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8-13 July 2014

The rural family in mountain areas at the time of global changes: adaptation and challenges. An ethnographic view

Marcela Olmedo
11 July 2014

Aims

- exploring the characteristics and identifying **features** behind adaptation strategies and processes of adaptation in rural context.

Using Aosta Valley rural environment as a case study the module will cover:

1. exploring climate change **vulnerabilities** and **risks** and **adaptation mechanisms** in farming context: climate observation & scenarios and future developments; its consequences on rural environment.

2. exploring climate change adaptation **options**. Potential adaptation options will be explored by selecting a specific climate impact and / or adaptation sector of interest.

3. exploring climate change adaptive **choices**

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Content

Concepts
Approaches
Case study
World café

Content

Concepts
Approaches
Case study finish by 10:30
World café 10:45-11:45
Discussion 12-13

Concepts

Climate change adaptation

Climate change adaptations are the **processes** and **actions** that enable people to **cope** better with increasingly challenging weather and climatic conditions. Adaptations may involve the development or adoption of a **technology**, or it can involve **building capacity** such as improved risk management or knowledge enhancement.

West and Gawith, 2005; Tompkins, E.L., Eakin, H. 2011

Concepts

Adaptation

Mechanisms
Strategies
Adjustments
Processes
Actions

to cope better

Concepts

Vulnerability

fragility
weak points

Measured by assessments = analysis of expected impacts, risks and adaptive capacity, measuring the ability to adapt. It is a tool for enabling resource managers to make judgments.
Damage level is development dependent.

Concepts

Resilience

the capacity of a society to return to its original state after an impact

robustness

resistance

tangible - containing walls; efficient alert system; available financial resources; etc

intangible - education; skills; risk awareness; decision power; etc

Mitigation

Concepts

Adaptation, Vulnerability, Resilience

in colloquial language these terms are many times considered as synonyms, opposed, or interchangeable.

“The importance is to find the conceptual links between them”

Concepts

Sustainability

Deriving from Latin (to hold up).

It is about **sustaining** human human existence: sustained economic, social, political, environmental, spheres.

Sustaining the enormous **challenges** of our time

Vulnerability Assessments

intensity
duration
dimension
localization

Vulnerability assessment

Importance of basic data

slow changes, for example, leave enough time to get ready and respond

fast changes leave less time to react

Oyace, Valle d'Aosta. Marcela Olmedo © 2011

How to capture the complexity of Adaptation and Resilience

SPATIAL

Mobility, boundaries, areas of availability and frequency of resources

TEMPORAL

Climate change; climatic variability; herding tradition throughout time; land tenure throughout time; cheese making tradition; changes in activities throughout time, availability and frequency of resources

Analysis approach

A "natural" area is multidimensional:

