute for water, part of ETH) in environmental sciences working on a pasture related topic, specific anti-parasitica, environmental relevance and I had the position 13 years as project manager in mountain pasture forage farming. So forage farming in Switzerland, we understand production of roughage and in the group we classified higher between, for example a colleague did the valley and I do the mountain area.

What would you describe as your expertise, where you are the specialist?

So usage or management of pastures and meadows in the mountain area including alp management and specialised in interactions between pasture animals and vegetation. From the viewpoint of vegetation as well as the viewpoint of the grazing animal. In the last years this has developed more with research of movement behaviour, feed selection of the grazing animal. Exciting is the intensification of land use, the impacts on biodiversity, ecosystem services to the consequences of extensification, so spread of the shrub cover is also a topic

What kind of relationship do you have towards the alpine farmers?

I have never done an Alp (never went to work a season on an Alp), so spent a summer at an Alp, several people in this area have done this, I have worked on various farms, I have worked on my farm connected to studies worked for half a year. Yea that's it and through my profession I know various practices

Then how would you differentiate the different actors in the alpine farming? So I have differentiated them between Älplern and Bergbauern, but I heard that it is supposedly not ideal.

(him asking about if he should speak swiss-german or german)

So I differentiated basically in economic aspects, between Älplern soing only the summer pastures and mountain farmers who have a cow-stable and manage the cows all year around.

Yea, I think this separation is sensible, but of course the borders are not clearly drawn. So there are mountain farmers who are Älpler and there are people who are only Älpler and then in winter, lets say ski instructor or primary school teacher. This exists of course but basically this would be for me the most basic separation. Well how else could you break it down? Yes, so yes I think this is for biodiversity not so relevant, but there are the cow-right owners. On many Alps there are people who are not caring for the cows any more, who are not taking care of the landscape any more, but they still have cow-rights that they rent out, or whatever. There are sometimes difficult relationships because they still have influence, for example with investments. But I don't think this is a very relevant part.

Agreed, if they are not actually on the pasture....

So if you have these two, you have... , in landscape policies this is exactly the separation, so there are the "Alpungsbeiträge" and the "Sömmerungsbeiträge", there are two pots, back in the days all money was..., how was that?,... the "Sömmerungsbeiträge" were ... , I have to think to not say something wrong, ... they were payed to the Alp and then.... I don' know I would have to look it up how it was in the past.

Well I think we do not have to go too deep into that topic

Nowadays there is the "Sömmerungsbeiträge" that get payed to the Alp for them to actually do the summer pasture and the "Alpungsbeitrag" that get payed towards the farmers that he gives his cows to the Alp. That was separated to support both with funds for the exchange, money is flowing there between the two. So either the farmer is paying for the summer pasture (Alpung), or the Alp is paying him for the cows, so to steer this directly they have separated this. So this is exactly those two groups, those two profiles.

And now to come back to the mountain farmers and pastoralists, how would you describe them briefly?

This is very difficult, because both are very heterogenous groups. I think with the pastoralists there is the differentiation between the people not directly involved in agriculture, who come to the Alp for this employment and then there are the people who are directly connected from the valley with a local background. So the externs are foreign people, this can be partly people with nature affinity, or its simply employees from the agricultural sector, so for example a Portuguese farmer, who understands a lot about agriculture because he grew up in the Portuguese farming system and he comes as a non-local to the Alp. And then there is the german student, who does the Alp-summer, he is non-local as well. These two function completely different, but they are non-local and then there are the local Älpler, either they have there own farm, or they are from a farm but not occupied any more. And then with the mountain farmers I would differentiate them between the full-time farmers and the side-income farmers, or there are the self-managers, they have an Alp that quasi belongs to their farm or the cows get managed in the summer by additional, farm-foreign employees. This is a how you could probably group them. But these are really heterogenous groups and there are regionally big differences.

How high would you estimate the knowledge about biodiversity and its dynamics of mountain farmers and pastoralists?

I think the farmers, hard to say, there really are farmers who are specialists for vegetation. Most of them do not have a botanical approach but rather a morphotypical, from viewpoint of the grazing animal. Most know the good forage plants, they know the attractive flowers, that they can assess. Grasses they know relatively well, lets say better than interested amateurs, they often know well about flowers but not with grasses and that farmers know quite well. With the pastoralists, I think there exists the whole bandwidth from people who know extremely well to the Portuguese employee who does primarily what he is told to do.

Well that makes sense

And then there are the people who are mainly interested in machinery, especially among the farmers and then those who are mainly interested in animals and they have got little interest in plants.

So a big variation

Yes!

So but would you think..., big birds of prey for example, they are quite flashy, would you think the pastoralists notice them and have an eye on it?

Well I have often the viewpoint from vegetation, this is my bias, yes this is clearly something else, the mammals they are very well informed about. So game populations, game movements, game resident areas this is well known to many, so if there is some quiet this is one of the main activities to spot wild animals. It is exciting.

What is influencing the local knowledge of pastoralists and mountain farmers? So for example level of education or origin, so the Portuguese who is of course not familiar with flora and fauna in Switzerland.

I would say the tourism has got a significant influence. In the areas where tourism is important the locals are more sensitised for these nature values, because this is an economic factor. In regions where this exists less, they

are more focused on production. And of course the level of education, the training is influencing. I wouldn't estimate that very high, it is more the personal preference if you are interested in it or not.

How would you assess the dynamics of the knowledge, so what happened in the past, what will happen in future. So the practical part of being a pastoralist is constantly subjected to change and has to be mitigated.

This is difficult to say, if there is an effect from all the information material that exist. I have said it on the phone, the assessment of quality areas and non-quality areas, I think this has one of the bigger effects, also the perception of biodiversity, also hinting towards the shrubbification problem, this consciousness is bigger than years ago. After the message that shrubbification is not beneficial for biodiversity, I think this message has arrived.

Is the local knowledge about biodiversity already in use in this region? So I was thinking about result based payments.

We had the Q2 areas introduced, as BFF (biodiversity promotion areas) in the mountain pasture areas. They are sort of a result oriented payment, then there are the NHG areas, these are the environmental protection areas, they are managed by very detailed contracts, this was flowing in.

So with these Q2 areas, in the literature Q1 areas are not applicable for the mountain pastures

Yes, Q1 is the management requirement, so a point of time for mowing that is prescribed or fertilisation or no fertilisation and this doesn't work on the Alp because you have not enough variation, you pasture once or twice but you can't, ... well you could work with stocking densities, but this would be too complicated, is not administrable. And then there are only Q2 areas. What is a novelty is that in the mountain pasture areas there is a direct payment per area size. Because all other payments are per animal count per GVE (Großvieheinheit – livestock unit). Which are normalised for the pasture time.

It surprises me a little, because in the EU with the CAP, most payments are area based and that is criticised very much.

Well on the mountain pastures it simply doesn't work that well, because there are massive pastures that don't have much productivity. There are 100 cows but they are on 300 ha and then there are small Alps where they have 100 cows on 20 ha. And if you do it based on the area the high Alp would get a lot of money, which is not equivalent to the labour input compared to the lower situated Alp. So for example the shrubbification problem, is mostly present in the lower levels below the tree line and on the high Alp on 2500 m there is nothing happening, you wouldn't even have to pasture the land, there is not much happening. That's why it is controlled by animal head count and all regulation connected to the number of animals.

Are there measures to promote or conserve that knowledge?

So this would be this, which knowledge? This knowledge about biodiversity stems often from science and is communicated and then there is the experience knowledge of the Älplern and these are two different things. About which one are we talking?

About the experience knowledge

Ok, we have partly knowledge exchange between mountain pastoralists, so Agridea has got some groups where this is aspired, We have this movies about problem vegetation, where experienced Älpler communicate their knowledge. There is no systematic collection of that, where we say we collect old plant names or their attractiveness for the animals.

So about the methodology of the study, I am asking because these initial interviews shall serve as a basis for the structured survey and the thing with the local knowledge exists in other countries where they have projects

including the local farmers to do biodiversity monitoring. Here in Europe it does not exist that much, so for me the crux is that I have to ask the right questions, to receive usable answers. And the survey I have to design from scratch and it has to be good, that's why I will be asking about indicators.

So which indicators do you think would be suitable to measure the local knowledge of pastoralists and mountain farmers and to compare to scientific knowledge. I was thinking about the additional indicators of ALL-EMA, because they are not looking at the whole, but rather is limited to specific species and also different layers of indicators so for example structures.

I think structures they would be able to assess very well. For example dwarf shrub share, also specific grasses, for example share of Borstgrass, which is dependent on the pasture. Weeds, or problematic plants, these are the species that are well known and are getting recognised also over time. So with these we have 3, 4 years ago, they are getting checked, there is a list of problematic plants that get controlled, they are in the direct payments regulation included. 4, 5 years ago thresholds were introduced, that have to be complied to and these are with Alp-control being checked and subsequently management is required. So for example dwarf-shrubs are included, Green Alder is included, Blacken, Ragwort, Germer, miscellaneous problem plants are included and then there is ordered by intensity, intensive, extensive, there are thresholds. With the Alp-control measures are negotiated with the farmers, they are mandatory, and if he doesn't comply with it, there is a check in the next 3 to 4 years, the contributions are being cut. This is the lever administration has got: cutting contributions.

There exists some database that gets saved and mapped?

Yes... how that exactly,... there is no database, these are confidential informations, they are connected to people, they are also connected to financial measures and they are confidentially traded and I don't know how the cantons administer that exactly. So there is no one database, because in Switzerland all those things are with the cantons, every canton does it a bit differently, there are no unified databases. You have to administer it, you have to know where it is necessary to check, but with this don't know how the cantons are managing it. But with the perception, I think these are the most important factors that the Älpler recognizes, if this has changed. So beginning of this week I was in Canton Bern to transect concerning mulching of dwarf-shrubs and there the farmer said 20 years ago on that field there were much less dwarf-shrubs, now its almost covered in it and behind it was much earlier, there is even longer ago. It is the recognition of problem plants, if there is for example "Blacken-nests", there the farmers can accurately perceive the changes and they know about the consequences of their management. Yes they know very well, and they have theories why there are so many of those problem plants, what kind of management is working and what not, there are different opinions, but they build an explanation just like everyone is explaining phenomena they perceive and this results in diverse conclusions, how the world functions and everyone has got a different opinion which makes a good basis for arguing about it. It is basically an ecosystem perception, what the farmers have because they are contemplating accurately about cause and effect. So if that happens, that will happen with the vegetation, I think this system they have in their experience-knowledge, so I would if you come and say biodiversity, then often comes the question: rare species? With this I don't know how they perceive it, we had already... it stops at shrubs. They can differentiate dwarf-shrubs or shrubs but if you ask what kind of species is this? For example differentiating only Green Amber and Willows, or Birch and Hasel trees, these are just perennials, so this is where it stops, where we botanists ask immediately: so is this a Green Amber or a Willows, or is this Birch? What is it? This is not so important, this is just shrubs with leaves around 2 m of hight and that's it and with dwarf-shrubs they can differentiate between Juniper and Blueberry, but between Blueberry and intoxicating berry that is from a Älpler viewpoint not a big role. There you have to ask the women, because she might be collecting blueberries. So it is more the functional groups, that get recognised than specific species. Or clover for instance, which is an important factor, it is the viewpoint of forage plants. If you build a group there for example clover, the Älpler knows very well where on his pasture there is a lot and less, because that's where he sends his cows, maybe he even puts out some farmyard manure, and where there is no clover these are the lean pastures, which are surrounding.

Do you have your own experiences with data collection through mountain farmers and pastoralists. I have thought a little about the point system from IPSuisse, where the farmers are assessing themselves and do the monitoring themselves to get the label.

In the Q2 categorisation the Älpler is essentially himself responsible for indicating the areas where we are supposed to go to. In that case it is included in the system that the Älpler is supposed to be asked: Where are the good meadows where I should go? Because they know their area the best. So this is where it is used, otherwise I do not have any experience, our experience is stemming from scientific interest and we want to assess the whole number of species of plants. I don't have much experience there. We did for choosing the sample areas, in most cases, we chose different methods to determine these.

So this question is about ALL-EMA, which was introduced 2016, so with 5 year intervals where the whole of Switzerland is measured and what is your opinion about that, are the 5 years enough to assess the changes?

Yes, this is based mostly on vegetation and habitat, in my experience the changes are slow and till you see something at least 5 years pass, if not 10 years. We have experiments where through soft-mulching we are not milling the ground, we compare meadows and cut and we are in the 11th year and after 5 years changes start slowly to be recognizable in abundances of plant species. After 5 years it starts, so where didn't cut at all there are now more ferns or there is significantly more grass, or its more weedy. Where we cut every year there are more Rosette plants, that's what you see after 5 years. I don't know the methods of ALL-EMA, I don't know how many how intricate this is. The yield share are flowing in but the composition of species is more essential and till you can actually see changes in species. First the compositions are changing and until the species are changing that takes a lot longer than 5 years, until you are not finding these anymore, because they are still present. In my opinion the 5 years are sufficient but the crucial point is to do it longterm.

I was wondering why, because the system is new and they just finished the first cycle and about changes not much can be said

You have to recognise the effort in labour and the time where you can do this is really limited and the amount of people you can use is limited as well, even if you get environment bureaus involved. The ALL-EMA is delegating the labour and is paying for that, but the whole pool of people who can do that is limited. But it is not purposeful to determine changes every year because it goes slowly. It is a difficult point, the early detection is always a big question: How early do we detect changes and then when we do how far are we advanced, that it is difficult to mitigate.

Which kind of format, so you have experience with mountain farmers and pastorlists, for the survey which kind of format would be suitable to get a big sample and response rate?

Good question... we are thinking as well about that. Are we doing it with paper and send it, or making an online survey, probably I would try to go two ways: digital and paper. Because especially the younger ones have an incredible computer affinity. I wouldn't limit myself to one channel and then there are the ones who never have time, where it goes straight to the waist paper pile. You could think about calling, some react better on telephone, but most critical with the farmers is the point of time. From my experience in November and December it is a very good point of time to ask something not field related, and for a survey there is the most space present, as most of them are doing the bureaucracy they didn't have time for the whole year. And then in the mountain area, those who are doing so side-jobs are doing these foremost in January, February, March, because there the ski season is on. And I do myself, so I have in Unterengadin several farmers that I am calling, with them November, December is the best point of time to reach them. And if you are on the phone the best time is when it snows, when there is fresh snow, even better are the days where it is snowing, because after the snowfall they have to clear the snow first. So this is the beat time, for instance in June you don't have to want anything from them, or what else is a good point of time is August, there on the Alp it is not so busy anymore, but

there is no hunting season yet and there is no "Streulächenschnitt" (scatter area cut). So August is a good point of time for visits.

Yes, unfortunately August is not acceptable for me as I have to be finished by then

Yea but November, December is good. And I think if you can do something like this survey, our experience is to do it as personal as possible, maybe introduce yourself briefly with a photo, that goes down well, a personal introduction. What also goes down well, is that you are brief in what you are writing, in most cases you don't need many sentences. Most farmers like it short, otherwise it ends up in the oven.

I hope not, I shall see

And if its not working at all, there are the agricultural bureaus and advisory services, normally they are helpful to follow-up with one or the other. So we were already looking for study farms, where we were not able to convince anyone and the advisor said I will join you and he looked through the list and said: "what that guy doesn't want to participate?" and then we went there and all participated.

Ok understood, this leads me to my next question: How am I able to reach a big as possible sample, maybe through a union or an association, the advisory service....

Well there is "z-Alp", there is a network, I don't know if he is supposed to be interviewed?

At the moment he is on the Alp

██████?

Yes, and I was thinking about calling him, because he is not really on my way, so if I would have an interview with him, I would do it at the very end

He would be an important for the Alp employees, if he is convinced, he would be a key figure. He is a representative of Alp employees and for the Äpler there would be the SAV (Suisse Alp Association). Jörg Beck, is he included?#

Well with the SAV I only spoke to Andrea Koch, who is a secretary and I unfortunately didn't reach anyone else.

So Jörg, I would hope, I have studied with him, but I haven't seen him in a while, but I am sure he would be someone useful and they have a big database of Alp-owners, Alp-managers so basically the farmers. Otherwise the cantonal advisory services. They are focused on the canton, did you talk with someone there?

Not yet, this is the first interview, tomorrow I have another interview in Zürich and then I go back to Schwarzsee and there I will have interviews with the people from the canton.

Canton Fribourg?

Yes, I was thinking Sense district is great because there are a big amount of Alpine huts

Yes

But the district is a bit small and it is on the border to canton Bern and the natural park Gantrisch is bordering, so I tried to also get the people from adjacent district involved as well

So this would be the focus region?

Yes that's how I imagined that

The cantons would be reliable partners to talk to and the SAV is rooted in this region: Berner Oberland. At least in my perception. In the whole of Suisse there are representatives, so I would include the people from canton Bern, the people from Hundrich or so, or from advisory services.

To the 4th part: Your personal perceptions, what changes did you notice in the alpine agriculture and landscape services? In the last years?

On the one hand there is a certain segregation of areas, the good areas are being intensively managed, partly they are almost managed like common agricultural fields. They do cleaning-cuts, they do partly flattening of the soil, they "eggen", they cut, they create "silo-ballen", so in my perception it is moving away from alpine management, so "Eingrass" for instance, you never saw that, it is the feeding of fresh cut pasture fodder in the stable. This is a very labour intensive method of using fodder, but you get a high efficiency, because the animals are not destroying much with their steps, they can't choose as much, but it's a lot of work. There was a decline because it was not economical, but some people do it on their Alps and the use of machines is increasing on the good fields. And then in the extensive areas you get increased dwarf-shrubs, through reduced foraging distance of the animals, which are the main perceptions you get. Fighting weeds is in my perception being intensified. Maybe its due to Alp-control, who have got more tangible numbers. I don't see that always in a positive light, there is also use of herbicides, mainly in the intensive areas. I notice a certain professionalisation, especially by the self-managers (Selbstbewirtschafter), who say: "The Alp belongs to my concept of management, this is important to me, I am looking to this Alp, I take care of". This is what I also notice in changes, where I had the feeling this wasn't the case 10, 15 years ago, not as intensive.

So these are in your perception the biggest changes in the image of the landscape?

Yes, in my opinion especially the use of machinery always leads to a homogenisation, and that is a bit of a pity, if you have pure pasture, only the animals create heterogeneity and the machines create homogeneity. It's another question if its positive or negative for biodiversity, but the homogeneity is not beneficial. To lose the small structures is a danger for the biodiversity

This is basically my next question: Landscape picture, climate, physical structures, social and economical structures, what kind of changes do exist there?

All this is coming from professionalisation, which you have in agriculture in the frame of structural changes, resulting in less farms, also less employed in agri sector and this you can notice on the Alp, there is less manual labour, which is getting reduced, there is increased use of machinery and certain fields where people say: "It's not worth it anymore". Partly the Alp-management is being born from need, the valleys were over-populated, they tried to use all possible available areas, well and this changed a lot. Now there is no need anymore and we don't need to farm every furthest back, small, clearing that exists. And this is the societal, how it's changing its coupled and then there is the increase in temperature. There happens a lot: With soil stability, that changes influencing the use, there also exists negative impacts of the areas if there is increased "Geröllgeschiebe". Then there are certain areas freed, in the high alpine region we have new lakes coming from the melting of the glaciers, and around there will be vegetation again. And then of course the usability. The melting of the snow is earlier and you can start earlier going to the Alp, you have a longer summer, this is effecting the farms. A farm that is suddenly able to use the Alp already in April till November, they are suddenly able to use the Alp for more than half a year, the Alp is more meaningful. Back in the days it was 5 months and now its more than half a year. So this changes the Importance.

So it's getting more important and also with intensification and machinery

In the mountains you get more precipitation, especially in dry summers the importance of Alps are increasing because of that.

What are in your perspective the reasons for the told changes? So climate change was mentioned already.

Yes, that is climate change and agri political changes, these are the, maybe new employment opportunities in the mountain areas. The employment in agricultural businesses are a function of other working opportunities in an area.

How do you perceive the state of biodiversity in the alpine region in Switzerland at the moment? So quite general

We still have a lot of biodiversity, we have also sensitisation for biodiversity and with the Q2 areas also a compensation of the use of the society. The Alp is looking towards the Q2 areas, because they don't want to miss these subsidies. I am not afraid about the diversity. I am critical about the use of machinery, it goes into the area of agricultural floor space (Landw. Nutzfläche). Then there are, that's positive, a range of new animals: Lamas, Yaks, Water-buffalos, diverse races of cows, the farms try to delimit themselves and go their own way. This is also diversity

Now the 5th part and I think last with content: How do you assess the quality of biodiversity monitoring in Switzerland?

I think, what is possible, well there is a lot done, a lot of monitoring, with BDM, with ALL-EMA, so the monitoring is good. Monitoring also is supposed to be uncoupled from the users. What could you improve? I believe the changes are noticeable, its more that it is a post-view. Until changes happen it takes a view years till they can be monitored.

Could you think of something to do, well a prognosis of these changes?

Well you don't want to burden the farmers with bureaucratic data collections. I think the whole remote sensing has got a big potential to capture this a little earlier. To think about a remote sensing program will happen soon.

So remote sensing for surveillance does not exist at the moment in Switzerland?

Not in the alpine area, there is nothing, forest development it is used well, already since a few years it is being developed to monitor the tree dynamics, also growth, but on the alpine pastures there is not so much.

A cooperation between the Älpler and Bergbauern and scientists or experts from the government or similar; how could this be effectively be promoted?

We have for instance the AGFF, the „Arbeitsgemeinschaft zur Förderung des Futterbaus“, and there we have conferences together with farmers. They happen partly in the valley area, but also every 2 to 3 years we do it in an alpine area, which is Alp specific. There you reach a certain region or bigger region, people are coming from a radius of 100 km, you can reach them. Then there is various, Agridea for example is doing an Alp-excursion, where advisors and scientists meet, so that this flow is going to the advisors. These are the key factors that could be reenforced, although I would say that we in the science cannot contribute every year with new research. Sometimes it takes 2 to 3 years. Then on the excursion of Agridea, I don't want to tell them two times the same thing. But we really try, in AGFF this exchange together with the farmers, that we hear the relevant questions and then we think about what science could contribute towards that. We created a new research station, which is virtual, it doesn't physically exist, but there are 5 mountain Kantons involved, where the advisory service with the topic of mountain farming. There we try to have that exchange, especially because the advisory services are in kantonal perspective, well it is the role that the scientist is going directly to the 7000 Alps, they are difficult to talk to, but we need the role of the advisory services.

The monitoring of BDM or ALL-EMA is spatially randomized, where there is a 1x1 km with a randomized point in the area, where the transects happen. Do you think on the kantonal level it is sensible to do that, so for example

there are other monitoring systems that are oriented by the pasture areas or the management areas and are drawing the borders there, or how would you, what would in your opinion be the best spatial scale?

Now, that you would extend that?

For instance, yes

They are designed so, the idea is if a Kanton comes and says we want to do it for us more detailed, yes I think it would be possible to extend that. So basically they are structured that one says: "we want to image Switzerland". "We want to collect Switzerland, the development of Switzerland", this surely would be.

Well Switzerland is big

Big Switzerland is not, but heterogeneous. Its always difficult to capture it, from one valley to the next it can be different.

With the small scale monitoring, what do you think, could be beneficial?

Well on that level there is almost no steering, this monitoring has got the level of flight of the agricultural politics in Switzerland, because we have binding rules and on the level of a Kanton there are not so many influencing factors. For example Kanton Graubünden has got now a program for clearing of dwarf-shrubs, the financially subsidise the clearance of dwarf-shrubs and they could say we'll do a monitoring over the Kanton, but you get quickly to the point we should rather there in the areas, where we do that, there we should do the monitoring. This would be separated from ALL-EMA, but often there is a lack in financial funds. This is probably done not enough, that one says there is a pot of funds, we want to have this and that effect and now we take from that pot one quarter and this quarter of the money is for actually controlling if the intended goal has been reached. Often they say we take the whole pot to reach the intended effect and we will notice anyway if its working or not. But actually saying that we need money to monitor the effects this is not done enough.

Then next question would be: Citizen Science, would it be possible to create such an effect monitoring?

So Citizen Science, this is a enormous topic!

Yes, so related to the afore talked about topics

Well yes you could do certain..., technically they are beholden to keep a journal. But the journal is staying at the Alp, but you could, if its attractive enough, leave some observations to them. Some Marmot count for example, or Capricorn counts, or something like this. You have to look out that the numbers are not doubled, with the capricorns this would be difficult, because they are moving from Alp to Alp, but with the Marmots, this would be certainly something.

Which advantages and disadvantages would you see in the contribution of local knowledge in biodiversity monitoring?

Ich have the feeling its not the perception of biodiversity between Älplern and scientists, these are two different things. To connect these two is a little ambitious. But you could pick certain indicator-plants and monitor those. But there would be difficulties to..., I couldn't say at the moment this would be the plant that one should, or if its very rare species, that one could take as a good indicator plant. If you would have them, you could say we aim for that species.

Well it is going to be part of the study, what is resulting? So in the whole, what could be, or should be done to improve biodiversity in your opinion?

In the alpine area?

Yes

So I think pasture with different species of animals. Also use of mixed pastures, adjusted animals as well, also education, Alp-control, this is I believe a crucial point. That these Alp-controllers have the biodiversity in view.

And do you think at the moment in the whole in the alpine region there is a sustainable management?

Yes. In the whole yes. If it wouldn't be sustainable..., if it wouldn't be sustainable, the thing is to define sustainability exactly. Even an intensification is sustaining itself, it is on another... it's a change, you can do it, they did it here as well, it is basically a productive system.

Ok what else do I have here? Meliorations, I think I talked to [REDACTED] from Agroscope and she said that it's a bit controversial in context of the biodiversity measures. But I don't know if you know about the topic?

Well yes, its investments in buildings, streets, improvements. Well this helps on the one hand saving the management, on the other hand you also get changes. One is trapped in the... do you complete this work, or not and this especially this management stemming from need, this is vanishing and you lose biodiversity and certain infrastructure saves the management and I believe there would be an outcry if you would give the people some outhouses for example, or if there would be the street infrastructure from long ago. Our country would look rather different. I think we should try... the structure melioration is by now sensitised for these questions, nevertheless they put a lot of asphalt, where a gravel path, so there some self-restriction would be appropriate.

So a compromise that you weigh?

Or a moderate structure melioration, other things for example are extremely important, so water supply, this is one of the really essential contributions, also to biodiversity, because without water no pasture. There are also hydrological changes, especially water flows in karst areas can suddenly dry out, where there usually was water. This can change and in tendency the "Sömmerungsschläge" are reduced, so meliorations with direction towards water are very important and they are positive for the biodiversity.

How do you think could mountain farmers actively contribute to an improvement of the environment with reference to biodiversity in Switzerland?

On the one hand the shrub-management, then also pasture animals are crucial: their weight, their feed-efficiency, that is also from a breeders point of view, that you take adjusted animals and that there is no total decoupling from the feed basis. The knowledge about farm manure, - management, - distribution, that you use farm manure very moderately where there is biodiversity.

So what is your view on the landscape and its management? Rather positive? Rather negative?

I believe the landscape is stabilised, there the Alp management, I mean the truly coarse interventions come often more from tourism on the landscape, then from mountain farming. So if the build new lifts, new mountain stations, well I understand that up there you cannot build filigree, if there are 5 meters of snow and - 30° the concrete has to be that thick. To create an elegance there is much harder, often this comes from tourism. Otherwise in Switzerland we have got the luxury to have that much money to our disposal, to do this controlling of this system. But it is increasingly a balancing act, as more people in the cities are foreign to agriculture and want wilderness, if they realize the coherences, that might be doubted, but the alpine farming is not always acting skillfully and especially herbicides, in my opinion you should always restrain yourself and maybe consider mechanical options, rather than working with herbicides, as I am sure that in some time there will be bigger restrictions passed. And the other things in Switzerland with the mineral fertilizer prohibition, with the limited use of concentrated feed we have addressed many of the points that come as objections. This works surprisingly well, for example when mineral fertilizer was prohibited, there was a huge outcry and everyone was saying: "now our alps will deteriorate and we will only have Borstgrass". I observe not many of those feared changes. Many could

arrange themselves, it clearly is less dramatic, well there were certain exemptions, but in the whole the effects were less drastic than anticipated.

Ok so the measures were very positive, with not many negative effects?

Yes, especially the prohibition or restriction of concentrated feed was in my opinion very sensible. They were looking across the borders and noticing developments in Süd-Tirol, I mean this is crazy, what kind of cows are on the Alp in the stable and what kind of concentrated feed they consume. Not really the pasture feed, really unsensible.

Which is curious because there is the Malsertal there

Well there it is an own world, which in turn functions autonomously. A different kind of thinking as well. They say, the locals: "the tourists are here, they give money, they want alpine cheese, so we need a lot of cheese, so we need cows that give a lot of milk, how do we get that, concentrated feed!" and then there are some cows that pasture outside, the logic is clear and if there are some scientists who say there are some bees less, well anyway the tourists still like it, and these are the important people

They bring the money. So we overdrew on our time budget a little. At the end did I omit something important?

Not really, for me I thought the questions were good. What could you add? I can't think of anything...

Do you have commentaries, proposals, ideas, criticism?

No, maybe I can think of something

Do you maybe have good advice, from your experience as a scientist, that you could give me for the road? I would gladly take them.

I think it's good, otherwise it gets too complex, to focus on a region or two or three. Otherwise, we also work like that, otherwise it gets too much for a master thesis and you can also concentrate more on the local context, because this is always important. And if you have x regions at the end you are back the local context but then it's diffused and if you have 2,3 regions, where you can say this region is characterised like that, the other like this, there we have differences. You can explain them, otherwise you are standing in front of the differences and you have x regions and can't explain that properly. That's why I think that's a good basis. Maybe they wouldn't even have to be connected, I would maybe, Senslerland, Gantersch is quite close together, you could think about for instance include another region of Kanton Bern. For example the "???" Alm where there is a natural park. I would think about that, especially for presentation. At the bordering areas there is always a gradual transition and if you have 3 or 4 regions, we worked like that too, we had the focus regions, the map is not visible, but we had these 6 regions.

And the idea behind that was having the biggest diversity in landscapes as possible?

Yes, at some point we said 6 is probably not so bad and then the big discussion started, asking where do we do this? (talking about his project) These were completely independent, completely different and if you only have gradual, well if you have nice differences it makes the explanation a lot easier. There you have 60% self managed Alps, there you have only 30% ...

[E6]

What is your professional background?

I started to study cultural sciences, then I changed to the ZHdK, the Züricher Hochschule der Künste, did my bachelors there in dramaturgy, so, you could say, I studied theatre and then I did a masters in Luzern in culture management, one could say economics of arts, where you try to check in which kind of spheres this creation of art is, also in economic ecologic etc. Since a few years I am working in artistic projects, almost always based on a long conversational research. I adapt to different thematics, that I find interesting, exciting, which could be heroism, or virility, or the body of an animal in our social space and I talk to a lot of people who interest me, that can be experts, but also people with migrational background, where I get the feeling: "you can tell me something about the topic" and then I take the basis, the material from these researches and process the material into artistic projects, that can be the theatre, or the museum, in the gallery, dance etc.

And last year you had your project with the alpine farmers

The project is almost a sequel, if you want. Last year I had the opportunity to stage Wilhelm Tell in Uri and Uri is the home of Tell, as people say and there we were thinking a lot, what exactly could we do there? In what are we interested about Tell? This heroism and we contemplated to put also the mythologic figure of Helvetia on the stage with Tell. I did a little literature research and noticed that there is actually nothing. Helvetia the figure doesn't have a myth, there is no legend. She was voted as mascot of Switzerland, not long ago 1848, when the Eidgenossenschaft was founded, people were saying we need a figure to identify with, that new and young country has got to have something to hold on to and then this women was installed, this Helvetia, but in herself she doesn't have a myth or a legend. The starting question was maybe: "where do we find this myth?", because next year there will be a stage piece, that is called "Helvetia" and there this Helvetia-myth shall be included on stage, which doesn't exist, we have to invent or search for it. And then the question was, where do I start? And because in the alpine areas there exist a lot of myths and legends, amongst "Sennentuntschi", one of the most famous legends in the whole alpine area, so also in Germany, there is this "Sennentuntschi" or in Austria. So I thought lets start there looking for knowledge of Helvetia there and of course this happens not without a wink. In the piece the thematic will also focus around the topics: unity and solitude, so I talked to Senner and mountain farmers about unity and solitude. These were the two topics that were guiding me, or at least I tried to tap into with the Älplers. There many things were created, where I had the feeling, that you could find a way to a Helvetian myth with this. Stay tuned – I don't know yet.

Nevertheless sounds very promising. In the project, what would you say is your area of focus? So where you can put in your energy effectively.

Good question ... with all these projects it is this awesome urge to talk to people and to truly know people and to say: "I'm at your disposal. I come here, you tell me what to do, I work with you, you can actually use me". That means if I have to get up at 3.50 in the morning to drive the cows, then I do that. I want to know how you work and I want to know what you are on about and I want to know what urges you have. To succeed I have to offer myself, or I have to go to active conversations where I am listening rather than talking myself. And I think this is, when talking about expertise, in all my projects, I never was an expert, I was no expert about virility, I was no expert about heroism and I was no expert about mountain management and until no I still am no expert, but I belief I have done with everything ... a jump into the rabbit whole ... and came back. I was in wonderland and I can process this in an artistic way, or talk about things to many people who know even less, are lesser experts and explain to them these hidden things. Very openly formulated. So a putting yourself for disposal of: "So I am here, talk, I want to know why do you do that? What is urging you? Why do you come up here?"

(me going of topic and talking about participative processes)

(him talking about hermeneutics, of the cultural and scientific world, process of the death of the genius and the new collaborative processes)

How would you describe your own connection to the alpine farmers?

On the one hand of course worlds are separating us, I grew up in the city of Zürich, which is a provincial city compared to Europe and the world, but it is the biggest city in Switzerland. I appreciate being urban, I enjoy being in cities and I think I can move well in cities. The rhythm that the city is dictating, availability of shops and something I don't know, a close proximity to everything I am looking for and what I need and want and the cultural availability and then you go as that "city boy" up into the mountains and you meet people who, with an incredible fascination and passion, pursue a job and I think it looks from the outside very separated and far from each other, when you think: "ok, now the city dweller is coming and he has to adapt to everything", that's correct, I had to dive into a lot of things, I couldn't prepare a cow for milking and now I would say I could get the cow ready for you. If you put the cow in front of me and say she needs to be milked, I could say ok, give me 1,2 minutes and I clean everything and I prepare for milking and have a look if the milk is good and then to the machine. I believe especially that I see a lot of similarities. I always find it interesting to think about similarities and I believe that both jobs, be it that of the alpine farmer, but also that of an artist are both very precarious types of professions. No one does that, who says: "allright, I just need to do something, so I'm up here on the Alp, or now I'm here in this art thingy", but I think they both are professions and also passions, where you dive into completely and you say: "I see an urgency here and I need to do this, this is what I absolutely want to do!" And there a lot of factors play a role, especially on the Alp, this isolatedness, this solitude, this on the one hand loneliness but on the other hand also the unity to unconditionally needing other people, who also are in this community of fate, because you have to, you really have to cooperate there, its not possible to do big co-working space, bureau, we are in the same room, but if we don't like each other then we don't see each other. You have to rely on the other people, who working together with you. There I see similarities, but also something like subventions, we are totally dependent on the state, if you want, on tax money. I think both jobs wouldn't exist if there wouldn't be a society that says: "ok we are ready to subvention you with our money" and I believe, not subventions, I think subventions is the wrong word, but we are ready to pay for that as a society and we do that for farmers, as well in the mountains as the flatlands, I would say. The reason why we assume something that we supply cultural labour, they do landscape nursery, they look for that the fields and the mountains aren't running wild, they look for a certain tidiness, they look for biodiversity, so all these topics are included and I think we attest the same thing for cultural work, so we assume, when we produce culture in a country, that we are identity creating or that we contribute that the society gets questioned, but we are totally dependent on the society that says: "Yes we want that; we want you farmers to be up here, we want you artists in the society"; otherwise this couldn't function. I believe there are similarities, probably there is much more but these are the first things that come up. With all those clichés, where you might have the feeling: "This is not going together; art and agriculture, there are worlds between" no, I think it makes sense.

So you were saying you went to 5 different Alps? What kind of feeling did you have with the different Älplers, what differentiates them? They are a very heterogeneous group, but in the end they all do that in the mountains and all of them in their own way and how do you think this is connected?

Yea in deed the connection, I think the processes on the Alps are practically everywhere the same, there is a certain time schedule that is not easily to be broken. The cows are depending on the Alp outside or inside, but in the morning you get up and you have to milk the cows that has to be done, then depending you have to get the cows, you have to drive them from the Alm or so, its in the morning 4, 5 o'clock. Its dark, you fetch them, then they get milked and then you have milk and with that has to happen something, that can be making cheese like on the Alps I went to, but it also can be that the milk is going away, for instance with a pipe into the valley. You are busy with that in the morning, then in the afternoon the task is landscape care, can be removing stones from pastures, that can be removing rubble, can be fencing, can be preparation of the firewood, and then around late

afternoon the task is milking again. Depending you put the milk cold for the next morning, so you can work with it and the cows are going out again. I believe looking exclusively at Alp management, if you have milk cows, the processes are quite similar and on all 5 Alps I was occupied with milk cows, of course there are goat Alps, etc., but I didn't see them, I had only milk cows and some calves. But I think the big difference, that's what you are asking about, the heterogeneity, is dependent on the vegetation and the location of the Alp. I was in Berner Oberland on the Schwefelberg and they have an Alp that is as big as the whole city of Thun, this is a huge area and when they have to renew the fence its 13 km. This is quite the distance and quite an area. Im Glaner Land the Alp is very small but very steep, the huts are practically built into the slopes and there you have to move differently, you have different processes, because you when you work on the big scale, you need different tools and machines and esp. when you go up, you need a different condition of your body, to go up and down. I believe these are the clearest factors, the vegetation, where is the Alp located and then there are many law factors. There are in some Kantons where it is very normal that the Alp belongs to a private person and is being passed down from generation to generation, as long as someone is doing it, otherwise its being sold. Then there are Alps which belong to a cooperative and the cooperative is employing someone, who works as a Senn:in and then there are Alps who belong to a community (Gemeinde), there everything is organised by the community and there all the maintenance is being paid by the community and then someone is employed who is working there, which makes a big difference. You notice that, you notice how the hut is built, if it can get paid through tax money, the hut looks better and is better equipped in my opinion. The most purist hut I had was leased by the family managing the hut, where they have to think: "do we do the renovation?" because they have to pay it themselves, through management we can get it back and does it equalise in the end. These are the differences and then there are differences between Kantons depending on the foodstuffs production. In Bündner Land the regulations are rather high concerning food legislation, there are small laboratories when you are producing cheese, everything is hyper-sterile, everything is in white and in Opwalden, there are still the old tin caldrons, where you make the fire with wood and this caldron is located next to the family, who is eating there. It would be in 3 m distance but in the same room, there would be people eating, talking, drinking beer and then cheese is being produced, without any borders. But its completely ok, because the laws are different. And I think there the approaches differ, in Opwalden for instance there were multiple huts next to each other, which was like a cooperation of farmers that came together, who all had their own cows, which were in close proximity to each other. That makes a difference if you need help, you are not completely alone, while in Glarus or in Bündner Land you are away, of course you can reach someone and come but there is nothing close. I think these are the bigger differences I noticed.

What was your impression of the knowledge of the Älplers and especially in context of environment and the animals and the plants and what was your impression of what was going on, on their farm?

Concerning the animals it is clear that they are very knowledgeable, especially, this was a nice quote, in Berner Oberland they were saying to me: "First come the animals and then it's the turn for the people" if the animals are doing bad you have to act, but dependent of course as well. What happens around that, so Flora and Fauna around the farm, not concerning the livestock, I wouldn't know that. I could imagine they have knowledge derived from experience and maybe being passed along generations, esp. those who went up as kids. But naturally I have the feeling that through labour conditions and the work load, that there is not much capacity left to contemplate the own thoughts and to satisfy the own thirst for knowledge, so not: "ahh look there is a new plant there, lets look it up, what it is, or ahh how is the vegetation doing?" I don't think so. I feel it's a rough working day and you have to look out to keep up and that you advance for the good of the animal and man. A big consciousness exists especially about slurry, "what do we do with farm manure?" for instance. Farm manure back in the days that were laid on the grass, where nowadays exists a big consciousness that this drips into the soil and that its not ideal, if its not put away or is standing on a concrete surface. There certainly a consciousness exists, but even there a lot of law, a lot comes exogeneous and is being executed and this is creating a consciousness of "ah ok that makes sense".

So you would say the main influencing factor is of political nature?

Yes

And you talked about the dynamic of the knowledge, so it is being passed along, especially if the Alp is in family hands. But what do you think, what is being passed along? So the world is changing and also the management has to be adapted to the 21st century, how do you think this is coming along?

Of course, some modernisation is happening on the Alp, this would be presumptuous and naive to have this romantic picture, that the cows are being milked by hand and petted lovingly, no of course there are milking machines. I was on no Alp, where there were no milking machines. I think it wouldn't be possible out of temporal issues to milk the cows by hand, also up on the mountain. These things happen of course, but I believe these are not the things that are not being passed along, that don't have to be passed along. Knowledge there can be generated quickly, you can imagine how this happens and when you did it 3,4,5 times its working. I believe its rather the traditional farmers shrewdness that is being passed along. You cant feed your cow with certain things, or what do you do if, these are hard facts, the cow has flatulence, how do you have to broach her, so the air can come out? So that these fermentation processes are stopping. But also things like weather, when do you have to do something in which way? When is the best time to start certain things? Many of those things that are not clearly nameable. Also when they make cheese, the nose plays an important role, the view and experience, what you can pass along. I believe its no exact science on the Alp. At this interface between modernisation and tradition, verbal communicated, or local language is playing a big role.

So you would say a lot of knowledge in existence on the Alps is verbally communicated and its not written down?

Yes, of course there are books and guidelines, also for cheese making, but I didn't see anyone looking into those books. There is a lot of feeling and a lot of experience.

Talking about the weather, "if the wind comes from there and the clouds look like this" then the people know what is about to come

Yes that is happening. The behaviour of the cow, if the cow does this and that, then its probably that reason.

Could you imagine as well that with wild animals, lets take birds or marmots, those could be local indicators as well?, for changes in weather for example?

Yes certainly. Especially in Bündner Land there were lots of marmots. There was a lot of talking: "ok they are not sleeping any more, they left their siesta", because between 12 and 15 o'clock you don't see them that often because they are in their holes, could this be a sign that autumn is coming soon etc. So things like this happen, that you live in that harmony with nature and the observation of nature, because you are completely dependent on it. This force, this roughness is always playing a role, for the whole work. You are completely dependent.

And the Alps are not the easiest environment to work in...

This might be going to far, or its very subjective, but of course something like a mountainous landscape has got something beautiful, sublime, wonderful, that's the reason why we are hiking going up there. I also believe this movement, this is always the case when we gain experience, we say he is experienced (Erfahren, Bewandert hard to translate, meaning experienced but put together out of moving verbs), always processes of being on the road and I believe being on the road in the mountains is something very beautiful, but to be stationed there, so I am 120 days here in the year, this can be something threatening. You are gone, you are subjected to this nature and the mountain landscape has something rugged. The mountain doesn't say: "Hello and welcome I'll prepare a warm nest for you and you can be here, this is a good place to stay, here I'm human here I can be it (zitation from Goethe)" no the mountain says all the time "bugger off, you are out of place, here are no trees anymore, above 2000 m. Here nothing can prosper, then how do you imagine you can come up here with your cows?" Flatly said,

but I do not believe that the mountains are a landscape that are inviting, but a produce from a need to say: "in summertime we have to leave the flatlands, we have to look for sufficient fodder production there for the winter when there is nothing and that's why we go up". I believe, if there would have been a different solution, this wouldn't have been kept as a tradition, because there is better vegetation, to be there, to have animals there. Also there are of course animals having accidents, that fall down. I also think for the cows its not the best environment where they can be, but you got used to it and that's why it still exists and it's a living tradition. This is good like that. But solely from a vegetation viewpoint this is not the place where you can say: "So here everything fits, now we start, this is a good place to built and to prosper and we can be here"

With this topic, what do you think is urging the Älpler, to nevertheless, especially in the 21st century, where you have employment opportunities in the valley right now, what is urging them to go up there?

I think some kind of..., I think people who know that from child on, I can totally imagine that you, this kind of living, this kind of purism, this isolatedness, also this kind of processes, doing things again and again. It's absolutely monotonous work. Every day the same, but also different, because you have to adapt to the weather. The working procedures are for 120 days identical, you don't start thinking every day from the beginning: "where do I start today, how do I do that?", there are many defaults, for instance milking times, the weather is setting the default. So I believe it is connected to freedom, it is connected to the sublime feeling of being there and look down into the valley. I believe, if you like the isolatedness, it is connected to enthusiasm. Then of course it is also the work: which is sensual, which is meaningful, which is haptically. I don't know many technical jobs that are so sensual, because you are all the time surrounded by animals, because you work with a raw product and you transform this in an almost magical way. Making cheese has got something very magical to it. You got that raw produce and you transform it into another kind of food. This has got to have something to do with, I can feel it, and its tactile, and it smells and there something is living. I got to know Sennen, who do that since they are young, who know that since being a child and then in Bündner Land I met a Sennin who started when she was 20 years old and gre up in the city. Through this process of maybe romantisation, maybe through the thinking of "I retreat for a bit, I am going away" and then stayed with this. I believe it's always some kind of "taking yourself out of the world". I think you have to want it.

So the retreat as ...

Yes something exclusive and something exclusionary. I think its both.

I have to have a look, please be patient, ahh maybe with this you might have some experience: So for the survey I have to choose a format, meaning on paper, electronically, on the phone. What is your impression with what I can reach many people?

So I would go certainly through "zalp", the association

Through [REDACTED]

Yes, there you get a lot of addresses. I would go through Caritas, they do mountain projects, they have contact to many Älplers. So probably these two. You exclusively want to get into contacts to Sennen?

And mountain farmers, there are some associations as well.

Yea there should be something, yes I would go through the associations

So with these I would get a rather big sample

Yes this would be sufficient

So you are probably often in the mountains, what did you notice as changes in the last years? So in landscape, but also the social structure or in economics? What happened there?

I believe all signs are facing towards some kind of centralisation, you notice that certain, that population numbers in mountain Kantons are dwindling. The Urner Land or Uri, there are less habitants, this is measurable, there is a centralisation happening. I think there is a change in perception, how we recognise agricultural businesses, what is partly good and partly bad, this is a whole topic in itself. In the mountains self, in vegetation, of course I could mention the very big topics like the death of the glaciers or reduced snowfall, the complaints of skiing areas that its getting shorter, that there is less snow. So these things that can be traced back to topics like, which are global, I could tell you. Small changes I cant tell you, especially if its about biodiversity, I am not familiar enough. If I could see: " ahh on this meadow it was always full with ... or this is not coming anymore, or the marmots are getting less", but I am not knowledgeable enough for that.

Ok, but biodiversity doesn't always have to be: "This bird is the so and so" but whats also part of the topic are structural changes, so I don't know where you are more often, but that roads are being built or so, something made bigger, something left behind or also behaviour of the animals that foxes are not shy anymore, such things also play a role.

There you could talk well with Jelena in Bündner Land, because they are busy with a spout of a river that is turning into a pond, and there you have to think if you are allowed to close it with fishes etc., but I can't tell you about that.

What do you think are the main reasons for the mentioned changes that you noticed?

As usual of course, a level of structure and a level of people. I think the structural changes can be explained through changes in the climate. And then there are also social and demographic aspects. In certain places they are rising in other places falling. There are places where more people exist and there are of course mountainous regions that present themselves as a tourist attraction. So lets think about Graubünden, about Davos, about Wef, what was years ago a small cow village, but also emigration I believe, that as usual when we think about man from Anthropocene and we are conscious about, how big the influence is, that we people leave behind. We are responsible for these changes.

And the demographical, if I understood correctly, has economic reasons?

Yes

Maybe you can make a short assessment, how do you recognise the biodiversity in the mountains? Would you describe it as good?

Well I notice it as rather diverse, so also from populations perspective, I went yesterday to Saganser Land, so I went from Sagans to Weisam and there were for the first time a colony of capricorns, that settled there again in Sagans. Yes I perceive it as divers.

What do you think is the reason for that?, that in the mountain region its busy like that?

Protection. Also political motivated, prohibitions, clear regulations of hunting, hunting supervision, nature protection. Yea some change that nowadays you don't place the manure directly on the grass but that you put concrete. In the end its consciousness, there is a stronger consciousness also with your work, that is based on perception. This is one of the best words in german "Wahrnehmung" (truth-taken – perception) because its so subjective, it shows how subjective things are, I have to take it, I actively have to take the truth for it to be something. Its not truth-being, it is not, but there has to be a consciousness created and I have to take it actively and say: "this is my relation, or there I relate to, or there I access to something like reality", this is what I would say is my perception, this is what I make perceived. And through that, what I view as truth in my reality. I think there things were happening, and we sharpen our perception and our consciousness, how we deal with certain complex topics. The Alps belong to that.

Your perception of alpine management? Rather sustainable or rather not? So in Bern, what you described sounded a little industrial...

No, there were not many cows, this were at maximum 20 animals, but the area is gigantic. In Bündner Land with an Alp much smaller, almost 50 cows. I really was surprised. Of course this a double-edged sword, if we want to have agricultural production, when we look at milk production, at meat production, at animal products in that way, if we consume it in that way, then the alpine management must be one of the most sustainable versions. But of course it would be more sustainable to say, we abandon that – comprehensively.

Then other things happen

And then you have to ask: “who is doing this job now, up there which is not connected to the management of animals anymore, but rather with the management of ecosystems?”. What we cant do is to say: “ahh, no we abolish because of environmental protection reasons the Äplers, we don’t do that anymore and they can move away, the huts can be shut down and we all move to the valley. Of course all the Sennen are contributing to a big part of the conservation of diversity and biodiversity. That you have to be conscious about. Its not only the evil farmer who is mistreating his cows, I present this big and pointed, who is drawing his economic success out of that. But of course things are happening, which are very important for the ecosystem in the landscape. That you would have to replace, if you say, we abolish every kind of production with animals. I think this is that two-edgedness, when you talk about sustainability. But you are more expert in that than me

Not yet, not yet, I don’t know if there are real experts at all, some things are very poorly understood. So as a final question: What do you see in future for the Alps, for the landscape, for the management? You were talking about the demographic change and what do you imagine will happen in the next years? Something good, something bad?

I believe, the need for explanation will rise. I believe there will be a time, when the society, the democracy will ask: “what exactly are you doing up there? What does it cost? And do we still want that?” So I think, and we are back at an art – question. So surveillability of “we spend that amount of money every year, we pay that as a society, what exactly are you doing with the money?” This is sensible I think, but this is something you have to be prepared for. A question of profitability, of synergies, of process optimisation. So all these great McKinzie terms will in my opinion not stop in front of Alp businesses. This makes sense, this is very subjective, but if you are down in the valley and you are mowing to produce hay for example, there will at some point be questions: “Do you really need four people to do that? Do they really have to rake every straw together? Wouldn’t it be faster if we lalala”. Also this kind of modernisations, where there are machines and new technology. Innovations that can be supportive, where you have to ask yourself from case to case: “Can we afford that? Is it economically amortisable? Who is affording that, the society, every business on its own? If yes, is it possible that we as the society is paying for that with our tax money?” In these cases you always move in form of democratic, or political processes at the end. I believe that’s where I would build on. I believe, especially with that external view, there will be a need for explanations at some point, or an increasing need. I think there will not be more alp businesses in future. I also think that they will not vanish. Probably they will be more cooperative, maybe they will work strongly together or one might think about if its possible to send an even bigger number of animals. Right now on that big Alp in Berner Oberland are still 20 cows and there will maybe be in 20 years 40 or 50, because you realise it’s a gigantic area and there have to be more. But I think especially from the political law point of view, there will be questions. I believe the craft there will pretty much stay. For that we do that thing for a too long time. For this, for certain processes I believe that certain hermeneutics already slipped in too far, or are too well-established, that this could change in a short amount of time.

(me talking about heterogeneity and homogeneity of machine and human labour), would you agree to that?

Yes I would go with you with the homogenisation, in terms of processes. I would be careful or critical, especially in this area, because vegetation and the exact location are playing a crucial role, that I get the feeling, so processes like cheese making that can be homogenised relatively well and quickly with machines. I believe it is necessary, alone from the nature of the Alp, through what is existing there, is there wood existing at all, or is it in an area where rockfall is an issue, or does it not exist. Is it flat is it steep? What is the nature, depending on that is it possible with machines? Of course you can construct all type of machinery, but I don't know if its translatable and I think that this type of homogenisation is limited. Because a technologization is not the main goal, for the people who are working there. I believe if it's the case, then policies are the driver and not necessarily through the individual who says: "So lets get this screw-mower-thing 1500 and now everything goes a lot quicker. I think this type of economics, this type of process optimisation is not in demand by the individuals. I believe there is a big pride in saying "no we do that all by hand and I want that with everything my hands are involved" I doubt that in Oppwalden, the problem is not building a steam-caldron, if they see it makes sense and its relieving our labour. No they like to do it over the fire, they like to make fire, they like to make cheese like that. I believe there has to be a law that says: "We forbid you to work with fire, it has to be done with steam, because the temperature has to be normed. It can not be that we have 2,3 decrees difference". I think that's when such innovations are installed and then it leads certainly to a homogenisation, but I think it comes exogenous and not intrinsically. I don't think the individuals, who are working there are interested in that type of homogenisation, through processes like economics and process optimisation, but it probably comes from outside, because politic says: "Wait a second, you cannot eat or sell your cheese anymore or you are not allowed to offer it, if you do it like that"

Ok thanks a lot, that's it more or less. Now did I omit something important, what you would include as a topic?

I have to reflect, so its about perception ... no I think you delimited everything what you can get. I am very curious how this will be receipted this questions and what answers you receive.

I am curious too

I would say, it is a very conspired group. Those up there.

I will have to be creative, that's for sure

Also the way you are asking the questions, if they should write something for you or if they are giving points, or some multiple-choice thing. I am curious

I especially have to be careful that the thing is not going straight away into the oven

And the right time, I think during the winter it does make sense to ask, instead of springtime. If they are gone, they are gone.

No chance

You can be happy then, if they have cell phone connection at all. (Making jokes about the connection) and then they are not filling out funny surveys.

Do you think you can give me some sort of advice on the way?

In contact with Älplers?

For example

They are, I think they are very open. I had a wrong picture of scruffiness and them having a narrow horizon. This is wrongly attributed, they are totally open. I believe it depends on a certain attitude to say: "Now can I come over, lets do it!" so something very pragmatic, where you can take them along, is in my view a lot better then long back

and forth, and not saying could you that and could you this, but more saying. I'll come up and then we have a look at it. I perceive them as very open and very interested and very passionate to talk about their work. I believe there is a consciousness existent of this needfulness to communicate their job or what they do there and at the same time in my opinion, they are all people who voluntarily decided to do this profession, otherwise you wouldn't do it. You don't happen to work on an Alp. It is more probable that you say "allright I work since 20 years in the bureau and I don't know why", on the Alp you know for certain why you do that, because you constantly have to question yourself: "Do I really want to work with that intensity, the pressure and the remoteness" and that's why I perceive them as that passionate about what they are doing and being arrested in that necessity to want, to have to do that and seeing no other way, in pursuing some other profession. Most probably you can get them through their passion. And I think, if you write a thesis like this, you probably have some kind of interest in finding something out. So I think you can match passion with passion.

I will try that, thank you very much!

[E5]

What is your professional background?

(asking for quick introduction again, me explaining) So my professional background, as I said I am here in the department for promotion of the birds. We are also concerned with improving the habitats of the bird, it is especially also not the goal to support some rare species of birds, this is a situation closer to an intensive care unit in a hospital. So if you do nothing, they go away. We try to improve the habitat and with that we try to influence a big area as much as possible. That is also a reason, why we are cooperating in projects with IPSuisse. These are almost 20 000 farmers in Switzerland. We have ca. 45 000 in Switzerland and this is a big share, also considering the area and that is very interesting for us, if we can contribute to some criteria with this label, we have helped the whole habitat. Me personally, I am a trained farmer. I am a trained businessman and I am an economic engineer. I have a diverse background, I am also an arable site manager, who is paid by the municipality, who looks after all farmers inside the municipality, especially that they do the applications for the direct payments correctly. My municipality has 100 farmers, that's also a multiplier and before that I was working for the agricultural office, 5 years, after that I worked for 5 years in software development and there it was about, so I was product owner. The software was the agricultural information system and with that, the Kantons, including the principality of Liechtenstein, are settling the direct payments. This is technical, how and what has to be accounted for and at the end there are the payments. Among other things I worked for the Bund, the Bund has got their own software to calculate the direct payments. The Kantons are ordering money and they have to recalculate that and this calculator was with me as well. So with that I have quite a deep knowledge. Maybe also the mountainous area, you are certainly interested in that. I have family, a cousin and an aunt and uncle and they have an Alp and there I am since my first year of life two times in summer, so I know it very well. We used to help up there. I know that from one Alp very long and deep. And I was living for 2 years in the mountains when I was in the beginning of my 20ies. I never did a summer on an Alp, I worked something else, but otherwise I am quite a lot in the mountains and I know the situation quite well, the problems that are there.

A lot of experience! Great!

Various, but what I'm not is a Dr. of biology, so I'm not that.

Well I don't really need that.

My purpose here is, most others here are biologists, I am more a mediator. I have to look that the results arrive outside and I have to understand the language of the farmers, so that we can make deals.

Well that's very important. (Talking about communication)

Yea that it arrives outside, that translating, that you can conceive another position. That helps, what I didn't say: I have a little farm myself, very small. That also helps, when you can try things yourself or when the Vogelwarte wants to do something, I can wear the other hat and think about: "How would this be for myself?", that's quite different. You can empathise, when you are closer to your targeted group.

Then I would advance to the second part. The actors in the alpine farming, I named the Älpler and mountain farmers in the text, so I differentiated economically, only Sömmerung and the whole year. How would you do that?

These are two different things. Why don't you draw the border with the Sömmerungsgebiet, then you truly have the Älplers otherwise you have the ones with the whole year business. If you do that, I would include the zones.

The Bergzonen? (mountain zones)

Yes, there are 5 zones, so for example you say: "I look at mountain farmers in Zone IV and V." Or 3, doesn't matter, so you can delimit. There are quite a lot of differences and they are doing things differently. Whats also

important, you come back to that at the end, if you are talking about Älplers, you have to define who that is. I assume you are meaning the manager of the Alp and there is nothing that does not exist. There are single persons who have an Alp with their family, so like my cousin. Then there are cooperatives, there are various ownership structures, mixed types and there are 10 different types of what all exists, or the municipality owns the Alp and someone is a tenant. Its always the question who do speak to?

So maybe it would be better to say the Alp-herdsman. Basically I am looking for the person who is actually doing the work on the pastures, who take care of the animals.

I would take the manager. But this is dependent on every Alp, there is also the Alpmeister (master of the Alp). If you come to the Alp there is the Alpmeister, who is the boss of the Alp, but he is employing to cheese makers and one herdsman and is himself not up there. With whom do you want to talk to, that could also be the employees union, which can be one or ... its relatively difficult. I would, a good definition is the Bewirtschaftende (manager). That's the one who is up there, no matter if he considers himself as a herdsman. A herdsman is more someone who only is herding the animals, if he milks he is more a Senn (milker and cheesemaker). But these are again the local designations.

I hope I will get understood in Switzerland

With understanding, for the biodiversity it will be tricky. You are regionally delimited?

Well Sensebizirk basically and adjacent districts.

We are doing an IPSuisse project in the mountains. I went to 9 different Alps this summer, also doing interviews like that. We develop a biodiversity system and we had certain ideas and we wanted to discuss them. Afterwards you ask: "Do you have problem-weeds?" and he tells you another name for the same plant. It gets more difficult, when you check: "ahh that's that!"

Well I was thinking about working with photos, to avoid names.

Good idea

So whats your assessment what the managers know?

We also were asking for that and that's extremely heterogenous. So there are people, who know an incredible amount, then there are ..., I recently went to a guy and he didn't know a single plant, nothing. There are some who most likely know the big animals, so a chamois. Depending on the interests it is variating. But what exists is, let me call it indigenous knowledge, that you know there are snakes, because 20 years ago there was a cow and she had a swollen cheek. That has to come from a snake bite, but we have never seen a snake. Things like this are coming sometimes, when you ask the right questions, or with luck.

The right questions, that's the point. - Or luck – So to the influencing factors of the knowledge.

Difficult to say, very personally dependent, what they as humans, less specific for Älplers, but I work in the municipality with the farmers and they made the experience, if you ask: "have you ever seen a rabbit?", then initially there are not many reactions. We made a competition and I was asking too: "If you want, write down everything you have seen from big animals" before, almost no one said anything and afterwards there was a lot coming back. Afterwards, how do I say it, with the food also the appetite is coming (german proverb: mit dem Essen kommt der Appetit) Afterwards one said to me, there is a Falcon, come suddenly: "Couldn't we put a box for him into the stable?", "Yea of course you can do that", one can steer the dynamic of the knowledge like that. If they are motivated intrinsically, or seeing a sense. I have an example of a critical farmer in another project, who had suddenly and he had to upgrade his hedge, but he was forced to do it. And he had a Red-backed shrike

(Lanius collurio) couple in there. Now he is doing on three times the area the same on his own costs and he is taking an effort because he was so happy about it. Before there was nothing.

This is nice, that such an experience can kick off something like that. The dynamics of the knowledge is again, very heterogenous?

Yes its very heterogenous. Something else I wanted to say with this question, there is organizational wise. If there someone like my cousin, since 40, 50 years is doing that, then a different kind of knowledge is created. Now you have to know, that on the Alps the staff is changing very often. Normally this is changing very often. I cant say it accurately, but I would say the maximum of 3 years it is the same people and then this is ending. There are Alps where every year someone else is up. That certainly doesn't help for such, also for the knowledge how to manage reasonably and seriously. Because it always changed and that doesn't help if the boss there, should know what he's doing, but if he's never up.

Well that's interesting, because all the people on the Alps, that I know in Fribourg, they are there for a truly a long time.

That helps a lot, and you can see it. There is also the so-called Alpwerk where you take stones on the side after avalanches or so, or you do de-bushings. If you are only for one year up there, you have a different kind of horizon, than when you think, I'll pass it on to my son. I would give a much bigger effort. There are constellations where this Alp here is in a group of Alps and they get raffled. So in 5 years you have this Alp and in another 5 years you have another Alp. So why should I make an effort here? Because that guy there is also not making an effort.

Sounds like the tragedy of the commons. That happens, unfortunately. So what do you think with the knowledge from the past, do you think a lot has been lost over generations?

Difficult to say. Some is certainly been lost. Many things are still there. Less directly ecological knowledge, maybe more management knowledge. What do I have to do, so that its going to be good, I think there is much present still. Or at least its covered and its emerging when you need it. Or someone still knows it.

Most traditions have a practical background

But ecological knowledge... Maybe another excursion: We surmise that the condition in the Sömmerungsgebiet (Summering area) is not bad, concerning biodiversity. There are singular examples, that are catastrophic, where Alps get cleared out, get over fertilized, terrible, often in connection with street building. At first there is a big street, then there is liquid manure, then the rocks get put on the side and then they are working with machines, leveling the soil.

The homogenization of the landscape

But these are more single cases. We with our project with IPSuisse we want to conserve. That is the primary thought. What we have at the moment is good and there are species that fled to the Sömmerungsgebiet, because its reasonably intact there.

Indeed, that's what I heard from most people so far and through that the Alps embody a unique feature and are of high value, because it's a bit like a treasure chest for the species, where they can retreat, while in the flats, in the valleys there is everywhere agriculture, streets, residential areas, so there is no space anymore and in the mountains there is. Is the local knowledge in biodiversity research already in use. I was thinking about the result oriented payments, where the farmer has got a relatively free hand.

Well, in Switzerland, we are not so far with this result-oriented concept. At the moment this is discussed in different projects, but not explicitly in the Sömmerungsgebiet. Not to my knowledge. But we see big challenges

with this result oriented concept. On the one hand its great, because you can abolish many of those stringent requirements, that are sometimes not beneficial for a project: You are allowed to mow after the 15th of June and then everyone is mowing on the 15th. In one year it might be better you would do it at the 2nd of June another year on the 2nd of July. You also take away the fun from the farmers, or the instrument. Its decreed and you aren't allowed anything else. And then you ask yourself, why they don't like to do that. Conceptually it's a very interesting approach, but what is difficult around the whole topic. The result has to be defined. That is not easy at all to define. You make a definition and you say, at least with most projects I know, when you don't reach it, its not necessarily your fault. There are other influencing factors, with the global warming, for the result I need 10 Skylarks (*Alauda arvensis*), now I don't have these and I say its because of global warming. The other influencing factors are counting as well. It cannot be that this is the gate to not doing anything. Because I simply say its global warming, that's the one point and the other is that its enormously consulting-intensive. Extremely. Usually it has to be escorted and for example in Austria there are approaches in the mountain agriculture, you know about that?

I don't know much about it..

So in Austria there is research about that, with some individual farms it was tried. Its very interesting, but if you can actually use it, at the moment we are a bit critical, if we can transfer that to Switzerland.

It has to be well thought of, for sure

And this in the Sömmerungsgebiet, I don't know...

Are there measures to actively promote or conserve this knowledge, be it management knowledge, or about other things?

Not from our side. What exists, are basic courses and trainings, but this would have to be more from Älplers for Älplers. That's lesser known to me

*Now to the methodological part (me explaining why I'm doing this and what I found interesting with IPSuisse)
Which indicators can be considered to elicit the local knowledge?*

(him asking about LEK, me explaining)

I think that basically, if there is a system, that could help you from the peg in the Sömmerungsgebiet... the IPSuisse point system you cant do it, as its for the valley area. The ALL-EMA is a monitoring program, as you have seen, this matrix over Switzerland with the points and you look at the points what kind of species have we found? Yea that one less too. I think with a structured Interview/Survey, you have to do it somehow in that way. Its relatively difficult, as it has different manifestations. Species of animals, or do you want, what do you want to know?

Basically, what I was thinking of was the additional indicators with ALL-EMA, there were some species listed, that are flashy, also neophytes and something like that. With these things I had the impression they are sticking out and they are seen. And also, the structural elements, which is relatively well researched, if there are old stone walls, if there is dead wood, when it's not perfectly tidy and clean. That that goes together with a higher biodiversity. So, I tried to go over that way and not ask, how many species of grass do you have on your meadow? I don't think that would make a lot of sense.

What is difficult as well, we later come to this, we think difficult or practically impossible to get serious data from amateurs, not because they don't know anything, but because there is the danger that they mistake an owl with a swan and afterwards you have numbers or results that you cannot classify. But what can help a lot is the indigenous knowledge to get the access to a topic. So where is a Capercaillie (*Tetrao urogallus*), they know we have seen one at some point and somewhere else they never saw one. Like that you can access a little, but that

we specifically do collections like that with amateurs. Also with us, many volunteers are counting birds and all of this data is getting checked again. So its not to discover striking problems, we have also found out that it cannot be that you see a Nutcracker (*Nucifraga caryocatactes*) there, "this is not the Nutcracker, that cannot be, come lets go look together, that's not correct" and then you can verify this and can still be wrong after that.

*Yes for sure, but that is the reason why I want to compare it to the scientific data from that area to see how much correlation is there. From my expectations, I expect a very high variability. That there are some managers, who are quite on spot, others less. I would be interested how much is there in the end and if there are connections to the socio-demographic contexts. So the Capercaillie for example, or the marmots, something that is striking. So in the Schwarzsee area, the Golden Eagle (*Aquila chrysaetos*).*

There you have to see, that the eagle has a very large territory, you have to take that into account. But also with the structures, we intensively dealt with this and what else you can do with structures is with the aerial image.

So with GIS?

Yes, you cant do everything, dwarf-shrubs is a bit more difficult, even though you can see them, depending on the ortho-photo. You can distinguish a cleaned-out Alp. Or differences and you can make up your own mind, but to quantify something is a little more difficult. Its more an estimation, but certain statements can be made. How many animals does it have up there, how many nutrients are there? These so called Normalstöße, I don't know if you know that.

Yes Großvieheinheit basically

Yes the Normalstoß is a Großvieheinheit, 1.0 during 100 days up there. That's a measure, for every Alp that was determined at some point. Dependent on the Alp, it fits, or its not enough or too much. That has an influence. The goal is to have enough animals during a enough long period of time, to avoid bush encroachment, but it shouldn't be too many animals, so that all the fauna and flora is dying. You have to fulfill this, to get the direct payments. That has to be correct.

You were talking about working with the IPSuisse in the mountain area. What were your experiences? Do you have advice what could be included?

So what we did, was asking. A concrete question was: "Do you know species that are on your Alp? Plants or animals." There was not much, not much was coming, individual things with a tendency towards bigger animals, as was noted. There was relatively little. Its amateurs, and the knowledge is heterogenous and something we weren't talking about before. Most of them don't have time. They work a lot in these 100 days and they don't have the view, because they are tired.

Yea I can relate to that. Well alright. With the format for the survey, what is in your opinion the best way of doing things?

So whats very important here, so far I have always been in person on the Alps and I recommend to not do it... maybe written but supported, or possibly supervised and not too technical. In the best case they have a smartphone on the Alp, in the best case, maybe no connection and as I said they don't have time. If you want as many answers as possible its dependent of your engagement. They have to say: "alright I'll help Jonas now", or "alright, I'll do it" but if you put a paper into their hands and they should send it. I have big doubts, that you will get sufficient answers. With my visits, I didn't want to control anything but I had to partially talk them into it. With us they got something for the hour, so they are not walking out empty. Not super much, but a little. You cant do that of course.

No not possible

And with the big sample, I was thinking about that, so simply some thoughts. I don't know if they have gatherings, your Älplers, if they have some sort of assembly.

I have to ask that at the local association, In Düdingen or in Fribourg.

Or if there is some an Alp-cheese market or an Alp-kilbi, so a fun-fair, where they gather, so that you, there you have the chance to get as many answers as possible. The people might look at you a little bewildered and say: "Dude its my day off, no work today." But you have to be a bit stubborn and they are all sitting at a table and you could take a few one after each other. If you have to drive up to every single one of them in the summer, it takes a very long time.

With that, I already got the tip to do that in November, December.

Yea that's what I was thinking about as well. With that there is the problem, to know who is actually up there in the next year, but that's no issue for you, as you said its always the same up there.

At least in that area, the ones I know. About the others I have no idea. I have to ask about that with the associations.

Or you go by areas. I was up on two Alps in one day, where I did the interview and looked at the plots. That took 2.5 hours altogether, partly the Alps were 400 ha in size and if you just want to have a glimpse at the plots, 2.5 hours is not sufficient. More than 2 I couldn't do, also with arrival and departure travels.

For me that's out of question to do. So that's the thing, I have to do a structured survey and I have to find the advisors, those people who are well connected and who can say: "Here have a look, takes only 20 minutes, fill this out!" So someone local, who does it for me. Me alone driving around there is not going to happen. Impossible. But so far the people have been very helpful, so I'm hopeful. Well to the fourth part is about your impressions. (talking about the farmers catalogue) What changes did you notice in the alpine agriculture and landscape management?

That's what we said before, the topic with the streets is leading to change. Then in tendency there certainly is more tech around, so the classic is the leaf blower, because that one is verifiably leading to problems with the flora, its blowing everything away, also the seeds from flowers for instance. Then also the bigger machines. As much as possible is then done mechanically, its not because they enjoy the machines, but often the problem lies with the Tagwerk (day-work), I'll come back to my funny example. That is the boss of the Alp, that's the Alpmeister with his cooperation. Some people have cows and all the cows go up to the Alp and are being milked by some people. Back in the days the owner of the cows had to work 3 days per cow up there. For example combatting weed, or de-shrubbing and so on and that's not being done anymore, or done less. After that the stress up on the Alp is even bigger, so I have to work more with machines, I have to be more efficient, I do treatment of individual plants with herbicides instead of doing it mechanically, because its faster and easier. That is the sticking point.

That would have been the next question already: Changes in the social and economic structure, so this division of labour where more load is on the Alp.

Or also, for example, this difficult Wildheu (Wild-hay), do you know that?

No

Wildheu is hay that was cut at very, very steep slopes and there are natural protection contracts for that. These are either special botanical compositions or partly its good because of the avalanches, when they take off some stuff and its not turning into shrubland and its extremely steep. Its not worthwhile economically and today there are contracts, but there are many historic Wildheu-areas, which are not in use anymore, because no one is going up there for a net of hay to work all day long and its dangerous on top. You can die doing that, its very steep in

most cases. Sometimes you have to be flown in with the helicopter. This are things, that's a change, as its not used anymore. Or what just came to my mind with changes for example: big predators, because of the wolf (*Canis lupus*). If you have a bigger Alp with multiple 100 sheep, then you can put some one up there to take care of them. If you have only 40 sheep, then that's not possible, you cant pay that. You cant deploy dogs as well. These Alps in the wolf area, they are dying. They are taken over or they die. Nobody wants to go up there. Back in the days you made a pasture up there and drive the sheep on it and you went two times a week, but now with the wolf there you cant do it, otherwise the sheep are gone, or parts of them. So this is given up.

That would especially be Graubünden or Wallis in that area?

Yes, especially in the Bündnerland I know about that. In the Wallis, people are talking to give up certain Alps, but if this is actually true... but I presume yes. The pressure is relatively high. Also because the merit is very low.

Reasons for these changes ... that would be the renaturation of the wolf or of big predators in general.

The spreading yes, otherwise the prices are relatively low and too little staff. These are various main-reasons.

And if the Alps are given up, then there is shrubification

Almost always, till the tree line, there are later forests, which doesn't have to be bad generally, but it leads, concerning the flora, that's gone. As well as for birds which is often underestimated. Birds don't really like high structures. There are trees they like, also crows, which live there, but for most birds its bushes. So around that height. The vast majority is eating insects from the ground. And they are not starting from the tree and are going down, that's too far. They want to sit short distance on a bush and then down. They are in safety and then gone again. But there can be too many bushes as well. So a loose vegetation, that would be good for the birds, but that's the case with biodiversity: Its never for all equally positive. That's always the case, someone is profiting and another one

Well for that you need landscape diversity, with many habitats. So the state you already said is quite good in the mountains

In general yes. There are some things, we also have some evidence that the Ring Ouzel (*Turdus torquatus*), which is going back. Climate change is suspected in that case. The Black Grouse (*Tetrao tetrix*) has problems with tourism. And there is clear evidence that in the Engadin, so St. Moritz, there is a massive intensification of the mountain agriculture. So you have to imagine that, it's a valley, a little bit like in Alaska, or in Canada. The valley floor is at 1800 m and its flat, but nevertheless its Bergzone IV or V. You have a relatively short period of time, but its so flat, you can easily manage it intensively. And according to that you can see how the flora is being pushed back. It is very extreme on a mountain meadow, if you put only one time liquid manure on it, where there was never liquid manure before, that's glaring. With only one fertilization you are destroying many, many plants. They are coming back, if you stop, but from outside.

So because of the nitrogen input?

Yes. That's very extreme. Or something else we have is the Höhensteigen (climbing in height), that's clearly proven, that for certain species its too warm. They are moving up. Do you know AlpFutur, there might be some interesting things for you.

(Talking about AlpFutur) and with the good state of biodiversity, why is that the case in your opinion? So the extensive

Yes of course. You cant use mineral fertilizer, because the system is relatively rigid, because of the Normalstöße. There is a clear legislation with not many margins. What is certainly good, we have many plants and butterflies

and birds there. Maybe there are other things occurring less. Of course you can always ask “what is good?”, but basically the issue is stable.

How do you assess the quality of biodiversity monitoring in Switzerland?

Basically, the quality is good. We have in tendency, so the organisations who are doing the monitorings, they are well trained. They do that technically correct. You have to look at, what is being monitored? You can always do more. With that you might have to contemplate in future: “

Are we looking at the right things?” That’s the question you have to ask yourself repeatedly. So more species of animals or more species of plants, so that we look at the right thing. It’s a rather difficult task, or a permanent task. Also what else you could improve is the connection of certain sets of data in retrospect.

Which is not easy. I found out that its considered as very sensitive data.

You consciously don’t want to have it detailed on site, but rather on a bigger area, so that nothing political is happening in a specific place because of that. So that the street is being built there, because you have nothing there, or not, because you found that species there. But that species might be able to survive, even if there was a street constructed there. So these are difficult questions.

(Talking about the situation in Germany) So a cooperation between the managers up there and the scientists and experts, how could that be promoted, so that there is more exchange happening?

I think whats important, that there actually is a dialogue. I noticed that now with this project. Its necessary to have a dialogue. They have to recognize us as partners, to not be the ones who point with the finger and say what to do better. Otherwise they are telling us only half at some point, because they are afraid that we say “now you have to deliver even more”. Whats also important in this project, or in all projects with farmers is the physical presence, that you are on site and that you talk to the people and listen wo their worries and that you are reliable and not just somewhere, not tangible. Also the farmers who have to deal with the state and then there is no one from the state, from the Kanton, ready to talk to them. I have to say no! I advocate in these cases for the farmers and say “It cannot be”. “They have to comply to some requirements and no one from you is capable to explain that to them?” That’s bad and afterwards you are asking “why do they always have such a negative attitude?” The cooperation is important.

Understandable. The state is not easy to be dealt with. So smaller scale monitoring, well in Switzerland, where it’s a problem with the sensitivity of the data, but do you think it could contribute to monitoring and in the end improve protecting measures?

I have the feeling, that the crucial point with monitoring is something else. You have to... crucial is, how much time and how much money do I have to do a clean monitoring. That has to be completed at some point. Afterwards I have numbers and it is written down, after how many years repetition, I think 5 is not that bad. We take the 5 and then I can do something here and afterwards I have 5 years and afterwards I have 10 years and then its going to start to get interesting. Then I can say “Ok this here is somehow like that and so on and before it was like that. Why did that happen? And so on” and that takes some time and the important point is to have a certain stability with the monitoring. And the case in the whole is to me personally almost more important, then how big or small scale the monitoring is. So that this here has a certain stability. Of course you can always argument, the critics would say “but here you have climate change and we didn’t have that there and that’s the reason why its that way”, but for the science this is very important. So preferably here better quality and a little bit less small scale and instead a continuous and always the same for good results.

Especially with the bird watchers, I believe that its internationally common to work a lot with citizen science and as you said before that its amateur observers being checked by experts. In the mountainous area, how do you think it would be possible to improve the monitoring.

That's what I said before, I think its difficult. So if its more that indigenous knowledge its more suitable for the introduction into a topic. "Where is the Capercaille?" and I don't know, or "Does it always come in April?" and afterwards being more focused "Is that true?" and then dig deeper and we have the opinion, that then its not so helpful anymore, because you get so many divergence losses (Streuverluste). Its also good knowledge, but its not really proven if its actually right.

Well its interesting, in the publications from IPBES about already existing projects internationally and quite successful ones. So I would say you have a rather negative attitude concerning that, I heard differently already. The Älplers I was talking to, I would actually go in your direction. But I am curious what will come out of this.

I think the topic is nevertheless super exciting. I believe theres many, a good example, a little abstract is the open-street map or something like that. Its great, but I have my problems if its supposed to be scientific and for me a monitoring is relatively scientific. If it has that much inaccuracy here, then afterwards I'm dragging that along and then my conclusion is not clean any more. Of course I always have that with me and I can calculate it away, but For collecting ideas, or to find out "ok up there is a construction site now when you drive onto the highway" these are the people who are here and it goes much faster if we all report that to google, as if they would have to find out themselves. There you have a big power. Also innovation, its mega cool to take all that knowledge with you, but for counting or so

So I probably used the wrong expression (monitoring). I don't want to sell the local knowledge as scientific, but I want to record the local knowledge as local knowledge. In the literature its mentioned, that very often its not possible to combine it with scientific knowledge and I want to compare that and have a look whats there. (me going on about the concepts of knowledge)

Ok if you see it like that, I am more with you. The other is, its difficult to do science with it, that's what I meant.

So I think it's a trend at the moment, to recognize these different kinds of knowledge. I believe it started in Latin America, (going on about the history of scientific colonization)

That sounds very interesting for me. What I like are different approaches, completely different. If you compare these with another, that's exciting again. Maybe its going into the same direction, but somewhere there is a difference and then science doesn't always have to be right. But there are new contexts and relationships too one another. But that's even more work, depending on the topic it might be very interesting.

(talking about how I have too much work already) I think advantages and disadvantages are clear. What do you think in the big picture, what should be done to improve biodiversity in Switzerland?

We are discussing in the house recently above all. Much helps much. We mean it in the sense that, there is no benefit if all farmers would start to farm organically, but we have to have a lot of diverse farmers who are doing things in a diverse way, different crops, different sizes, different cutting dates. Maybe with the different methods of cutting a meadow, there are very interesting publications. There are Mähwerk 1: which is bad for this and that, but then there is Mähwerk 2: which is supposedly better for this and that, but in turn its worse for that species. Its nice and everything, no insects get hurt, in return if there is a frog in there, the frog is dead and with the other one the frog survives. Simply many, different technics, types of management, types of crop and this is very important for the state of biodiversity. So that there is no homogenous thing, so that there are more possibilities.

So diversity in all areas basically. What is your opinion about the direct payments and biodiversity measures? Is it sensible or are they going contraire?

In the whole, if we are looking at the Sömmerungsgebiet, in my opinion it fits well. So there are direct payments for different things. There is also direct payments for street construction, also in the Sömmerungsgebiet.

That would have been the next question...

That's a bit dangerous, but I can understand the mountain farmers, as they have to manage it and that they need some kind of road. I don't have the opinion that you are not allowed to do anything never no more. If you are that strict, we come to the point where they don't want to go up there. Its just not longer up to date, but you maybe can expand a road and don't put tarmac on it. It might get washed away a bit and you have to redo it, or in width. But just because you do the street as the Kanton you must not allow after 5 years "So because of the road I want to increase my Normalstöße", you have to say no! no! This was not the goal of the practice. It cant be that you are driving up feed, which is usually forbidden, but they try everything possible. Another point is, I know the direct payments system very well. In my opinion, at the moment the ratio between valley and mountain ... there shouldn't be more money going towards the mountain and the Sömmerungsbereich. There relatively a lot is going up. In the last agricultural reforms, if someone was winning, then always the mountain and the Sömmerungs farms. Yes they do even harder work, but there is an example. You have to have a look down here, how the farms look like, what kind of infrastructure they have, what kind of barns they have and so and after that you go into the hill zone and the mountain zone and suddenly you can see only beautiful stables. You see a lot of machines, that you could use on multiple farms. Its like that, because its hardcore economical. Down here, you are not building a ceiling-heavy stable (deckenlastiger Stall) anymore, where the hay is above. You build like an Aldi, some hall and you do the hay storage on the side, because its expensive if you build two storied. In the hill zone, you still build like that and they are saying "we have so much snow". That can be the case in Engadin on 2000 m, but in the Entlebens, that's in Kanton Luzern, a ski area and so on. They are starving because they are not having snow, that ski area cannot open because snow is lacking. And they are telling me, they have to build that way, because of the snow... And partly there are on top some ??? payments, that means you get payments, that you don't have to pay back, so you simply get them and they are stupidly connected to the sum of construction costs. So that means, when you are building mor expensively, you are getting more and then there are misaligned investments. In tendency, this is more pronounced in the Sömmerungsgebiet. But there local knowledge, there is no direct connection.

How do you think the Äplers could contribute to the environment, especially in the context of global changes, lets take climate change, how could they contribute to that?

To the global changes, I think the most they contribute in the way that they conserve their local area. So what they have directly with them. Their potential otherwise is limited. They are not the bad causer of global changes.

But affected is everyone.

They even very much, depending on, if we think about global warming, with erosion. With permafrost and so, that can have massive impacts of course. There are whole mountains collapsing.

So for the end, last question: The future, landscape picture, management of the Alps. Rather positive? Rather negative?

A very open question, but I always believe in the positive and I am convinced, that in the Alps a lot of things will be conserved. The Alps are also a place of longing for the Swiss. We like to hike there. Walk through there on a Sunday. Every Swiss person has a picture of the Alp and how it is looking there and they like to be there, with high expectations. At the moment its still allowed to do the Einzelstockbehandlung, with herbicides. No one understands that, of the consuments. We want to have that gone as well, but we are not that far. This is an indicator, nobody really wants that and everyone is getting disturbed by that and everyone can join the discussion, as they go hiking occasionally. I think, that's part of the process and its what characterizes us, even though many do not have a close connection to that, but this culture is something very important. I have the feeling, if you would ask the Swiss, that this is a big factor for identification, even though the fewest have been on an Alp, its part of it. There are statements from the Bündnerland, that I can remember. If a bigger Alp is getting available its immediately leased out again. There is always someone who goes up there. Its less the case with

mini-Alps, but if there is a bigger one, that makes sense in managing, then its immediately leased out. There is also pressure, the hunters for instance want to have the Alp too and not only the farmers, because they want to go hunting up there. Or pressure from tourism and so. Partly there are very difficult situations, if there are that many tourists, that its not really Alp anymore.

I had the impression, especially towards Austria, that in Switzerland its still relatively calm.

It depends always where, but yes. Also in winter, you cant compare it. On the one hand that circus with St. Aprèsski, but also in Austria, they build like crazy, still at the moment. They use explosives and build so much, you can forget it, you don't even have to try it, you will never get through. In Austria they simply say: "the valley descent is too narrow", then there is corruption, I cant say it otherwise, money is being pushed everywhere and in the end they do it. Its intense, there are movies about that. With us, only with money you cant do it. In Andermatt we have a bigger ski area and they were building lifts, but they bought another small area close by and deconstructed that one. That's why they were allowed to build on the other side. That's always the trade-of, if they do it at all, then concentrated in one place and more space to leave area alone, instead of destroying everywhere a little. Is maybe better.

Well that's almost a philosophical question. So we are finished, did I forget in your opinion something important?

I have to think... no I think its good

And always my last request: some good advice, that you could pass along.

Well with the presence. You have to look that you can have in time a plan, how you want to preceed and then that you have a plan b, if its not working out. And if its not going as you imagined, that you can do something else. I think its extremely unfortunate, if you make an effort and then the result is "it didn't work out". This is not an easy taks. Its possible.

Yea its going to work, I don't know how at the moment, but its going to work.

[E4]

What is your professional background?

So I am a biologist, I made a PhD in evolutionary biology, a little bit this evolutionary processes and ecology and I found this position directly after my I finished my PhD. Here I am responsible for biodiversity monitoring, indicators, reports, various political processes, both national and international and because I work with data a lot, I have various research projects and I also work for communication. I'm not an expert in communication but I am working with the facts and I look how we could communicate that.

What would you describe as your expertise, your focus, where you are the specialist?

I think my strongpoint is, that I'm not a specialist. I think its important, that I am the specialist in how to create an indicator, so how does this work, with goals and data and so on. With my work and don't have to be specialised but I have to understand everything on a global level and for Switzerland. Diversity is very broad, so if I am only talking about plants, that wouldn't work out.

What kind of relationship do you have to Älplers?

So nothing in particular, my mother in law got sheep in Wallis. 20-30 its nice but its not her main job. I know how it works and how difficult it is. I think for us, what happens in the mountains is very important as for us in Switzerland that's where the higher quality and the higher diversity exist and that's where the changes happen at the moment. So this is important to do something there, this is one of the reasons.

To the second part: How would you describe or differntiate the different profiles of the actors in the alpine agriculture. So I started with differentiating them economically, by activity, if they are farmers all year long or only in summertime. What else is there to pay attention too, what else would you take into account?

I have to say that I'm sure that my picture is not complete. But I view it more out of a administrative perspective. Something very important for us are the biotopes of national importance, they are some of the main protection areas that we have in Switzerland and for example there are high moors and flat bogs, floodplains, the spawning grounds for amphibia in the dry meadows and pastures. And for the flat bogs and dry meadows and pastures, these areas are in use, in agricultural use, because otherwise this is going away. To protect these areas, as the federal bureau we decide were to draw the borders, so where these inventor areas are. Then the Kantons are responsible for the execution of the protection and how they do that: There are contracts, they create contracts with the people who use this floor space. For me the logic is: I see these people, their point of view, I know that its very, very complicated to organise that, because there are Kantons: Wallis, Graubünden, they have a lot of this type of area, many hundreds of these small pieces of area. Then its very difficult to find these people and to inspire, you have to do something in particular. They get money as well, but you have to organise everything and its always a special case and so on. They don't have many resources and in terms of monitoring, I see, that that protection is not done yet. It functions partially but there are more resources necessary. I have to say my personal experience is at the Kantons. I'm not going to the field to actually talk to the people, I cannot really say if there really is a difference between the people who stay there 3 months and the others. I think it is quite ambitious. What we can see is that the use is much higher in the locations that are easy and at the locations where working is difficult, they go more towards (re-?) deforestation, is that correct?

That means if you are not going out, how high would you assess the knowledge of the Älplers about biodiversity ans its dynamic?

I think, many people are often outside and they know that there are many different flowers, probably not the latin names, but there are many beautiful locations and at least the people who are a bit older can remember that there were lots of butterflies, that's something that comes often. Now this is probably, my impression is,

what is difficult is not to explain that there is diversity, but to explain what is important to conserve that and that we are dependent on the diversity and that this diversity is reacting on how we use this area. That means if there are too many sheep or too many cows, then the plant diversity is going away or there are no more insects, but there are more cows and sheep, which is more money at the end. For me this is the difficult point to communicate, why the flowers and the insects are so important that its worth to have less cows and sheep, this is really the important point.

In your opinion, about which species or taxa would the people know the most? You mentioned butterflies, flowers, so the obvious things.

In alpine areas certainly the flowers, that's something, the Edelweiß ans so on, everybody knows that. They have probably never seen it, but they know that it belongs to the alpine mountains. The butterflies are also certainly something that you notice, many of other species you have to be looking for or listen a little bit, or to know that: "ahh that does this". So certainly there are the bigger animals: the birds, the mammals, lizards. Whats always interesting for me to see is that the people have no idea how many species there are in Switzerland. So when you do a list, you get 20 or 30 if you are lucky, but there are 40 000. They are all insects. The people think there is one bee and two butterflies, what really is unknown is the diversity.

Which influencing factors do you think exist on the knowledge of the Älplers? So you were mentioning communication, so I would guess this belongs here?

Could you repeat this please

(I repeat the question)

I think there are two sides. There is the local knowledge that the people have and share with their children. For example, a lot of flowers that I know, my mother showed me. I think this is always very important. Probably, this is only a small part unfortunately, what always comes are the studies and the part concerned with biodiversity is always very small for the farmers. You learn, I don't know, 3 years and there is nothing about this diversity. It could be a few days, so to speak there are these beautiful things and many of these things are dependent on agriculture its not just agriculture destroys everything. It could also be positive. That's one part. Its also the cognition of what exists. But today there are many changes. I heard that the neobiotas, so the invasive species or non-resident species. Some Kantons, some municipalities are informing very well and the people so something because they understand that is a problem, I'll take that out from the field. In other locations this doesn't exist. I see that, for the new things this is very important that there is something locally organised for all these new species and it could also work for the others, but this does not exist. I think with that in Switzerland and at least in the mountain areas, that if we do something coming from Bern, that wouldn't work out. It has to be from the municipality or from the local public.

How do you assess the dynamic of the knowledge? What has happened in the past? What is your assessment for the future, where is it going to?

So always for the mountains?

Yes always for mountain farmers, Älplers.

I think generally we lost much knowledge, because we don't need this knowledge any more. For example all those plants that are important for the health. One knows some things but we don't need it anymore, we go to the doctor and get something, nobody does that really. Well there are always some but altogether, I think this is an example that things are being lost and also when you are in the field and your life is dependent on it, than it goes. You are more attentive to the different plants, and you say this is more moist this is more dry and this has an influence on everything. But the people are more and more driving the tractor and there is also the chemicals.