Political dimension = norms and laws

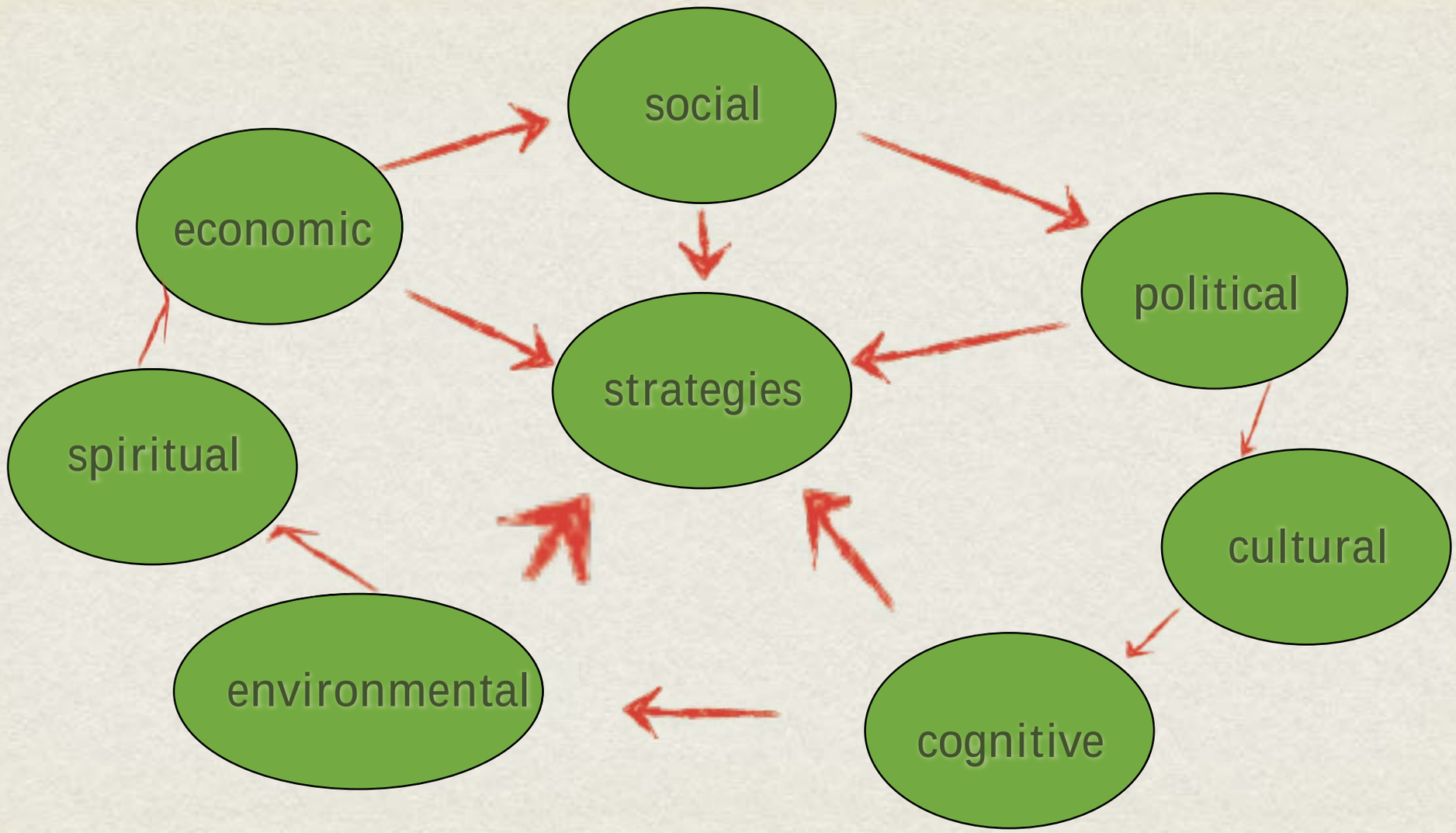
Economic dimension = is ecosystem dependent; relates to subsistence and development

Social dimension = how people organize their space: own ethic codes; social hierarchy, heritage, a "way to do things".

Cultural dimension = geographical space that contains a value of nature; cosmovision of natural territory; toponym; language.

Spiritual perspective = relates the spiritual dimension with the earthy dimension; the holy space; rituals; beliefs related to nature.

Conceptual framework



Analysis approach

Not to document,

but to understand processes

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Weather and Climate Changes in Aosta Valley