The farmers they don't need this knowledge anymore, it's a little bit like the tech made all those knowledge obsolete. This is an example from this year. The weather was very, very hard for the farmers this year and I talked to a farmers from Wallis, since a few months he is producing wine, so its not exactly mountains. He produces organically and he said: "For all those who were working organically, this year was not so bad. They were very attentive and they always made everything just in time". And the people who have big troubles this year are the people who used the chemicals as was prescribed: "2 weeks, taktaktak" so without taking into account what happens outside and because it was particular this year, they had diseases. And I think for the knowledge altogether its like that, we don't need the knowledge anymore and so it gets lost.

And your outlook to the future? On the one hand the trend intensification and more machinery, but on the other hand, as I heard from other people, science and bureaus try actively to communicate more and to spread this knowledge. What do you think has got the stronger influence?

I think about that looking at the whole situation, that the people who are working outside in the areas have a bigger influence and unfortunately..., we have an influence, but it is not so strong and I think the communication has to be done smartly. I think, that the people, if we say, so you are a farmer in Wallis and I tell you, that you've got 15 national priority species on your area and then you think: "pitty, I have to do something special, this is complicated and then I have a so and so much...". The other direction would be that you are proud, that you take it as: "this is a beautiful meadow, I am so happy, it so beautiful because I have done something correctly for this meadow and that shows what a good farmer I am". Until now, I think, we are in the first situation, if the people... I realize that with the monitoring, the people are very afraid of the people who are monitoring, because they think if they find something special, then they have a protection area that comes down from heaven. This is always a fright, if they think like that.

This is in Germany exactly the same. Is the local knowledge already in use with biodiversity research? So for example I was thinking about result-based payments, where the farmer is given relatively much liberty and only if the result is right, the meadow is nice, there are many species and then the money is being payed. Does there exist something in Switzerland, where that knowledge is used?

Yes, there is, I'm not a specialist for this, but there is this quality, for meadows and pastures, there are two quality levels. The money that comes from that quality, so Quality 2, there is a higher financial contribution than for the Quality 1. Normally it takes more special things to reach Quality 2, that goes together. That would be for example, fruit trees, high trunk trees with a special meadow below. And then with the plants concerned..., I have to say its not dependent on what they do, but what plants exist there. There are people and when they see, these exist here, then the area gets Quality 1 or 2. This exists, there are ideas to extend this, because sometimes Quality 2 is still not high enough or the Quality 1 is a bit too simple to reach.

Well for the mountainous area, Quality 1 is not applicable anyway, they start with Quality 2 and that's it.

Furthermore there are special contracts for the biotopes, but there, there exist no, these areas have a value and you have to do something, but there is no list, its not result oriented.

Are there measures in Switzerland for this local knowledge, what you said before, that its getting lost, are there initiatives to promote or to conserve this?

So I don't know everything unfortunately. So we try to, the agricultural politics, to look that local conditions are taken into account. So that means, if there is a meadow that is wet, than we shouldn't say: "no this is supposed to be dry". The people take this into account. We find there are a lot of problems with: We have a monitoring called "ALL-EMA", this agricultural monitoring, there is one module with biodiversity promotion areas, are not really that what they should be. That means a farmer does something in particular with a plot, so that it is a medium-fat meadow or a rich-fat meadow and he gets money for it, because he does everything correctly, but then when the

people from the monitoring are coming, its not a biodiverse-fat meadow, it's a biodiverse-poor meadow, because the soil is so full with nitrogen, there is no possibility to have some lean-fat there, because its simply not possible, or it would take 150 years to get it lean. We saw that as a big problem, that many of these ... so it doesn't work out if the soil is too rich in nutrients and then you cant have a dry meadow there, its not possible. Nevertheless there are many people who try that and they get a lot of money for that, but for the biodiversity at the end its not very useful. So its not really about knowledge, its about how this whole system functions. The answer I think about is.... With the big species there is the black nosed goat in the Wallis for example, that exists, but knowledge... I don't know.

Ok, all good. (Me explaining the survey) Which indicators do you think would be suitable to measure the local knowledge and to compare with data from ALL_EMA for instance, or data from the Vogelwarte or so.

For biodiversity, for Switzerland, there are 3 questions: Does one know the word biodiversity?, Can you explain it? And then you can explain that, and what is the third? Are you doing something for it? So this is to get to know how the people perceive biodiversity. And there it would be interesting wo know, which or how many species are directly known. Or can they give categories for that, so for the quality of biodiversity in the different areas and you could certainly connect that to ALL-EMA and see if that's correct or not with the biodiversity. Yea for me it would be interesting to know if this knowledge is either only for fun and the people are content to differentiate this blue or red flower. Or, if its important for their work. But these are not indicators, I'm sorry.

Yea well, but its an interesting idea, what kind of motivations there are. I also thought about the label IPSuisse, I read about. There they have different levels of indicators, so they took structures for instance, where its well know that certain structures are beneficial for biodiversity, so for lizards, for insects or something like that and they used that there.

I think, the structures its good. In Switzerland we want that the landscape is very beautiful and in order and for biodiversity this is sometimes not a good solution. Its always interesting to ask the people, what looks good? What is in that direction? What is the first impression, when you see this picture or the other one? So one that is green, green, green with flowers and the other one that is "blub" that is difficult to use, with wood and stones. Because for many people, at least in the mountains it was, it is so hard to work there, that if there is a new machine that takes out everything than this is already a good idea, it makes everything a lot easier. They don't see the beauty or the diversity of all those different structures, they see only things that you have to dispose of with the tractor.

That I thought I have to use, because they have got their agricultural perspective, their economic point of view and I was thinking maybe you can use that. Do you have experience with data collection of biodiversity through Äplers?

No... I don't know if there are some who are botanists and do that, probably. But that would only be as a hobby. I think that the people who are doing the checks from the Kantons, they are professionals. I've never heard about that

We were talking about ALL-EMA, so the first 5 year cycle is over and do you think these 5 years are sufficient to measure biodiversity across Switzerland?

So we did 5 years, because it's the data collection cycle of BDM, biodiversity monitoring, that's also 5 years and the idea was that if ALL-EMA is going into those square kilometres, than in the same year there is also BDM included, so that the data from butterflies and birds are going together with the plants. Why 5 years, I think, we do that more than 20 years, I think it was a decision because of resources and because to do everything in the same year, that would be impossible. And we are trying, so every year is a bit independent from the other. We ... the Kanton every year, despite this 5 year cycle, we always record, the last five years, you could say it's a flowing

thing. That's possible because we are not only doing the alpine regions but also the Mittelland in the next year, so its always spread out. I think that for the biodiversity its enough. I'm always astonished, there are indicators where you need 10, 20 years to see something and then 5 years would be too fast and there are other parts of biodiversity where a lot is happening in 5 years.

What for example?

So climate change, that would be one thing. So the changes create changes in the community of species and there are species, that 10, 15 years ago were extremely rare in Switzerland, only around Geneve and Basel where it is very warm and now they are everywhere. So this is, this butterfly for example, but it also happens for plants and so on. That happens very quickly, for structure like forest, we see the biotopes for instance in 5 years a lot could happen. So if someone stops doing things, then in 5 years you got trees and for the area this is important, because all the plants growing underneath the trees, its not possible anymore. For dynamics like this, 5 years is already good.

So also methodologically, to reach the Älplers with the survey, which kind of format do you think would be good? So you can send by paper, online, telephone...

I think, we do that not often enough, but my advice would be to actually meet the people, an evening in the restaurant with like a little class about something. But really meet the people,, bring them together and then discuss with them. Because if it is a paper, there are many people who don't like that and they don't like to read it and think: "Do I have to do something or not?" What I have seen with invasive, non-residential species, that was always on Saturday morning, the people are going to the municipality and they learn about the 10 new species, which are also dangerous for the cows and so on. This works. The others are a bit more difficult.

What do you think, to get a big sample, well people already recommended the associations to me, the swiss alpine association (SAV), or cooperatives...

Yea that's always a way, the problem with these things that are so national, that the people in the Jura, they know that they are not the same as the people in the Wallis or in Graubünden. And then if its something national, my fear is that it is not well recognised.

Well my focus is on the Kanton Fribourg and especially Sensebezirk and around

For me, there are always the cantonal bureaus and that is a good unit, but when the meetings are really in a village then for me, that would be the best instead of inviting everyone to Fribourg. Because of the language, because of the personal factors.

And now to your assessments: Which changes did you notice in the area of alpine agriculture and landscaping?

Very strong is the intensification in between 1000 and 2000 meters, so there is something happening, that already happened in the Mittelland since 50 years. There are more roads, which means bigger machinery. We see, I don't know how it is called, but these machines that make everything flat and beautiful, so they take out the stones

Mulching?

Yes that one. Something like that is the worst for the small structures There are things for irrigation, maybe all these, yea ... because there are less people and more machines, then everything is ready for the bigger plot and less diversity. The homogenisation is huge.

And which changes did you notice in the landscape picture, climatic, with physical structures, you were talking about the streets for the bigger machines also Biodiversity and social and economic structures or other areas as well? So in general.

I think that, what we saw in the last years are all these big works in the landscape for artificial snow. There you need huge water pumps and big reservoirs. That means, to build that you construct beautiful streets and then you have truly huge machines high up in the Alps and after that they are not deconstructing the roads, so there is a possibility to go with the car and the restaurants in the mountains they want a parking lot. All of these things are going together. Then it is easier to go with the tractor, before it was impossible and I think this use is what you see at the moment. In 2, 3 weeks you can see all these white patches in the Alps. This is artificial snow and they try to do it very early and how this is influencing the whole biodiversity? There are many... if it is an intensively used, then its very homogeneous, there are only a few species who like that and then these species are the same everywhere. Before the diversity in the Alps was very special, because here it could be dry and 2 meters further very moist and you have that community, which is very rich. And now for having artificial snow for the ski slopes, they are flattened and the grass is very beautiful and because they are used as well in summertime..., I'm sorry this is a huge list, you have a lot of problems with the sport facilities for the animals. This is noise, there are so many people, where before no one was and there you have problems with birds.

The reasons for that?, I guess economical, with tourism you can earn money

Yes, and this is a bit my opinion, that all this is very short sighted. We know that in 20 years, there is no snow. The other problems I forgot to mention are with the energy. Now for the green energy we need dams and wind turbines and so on. In the alpine areas, the locations are still free, that means there is a potential and when you think about landscape and biodiversity, its difficult to organise this together

Coming from that, how would you assess the state of biodiversity in the alpine area at the moment?

So for Switzerland, very, very clear. This is where our priority species are. Switzerland, a big part of the Alps are in here, the alpine species are with us and we are responsible on a European level. Also that's where the diversity is high, because we destroyed everything in the Mittelland. Normally there should be more species here (Mittelland) than in the Alps, but that's not the case. That shows out of my point of view, that we need to protect it. We want to conserve this biodiversity. But I forgot the question...

Simply the state and how you would assess it at the moment.

Not that great, I see that in the Mittelland its finished. You could so some things better, but it doesn't make a big difference. In the mountains, you could destroy very much and there are many interests, not to kill the biodiversity, but to create ski slopes and so on. I think at the moment, that's where we have the big challenge for the future.

How do you assess the quality of the monitoring in Switzerland?

Extremely high! That's not just because I'm in charge of that. I know the state in Europe in other countries, we are very lucky to have a good monitoring system, which is older than 20 years. Today I couldn't finance that, if there was no monitoring, it would be politically impossible. But today it exists already and that's why its possible to have it always to have and the value is bigger every year, because you have that amount of data. There are still gaps, with the insects for instance we have the butterflies and water insects. These are some percentage of the diversity, this is not representative. This is always the case, I think altogether we are very lucky, because we have a good idea whats going on in Switzerland.

Apart of monitoring insects, could there be something else improved?

Of course, you could integrate more groups into the system. That is possible. An example: the fireflies are very interesting, because they live in a pond. Now we have a monitoring for all running waters, but there is nothing for stagnant waters. How do you call that? Small waters?

I don't know...

For that we don't have any information, through the amphibians yes, but the amphibians are not a 100% connected to the biodiversity quality altogether. Then fireflies for example, that would be very interesting to observe. And when I could name a second group that would be the moths, because it's a big group, it comes with a lot of species and is statistically very interesting. But for what reason: for the light pollution. We don't have anything about it and we know it's a big issue. And if I come back to your project. The problem we always have with agriculture is that the farmers always say: Its always agriculture. And with light pollution, then we could include the settlement into the picture and for me strategically this is an interesting idea, because its not only agriculture, also residential area and development and we know that it has a very big influence.

And to the farmers, how do you think a cooperation between science and agriculture could be promoted effectively? At the moment you can see that both are a bit ... well the communication is tricky and then cooperation is difficult.

I think there are always good examples, for instance with soil. There is lot of research about soil and that's something new for the farmers. They know that the soil is a very, very important resource, but they have no idea how it works. I have heard, if there are soil researchers and they talk to the farmers: "If you do this and that, it will go like that" that's very practical and it gets taken, but for me, the issue is to have more people in the field, who could do an accompaniment. From case to case, the AgroScope or the [REDACTED] are like: "we do a report with 100 pages, help for a good book" nobody reads that (apart from me...). I think it would be more sensible to have people in a region, who do things very personally with accompaniment. Le conseil.

Do you think a more small scale monitoring on agricultural fields could contribute to improvement of biodiversity?

Whats great with the monitoring, it delivers facts, its measurable, you could measure the success and now with our system it would be possible, we have data for the whole of Switzerland and you could have this in your garden and then you could check if your garden is in the mean value or not. This would be certainly interesting, to look very, very specifically, because you could see after 5 years this meadow has won 5 species for example and then you see the success. Normally whats missing is the monitoring success. There are projects with a lot of money to do something. It is assumed it functions. No one goes to the field afterwards to see if it worked or not and I would recommend to do that.

And do you think citizen science could contribute to that to measure these successes?

This is on the kantonal and national level for certain. I would, it's a bit difficult, if its more local, because there you have conflicts between people. There could be problems between people if there was, so you are a farmer and there are people who have a house as a neighbour, or a datcha, they are biologists and they find a plant. That wouldn't work.

No, no, my idea was that the farmer her/himself observes his/her own soil. Hopefully not the one from the neighbours.

That could be certainly..., they have everything in their hands, yea I think the stuff with the soil they do it themselves afterwards, so that would certainly be... you have to change the protocol, so that people who are not biologists, because the vegetation, when you walk onto a meadow and bumm you have 40 species. There are no flowers and just species of grass and that's not easy. It has to be thought after.

Well I have high hopes for the Vogelwarte (Bird-watchers) with their point system there. What advantages and disadvantages would you see in incorporating the local knowledge and monitoring. Well disadvantage you talked about, that maybe the neighbour... it might lead to quarrels.

The danger for me is always, that's its being understood as surveillance. With ALL-EMA we have 150 km² in Switzerland, that's very small and we are not saying anything to the people who live there or the farmers who

work in that squares. We are not making any special report. Its always hard to understand, that with the monitoring we have a... what we are looking for is to have a picture of the whole of Switzerland and the Alp and not something for the areas where the data is extracted. For me this is..., for many people don't understand that well. They think, if you measure something here then you write a report: "Point 21: bad". We don't do that. You have to explain it well. So like you did in the beginning (the introduction not recorded). Something stays scientific and neutral. This is data and ... how I said.

Yes understandable. What do you think in the whole, what should be done to improve the state of biodiversity? So to protect the mountainous regions as you said before.

To reduce all the drivers... So for example, I work for the Federal Bureau for Environment (██████). We work with the protected areas and additional to that species protection and all these things, but at the end this is..., if we really want to do something for biodiversity, whats important is all the rest. That means for example with financing, there are so many millions in misaligned incentives, so 40 times more misaligned incentives than for biodiversity. What do you do with that? You know that there is so much money to make something worse. You have to start with that, I think. When we have a long term strategy with system use and all those ideas. It not only has to be biodiversity but also in other areas, so energy, residential areas, water, refuse so everything, so now... when we do something for biodiversity, we have to work with all of the rest and not with biodiversity.

Do you think there is a, still is a sustainable management in the alpine area at the moment? You were talking about the changes with the big machines, so on average in Switzerland.

I think at the moment, it is always a bit worse every year, the problem is we have... the people always think, they think too narrow, that means, when they do the renewable energies, this is good for the climate for sure, but this is terrible for biodiversity in the location in the Alps. You mustn't think only for biodiversity, or about climate, or agriculture, or nutrition, you have to bring all those things together, so if you have less pesticides, its better for health and also better for biodiversity. These are such stories and you could make the energy like that, that it influences biodiversity less, you just have to take everything into account. And I think what is difficult at the moment is to break that seal and that biodiversity is not only a problem for the people who construct wind turbines. You have to work with it and it could be good, you just have to communicate and understand each other. This is a lot...

Its of course a huge topic, but... how do you assess the subventions connected to biodiversity for the farmers? So far does it function rather well?

No I don't think so, because with the direct payments you have a lot of mistakes normally. In this law, it says it has to be sustainable, biodiversity is important, but if you look at the whole system, I cant find the word.... Its not 100% logic. There are lots of things that go into one direction, and others that go another way. Despite the direct payments, there is always too much nitrogen altogether. Well it's the problem with animal husbandry. Its like with the climate and biodiversity, you have to really think towards the goals and not only: "aha theres biodiversity here, then we have 500.000 mio SF per year" and then for the others we so much left. It has to go together.

And one thing in particular, the melioration measures, whats your opinion about these?

So we destroyed everything with the melioration measures. This exists since 100 years in Switzerland and all the structures are gone. Everything is removed, everything is in concrete, the drainage is everywhere.

What do you think could the Älplers contribute towards an improvement of the environment, so of course with reference to biodiversity in Switzerland so especially in the context of global changes, climate change, but also economic changes or population growth or decrease? What could they actively contribute?

So this answer (something) works for all, I don't say that. I think there are many possibilities. We need these animals in the mountains, without these animals there are no meadows with flowers. Its just, it has to be done correctly. I think the biodiversity has to rise in value. So I read that, when you go to milch.ch, there its written that when the cows eat a lot of flowers, then the taste is good. All our cheeses are good because there is biodiversity and that is something people have in mind, but in practice this is not what happens. I think that you have to take back those kind of arguments, so that people do some good work, that they are proud of the diversity of products. And this, it comes with advertisement, the alps are beautiful because they do a job well and that's why there is flowers and cheese. I think if that works, that is certainly beneficial for biodiversity, for the climate altogether in the alps.

So for the end: What do you see in the future of the Alps: landscape picture and management, rather positive? Rather negative?

I am a positive person. I would mention a lot of negative things, I already said that. I see a lot of conflicts, because this is where the conflicts happen now. Many people working there are not earning much money, so it is difficult for the people. I am afraid that there are many decisions on the national level and the people are feeling lost and powerless and I think that there are sometimes good examples, some people are very dedicated and they do, as I said, their job well. They have good cheese, they can sell it well. Also it comes with history, many people don't like to do it, its already too much. Its enough to have sheep and you don't want to do all the communication and I am a little afraid that that might get lost and then the Alps are natural parks with people in a helicopter who build a (something). The diversity is always vanishing. But this could change. We are lucky, that we still have so much diversity there ... and farmers.

Ok that's it already, well already, we have overdrawn a bit. So in your opinion did I omit something very important for the topic?

Yes, can I ask something: Are the questions always the same for all people?

For the scientists and experts yes, for the farmers I have another catalogue, but with similar questions to compare the groups, but formulated a bit different.

I was thinking, for me this is suitable.

So far it was working quite well, last week I have been to an artistic director of a theatre group (talking about the theatre guy and other interview partners and the size of the work, its too big...ending)

[E3]

Then I would start: What is your professional background?

I am an engineer/agronomist from ETH and did a dissertation in genetics, animal-genetics.

And for you, what would you describe as your expertise?

The experience from the Alp-inspection, what we are doing there. I am the secretary of the farmers association. Coming from that, the contacts and the problems of Älplers and the situation. We do every year in the 18 (8?) Zones the Alp-inspection and the inventory we are doing every 18(8?) years of the Alps and the biodiversity, the reptiles for example are included sometimes. It gets talked about or recorded and then we also have every 3 years the recording of biodiversity for the direct payments and monitoring the biodiversity of maybe 60% of the Alps in Kanton Fribourg. So there is data available.

Great. What kind of relationship do you have to the Älplers, you said the Alp-inspections.

Every year we create our yearly report and the reference is through the membership of almost all Älplers in the Kanton Fribourg in our farmers association. I take care of the problems that might arise, all sorts of problems. So what comes around: water, rocks, direct payments, new constructions, so we give little subventions for constructions, sometimes social problems, neighborhood problems. Everything goes through us. Every year we have something of everything, from what I just said.

A big task

Yes well, its not 100s per year, but yes, very diverse, different.

So how would you differentiate the different profiles of the managers in alpine agriculture. I have differentiated economically, so basically people doing the Sömmerung and people who are farmers all year around and with other interviews they said with the Bergzonen I to V, could differentiate.

Maybe age. There are whole year farms, which have Alps, we can see that very well with our Alp-inspections. They manage that together, that's something we record every time. So whole year management and only Älpler in summer. So if they work for someone, who has a farm, that's a second difference. So whole year in itself, then as an employee for someone who has a farm, or for someone, who does not have a farm. Then theres a difference if the Alp is managed from the valley or with someone up there, so that's a very big difference. And age for sure, its not the same if you are a student and you do it in the summer break, or a pensioner with or without agricultural experience. Then also an owner or leaser, so when its about investing, then theres a difference.

How high would you personally assess the amount of knowledge about biodiversity and its dynamics?

From Älplers?

And mountain farmers yes.

What kind of assessment shall I give? So some know very much. With name and, there are some who are very good ranging to very little knowledge.

That's what I am used to hearing so far.

Mountain Sorrel (*Rumex alpinus*), they all know that one. And you have to differentiate between good and bad ones, how was that in german: mauvaise herbes – Unkräuter (weeds), so that's a bit extreme, but they know how to fight the weeds – manually or chemical. So that's what they know, but they don't necessarily know a lot of names, so coming from that: From very much to little.

What kind of influencing factors do you think exist on that knowledge?

The training most probably. Training and family surroundings. If the family has some knowledge about it, the parents for example, if they already are interested. With animals it might be easier, there are not that many. Reptiles and insects is also a possibility. Animal biodiversity is known with all of them, everyone knows what is a wolf or a deer, so that's for certain, or what else a lynx. Maybe there are 10 species or so. With birds its probably less. Predatory and non-predatory birds, so that difference, but with mammals, I don't know what would be coming there. Birds less, reptiles, I would differentiate between 2 different and insects much less. What was at the end, ahh yes the training and then the personal interest and family environment.

How do you assess the dynamics of the knowledge, so what did happen in the past? Did it increase, did it become less?

No idea. I believe they take care, so the grass is growing well. Good and bad you can differentiate and in every area, there are places where its more or less moist, more or less dry, where there is good grass, all counted together, that's multiple plants. I think everyone knows, everyone associates with plants, if they are location adapted plants. They rather have the location in mind and know if its good or bad plants. That, I think most of them should be able to do that. They know whats on there (on the meadow), because of pasture management. They do know if it has more or less grass, if it is good or bad is and so on. If it's a mixture of clover and grass, or with dry locations, wet locations, they do know that. But instead of knowing the plants, rather the location, what is better, or what would be necessary for the animals. I think rather that you could assess.

Yes that's worth a lot, would be a different level, but that's having an influence.

But this would give the information, what they actually know about the plants. That's important, as they know about the plants, they have on the Alp and if it's a dry location, they know more about plants adapted to dry conditions and if it's a more moist location... it is a difference, depending also on the height: higher location, lower location, drier, wetter. These are all different axes where you can notice the different proficiencies.

Is the local knowledge in the area of biodiversity promotion already in us? So I was thinking about result-oriented payments...

So biodiversity payments on the Alp, this recording, was something we did. Its measured in percentage. I think there were 6 indicator plants. So from a list of 50 plants you had to have at least 6. And from this 60 (50?), there were 2,3,4 locally adapted plants and from that list you had to have 6 and on the Alp you had to take several points, so locations and look at the m². So we did the method of the Agridea, you can ask at Agridea. Concerning biodiversity subsidies you can ask there. We have done the training for the experts. The experts are farmers with good knowledge or biologists and we had 4 or 5 who did that. So Agridea said how they had to do it. Taking the location: north, south or so, or steep, flat or so, wet, dry and depending on the type of Alp they had to disperse the collection (? , maybe the money). And then you have to make an estimation, if from 4 Bund 2, they had 6 plants, you have to estimate for the whole Alp in percentage, how much that is. And what they know about biodiversity, that is mostly that. That is the percentage of the area, where they get money. Do you know what I mean? For what its about, that accounts to 60% of the area, for example 100 ha, 60 ha with good biodiversity, whats on there and not even. That's whats corresponding to the most.

Well its about money and then, that's important.

I don't know if it comes later, but it's a sign for the level. And many who said with intensive agriculture and blablabla, its not intensive at all. With every Alp-inspection we do, every year more, you can notice that you can't do it intensively. It is so extensive. If you have no street, no water, for multiple reasons, contrary to what certain people might say, you can't manage it intensively, what certain people are thinking. Not because people are putting away cubic meters of liquid manure, so that the storage tank is getting empty, you cant say its intensive

and mineral fertilizer is being brought very little. At the moment, I think less and less. Before maybe yes, they brought phosphorus up, but nitrogen very little. It's not worth it. So this quality we have at the moment, we have since a long time.

Indeed I will come back to that point later on. With the direct payments for biodiversity with the 6 indicator plants are there measures to actively promote the knowledge about that?

I don't think so. It's a recording of the inventory, we are in 21. In 14, 15, 16, in these 3, 4 years that was done, which really was an inventory and if, there are no measures connected to the biodiversity subsidies. So everyone can take measures themselves, if they want to, but on the other hand this is not recorded anymore. That was recorded once, now there is only the control and they are having a look if it's correct or not. In most cases it's correct. That is only an estimation, but there are no mandatory measures. What was there, is there, most probably.

To the third part, methodology of the study, so for the survey I still have to work out. Which indicators would be suitable to record the local knowledge?

In connection to local indicators of ...

Biodiversity. So as an example: I was reading about ALL-EMA, the monitoring program and I was thinking the additional indicators, where invasive species were included or single species that are a little striking, where you don't specifically have to be looking for.

But with that, which questions are you posing for example?

So I would ask for indicators. Let's say invasive species: Did you see invasive species somewhere in your management area, if so how often. In that direction

If you are talking about invasive species, are you talking about local or imported species. Do you do a differentiation, for ??? Caucasus...

To be honest, I haven't thought about it.

That is something that might be..., they have to be able to understand, that when you say invasive species, they need to have a connection to what is an invasive species.

Well I probably would take one particular one, that is spread and where I know that it exists in the area of Fribourg.

There is one, I don't know the name in German... fuger... (looking up the name and getting some stuff), there are maybe 4,5 typical weeds and they know what's about, so with the local name. And then there are the others, the not local species and there I would ask straight to make a differentiation. That's correct that invasive species have an influence on biodiversity, for plants, for animals, the wolf, that can have an effect, but we don't have enough of that.

Not too many wolves in this area

On the other side, in Wallis and Graubünden, but there, there are a lot.

The wolf is always a controversial topic, also in Germany.

About the wolf in Graubünden, I had a meeting with a government councilor there. The measures are not good enough there. They can't protect sufficiently, they cannot pay sufficiently, everyone is overwhelmed with the wolf.

I heard that sheep herders in Wallis partially abandon their Alps, saying it's not possible anymore.

If the goal is to remove the human from all Alp areas, also the tourists, then they can continue like that. In many locations they will lose like that the animals and the Älplers. But about that, we don't have that much. The lynx is not doing that much and the wolf is not invasive, so that they would pressure other species, that doesn't exist. But with plants it's important because (he just remembered the name) ferns! That has a big influence, if it grows than it covers everything and of course the ??? - grass. The quality of the Alp is bad and if the biodiversity is bad and that people noticed and that's the reason why the Alps are so good. In dryer locations to have a good biodiversity is easier, it's there, the grasses and everything. I would differentiate between local and not-local. I would give an example, so with ferns, just give some example.

I was thinking about to work with pictures to avoid the names.

Heracleum mantegazzianum, Giant hogweed

Oh that one is poisonous

I don't know if this one is in Sense (-region), but every now and then you have it, but in Kanton Fribourg not very much. I don't have the feeling that our Alps are invaded by certain plants.

Well it's part of my study to find that out, what's out there. I will skip the questions about ALL-EMA and IPSuisse. (Talking about IPSuisse, shouldn't have mentioned it)

They work with a label and to create a label for 100 days on the Alp. They could do for grass and mountain cheese and label it with IPSuisse. That could be done and on top, why not. For the farmers that would be an easy measure to get a little more, especially here in the Voralpen, there is enough space, it probably wouldn't change anything with management.

I also think it's possible, but I would be curious in which way it would work.

...Mountain cheese...

One point of the survey, I am worrying about is the format, so I get some answers back. (explaining him the circumstances)

We already have done a lot on paper and also electronically with google. The flowback is 20% to a third, depending on the survey. I did a survey about ??? and send it out (construction site noises) and got back 230, 250 from 600 that I sent and we did one about tourism, where there was a bit less coming back. When you do Sense, I would make sense to do adjacent districts, are you taking Bern as well?

Is planned. Tomorrow I see someone from the Naturpark Gantrisch.

So you can do over the whole park. With us in Schwarzsee it is not very big. It's much bigger on the other side. If you send 200, 300 surveys you would get 40 back and the power of 40 surveys....

Is not very high

It's nothing, but in every case I would do online and paper. In that area some prefer paper others online. The point of time is winter.

For the point of time, I already heard that November, December is supposed to be a good point.

And January. We can also, every year we got winter classes and there we could... if you take the whole Sensebezirk, then we can help. We can give it to them, or we can send it by letter as well, or you want to do everything from Belgium. We can offer that we send it with a letter from the association president and me.

Many, many thanks

And then, that you send it multiple times, 2, 3 times, I think is important. One time earlier, one time later.

Many, many thanks, I will certainly come back to this offer!

In Kanton Bern, we can't do anything, but maybe, yea maybe Gantrisch park, they have a lot of Alps.

Yea I have to ask there.

Otherwise you would have to, but you could do that anyway. So we have the data from 600 farms, I just have to check with the Kanton, if we are allowed to do that. The data is coming from the Kanton, for such things. And for Bern you should go through the Alpwirtschaftsverein of Bern and also ask the Kanton. The direct payments system is called GELAM and there you have to make a request at the Kanton for a record of the Äplers in the area xyz, then you can get to 800 or even 1000 farms, if you want and then you can send it to them. We have approximately 600, well not quite, approx.. 200 in Sensegebiet, there you would have to have a look if you do everything in German or French.

Maybe bilingual would be better to include the region Gruyère.

Kanton Fribourg is almost 600, so around 590, 400 with Alp but 600 farms. But Kanton Bern has 3000, 4000, much more than we. Can you speak French?

I can speak French, for scientific purposes it's not sufficient though.

Maybe you can work with crosses and so, you have to think well about it. Many questions with a cross, multiple choice with comments. They like to do the comments. They are writing. So basically they like to participate. You have to explain it to them well, if you are starting with biodiversity, then all lights might go red and if you write it to fight the wolf

Not a bad trick. If I will go straight like that, I don't know

That's important, you have to think about, how you want to deliver that.

(talking about the hypothesis, that there is a lot of knowledge present)

Well that's a start. If you tell them: We have a lot of biodiversity, and this biodiversity we have thanks to work over decades and you want to see and look and prove it scientifically, then they will probably participate, because they are in the positive light, if you start saying they did a lot of good and this is an evaluation of their work.

Well that's the truth, the Alps have that high biodiversity, because the management is present.

Don't do the biodiversity in the Alps is not sufficient and it needs to be improved and more control and so on. So over the questions it's not so bad, but you have to have it in mind. You have to ask questions that ... if you pet an animal, always in the same direction as the hair is growing. Just don't be too aggressive, otherwise the response rate is lower.

To the fourth part: your personal impressions basically. What changes did you notice in the alpine agriculture and landscape management?

Less maintenance because of predators, especially lynx, no wolves, lynx has almost no influence. It is just an influence on hunters. So it's not going to be intensive! We are blocked with the amount of Normalstöße and it's certain, a few animals every now and then, it's not getting more intensive. Allowed is only as much, as the state allows, as much as the Kanton allows. If you have 100 Normalstöße, or 50, or 32, or 14 then you don't have more. In most cases there are not enough. For the direct payments you have ca. 24% plus/minus range in possibilities to go over or under, after that you are not getting direct payments anymore. It is respected quite well. So not enough, that people are against the 24% every year and that there is not enough pressure on weeds, you have

that quite often. Its not very bad, the direct payments, the Alp-contributions have the goal to assign more animals. In the Kanton Fribourg, that's less the case, but in other Kantons there are clearly not enough animals – Graubünden, central Switzerland, with bigger Alps there are clearly not enough animals and they are not getting forward. In Kanton Fribourg there are some points, where its like that and if its like that, there are 2 reasons: either too extensive, too much work, so for the farm in the valley or too steep, too difficult, too much work. So whats important is below 1600 m, where the treeline is. So below the treeline, that's very important. Above the treeline there is less pressure, so some plants, but in general its ok, but between 900 m and 1400 m, there the pressure from weeds is very strong.

And changes with the climate, structures, so streets for example, settlements, or also in social or economical structure, what has happened there in the last years?

The extensivity is the consequence from a bad connection. There are 2, 3 sheep Alps, where the people are not going anymore. Its too cumbersome to go there. Its not possible to park the animals at night, to fence them in. So the effort is too big, the Alp is too small. It is very difficult to directly reach water and they gave it up completely and now soon there will be. What was the question again?

(repeating) for example, one Älpler told me that a few years ago he had no more water suddenly.

That, if there is no more water, you fly with the helicopter. We already did that 2 times, in 2013 and 2018, we did water delivery. And there is being more made for water, eater connection, water pipes and so on. Water at the moment is not the limiting factor. With one factor alone, in most cases its not enough. Its not only water, not only road, not only wolf. It has to be multiple causes. So its steep, no road, no water and the wolf on top.

Bad combination

That's very bad. Even if the wolf is not there, if its very steep, no rad, too small. Maybe with the generational change there it happens. Too much work, too big farm in the valley, too many animals, bad economic efficiency, divorce, who knows. Suddenly it is lacking with the work, the necessary working hour to do the Alp, there is not enough money to pay for that, too few employees, too much work for the farm manager and the people who are on the Alp and then they do the minimum what they are able to do and then the forest is spreading. It is usually a combination of different factors, that you know. If you ask the question: "what kind of risk do you see for your Alp?", so not only water or predator, so I don't have a negative attitude against the wolf. It's a fact, it is a huge effort and a huge amount of stress, its like that. So with economic efficiency and size, they do know what is the issue with the Alp, what they would like to improve.

So one reason for the change would simply be economics, that the steep slope is not being mowed, because its too much work for not enough...

Yes, that's what you can ask [REDACTED]. Do you have him on your list?

Unfortunately not.

He still is in the farmers association and he knows the whole Schwarzsee very well. [REDACTED]. He is very nice and you can say to him, you are coming from me and he had a few health problems, but now its going better, but he can explain a lot, he knows every stone and about this Alp meadows, or sheep meadows, he knows about it. Its too small, if they could have 400, 500, 600 sheep it would pay off to have a herdsman, but with 150 or 200, its not worth it, to have a sheep herder. Its also impossible to have dogs and with or without wolf, its hard.

And for example the water shortage, what was the cause for that in the last years?

On these Alps water shortage can be a factor, if the investment is too big, for 100 sheep, they don't do that. In that area, with 100 sheep for example you can go down. Not everything gets eaten, which is a stress for

organisation, but in maybe 8 years out of 10 you can go there. And up there, there is no mountain, no forest, its not so bad with the sheep, you can keep the forest at bay quite well with sheep. But the question was, why water? So if the whole of Europe had a, like it was the case in 2013 and 2018, an anti-cyclone, a high pressure. We have the problem here in Kanton Fribourg, that the mountains are not high enough to have snow. In Wallis, Graubünden or central Switzerland, you have much less of an issue, because the water comes from above, from the snow, the melting snow. But in Kanton Fribourg, we don't have that and if you are at 1600 or 1800 m up there, or 2000 m then, if the water is not coming from the heaven, then what do you do? You cant pump it up, that is the issue. So that is the main factor. And else it is karst stone, so everything is flowing downwards, its not holding the water, but this is the reason why. And because there usually is enough water, when it has rained 2, 3 times a month, that's sufficient for the sheep, and to hold the water, that worked out, but if you are in the situation with high pressure and high temperatures over a long time, you have a big stress, because the animals are drinking more, that's a difference as well. Most probably back there, there were very few days, where it was above 30° on the Alps and if they have to spent a few days at 28°, 29° then the animals need a lot more water and what usually is enough for a month is gone in a week. That is the issue, that the whole management is changing because of 10 days, 10 hot days. So water, the amount of animals and the location was usually in an equilibrium.

Well one big system, where everything is influencing everything. State of the biodiversity, you are assessing as good, so even very good, if I understood that correctly?

Yea pretty much

And because of the location simply, because only extensive management is possible on the slopes.

Yes and the limiting factor, especially in Sense, is the type of rock (soil). If you have the Flysch or Karst. Flysch is it the same in German? Its very wet. Flysch – “mixture of coarse-grained rocks and fine-grained rocks”. And there the problem is, its very ... if you have a Flysch area, you have earth on top and because its clay-rocks, than its (the water) is not going through and Valley Höhli, that is a location in Sense, where the whole village came down and that's typical for Flysch. Flysch at the bottom and earth on top and then pfuiii (going down).

Everything is sliding, yes.

Schwarsee area as well, at left when you come in, I don't know exactly where...

From the family Feyer the Alp, not Cerniets but Längmoos, below that one its sliding.

Yea everything is sliding there, that's Flysch area. If you come from Bulle, through Corbières towards Schwarzsee, la Berra too. This is all not the best location for plant biodiversity, because there simply is less growing on it. What was the question again?

Simply the state in general

In general? Very good! Over 60% of the area, even more, so I don't think that its bad. So without, you were asking the question whats about the funding, but without special funding, they always did it like that and where it was bad it stays bad, so in the Flysch area.

How do you think a cooperation between managers in the mountains and scientists and experts, also in the Kanton, could be promoted?

Promoted? To promote that a goal is necessary. A common goal. Otherwise you alienate the managers. If it's a control by the Kanton, then they participate and have a look that they do that correctly, but with promotion I don't know. Money is always a good way of promotion. If you realize for example with the survey, that farms are incredibly important and there is money from a program, foremost to push, then of course this is a valid way, but otherwise they tend to cooperate.

So in general an open attitude.

Usually yes, not like I never allowed that, I like being an Äpler myself, I never allowed that they... So if you come with control and penalty then they don't like it

No one does

But if its some xy project, without consequences, and to show something without an idea, that its going to get stricter or, well its strict enough, then ... they are pretty open.

(talking about the Alp-inspection books he gave me) so its 400 chalets, one third of that is 150 and 10% of that is not much, so you should expand your area and do a French translation and look for chalets in Bern region.

How do you assess the connections of direct payments to biodiversity measures? Does it function well with the system?

Yes. Before the last change of the direct payments, 7, 8 years ago, there were not direct payments for biodiversity. So 8 years ago there were no direct payments for biodiversity on the Alp. That's the next point, you can ask at Agridea, but it should be that way. They were very well received, many participated in that, over 80% I think and when there is money coming in, without changing anything, then its possible.

Tempting yes. The melioration measures, how do you see them in perspective of biodiversity, they are partly criticized.

Much has been done and the biodiversity, apart from directly underneath the road has not been influenced greatly. A huge amount of intensification did not happen. There is simply less people, less arms/hands?? And then you need a street, otherwise back in the days with us, there were a lot more people on the Alp. I think on the chalet, it has an influence, it certainly has an influence on the management type, but on the other hand I think there is no big influence on biodiversity. Then maybe you can more easily go up there with the tractor and you take liquid manure up there and you can bring it a little further, but the influence is not so bad. That's negligible, a small influence maybe. On the other hand, so it does not have an influence on where the Alps are bestoßen (being managed with animals), but it has a huge influence on where the Alps are not being bestoßen. There is a biodiversity loss.

What do you think could the managers do, lets say with events, like that water shortage, what happened in the last 10 years twice, if something like that should get more often in the frame of climate change, so with the warming, what could the managers do to conserve the environment?

Not much... simply do the management, they can adapt the management to too much or not enough water for instance. And that they did this year, they came down, as there was too much water, or where it was hailing down. There was no feed anymore, so they came down. There they adapted, that shouldn't be bad, if its just one year. If its not grazed enough, it might have an influence on avalanches. That's a bad side effect. Its known that grazing on the Alps is beneficial to reduce avalanche risk, otherwise it becomes quicker a slide. And if its too dry, they try not to overgraze, so that a year later the whole system can regenerate on a good level, so that you can continue doing that.

So basically a sustainable practice

Yes. That's in the interest of the people, at least in Fribourg, we don't have much concentrated feed, that is transported up there. If there are special conditions, the can have it in the chalet to feed the animals, but usually with us there exists not much that goes further than the adaption to the weather. In other areas, they give a lot more concentrated feed, because they produce more and have more animals and so on, but not in Fribourg. They just have to adapt for when there is too much water, or not enough water. And when they do that, the

consequences are not too bad for them later. If its too wet the turf is bad, that has consequences and if they are eating too much, if its dry, then that too. The grass is not good then. So these adaptations for the alp management practice they need to do.

But there are enough free spaces given, so this is possible.

Yes, in the worst case it means more pressure for the valley area. The Alp area is a higher level, the ones who will suffer are mainly the lower levels. Because the animals are going away, maybe to another Alp and when they finish early they come back to the valley and sometimes it can be 2 weeks, 6 weeks, a month early and the grass that is eaten down there is not being landed???, which is leading to a problem with the ???, but up there less.

And very much in general: so we are coming to an end, whats your assessment for the future of the Alps, rather positive? Rather negative?

Rather positive, if the state continues the support.

Very good.

The state is important, but also it could be tourism, doesn't necessarily need to be the state. If we really want the wolves, then it is a decision for the society and a problem. The people who cant work at the Alp anymore, its not a big issue, they will earn the money somewhere else. This is more a socio-cultural issue.

The landscape picture would change drastically.

That as well, but this is important. There are certain Alps, where its really difficult, where working is very difficult. And the life has to be adapted. Or as well the prices, the product prices, or the product demand, for more cheese for example. If there would be no more demand for mountain cheese, then we would stop and people wouldn't milk up there and the farmers who are doing Greyère and Vacherin, if they don't have an access with the street. And what else, too big pressure from the purchaser. If the work is keeping to be undervalued ..., if its not being valued anymore and not seen as a necessity, then its going to be difficult and they are going to give that up. And you can see that, well not so much in Fribourg, but for a sheep meadow over 2000 m and 50 sheep, there the sadness is limited, but in the Jura, Watland – Jura, they have a killed some cows there the wolves and that inducts a wholly new type of pasture management. And if that then is fun or not is a question. Other areas, like the Wallis, they already in some cases reached their limit. But otherwise, if the federation keeps on supporting, if the main problems do not come to a head and if the support or the possibility for meliorations are given, then that would be the third reason. If the melioration projects are legal or are getting supported, that's of course important. So these three points.

Ok at the end, did I omit something very important?

Maybe with the biodiversity you can make a question like that, that they can show what they know. So with invasive plants you give examples and then you can ask what they know and let them describe. So about mammals ... but what kind of reptiles, or there are not that many and the tritoral pest?? Some they know it, but they don't know the name, its only a proposition. Its probably going to get difficult, if you know tritorale pest, as black-yellow or yellow-black, so its difficult to name it. With plants it's the same thing, the 50 plants you are supposed to be able to identify. Then they know 4, 5. But then questions to what they can actually do, so to list, but I don't know, if there will be a lot coming back.

I shall see. At the end, do you have good advice you can give me.

So we can do the distribution of the survey, as a letter. So my advice would be to do that together.

With pleasure, with pleasure!

I mean you can do it yourself, but as an advice.

No... I would prefer the cooperation

What else... the questionnaire testing, I would give it to some Äplers as a test balloon. I do that often. If you give it to the president or the ex-president of the Äpler association, they know it and they are motivated and if they read that, they give you good advice and they know if you are making mistakes. Or if you have a position, or questions that are disturbing. I'm a farmer myself and I know that its not only possible to do it nicely, but that it is also not imbalanced, just that there is no opposition syndrome.

[E1]

Shall we start now?

Yes is good

(explaining how long it will take) What is your professional background?

I studied agronomy at the Schweizerischer Hochschule für Landwirtschaft. I grew up in the Sensebezirk in Brünisried, next to Plaffeien on a farm on almost 1000 m, so almost on the height of certain Alps. We also give our animals to an Alp, to the Kaisereggalp. I am helping as well with the driving of the cows over the Alp, the Kaisereggalp, in that case. My wife is since this year co-owner of an Alp, so I'm working regularly on a Sömmerungsbetrieb.

What would you describe as your expertise, your subject, where you are the specialist?

Most certainly with the contribution payments for the Sömmerung (Sömmerungsbeiträge), eidgenössische and on the kantonal level, there is both.

To the profiles in the alpine agriculture. (explaining how I differentiated) ... mountain zones I to V ...

I to IV

Alright, there I got wrong information as it looks, what do you think for classification, what else makes sense to consider for differentiating?

If we delimit the region Sensebezirk, the lower part is valley and hill zones, there are these 2 differences in the flat part, then there is mountain zone I to IV and in the Sensebezirk we have mountain area I to IV, there is, if I'm not mistaken, only one farm in zone IV, which is not managed by a person from Fribourg. If we delimit this region, Plaffeien, Schwarzsee we speak about mountain zones I to IV, dependent on the height and slope steepness on these areas and these are the year-round operations. I also have connections to the Äplers, if I am allowed to jump a question back.

Of course yes

I am privately engaged in the committee of the Alpabzug (festivity driving down the cows) in Plaffeien. This is maybe one important information in this context. This would have been last Saturday, unfortunately we had to cancel it the second time.

Yea I read this, its unfortunate. Because of the sample, so I'm meeting tomorrow with a representative from Naturpark Gantrisch and my thinking was to extent my survey to Kanton Bern as well, while primary the reference is to Sensebezirk here. How high would you assess the knowledge of the managers about biodiversity and its dynamic?

Are we talking about biodiversity flora and fauna, or only flora?

Flora and Fauna

Very heterogeneous is my assessment. There are several, who are interested in it very much and who know very well about it, but I think with the big majority, that their knowledge is not very big at least in this region.

What influencing factors exist on it?

Certainly the consulting plays an important role, especially Grangeneuve (farmers school) is very active. They offer field tours as well, so directly on the Alps, or in the mountain zones, where they conduct consultation events, but all of this is voluntary and the participation, depending on the topic... if its about the wolf, that concerns the most, compared to a rare plant out of my experience. This is an approach that works. Since 2014 there are those biodiversity contributions. With the direct payments, where you have to reach a certain amount of indicator plants.

These are the BFF right?

Yes BFF 2 in the Sömmerungsgebiet and that was contributing to, at least with some and their farm, they have gotten themselves assessed from experts, from outside and also got receipts of how many plants were found in the sectors. What are the genetical..., the type of biodiversity rich, the valuable plots. I think that contributed, that the one or the other engaged with it.

How do you assess the dynamic of the knowledge, especially in perspective what was happening in the past?

I think this heterogeneity was always there, it certainly will also exist in future. Well the introduction of the BFF contributions in 2014, was certainly beneficial for a more intense engagement of the people with that topic, because there is money to get and this is an incentive. This quality will be re-examined after 8 years, so there will be a report, how did that change? Positive or negative, numbers-wise and then they have the up-to-date report, which is an instrument for sensitization.

So your assessment for the future would be rather positive, that the knowledge will be growing?

Yes and also generally the political tendency. The pressure is rising from the environmental side, be that the reduction of agro-chemicals, to look for alternatives, also to create structures. With the whole-year operations, we have the Vernetzungsbeiträge (networking contributions), which cover the whole Sensebezirk. Where there is also the structural elements are a topic, branch piles, stone piles for promotion of target species, especially in the area fauna. That concerns of course the Sömmerung as well.

Is the local knowledge concerning biodiversity in the region already in use? I was thinking about result-oriented payments for example.

Well result-oriented its in that case, if there are those 6 plants, then there is more area present with BFF 2, while we also know that certain areas will never reach this potential, because the soil is not suitable for that, or the slope is not suitable. There it is difficult to do more in that area, coming from that its hard to say.

And measures to actively promote the knowledge, so the networking projects for instance. Are there existing more meetings in groups for example, where this is systematically promoted?

So these consultation events, where topics like that get discussed and the Naturpark (Gantrisch and Gruyère here) has an important role. They supervise projects, be it fight against neophytes, which goes in that direction. They did action days (Aktionstage) against Himalayan balsam (*Impatiens glandulifera*), or the Japanese knotweed (*Fallopia japonica*). There are different approaches, where the municipalities are also involved, so that they do something on a communal level.

(me explaining the survey) In your opinion, what would be a suitable indicator to record the LEK. The managers, what do they notice, that you could use for biodiversity?

There I have a question (talking about LEK) As I said the fauna is more graspable than the flora in many places. We have for example the wolf that is back in the region since 2007, before that we had the lynx, which came back. We have again eagles in the region, we have vultures. These are animals, that are being discussed more, which are more visible, than some rare plant, which is suddenly there or not there anymore. I think the potential with this is probably bigger, in the topic of fauna rather than flora, is my feeling.

I was thinking as well about, well with the big mammals or big bird, this all would be primary indicators, but also to include structural elements, so from another level, where there is enough scientific evidence that the stone piles, or the branch piles, what you were talking about, are having a very positive effect on biodiversity. And also to ask for that.

Stone piles are being promoted through the Landschaftsqualitätsbeiträge (landscape quality contributions) and also through the direct payments. This is an element included in the perimeters. How many of these were there before, we don't know of course. We don't know how many there are at the moment, we know how many are registered for the contributions. Coming from that its relatively difficult, I also think its quite static, they counted that one time and registered it. They are not recounting them every spring if there is one more or one less. That's rather difficult, but I think by means of ortho-photos, they are in the kantonal map directory, there is certainly a potential to look over the years, because the ortho-photos were newly created to evaluate a defined perimeter, be it single trees (Einzelbäume) for example, or stone piles. Branch piles is in the Sömmerungsgebiet is less a topic, this is more for the year-round operations with the networking areas, there its more a topic.

Do you have yourself experience with recording of biodiversity through managers in the mountains?

Managers themselves not. These first recordings from these BFF, I think that is something very comprehensive, otherwise there were the aspirations for the ancient landscape Brecca (Urlandschaft Brecca) to record the inventory and there were certainly done huge projects in that area. What was there was a workgroup in 1999, I might be wrong, that was the group "Schafalpen" (sheep alps), who were dealing with the phenomenon that sheep generally walk upwards until they cannot climb higher. And there, analysis's were conducted, botanical collections, what plants were present and being endangered through overgrazing. They had tried, there are now the staggered contributions for sheep pasture system, to incentivise the people to realise a rotational pasture (Umtriebsweide), if not a permanent shepherding, to guide these sheep better and to use the potential of the meadows better and also to spare biodiversity. The topic over/under use in this sector.

The 5 year intervals of ALL-EMA, the monitoring program responsible for agricultural areas, do you think they are sufficient?

That is something I don't know very well. Is it done by the federation?

I think AgroScope is responsible for the control itself, otherwise it's a federal program, but if you don't have much information about that, we skip that question.

Yea I don't know it. We here have got the 8 year rhythm of the agricultural policy, these BFF 2 contributions, where we don't know when the next agricultural policy is coming what gets enforced and what kind of measures will come. I think this one here is not much under pressure, so that it would get decommissioned.

Then to the format, one point I am worrying about a little. Well since I talked to [REDACTED] less, but I have to reach the people with the survey somehow and what do you think, what would be suitable? Electronic, on paper, with the telephone, supervised, unsupervised. In that case supervised is not an option as I am simply lacking money and time to go from door to door.

If this is an online survey the response rate... its of course a question of the sample size. There will be for sure a return rate, I would guess 20%, that would be realistic.

I would say I need around 100 answers, to work with it statistically, well I need a rather big sample...

Yes for sure. 100 in the Sensebezirk, is that is not a 1 to 1 supervision...

No, no that's why I want to include Kanton Bern too, so the Naturpark Gantrisch area is included.

We have almost 600 Sömmerungsbetriebe, of that 200 in the German speaking part. That is Plaffeien, Plasselb, Jaun as well. Its not the Sensebezirk, but its very close by and is very similar. With a return rate of 20%, we would be at 40 farms.

That's not quite sufficient. I have to do a French translation.

Yes that's probably more important, and a first time slot with a reminder included, to remind people. And then to choose the point of time so, that it falls into a period where they are not too busy. So maybe November, where they are not too busy on the farms. It's a bit quieter.

That's the information I got too, that November, December, January is a good point of time.

Yes

Well the big sample, Kanton Bern I guess, there is a bit more...

Count on them

I shall see tomorrow, whats coming out of that. The fourth part is about your personal impressions, what kind of changes did you notice in the alpine area in management and landscaping in the last years?

I am supervising the dossier now since 14 years, now the 15th year, so I am on board since a while. We do the Sömmerungs control as well ourselves on the Sömmerungs farms for the contributions. Every 8 years we have to visit the farm, that means in the region I have in principle visited every farm 2 times at least, if not 3 times already. The big Issue, concerning that is that we have with us a lot of private Alps, which are to a big part managed from home, so from the whole-year operation farm. These whole year operations (Ganzjahresbetriebe) are getting in tendency bigger, with less people working. Where formerly many people were working, nowadays there is mostly one operations manager alone, at most with one employee and he can not split himself. You go at best in the evening, 2,3 times a week up, count the cows and look if everything is reasonably well and then you go down again. Rarely there is someone on site for the whole summer, who can actually take care of the pasture maintenance in daytime. Weed control, shrubification control. There we see clearly a tendency, that the pressure is rising. I would say in comparison to other regions in Switzerland, like Wallis, or Graubünden, who are characterised by very big ingrowth of forest area, because pastures are completely given up. With us, if an Alp becomes available, an interested person can be found in all cases. In that perspective its not so problematic, because of the time and the labourers.

Otherwise, with other changes, concerning climate, concerning structures, surface sealing as an example, but also with social or economical aspects. What kind of changes are to be observed there?

I think with the climate you can observe the extremes. We had ... 2015, not sure, a very dry summer and in 2018, where there had to be water flown up with a helicopter. I'm sure [REDACTED] talked about it.

He did

He was more involved with that, as they, the farmers association managed that dossier. This summer we had an extremely wet summer, where in the Flysch area it was very difficult to reach the necessary stocking rates. That

was the other extreme. So these extreme situations are certainly conspicuous, that they cumulate. Socially I would say, because of the increasing workload, the administrative effort to get the corresponding contributions. There surely is a big pressure present socially. And on the other hand structures are breaking away, like a cheese dairy, which is getting converted into a milk collection site in some regions. The people are meeting less, they have that much work on the farm, that they are not sitting together in the evening and meet each other. With several, I think, the exchange got reduced and then there is the opposite, like with Elmar (Älpler, common contact) who is managing a buvette (small place for food and drinks), a Almbusiness (Alm is usually the German term for Alp, I don't know if this was adopted as a name for a Buvette in the mountains on an Alp), that experienced an extreme boom with covid. The regional tourism, the people stayed in Switzerland and did hiking, went to the Alps to eat and drink something. There the people of course are coming to the operation and you get to an exchange with them with all those different people with various backgrounds. That is making the situation more interesting of course.

Then the reasons for the changes. With water shortage, the global climate changes, I guess?

Yes. Covid, you don't get around that.

Unfortunately not. And for the other reasons, the higher workload?

Administrative effort, which is getting bigger. Generally the workload on the farms.

So through efficiency increase? Economical pressure in the end?

Yes, the operations are getting bigger, because several ... the structural change, which was pushed by politics, that smaller farms are vanishing and getting taken over by bigger farms. With their vanishing other businesses are getting bigger and in tendency there is less workers on the businesses. Economically you have to ask the question: Do I employ someone, who is helping me with the work, but then you have to get bigger to equalise that, this "financial loss". That is a chain reaction (Rattenschwanz).

The state of biodiversity in the mountain area at the moment, how do you assess that?

I am assessing it as very good.

And what are the reasons?

We have very strict regulation concerning the fertiliser supply on the Alps, the limited Feed supply. So agricultural policy is going quite clearly in the direction. These are traditionally extensively managed areas, which shall not get intensified. Instead so that these traditionally extensive areas can be conserved. Also with indicators like hares, which are back in the region, you can measure it.

Then how do you assess the quality of the biodiversity monitoring? In Switzerland

That is the question with the monitoring... these BFF 2 areas, do you see that as monitoring?

... as well, it's a bit of a mix

As indicators, the natural parks for instance. They constantly have to contemplate in what they are investing their money. Money is flowing into projects like that, so dry stone walls etc. There are certain monitoring activities. A lot of studies are conducted.

So in general the quality of the monitoring is good?

I think the monitoring is selective, but good.

Then cooperation between managers in the mountains and scientists and experts. How could this effectively be promoted?

I think a lot is done already. For example with Agridea there is a platform for ..., I believe its "Digi Plan Alp", where weed control is a topic, where learning videos about different species of weed were created. It was really a successful project, as there was indeed a true cooperation with the Älplers. Sometimes this is failing because of bad communication, but they are trying to give that along and say: "Have a look at the videos" or, there are these platforms to get informed, but this is connected to the time monitoring. In the evening the motivation to watch such a video might be very small. But I think so, that Agridea is an organisation, who are very active and doing much. We also have normally Alp-excursions, which is organised by Agridea and we go two days a year normally to a always different region in Switzerland. Unfortunately not many practicing Älplers are joining, its more composed of scientists and representatives from the administration. The Alp-mangement associations, the alp-management association from Fribourg is doing the winter-classes, where also technical things get shown and discussed. Partly scientists get invited, who are holding a brief presentation. Also the Schweizerischer Alpwirtschaftlicher Verband (SAV – Swiss alp-management association), they have their annual meeting, where there are inputs like that and also excursions with its members, they are very dedicated.

The sustainable management in the alpine area – I would skip the questions before, as they are in a big part about monitoring – I understood the sustainable management in the alpine area as it is there and is being politically promoted, this extensivity.

Yes

Then, how do you assess the connections of direct payments to biodiversity measures at the moment?

These are relatively high in the Sömmerungs area. Keyword BFF 2 in the Sömmerungs area, where these contributions can be collected and then also for landscape quality. There also exist several measures, like hay meadows around the Alp hut, hay tourists (?) partly. Watering troughs made of wood, wood fountains as watering place for animals. Fences made from wooden stakes etc., where it is tried to conserve them. They not only provide a contribution to the landscape optical wise, but also wooden stakes, when they have a certain age they provide space for smaller animals and are interesting in this case.

The melioration measures, I have heard that they get criticized in the context of biodiversity. What is your opinion to that?

With us it is a bit special. There are these multifunctional cooperatives existent. In the Sensebezirk are 4 big multifunctional cooperatives in the sector, you can talk about community projects there. They make sure they think in perimeters and not everyone having the way to their Alp, that is certainly a speciality in this sector and to my knowledge there are also from the federal side, from the federal contributions there are possible supplements, if the biodiversity is promoted. So biotopes and what not is possible to do.

And then in the frame of global changes, it is not to be assumed that the extreme weather events are decreasing suddenly. How do you think the managers in the Alps can contribute to mitigate these changes?

I think that they continue to manage the Alps in this way. That is certainly an important contribution. So in the context of biodiversity, there was a study, that areas not being managed are getting overgrown. At first biodiversity was increasing and after a few years it went down rapidly, because the light was missing for several plants and I think there they are providing an important contribution to biodiversity. In context of climate its difficult, with climate change its hard to assess at the moment, what will be the optimal solution.

There will come several changes along, most probably and the mountains here in Switzerland are an environment in constant change with sliding slopes and so on. It requires constant adaptation.

I think also the specifications, when pastures are being cleaned, getting rid of the shrubs, that it not all gets burned, but that nowadays there are modern systems where people are abiding. I think in with the climate, that might be an important point with the air pollution control. Formerly they created a pile and two days later it got incinerated and the deal was over, that's different today.

What is your very personal assessment of the landscape picture and management in the Alps? Rather positive? Rather negative?

Positive!

Why?

Because the areas are kept open, the soft tourism which is playing a more important role, which can generate additional income. Especially for our region (Sense), which is relatively touristic. Several Alp huts are offering food and drinks, they have a buvette. That is certainly valuable for the perception of the general public.

To finish: did I omit something very important with my questions?

No, quite complete

Do you have some good advice you can pass along?

(asking about interviews and survey technicalities, talking about important people to contact)

[E8]

What is your professional background?

I am biologist. So educated through master studies. With the natural park I am the division manager for nature and landscape. We are divided into different sectors in the park. From society over economy, well the natural park is widely set up and I am responsible for the part nature.

So in this case also for biodiversity?

Yes, I have biodiversity projects, landscaping assignments, typification a lot.

And your focus area, your expertise, where you would consider yourself the specialist?

That would be ecology. So the interrelationships, mostly ecology. So the general stuff which is important here in the nature park. An expert in one particular area I'm not, but I have a very broad knowledge, a little bit of everything. Specifically improving habitats and such things, which is important in order to make the whole right.

And your connection to the Älplers?

Is relatively good. Well you know a lot of them personally through the projects we are doing with volunteers, landscaping projects. We also are organizing one time a year the "Platform Moorlandschaft" (Platform moorland) its called, where one gathers all Älplers for giving them information about the park, current projects and also to collect their worries. Concerning what is located with them.

So some communication?

Yes and that helps, if you have projects located there and you are dependent on them. Its about constructing trust, which the park is doing since 10 years and I am employed by the park since 5 years. So the relationship is very good after 10 years. It took a long time, but now we are in contact with most of the Älplers.

So if they know its happening on a regular basis and is reliable

Yes, sometimes there is the fear with the nature park, nature is in the name, with new regulations etc., but that didn't happen and they recognized that after 10 years, that they don't have to be afraid.

How would you describe the different profiles of the managers? (talking about my differentiation) One interview partner mentioned the mountain zones I – IV.

Yea depends on, I don't know if they are the whole time up there in the zone I... All that I know, not everyone, but most have a farm down somewhere and are up there because of the Sömmerung. They are having a farm at the same time in the Unterland (valley, or down the mountain). They are managing that together with the children.

So most huts in this area are managed by the family, who is owning the hut?

Yes I think so. I don't know if it's the majority, but its regular. But they have of course animals of the others too. They are with both up, additionally with animals from others.

And it is mostly milk cows or cows for meat?

Yea I think to a very big part of the area. They are not that alternative yet. They are not experimenting with new species, its not the most innovative are.

So they are rather traditionally?

Yes I think so.

With the traditions, are they staying up the whole summer or are they commuting?

No I think to the biggest part they are really up there. There are even some farms who still have a small cheese making operation on the huts and producing cheese on the Alps.

You, how would you assess the knowledge of the people managing the Alps, so delimited to their pastures.

Rather low. There are a few exceptions, of people who are very interested, but mostly through projects that generate interest in them, but the majority is rather low.

And that what they know about plants and animals, in which area do they have the biggest knowledge?

Plants, the problem plants of course, but otherwise not much. Fauna maybe, it's a famous picture: cow and snow grouse. And such things that you see. Wild animals and wild birds.

So the bigger ones that are striking?

Yes

Which influencing factors do you think exist on the local knowledge. You were talking about the Platform Moorlandschaft, where I guess knowledge is being exchanged. Are there often meetings in groups or specific consultations?

Not explicitly for the Alp farms, but every agricultural business has to go one time a year in Switzerland, so in Kanton Bern there is a networking project (Vernetzungsprojekt), ecological improvement, which is going for 8 years and in these 8 years every farmer has to be consulted at least once. For what can he apply, for what exist contributions, what is important in the area. There they get informations and the yearly Platform Moorlandschaft, I for example am explaining every year the difference between the thistles, we have in the moors up there species of thistles butterflies are dependent on. There is the Marsh thistle and the Canada thistle and we try to explain to the Älplers what is the difference, so they leave the Marsh thistle alone. So project specific they get information, or with the butterflies, if its on their area, we take them to the field and are showing them the butterfly to show them the speciality. So only project specific.

You have the feeling that, even the butterfly itself, that it is generating interest in the topic?

Yes in most cases yes. If they see it and not only a document or a picture, but the real thing outside, often they are enthusiastic and are enjoying the things.

And with the dynamic of the knowledge, what do you think has happened in the past? So was there more knowledge in the past or?

So about observations and developments. Formerly the people where more and longer up on the mountains or only up there. Today they sometimes have a side-job or something like that. Coming from that, I think, maybe some knowledge is lost. On the other hand, from my experience its mostly the young generations, who are interested in such information. With plants, last time I took some plants with me from the moor landscapes and I was asking what that is and they could discover that. The interest in details seems to be more present with the young generations.

So you would assess for the future, that it could increase?

They seem to be more open for information or things that others are regarding as important and recognize the necessity for assistance. So its single cases, but that's my general impression, that it goes in that direction.

Often it starts with single cases and then.... Maybe its increasing. How is the local knowledge about biodiversity already in use? (talking about result based payments)

There are certain controls organized by the Kanton and the local knowledge from the Älplers, I think is hardly used. Maybe there is sometimes a call for participation in observation for single species, when they see a Black Grouse or a Capercaillie for example. So random encounters like this, that they are reporting that. Also the big predators, that everyone knows, there it might happen as well that the knowledge is gathered.

There are no structured measures to actively conserve or promote the knowledge?

No, nothing structured.

(Talking about methodologic stuff) ... for Biodiversity I need indicators. Which indicators do you think would be most suitable for the survey?

Groups? Species groups? Or single species?

Well yes species groups, but I was also thinking about different levels of biodiversity indicators, so structure elements for example, so dead wood, stone walls and so on, which is positive for biodiversity, not only the primary indicators.

Yes I think that would be... small structures are always a big topic with us, that could be exciting with the discussion. Or differentiating something very general and a pure hazel hedge, to find out if they know the difference, that would be interesting. To see, that's its precious these things.

To quickly come back to the primary indicators, you mentioned big fauna, so that's what's striking. Apart from that... So for example, one interview partner mentioned fireflies, do you think that would also be striking enough?

I think yes, if there are suddenly some. Differentiating the species yes, maybe you underestimate them. Or what else, what is influential for management practices is the species composition. Where is the soil wet, in terms of the plants.

The indicator plants for soil...

Yes these, maybe more knowledge than you would expect

Indicator plants for acidic soil and so on then as well?

Yes

You got some personal experience with data collection through managers in the mountains?

I myself not. We have accompanied a few studies.

What kind of studies?

This year there was a master student from Schweizerische Hochschule who was looking if there is a difference for mowed pastures and grazed pastures with test areas. Otherwise there is from my personal interest to specify when you find something and such things. But specifically field recordings for the nature park we don't have, that would go too far.

One point that is worrying me is how to distribute the survey, also what kind of format. I wrote in here supervised, unsupervised, but to be honest supervised is not going to happen, because of time and money, so its going to be an unsupervised survey, but rather paper, online telephone?

I would say with us, rather on paper or telephone is certainly the method with the highest return rate. They often are saying they don't have time and if they are not understanding the background, than it is tedious. With the telephone you have got them.

If I should decide for the paper, would it be possible to work together with the natur park Gantrisch, that you are helping me a little with distribution.

Yes we could send that, we have an address list of all Älplers and that would be possible.

(Talking about my original plans and scope and sample etc.) What is your assessment which kanton in Switzerland would be a good sample area with bigger differences in Alp and mountain management to my current sample from Fribourg and Gantrisch?

Yea on the other side of Switzerland there would be Graubünden.

Or Wallis?

Yes or the Wallis, those could be the most interesting.

Well they have a lot more the wolf issue there.

Maybe Appenzell is similar to here, but Graubünden, Wallis...

The fourth part is about your personal perceptions of changes and populations. Which changes did you notice in the alpine area in terms of landscape and management in the last years?

In the landscape itself, what I already mentioned, with the Älplers is a change noticeable, that they have side jobs. Former the whole family was up there and now only one generation alone is managing the Alp, this is without support, without volunteers this is not possible anymore. That is in my opinion a major change compared to before.

Other changes, for instance climate and physical structures, but also social and economical, what could you observe there?

I am since 5 years part of it, so I couldn't really observe that many changes, but I think, what I'm hearing in Switzerland, that a lot of farms are given up and coming from that the Alps up are subject to shrubification and overgrowth (of plants). In our area fortunately this is not so much the case. The Alps are well managed. Shrubification we are helping with assignments here in the park, so we could conserve it, but there are other regions where there is intensive down and up (on the Alp) it is given up.

Is there a trend for intensification up as well? Or is this mostly in the valley?

Mostly in the valley, also the hill-zones, but in the Sömmerungs-area there is no problem, also because, in our area, I think almost all areas are having a contractual arrangement with the Kanton, with the financial contributions

And the Normalstöße

Yes maximum of the animals on the Alp is managed, most of the area is regulated. Without that...

And with climate. 2018 there was the water shortage, did that also effect the nature park Gantrisch?

Yes, but rather in the lower parts. On the upper parts they were lucky. It's a very wet area, most of it is flat-moor and that's why, especially in comparison to other regions they were not affected as much.

I heard that from Fribourg, that they even had to carry water with helicopters.

Here this happened only in very few cases. No they overcame this very well.

And your assessment for the reasons of these changes? So that the Älplers are taking more side jobs and so on.

I think that's the development of society that you need more money to finance livelihoods. The Alp management on itself is not profitable, but with the contributions from the Kanton you can manage. Also that children are not interested in it, maybe before kids were on the Alp anyway and took over the operation. Now that is changing.

And the shrubification because of the abandonment... And the state of biodiversity, how would you assess that at the moment?

Rather good in our area

Whats the reason for that?

The most important point is, I don't know how the development would go otherwise, but the contractual arrangements with the contributions from the Kanton. Maximum amounts of animals, contributions etc. This are the most important points. Especially the contributions that are flowing, because otherwise no one would do this anymore

How do you assess the quality of biodiversity monitoring here in Switzerland?

I think, the monitoring that is done, the knowledge that is existant?

Yes there are several programs

Ye I think, in comparison to other countries, we are doing quite well.

Do you think that nevertheless something could be improved?

Yes I think the monitoring is very different depending on the species group. Botanical we are doing well, birds as well, I don't know what is the reason for that, but the Vogelwarte is doing a lot and they have a lot of young people, they never have issues. There are a lot young ornithologists, but in other areas, we hardly know anything.

Which species groups for example?

Insects I think. Butterflies are striking, there the interest is higher, but inconspicuous insects there. Also water areas, there are a lot of flies that are not being monitored, that's were you need specialists. But in general that what you can do with citizen science, with volunteers, where you are getting a lot of data that its lacking.

With the insects, would you say they are doing well in the mountains (talking about the german long term insect study)

I think that there are some losses, but less than in the lower parts. In the mountain areas there weren't that many changes, so shoring, which is the reason for the major habitat loss in the lower lands, is not present up there.

A cooperation between managers in the Alps and scientists or experts, how could this effectively promoted?

This is a bit difficult. I think its mostly down to the reason that the Älplers are not seeing the sense behind the effort that is made (by scientists). So to collaborate with projects, we need to show them how they can benefit from it.

So a lack of communication in that case?

Yes, I made the experience, the last time with the student who was studying the comparison areas, I called all the farmers and asked if it is ok for them and they were telling me, that this is the first time that someone calls them beforehand. They said every year people are on their fields and are researching some botanical stuff and never they were informed about that. They have a contract, the Kanton-areas, that's why they accept it, because they think its from the Kanton, but they would appreciate that, they were very open and happy. So that's why I think communication is often the issue.

I think that might be the reason, what's different from Germany too, that the data collection for biodiversity, be it BDM or Agroscope with ALL-EMA and so on, that these are considered sensitive data and people told me that the farmers are not being informed, where exactly data is collected, so that, the thinking behind this is that there is no manipulation. So the farmer is not saying: "oh people are coming, I have to make things in order now" to avoid that. But that's in the end also a lack of communication... and if the farmers are open and the federal office would be a bit more open as well, I could imagine that they would understand that there is no reason for manipulating anything.

And with the communication, if you approach the Älplers, it is the simple language and to show things with examples, so they can imagine something. With the background of his study, "why do that?" so you can explain with the butterflies outside, they are here and in 2 other places in Switzerland and show it is something special. So examples like this, where they can relate to. Optimally together with production, how do they benefit personally in terms of management practices, that is the main reason, which is not so easy.

Oh yes, what I was thinking, well the interviews with the Älplers I haven't done them yet, that's up for next week. I was wondering how much consciousness there is that the biodiversity is so nice because the Älplers are there and are managing the area and how much consciousness there is, that they are the people responsible for that, that the landscape is so beautiful, that there are so many animals, that's to their credit. I could imagine, that this consciousness is lacking and when they hear about biodiversity, they get intimidated "are there new measures coming, new regulations coming, do I have to pay attention to some things?" So that there is more a negative image, even though it should be very positive.

Yes I agree

With the current monitoring efforts, so with randomized plots of 1 km² size and there randomized as well for mapping and transects. Do you think a smaller scale monitoring could be beneficial?

I don't know, it's hard to say. It's necessary to find out which area it is, as I am assessing it, is that it has to be relatively similar, that you don't have differences. I think it's relatively similar in these aspects.

What kind of advantages and disadvantages do you imagine exist, when actively including this local knowledge?

I think this is always quite interesting. A lot of knowledge gets passed down through the generations and there things might turn up that you didn't notice before. Things you didn't even have on your screen, that you might find out. Especially with climate change, that could happen, but also biodiversity. That you are using local species.

And disadvantages?

Not much

In the whole, what should be done to conserve this good biodiversity in the mountains?

The most important thing would be the contributions to the Älplers, but also what you said before the valuation of their work. Well agriculture has a bad image in Switzerland

In Germany too

You have that intensive management, and the value in what the Älplers are doing, that you show that to the public is important, also for them, so that they continue doing that and with the financial contributions that makes it possible.

Do you think the alpine area is currently sustainably managed?

In our area definitively yes.

I don't know how much you know about the direct payments, but do you think these connected payments for biodiversity are reasonable?

Yes I think so

I heard from some people and read a bit about it, that the melioration measures in Switzerland, with road constructions for example, are viewed at critically in the context of biodiversity and where it gets criticized sometimes that measures are going into opposite directions, what is your impression?

So road construction not in agriculture but generally?

For example there are many alp huts , which are not connected properly to a road and where you need a 4x4 and where with those meliorations actual roads are constructed, so for example.

Yes that might be a point that is contradictory. Road construction is still a big topic, I don't know if that might also be connected to the machines, to make it accessible the bigger agricultural machines.

Could you see that on the Alps, that there is an increase of use of this type of machinery?

In our area again less. Those typical for the Alps yes but not the bigger ones. That again is further down in the valley where they are getting more intensive

And what do you think, you talked about climate change before, how the people managing the Alps could in the context of the global changes contribute to preserve or even to improve the environment also for biodiversity?

Its difficult, if they can do actually something, well yes to preserve what is there, that they can keep on working. We have moor regeneration projects for the park together with the Kanton and it is concerned with climate change. Also with retaining flooding and so on and there you are of course in consultation with the landowners, who are most of the time the Alp managers, or the Alp cooperatives and there they have to agree to the actions taken. And there their contribution is that they are ready to support such projects. Most of the time its connected to less, if its in the forest, or on the open pasture, to less management. They give the area back to nature and they have to be open to do that, which is not easy.

Although with the moor areas the readiness should be there, especially because of the water supply.

Yes, you have to explain that to them and in our case they were immediately ready to cooperate with us. So it was also a forest area that was wet anyway and the effort to make wood there is quite high because of that and they provided the area immediately.

Which makes sense... and in general, how do you see the future of the Alps? In terms of landscape, in terms of management, rather positive, rather negative?

Positive, you can preserve that, what happened in the last 10 years as well, so you just have to continue. I think the nature park is playing a not unimportant role. Additionally in winter time we can support more than in regions where this regional management does not exist.

So would you say that in Kanton Bern there are quite a few subsidies for the alpine regions?

I think so yes

And then a Kanton you would spontaneously name, where there are less subsidies?

I don't know, maybe in the Wallis, Tessin could be. The neophyte problems, that was apparently given up there completely, if you look at certain landscapes, which is also with warmth problematic the situation. Maybe there is less money available for such things.

For the end, did I omit something important, that you would mention?

No, what I already said. Whats important for the Alp management, that you reach them with simple language and to explain the goals and whats in for them, that is the most important question of course. In which way do I benefit, is always the first question, when you ask about something.

They are very busy up there.

Yes that, climate and biodiversity and so on, I think they do know that by now, but for them how they could contribute to that is not a central objective. Rather in which way does it help me specifically for my farm.

Otherwise are there more propositions, ideas?

No not spontaneously, I will contact you if something comes to my mind.

Could you give me some good advice for the way?

Patience, patience with the Älplers and not get intimidated quickly. When first meeting some, they are very rough "What does that guy want?". If you want to enter a topic that might interest them you are immediately in a conversation and you get invited to a coffee and you get to know a lot of things. Its just at the beginning briefly that you have to grit your teeth to get an access to them. That was my experience, when you are working together with them.

Thanks a lot that's it

[E9]

I would like to know your professional background.

I am a biologist/ecologist and am mainly occupied with biodiversity promotion in agriculture and I am also dealing with insects, biodiversity partly, food webs and also with, especially considering the food webs, with bigger mammals, so for example bats.

Ahh I did my bachelors about bat activity, that was a lot of work. How much experience do you have in that (biodiversity and agriculture) area, so work-experience, how many years?

I studied that and kept on working into it, so that's why it is hard to say that. With AgroScope I am working since 2 years, almost. Before that I was also occupied with these topics coming from different directions. So I would say at least 6 years of work experience.

And what would you name as your topic, your subject?

Well the biodiversity in agriculture.

Is there a connection to Älplers or managers in the alpine area?

No, so far not. At least not professionally

Ok, is there in private?

Occasionally

I made the differentiation with the managers out of economic principles, so Älplers who are only doing the Sömmerung and mountain farmers who are managing all year. What do you think could play a role for classification.

Probably how long they are doing this and out of which reasons. Especially with the Älplers. I think crucial is the interest in nature and biodiversity. I think there are big differences between farmers who have a classic farm and want to produce and certainly some farmers and Älplers who have very high interest in nature in itself and the coexistence and the interaction with nature.

That means if you would have to make an assessment for the knowledge of the managers. Some have a lot. So you were talking about the interest in nature of the managers in the Alps and normally if there is a lot of interest there also exists a view on the phenomena of nature and there is interest in acquiring knowledge.

I think there is a big variety in different...

A big heterogeneity?

Yes, I think you can't generalize there.

And the dynamics of that knowledge. Do you think in the past it was more or less?

I could imagine before, if you take 100 years ago as past, then the compulsion to manage with nature was larger, because partly medical knowledge needed to be present about certain plants, which you could use to heal your animals. While now-a-days that compulsion has reduced, but there still is a big interest to turn back to old medical knowledge for instance. So I don't think you can generalize, I think you have to look at the person specifically.

Of course! And your assessment for future processes concerning the knowledge. You were talking about the trend to go back to old medical knowledge. So how would you assess the future development?

Just as diverse as the knowledge itself. That depends on, I think with the training of farmers, for example there will be more focus on incorporating biodiversity in the training, concerning the contents of teaching, then lets say in 1970. That depends nevertheless on the interest of the farmers or the trainees and also on the choice of the training farm, where they it is decided which focus they will have in terms of biodiversity knowledge.

Ok. Is the LEK out of your experience already in use in the biodiversity research and management? I was thinking about result oriented payments, where managers are given liberties with the methods and at the end it is controlled if it was successful or not?

I believe this is being tested by the [REDACTED] and BLW at the moment, so result-based agriculture, if you can advance in that way. I think it will be a big step in future, that you are not paying for certain actions, certain events, but rather for which plants actually exist on a meadow and what kind of value they have. You do that already with the Quality 2 on the meadows (BFF2) in the Sömmerung area and I think this is purposeful.

For these programs, which would be built on the LEK, are there structured programs to promote or conserve that knowledge?

I think I am the wrong person to ask that.

With indicators, well in the survey I need to include some indicators to ask about biodiversity. I was thinking about different levels, so taking structural elements.

So indicators: What the farmers think about or create?

So my plan was to distribute the survey to a big sample of farmers and I need to elicit with my questioning the knowledge of natural processes and especially about species diversity and if I start questioning now: "which of these 40 flowers have you seen on your pastures?" will be little purposeful. I have to, most probably go a different direction. So primary indicators are out, I think. Well I am asking for experience knowledge on the one hand and on the other the scientific knowledge (blablabla)

So I think to ask the farmers with monitoring and so on to compare, which will be easier. I would take those recordings ALL-EMA is doing, so indicators I would ask there. There are plants recorded, butterflies, birds and I think those the farmers should know for sure.

Then with the format, so I can reach as many farmers as possible. I was writing supervised or unsupervised, but supervised is out, money and time is lacking, so I have to come back to online or paper formats. On the telephone it will be difficult, because I don't understand the Sense dialect very well. What do you think could be done in your opinion to improve return rate?

So supervised means like this interview... so yes, to create an online survey, maybe call first and ask to see if they would do that, also send this, so they heard about it. Then the language is important and the construction, also with pictures. Return rate will be higher then. You usually only reach 30 %, the return rate is maximum 30 % with online surveys it will be lower with the farmers. You could let it be distributed through for instance the network of swiss alp farmers or something like that. If you are in Kanton Fribourg if the nature park Gantrisch is included as it belongs to Kanton Bern.

Is included, because Kanton Fribourg is too small in the end and I have talked to an employee as well. They are fortunately up for a cooperation.

I could imagine that their network from Gantrisch and also Gruyère might be helpful.

This part is about your personal perceptions: Which kind of changes did you notice in the alpine agriculture and landscape management?

I think there are more intensive operations. More irrigated areas, more fertilized areas, especially with liquid manure. More intensive, so more animals are being put on the plots and through that it gets more intensive and following from that also an abandonment of pastures. For example abandonment of management practices like mowing, which is important to fight the shrubbification in the alpine area happens and biodiversity is being lost.

With more animals, what I already heard a couple of times as a counter argument that the NormalstöÙe are being legislated by the municipalities. Are there ways to increase these NormalstöÙe?

I don't know about that.

Otherwise, did you notice changes in climate and structures in the mountains, but also with social and economic areas.

This is again a very wide questions. In the context of biodiversity, I would say yes: an increasing amount of structures is lost, because management practices are increasingly mechanized and bigger machines are used. Structures for example stone lentils, hedge-structures and through abandonment of management or very intensive management these hedge structures are lost. With the meliorations for instance these structures are still decreasing and there needs to be a political counteraction, because this are the elements which are very important for the biodiversity. So grazing is principally something good, but too intensive grazing is not. Extensive grazing is beneficial for biodiversity and the structure elements that are being produced by grazing, so also tread damages, wetting of the pastures or stone lentils that can still exist and as soon as a tractor is used there they are removed and this removal is leading to a reduction in biodiversity. So this was happening in the last decades through intensification and if you are looking at it over time from aerial images you can see a strong degeneration.

So aerial images, you mean helicopter or satellite images? So GIS analysis?

Well I don't know about GIS analysis so much in the alpine area. I was remembered a well known reptile specialist in Switzerland who showed that structures are getting reduced through meliorations in the last decades. Also from personal experiences I know that through those meliorations structures are removed and through the aerial images. You can also just do a photo from the other side of the valley.

When we come to the next question: The reasons for those changes, so meliorations as one reason. Are there more reasons?

Also financial reasons of course. If the management of an alpine pasture is not feasible anymore and the pastures are abandoned then you can see a shrubification with mainly green alder and that is less beneficial for biodiversity.

One interview partner noticed, in the area of Fribourg not such a current topic, but that in Graubünden and Wallis many pastures are abandoned because of the Wolf, because it gets to expensive to protect the sheep for example. Did you hear about this problematic?

There are certainly big problems, or discussions about the topic wolf. Also in Fribourg where they shot several wolfs, because the pack acted problematically killing sheep. I think there is a big discrepancy between the alp management and environmental protection.

What is your assessment of the state of biodiversity in the alpine area in Switzerland at the moment? I can remember earlier you mentioned it is very high because of the high structural diversity.

I think you have to look at it more specifically. I think there exists from very intensively managed and very poor in biodiversity to very rich in biodiversity and very extensively managed. I could not say there is a specific point and

you should look at it over a certain timespan and then probably as well focusing on a certain area. The alpine agriculture is spatially a very big area.

I am hearing the main reasons for both negative and positive developments (of biodiversity) is the alpine agriculture?

Yes

The quality of biodiversity monitoring in Switzerland, how do you assess that?

I think it is a very innovational development for Switzerland, that takes a pioneering role within the context of European countries because this monitoring is executed since a long time and always in the same manner and through that it is possible over a longer time period to compare data.

How do you think a cooperation between scientists and experts be promoted effectively?

I think, if you are doing specific projects as a scientist working together with the farmers. Beforehand also taking them in with plans and ideas they have. After that creating a flow of information towards both sides. Then questions concerning practical issues I find very important and that these are taken for scientific work.

So basically the communication is important explaining each other?

Yes because scientific questions should always be practice-oriented.

Do you think a more small-scale monitoring in the area of the mountains could contribute to an increase in biodiversity?

Well yes, but I think in parts it is not really possible to do it even more small-scale. I think with a monitoring the main goal is to get a temporal perspective and do comparisons. That on a small-scale you can only do through certain scientific projects, that you observe on the small scale and that you cannot do swiss wide.

What is your opinion towards citizen science, so for example the Vogelwarte is using it quite a lot, but even there the data has to be verified by them, to see if its really correct.

I think citizen science has got many very beneficial aspects to involve the local population. You get a lot more data and maybe also a sensitization and through that a media interest. The crucial point is, it has to be very well supervised and very well defined. So you get a lot of data but you have to look at them in a very differentiated manner, as it is private people who are doing this and not specialists. So it has to be very well structured and differentiated!

In the whole what should be done in Switzerland to conserve or improve biodiversity?

There are a whole lot of starting points and you have to look at them in a differentiated way where you are.

So depending on the location?

Yes, I think you have to. Well I think the question is too wide. There are so many aspects included that we can talk 2 weeks about that.

Ok, what is in your opinion the priority?

In the whole of Switzerland?

Yes

So for example wet areas. 90 % of all wet areas have vanished, were dried out. That is an important aspect for the climate, where the climatic conditions are reduced or badly affected and on the other side it is also for the

biodiversity this is over a long time span is reducing biodiversity severely. But there are so many aspects and also on a small scale, so I think this question cannot be answered in a few minutes.

This is not really expected. Indeed for me this is one of the more interesting questions, as I am asking for opinions and priorities, which leads to me getting very diverse answers, partially with similarities concerning the reasons behind that and at the end I think I will get a wide range of information out of that. Next questions: do you think the alpine area is currently sustainably managed?

I have said that already. You cannot generalize that, but talking about a trend I would say it is getting too intensive.

So rather a negative trend?

Yes

Your assessment of the connection of direct payments with biodiversity measures is what?

I think there is in Switzerland there a positive trend visible, that there are result-oriented direct payments. But it is not sufficient for a trend that biodiversity is improving.

You were talking about the melioration measures before and I heard from that, that you have a rather negative assessment of these?

It depends. I think that melioration measures often have the effect that they harm biodiversity but you have to differentiate that. Many meliorations are very important for the usage of certain areas. If there is no maintained street going to alpine pastures in higher locations, then these pastures cannot be sustained and following from that pastures are abandoned and that is again rather negative if that melioration did not happen.

So in your opinion the meliorations should be differently regulated or more regulated?

Well I don't know that. I am not an expert for the conditions of meliorations.

How do you think managers in the alpine areas, especially in the context of global changes, foremost climate change, but also social and economic changes, how could they contribute to a conservation or even improvement of nature in the alps?

I think, if all those intensive alp farms would manage their pastures more extensively they could contribute to a big margin to an improvement.

And now again one of those wide questions at the end: How do you assess the future of the alps, its landscape and the management? Rather positive? Rather negative?

Positive. I think there are many people interested in the alp management and with a very practically oriented way of living and that the interest in biology and biodiversity is increasing a lot, where many people are distinguishing themselves from such a way of living that would correspond to the public and I think that many of these people are going to the alps and are doing alpine farming for example. Yea that could be very positive!

At the end did I omit anything very important?

No, but I think you should put more concrete questions, as these are sometimes too wide, where you don't really know what to answer. Especially because naturally there is a very wide spectrum and it is difficult to lump everything together as there are so many political and scientific topics.

Ok, I will write that down below critic. Do you have any good advice you can give me, especially concerning the survey that is planned?

Yes, to ask very concrete questions, that is important and to keep it simple. Because you want concrete answers and exact information and if you are asking that wide it is difficult. It all depends on the personal feelings what is assessed from the people in particular, which kind of main streams they are observing.

Tank you very, very much!

[E2]

How much experience do the Älplers have with the cooperatives?

With the cooperatives, these are usually farmers who grew up as farmers and always were occupied with that from small age on. They are practically always descendent from farmer families. So well the managers, but the employees of course not. The problem are the employees, with the managers you have to be careful. Those cooperatives are employing a person and that can be a farmer from the area or someone like you, who hasn't got much experience.

How they are distributed is not influenced by the managers?

You try to employ people who have a certain experience and the manager, the owner of the Alp has to accompany them. Otherwise there would be problems. For example the Alp where we went up, where they are spraying a lot (herbicides) the former boss was a pensioned butcher, he never was a farmer. That is really the big problem, to find people who are experienced and that was solved by a supervisor who is experienced and who can instruct and watch the Alp employees.

Of the knowledge, with focus on biodiversity, which of the groups (of people) you mentioned would you have most confidence in?

Basically you would have to differentiate that in organic Alps, where they are not allowed to spray. There you can expect that only the most necessary plants are fought. An organic farmer rather has an understanding, not necessarily, for organic agriculture.

With the organic farmer, would you say the employee, or who has got the most knowledge (about biodiversity), if it's the private owner.

That would be the organic farmer. If I take the example from here, where the Alp boss didn't know anything about agriculture, he was a butcher by profession never a farmer. They don't even have the basic training. That is, if someone becomes the boss of an Alp he does not need agricultural training. He needs a training to deploy herbicides and pesticides, but no one is checking that. He certainly didn't have one. That is a gap in control. Biodiversity and so on, no one is interested in that.

Well a little is always perceived. So influencing factors you mentioned the subventions. What are advisory programs, training programs, individual tendencies of the people, maybe someone is interested in weasels out of some reason and does that have an influence?

Yes the community Alps are directed by the guidelines. The Alp management guidelines are being elaborated and they can be individual specific. Coming from that the Alp manager has to advance. For example with the ????-cooperation they even offer classes to show how to spray herbicides.

Well I guess that's how it goes unfortunately. With the question concerning the dynamic of the knowledge you mentioned a rather negative view. Would you say there is a lot of knowledge lost about sustainable management practices?

Unfortunately I have to say that.

Assessment for the future. Do you think this can be conserved or reanimated?

Important are the direct payments. We are not doing that intentionally, it is more private, I get questions about any kind of problem about herbicides or Alp management then the FibL is directing towards myself. I notice that, the herbicide use and we are doing trainings, the FibL does trainings, to show how to manage an Alp without using herbicides, the knowledge is present, but many people don't accept it, because they have modern methods. That is usually the argument, you have modern methods and you want to use them. And that's herbicides.

With the next question: is the local ecological knowledge in the region already in use? You answered that there is not much research conducted about that topic. That surprised me quite a bit. In the swiss constitution it is written that the society has an interest in a functional and sustainable biodiversity and it is mentioned everywhere. How comes that there is so few research about that topic?

Because the direct payments are directed towards the wrong ends. In the management guidelines it is written: the stinging nettle has to be fought and that is totally wrong in my opinion. A stinging nettle is a beneficial plant. Here the knowledge is lacking with the people who are working there. If someone writes a stinging nettle is bad...

Who are the people creating those guidelines?

That would be the office for agriculture (Amt für Landwirtschaft), Agroscope, Agridea were also guilty and involved. They developed this and slowly they recognize, but every time this is included. We have our national committee in Unter-Yberg, the Dettling guy and he says: We are using the modern methods and we stick to the rules and we are allowed to spray.