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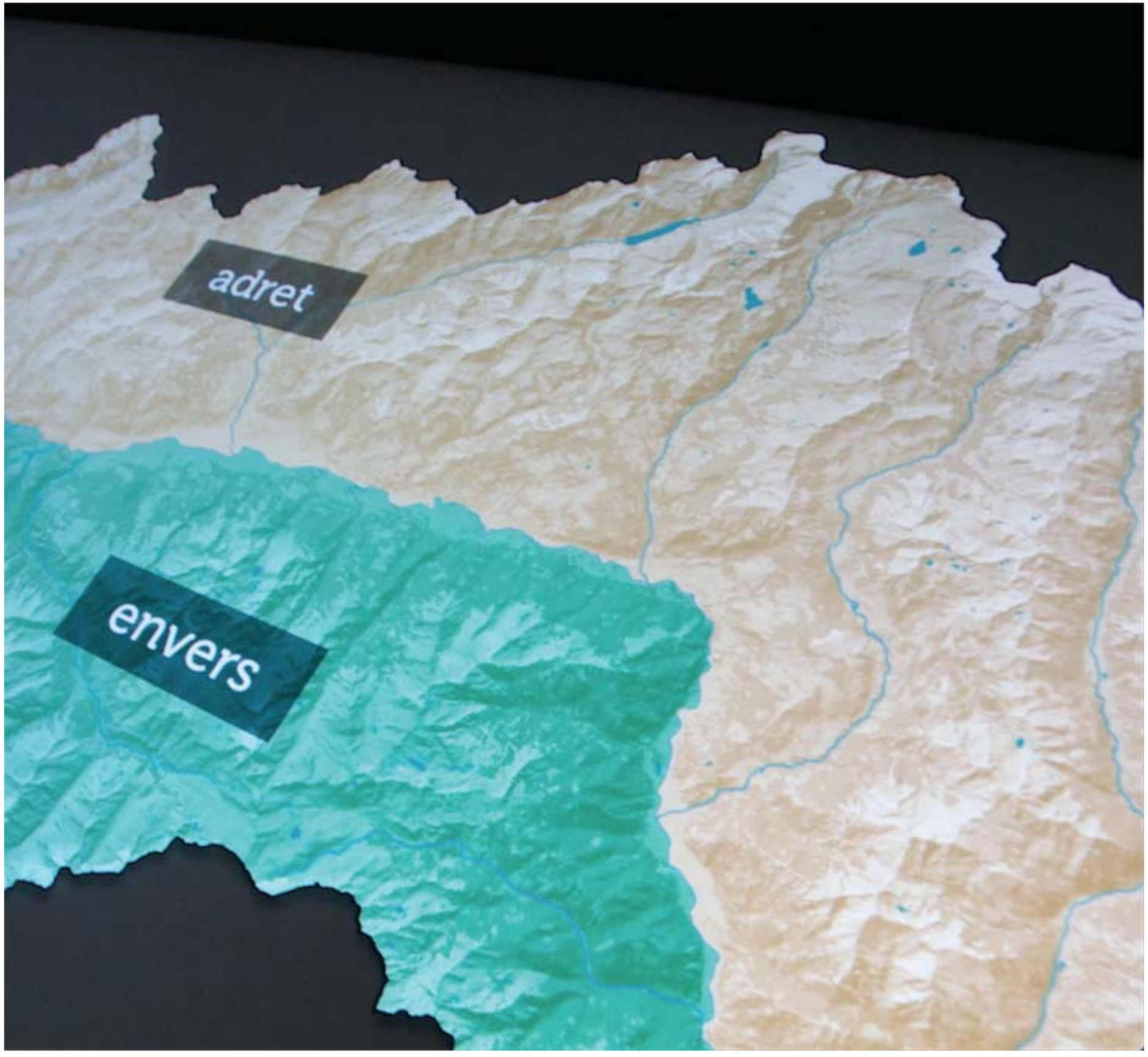

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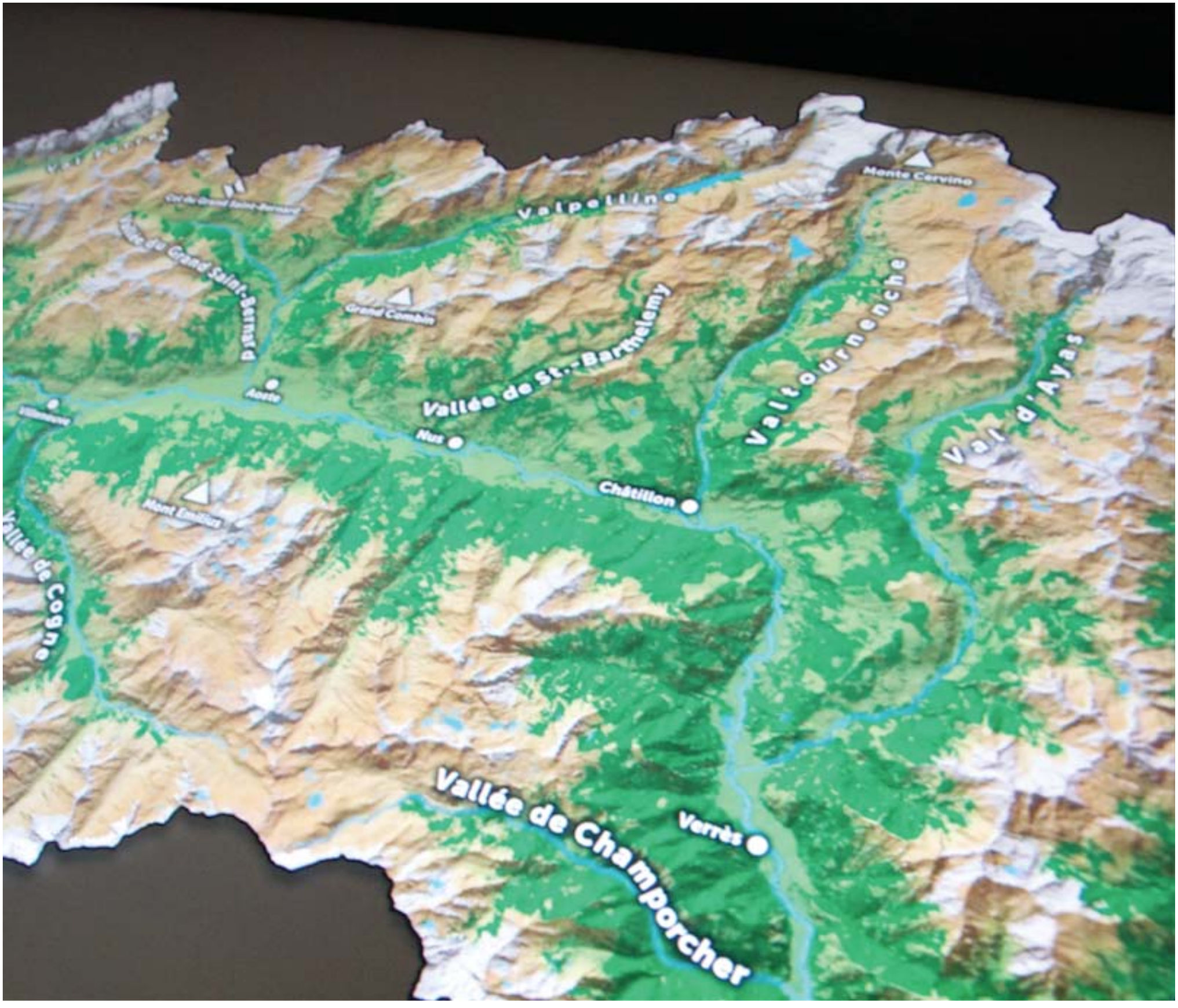