How comes that, at least with Agroscope I got the impression, that the people there are further than that. How comes that this is not changed?

Because politics, well its quite sensitive the topic, because politics are granting or cutting the financing Agroscope and Agridea. They are financially dependent on them. At the end the FibL as well, but our task is clear. We have to show to the farmers how to manage the land without chemicals. That's why we have more liberties and we can be more cheeky. He was saying that too, that's not only me, I was always reserved and with the classes we were saying that too. We communicated that on organic Alps this is not allowed and the outing has only happened recently since a year, when I was interviewed by several newspapers, when they were doing the movie. But now it is common knowledge that biodiversity is being destroyed even on the Alps.

That's very important to communicate this point through newspapers or something.

Of that the farmers are afraid, that the people, they are most annoyed with that, that the people now know that they are using poison.

And why do you think the farmers are afraid? Is that a basic resistance against change or well they could switch to mechanical methods, as you said and it wouldn't take more time.

The organic farmers are still in the minority and for them these are strange guys. So somewhat it is not accepted. It is difficult, you know, "der Beobachter" the newspaper, who started the whole thing, who wanted to interview the responsible man at this Alp there. That man died, now its someone else and he told him on the phone straight away: no I am not giving an interview, because you are displaying us in a bad light. You are displaying us badly and the people want spotless fruits and spotless vegetables all that and they want more meat and milk and exactly that is not the case here in the Alps. I can prove that to everyone. There is no kilo additional meat or milk if I spray the stone piles dead. There are other methods to produce the same amount or even more. Herbicides are not necessary on the Alps.

So also communication problems.

And the attitude, if I tell somebody, you know there is this alpine camphor, there are plots, maybe half a hectare, completely over-fertilised and there, could, should be done that. Later I will show you up there is no camphor, there was no spraying, simply mowing early. Like I did up there with the spearmint, that is almost the same. Simply 2 to 3 times mowing in the year and then it is gone, just like with the camphor. The farmers simply don't want to see that.

And camphor predominantly is growing on soil rich in nitrates?

Exclusively. And on so called "Lägerfluren", the area where the animals are lying on and shitting on. Back in the day you collected those cow patties and with a cart you brought that to an area where the soil was lean. You did that, that's not an invention. You did that!

Even I did that when I had my 2 months there.

And I always liked doing that. I wouldn't even think about going around with a poison sprayer. I was lucky with the Alps, where I was employed. I was 2 years in Kanton Graubünden and 2 years in Kanton Glarus, this was no topic spraying poison, really not. You had a tool with you, a hoe or a scythe, and a lot of bad herbs, thistles for example, they (the cows) were eating that when it was dry. So we are not using anything new, we are only using the modern methods and that means spraying.

Well unfortunately. Talking a bit about methods. You were sending me a few links and I didn't read everything 100 %, especially AlpFutur, which Mr. Herzog gave to me fortunately. But especially problematic plants. I was thinking of taking problematic plants as an indicator for species diversity, that would mean, it needs to be a problematic plant that displaces other plants and displacing plants in a way that you can say species diversity is decreasing when this plant is present. Is there a plant in that sense?

These are the alders. When they are there, then nothing else is growing and you can see that here as well. We have to be careful with that. Down there they even planted alders because they are growing quickly. Alders when they are getting out of hand then... up there you can see the young growth. 4, 5 years ago we went through there with the chainsaw and now this year, next year we are doing the same thing. We have got here, I have people from FibL who can live here for free I am not charging, but I am saying: if you want you can cut some small firs, down there as well, or do something. And then I had one intern, a Spaniard and he told me: I can certainly not go to cut down little firs. I have been to Africa doing afforestation and now I am not coming here to cut. Then we did, he did some other work. So that we are using as well, these are young people, they don't have to, but they can live here. They are not so many.

Coming back quickly to the plants, are there other species, maybe some neophytes, which really displace other plants?

That would be the fleabane (Berufskraut) for example, which is relatively new and you have to fight it thoroughly. We don't have that here fortunately, or not yet. And then the spearmint, for example down there as well (explain location), we didn't cut for 2, 3 years and if we don't do anything there it will overgrow and then nothing else will be growing.

So it will cover the whole slope.

Completely. The ferns as well. These is the big forest growth, alders, perennials, ferns, spearmint, camphor, limited to those fertile "Lägeplätze" and the camphor is relatively easy to fight.

The camphors are not displacing plants on a big scale?

Only where the soil is really fertile, these Lägerplätze.

You sent me the catalogue of measures: Kolas-Z. And there it was about these plants.

Yes, that was the reaction then, when we went to Bern, together with Agridea, [REDACTED] was also there. Then Kolas, the Zentralschweizer Regierungsräte were the first to do that. Now when my brother is in control he can show to the controller: here look there we have cut for 5 days, up there we have ... and so on and that should be sufficient and down you could improve, but first we watched out, that, up there you can see its cut, there is less and its going back, but we cannot employ someone for the whole summer. So these perennials, bush encroachment, that would be the rosehip for instance, they are belonging to that category, you can see over there, these are rosehips. Down there it was full as well, where its looking so nicely green and we removed them.

Experience with collection of species diversity. You wrote that there is no interest in that. My question for that is of course, how could you create that interest?

Payments.

Only with payments? So for example one interview partner told me, he came to a farmer and showed him a bird nest and he said that the farmer got excited about it and started informing himself about it.

Well today the farmer showed us a rare plant as well, that would be someone like that. But these are the exceptions.

But if these are the exceptions, it means there is some fertile base present and maybe more interest could be generated, I don't know how.

Yes, but in the end it is going through the wallet, except for some rare exceptions. My sister is married with a conventional farmer and she is fighting with her husband all her live long, that he is not spraying anymore and now he is at least not spraying any more, because his daughter was doing a PhD at New Heaven University and now she is working at ETH, studies in the field of biology, she is a biologist and she has taught him that. Then my brother in law did let his other daughter go out with the sprayer when she was pregnant. You know the issue is the understanding, the people believe its harmless, its legal to spray, so its harmless.

Ok there the sensitisation is lacking. Then with your impressions of changes. I noted that you were mentioning the bad water quality. Where does that come from?

In Einsiedeln for example, they have to build a new water catchment, because the old water catchment is down in the Rappennest its called and the railway sprayed 40 or 50 years the rails with Paraquat and so on. This is logical that the water from the streets and rails is canalised there and they are communicating simply we need a new source. The new source now they found is from that brook I showed you where that boulders were below and up there they are spraying again.

So the same problem again.

Just not in a smaller scale. In the agricultural area in the lower parts they are spraying with beams and they are allowed to spray $\frac{3}{4}$ ha without permit and then that happens, that, my brother in law did the same thing: oh he is spraying! Come quickly to me as well, I have something to be sprayed as well.

You said for reasons: the misguided agricultural politics here in Switzerland and you could gather rather a lot of international experience through your profession. Did you see countries where this was handled more sensibly?

I did an internship, that was 1975, I did an internship in Canada, in the west. There, there were no herbicides, that was in Alberta, semi-arid area and there we went with the harrow simply through. But there was wind-erosion of course, but back then it was done like that. And now every second year when there is not enough rain and the bad herbs was state regulated. The farmer I worked for, he had a contracting company and there we had much contracted work from the state. If someone hadn't cut their weeds, when it was shortly before seeding, then the

state came and told to some contracting company: go there with the harrow, so that the stuff is not flowering. That was 1975, I was 21 years old back then. I did the internship there and herbicides there were no topic. On the other hand, there where I did my training I used herbicides, that was 2 years earlier still. 1972, 73 there you sprayed stupidly a lot of herbicides. Gesaprim, which is since a long time prohibited and then I can remember that the grass was not growing in the next year. "Well we used to much Gesaprim, lets do it from new"

Different times.

But it is not much better now-a-days.

The state of biodiversity, you assessed that as a negative trend, because of herbicide use in the Alps.

That's like that, that's clear. Also if you have a look down there. Years ago there still were some shrubs. Now there is a proficient young farmer who is spraying, actually I don't know if he sprayed or not, but you can see the differences. Down there everything is sparkling clean. Before there were perennials, biodiversity, now nothing is left.

Too clean.

Yea the tendency is simply... A farmer from down there is sending me a photo, with whatsapp. Meadow of a real farmer and meadow of an organic farmer.

That is simply provocation.

Yea but that's how they are thinking.

But that I think is interesting that the communication, well he communicated with you, he provoked you. Like saying: you know nothing!

I am always neutral and usually wait. Why do I receive things like that? Then they always say organic farmer non-organic farmer. Then there is a beautiful meadow with a lot of grass for the high performance cows. A picture of an organic farmer ohhhh...

At the moment the machines being utilised. I was thinking it sort of is a compromise, that some Alps are not given up. What the people did a century ago, no one today would do that and where do you think the threshold should be drawn.

No I don't think that, because if I look what I do, or if I have people who are helping me, then I cannot even give a chainsaw to them. If I am cutting the trees and they are collecting them. I don't want to run around with a machine that makes these noises. If I am here I want simple instruments like a scythe, then I have my quiet and I don't want huge power, I want to be in the evening rested. For me this is recreation...

Meditation?

Yes and that's why those measures from Kolas are good, because you can explain them to him. Everyday I am doing something and that I am walking with a huge backpack motor mower, they cant ask that from me. That would almost be torture.

Well mowing with the scythe after a while is also getting very exhausting.

I am used to it, I like doing it and its good for the health. You know, when we have people or we are employing people, an internship for example, then you cannot mow a whole day with them, that's not possible, you did milking from hand as well, that's not possible. You have to be reasonable and back in the day, back in the day it was nicer. I experienced that, back then you did from early morning till the evening something, but you didn't

have that stress with the motor mower and I don't know what and we are using a motor mower and on a cooperative basis we have a mower with chain wheels.

With the part species diversity: how do you assess the biodiversity monitoring in Switzerland, you wrote that its quite one sided and concentrated on some species and I have to ask on what should it be concentrating? Or should it be simply wider?

So what we are doing in the courses, what we train the people on are the ground herbs (kreuzkräuter) for example and all the things that are neophytes have to be mowed. They simply must not seed.

But with monitoring I was meaning what BDM is doing or ALL-EMA with their 5 year program, where there have their 1x1 km plots and they are doing their transect walks. Plants are being recorded, birds are monitored by the Vogelwarte, ALL-EMA is concentrated on agricultural areas, but I think insects are included there, but not everything of course.

It really is complicated. What is important for us for example are the ferns there, the spearmint are not so important as they are not producing seeds that fly around everywhere. That is important that these plants, that's why the fleabane (Berufskraut) is so dangerous, that creates an immense amount of seeds. Simply those problematic plants that are truly spreading quickly and then are dominating the inventory, these have to be fought thoroughly. That is possible. At many places you can drive in there with the motor mower or with the tractor, you don't even have to do it by hand, before it flowers. A stinging nettle is not spreading, that is a stick, why do you have to fight that, when it is a healing plant a usable plant, that is totally wrong to fight that plant. Or even the camphor, all the plants that don't have seeds which fly around. That is not a national problem! That is locally limited. But the neophytes...

With the question about cooperation of Älplers with scientists and experts you wrote the payments. I would ask about the IPSuisse with their label, so market based, which is also a financial incentive, but steered by the market. What do you think about that?

So there is that [REDACTED], who is also committed, he took part in our class and he publishes also those critical articles. Agridea, Agroscope realised that as well, going through politics it is information distribution what we are doing. But for FibL employees it is not our task to distribute information but to show to organic farmers how it is possible to do without and especially in Switzerland the organic network, the BioSuisse with one leg it is supporting the herbicide use on the Alps. They are saying: we cant do anything on the Alps, the cooperatives have a majority with conventional farmers, we have to conform to that. That is ridiculous.

So you would say BioSuisse is a almost a case of conflict here?

Martin Ott my boss is saying that this is the case. He would say the same things I am saying. I am not an exception here. But the BioSuisse, there are organic farmers who say we are allowed to spray on the Alp, why should we not do it. Its about the legal condition. As long that it is in the head of an organic farmer: I am allowed to spray. My brother, my brothers they are not allowed to spray: are you mad, I don't want to get poisoned. But the biggest part of them say, that is an allegation, they say we are allowed to spray. The understanding for the danger is lacking.

In this conflict saturated environment, lets put it like that, how could an agreement be reached between those different parties?

Very, very difficult. One example, you saw it yourself, there is a big stable. There it would be very easy to create a part organic and a non-organic part. It would be very easy. And then if the BioSuisse says that's not possible, the will is lacking. You only would have to comply to EU organic regulations and communicate that. It cannot be that the conventional farmers are ordering what is possible and are arguing with tradition and when they cannot

come further with traditions then they push forward the modern methods. If they would comply to the old methods and the old methods say that every farmer has to do 1-2 days of drudgery (Fronarbeit) on the Alp. We didn't have that. The drudgery days.

True, the representative of the farmers union told me about that.

And not even that, they want to do. And if you are spraying, you are spraying when it rains, when its not having an effect, but you do it anyway.

That question you answered before: in which region in Switzerland there is more intensive and more extensive practices. The pre-alps...

The lower located Alps. There is also a much higher pressure with problematic plants. If you are above the tree-line then you might have some troubles with juniper.

Ok not much happening there. The connection of direct-payments with biodiversity measure. I wrote down a question: What kind of potential do you see in those, what can be reached with the direct payments?


There I am seeing a big potential. For example my brother is the manager of this Alp. He gets money for this hut, he gets money for a wooden spring tub, he gets money for a cross. That is traditional, that is home, for every cross he puts up he gets money.

The bigger the cross, the more subventions payed?

No, it should have a regulated size. It is partly absurd for wooden fences, but I mean that with the crosses.... Here this hut and there is a regulation: This hut has to be 100 m in distance of the stable. My brother in law and my sister, there on the other side. Their hut is only 80 m away from the stable, they are not getting any payments for maintaining the hut. These fart ideas, simply those somehow strange, how do you get an idea like that. No one could give me a reason so far. Maybe you will find that out, why an alpine hut is getting maintenance payments, when it is at least 100 m in distance located from the stable. Maybe they found out, that there are only few where that case applies. Maybe, or it has less flies. Or if you take the cow inside, what it was planned for, then the payments are cut.

Then melioration measures you wrote that agriculture has a bad reputation for the general public. That is the same case in Germany. What do you think could be done to increase popularity in agriculture to get better trained people, or more interested farmers?

One measure would be simply, that over the weekend there is no bringing out of liquid manure, no slurry. I know a farmer, who lives close to Einsiedeln and he has some people there who live in close-by and they are paying him to not spray out slurry on Saturday. That is a bit ridiculous. And then also I know farmers who purposely spray slurry on a Saturday to annoy people. They should know what we are doing. What else could the farmers do? This week there was an animal show in Einsiedeln, they had enormous bells, that is certainly not, for some people it might be entertaining, but most people think: why do those cows have to, with the eyes of the cows wide open and roaring. But criticising the bells, you cannot do that. At most the size of the bells you can criticise.

 *told me, he is putting the bells on, but he is tying the clapper, so its not making any sounds.*

We even had a project, I heard about it too late, but I am still at it, so we are not putting bells on the cows, but instead a GPS. That would serve the purpose. I could check from my home then. My brother for example he has got a camera in the stable and he can look at all times what his cows are doing. If they are calving or not. We propose this also in a course. From this place here he surveilled everything with a drone up there, if they have water and everything. You know down there, if my brother has to check the animals, up there is the road and he has to work the whole day, then he has to check the animals. Is there still water?, with the binoculars or so. I can

sit here and maybe in an hour I can see all the animals, but if there is water? If I had a drone and you could automate the drone. There are so many methods how to do it more easily. The same farmers then say: but the animals are getting irritated. I have to tame them. The farmer who brings the animals to the Alp, I have to say: it is not my responsibility to tame his animals. That would be a modern method. You could calculate that. Those there, 6-7 weeks they are down and he has to go down every day. Quarter hour down, half an hour control, up again, so 2 hours. He could send the drone down quickly.

That's right, that would be very quick. Well.. for the end you were saying its ambitious (my work), do you have any good advice how I could make my live more easy.

Difficult. There is a lot of information and the people who are working a longer time on that, you are in contact with them, [REDACTED], [REDACTED], one thing would be: in Fribourg I would ask with the organic farmers. One guy he was president, I was asking him if I could give you his number. He is doing sheeps and hes pensioned. (Giving me the contact of that guy)

5.2 Farmer transcripts

[Ä2]

Lets go!

What is all the biodiversity good for if we don't have time to use it? Over the internet we get information much faster. Nature is a little slower and a bit more boring.

Can you very briefly explain the farm here and your motivation to do things here as you do?

So in the summer cows for meat are pastured here, which I am looking after together with my life partner.

And why do you do that?

For me this is a means to the end to access this special environment. Of course is this type of keeping the cows still very sustainable. That the cows are pastured here is a very expensive thing. For the animals. This year we even had milk-cows, who already had a calve, which were coming as relaxation to the Alp.

Luxury.

That is luxury. I mean if you are going to a regular store to buy milk, you would not think that this might be coming from cows which are giving up to 70 l of milk a day. 70 l !

Too much, that's a lot.

How heavy are you?

David: 85 kg approx.

Imagine that! That's almost our weight each day with 2 times milking

The pastures are located around the house right?

Yes

How is this place called? The Rumena of course, but to which municipality does the valley belong?

Plasselb.

What characterises the Alp, so race and amount of animals?

The cows are a mixture of milk yield and meat races and this is a breed from a Canadian milk-yield race and these meat races, old types. I don't know the exact name for them, but generally a dual purpose race, meat and milk.

What is the current trend, where is it going? Ever more milk yield? Or this dual purpose? What do you think?

Our boss is still an enthusiastic breeder of milk yield races.

The animals are moving a lot here on the pastures?

Yes. Here it's the case with the traditional pasturing, that the animals are in the stable over the day, where they have quiet from the flies and also to protect the meadows from step damages. At night time they are outside. Early in the evening they go out and spend the whole night outside.

You come up here beginning of June right? And back down at this point of time, end of September.

Yes. Approximately 100 days.

The milk you are milking, do you sell it?

No this is just for us, from the goats. The cows are not milked of course, these are no milk-cows.

Even though it's a dual purpose race?

Yea later on they give milk.

Ahh ok it's the young animals

Yes they are not milked here. You thought we would milk them all?

Yes! I was wondering because you have no machines here.

Like at Thorstens place (where I worked, milking from hand)

I was wondering.

No we only have the two goats for our own needs.

And you have a side job right? In wintertime when you go back to Germany.

My side job is, you might have noticed that, is the art of living (living in an unusual way). Alp-restorer and that's why, living cheaply. Somehow collecting blueberries. That was always my fortune here, that I could, when I was here in wintertime, that I needed that few money, that I could live here with one cow the whole winter. ´

So basically 100 % of your income comes from here from the Alp?

Well, what we did was, that we have occasionally some guests here sleeping, who are paying.

But what does it do? Is it a big part of income or a smaller.

Once it made up a bigger part. Of course I did several other things. I even hosted disabled kids here for vacation and I had teenagers here, who were struggling for therapy purposes. So different things, where you could use this protected space well, when those handicapped people sheltered here for recovery.

How and from whom did you learn the Alp management here?

I grew up in a farmer's family.

So you didn't do any trainings, or something like that in the valley here in Switzerland?

So cheese making and everything auto-didactic.

Since when are you here on the Rumena, or ...

1976

76 ok, since when did you do Alp in general? So on other Alps, also 70ies right?

So to manage an Alp myself, I started doing that 1979. 76 I arrived here and had a glimpse. I was watching how the others were doing that and I had the luck, that I was not responsible myself. Going to the Alp and I could make myself useful. Like years of travel (Wanderjahre, gap year sort of, old concept in Germany, where everyone, when young is supposed to travel to gather experiences and learn)

Are you part of a cooperative, association, union something?

That was for us always a concern that you were helping each other at all times, that you help that one guy there. Now for example that Ruedi build us the wind power and photovoltaic and so on. These kinds of cooperations, but everything privately, not formal.

How is it here on the Alp? I guess you do the biggest part of the work and if Ute is here she is helping you?

No, no Ute is the main employee here. Because I was those many years always on another Alp. 89 Ute started here and I left the Alp to her and 2003 I came back here. Our junior-boss wasn't happy at all, that he had to deal with me. Even today he is not content with that. He is younger than me, but lets put it like that, he prefers to decorate himself with a female herder than a male herder. But we have big advantages here, we can calculate certain activities, for example maintaining the path, or repair the stable, or drainage maintenance, or the manure ramp. This is my tractor, I use it here and I can calculate certain works for that, transportation. Coming from Ute, the main employee, is a female herder, they do with her, that was already before our current boss, the seniors, they were already accepting that more easily, if a female herder is needing help and I came from another Alp and was helping out here. If we wrote a few hours down, they rather accepted that, otherwise they might have said: That is something the herder can do anyway on the side. Getting out the manure, or repair the path, or doing the stable floor and so on. But do you know the whole thing here, you have to imagine it like that, that the whole business is run in that way, that I am the one who is to 50 % initiating it myself and that is my advantage. I earn less with that, the few hours I get paid for that, but that is more important for me because I can do the things how I want to do them. When I am fixing the slurry pit and make it new, the boss would be overstrained. He would get a trained person who would do it here and the boss has to pay a lot of money. But when I do it, he gets it very cheaply, but he is annoyed sometimes, that he cannot have a word as much as he would like. For example, with the stairs, that he brings in ideas, that are completely off, that don't fit at all. How that is going when a boss has ideas, that he wants to include ideas that are far out, that are not productive at all and just exist because he is the boss, but they are not beneficial for the whole economic situation.

Which kinds of personal attitudes, ideas from you and so on, are influencing the practical management? So how you are doing the things here.

Minimalism!

That fits

That has huge advantages, because it results in an immense freedom. If you are minimalist then you are not dependent, or very little dependent.

What do you think characterises an alpine farmer? So identity or some inclinations, dislikes.

With that I am always thinking of one beautiful story: Imagine it can be cold in summertime and you are at 2000 m on an Alp and you wake up in the morning and there is half a meter of snow. No matter what, cows, sheep, or whatever and then the most noble activity you can do as a herder is keeping calm. Because if you get nervous, then you transmit that nervousness to the animals and then they need even more energy. The main point is using the existing energy as economically as possible without making the animals nervous. The animals can withstand 3 days without eating. But if you are, I can see that with Ute, if one animal is roaring, then she gets a bad consciousness they could starve. Then I am saying, if one cow is roaring, 3 days more.

What kind of knowledge was present with Alp farmers in the past, where you have the feeling that that is being lost at the moment, or maybe already gotten lost.

One thing is coming to the next, you know. From the question before: this keeping calm. That is the big problem, that this is not counting any more today, that always hurry is the trend. With calm, if you can wait something out, the bad weather for example or something and don't think I have to accomplish that now, because in the next 3

days I am not coming to the Alp. But if I am living on the Alp, I can wait till good weather comes back. So that this is all merging. The knowledge when I am able to keep it calm to save the energy, for the time when the window is opening again. Instead of doing some things, there are situations when you better stay in your bed.

What do you do different to your predecessor here. You were talking about the condition of the hut. So what would you say you are doing differently?

So what is very special, that I have idealism, as if the house belonged to me. But the point that I am here as it were on call. Because if the boss doesn't want to finance us any longer, its not my hut, if I should lose the job, then I will lose my habitat and along that I am doing these projects. Formerly I also did the slurry pit, well there was slurry from 40 years ago in there and I emptied that with the wheelbarrow. Back then I had more idealism. Today I am profiting of what I did, that this is useful to myself. But if I can make it useful for the long term of what I am doing there again and that is very important today, also when Ute is giving the initiative and says: all right lets do something for the next 5 or maybe 10 years, we are profiting from that. So this is long term here, even though I don't own the Alp and I don't have any security. I don't know where this is coming from, but this is the biggest source of energy, when I can overcome the thought of not being able to come back in the next year. But I act as if I would be here the next 20 years, that's where the most energy is coming from. I wanted to say something else to that: If I should own this whole operation here, then maybe this would be much more perfect. This is a beautiful mixture of acting like I own it and at the same time not knowing if tomorrow it all ends and it has the advantage that its not much more perfect. I am often thinking about that, when I see my siblings, who all have some real estate. That is madness what people do, when they are real estate owners. Those kinds of strange fruits this bears! You start graveling your front garden, so there are no more weeds growing.

In the worst case, yes.

Just because you are annoyed with having so much land, that you put concrete over it.

How do you exchange knowledge and experience here about the management or landscaping practices? So with other alpine farmers.

At the moment with you.

Well I am no alpine farmer. So you just meet with people?

Yea, yea, so if I am here, there is one guy who is 93 years old. When he is telling me about 80 years ago, he talked a bit about that. But I don't want to judge only the old ones, what you were saying the exchange, I don't know if it is all positive. The innovations is playing a role for me too and that I am here, for example the proverb: the dung is the gold of the farmer and I am telling Ute when we are carrying the dung: you know that proverb? No – I always thought dung is only producing work. But, sometimes I think the whole thing with the shit, when you touched shit as a child, when the parents are saying: no don't touch that and so on, you could poison yourself from your own shit, or from the shit of someone else. But that is justified. I always think that this is connected to the black death, where half of the population died out and that you found new conducts, today you are not shaking hands anymore, even though the people realised after epidemics they returned to shaking hands, because this is not connected to the head. They found that out that shaking hands does for humans, as for apes, when you shake hands you are smelling, to check through smelling, are there some infectious things going on. So this shaking hands is replacing research if you want or pharmaceuticals or all those things.

I hate to interrupt you, but we have to stay with the topic for now. Do you worry about not being able to pass on experiences or knowledge? So to the eventual next person here.

Yea that is often a topic. Sometimes I am wishing that someone could immerse him/herself in this place like I can. I was talking yesterday to Ute, that is something even she does not completely understand. We are here for such

a long time, but I am a little extreme with that, but for example when I am here, you experienced that, when I was mowing here, when it was so wet that I left the cows in the stable, 35 cows, and fed them in the stable, because the cow when its wet is not only eating with one mouth but with its 4 feet is destroying 4 times as much fodder. That means in the extreme case you can get a lot out. Then I also mowed the rushes (Binsen), yesterday the topic was: why are there so many rushes? And I couldn't say anything to that and said: Well Ute the boss felt provoked by myself mowing so much, because he, who cant afford that with 20 cows in the stable and a side job or main job. So you almost have to say the farmers today are forced to give up the old knowledge, because they are ever more rational and how should I call this? They have to plan with the machine or something, you go to the telephone and get whoever, who is managing the land because you are going to work and you pay for that. That has become so perverted. To wait for the right time window, what was the case before. That is not playing a role anymore. Well with the weather you still have to be careful, but with the more intensive machine use this can be avoided even more.

Which kind of changes about alpine farming and landscape management did you notice in the last years?

So that example with the road here. If there is a road going there, then of course all of that farming is going to be managed with machines, then it can be that a cow race, an old one which is also cleaning the meadows through their eating habits, who are also eating the rushes is kept not so extensively, like at our place but. With the new races, where the cows are not eating all the grass it happens that the farmers are going over the left over grass with a mulcher, that little milling machine behind the tractor and they mill around everywhere where everything gets destroyed and that is very questionable when talking about biodiversity concerning plants and animals, what is being left at the end. This mulcher.

Which other changes did you notice with climate for example, with physical structures, we had the road already, with climate, species diversity and with social or economical structures in other sectors?

Ah yes of course. The water problems. When I came here 78 I thought up there is a moor, there will be no issue there will always be water. Because if you live such a life here, you don't have any public services, as it is called in Switzerland, where you can say: if I am paying the taxes I want the postman to bring the post to my house and that somewhere close by there is some public transport and the slurry the water treatment plant should take that, for what I have to pay, that there is electricity. Here I have to take care of these things myself. I was thinking before when I was having a shit: oh do I have to tell you where you can have a shit if you wanted. This goes like that here: that you can do it here like the cows, that you find a place, where in the best case the grass is nicely eaten, because there the soil is interesting for the animals and there the soil can use some nutrients. If you take a shit there or take a piss there that's good, there the turf can absorb the nitrogen most easily.

That is some local knowledge here!

That is developing slowly, before maybe it was there as well, there is this kind of shame, maybe it also came with the black death, but these people in the city who were shitting into the roadside drainage, that goes out of hand and is not working anymore. But here is more space and we can allow ourselves such, I wouldn't say experiments, but such honesty. Hundertwasser put a dry toilet into his living room next to the television and that was his holy toilet and had, I say sometimes, why are we so scared about the death. Or that whole discussion about live after death. We cannot argue that from our energy, if you would fall over and dead so on, there would be some kind of energy coming from that, so if it gets composted. By the way in the USA they are converting corpses to compost and I think this is the most honest. That is the thing with shitting, I find that very interesting that we every day, with eating this is a sacred act, but why is shitting not an equal sacred act? That we get conscious about that we only get food because we are shitting, because we are producing humus all the time. That should be taught to the children already, this honesty of the circle, of the always returning and there the resurrection is given every day.

That this what I am leaving, I am taking care that something else can grow and then at the end, when I am not eating anymore, then at least my humus can be of use and something grows out of it.

But the changes with birds, mammals?

I have to say I am not dealing so much with the birds. The biggest problem was the water issue. We need approximately 1000 l of water a day for the cows and the household. If you imagine that back there at the source, there is not a single drip of water coming out. I had 300 m from here in the forest always eyed a source. Today I rolled up the hose, because this summer the mice ate the hose, which we put provisionally from the forest to the edge into a tub and then the cows didn't come here. Here we closed everything down with boards, everything closed and when they went out in the evening they had to go over there with an electric fence, so they are going there. When they did that once drinking there, then they knew it on the next day and you didn't have to guide them. But these changes that the soil changed, that it is not so receptive for absorption any more or that the intensive precipitation is simply running down. This year they said it was the most intensive rain since 1980. In early summertime. And back then I was already here (in 1980) with my daughter and we went to the stream down there with a radio, when we were transporting tree trunks with a cable car and suddenly it started raining and all the trunks went with the wild stream and I was sitting down there at the stream beneath some roof and I didn't realise that I almost got drowned there. Someone rescued me with a caterpillar vehicle. So the boss rescued me. And up there at the second Alp, from that elevation a cable went down 1500 m over that valley, a cable car was constructed to transport 1000 m³ of wood down. But back then this was a good source of income for me, also did that black.

So water is the main issue, but did you notice I don't know for example more or less marmots, or some insects you have never seen before, some plant species, which are moving up or something like that?

That talking about insects, I notice that most when I drive a car. 15 years ago when you went to a gas station it was important while filling up to also clean the windscreen, they even employed someone specifically for that, who cleaned the windscreen. Today strangely you don't have to clean your windscreen anymore. That is very worrying, but here... concerning changes of the animals, I still can imagine that this here is an ideal area, because here it was never intensively managed.

Something with economic or social structures which changed? So in a lot of rural places the young people are going to the city or something.

But that was even before my time like that. That here, that is a different story, the people here in the village are called goat-tails, because formerly they were, I mean formerly everywhere that was the case, the grandmother of Ute had goats too. ??? its called in Bavaria, so small structured subsistence farming, which the people were living of. But they were making jokes about each other here the municipalities, the villages. The goat-tails here in the village they were annoyed when they were called goat-tails. And I wanted to say that, this decrease of that, I must not idealise that too much, the people were very poor and were resourceful, that's why it was working. The kids, the older generation, who are older than me (████ is 63), they were telling that before school they went herding goats along the wild stream and so on and what I in my childhood did not have to do, well I had to work a lot as well, but not that intensively. The goat-tails, I usually say, that you can be proud of your ancestors, that they were that smart to make a living from a cow or a few goats. Because that's what I'm more interested in, this small scaled, subsistence farming. If the small agriculturists can nurture themselves from that and only produce that, so its enough for a living. That has been totally forgotten. What is important today? Today its important that the supermarkets are dictating a style of living for us. That is a total consume dictatorship, which is going on today. That is also the reason here on the Alp, that I can be protected from this. I collect my blueberries

You got it all here.

The crazy thing with the blueberries is that when I go collecting them I am always astonished, if they are growing, last year there were none and this year I am collecting and I have 3, 4 I collected, takes about 5, 6 hours to collect and then I think I am not carrying a wallet! That somethings like this still exists! That I without taking my wallet can get somethings and I don't need to do anything for that. I don't need to pluck weeds or do a summer garden.

Simply collecting and the changes you just mentioned, what do you think are the reasons for them? The water for example.

Of course, they are talking about the climate change, but I believe formerly there were climate changes too. I believe the much bigger problem is, not just climate change, but that we cannot get of that kick, that we made ourselves so dependent on energy. Of that, how do you call that, of that carbon energy. Oil and gas and that the regenerative resources should be much more expensive. So we were like fixed for the last 50 years or 100 years from the industrial revolution and the generations coming have to sort that out.

Yea might very well happen. Well the state of species diversity you were saying, that its quite good and the reason for that is the extensive management practice here, if I understood you correctly. So here in this space.

As sustainable as possible. That I can do a management, where I don't have to get so many things from outside. Here rests a lot. Here is so much forest. Here at the moment rest so much, the last 40 years, it is fallowing. I have told you already the whole living space, the whole energy, this is here used mostly at the weekends, but 50 years ago a whole family was living here with 10 kids and they lived of that and that today is only tittle-tattle, only fun on the weekends, because there are not that many families who could subordinate them to that rhythm of life. Even though, you could observe how I am doing with this wood oven. I mean there, I don't need any central heating or so. I have up there a water tank and I have the pressure coming to the house. I didn't show you the shower yet. In front of the sink, I showed you the warm water in the sink. I have that one hand mixer and the shower head and I put in front of the sink a black rain water barrel and then I shower in that.

Certainly works out. So for example in the valley, what are the main reasons for a decline species diversity? What would that be?

Yea that is connected to the more intensive..., the more intensive farming practices are of course saving money, but with the side effect, that a lot is falling through the net.

What is the first you associate with protection of species diversity?

Of course to rescue certain species threatened by extinction. But of course also, I don't have to say that, the corresponding habitat. This really is the problem, that so many people live in a small area. Not only that, but also because these many people need a lot more energy. I sometimes visualise that example, that 80 % of the energy in the world is used by 20 % of the world population and the remaining 20 % of the world energy the 80 % can share between each other.

Which practices are you doing, that have an influence on species diversity. For example, if you adapt your point of time of mowing, or some structures.

So for example I can mow with this thing (he gets a very small primitive scissor and starts cutting the grass), but if I had a circular mower and here today some earthworms come around, that is very difficult to not cut the earthworm in half. Formerly I was giving them to the chickens, but also a frog I somehow brought them in pieces, but here in Switzerland these cutter bars are being subventioned, because with a cutter bar you are not destroying these flies so much in comparison to those quickly rotating blades. But I think this species diversity, how should I say that, the more mechanical and rational you manage the soil the more you can damage..., even a small structured plot, small structured because the landscape is simply there, a trench or so and you are not

draining all the water, I did that already too, but that I also accept certain non-manageable regions. And then there the species diversity is good.

But do you do as well, I would put it as structural improvements. If you have some stone walls or something or generally for insects those piles of wood are great.

Stone lumps, there the lizards are coming and they like to have the stones. Where do I have that, on the lower Alp, there we have some stone lumps after the small bridge and that is still on the lower Alp. We drove there because we couldn't drive up anymore. The path was so muddy down there. Now I flattened the stones a little bit, Ute was saying we get a little money for that, but because the new road is supposed to be constructed, he (the boss) has not so much interest to do much there. And when I flattened out the stones, they were lying on a little pile, some small lizards came out of there. But also the trenches. Open trenches, that you are not putting pipes everywhere, that you have the fireflies and the salamanders, they hunt in the water, in the water trenches, that they find some habitat there. For example the trenches, they are coming here with an excavator and you should come from bottom to top I believe, so that the little animals can go into the little side branches of the little stream. So you are not destroying them all and I, I wouldn't come with an excavator, I am doing that by hand. I completely undress and then I walk along the trenches and the turf, that the cows have kicked in there, I get out with my hands and that is... don't tell that anyone. You heard about the CO2 tax here in Switzerland, that works in parts, that you get that back. I was thinking you ought to have something like a km counter on the bike and as many km as you do without emitting CO2, only through muscle power, as much money you should get. Nowadays that wouldn't be an issue with the mobile phones. But on every machine that is driven with energy (fossil that is) and is also making noise, I would introduce a noise tax, that it has some kind of counter, a noise counter and the noise producing, the CO2 problem would be included in that. Every time when they have a vote here in Switzerland and some tax in that direction, an energy tax: ohhh the whole industry is going down.

Like in all countries. A part of the interview is also for making a survey, where I will not be around and where I will ask about the animals and that's why... I basically have to know what would be the best animals to ask about, so what kind of wild animals could you think of from your everyday life, when you are on the pastures. Which one do you recognise the most, without actively looking at it. You already mentioned the fireflies.

The lizards. Yea well I mean the ones we have around the house here are the weasels. And then with the moles, they create the molehills, but they are also very useful because they get the humus to the top. You could also if you go with a machine over there compress the soil so much that they wouldn't stand a chance.

So lizards, fireflies, weasels and moles.

There is also the lynx.

You have seen lynx here?

No I never saw them, but the traces. I noticed one time because he (the lynx) has killed a deer and I was asking the gamekeeper, a fawn, and he said: that was most probably the lynx. I have already taken killed animals back home and ate them myself. I already killed a fox myself and ate it?

A fox or a lynx (names are very similar in german)?

A fox.

How did it taste?

Chewy, but the old people have some recipes, to marinate it in milk, something like that.

I have to ask in the restaurant: in milk marinated fox.

David: are there wolfs here?

Yes, if there is one then you have to... I have a niece who is herding sheep in Switzerland on 2000 m and she was saying: the wolf is approaching and if that is taking over it is not feasible to manage the Alp anymore. So it is very difficult to find a compromise. They have adapted to the situation with livestock guardian dogs and whatever but...

With the animals is there some species or group where you noticed some changes in the last years? Individuals, if they got bigger or smaller, if they look different, or did it stay the same.

What is rampant here is an infectious disease, which is called Gämbsblindheit (Chamois blindness). They were saying it might get spread through the chamois, which could spread over to the cows. So that then it would be advantageous, I always say the bullet from the hunter is much too fast and in the way the lynx and the wolf are hunting, that much patience does no hunter possess. He only has a fast bullet and the fast bullet prevents with the hunt, which the animals are always doing, there the predator gives the prey a chance to flee and if the animal is still fit, Kasper (a little dog) also runs after a deer, but he cannot catch it. But if the deer would be sick and it was slow and would collapse and then he would kill it. That's why, the bullet doesn't make a difference between a weak and a strong animal and there the fox or certain natural enemies an advantage. A good hunter, he would notice that, he would observe the animal for 3 nights before he kills it. So someone who wouldn't kill his own dog as an accident, because he was thinking it was a deer. Not long ago, someone really wounded a human! He thought it was a wild pig. But now they are not allowed to be alcoholised. Just like in road traffic they introduced that.

About time. That with chamois blindness, where do you think this is coming from?

Yea that could be, if it is the chamois which is vulnerable, the chamois doesn't have any natural enemies anymore and there is not enough selection of the weak animals. That could be a reason to be for natural predators.

And with plants, which plants do you notice in everyday live the most?

Yoo, thistles!, but like crazy in one moment are coming so many. Thistle flowers the spores come with the wind from some other areas. The thistles clear here are fallow lands as well. Then I could imagine that these really big plots, when they are laid fallow, with small plots it doesn't matter so much I think, but the really big areas and then a lot of seeds and then this could be... but it depends on the management practices. With us even the cows, but the goats eat them and if a goat it's a thistle then it cuts it at the very bottom and it goes backwards into their mouths, so it is not getting stung. Very carefully and we are cutting the thistles and afterwards I am working with the machine up there I showed you. I am chaffing them and feed them from the tub, when they are very young and no seeds yet.

And other plants?

Well how do you call the invasive plants, when they come from somewhere else but we don't have that many problems with them. Maybe the reason is that we, how should I say that? Maybe there is an advantage that we still put the cows into the stable, that happens on almost no other Alp anymore, that they come regularly into the stable. That through that the pressure of too many bad weeds, that they can keep that at bay. The animals, as I said before that the animals also have to maintain the pastures.

Some other live forms, mushrooms for example, is there something striking?

If its dry then there is not many mushrooms, then 2 years ago, or was it last year? They got kilos of them out, hundredweights they were carrying it down, which is illegal, I think you must not pick more than 2 kg. Some got punished. Down at the bridge there was a gamekeeper or so, who controlled. Searching the car and if you had 100 kg of mushrooms then...

What are you collecting yourself?

I am not such a diligent mushroom picker. But here are many people busy. You have to get up early, collecting mushrooms and... was that last year or the year before? You could find mushrooms that easily, there were accordingly many. But this year it was too cold, was not so ideal. But you wanted to know the changes?

Of course.

From mushrooms or something.

If you noticed something.

I am not the expert because I collect blueberries and with the blueberries there is the problem with the, with a vinegar fly, which stings the blueberry and then the blueberry gets, or some kind of fly, and the blueberry gets soft. You cant even pick it, its so soft. They just get ripe and they are as soft like mush, if you touch it, then its not a berry. That I noticed. Otherwise the blueberry is interesting for me. I always say it's the most democratic fruit in the forest, because it appears so sporadically. Of course I also like a blueberry field where a lot of blueberries are growing, but come on there will be many people there. There where there are not so many blueberries, where you have to have a lot of patience there are no people, there you are all alone. That is interesting to me. There where you have to work for the habitat, there you don't have any troubles with someone competing for it. That's why its pretty quiet up here, apart from that quarry. But this are excesses from the people who have houses, they like the space around it, but then they put gravel on it.

Which structural elements so you think are important for species diversity. You mentioned the stone pile?

Well I can put a pile of brushwood or... there was a change to the positive, that you cannot say anymore everything is brushwood. Down there is a pile like that. That dry pile there, you could leave it like that, so that someone said "Niederwild" (small game) can hide in there, like a porcupine or so, hide underneath there and Switzerland is extremely tidy. That doesn't come easy for the people. There we have a shrub cutting place, but even that would theoretically not right. The shrub cutting place is supposed to be on a hill, because if its rotting, composting, that it can fertilise immediately. So that you give dead matter a place to be, where you can profit from the rotting, because that is nutrients for the soil again. The whole problem with the waste water is there because the nutrients are at the wrong place. We are happy that we have nutrients and not have to buy the phosphates from Morocco so that we can get big potatoes.

But could you see that in the last years, that people leave dead material on the ground? Or?

That is in the forest increasingly mandatory, in the state forest, they aren't allowed to burn anything anyway. So when we cut the little firs down with the small scissors, for example like this one there. If they start growing on the pasture we have to cut them down at some point. I rip them out when they are freshly sprouted already by hand. But if you leave them standing this long, well we left them standing here because this is our stone garden up there. Lets see what comes out of it. All the trees around the house, you have to imagine 40 years ago there was the only tree was this one.

The one direct next to the house

This one here, that is the old apple tree. This one stood a little down from that winter lime and 99 or 2000 there was a pretty strong storm called "Lothar" and in that night it fell down and there was just one tree more and that was that cherry tree over there. Apart from these there was not a single tree here. I started with the big acorn, that was 86, I brought some small seedlings and put them here into the garden and the huge tree grew out of that.

That's great

And because we are not letting out the goats freely now increasingly things like this are coming. Back there is a red juniper, of course the other juniper, the black one, or that thing, we don't know what that is. Ute is a specialist for herbs, she does those herb courses, but she also doesn't know what kind of tree this is.

Well if she is doing herbs, trees are probably outside of that.

No she does also with trees. Tree walks.

Otherwise could you notice structural wise any other changes here in the valley?

That the Alps are being driven to (with cars) increasingly. What did an older herder say? The street to the Alp gives the possibility to be quickly on the Alp but also quickly down again. The fewest people are staying the whole summer on the Alp.

So that has become the exception by now?

Yes most of the Alps are for vacation, that someone is renting one and is coming for recreation on the weekend. The streets are there to manage the cows. One time a week it is mandatory, you get here, when you manage the pastures here, you get money from the state, around 50 % of revenue you get without doing anything for that, only for proving that you manage that and that amount of area and then the tax payer is paying you. A nice example is one milk-cow with a calve, or without calve in that case, but a cow that gives milk is accounted as one Großvieheinheit GVE (livestock unit) and then I wanted to know, all those subventions, those direct payments, that the EU (???) is affording for itself and that the agricultural area is being managed as it is managed. That you do a simple example: I called them because I need to have the ear markers as well for the cow for TVD (Tierverkehrsdatenbank – animal registry), but I did not have the possibility to get direct payments. In that case it didn't matter to register my cow there only for statistics, but then I called at the office and if they could tell me how much, if I was eligible for payments, how much approximately I would get for one cow. But you are not getting per animal, but per area. That's why the owners who are not managing the land, they get money. And they are saying: well anyone who wants to can manage the area, but I am only cashing in on subventions. That's why speculations with plots have become so extreme. And then I wanted to know what one cow approximately saying 1.5 ha, between 1 and 1.5 depending on how intensively you are managing the land. Guess what a farmer can expect here in Switzerland? I guess it is the highest direct payment you can get, if you doing with one hectar here in Switzerland with organic on the highest level, because the differ, the higher level you are the more money you get, so the highest level. Guess how much money a farmer is getting in a year through this one cow. How many franks?

2000?

Not bad. David you?

David: 5000

Even better. I am astonished that you David are knowledgeable about agriculture, or at least with the money, what can be earned on the side line. Maybe you have in east Germany somewhere a plot and you get money from that. He hasn't told us that yet. 5000 Franks you are really close, you even guessed more than there is in reality. Its 4500. Can you imagine if you have 100 ha?

It's a lot. How important is environmental protection, sustainable management and conservation of species diversity for you?

Yea of course, that is a high priority.

What are you doing actively for that, to promote that.

I already told a few examples, that I am putting more effort with manual labour here. Working at the right moment. I reach less profitability but instead at the end its not only profit I get out of, but that I can manage it in a sustainable way.

You were saying you are less profitable, through that are you being supported by some organisation? Maybe with the direct payments.

I feel that I am a volunteer, that I am providing to the country through the sustainable farming practice, that is less subventioned, that eats less money from the state than intensive farming. But of course I connect that to, I have the fortune that I can connect that to live in such a luxurious hut (its not...) that I could stay in wintertime here and had my calm and if the quarry wasn't around, that would be absolute bliss, then I would say all few weeks you could come from Berlin and I don't know what kind of hard work you are doing, you could relax here.

Which practices, strategies, measures is in your opinion good for species diversity in the Alps? So extensive management you were talking about.

According to the landscape and according to the animal situation managing, which is costing profitability and also much more manual labour commitment. Not letting machines do the work for you.

For conservation of species diversity, what kind of measures do you think should be taken? In what scale, by whom? So if you were king of Switzerland.

Yea the direct payments at the moment. That you are preferring species diversity beneficial landscapes, give support and especially that the big distributors are being more pressured by the consumers, but there are the excesses of the free market. I mean everyone is doing that: oh that's cheap, there I buy for the whole week.

Tempting.

Even though there is also some crap behind that with the cheap foodstuffs. I am always saying the war today is being fought at the shop counter. Everything is so cheap and we are in Germany the world champions in cheap foodstuffs. Contrary to the economic power, that slope, greed is awesome.

Where do you see at the moment the biggest necessity for action to protect species diversity? So probably not here on the mountain.

Well, of course,... I don't have so many, well I have siblings who are doing agriculture. Two organic siblings where the descendants are doing organic now, but also on the mountain. Especially here, through that development/exploitation I had said at the very beginning, that here are more machines used and then they start mulching up here as well, as soon as they can drive up here with the tractor. That is also a danger. If you mulch here and here are some small thyme piles and there are some ants on it, or anthills, there thyme is growing and the cows are eating that, but many different species have their place. There is the fern, where I could go against that with some sprays, no! I now say, the dry weather, maybe its not so bad that the fern, if it is very dry, is producing some shade and below the fern the grass can grow and the cows still have some food. That would go towards the changes: Drought, what can I do? We probably all have to change our mindset. There in the village where I am living there is a woman from Ukraine and she is mulching like crazy. She already plants potatoes in winter, in the winter they are already sprouting and she is saying: she could make a garden also in the desert and I am always so moved. When I go half an hour through that garden, what kinds of possibilities are there. She has 100 different varieties of tomatoes and the craziest things. For me that is being moved from the possibilities and on the other side, what you just meant, what should be moved by this powerlessness, that nothing happens, that most people are not getting their asses up. We have to make big efforts to say we are not going to the big distributor but to a direct seller and look how the plants look like that I want to buy and the same thing with the animals. I have marketed cow meat directly and also yoghurt, 60 households direct delivery with yoghurt, that I

made up here. I said to the customers: that would be like if you are milking a chamois up here, that's how extensive my cows are kept and you are also producing yoghurt from that.

Do you know about the melioration measures by the swiss government?

Yes

What do you think about them?

Normally I rather have troubles with them, because they can cause especially in this rather untouched nature quite a lot of damage. The meliorations are more useful for the economy, but they should be used, if they should be used, only if people hazard the consequences, or if it is thought about that there is a lot lost. That there every trench and every otherwise not usable area is being ploughed through or something like that. That is the land consolidation. Even though that is such a perverted word: land consolidation, as if there was dirt there before (in german direct translation Flurbereinigung would be land cleaning), clean everything.

Yes everything needs to be sparkling clean. Do you think in the area there is a lack of scientific research about species diversity?

There I think Switzerland has a lot of possibilities. I can see the publications from the environmental ministry (Bundesamt für Umwelt BfU) and what I get free of charge 4 times a year. That is so rich, that I, that is very demanding to study that booklet. I can't do all that.

That's quite a lot ey?

I don't know if you know the journal?

Yes I do

Are you here in Switzerland?

No, but in preparation for this work, I had to read several of these publications.

From the BfU?

Yes

I have collected the issues from the last 10 years or 15 year.

You got it in your library?

I somehow think, there are so many interesting things in there and I am a bit of a hoarder, because if you are living here in the winter then this hoarding can be quite practical, if I have some newspapers which are 10 years old, then I still read there interesting things.

This question is aiming a bit far but anyway: under which circumstances would you be ready to participate with a monitoring for species diversity? What does not mean you are sitting down with the binoculars, but the things you notice in your everyday life.

We have the program here that the species got counted.

Here at your place?

Yes here on that Alp.

So you are Q2 area?

Yea of course, a certain species diversity is given here and that's why our boss gets direct payments, because of the proof of so and so many species and the reason the species are present here, we also contribute to that with our work, when we here, what you were asking about before. I have studied the documents and I am theoretically not up to date and I would have to get it explained to me, to find the connection between theory and practice. I was occupied with that more in recent times, just like with that street, that was 15 years ago. First to the BfU than to the ministry of agriculture (Bundesamt für Landwirtschaft BfL) I did some propositions to them how they could make a project out of the old road network. I have in my head some crazy ideas, I was thinking you could offer a prize for sustainable agriculture, but also those road things, that the state is supporting the existing road network, because the state is supporting at the moment to those kinds of projects, that are on a bigger scale, where they build bigger roads. There are some regions here, which are like the Breccaschlund, you have been to the Breccaschlund, these are landscape protection zone, natural landscape the Breccaschlund is called and there they constructed a street up there. There they gave some money for the paths up there even though they are pretty steep. But here they are discussing that the existing paths are too steep and there is no money for that and that is the perfidious thing. On the other hand the people are annoyed because the biggest part is coming from the tax payers, up to 60, 70 %, formerly it was 80 % and they are saying when the streets are closed to the Alps: yea if that is payed by our tax money, the extension of the streets to the Alps. But this is so difficult, that should be communicated, that the society takes part in that, for what they pay. Well I am not paying much taxes, I don't need to get angry about that, even though with those taxes are mainly weapons bought. I am putting myself effort in here and that is my policy for me that I show people at this place at the turf what ways would be possible to go.

What kind of indicators in terms of species diversity, well I cant measure the whole species diversity, but you always need some points of approach.

I have to tell an example. Thorsten (where I was working) his slurry pit simply went to the land.

Yea back to the small pond.

I discussed that with Thorsten, that he should make a little pond, or a separation, that its not flowing into the trench. Like a reed water treatment or so and there I was thinking about the question if I am exchanging with someone about improvements. There I am usually very pugnacious.

What do you think which kind of indicators would be suitable to record the local knowledge of the alpine farmers about biodiversity? What do you think a lot of them might know? For example as an indicator, well you said you are not knowledgeable about birds, but lets say most of alpine farmers like the birds and they can differentiate between them.

Well Ute knows a lot more about birds, or here the Vogelwarte (the bird watchers) Sempach is quite active and I put up an observation point there. There is rarely anyone.

But for yourself?

No here are more things, where we were thinking about what kind of predator that was, that was probably a sparrowhawk.

But for yourself. What do you think with plants, animals or mushrooms, in which area are you the most knowledgeable and what strikes you the most, where you could say what is where when?

Before I said that, that I cannot name you a specific plant, but if I see that, there is for example, that I learned from theory, that a certain type of pasture. You can for example in the early summer let the animals walk in just briefly and then you go somewhere else, so that the most intensive plants are shortened and then certain species which don't have as many chances can grow better. So you can through the type of pasture, how you let the

animals graze there, how long you let them graze or how quick you are going to another pasture. There are possibilities to favour the one or the other species and I am having a bit of a hard time with that. I naturally do it a little bit from the rational side, so that I cut the grass and fed the animals in the stable, but if I don't let the animals not go everywhere, well that's difficult to say. I protect foremostly the infrastructure that I created, but if they are not kicking down the trenches, that is a good example with wet weather, because I am feeding them in the stable, then the salamander have got more possibilities in the grass or in the trench to survive. But it is so difficult to say, there are even some totally stomped down pastures where certain species are having advantages, that is really difficult. There were even some studies already where it was shown that the pasturing of the animals, even though they did some damage there, that that is favourable for certain other species. In contrast the thistle, if I completely eradicate the thistle then I have taken the habitat from the common blue, who gets some food on the thistles or so. But I am not so thorough that I am busy behind that, that I regret that a certain species is not present anymore. I believe through my way of doing things, that I could survive here, where I was worrying about, because that's exceptional, that I am still here at all and spent so many winters here. I had to and I can understand the person who says: first I need to have some food before some butterfly gets some food, where you have to mention, that human would not have survived evolution if he wasn't so savage in the human history, if not he might be extinct like the dinosaurs. That is the other side, but clear that is madness what happens, when we are wasting vast amounts of energy and cover streets with concrete and this exuberant mobility. I am reading a book at the moment from someone who travelled around the world and sometimes I am thinking: man should I go to Bangladesh and have a look how these people there are living and afford some travels. I never travelled that much, if I travelled, I did it by hitchhiking. Well I was travelling too, to Austria to Bavaria. For 6 weeks I went away, 6 weeks I was on the road with Ute's car, that travel where I came back to Stuttgart. I have already afforded something in my style.

What do you think how could I motivate the alpine farmers to take part in the survey, so not an interview like with you but a shorter survey. What so you think could motivate them?

Yea if it's the Älplers? Nowadays its more the Alp managers, these are not the people, like we, who live actually on the Alp, but they are the people who own the Alp. That lobby still is very weak, there exists the Alpwirtschaftlicher Verein (alpine farming association), but I was in one meeting and there I was talking about more sustainability or organic practices on the Alp and they said to me: we already have enough organic, we don't need that on top on the Alp!

Not open for that, ok.

But there is a lot done, over the bureau for water management, that it is controlled where the liquid manure is going, but that is not so important anymore because pasture grazing (Weidehaltung) has increased, but that is hard to say. Well with the pasture grazing, where the animals are never going to the stable, there the animals are often treated with a neurotoxin that they get on the back against the flies. The motivation, that more people are motivated, that is not easy.

No the people who are here already, to motivate them participating in the survey. That is the thing because I have to think about: am I doing it on paper and send it by post, or am I doing it online and the people can look at it on the computer? Or am I calling the people?

With a study, I think that was from University of Hannover and they said you could lay the whole upper pasture farrow and such things, that was 30 years ago. Such proposals exist here too with the storm they were saying, if we make a certain area only virgin forest, but that goes through subventions., that they make suggestions and then now our farmer gladly accepts the money, if he provide a certain species diversity. But it was just a bit of a pity, that there was not given more incentives to them. If it was said, if you could do a little more extensive pasturing, there are certain programs, to let certain parts of pastures grow for a longer time, that the species can

flower and spread their seed. I did that basically voluntarily, without being compensated with money just because..., I did it like that. At certain spots I let more intensive grazing happen, other plots I was managing more cautiously.

To the topic species diversity, is there a topic where you think I absolutely have to include that in the survey? What you personally would judge as very important.

Yes that the species of sustainably living alpine farmers is not becoming extinct. Male and female.

And quite generally how do you assess the future here, more positive, more negative?

What is worrying me very much is the quarry.

So rather negative then.

Yes, well I am thinking this whole thing here is declining for me and I was thinking, maybe it got its red colours. Well of course there in Hunsrück I have also, I don't know if you can imagine that. I live in the Hunsrück in a builders hut. 6 m².

Oy that's not much space. So one of them with wheels?

So there are two gay men who manage a farm and there is a lot of food coming from the food bank and through the packaging, all the plastic, the bread with the crumb feeding to the chickens and such jobs I am doing and I can live there for free and on top of that, I can eat there for free, if I rescue all the food. I don't even have to go dumpster diving. All that stuff is coming straight to us. They get that 1, 2 times a week, what the foodbank cant use anymore, but that is crating so much work, the whole broccoli, to remove the plastics and I could nurture 20 other families if I all the foodstuffs would be eaten and I give it to the pigs, the chickens, the cows and the rabbits.

Statistics say that approximately 40 % of all foodstuffs are being thrown away. Comes some things. At the end, so you think I omitted something to the topic Alp and species diversity?

Yea well what I said at the end. The worry about that type of persons who would approach this habitat here, to live like that in harmony, to live sustainably with the possibilities here. The support, you know when I was coming here this was a trend. Did you follow a trend before?

Certainly yes.

Now it's a bit of a trend again, but now those Friday for future, I don't know. With us this was also very political but I was more interested in the left wing, but when I went to some student bar there in Landshut and they were saying that every worker should drive a Mercedes, that was a bit strange to me. 1968/69 there I was a bit too realistic thinking that might not be possible, but to some point if all people were saying that, then everyone would be here on the Alp then it would be crowded here, so it might be an advantage that its not like that. Up there there exists a ski lift, it comes from down there from Gruyère where the cheese is coming from and I have been there with Ruedi, we went up, there also a curious character is living, you could interview that one too, maybe you heard about that guy from Ruedi? André

André I met already, with longer hear.

French accent

Yes

That is a crazy guy too.

[Ä4]

Could you briefly describe your profession, the farm and your motivation?

I am a farmer, trained farmer, I have always lived here in the region Schwarzsee. For a long period of time we had a big farm leased. Milk farming and breeding and Alp farming. This leased farm we gave up in the year 2007 and now we are here on our own summer pasture farm (Sömmerungsbetrieb) where we are living the whole year. We have around 23 ha pastures with summering (Sömmerung) of 23 livestock units (Normalstöße) that accounts to ca. 45 animals.

And the pastures are located around the farm?

These are around here. A part is located higher with its own stable. Sometimes we are moving the animals and they are sometimes staying up there on the higher pastures.

And here on the farm is it cows for meat?

We are diverse. We have mother cows with calves, we have cows for meat and also have horses, mares with foals for the summering.

The animals, I guess in summertime they get driven on the higher pastures?

Yea at the start of the summer from middle of Mai till the end of June they are here and then they go to the higher located pasture and then they come back here. They stay for 120 days normally.

Do you have a side job?

The farm business I left to my son, but he is going to work full-time and my wife and me are managing the animals and as a side job I am milk controller for other farmers.

Does that produce a big part of the income?

No, that is this is just a small percentage, 4 to 5 % something like that.

How and from whom did you learn how to manage an alpine farm?

I grew up close-by to here on my parents farm, that also was always a mountain farm with summering and additionally we always had a lot of forest, I was also very busy in the forest.

Was there through extension services some trainings, classes etc.?

Yes through the alpine association Fribourg (Freiburger Alpwirtschaftlicher Verein), where I was for a long time working in the board. Every winter we did a winter course with the actual topics for the alpine farming. There were always 3 to 4 points that were relevant and these were always well visited. Especially concerning the changes in the summering contributions (Sömmerungsbeiträge) or with fertilization or whatever was relevant was communicated to the alpine farmers.

And you grew up on a farm so your work experience is live long I guess.

Yes

Ok. You were saying that you were chairman of the alpine farming association, are you otherwise part of a cooperative or union?

I was 25 years member of a multipurpose cooperative (Mehrzweckgenossenschaft), partly also president, that means that is the cooperative for alpine streets, lining of streams, landslides. There we have here in this area a lot of cooperatives and I was of one of them the president. The cooperative in this area here.

The farm, how is your family organized, you were saying you gave it to your son, are there otherwise employees or co-workers?

No this is only a family farm.

How do personal attitudes the farming practice? So for example with organic farmers, who say they don't want to use herbicides or so, or the usage of machinery. Do you have any influences like that?

Yes, not a real influence. Everyone for himself has to decide, of course now with the restrictions. We partly have with weeds, in the Flysch area there is the danger you know of many weeds, foremost thistle and if there are too many then you are almost dependent on herbicides for the fight. Nowadays we do a lot manually pricking out or cutting. Very few herbicides, one time you have that under control there is not much to do anymore. And of course the consciousness about preserving the nature is more present with alpine farmers.

What do you think characterises an alpine farmer?

We often say that has to be in your blood. Of course there are also people who had a different job, but quite often the grandfather was an alpine farmer already and like that...

Which kind of knowledge was existent in the past, with your father or grandfather for example, that you think is dying out at the moment, if it is management practices or production practices.

What is dying out... yea the forest use here in the mountain area, at the time of my grandfather he used to work with the horse in the forest. Now this is done exclusively with machinery. Otherwise, also with the maintenance of the pastures in the flysch area, my father did all the drainages and trenches by hand. Nowadays that is done by machinery. The practice has effectively stayed the same, the changes came with the evolution of techniques. Back at that time there were more people on the farms, employees were present. Today the employees are missing, that would not be possible to do everything by hand. But otherwise dying out..., nothing I can think of.

I was also thinking a bit about medical plants for instance.

Yea that maybe is in the family chronic, my grandfather they basically never went to the doctor. They cured everything with herbs. You can see sometimes in the television from Bavaria that people are working increasingly with medical plants. There knowledge got lost certainly.

What are you doing differently to your father on the farm?

His wife: Not much different. Himself: With the work you are doing the rational, formerly there were very few slurry pits present. It was all manure, today we have more slurry pits, more slurry is produced. In our area manure is very important for the soil, for the conservation of humus, for the composition of the plants. I believe there is a change of mind, that more manure is produced than for some time.

How are you exchanging knowledge about farm- and landscape management?

Certainly through contact with the colleagues.

So personally?

Yea and through the nature park. They sometimes are doing projects. Schwenden or something, cleaning the pasture or something.

Are you afraid that you cannot pass on knowledge about management to your son?

No I am not afraid of that. Sometimes it is difficult in young years. He also did the agricultural school and sometimes the young know, we can do this ourselves, but sometimes with increasing age there are some recommendations that get perceived.

That needs some time sometimes.

You cannot dictate but you can try. Takes some time.

I would start asking questions about perceptions and changes: which changes did you notice in the alpine farming and landscape management?

Until 1986 our Alps were very badly connected, that was practically only possible with horses, very bad paths and then with the foundation of that multiple purpose cooperative came the developments and there it was also possible, many of the buildings were in a bad state, that a lot of the buildings could be renovated and the structure changed as well. Formerly the herder was mostly up and stayed up on the Alp and nowadays we have many farmers who are managing a farm in the valley and an Alp at the same time and there the precondition is that an access road exists. Until 100 years ago, until 1924 there were a lot of Alp dairies and those basically vanished and also the last 20 years the summering of milk-cows has increased strongly here in the area, which is not the case everywhere.

Well milk-cows are very laborious to keep.

Yes, but that also came through that many farmers have a valley farm and a mountain farm. So they bring there own cows to the Alp.

So the Sennerei (alpine dairies) have increased as well?

Yes

What kind of changes did you notice with other things? So climate for example, or with physical structures?

Yes of course we cannot deny the climate changes with increasing warmer summers with the exception from 21. We had 2003 and then 15 and 17, but generally more often those warmer summers and the problems with water on the Alps.

Ah yes, there [REDACTED] told me that they used helicopters...

Helicopters with water, yes. That incentive also came now from the alpine farming association and through the multipurpose cooperatives to build more spring taps and reservoirs. Because the water supply is currently one of the main topics, to normally supply the Alps with water and that you don't have to call the helicopter.

[REDACTED] also told me that, with him his spring ran dry, I believe it was in 2018 and fortunately he had through scouting before found another source and that one he prepared quickly and build a street for the cows and drove them half a km to the other source. So chaotic. What are from your assessments the reasons for the changes you were naming?

How much we can contribute to that, there certainly are multiple reasons. You can hear from big deforestations in several countries, but also here. I say to myself sometimes, that the farmers houses should be more surrounded by green plants so that the solar radiation is absorbed. But lets go to the villages. All those big buildings all build from concrete, they also take in the radiation and are not emitting the heat over night, that's why the nights get warmer. Of that now one is talking much. If we take all that from the whole of Switzerland that also is heating the climate.

Probably yes and how do you assess the state of species diversity here in Switzerland in the mountains?

Yea I believe the species diversity is still present. In the alps we have to, we saw that with the biodiversity contributions, where there was the data recorded. Sometimes you were amazed what was still there. Of course you have to be careful with the management, well they had some problems with the sheep, who were quite often always at the same spot. Now they are always pastured plot-wise, so they are not at the same location all the time and are eating everything bare.

Yo you have on your pastures also biodiversity promotion areas (Biodiversitätsförderflächen BFF)?

Yes, ca. 1/3 of the pastures are BFF.

And why do you guess it is the case that here in the mountain area the biodiversity is still so good?

Yea the fertilisation of the soil is not being overdone for sure.

So a rather extensive management.

Yes rather extensive with usage of farmyard manure.

And what is..., when I come to many mountain farmers and I say: species diversity then they usually are declining: oh no, I don't want to be involved with that. And what is the first thing you are associating with the protection of species diversity?

Certainly the financial contributions! With the milk the income is surely not..., the one that gets made to cheese its good, but with industrial milk the prices are not so great. Then there are many young farmers, they draw from the biodiversity contributions and they are ready to do something for that.

Which activities do you do, that influences species diversity on different levels? So positive or negative, I was thinking about point of time of mowing, structural improvements, so maintaining an old stone wall or something. What do you do there?

Well the time of mowing certainly. Then with pasturing too, where we have the most biodiversity is the pasture which is used the latest. And now with structures with the stones, that is much regarded here, the branch-piles too, also with these regions with those old stone walls. Formerly they were delimitations for the pastures, there many stone walls were refurbished in the last years.

Yes I saw that too.

There are also many small animals using that as a refuge.

This interview also has the purpose of creating the survey later on and that I can..., I just want to mention that here, that your answers here are influencing the design. You can actively participate in design if you want and I have to, for the survey, to record data about biodiversity I need some indicators. So like the people for the BFF too and that's why the next questions are about that topic: Which kind of wild animals do you notice the most in your everyday life?

Wild animals, predatory birds are always here.

And they are striking?

Yes, deer and chamois. Deer went back strongly. Chamois in the high mountains are still present but here in the pre-alpine area have decreased strongly. Since a long time we have the presence of the lynx and wolf as well since a few years, but the lynx is more strongly represented here.

Yea with the wolf [REDACTED] told me that not long ago some got shot here in the Fribourg area. But I don't know much about that, one family or something.

Yea I don't know either.

So changes deer, chamois went back strongly.

Rabbits also went back strongly, but are at the moment recovering after Lothar (the storm). Because we have many different structures in the forest, there are many shrubs where they have protection.

And how are the marmots doing?

That is very divers. They were for some time also reducing a lot, now they are..., the reason is not known exactly, if inbreeding was involved.

But they are recovering at the moment?

Yes.

Otherwise could you notice differences with the individuals, if some predatory birds are bigger or smaller or the colouring, the behaviour, I don't know, that the deer are behaving strangely?

Yes especially the deer. You seldom see them 2 times on the same day at the same spot and if they are there only for a short time and then they are gone again. They are changing their location all the time, this is not like back in the days. Here they were for 10 years coming for eating until the house and then 5 years ago the wolf was here and since then this has finished.

Ah here in Schwarzsee you had wolfes?

Yea I saw him! He was having a walk here. This summer when the cows were on the upper pasture and suddenly, when I went and they saw me they were so shy, like a wild animal. Immediately gone! With my son as well. He went one time and there was the lynx there and he scared them 2, 3 times. A lynx cannot kill the animal (cow) but he probably was in the mood to do something. As soon as they were down here, they were immediately alright again. Up there, with the first glimpse they were gone like rockets. He filmed the lynx one time when he went.

Did you ever see a lynx, they are usually very shy.

Yea yea, he was very close when he recorded him. I have seen the lynx 3 times already.

And with plants, what do you notice the most. Well the thistle oyu are having at the moment.

Yea thistles we have the most right now. There are also Alp herders who are not doing anything against that and then with the wind they are spreading.

Yea that is an issue, when the whole pasture full of thistles.

Yea the predatory birds, sometimes you get the feeling in wintertime they suffer food shortages. Formerly with home slaughtering the residues were disposed on the pastures and there the predatory birds had something in winter, that's why we have to cover the chicken yard with a net and even though he killed the rooster last week.

A predator bird?

Yes and then I have...

That's a pity for the rooster. And with the plants you were mentioning before about the firs and the dwarf shrubs, if you are not taking care of the pastures that they are spreading.

That was always the case. In this summer, when the animals did a lot of step damages on the wet soil then the seed has a foundation for sprouting.

And someone told me alders are a big issue.

Alders yes.

And other plants?

Willows.

Are there invasive species here too?

Yea not with us on our pastures, but sometimes along the way. Groundsels also exist. We don't have them, but it does exist. Where you have to burn them, how was that called, they get pretty big. Meadow bistort (Wiesenknöterich), from that family and they are coming through communal work with support from the nature park. They have to be ripped out and then burned. The giant hogweed (Riesenbärenklau) that one.

Very poisonous yes.

Thorns are also existing.

Thornes like blackberries?

Yes, but rather the rosehips, hawthorn, blackthorn. I leave the blackthorn if its in one space, if it sits on rock boulders or so.

They are not like the thistles.

Also gives refuge for the birds.

And with the plants, did you notice some changes there? So that certain plants are not present at all anymore or other plants increasingly?

Not really here no.

And the plants themselves, are some plants growing bigger or smaller, do they look different?

No I never noticed anything like that.

Ok and other species, I thought about mushrooms are there many here on the pastures?

Normally yes, this year there are none of course. But normally at the forest borders there are many, it's a mushroom region here.

Were there any changes what kind of mushrooms are growing here in this area?

I don't know all but I don't think there are big changes. The collection is also limited to 2 kg per person and for some time there were also the ??? there, but that got abolished, but the amount is limited. Formerly they were coming from Neuenburg in droves. At the morning with the torch at 5 o'clock, everyone wanted to be the first there, but that went back.

Well everyone has got their secret spots to collect mushrooms. The others must not find out about that. Which kind of structural elements do you think are important for species diversity? So we were talking about the rock piles and the little walls. What else for example, so the blackthorn, you mentioned.

Open water is certainly..., many birds also need moisture to build their nests.

And something else which is important for species diversity in your opinion?

Yea certainly, that is being done to day a lot, that the pastures are separated into plots. Formerly it was possible to have one big plot and then they (the animals) were always grazing at the same good spot and the plants didn't have time to recover. If we do the separation then the plants get their rest and they can recover.

And why do you think, well with the open waters for the birds building their nests, but why are these structural elements important for the animals?

So that they, for maintaining the population and reproduction.

And with the open water surfaces, were there changes here in the area.

Yes until the 60ies, 70ies many people were on the Alps and did them (trenches, drainages) by hand and then for some time this was neglected. And nowadays its being done by machinery, but that also lead to the sliding slopes, because the water couldn't drain any more from the open trenches.

How important is environmental protection for yourself?

That is the future for sustaining alpine farming. Also for the population.

So managing sustainably has got a high priority.

Yes with certainty.

Through what kind of state or private programs are you supported with managing biodiversity?

That is the consultation and the financial contributions certainly too.

And all that is state financed?

Yea that is from the state, well I guess so. Taking part in for example the Network projects (Vernetzungsprojekte), that is voluntary, but a certain amount is demanded by the state, but that is for the municipality, or multiple municipalities that cover such an area and there the people are motivated to take part in.

Which kind of practices are in your perspective good for biodiversity in the alpine area?

Certainly a tailor-cut management.

To the location?

Yes. Here we are also, well the summering number (Sömmerungsanzahl) was determined. The livestock units, so the pastures are not being overgrazed and the inflow of foreign (to the area) fertilisers is forbidden. That also plays a part.

And otherwise, generally the extensive management, which is in place in the alpine area.

Yea that is certainly important. You would see if our ancestors wouldn't have managed as they did, we wouldn't have such an area, that's why we have to make sure that this can be continued.

Also a conservation of what you learned from your father?

Yes.

The alpine area is also characterised by a high diversity of small scale structures and that should be conserved.

Yes especially with single trees. There was recently made an effort to plant maples. We have some areas here, the Breccaschlund and Muschelschlund where there are a lot of sycamores. Here in the pre-alps it was less present, but now there are many who have planted maples. Then that you leave some firs standing on the pasture.

And to conserve this mountain landscape, what kind of measures do you think should be taken?

Certainly the financial part has to be appropriate at the end, so that the people, at the moment with the contributions in the last 20 years, that got raised regularly, a lot was done. From that side we have a good stand. The motivation of the people, we have no reason to complain about that. We have many young alpine farmers. Young families. You can see some areas, where the Alps and animals are only managed from the valley farm, just a check and then gone again.

In which part is this more common practice?

I have seen that in Wiesbach district in Kanton Fribourg. ??? I don't know if it says something to you?

Says nothing to me.

The alpine farming association has in the Kanton Fribourg 18 circles and a region gets checked every 18 years.

Ahh the Alp control ok.

It is not connected with sanctions, but there is a census done, changes compared to before. Recommendations are being made and you can see such big differences. I was for 18 years with them. In the Wiesbach region we did per day ca. 10 Alps

Quite a lot!

On one day. There was not a single one that was constantly being inhabited, all from the valley. You could see, the buildings are not properly maintained and on the pastures you could see it as well that only the most necessary was done.

So you would say just looking at Kanton Fribourg that there are...

Big differences yes. What we, you were saying there still are bigger Alps who still have employees, a man or a woman or something (or what thing?). If you look at Bern or Graubünden or the cooperative Alps in Wallis where pretty much everyone is an employee, then we have a very big difference here. Here we have mostly private Alps and some cooperative Alps too, but which are usually managed by one family, who lives the whole summer on the Alp.

That characterises this area here. Why things are working as they are working.

Yes

Where do you see at the moment the biggest necessity for action in the mountain management here?

In the alpine farming, well in the pre-alps here we have during wet summer a big issues with sliding slopes. You could see that while coming up here from the road.

Yea that looked not so good in some parts.

1995 we had a slope slide from top to bottom and then there was a drainage done in the upper area and last winter there were 2 days of rain while the snow was still lying. There went a lot of water into the soil and it became active again. We could see that at the road and the stream is a wild stream. In summer during thunderstorms it has a an enormous amount of water and there are erosions.

I also saw that on the other side of the valley, next to Elmars hut.

Ahh yea the Längmoos the access path is sliding down. Last springtime the road was 6 m lower again. That is something we always have to fight with.

That is not easy. So concerning the sliding slopes and the erosions, what is your opinion to the melioration measures? The structural improvements, water or streets.

We are relatively well set up. With water construction the support is a bit lacking from the Kanton. What is concerning paths is subventioned through the office for agriculture (Landwirtschaftsamt) with contributions and support us, with that we are well set up. But in the water construction it was lacking a little, they admitted that too, they were a bit slacking with maintenance, but I didn't see no improvements this summer.

Maybe next summer, lets see. But in general you see it positive?

Yes.

Well there are some people who look at them critically, that's why I'm asking. Do you think in this area here there is a lack of information about species diversity?

Yea that could be expanded a little bit.

And otherwise is there a lack of information about codes of best practices (gute fachliche praxis), that's how we called it at the agricultural school.

Well I believe, last year did that winter course not happen, but otherwise we are set up pretty good with information for the management. But maybe that would be a specific topic, the species diversity, to give that a bit more presence, or also through the nature park. They are also involved with these tasks, maybe it would be possible to achieve a little more there.

Right, now to the methods of the studies, I think I can skip the first question, you answered that already when we were talking about plants and animals. But what is very important for me is, I have to do for the survey, because I am unfortunately not here because I am lacking money and time, blablabla, but I have to motivate the alpine farmers to participate, how do you think I could do that most sensibly?

(Talking about the interviews)

Try to get the people into a conversation, maybe..

Well the farmers union fortunately proposed to help me and I was thinking maybe there are more suitable who I could ask to distribute for me.

So are you looking in this area for someone?

Yes of course, always.

Elmar Z. would be suitable. He is the Alp-association vice-president. He manages an Alp on the other side from here. Today you can't see it, he also goes up there with cows. There was a extraordinary situation this year, we had hail damages in June. 10 cm hail balls, the grass was damaged and he had to go down with the cows and returned later on. (Talking about telephone numbers and contacts)

Do you have any experience with data collection for species diversity from Alp managers here from this area? I was thinking a bit about the birdwatchers, which is working a lot with amateurs and I was thinking maybe there is some Alp manager who is working with them.

I wouldn't know anyone, but they come regularly to this area. Schwyberg. Maybe ask the birdwatchers themselves. Yea they come regularly, they have a driving permit for Schwyberg, so they come often to collect data. There was a wild park in planning and they did for that a lot of data collections. Maybe you could get something there, but I don't know if someone from this area is involved.

And what kind of format do you think with the survey would be most suitable. Maybe on paper or online is possible as well.

The younger ones online for sure. Paper is probably not bad too. At least you have something in your hand.

I was saying in the beginning, that your answers will be part of the design of the survey and for that: what would you like to have included around the topic species diversity to be included. Is there some topic you are interested in?

Not in particular. What we already talked about the consultations, with clarification for the people. Before these biodiversity contributions were introduced, well the species diversity was present and you didn't occupy yourself with it. That is only since that.

So the awareness yes. And then at the very end how do you see the future of the Alp management and of the landscape? Rather positive? Rather negative?

Very positive.

And why?

We have many young motivated people. Of course there are some families where there is no future, but then there is also a family with 3 sons and all of them want to do that profession. Yea I think its positive.

And the farms that are given up is at difficult locations.

Yea more that. Formerly, 100 years ago many Alps were bought by the state, which were swampy, wet and which got reforested and at some point they said: no its enough and now we have at Elmars place with the slope renovations on top with forest and some pastures, but not whole pastures anymore.

Slope renovation with forest, so the roots can stabilise the soil.

Yea to reinforce the soil.

Did I omit anything important around that topic.

No I don't think so, very elaborate.

Thank you, otherwise do you have commentary, ideas, critic?

Yea sometimes there is the communication to the not-agricultural population an issue, that is an important point. Sometimes people are seeing it different, because the not-agricultural people cannot understand it in that way. Especially you can see that with the forest. Nowadays dead wood is left in the forest and that creates humus and not like before all cleaned up and many people have problems with that.

But that is good it is done like that now. (Talking about bats and dead wood)

Do you have any good advice to give to me?

I think its important that someone is taking the topic.

I am very happy you think this is an important topic. I am very happy about that. Thank you very much

[Ä1]

Very well, could you briefly describe your profession and your farm?

I have at my home a dairy farm with 24 ha of land. Dairy business and own breeding. In summertime I am managing my Alp, the Steinige Rippa in the Breccaschlund and the Alp belongs to me and the farm is leased. In summer we have a Buvette a Besenbeiz as it is called (small gastronomy on the Alp) on the Alp and there we sell food and drinks for the thirsty hikers.

Yea I stopped there already too.

Ah that's how you knew me.

And what is your motivation?

Motivation: I love the farming profession. I love the mountains, I like the animals, the machinery, that fits well for me, it is a pleasure. Also being independent, you have to do a lot, a lot of hours also on Saturday and Sunday, but I like it.

Great. The pastures are all located around the Steinige Rippa?

Yes, this is a bit of a difficult Alp for managing, rocky and steep and the upper hut is without access road.

Through what is it characterised, so number and breed of the animals?

I only have my own animals on the Alp. Its around 50 animals with dairy cows, calves and cattle. A dog and 5 goats, 2 pigs.

Is there a trend, where its heading to, rather more animals or less animals.

Certainly not more animals, that is exhausted. It is enough animals for the Alp and I want to continue like that.

The movement of the animals. I guess in June you are going up and then...

Beginning of June until, the dairy cows are coming down earlier and end of September the season is over or beginning of October, depending on the weather.

Yes, how do you sell?

My products? The milk from the cows is processed to Vacherin Fribourgois, cheesery milk and the claves for the kitchen (meat I guess) and the animals, the animals for slaughter, I sell at the slaughter cattle market and I am doing a bit wage labour sometimes, driving manure and the meat for the buvette, the dried sausages I also sell on our own farm. That always goes from the own farm.

So some direct marketing ok. And you don't have any side-jobs as I understood it.

No I am full-time on the farm.

How and by whom did you learn to manage the Alp and the farm?

That was a bit put into my cradle. Especially the Alp and the farming. My father was no farmer, but my grandfather was a farmer and they lived in the same house and we were always in the stable and like that we learned the processes.

Otherwise were there some courses?

Yes I went to the agricultural school with subsequent professional examination.

Are there some additional training classes, through the farmers association or so?

Yes, we have a course group, or how would you call that, in Grangeneuve in the agricultural school, there are always courses announced and if you are interested in a course you are visiting that one. And always in the trade press, Schweizer Bauer, Bauernzeitung, Die Grüne or something, you try to develop further, you have to do that constantly.

Well time is not stopping.

Yea that's like that in every profession.

And are you part of a cooperative, union or association?

Yea we have the cooperative organised milk sale and also the meat sale is also cooperatively organised and also the Landi, the purchases for concentrated fodder is also a cooperative.

How is it organised with you? Are there employees?

Ich had until last week a trainee. At the moment I am on my own, well with temporary help and with my parents on the Alp, especially on the Alp I need some support and the grandmother is also there.

Yea I met her too. How do your personal attitudes influence the management practice? So I was thinking for example with [REDACTED] there was a strong ecological way of thinking, how he does what, do you have some motivations too?

I live with the nature. For that I don't necessarily need a lable. I am a farmer with body and soul and that says everything. You have to work with nature, that doesn't have anything to do with pollution. I always say a healthy attitude or a healthy thinking. I am not the born organic farmer as you know them with a felt-jacket and scarf, but I don't condemn it. You have to look for yourself especially in the dairy cow feeding, the organic feeding, if the cow has almost no energy left and you are not allowed to give additional concentrated fodder, I have some troubles with that, that is not really organic, I say. If the cow is lacking energy she is not healthy. So there I have some troubles with organic management and also that a lot gets imported and so, but I don't want to go further into that. I am a farmer connected to nature, like that!

So you would say your management is more extensive?

Not really extensive, not that. But I try to get out the optimal not the maximal. But not extensive, that would be the wrong word.

Ok and what do you think, to work on an Alp, that is requiring a lot from the people and what is characterising the alpine farmers, who are working there?

You have to be born like that, you have to know it from small on. You are not learning that when you are 20 or 30, that is hard work. You always have to stay busy, you have to be self-critical as well, what did I do right? What did I do wrong? What could be done better the next year, maybe improve the management as well and yea it needs lifeblood. It is also necessary for my animals to go summering. I don't have enough pastures here at home. So it makes sense when you give them to the Alp.

(I mixed up with the formal and informal way of talking and discussing that) You were saying that your grandfather was also a farmer and what do you think what kind of knowledge existed in the past, that in your opinion is currently dying out or that is not in use anymore?

In comparison to the past? So I have to remember that? What is getting lost or so? Especially in the alpine farming I can see the trend, the young ones, the society doesn't want to be tied down as in the past, like my grandparents.

I see that sometimes as a threat to the alpine farming. The young, also the women also want to have free time, we do that too nowadays, but in summer, when you are on the Alp you are tied a little. There you cannot go every Friday to the city and many young are not ready to lead a life like that. This is not just a job it is a vocation it is a life, a style of life. Sometimes I am seeing that the young decreasingly want to be tied. Depending on the region, in Kanton Bern this is very different. Here it is a bit different and in tendency less. How should I say that, the connectedness or something. You are not always free, when you go working you are free on Fridays, Saturdays, from the morning 8 till 5, half past 7 till 5, that is simply not the case.

The cows are not doing weekends. What are you doing differently than your predecessors? Your grandfather for example.

Well today you need increasingly machines on the Alp, in most cases there are less people for work. The manure, I can remember used to be drawn with the horses and ??? (some sort of cart), unloaded it by hand and today I make a pile and I go up with the front loader and the mist setter also the slurry. Otherwise weed management, fencing, providing wood. Wood is also a thing, you take the wood splitting machine, in the past everything was done by hand, but today you have to use machinery to handle the workload, that changes.

Well to employ people is very expensive.

It comes very expensive and is not easy in agriculture.

That's clear, with weed management: How do you do that, mechanically, chemically or a combination?

Both.

And the experience you are collecting, that other alpine farmers collect as well, how do you exchange that? Is there every now and then a meeting, is that private?

We have a alpine farmers club, but that is more for the sociable. We also have the alpine farmers association in Kanton Fribourg, which provides every year courses and further training and in these 2 clubs there is a lively exchange possible. Or also in the trade press, trade articles and so on.

Well I was thinking in the last years there were some water shortages here and that the people in the mountains are exchanging which source still has.

We also have that multi-purpose cooperative, that is in the Breccaschlund in the valley, that is also for the streets and the water supply, those different topics. There we have every year a general meeting and sometimes also an exceptional one and there you can use synergies and, how to say, there you are exchanging, not every association does its own water supply, or most of the time you are doing a project. After that there are some more subsidies from the state, they support that after that.

Well you are still very young, but do you worry about not being able to pass on your experience you collect on the mountain with the cows to a possible successor?

Maybe I am still alone at the moment, if it stays that way, yes voilà, than it stays that way. How should I say, you have to try to send the kids, when they are still young to holidays to the mountains. I don't see that as child labour, but as experience for life.

This is nice with the animals.

And they learn how to handle and also to improvise, if something is not working out. Some young are seeing black right now, they cannot go further. The mobile is broken, oh I can't live! You have to try with the young. I also have good contacts with a student from Zürich and so and they are coming since x years to the Alp and they certainly have already made good experiences. They learned a lot, they have to partake in it.

You were talking about improvisation. I can remember that [REDACTED] said, when I was asking him what is being lost and his answer was straight: the calmness and he said if you are on the Alp and there is unexpected snow and he said you need to keep calm.

Yes correct or a lightning strike and a cow is dead. I have experienced that, multiple times already. This year as well, there it was dead underneath a tree, but you cannot scream and cry and go to the neighbour, that is of no use. It's not going to wake up again. You have to stay calm, think and in the end also forget a bit as well. Well you know, the cow I reared as a small, watered it, nurtured it, cared for and after that everything was for nothing. Also financially, that comes on top, but yea that is "gebauert" ("farmered") as you say, you have to live with losses.

That is part of living that's true. And now to your personal perceptions: What changes did you notice in alpine farming and landscape management in the recent years. So the last 10 years or something.

Not much. Here in Kanton Fribourg this is not so much the case. Some Kantons have to deal with overgrowth, sometimes there are Alps that are not getting managed anymore, because the effort is too high, if there is no access street and no animals.

And that is a trend in recent years?

In the last 20 years, I would say, there were Alps given up, but now its stagnating. These were partly also difficult Alps, wet Alps, simply difficult ones, where it was wet and bad grass.

Otherwise changes with climate or physical structures or social changes?

Ah these kind of changes. Yes there was a lot of electricity installed to make the management easier. With more people it has to go with machinery on the Alp, as you said, to hire labour force is very expensive. Water supply got realised with good drinking water. Alp developments were done, so you can drive up to the Alp with a car, very important to maintain the hut. Maintenance, like making the roof. If you have to carry up everything with the donkey that is very difficult today, nobody does that anymore. The change in society. Well with a helicopter, but a helicopter costs also a lot and is connected with marching on foot and that is difficult. But with many Alps, also the hut got renovated with modern milking machines, with pipe milking, not with the buckets, that you would have to carry. That used to be done a lot. Or also a sewage canal (Schwemmkanal), that is a grid and a trench and the manure is falling down and in the end this is going into the slurry pit, that was done a lot too. Also in the hut a lot of modernisations were installed. Not the old smoke kitchen anymore but a real kitchen, that exists too, where it is permanently managed.

Were there some change in nature that you noticed?

In the nature..., yea with the wolf there is an issue. With the wolf, you have to look out, otherwise it is driving the animals away. I was worried about my young animals. I was lucky that never anything happened until now, but you have to keep an eye on that, that the wolf is not reproducing otherwise the alpine farming is endangered. Suddenly the young say: I am not going to Alp anymore, if its not possible anymore. If it gets so difficult that you have to be afraid for your own body, then it gets very difficult. Climate wise, we had very dry summers, very wet summers as well. It was a bit extreme, but well the nature, I had a discussion with a guy. Next summer I am going to the Alp where I am and every summer was plus minus the same length. It is always equalising a bit. Maybe in June it will be very dry, later on in July there is a lot of rain and afterwards its growing again and sometimes its wet in August and then you get a beautiful autumn and that compensated again. The nature, this year we had a lot of hail. Ey gigantic, that looked very bad. Also a lot of damages with the roof and the pastures were also damaged.

Your assessment, what are the reasons for the changes you mentioned?

The reasons? So society, the change in society, that the people are all having a car today, a mobile at your home and that is right as it is. You mustn't distance yourself from the rest of society. Otherwise you are like the Aborigines, or how would you say that. That is not possible. But that is also an advantage, they also have a real income. As I said, the young don't want to be tied down as much as the previous generation. From nature wise, well you hear about climate change, but there also were very dry summers in the past, my grandmother can remember and she might remember in the 50ies there was one winter without any snow! Nothing here in Plasselb and we had mild winters as well, but in the last years they were increasingly mild.

Well in Berlin for example in the last 5 years there was no snow at all, which is very unusual, but we shall see, I hope this year there is going to be some.

That is part of the winter yes.

Well lets see, lets see. And the electricity and water supply. This is probably going through the melioration measures constructed. That shows a certain valuation that the society is saying: yea that's necessary. Do you think this is a trend, that the general perception is changing and is saying: yes we want the alpine farming.

Yes that I can feel. Today with sustainability and everything, that gets propagated a lot. Sometimes the dairy production gets beaten, but in the mountains people are ready to pay something. If its for the water supply for instance. In our valley in the Breccaschlund, there are 99 %, lets say 95 % of people who want that valley, as it is and also managed huts and also renovated huts and not derelict huts. They want that, that is important for them. But on the other hand, these are the same people who are criticising the slurry and so on. Sometimes it is really difficult.

That's part of the game I think.

Yes, yes the slurry. But it is nevertheless supported. I am not afraid in Switzerland that you simply give up the mountain regions, I believe that we get the support for that. Also from viewpoint of agricultural politics, we have the sympathies. It is also important, otherwise nobody will do it anymore. You have to be able to a small extent to make revenue and you have to be able to nourish a family, otherwise it does not make sense. Otherwise you are working yourself to death, if you have to take a side-job to be able to live at all and only enjoy working from morning till evening is also not possible. I also see the that the products from the Alps are in high demand, like the cheese, the milk, the cream and the small gastronomy, the buvettes as we say, that is in demand! I can see an opportunity in there, that should go alright.

And how do you assess the biodiversity here in the swiss alps?

That's very good!

What is the reason for that in your opinion?

Yea that comes from the sustainable management since many 100 years. I am doing everything in the same way as my great-grandfather. We are doing this since generations without sheets and books and the flowers are still sprouting. There he didn't do any mistakes in that direction. That is a gentle management with cattle, with cattle, not more cattle, just the cattle that the Alp needs so that it is going, that is sustainable management. If you are not pasturing then there are no more flowers, only the mat-grass (Borstgrass) and the shrubs.

So you have the livestock units regulated. Do you think the livestock units are estimated well or would you send some more on your Alp?

Well I could raise it a little bit, with the improved management I did do. I have geschwent a lot, as we say, a lot of weed management, the shrubs, now I have a little more pastures. But I leave it like that, much more is not possible. No, I don't have any intentions in raising.

So now about species diversity. What is the very first thing when you hear species diversity?

Species diversity? The many flowers, many types of grass as well. You also notice the milk does not taste as good in the valley as up here, that you always notice. The plant community makes the milk and that is species diversity I would say.

What kind of activities do you have that influence the species diversity? For example mowing time or something.

So up there is pasturing. At the beginning of June I am starting the pasturing and otherwise I am not doing much up there. Down here you have the 7 % eco-areas, these are not allowed to be fertilised. You have high-trunk-field-fruit-trees (Hochstammfeldobstbäume), that's how I do the species diversity. You have hedges, you have shrubs, you have a nutritional balance, you are not allowed to put more than necessary and what else mowing time as well, yes.

(Explaining the survey) Which wild animals do you recognise the most in your everyday life?

So which animals on the mountain? The chamois! Everyday I see them. The eagle sometimes.

That's true there are eagles in Breccaschlund.

And Bartgeier (bearded vultures), or how you call them, you see them sometimes as well.

How many eagles are there in Breccaschlund?

I think only a few.

So less than 4?

Yes less than that.

Is there a species or a group where you noticed in recent years changes? For example, that the chamois are bigger or smaller or if they are behaving differently, they got shyer or less shy and such things.

The amount of chamois in the last 10 years has stayed the same, there I didn't notice any changes and the other wild animals as well. I would assert, some people are laughing, but that the chamois know me, when I go to my animals. They are not so shy anymore, they walk a little bit and observe but they are not running away. They know you, if you are in the terrain every day. That is the nature.

And deer for example or marmots?

Marmots are fewer, because that is the eagle. That is a bit of an issue. I am also positive towards supporting the eagle, but at the same time not too much. He eats a lot of marmots and also the wood grouse, they got fewer and marmots, when I was young there were a lot more and now its less with the eagle, he eats them.

Normally that should balance itself. If there is not enough prey, then the eagles are dying, then there are more marmots again.

I hope that, not too evil I mean, but it is a pity when there are no more marmots. But that will balance itself.

And with plants what do you notice predominantly in your everyday live?

With me there is a very high species diversity on my Alp. I did let that get controlled and they said that 85 % of the area is very rich in species. All the flowering plants, the marguerites and all the names. That is normal.

So rather the flowers, which are striking?

The grasses, the flowers.

And the problematic plants? The thistle

Yea I have them too.

Ah they are unfortunately everywhere.

That is very difficult. The nettles I have got, the camphor, thistle, white hellebore, that one is not so bad. I have a little with my Alp, the Alps are different with these things, weeds, some Alps have almost nothing and some Alps have a lot and I have a lot too. I have to keep it in focus. With the management at home you go haymaking and you have to do both. You go up to milk and then there is bad weather and you have time to make sticks, fence posts and so on and also fight the weeds. You always have to keep at it.

Yea otherwise it is exploding.

No otherwise you don't need to come again.

So for example, also problematic plants, like trees or shrubs, are there alder trees for example?

No maple trees are very common. Sometimes a little of a pest.

Did you notice with these a change in the last years, also with invasive plants if there existed something?

Yea the thistle. Originally it was not in the mountains I believe, they are coming from the arable farming. Thistle are feeling in the warm dry summers as comfortable as can get. That is increasing.

And otherwise with the flowers you noticed something. That some flowers have increased, or that the colours changes?

No nothing, since my childhood this is the same.

Other species, I was thinking of mushrooms for example.

Mushrooms, with me in the valley, almost none.

Which kind of structural elements do you think are important for species diversity?

Structural elements. How should I say that, a bit of everything is necessary.

So a general diversity.

Yes, the bees are necessary, a beautiful maple tree in the middle. That we are supporting, a single tree and a sustainable management for the Alp. Yea these are the points.

Were there changes in the recent years, so did single trees die or they increased?

That always happens, after 200, 300 years there is an end.

So it is keeping the balance more or less?

Yes.

And for you personally, how important is environmental protection for yourself?

Well simply not too aggressive. Environmental protection, I am for environmental protection too, but not simply, these people who are governing and have got no idea of the whole story, there I have some issues.

Yea I believe that!

When they come with prohibitions and we do it since generations exactly the same and suddenly someone from the office is coming and is saying: this is prohibited now. With that I have my issues. But environmental protection, I am all the way for it, to keep the alps as they are not make a holiday home settlement and so on and this time is now almost over.

Fortunately.

Yes fortunately.

(Talking about Schwarzsee tourism) Do you do yourself something for environmental protection?

Well in my business I am managing sustainable and I am not driving around in the landscape without a good reason and I am trying to use synergies and application of fertilisers and so, that is clear, that is regulated and simply what the plant needs...

But not more

Yea, I am not driving every half year to, I don't know where into the holidays, that is also a bit environmental protection.

That is quite a lot of environmental protection. The airplanes are incredibly dirty.

Unbelievable, you see a lot of these contrails. I have not a bad feeling that I am not managing sustainably.

And are, with the biodiversity schemes, supported by the state or privately.

Well that is a precondition from the state to get direct payments on the farm. You have to have a certain area of BFF (biodiversity promotion areas). I even have more, I have 10 %, sufficient would be 7, that is maybe also a contribution.

Certainly! So up on the Alp there are also BFF written out.

Not directly no. We have also regulations, we are not allowed to bring mineral fertiliser up. Simply the own manure and slurry. We have no areas, where we are only allowed to pasture them at the start of August or something like that.

Which practices, strategies, management are in your opinion good for species diversity in the area of the alps. You were talking about that gentle management.

Yea the management that it allows, with cattle, with dairy cows.

So dependent of the location?

Yea the higher you are the less grass is growing. In the high alps the grass is growing one time and after that finished and in the lower alps there is a bit growing and there you can have a few more animals. At 1900 m, or at 1200 m, there is a big difference.

Structural elements, you were talking about, with the 7 % of areas, that you have hedges and so on.

Hedges, field-fruit-trees, extensive pastures, single trees, that is my...

And dead wood for example?

Yea dead wood I have too. Stone piles, branch piles I have too.

And to conserve species diversity, what do you think what kind of measures should be taken?

Well, maybe not always support the big farms. In the last 20 years a lot of pressure was exerted on the small farmers with 10 cows or so and afterwards big farms were created with 50 cows plus.

True that is a change to, that the farms are getting bigger.

A lot bigger! But that was regulated directly and indirectly and it was always said that the farmers are not advanced enough and they were saying, that the farms need to be specialised. One does dairy farming, one does pig farming, one does arable agriculture. In the past a farm had dairy, they had pigs, they had arable land, they had grass pastures and there the cycle was more closed and today it is a little bit one-sided, but then the government and the consumers need to be ready to pay a little more and not always want cheap products, that is a big problem. For the food they don't want to pay that much anymore. The car doesn't matter and the holiday boat and so on, that is allowed to be expensive, but not the food.

But if the food costs 10 cents more...

Oh, you should show some consideration for the family farms, the farms as such and not as agricultural businesses. He has got big tractors, he can work faster. It's not so good for the soil. But well here in the hilly area here are the borders set, you cannot work with big machines and fortunately a bit.

So mostly political measures that they are doing more for the small farms.

Yea not always bigger, bigger, bigger, what was happening in the past.

Well if there are bigger farms then there is more homogenisation happening, with big machines, that's not good, at least for species diversity is not good.

Yea, simply a balance, everybody wants to earn something, also in politics. Especially them they want to have the wage at the end, so they are looking for themselves. I think everywhere that problem exists. But you cannot simply say: the farmers are at fault. The farmers are responsible for the climate, for particulate matter, for nitrate in the water, everything comes to the farmers, but you were forced to manage like that, also in the agricultural school. I don't know the teacher was, when I was there, there the only topic was pesticides and so on and today these are almost forbidden. There was a vote in June, I am also not for the pesticides, but in the past they were very much propagated, 15 years ago when I was 16, 17.

That always change quickly. And where do you see the biggest necessity for action for Switzerland concerning species diversity.

With regard to the Alps, foremost that you cultivate them, that is important so the species diversity survives. Well simply with the farms at home, to continue with the compensation areas 7 % and also sustainably manage. To plant an apple tree, or 2 or 3 so the generation coming after us has an apple tree to and also for the bees and so on. The cow that goes to the pasture. Not just in the stable, which is again the trend with the milking robots. But in Switzerland it goes in direction milking robots, very strongly. Not in our region, because we have cheesery milk and we have a duty booklet and that has to be complied to and a milking robot is forbidden. But the farms in the Mittelland (flat part of Switzerland) and so on, they invested a lot in the last years in milking robots and the cows are staying again predominantly in the stable and are fed like that, what the people do not really want, but they want cheap milk. And with the robot they get cheap milk. The farmer can by himself do 100 cows and is not tied to a schedule anymore, he does not have to go at 5 in the morning to milk. But the people would prefer to pay 50 Rappen (100 Rappen = 1 Franke) for the litre milk and that is not possible. So a change of mind with the consumer as well right? For a litre of water or for a litre of beer you have to pay more and it simply doesn't fit anymore.

We were talking about the meliorations before of the swiss government, what do you think about them? Are they done enough or not enough?

Yea, when a project is going you are supported and quite well supported and these are investments you cant carry alone as a alpine farmer, these are huge sums. Yea I could say its positive.

Do you think here in this area there is a lack of knowledge about biodiversity or about environment?

No I don't think so not in particular.

Is there otherwise a lack of knowledge concerning management practices or changes in the environment?

I don't think so, not to my knowledge.

(explaining distribution of survey) how do you think I could motivate the farmers to participate in the survey?

Ah how to get them... well I am taking some time as well, I would have work too, but no worries, I like doing that.

Thank you very much!

How to motivate? Are you taking people from the region?

Yes that was the plan.

Did you already talk to [REDACTED] or [REDACTED]? They know many people.

So the associations?

Yes! I would do it like that.

Do you have any experiences with collection of species diversity? I was thinking a bit about IPSuisse, well they are in the valley.

Yea I am also doing IPSuisse.

So you estimated the species diversity yourself?

Yes.

Was that difficult?

No that was easy in my farm. I didn't have to change anything. I have difficult areas with hedges and trees and everything was present.

What kind of format do you think, well I could do it online, I could do it on paper, with the telephone, what do you think would be best?

Online! Well I don't know, online sometimes these things I am ignoring, but...

But if Mr. [REDACTED] is asking for it?

Yes, that comes alright.

Then, I want to make the study as open as possible, so is there a topic in the context of species diversity, what you would wish for to be included, what you think is important.

No I cant think of anything at the moment.

So last question: how do you assess the future of the alps and its management and landscape? Positive? Or negative?

That would be from region to region a little bit different, but here it is positive, that we can continue going like that. The people are motivated as well. I think in this region its going well. We had in the region Fribourg with our Alp cheese production, with Gruyère and Vacherin, we have very good sales opportunities, that is in high demand. I see the future as good.

That Vacherin is really good!

Yea that one is great.

You think I omitted something important for the topic species diversity and management practices?

No I think its all.

You have commentary, ideas, criticism?

No

Very last question: can you give me good advice, those I am collecting too.

Yea, stay connected with the alpine farming and show your colleagues this world. In the end that creates relations: ah lets go again, that was nice with Jonas. And later on they might go with their children or you as well and show that to the children, that is an advice, that it keeps being continued.

[Ä6]

Well then, could you briefly explain your profession and your operation?

Yes, we have ca. 15 ha, dairy farm with around 10, 11 dairy cows and the small, the young cattle. 2 goats.

Goats are always nice.

They are from the son.

Nice animals and your motivation to do that?

I as a child grew up here. It was my parents farm. Then my brother does not like the mountain area he had a farm in Bulle in the flat with someone together. He then stopped and is working as an employee in Grangeneuve in a state owned farming business. Well he likes the big machines and flat land and my ex-husband wanted to take this over and then we did that and when he left, my son, at the time he was 8, he said was asking my father if he can continue until he can take over. He likes it, the mountain area.

That I also found nice in Schwarzsee, how many young people are interested again and took over. Through what is it characterized? What breed of cows are there? I think I saw before (on a sign) the brown Holstein.

Yea most of it is red Holstein.

And the trend of the Alp, does it go towards more animals or less?

My son wants to get bigger, we already have a plot more, so that there will be enough income. My father always had another job additionally. He was inseminator. Either you have to have something that fits with it, or you have to get bigger, he would like to have more land, but... its difficult. The rest what we have all belongs to us, its our own land not leased, coming from that it will stay that way, not getting smaller.

And the movements of the cows. They come up in June?

We don't have a proper Alp. We have this farm and a little bit further up we have, but that also belongs to the agricultural land, where the cows are going during the summer, but only 2 months or so. Because our cows are calving in June, July and then we don't have as much time to be away. But we have also 3 cows or so, that go to a foreign farmer and the Alp that we have is only with meat-cows. With, what did we have? 3 of our own, and 13 from someone else.

And on the Alp is that classically, June up and end of September down, depending on weather?

Yes, this year was late on the 31st of May they came up, otherwise it usually is middle or even beginning of May. And they left on the 13th of September also a little early, but it usually is middle of September.

And the sale of the milk, who is buying that?

Here to the local cheesery.

And the meat-cows is there also a local butcher?

No the 13 foreign ones go back and ours is rearing. We have kept a small cow for ourselves, but for our own use, for meat for us and that we let it being slaughtered in Lemoulin so close to Chateau..., yea.

And you have a side-job as a teacher. How is the income distributed? Is it 50/50 or?

No more 1/3 of the farming income.

From whom did you learn, how to manage the mountain farm or the Alp?

From child on and then I had to, to be eligible for the direct payments, I had to do school for 1 year, for agricultural training in Spiez.

Are there other classes, or further training or something?

Yea there are some coming from Grangeneuve (big agricultural school there).

Since when are you managing the Alp or the farm`

Since 2009 it is running on my name.

Are you part of a cooperative, union or so?

No

Are there employees?

Yes my father, family. So he is doing the bureaucracy from the Kanton and he is 100 % and my mother helps and myself and that's it and my son soon, or if he is here.

Do personal attitudes influence the management practices? So I was thinking about organic farmers for example often have a strong idealism to do that and do you have something like that?

No

The management is it more intensive or extensive?

No rather in the middle – instensive.

So there are machines that are being used?

Yes

On the pasture the weed management, mechanical with herbicides? Or how is this done?

Simply with herbicides with a backpack sprayer.

And then what is characterizing a mountain farmer (female)?

No idea

Some inclinations or dislikes maybe?

Yea well you should like the animals and have to like doing that, this I told to my son. If you don't enjoy doing it, then you should rather not do it. That is every day and always get up early. And when the children say: you don't know the cows anyway. I say: Actually I haven't chosen that as my profession, I am a teacher and then I was simply helping my ex-husband and then it just came to me. So that goes alright and I like doing that, so my son can take over at some point because he wants that. I couldn't do that all by myself, if my father wasn't there. Also if I would stop teaching, I don't know enough about the machines. In the family with help this is going and I am going to help my son later on, but I cannot take the whole responsibility. That's not my thing.

What kind of knowledge do you think existed in the past with mountain farmers, that is dying out right now or maybe is already lost?

Maybe to listen more to nature signs.

What are you doing different to your predecessor?

Hah, the whole agricultural politics is focused more on biodiversity, because the agricultural policies just changed when I was going to school in Spiez and we learned about all those new regulations. And with that I might know more than my father. There we are not agreeing sometimes. He is cutting all the trees because that makes shade and I sometimes think to just leave it for the hedgehogs and so on. Or yea, that, in the mountain area there is the support if you have, oh, the 7 indicator plants for flowers and then there is a contribution and I did that with the controller, because I know where they are and my father thinks: there (where the flowers are) is no grass for the cows, that is like that, where it has enough grass for the cattle to eat there these plants don't exist. I think it's good if there is both, then there is enough grass for the cattle and nevertheless the flowers are also present, which is important. But sometimes I have to fight a little. Yea after the old idea of the agricultural politics, where you had to nourish the population and now the politics, well maybe that will change again, I don't know, but it's much more on biodiversity and so on. I think maybe a little bit of both is necessary.

Certainly that yes. How do you exchange knowledge about management practices about farming and landscaping? With others?

Every year there is an inspection of fields, which is interesting always, also organized by Grangeneuve. They usually take a topic: this year we were around Charmey where there was a lot of water usually and she explained there what kind of directions there are, because this is the water source of Bulle and what kind of directions are for that and that is always interesting what kind of discussions happen there.

Do you have any kind of worries that you cannot pass on that knowledge to your son?

He certainly knows as much as I do, or even more as he is in his training at the moment and he does the 3 years of training and he can also profit of my father.

To the second part: your personal impressions of changes here in the alpine area. Which kind of changes did you notice in the alpine agriculture and landscape management in the recent years?

There are better machines, which are made to go into the steep slopes.

I was thinking of some things like, many people told me shrub encroachment and also that alpine pasturing is given up and that there the forest is coming back.

That does exist. You always have to do the weed management and not neglect that, otherwise...

But were there some changes here in the area?

Yea I think so.

In which direction?

Not so much anymore..., that the farms get bigger and then time is lacking to do everything if everything happens at the same time.

So pastures are being a bit neglected?

Yes, we say that often, formerly they had much less land and the summers were more equally long and now you have better machines that help and less people who are working. Nevertheless you are busy every day.

And what kind of changes did you notice with climate, with physical structures and with economic or social structures?

That there are those extreme summers. So either very hot or very wet summers, like the one we had this year. So that would be the climatic points and then...

In Schwarzsee for instance there are a lot of flysch area where the slopes start sliding. Did that happen here as well?

No we didn't have that so much. I believe its rockier here. That is not so much a problem, as when the water is short on the alp for the cattle. This year they (the cattle) destroyed quite a lot around the hut and a lot of dirt simply and then the weeds are sprouting immediately. But no sliding or something.

And how is it here in Jaun, is there the trend that the young people are moving away to Bulle for instance. Or is it balanced?

There were many new houses because families stay there, but in school we have a lot less children compared to when I was a child, we were around 100 kids and now there are 47. But the families are getting smaller as well. Not everyone has as many children as in the past, that makes a difference. Many people have to leave for working, but they are coming back in the evening back home.

So they are all the time commuting, ok. Economically is there enough work for the people.

Well there are several wood processing businesses and then some with tourism but otherwise many leave for working, sometimes only to Charmey or Bulle, but nevertheless gone.

What is your assessment for the reasons of these changes you mentioned? Always bigger farms.

Many small farmers top, because it is not profitable anymore. We are lucky here with the cheesery milk that we have Gruyère A.O.P. and get a good price for the milk, but yea well, the milk price is... or better said, the costs that you have with this size like ours and selling the milk that is balanced. The revenue are the direct payments. If wouldn't get those in the end, even though we have a good price for milk, there is nothing... well for example the milking machine, the maintenance, you have to do that every year, that costs almost 2000 Franks. These costs were always rising and the milk price is staying the same. With direct payments its possible.

The extreme summers for instance, would you connect them to the global climate changes?

Yes I think so.

And species diversity how would you assess that here in the alp area.

Yea I think there is a lot, a lot of flowers. You have to be careful, but some who don't know farming in the village, they always get the impression that you are mowing too early or so and that all the flowers are gone. I think you have to be careful, but we have got our guidelines from the Kanton. Or you can also participate in the networking projects, which we are part of, to leave a certain space.

And why do you think are the reasons that it looks pretty good here in the mountainous area?

Because it simply is not that intensive and not so much slurry is put on, or the relation between number of animals and land is correct and then also the ratio between land and slurry or manure is alright and its not getting to intensive.

Now to the third part, we actually start talking about species diversity now. What is the very first thing you associate with protection of species diversity?

That not so much slurry must be put out, there the part that is networking area, those 7 % that a farmer has to have as biodiversity promotion area (Biodiversitätsförderfläche BFF), there is now slurry put out and no mowing later on and that I think is helping.

Yes, which activities do you have that are influencing biodiversity. So these BFF of course, but are there other activities that ha a positive influence on species diversity?

So the weed management, so that this is not taking over and the correct use. So that there is not too few animals on there and not too many, so that this is in harmony, but also that is all regulated by the state or the Kanton. On the Alp we have 8.9 livestock units (Normalstöße) that we can have there. One livestock unit is one cow, 100 days and that you cannot exceed and you are also not allowed to be less than 75 %, otherwise you don't get the contributions. Sometimes that is difficult, depending on the summer, when the cattle is coming much later, like this summer, that you are not coming out too deep. That could be a little bit more flexible, depending on the weather, but that is simply set and sometimes its not so easy. I think it does help that there is not too much and not too few on the Alp.

And with single trees, or stone piles for example, are you collecting the direct payments for that too?

Yes

But with these structures: hedges, stone piles, single trees, did you make an effort to specially create those, or were they simply there.

They were there already and I am always fighting, that they are not cutting the trees my father and my son. I always say we need to get a new one then. But we have one of those ash tree, those are quite sick and this one doesn't look that healthy anymore. Next to a hut that we have and it is almost hollow, but there are still leaves on. My father in that case always says: you will see when it drops on the hut. You have to plant a new one, but that takes time until they get big.

And talking about the sickness with the ash tree, is that a single case, or ...

No they are sick everywhere. In the whole of Europe there is that sickness. But that exists and then there are a few which are resistant to that sickness and then there are a few who die. That also existed with the elm tree, also with the field elms and the witch elm. They are back now.

So one of the reason why I am doing this interview ... blabla... Which kind of wild animals do you recognize the most in your everyday life?

I always see a lot of squirrels. So deer, chamois there are a lot here, but in recent time I saw a lot of squirrels. I already 2 times ran over one with my bike and then I told that at home to my kids and they were laughing at me and then recently again and they were saying: Do you have a problem with squirrels? But I think there are many at the moment, but they are pretty yes.

Very cute for sure. And otherwise, some other animals.

So stags we are seeing quite a lot in this area, yesterday I almost ran over a fox, badgers, weasel, a lot of crows.

And hares?

I haven't seen one in a while.

What else is there, in the Breccaschlund the eagles are back. Are they here as well?

Yes they are here too. Common buzzards, hunting for chickens, there is plenty of them too.

Otherwise could you notice some changes with the wild animals? With their behaviour or with their colouring? With the foxes for example, that they are less shy or the deer get more shy or something.

No I don't think so. The chamois you see in direction Charmey they are always there, they are next to the road, they are not even shy anymore. But I think its probably always the same family.

But before they didn't come close to the street?

I can't remember that. Maybe I didn't pay attention when I wasn't driving the car myself.

And then with the plants which ones do you notice mostly?

The buttercup is common, because it is so yellow, there were a lot of slurry was put out, I am always saying.

So more than in the past?

I think so yes.

I don't know, I heard a lot from people the thistle.

Yea in the alps that is an issue if you are not doing your things and the camphor we are controlling pretty well, because every year we, either here or on the Alp, are going with herbicides against that. That was in the past much more. I can remember that we were walking behind the machine threw them arms full into the stream and now there are really not so many anymore. And every year you need to use less herbicides, which is good. If you neglect it too much, you struggle getting back the control.

The story with weeds and the thistle was it in the past more common as well?

No, that one has increased, also the high yellow one... Ragwort (Jakobs-Kreuzkraut), that increased too. Maybe in the past it was more common in the lower regions and now it is..., maybe like the snow line is always moving up and it does the same thing, going up, I don't know.

So also with the warmer temperatures the plants are coming as well?

Yea most probably. They got introduced at some point and is multiplying if you are not paying attention.

Maybe with the trees, like the ash tree, no not that one..., with alder trees, is there any trouble here?

With us not.

And the shrub encroachment is also not much of an issue?

Yes because my father is always going there. But there are some Alps here in Jaun where that is more of a problem and with the alders, they are more on the shady side, so the other side then, not on the sunny side. I know about one Alp where there is a lot.

Are there more plants, where you notice that one plant is growing more on the shady side, the other prefers the sun.

I can't think of any at the moment. We have the impression that there is a difference at the ski slopes, we have some land there, where the ski slope is and there the grass seems to be more coarse, not so nicely delicate, I don't know if that is the shady side or the ski slope, because the pistenbullies are driving there. Or with the soil or I don't know, there are many things.

And also there with the plants, did you notice some kinds of changes with the plants themselves? That maybe one plant is growing taller than in the past or the colour has changed a bit, or a sickness, like the ash trees.

With the plants no.

And other species, do you know a lot about mushrooms, well it is a very bad summer for that, but lets say in a regular summer.

No, I never find mushrooms.

Then which structural elements do you think are important for the species diversity?

No idea, structural elements?

Yea these..., where there are also direct payments, like the single trees or the dead wood, like a pile of branches.

These what they are requiring, these I think are important as space for the animals or that the flowers can multiply.

Why do you think this is the case, that a pile of branches is so good for this?

So the animals, that they can seek shelter and hide from predators. We did that last year in school as well, because that topic was with the *parque naturelle regionale*, where Jaun is a participating. There is always an excursion with the school children and the topic this time was corridors for wild animals. We did a game with that, to sensitise the pupils with that.

Very nice! Could you notice changes there in the last years, maybe also because of the direct payments, so that they are..., well just leave the dead wood or not cutting the tree.

I think so yes, I mean you get money for that. Much is done because you get money for that. On the other side (of the valley) we have some land in the networking projects and we didn't mow until the hedge, because you have to leave some part standing to get the money. Otherwise I believe my father and my son would have mowed everything, so it looks clean and that there is no chance of shrub encroachment and through the incentive there, you do it like that. I do think you have to pay like that, because otherwise... well you have less hay and because of that you get the money.

That's alright to get money for that and how important is environmental protection and sustainable management for you personally, apart from the contributions?

Yea it is important. I also try to take the pupils there to see what a beautiful nature we have. This year we were doing the trees, they have to do a herbarium with 37 trees that are growing here. So pressing and put it in the herbarium. There were many reclamations from mothers, who were thinking that is too much, but I think its important to go out and not only sit in front of the computer or in front of the TV, no?

That would be already my next question: what are you actively doing to promote that? And you are teaching the next generation. You are supported by state funds, but are you also supported by private programs. So I was thinking about IPSuisse, the label with the ladybug on it.

That you are not noticing straight away, not like the direct payments. There also is the *acu-viande-suisse*???, I don't know if that counts as private. If you put an animal for slaughter you have to put that sticker on and then the kg price is a little better than without. But that is not as directly visible as with the direct payments and if that is always so well handled I don't know, but I always have to put on these stickers.

Which practices are in your opinion good for species diversity in the alpine agriculture?

That would be the same thing. The correct livestock numbers, not too much not too few. That is pretty much.

And with structural elements, what is important?

Yea that you seek to conserve them and lay the stones on a pile, that it stays like that.

And the structure on the big scale, like the diverse landscape?

Yea that also is connected to the correct livestock numbers, so its not reforestation again. So not all forest so the picture can stay the same. Or not cut everything down, to get the opposite.

For conservation of biodiversity here in the mountains, what do you think what kinds of measures should be taken?

Hmmm, I don't know if you could do more. You could pay the mountain farmers even more direct payments than at the moment, compared to the flats, because this is no comparison here if the people in the flat lands are mowing with the big machine and we are scraping along the steep slopes. So that it stays that way.

In which scale? Much more?

Yes always much more!

And to conserve species diversity, where do you see at the moment the biggest challenge at which point?

The contributions should be continued and its difficult, I have no idea.

Well you are doing in your school something for that!

There must be a compensation between profitability, so that the farmer is not only a landscaper and that's the difficult part to keep the balance. It should nevertheless be, it should stay a business the farming, not just landscaping.

How did it come in the last years that this balance was so difficult to keep? Between profits and landscape?

The direct payments were very strongly focused on the biodiversity, which was not the case with the last agricultural policy. The contributions were ending also, formerly I believe they were paying by amount of animals and now they are bound to hectares.

And do you know about the melioration measures by the swiss government?

No

No, ok lets leave that. Do you think here in this area there is a lack of knowledge about biodiversity?

With the other population, I think so yes because if you have to leave 10 % of the BFF area standing there many people in the village were saying: why does he not mow? And then we made one time from a farmers perspective an article in this small newspaper that exists here in Jaun, that this is because biodiversity like that. But the people have the feeling: why does that guy not mow it properly? With the others it is not always clear. With the farmers at the networking projects you simply have to do it, to get the support.

Otherwise is there a lack of knowledge in the area of management practices or in the area of environmental changes in general?

No not really.

Ok, then another important point for me is the distribution of the survey.... Blablabla... how do you think I could reach the alpine farmers with the survey? That is some online document or a paper and I am still worrying about, that this paper will go straight into the oven.

That is difficult. Maybe through those responsible in agriculture. Closeby here lives a young farmer who is the responsible person here and if that guy would write: You should participate. But if it arrives simply by post, or by mail then it would rather go to the trash then if he knows whats going on, maybe I can tell that to him, that you were here and we have that whatsapp group and if he says you should participate then maybe they participate. Of course not everyone.

That would be very kind!

Of course not everyone is part of that network project with 10 % leaving standing. Not everyone likes that. But I would say the younger ones, would rather understand that.

I will come back to that! I am trying until

██████. can tell the responsible people that.

Yes, no but I am trying to have that ready until December to come at a point of time so people have time and not coming in spring time when people are busy.

That certainly would not be good.

Format wise, what do you think would be the most suitable. Online or paper?

Maybe rather on paper. Not everyone is so online. That would probably be the next generation.

Yesterday for example I was talking to a young farmer and he was saying online! That was no question!

For me I would say online as well, but the others...

Is there some topic about biodiversity where you would say I definitely should include that in the survey?

No cant think of any.

At the end: how do you see the future of the alpine farming and the landscape? Rather positive? Rather negative?

I think it is going to be more difficult if ever less farmers have ever more land and do not have the time to do certain things. To fight against shrub encroachment or so. That is going to be difficult.

So rather negative, that shrubs will increase?

Yea simply from temporal reasons. There are motivated young farmers, like my son but somehow if that continues: to earn sufficient money you have to get bigger and always less employees. That is certainly not going to be easy.

No probably not. In your opinion did I omit something important?

No I don't think so.

Otherwise do you have any commentary, ideas, critic?

No

Ok at the very end, I ask that to everyone. Do you have good advice to give for the road?

It would be interesting to hear from the study when its finished.

That is a very good point! (Explaining the esteemed focus group in April)

[Ä5]

Could you briefly describe your profession and your farm?

I am a trained nurse, but at some point in my life through chance with my partner we happened to have the opportunity to buy a farm. My partner was a farmer, we had sheep a few cows and goats and an Alp was belonging to that. Before we could take over there were horses summered and there we continued with horses, I had a horse myself and already since my childhood I am interested in horses. Like that I got a glimpse into agriculture, through my partner.

Are you still working in farming at the moment?

Theoretically yes, but only with horses. That changed a bit. I took over the farm, even though I am myself not a trained farmer, but nevertheless I am able to get the direct payments, as I could show enough years of experience.

That means the horses are getting summered?

That is mainly a summering at the farm down and the farm up. With the farm in the valley, it is located in a sliding area and the sliding reactivated in 2018 and through that the stable got destroyed and that needs to be taken down. So we don't have a stable there anymore, it also is prohibited to be reconstructed there. So at the moment there is only summering as the animals are only outside.

What breed of horses are they and how many?

There are various horses from various owners, all types of races, but rather rugged races, not so much sport horses and they are coming from everywhere in Switzerland, well they come simply on the Alp and stay there for 2, 3 months and then they are going back.

Do you have a horse yourself?

We still have 2.

When are the animals going up? And when are they coming back down again?

Well you have to imagine it a bit different to cows, they are not getting driven up there, they get guided there by every owner themselves. With the upper Alp that is beginning of July until end of August, 2 months, but its quite high until 1800 m and the lower Alp, there they can come whenever fits for the owners between May and October.

Where is the Alp located, at Schwarzsee right?

Yea at Schwarzsee, up there..., a little bit below Kaiseregg.

So where the ski area is located?

Yes exactly, the pastures are not where the ski slopes are. There is a hill, the Homättli its called next to the Salzmatt.

Längmoos is not far away from there?

That would be lower. The Längmoos is located between the lower Alp, the Ludener, where the stable was sliding and the upper one.

Yes I can remember that the mountain is sliding there quite a lot. The path to Längmoos as well.

That one got destroyed multiple times. Yea that is above the Ludener and the Ludener is located closer to the houses, some got destroyed of those as well. The further down less damage there was.

How much % of your income is generated by that, or do you have a side-job?

Yes I am working as a lecturer at a higher education institution for health (Hochschule für Gesundheit), so for the people who are learning nursing. There I work 80 % and on the farm 40 to 50. And winter that is less.

By whom did you learn how to manage an Alp?

By my former partner. Because with him I went to cattle Alps in the past before we bought the farm and I learned like that. How to handle horses I learned at several further trainings.

Is this run over Grangeneuve?

No these were different trainings in Avange in the Jener??, courses for riding but also classes for handling horses at the ground and yea, how can you lead a horse, how can you take it out of the herd, so practical things that are important on the Alp.

Are you part of a cooperative, union, association, club, something?

No not really, well there is this cooperative Schwyberg-Ettenberg and they are doing the maintenance work on the Alps and we are belonging to that as we..., for the street maintenance, every owner pays..., every owner in that area are belonging to that one. I think the most and you pay some dues, for example if you have a problem with water, with the water supply.

So mainly infrastructure. Are there employees on the farm?

Yes my brother lives in the Ludener and he is in some sense my employee, because I let the direct payments run on my name and I give him a part of that and he does the Alp, the lower Alp, the Ludener he is herding the horses and does the fences and so on and on the upper one there is another herder (female). She does July, August, where she really lives at the hut and she is herding there the horses.

And personal attitudes, how do they influence you, so how you manage your Alp. Well you said you have a personal preference for the horses, and take horses out of that reason, but are there further attitudes?

Well I have very much an attitude that we should protect the nature and I know that up there exists a great diversity of very rare and beautiful flowers. We one time won the first prize. A biologist came and counted the rare species, so the indicator plants and found 66 and that was the biggest amount compared to the surrounding Alps there, so from those who participated. But also formerly we tried to pay attention to that, that the horses for example are not coming to early up there, only in the first weekend of July, then the flowers have some time to..., the biodiversity..., well I mean also in my live. I am eating predominantly organic vegetables.

So there is some idealism there?

Yea, but also realism. I think this is something important.

What do you think a person has to bring with them to be an alpine farmer, to do that in those surroundings. Its not easy work. What does a person have to have inside them to do that?

Certainly the readiness to live a simple modestly. If I would take the alpine farmer (female), who is up there, only 2 months but in that time she really lives up there. She doesn't have water, no electricity, well a little solar energy, which is enough to charge the mobile and water she has to walk to get that, so potable water. So that readiness to live like that, or even to want to live like that. She for example wants that, finds it great to be in nature be offline and also be able to work physically. You have to do the fences as well. That is always the

difficulty to find someone also with knowledge about horses, because it's a horse Alp and that is not the same thing as cattle. The handling, you cannot simply take them from the pastures or tie them on somewhere, that is not possible. Knowledge specially about horses and that is a bit difficult sometimes to find someone for that. Just because someone is a fan of horses doesn't mean they are fit for the Alp.

But that is certainly something special, at least it's the first horse Alp I hear about at least in this area.

Yes there are not so many and many have a cow Alp and take a few horses or they have a pasture to summer some horses, but they have a different job. But there are a few others in Wallis and in the Bern alps in Graubünden.

What knowledge existed with the managers of alp farms in the past that, in your opinion, is dying out or is lost already?

From knowledge? I find it always interesting to talk to older alpine farmers. They sometimes know, for example one time one of them said to my: well in the past the source was going through there and then we noticed, that that was very smart. We did that too now, like formerly. They knew where the water is flowing, where are the water veins. Such things I experienced from the surrounding neighbours.

That is not so easy in that karst area here.

Yea that's right, its streaming and oozing down somewhere. Our Alp is like on a hill, at the very top and that means there are water problems.

I was thinking about healing plants as well.

I didn't get to know anyone personally, but I am doing this myself a little, so I got interested in it. There certainly are many healing plants, sometimes I was collecting a few and dried them. I was not directly in contact with someone who would be an expert in that area.

So you would say in the past there existed more knowledge about that topic?

Yes I would say that. But also with young people there is that interest. They know, or want to get to know them and use them in the kitchen for example.

So it's a trend now?

Yes I think it's a trend.

What are you doing differently than your predecessor?

With them it was more important that it was profitable. That is always a bit difficult with an Alp. You are not getting paid by the hour. The hourly wage would be very low if you calculate everything, all expenses. They were trying to make it more profitable to take a lot of horse up there. She who was before me up there also raised the costs for the horse owners a lot.

Ah before this was also a horse Alp?

Yes, before me this was one as well. We knew the people who were there and one thing got to the other, she wanted to go to another country and they were asking us directly: do you want to lease for after, but the owner said: I want to sell at the moment so this is how it came to that, that was in 2002.

So they were more intensive?

Yes

How do you exchange experience and knowledge about the management practices?

With friends and acquaintances who are also doing Alps, but with horse Alps I don't know that many. The surrounding ones all have cattle and there it is more like the grass has to be good for the cattle. This is not so much the case with me. Sometimes I get the feeling I am not on the same basis as them.

But for example that with the water pipe.

Yea sometimes there are smaller interesting things, information.

But that was a personal talk, that was not organised.

No

And are you worried, when you are giving up the Alp management, that you cannot pass on your knowledge and your experiences to your successor?

That could be yes. Well I don't know who will take over. My children are not so interested, but I have a nephew, who is interested in it, he is 17 at the moment and he learns to be a farmer, he does the training, but he would go there with cows of course, dairy cows or cattle.

Although I heard with that, apparently, that only a dairy farmer is a "real" farmer, supposedly. Someone said that to me.

That is a little bit the opinion in Switzerland. But also arable land farmers.

In the valley, in Mittelland then. Second part is about your personal perceptions: Which changes did you notice in recent years in alpine farming and landscaping?

So on my Alp or in general?

In this area. So that what you know.

It got dryer in general, but otherwise I would say the diversity is still present.

But also the sliding slopes for instance.

Yea, there you cannot say that it increased. It was in the past the same situation. It is well known that this area is sliding since a long time. There was a time where houses were built without paying attention to that, in the 70ies, 80ies, 90ies also, where there were a lot of holiday chalets built anywhere and they didn't check for that so accurately. That's why we are feeling the consequences now, because the stuff is sliding down, but that the sliding was active and then again passive, that is since a long time like that. You can see that from satellite, no... aerial images you can see that very well.

And otherwise were there changes with physical structures but also with social or economic structures in this area?

Hard to say. In the area where I have the Alp it is very common that the Alps are being passed on to the children. It are no dropouts coming there, it is more family businesses. In the area Gruyère there are more possibilities for the dropouts to go to an Alp. Maybe in Graubünden as well, but here its really, you can say that, family farms or cooperatives as well. The alpine cooperatives who are running the Alps. Some are belonging to the army and they are leasing it to the alpine cooperatives and they are employing a herder, but that can be the same herder family over generations, who is employed by the cooperative.

So something I heard frequently, that less people are working on the Alps, that a lot of mechanisation is happening.

Yes true, that is the case. Often there is one person who is overseeing multiple Alps and is going with his motorbike or quad from one to the other: here the cattle, there the dairy cows. So rather work less and acquire more and partly also,... there are all the time huts where they improve electric supply or a street, but this is going very slowly. This is not like the city where there are huge areas being developed or so.

Yea I think the mountain does not allow any kind of fast processes and what is your assessment for the changes you mentioned?

I think that is connected to that it gets generally more difficult to live from one wage alone. These are the common struggles, that you also have in the city too. Or maybe you got used to a certain standard if in a family both have a car, both have a job and that you have more expenses and you have to earn more. Well that's capitalism. The richer are getting richer and we the middle class have to do as well.

And the dryer weather could you connect that to the global climate change for example or are those random extremes?

Yea surely I would do that. One point I forgot: the insects are climbing higher. So we had for a time no ticks on the very top. No horseflies and also a lot less flies and mosquitoes and now it is..., because many horses are coming to recover from eczema, fly pest and so on and that is less good now.

Interesting! So you assessed the state of biodiversity as good right?

Yes surely.

Why do you think is that so?

Well I got the confirmation from the biologist who came 2 times, one time he counted the flowers and also with the comparison. Up there, there is an infinite magnificence of flowers and plants and what you cannot see the flat lands.

But why is the difference there? Because of extensive management of the mountains or small scaled?

I think because of the intensive agriculture. I think here we would have a huge diversity with wonderful flowers as well, I don't think that is connected to the Alp.

To the third part: biodiversity. What is the first you associate with protection of species diversity?

Protection..., like I am doing that. This is always very difficult. On the one hand you always say: the horses are eating there. They come at some point up and everything is flowering and so on, and you say sometimes it's a bit of a pity, they are trampling and eating the flowers and then you notice where they are not eating so much, the diversity is smaller because there, if they never eat the green in between there are big grasses growing, which are very hard and the flowers cannot grow. I always find it difficult to decide when, how long and how many horses for it to be good.

That would be experience I believe? Also dependent on the location.

Yes certainly.

Which activities do you have to influence the species diversity? So you were saying you try to not let the horses pasture too early.

Not too early, not too many horses and normally the whole Alp is open, we don't have many different plots of pastures. Well on the lower we do, there we have 4 pastures, but not on the upper one. We were starting that, because there is an area where they like to be, because there they have a good view it is relatively flat, but is exposed half ways to the north and there is always a lot of snow in springtime. So the flowers are growing there

later and we started to fence this part in. We have done that since 2 summers. We have to see if we can protect that a bit and only let them in in August, because otherwise they are grazing very far. With horses they are always there where they prefer the spot, even if there is not much food left and there where it's steep, there would be a lot left, but they are not going in there.

How is it with horses, can they trample the slopes like cows?

Yes if it's wet for example and they are running then it can get totally brown and the turf being truly destroyed.

And the measures that are connected to direct payments, for example those stone piles, or single trees, hedge rows, are you doing actively something for that?

Yes on the lower one we do mostly stone piles, branch piles, hedges and so on, tree groups so that we steer that. Down there we have more the problem with forest encroachment. Then we are leaving groups of trees, so there are not too many areas, where nothing is growing apart from grass. So to support small animals, like snakes, porcupines or so. Whereas on the upper one it is a bit difficult because it is located at the tree line and the only thing we can do there is letting the dead wood remain and stone piles as well, they would otherwise get spread out. In the past you were doing that more, but there is a lot of work to do. Sometimes the weeds, hoeing these out.

(explaining the survey) So I would start with wild animals, which ones are in your everyday life the most striking?

The marmots, we have a few, on the very top of course. Sometimes there are also the chamois. With the lower Alp more deer and foxes, every now and then hares on the lower and the upper one. The eagles we have seen a few times on the upper one, or even an eagle couple and other predatory birds of course. There are many buzzards, kites and falcons and even griffon vultures. That I didn't know for many years, but I met a photographer one time, who was hiking there and he told me about it.

With the griffon vultures I don't know, but I think with the eagles, they are quite new in this area. They came from the south, I think 5 years ago they haven't been there.

I thought I would have always seen an eagle every now and then. Maybe in between there was a period where I didn't see them for long period of time. 2005 or so, we had chickens and one of them tried to kill a chicken but didn't get it, that most certainly was an eagle.

And to the frequency: were there changes? With the marmots or the deer for example.

Yea the deer you rather see in winter on the lower Alp. My brother always sees them, he hasn't got a dog either, they are coming to the pastures and are there the whole winter, already now in autumn, in spring time even together with the horses and then you are not seeing them for a while during summer, but the whole winter they are there. They also know that they are not being hunted there. The hunt is happening outside of the pasture and they know that probably.

The shelter and with the hares, did you notice some changes there?

I haven't seen them also for a few years, but this year I saw them again. But not directly on the Alp but while driving up. So in lower locations. I have to go through Muschenschlund.

So the eagles you mentioned, that they were gone and came again. With the other animals did you notice something if they were more or less in the past or if they changed their behaviour, so more or less shy or so.

Marmots have gone back, they are more present in springtime. It is also a popular hiking Alp, there are many people coming through there and sometimes with wild camping and so on. I believe that the marmots are a little

less close. You still hear them, sometimes you see them but a little less. In the past they were a lot more around the hut.

Otherwise were there differences between the individuals, if they are bigger, smaller, if the colour has changed?

So with foxes I always have the feeling they are huge on the Alp and otherwise you rather see smaller ones, in the city. But that something changed in the last years I cant say. The marmots, there are always big and small ones, but that was always the case.

With plants which ones are the most striking in your everyday life?

That I had the feeling is always similar. What I noticed is that the turk's cap lilies is not present anymore, that is a very rare species of lilies or orchid species, I am not sure now. That I haven't seen in a long time. I don't know if it is getting worse or yea I cant say that. I was thinking I will ask the biologist, who was up there in 2014. He might now, or he can have a look.

And from those 66 plants that grow there, could you identify them?

No, I know a few, but not so well and I keep forgetting them because I am not training enough for that. From those indicator plants there were several inconspicuous species, that was not only the beautiful flowers. Special species of grass and so on.

Problematic plants for example, they are usually a big topic on the Alps, what is the most striking or you have most issues with?

On the upper Alp we don't have many problematic plants. There are not so many locations where they are always standing. I know with the cows the locations are always the spots where they are standing or lying, but the horses are walking around all the time and for example there is next to no camphor, maybe a bit. The advantage is that certain horses are eating the plants, so for example, how is it called, chardon, the one that stings, thistles! The horses are eating these, that is a big advantage and on the lower Alp there is more. There we have a few locations with camphor and my brother is cutting them out.

So only mechanical?

Yes only mechanical.

You were talking about a shrub encroachment problem at the lower Alp and which kinds of bushes or trees do you notice?

Those which are growing a lot. These are alders. I think at start you weren't paying enough attention to that and said: ah it might be beautiful, a little wild if the shrubs are small it looks nice as well and the animals can eat from them, but now these are partly grown into real trees and you need a bit of skill as well and..., so my brother can work with a chain saw, but if the trees are really to big it gets dangerous.

And other shrubs, apart from alders?

On the lower Alp there are a lot of fir trees, which we are removing often, because if they get big they need a lot of space and nothing is growing underneath them. Then we try to cut them while they are young, because you know these little firs are pretty but they grow very quickly. So if I am going there to cut shrubs then I usually cut small firs and alders and there we are always looking where, that is rather complicated, that you are not taking them from the wrong spot. So on the lower Alp it is for example very swampy, they are really very contrary the two Alps.

A flat moor?

Yea it is located at the slope but is simply swampy at many locations. The flysch underneath it, that's why it is sliding, there are no rocks that could stop that and there it is partly good if there are willows growing. In the swamp areas we leave for example some things like willows, to stabilise the soil and contain the water.

Invasive species?

Not many.

But if there are?

MI don't know, my brother is a little knowledgeable with that, he was working in horticulture and he watches out sometimes if there are some. At some time we thought there was a giant hogweed, but in the end that wasn't the case. I believe we are still spared with that.

Well the giant hogweed is very poisonous. You have to be careful. With the plants did you notice with them any changes, like sicknesses for example, but also growth, size, speed of growth or something?

There are always astonishing things, we have some plants, like apple trees and those are growing very differently well. So the birch trees grew very well, some shrubs, fruit trees less, also hazelnut is growing not so well. One time we planted a mountain oak and it grows but very slowly.

A real oak.

Yes sometimes you think its dead, then it is growing a bit, is not coming so well.

Other species. You were talking about the insects. What do you know about them, I would guess with the horses probably mostly the stinging insects like horseflies and so on.

Yea exactly. It still is less bad than in the flat lands, because it is situated a bit higher. The Ludener is at 1200 m and up on top its even better, there is also always some wind, where they are blown away, but in general around the horses there are a lot of flies and midges, sometimes they get a summer eczema, because of the ??? midges.

And this has definitely increased in recent time?

No I wouldn't say that, not more, but they moved further upwards. On the upper Alp you could say more, but in general I more have the feeling that they get less.

On the lower one.

Yes as well.

Which structural elements do you think are important for species diversity?

Also dead wood, branch piles, shrubs, stone piles and maybe different species of trees, of course different species of flowers.

So simple diversity (in structures)

Yes possibly as much diversity as possible.

Why do you think that's the case? So how is dead wood has such a positive effect?

Partly it is composted and also shelter in hollow trunks and so on and the different animals all have their speciality, for example there is the goldfinch (Distelfink) which needs the thistles, yea I don't know exactly, certain animals need certain plants and if certain plants are not present that influences the presence of birds or insects.

Could you notice with that, you were saying that you did those further training, that there was said: Leave the dead wood or branch piles, that is not always the case. Do you have the feeling that the alpine farmers are increasingly using this lets say newer knowledge and not clean everything sparkling clean?

Yea with alpine farmers I mostly don't see that. I see it more in the flat lands, it depends on the region, for example in Fribourg, which is a little bit backwards anyway.

Its rurally characterised.

Well yes, but there are not so many organic farmers here. There is much more in the surrounding Kantons Bern, Watt and what I rather see is in Seeland where they also have those branch piles, these hedges and are actually doing something for that. Here in the area Senser Oberland and so on I am seeing that a lot less.

You were saying environmental protection and sustainable management is important for you personally.

Yes, its also an organic farm (hers).

You get direct payments from the state for the BFF.

As well yes.

Are you also part of private projects? For example the IPSuisse label.

No the problem is we don't have any product to sell. For example the organic bud (bio-knospe) we don't have that because its only for products. Other private labels not. So just the biodiversity programs I think they are not all state owned there are also the regional ones, where we are participating.

The pasture with the 66 indicator species that you mentioned, do you know if that is belonging to quality level 2 Q2?

Yea that one is belonging to Q2 and there is also that thing from Gantrisch, the nature park, that is belonging also to it. The competition was organised by the nature park Gantrisch.

Which practices are good for the species diversity in the area of the alps?

Well possibly leave as much as possible to nature, not construct everywhere. What I think is also important is leaving the swampy areas as they are and not to construct so many drainages. Also with the water issues. Water is not only there for the Alp animals but also for the wild animals and the plants. Otherwise I am not so knowledgeable. We don't have any tractors or machinery. When we are doing the hay someone is coming and we are helping out.

But you are not inclined to buy tractors or something?

No

To conserve this beautiful species diversity here in the mountains, which kind of measures do you think should be taken?

I would say not too many animals up. I think there it is counter productive that you get direct payments per animal, there everyone is ambitioned to have as many animals as possible and more divers animals, not just cows, but for example more horses or also goats.

Yea that also would help reduce the weed problems.

Also not letting the animals eat on the pastures too much.

How do you think this should be supported, so again connect it to direct payments, a financial incentives or through training in the agricultural schools.

Yea I think through these two things certainly. Through education and with also adapting the direct payments to it. So change that the farmer who is doing intensive production gets more, that I find important. Those 2 initiatives that didn't come through this year they would have had an effect in this direction.

Which initiatives were those?

One was a potable water initiative, that the farmers are not allowed to use pesticides on the fields and the other one was also with the direct payments, that only the farmers get direct payments, who are not using chemical pesticides and that they only have as many animals as they can produce food for them. They both failed unfortunately, as is often the case with initiatives. A good idea but then the farmers association is very powerful in Switzerland, even though the farmers are not so important here. We only produce 40 % (of foodstuffs) ourselves and the rest comes from abroad. But meat and milk production its logical is much less, you need a lot more space.

Well doing arable farming in the mountains is not easy at all.

In the alps, yes, there its clear. But there could be a lot less cows and they could come in summer to the Alp that would be more sensible.

So you would also see the biggest need for action in that area to protect species diversity?

Well I think that needs to be done in the whole of Switzerland and not only here also in the whole world this should happen. To do only something in the alps would be almost senseless. I think the problem is more in the flat lands where there is too much intensive agriculture, too many cows, too much meat and too many pesticides, fungicides, too many insecticides are necessary.

Yea I was talking to someone about that and he declined and said that he has given up on the flat lands, at the moment the focus is protecting the mountains and conserve what still exists. Do you know about the melioration measures by the swiss government?

I heard about them.

Ok lets leave that one. Do you think there is a lack of knowledge here in this area about species diversity?

Yes I think so.

And how about the management practices and environmental changes? That there is not enough knowledge?

Yes as well.

(explaining the survey distribution) How do you think I could motivate the people to participate in the survey?

So sending a sheet with the post? Or online? Yea that's always difficult. I experienced that as well. I think rather with multiple approaches and with catchwords and not too long, it must not take too long. I also sometimes participate but if its really taking too long... ca. 15 minutes after that it gets a little...

Yes I know that too. What do you think with the managers online or paper, for which one would they be more open?

I think the farmers or mountain farmers, rather on paper. That is still not so.

We are coming to an end. I try to do this as open as possible: do you have a topic that is connected to species diversity where you are saying that should absolutely be included in the survey?

Yea maybe how you could improve that in the flat lands or everywhere really.

Well flat lands is really outside of my topic. It's a master thesis not a PhD.

Well I would be really interested in more promotion possibilities.

How do you see the future in the alps from the management and landscape? Rather positive? Rather negative?

Well rather a little negative, considering global warming and if measures are taken, we are already a little bit late in that direction. That this is truly having an effect on the alps, especially water shortages I think and with the changes of presence of animals, that the wild animals are decreasing with time, even though you promote it with the wolf and so on, there is still a discussion but maybe...

Wolf is a very difficult topic and I can understand both sides, that has to be regulated well.

Yea Switzerland is small even though the alps are big.

But wolfs have huge territories, they need space. Do you think I omitted something very important to the topic.

I cant think of anything at the moment, maybe later, maybe to the sheep. There are those sheep Alps in the alps.

Are there in Fribourg area?

There was, now there is less, because of the wolf. They didn't want to work with the dogs, took partly the sheep away.

People said that to me about Wallis and Graubünden as well. Otherwise do you have any commentary, ideas, critics?

No. I think its very good you are doing this.

Thank you very much and I am asking this to everyone: do you have good advice you can give me for the road?

Yea I think it would be super, well I don't know how your work will look like later on, maybe you will be a professor (*no, no, no, never, ever, no, nay, never*), that you could contribute something in the direction environmental protection.

Yea thank you very much.

I don't know if this is your idea.

I think good observation of the environment is always helpful not only to protect but also to raise awareness.

Yea I think there are a lot of studies missing, so there is much that should get researched.

Well I also think science still as a bit of a parallel society and with communication is lacking.

Much is known since such a long time, even from my school,... (talking about school) the problem I think is the money, everywhere.

[Ä3]

Could you briefly explain your profession and your farm?

I sometimes call myself typograph, typograph and herder and I don't have a farm, I am employed and as a typograph I work independently in winter. On the Alp as employee. It is located at Kanton Uri, next to Gurtellen. A cattle Alp, 70 to 80 animals.

Relatively big!

So so

What is your motivation to go to the Alp?

I don't know. About that we were discussing often. In the end it is something emotional, or something inside you that lets you do the work again and again. But if I would say intellectually: I find it great to live with animals in such a landscape for 4 months and you have a focused task. Its about them being healthy, them all being present and that they have enough to eat and that is the difference to the rest of the world, to the winter world where everything is a bit frittered (verzettelt), there is something, there demands are coming, there you have to... And on the Alp you have your focused job and it makes sense to let the animals eat on those pastures, to pasture those landscapes because you cannot produce tomatoes or wheat over there. Then out of these mountain flanks you get milk and meat and that is really awesome.

The pastures are located around the Alp hut, or is there a lower Alp a higher Alp?

I have 6 huts. That is a bit special. It is a valley on its own, I don't have any neighbours. It really is like a valley basin that I am pasturing from down below 1500 till 2300 m. It's a bit nomadic. You are always transporting things, making fences front and back moving them, moving on and so on.

What kind of cattle is it, which breed?

These are calve rearing cattle and every now and then 1, 2, 3 mother cows. So the cattle are from all years, they are always coming back with the calves. Most of them are 3 years there. At first as a calve, then as a Mäse (??? I guess a swiss word, meaning juvenile cattle) 2 years old and then as cattle 3 years old. There they know the Alp and we know each other as well and I know all of them with name, that I can say: Hanna, how are you today?

What is she answering?

Mostly she flaps her ear to the back and probably thinks: what's going on?

Which breed is it?

Mostly Braunvieh (old swiss breed, very cute cows)

Original brown?

No, not original. There are a few originals there but the bigger part is cross-bred with brown-swiss.

Is there a trend visible, where its heading to: more or less animals, other breeds something like that?

On this Alp I would say that the farmers are tending to go for less high performance animals. That doesn't have a big value for them, rather healthy and easy and easily to handle. That of course is not everywhere the case, but as a trend I would say that the breed for high performance animals is declining in that village, because they are seeing that they cant earn any money with that. The milk price is as dominant for revenue as in the past. But if you have less costs with holding the animals and less problems then you can earn again.

The cows, are they the full 120 days up there?

Around 100. 100 to 110.

So June till the end of September?

Yes

The side job as graphic designer you are doing in wintertime and the income is around 50/50?

No I have a little publishing business. I do around 10000 with the Alp and around 10000 with the publishing and around 10000 with graphics. (3 jobs! And 30000 Franks per year in Switzerland is not much at all!) And if I should have a great project with the graphic then I am doing with that a little more, maybe 15000 or so.

How and by whom did you learn the Alp management?

I have learned it while working there. I don't have any training, I am a trained technical draughtsman and I came through chance to a goat Alp and there I got stuck and slid into agriculture and was working on farms and like that I was sliding into this, but I have no training.

Were there some courses or additional training?

Yea I did the Sennenkurs (course in cheese making) of course. There was also a herders course. But partly, the Sennenkurs I did so I am able to make cheese, as I was very interested in that at that point of time, I was still young then. I was interested in make foodstuffs out of that landscape.

Making cheese is great!

It is fantastic, that conservation, to conserve the milk is awesome!

(talking about making cheese, I know how to do it as well, that's why...) Since when are you doing that with the summering?

Since I am 20, but I suspended it for 15 years, because with the kids and the business here. Creating this and then we moved here with the garden and so on and that didn't fit somehow in summer 3 months away. You have to be able to afford that. If you are embedded in agriculture that's one thing, but if you are only employed then you have to look in wintertime and that has to fit somehow and this is not easy. You cannot make a career. For instance if you want to participate in a theatre group and you miss 3 months, that's not possible. If you play in a band and you miss 3 months that is not really working. Or if you work in a company and you miss 3 months, than you are not advancing either. That's why it is not that easy.

Are you part of a cooperative or union, association or something?

No, this is something that is characteristic for alpine farmers is that they are quite individual. Not everyone, but I would say around 75 % are rather individualists, so rather not in an association. Otherwise they are very different. All types exist: rich, poor, intelligent, dumb, higher class, lower class, left-wing, right-wing, all colours exist. I think jobs like this are rare, where so many various types of people are working. And all of them are doing up there more or less the same. You can certainly say a sheep Alp is something different to a cow Alp, but fundamentally it goes into the same direction. It is very funny, also if you have neighbours, who are very different but you still have partly the same problems. It is interesting.

How is the work up there organised? Your wife is helping you?

No I am more doing it alone and sometimes I have for 3, 4, 5 weeks a helper.

So a voluntary worker, for food and sleeping?

No I pay a wage. I think its not possible to not pay a wage. It is not much, but it simply is half of my income. So I get 140 Franks a day and then I pay 70 to the helper, or maybe 60, it depends, sometimes if he has no idea what he is doing. But I am paying the food, so he has as much as I have, because I think everyone is working and responsibility, you don't necessarily have to pay that. Responsibility is something some people like to take, so I like to take it and I don't need to get money for that. But 70 Franks is not much money, so I almost have a bad consciousness, but I cant pay him more than I get, that is also not possible, that would be strange.

Your personal attitudes, how do they influence the management practices, maybe that's what you said to pay your employee fairly. I was thinking a bit about organic farming, where people are saying: I want to produce organically, I don't want to use chemistry, I believe that the products are better, its better for the soil, its better for the plants, better for nature. So something that is not fuelled by money.

Fundamentally I think money is something, well I need something from it, so I can live, but it is secondary. For example with that zalp thing (his publishing), there I put in a crazy amount of time and I don't get much out of it, but nevertheless I have the feeling if you do something that you like doing, then it is worth it at some point. With me it was profitable for example with the books and through the zalp I have a super sales channel, because all those people interested are coming there and every now and then they buy a book from me and that is super. And I was always living well, even though I didn't earn much money. Money is somehow, I think it must not be a motivation track. But otherwise from management perspective. Well of course on the Alp, I have also sprayed herbicides already, you aren't allowed to write that of course (making a joke). Yea I did that too, but I really think it should be forbidden on the Alps, because it is not necessary. And people have tried it, I don't know if [REDACTED] told you that [REDACTED], what's her name? a politician from Basel region, she was doing a request with the federation and they rejected it. But on the Alps it should get prohibited?

And with the use of machinery, do you use a lot or not so many?

I have a chainsaw and a brush cutter and need around 20, 25 l of petrol.

That is not so much.

On a dairy Alp you have of course you have more machinery and you can drive there better and such things and with me this is not...

I was thinking many of the alpine farmers are driving with tractors or with mulchers and so on.

No we are not like that.

What do you think characterises an alpine farmer, so what do they like, what do they dislike, how are they viewing themselves?

There are many aspects. The feeling that I sometimes get is that they have a pretty good self confidence in their job. They think that they are doing a good thing. During those Alp-decents or when there are meetings they are stretching out their chests somehow.

A pride.

Yes I think so. You have the feeling that you are individualistic, you are one who is still able to work, that is also very important. Yea that I believe so, not consistently but in general. I am seeing that a little, how should I say that? Those are 3 or 4 months and in those 3, 4 months you can let it all hang out or work more, starting through, that you can do for 3, 4 months. 12 months you cannot do that. That's why, when they are showing their breasts and: what a guy I am, who can do that! That you can do for 3, 4 months, there you have to cut a little bit on the pride. Sometimes it annoys me too, there still exist some employees, who want to be loved for that. So either they want a high wage or then they want the farmers to say: wow that is the best cheese we ever had or

something, wow that you are doing all that. Many of them have a complex and then they go to the Alp and can get started there and if the farmers are telling them you are the best, then everything is fine. So this has a bit of a pathological character too.

Interesting!

I think so and the farmer he is working the same and no one is congratulating him. So rather the opposite the population is calling, because they torture animals or because they bring out slurry and then the landscape is smelling and when they are going with the heavy machinery, where do they get the money from? The acceptance is degrading in society towards the farmer. It is not all bad, but it is rather degrading especially with the urban culture. That's why the farmers are saying too, they are struggling sometimes to say to the alpine farmer: what a great guy he is or that you are working so much, because they just work as much and with them no one is saying that and if they are not saying it either, then many alpine farmers are genuinely insulted. They say: well the farmer does not know what I am actually doing and yea, that happens too.

In Germany this is not so much different, there the farmers are being criticised a lot too, nitrates and so on. With the alpine farmers what kind of knowledge existed in the past, what is currently in your opinion dying out or has already vanished?

What is really a pity in the current situation, but that is maybe already the case since 20 years, is that many of the employees, they are changing a lot and then the experience knowledge is being lost and that I think is a pity. Farmers anyway agriculture, but also alpine farming: knowledge from experience is necessary, that it is not possible with being 3 years on the Alp, that needs 20 years or so. You can see with certain management practices how the soil or the plants are changing, or also with the cheese what you are able to do with that building or that cellar. What are you able to accomplish and what not and so on, that needs experience, watching, observing, also tinkering with something. That I think is a big pity, that knowledge is lost here. Now basically from old knowledge, that got lost now, probably the herding, because you have fences today. So the driving of the animals you are doing that less and less. Such things and then Zieger (Molke probably) you do less, so you know Zieger, when you get the rest out of the leftovers in the cauldron, such things is being done less. These things on the side are disappearing.

So everything that is laborious and where you cant take that much out.

But it is also not so important. There are new aspects, if you are fencing then the pasture is changing, which has an influence on biodiversity of course. But it is simply different, I don't want to...

Doesn't have to be worse.

Exactly.

And what are you doing differently to your predecessors?

Now, in the last 10, 20 years I do it differently that I am pasturing a little harder. So I am doing around 10 days more than the people before me. So am better pasturing out (ausweiden – using the pastures more efficiently), I am going more out. I am creating most years a new pasture, not big, but I always try to gain a little more pasturing area. Then I am doing some pasture things, I am cutting the fern, that they weren't doing as well.

So these problematic plants.

Yes

And knowledge and experience about the management and landscaping, how do you exchange that knowledge?

On the phone.

So simply personally.

Exactly, I am studying of course too and I always have ideas. Now I would like to burn a slope. Blaze management, that is of course forbidden in Switzerland, but this is my next project. Or those fern things. I find it great to see if I can do something there or not. The book says with the fern, 3 times in 3 years and then its gone and I have spots where I am cutting since 6 years 3 times and they are still there, but they are very small, I have to admit. But if I wouldn't do anything for 2 years then they would be back. And such things I am always finding it good, when that [REDACTED] (also had an interview with him) says: 3 times cutting, 3 years then its gone, well... also with the white hellebore (Weißer Germer) I was discussing about that with him, these white hellebore plant is assessed as poisonous, but with me it gets eaten completely. So it really is grazed completely.

And there are no problems?

I have never seen problems. I saw some calves, where I had the feeling, they are like a little bit drunk, but I can't tell you if it comes from that. But with the problematic plants I think, you can approach that philosophically, what is or should be done. And especially that hellebore plant is funny, that is a problematic plant, but if it gets eaten, then it is a fodder plant. There are some Alps, I saw that already too, where the animals didn't eat it, but it is not covering the pasture. With hellebore the grass is approaching up to the stem, because it is not like camphor covering everything and underneath it gets dark and then nothing grows. It is growing upwards and you have pasture till up close, that's why it is in my opinion not a problematic plant.

What are the other alpine farmers saying to the hellebore are they agreeing with you?

Yea well with that I was mostly exchanging with [REDACTED] and he is not always agreeing with me, because they got money to make a film against the hellebore plant and so on. Then it gets a bit difficult, but you are right, I should ask more people. Yes how they do that, but most of this discussion they go away when you are mowing for example, or you have to rip them out.

And are you afraid with the experience you might not be able to pass that on to your successor?

No I am not worrying about that. There is now an internet homepage and there you could, the Partura Alpina, I don't know if you encountered that, they are making movies there the FibL is also in there, BLW and so on and they do movies of how to handle problematic plants, like alpine rose, fern, hellebore.

To your personal perceptions: What changes did you notice in alpine farming and landscape management?

The newest changes are that it runs over the direct payments now. You are actually obligated to leave the pastures open and through that, [REDACTED] is with his courses, that is a bit done and the farmers are discussing: what do we want to do this summer? Before it was not coupled to the direct payments. There it was more about the experience knowledge from the past that you had to work 2 hours per cow and so on. You were doing that these compulsory labour work, that comes from long, long ago. There something happened, but it is not that easy, such a landscape you cannot simply change, the soil. Most of the times when a plant is overgrowing the case is that it has optimal conditions there. You cannot change the conditions most of the time, be it soil or fertilisation or when the stone is..., the steepness of the slope, is it southern exposition, is it northern exposition, is it a lying place. I think philosophically it is not far enough thought. So if you now, I have on my Alp camphor as well and camphor you simply don't want, they are not pretty and I can spray them away, with mowing I will not get rid of them, but with spraying I most probably would. But that camphor is growing where they like to lie down and I don't have that many of these spots, that means also even if the nicest grass would grow there after 2 nights it would be totally over shitted and over lied, pressed down and they wouldn't eat it anyway. So you don't have that much loss of pastures with camphor. That is ignored a lot, I don't know why. You get the feeling if there is a bit of grass there: oh great no more camphor there, but is not, if you calculate how much fodder they get out of there I would say it probably is 1 to 1, they are eating some camphor as well.

Yea [redacted] was telling me that the camphor likes to grow where there is a lot of nitrate in the soil, so yes where the cows are lying.

There are things you can do. You can for example from the topography if it is possible, then you can fence the camphor, so that they cannot lie there anymore, then they have to lie in somewhere else and they fertilise other spots. Then they maybe have to lie on a slope, which is not so comfortable, they would prefer to lie on the flat. Like that you could stop the supply of fertiliser for the camphor, but that is a lot of work, but it would have a bigger effect than spraying, most certainly. We did that on one Alp and it was simply a good project.

Otherwise, did you notice changes with the weather, or structures: streets, hedges, forests or also with social or economic issues?

Economically I would say the employees are earning a lot better than in the past, partly they are valued more, not everywhere of course, but yes. Streets are also clear, they get more and more. Especially Graubünden has maybe one Alp left you can't drive to. Here there are a few left, especially the upper relays, that you cant access by car. Yea there happened certainly a lot. For me as a herder, I skipped those 15 years and what is very new for me is even more fencing and for example the mobile. In the past if an animal was sick or had something you had to go down to a restaurant or so and call from there and the farmer was also not home and you couldn't reach him so you had to walk 2 times and today I do a whatsapp clip and send to him: look how she is limping, should we do something, what do you think? Or something. That made a big difference I would say.

I think so too! And with weather, were there some anomalies?

It certainly has gotten warmer. There is almost no frost anymore, so 30 years ago I had frost every summer and now the last 6 years I think I never had frost, maybe a little bit in autumn in the last days but not in august or so. Snow I have a lot less, snow I used to have almost every summer, now almost never. One time I had to go down in those 6 summers. Otherwise I find it difficult, what is being said about the climate that its getting more extreme, I find it difficult. In the past there were also dry summers.

So you noticed nothing with that?

The time is too short to say. Also from a human perspective in 18 it was relatively dry then they started building systems to collect water, maybe you saw that, Agridea is involved with this, because they were saying: ahh now its always getting drier and if you look at the last years, this summer was very wet and the others were quite regular. You always have the feeling there where you are, this is the trend. But that is mostly not correct.

Yea that is always difficult to assess. But your assessment, what are the reasons for the changes you mentioned?

That would be progress and climate change. Well the progress is mostly thought of technically, so technical progress.

At least in Europe, yes. And how do you assess the state of species diversity in the mountains at the moment?

I don't know whole Switzerland but here in this area I would say very good. With the insects I simply noticed. Well this summer we have to skip, because it was so bad weather, but otherwise, I would say in comparison to the low land, 20 years later there are still many insects, butterflies, moths, crickets and such things, while in the low lands that has decreased quite a bit.

Why do you think that is the reason?

Yea that is connected to the management. Further up you simply cannot do as much, because the vegetation period is a lot shorter and down you can simply use it more and here the pastures are cut so early with the silage, that is severely bad. Basically here in the valley it is like that as soon as the dandelion is flowering they are mowing and then its not in a fashion like: a little here, a little there. If it is 4, 5 days nice (weather), then the whole

Lind plane is in 4, 5 days mowed. Then the insects cannot jump somewhere else, it simply is finished, that goes extremely quick with the power of the machines and that is simply not that feasible in the mountain area. You are much slower with mowing, maybe you have hand-held mowers and in the steep you have to rake it down manually and what else I find interesting, I learned that when you are fertilising and using mineral fertiliser then the species diversity is lost. And I was always surprised on one Alp where I was, there were beautiful Maiensässwiesen (some kind of pasture I assume, next to buildings, east swiss dialect) they went up until 1800 m and they were bringing out mineral fertiliser there too and the species diversity there was huge.

I think the mineral fertiliser itself is not the issue.

Well it cannot act there as supposed to and you mow only one time, you start mowing on the lower part and there the pasture can eject a lot more flowers and I mean there where the landscape, the meadow diversity and there are more insects and if there are more insects then there are maybe more birds and so on.

You already know that question: What is the first thing you associate with protection of species diversity?

Financial contributions (a joke). I don't know much of everything.

What kind of activities do you have that is influencing species diversity?

So I have a lot of fern, a lot of alders and a lot of alp roses. My Alp is growing in or verchrutte (Verkrauten, swiss dialect, "over herbing") so the wood is growing.

What kind of measures do you have? You were talking about mowing time, are you specially waiting with mowing until the flowers have flowered?

Well this is pasture management. I rather mow down the lignification (wood overgrowth) with the chainsaw and the brush cutter and so on. I am not influencing the species diversity on the meadows because I am forced to use the pastures that it is possible topographically. When one pasture is grazed I go to the next. I cannot wait for 2 more days or something, there I am limited. What I already have done is grazing one pasture earlier than usual, but this, well I can do that occasionally, but organisation wise I don't have a big leeway. And the rest is done with the chainsaw, for example where there are a lot of alder trees, there almost nothing else is growing, that is really almost dead spoil then. When I saw them away, then there is not immediately grass coming, but there is some light again and then other plants are growing.

(explaining the survey) Which wild animals do you notice the most in your everyday life?

So certainly not in an area that is saturated with wild animals, but if I am on my way then I have foxes, marmots, birds in the first place. Lesser is then the stags and chamois, but as I said before insects. There is a true diversity and from certain you have more pleasure with others a bit less. I always find the frogs amusing, because I am startling when I walk like this and then suddenly it does...

Did you notice any changes in the recent years, if they got more or less?

That is a bit difficult because I am since 6 years there and that is an almost too short timeframe. But I think there, there should be more chamois. I don't understand why there are relatively few chamois. Because there are big areas that you can pasture, so pastures that are not grazed by livestock.

And other differences, so that some animals are more shy or less shy or bigger or smaller?

I couldn't say that. I don't know.

The same with the plants, which plants are the most striking?

I would have to have a bigger span of time. So with meadows that you can mow, I could imagine that the changes are bigger, than the with me where I am pasturing.

But with the plants, doesn't have to be changes, but which plants do you notice the most? So maybe the alders because they are crating problems and what else?

What I am occupied with the most are those plants that are taking the pasture from me, this farn, the alders, the alp rose and erica, those heather shrubs, so these shrub things. With these I am occupied with the most because I am fighting those a little. Or what else is funny, I was on one Alp where the camphor was annoying us the most, there were truly a lot of camphor and we tried to push it back a little. Now I also have camphor but I have even more fern, that's why the camphor is not on my mind, that is funny, it is the ratio.

Every Alp is a bit different.

Exactly.

Were there for example some invasive plants as well?

I haven't seen any with me.

Something with the problematic plants that are increasingly present, so the ferns for example.

The ferns are a bit particular. In the past, there truly are a lot of ferns, in the past they were mowing it in autumn and taking it as plant litter back home. It is simply the case, that if you mow fern one time, then it doesn't hurt him. But the advantage is because they are very high and they are falling over and cover the pasture. In the past when they were taking them in autumn, then at least the old ferns from the year before didn't cover the pasture, that was a big advantage and today the farmers have straw, they are only collecting a little of that fern and then it falls down on the pasture, where there would be a bit of pasture left and covers that grass, also in the next year.

So the plants would have to be taken away.

Where I have a slight feeling that it is more are those thistle things, maybe others were saying that as well.

Yes.

But also here I am a little unsure, if you look at problematic plants you quickly get the feeling: ah from this is every year more. You would have to look at it more precisely to know if that is really correct. Maybe it was 30 years ago already like that. I don't know if you know that, but after the war the Americans (USA) have photographed Switzerland from above. That was 49, or 46, I don't know and there are aerial imagery from whole Switzerland and they are digitally available, you can slide that and you can see how was the Alp grown in the 40ies and 50ies and how is it now. And I find that very interesting, there people have told me also: yea back in the day everything was open there, talking about the alders and then you look and you can see there were also alders back then at that spot. What the people are always telling you is coloured very personally, some memories and they don't have to be always correct. With me I noticed, that where it has alders at the moment, there were alders in that time, that is already 70 years ago, too, but not quite as dense. If someone says there were no alders at all in the past and 100 years ago there were alders there too, or 70 years ago and he is not older than that, that cannot be true.

That is also interesting how this comes (talking about snow levels).

Yea exactly you have to be a bit careful with that. And maybe in one year it was the case (the snow) and that stayed in the mind and then people say: in the past! But in the past there also were warm winters.

And with other species, you were talking about insects, that there are many in the mountain area.

I think so, that probably is from location to location different, I can't say that exactly and I didn't count the insects 20 years ago, but from my impression, I am always amazed by how many butterflies are around.

The butterflies?

The butterflies or the "Falter" I don't know where there is the difference (none in that case, butterfly is the animal in all its transformations, while "Falter" means only the last transformation), but the stinging nettle with me is completely eaten by the caterpillars.

And do you notice a difference with the insects between 1500 and 2300 m?

I would say in the lower parts its busier than up high.

Otherwise mushrooms or something?

Mushrooms are bad with me. There are a few, but not many, there are better places and that's why I can't tell you about the development.

Which kind of structural elements do you think are important for species diversity? I was thinking of hedges and so on, which are also connected to the direct payments.

In the pasture area I would say you are not talking about hedges, but its clear, as diverse as possible with a few trees and stones, wet holes, or swamp or stream or such things. A highly diverse landscape results in divers animals and plants. But of course from the side of the plants there are limits. I don't have much limestone, more silicate rocks, less species diversity. Lime pastures are richer in species.

And could you concerning that, not only on your pastures but on neighbours in that area could you notice changes there?

I rather think the pastures are quite robust, so if you are now..., I have the Japanese lily (Pracht-Lilie) on one of my pastures and it is every year there and it gets grazed and it gets trampled on partly, somehow they are always coming back, also arnicas for example they are always present. I think they are quite robust the pastures. Then there are areas that get fertilised by the farmers, they partly take slurry up from the valley farm, which is prohibited, additional fertiliser supply you are not allowed to do that, but they do that there and also there with that slurry, the pastures are not broken through that, quite oppositely it benefits the pastures there, because next to it you have enough lean pastures, that still exists. Looking at the whole these are still small areas and through the fertilisation it gets a bit fatter and through that the grass vegetation is changing slightly and then other plants are coming then where it is only lean and like that it (species diversity) is rather increasing.

How important is environmental protection and sustainable management and conservation of species diversity for you?

I always have the feeling that biodiversity is very important and the life always tries to diversify itself. I believe that the spirit of life energy is to diversify, quasi the force of life has the best chances to survive. That has got no so much to do with human activity, simply, well I am not a believer (religious), but I get the feeling that this power is extremely big, because you can see in every crevice, it is unbelievable how in everywhere place something is still growing, or on which glacier are some fleas speeding around or so.

On the rubber seals on my car for example, there something is growing too.

So this force of life is very big and we will not be able to destroy that. But here in Switzerland I think a little bit, that you sometimes loose the view on the whole, we have it quite narrow here and then you are looking at the square meter and if you look how many zones there exist, so maps with something, where swamps are mapped, where wildlife protection areas are, where water protection areas are and all of that is overlapping and every

square meter is..., that is a bit ridiculous. The big problems worldwide are rainforests of course or something like that. Not how many plants you have in your garden or something like that. Well, I am not criticising that, but sometimes you lose that out of view a little.

In Switzerland the species diversity program, well Switzerland is weighing that, so some species for instance are rare but also exist in the Pyrenees, those will be classified lower than species that truly only exist in the alps, or some which only exist in the swiss alps, which is then the highest priority and with those it is well observed. So they check globally: is it really so special or not, sometimes it is, sometimes it is not and then it gets valued.

I find it great if you still have some lady's slipper orchid (Frauenschu) and so on, that's great for sure. You don't see it often, but yea well if it is not there it is not going to change the world and like that it is with a few things, well I am against herbicides on the Alps, but altogether you have to say what gets sprayed on the Alps, if you take that..., I always have the feeling that you would have to fly up with the helicopter and then you see it from above and always further and further and then it loses its importance, if some herbicides were sprayed there or not. That is smaller somehow marginal compared to some sunflower fields in the valley or the rainforest or those palm oil things and so on. So I don't want to talk it small, but....

A drip on a hot stone?

Exactly. Of course you should nevertheless do it, with the climate change or ambitions to oppose that I find it naturally that Switzerland should participate, even if viewed globally is probably not making an impact, but everyone has to take their responsibility. Certainly. But you still have to view that this is the case and you can nevertheless do something and still nevertheless recognise that it is not having an impact. That does nothing does it?

Well the alps were managed extensively since hundreds of years and they look as they look and now it is not intensively ploughed in the mountains or so.

Exactly. When those biodiversity contributions were coming, there I also thought now they have gone crazy! I mean they are managed since hundreds of years and the biodiversity is there and it will probably be similar in a hundred years, I would say, through the contributions that is not being changed greatly.

But are you supported through the contributions, for BFF?

We get ca. 8 – 9000 Franks a year by the state. And we are not doing nothing for that.

Yea, most alpine farmers were saying that to me.

That is simply there, coming from that I find them rather stupid those contributions. The biodiversity is already good but the contributions are a bit stupid.

Basically a subvention for the management.

There are people, for example the Bündner farmers president was saying: Finally we get payed for something, that we always have done.

Also a point of view.

But I think you are not actively doing something for that. You cannot really. Well with lower located Alps I think you can do more, but the higher you are, the less possibilities you have with your interference.

Well in higher located Alps is not so much happening, there is the diversity anyway lower than the lower located ones. Which measures or something are in your opinion good for species diversity in the alps? Extensive management?

Yea, so I would say high up, difficult to do something but lower you can influence a lot through fertiliser management or so. Or with, depending on if you have the possibility, with pasturing, with paddock grazing, that paddock pastures is today, because of the simpler fences much more widespread, with herding that was a bit different and especially with dairy Alps, if you are doing milking parlours, where you don't have to walk as far with the animals, where they can lie somewhere else, there you have a distribution of fertiliser. There are such possibilities. It just has a greater effect down low than up. If you start at 1200 then it is totally different, there you might be able to mow more or whatever, what's up on top not possible anymore.

For the conservation of species diversity, what kind of measures should be taken?

Certainly it is good that there is no foreign fertiliser, which is now forbidden in Switzerland. What should be done, I find that difficult in general. So the direct payments, that is not badly organised. I think the concentrated fodder support could be abolished, but yea... but otherwise, if the consciousness is present with the farmers and alpine farmers then they can depending on where they are, is it located high, low, regionally topographically, is it steep, is it not steep and so on, they could do depending on that something and the shrub encroachment, that you have to keep that open is also ok, I think is also good. You could say adapted animals, location adapted animals, the Alps are also locational adapted so they should certainly be lighter, that would also be good. So you are get into problems with high-yield cows you have to give them concentrated fodder.

And where with that are you perceiving the biggest need for action?

For biodiversity... yea I don't see a high necessity for action in the mountains. You could prohibit the herbicides, that would certainly be good.

So rather in the valley the practices, how things are managed there. That the need for action is mostly in the valley and not so much on the mountain.

Hmm, so you should have to break that trend with the always bigger, always more. I am at the wrong location for that, because in Kanton Uri is the Kanton with the statistically smallest farms, so has the most quasi diversity there, but that doesn't matter. And then it would be necessary with the number of animals to go a little bit back, also in the mountain area, that you would be able to mow later. That with mowing early is generally shit. Maybe you would have to say no silage, or no springtime silage, that you are not mowing so much and wait until its really hay. Then you can increase the diversity. And no slurry, only manure, in general.

Do you know about the melioration measures by the state? And what is your opinion with these? Are they generally directed well or...

So what you can see well is that where there are no meliorations happening, a municipality where there are no meliorations happening, there is much more hedges, trees. The landscape is being cleaned out when the same farmer has bigger areas, connected bigger areas, when he owns them, or when he can lease them. Then these things result from that. Well today there are landscape quality contributions, then you get some money for a stone pile or a hedge row, but I also understand that, if you are mowing there every year and every year you crash into that stone, at some point you take it out. Or you find, that you could drive straight over to the next meadow, but there is a small stream in the way, then you clean it out. That is simply like that and if it belongs to the neighbour and not you, then both are mowing until the small stream and that's it. That is obviously with these municipalities. The municipality where I have my Alp, they don't have those meliorations and that is extreme how many hedges and, how do you say it, obstacles basically, stone piles, little walls are around there. And if I think of ??? (name of place) where I was in the past, there were meliorations and this is pretty much cleaned out, everywhere streets, cleaned out landscape. So for biodiversity this is certainly very bad.

Is there in the area, where you are, is there a lack of scientific knowledge about species diversity? What do you think?

I don't think so.

Is there a lack of knowledge about management practices or about environmental changes there?

I wouldn't say a lack of knowledge, but the farmers they have a mentality or something and this is sometimes pointing the other way. Especially here in this area people are sceptical about scientists or the state or so and yes, as a farmer you get a certain defensive position as a farmer. I experience that very different in Kanton Graubünden, there they are more loyal to the government. If they are saying something, then they are cooperating and here in the central Swiss people are sceptical. If someone says something than you most certainly do not do that. So you yourself knows better. That has to do with mentality and this is hindering certain new things, or progressive things, so mostly those are like new things, that they now should also look out for biodiversity, that is standing in opposition.

But that I think is a pity, especially the management in the Alps. Biodiversity should really be something positive, even for the farmers, as through their management this is enabled. The reason its good are the farmers, they are the managers and I find it a pity, that as soon as the topic species diversity comes up, that defence posture is taken, maybe also with wolf and so on, but it really should be something positive.

Yea you must have as a farmer some pleasure in it. But there are also the farmers who are having pleasure in machines, or that they have the highest output possible and that is not easy at all. Now you have in the last 100 years you were trying to mow until the forest border, to get the maximum out and you were always cleaning and suddenly now you are supposed to leave some shrubs at the forest border and so.

And leave the dead wood.

Exactly, it is not always completely comprehensible and then, it needs time, then new generations are coming who see things a bit differently, but yea it sometimes needs time.

Well slow changes are often more sustainable then a quick jump.

Yea also with the slurry, there it was, I would say, the government, the agricultural offices, they are never responsible and that is a huge issue. The best example is the BSE, I don't know if you noticed that the BSE scandal. I mean a farmer would never have gotten the idea to feed his cow meat, but the scientists found out, that if I give so and so much proteins to the front, then I get more at the back, so I am feeding things where protein is included and take some fish flour. So a farmer would never have thought of feeding a fish to a cow and then you have a scandal, but no one is responsible from them. With the stable buildings that was maybe 40 years ago, they were saying you have to do schwämmig Mistung (creating slurry by collecting shit and piss in a tank, no mixing in fibres) that is a lot less work, everything goes automatically, but then you end up only with slurry. 20 years later people noticed, only slurry in the mountain area is shit, you have to have composted manure, then you have better meadows and higher diverse meadows, but there no school is coming, like the Planterhof: ok we have made a mistake, or something. Its always the case that in the moment where you are, they are shooting off their mouths: you have to do it like this and that and responsible in the end is no one. And with that I have to say honestly: That annoys me a little, that then the farmers who didn't do the schwämmig Mistung, because they were always making manure or who didn't feed their cows with fish, they are in the end criticised, that is not fair.

No truly not and the scientists really often are the smartasses coming and ehh, that's of course not good and 20 years later they changed their opinion.

So they should also step back a little for themselves and say: I think this is the best, but it does not have to be that way for the centuries or maybe I will get another idea or so.

Certainly, that should have been one of the big points of this study, that I am not coming like that (keeping on congratulating myself)

(Talking about some sheep farmer) First they come to the successful farmer and they collect the data, pay attention, convert that somehow and are creating regulations for everyone. Then they come again with a check list if you are doing it in that way. So all their ideas they get from that experience knowledge from the farmer and later they are coming back and do the regulations, that is quite exciting.

That's how it goes unfortunately.

That's how it is, but all participants should see it that way, to recognise that these mechanisms exist and then you have to stand back a little to say: is it really necessary or not?

Here in Switzerland with the direct democracy, there is a very powerful tool for that. Then a very important point for me, how could I motivate the people to participate? My big fear is that the paper arrives with them and goes straight into the oven.

Yea I would say don't ask too many questions, make it short. What certainly would be good, if you have time that you tinker a bit, so that you do one survey and then you send it to someone or to 2, 3 and then you can refine it, or you could pull some stuff together or so. What certainly is also good, if they don't have to write too much, so making crosses or with one word or something. It has to be well understandable obviously. With what I often have the feeling, many of such things are based on word and then it is full because everything is very important. That is somehow I don't know...

Not a good format.

I understand that, if I have an A4 sheet with 12 point writing and close paragraphs and so on, and then I think: oh no! So maybe you could do that with a certain format or with pictures that you can make crosses. Flower meadow, no flower meadow, swamp that it gets a little more funny.

That with the pictures I was also thinking of. That it is better than texts.

Yea maybe a little bit lighter. I don't know. Someone said to me every time he takes a pencil in his hands he gets headaches and they have to file rather a lot. Or put a beautiful Sennerin (female alpine cheese maker) on the front page then they at least open the first page.

That is a very good idea. Well the funny thing is I hate those surveys myself, if I have to do them, so I'm always thinking what could motivate me to do this.

Maybe you put a 50 note with it, or you send a cake with every survey.

I would like to do that.

I did that already, when we did that Hirtenstock und Käsebrecher book. There I wanted of course that it will get reviews in newspapers and back then the idea was to send review books to the newspapers, or radio, these media, press. And then I put a teabag and a piece of chocolate with it and said: take your time to look into it, make yourself a tea or that in that way. I can't say if it was useful or not but that is like a...

Nice gesture.

Exactly and this you could, I don't know with what, a teabag is a good option, that you can send quite well, but yea something small.

That is a good idea yea. Do you have anything to the topic of species diversity where you think I should definitely include? Something I really should ask about.

What I think is that the species diversity is creating pleasure. It is fun if you can see different things. I don't know, sometimes I find it great, we have bathtubs as troughs and then there are caddies in there (Köcherfliegen) and

from the dust that is falling down you can see the way of the caddies, that's somehow funny. If there were no caddies that wouldn't be the case. Of course I get annoyed by insects as well. Someone was saying to me: Tell me what is the sense of a tick?

Yea... that is certainly true.

He could live quite well without ticks existing. What is the sense of a tick in an ecosystem.

I think most animals could live quite well without those critters.

But basically I think it creates pleasure or if I see that Japanese lily, every year always again, I know it is simply there but I always enjoy seeing it again. And when, you can ask yourself that: do I enjoy that diversity and if you have that, it would be great doing something for it that you feel joy. And if through that the whole earth gets rescued, would of course be a nice side effect.

Well if the people are pleased by it, that is already quite good.

And then you can go further and say, if there are hikers or tourists coming past a meadow of yours and they are joyed that is also something great. So that you are not viewing that as totally technocratic or systematic. Yea simply that it is great if you somehow manage to have larks in a wheat field or such things.

Super that is a good point. How do you see the future of the alpine farming, landscape picture? Rather positive? Rather negative?

I don't really know it precisely. Generally I have the feeling that it goes on for a bit the way it is now. So with the wolf I see it negative at the moment, but maybe in 2, 3 years. But there pasture area is given up because there are less sheep and this is not funny anymore with that herd guarding, that does not create pleasure and yea and with sheep, its that meat production that still is the most natural. That is a pity that they are going down. Those are the animals who are outside the most with free grazing. Otherwise I think at the moment the trend, or the image of the alpine farmers is still pretty good. The valley agriculture hmm hmm hmm, but the mountain agriculture in the alps the image is quite good. The people have the feeling that there nature is still being produced, a little the rose-coloured glasses. The image is good so money will continue to flow as long as that is good, finances are mobilised politically and coming from that they will be able to survive and continued to be managed.

So rather positive?

Yea with that I am not seeing big problems.

Yea alright, did I omit something very important in your opinion?

I cant think of anything now.

Do you have some commentary, ideas or criticism?

To your questions? No also from the length its ok like that. Maybe what you could differentiate a bit more sharply is if it is valley, mountain or Alp.

Well I am only doing the mountain area, so I have to make the decision after which point.

Well Senseland is partly not that high.

No its not so high. Well I said to myself I am concentrating on the summering area and then I say no matter how high the summering area, point.

Then with the pasturing you can do less then with the mowing, you can control your point of time better, with pasturing less so.

Do you have good advice you can give me for the road?

No you are doing that well, njo you are doing that in a sympathetic way, that's certainly good.

I am trying thank you very much!