Friday 11 July 14

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Past and projected impacts of climate change in European regions

Arctic
Temperature rise much larger than global average
Decrease in Arctic sea ice coverage
Decrease in Greenland ice sheet
Decrease in permafrost areas
Increasing risk of biodiversity loss
Intensified shipping and exploitation of oil and gas resources

Northern Europe
Temperature rise much larger than global average
Decrease in snow, lake and river ice cover
Increase in river flows
Northward movement of species
Increase in crop yields
Decrease in energy demand for heating
Increase in hydropower potential
Increasing damage risk from winter storms
Increase in summer tourism

North-western Europe
Increase in winter precipitation
Increase in river flow
Northward movement of species
Decrease in energy demand for heating
Increasing risk of river and coastal flooding

Mountain areas
Temperature rise larger than European average
Decrease in glacier extent and volume
Decrease in mountain permafrost areas
Upward shift of plant and animal species
High risk of species extinction in Alpine regions
Increasing risk of soil erosion
Decrease in ski tourism

Coastal zones and regional seas
Sea-level rise
Increase in sea surface temperatures
Increase in ocean acidity
Northward expansion of fish and plankton species
Changes in phytoplankton communities
Increasing risk for fish stocks

Central and eastern Europe
Increase in warm temperature extremes
Decrease in summer precipitation
Increase in water temperature
Increasing risk of forest fire
Decrease in economic value of forests

Mediterranean region
Temperature rise larger than European average
Decrease in annual precipitation
Decrease in annual river flow
Increasing risk of biodiversity loss
Increasing risk of desertification
Increasing water demand for agriculture
Decrease in crop yields
Increasing risk of forest fire
Increase in mortality from heat waves
Expansion of habitats for southern disease vectors
Decrease in hydropower potential
Decrease in summer tourism and potential increase in other seasons

Source: European Environment Agency http://www.eea.europa.eu/data-and-maps/figures/key-past-and-projected-impacts-and-effects-on-sectors-for-the-main-biogeographic-regions-of-europe-3

Extreme events

Bionaz, Valle d'Aosta. Marcela Olmedo © 2011

Will be more and more common and intense,
threatening those who depend on mountain resources.

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Scarce snow; intense and concentrated rain; high temperatures

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Vulnerability

Agriculture is a weather/climate and water linked activity. Hence, it can become more vulnerable as events becomes more extreme.

Scarce snow; intense and concentrated rain; high temperatures

2 giugno Valsavarenche,Valle d'Aosta. Marcela Olmedo © 2011

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Rural world and Challenges

Challenges presented by climate change in mountain ecosystems around the world include

water resources,
glaciers,
natural hazards,
biodiversity,
food security,
migration

The EU Adaptation Strategy has three objectives.

1. Promoting action by Member States:

The Commission encourages all Member States to adopt comprehensive adaptation strategies and will provide guidance and funding to help them build up their adaptation capacities and take action. The Commission will also support adaptation in cities by launching a voluntary commitment based on the Covenant of Mayors initiative.

2. Promoting better informed decision-making by addressing gaps in knowledge about adaptation and further developing the European Climate Adaptation Platform (Climate-ADAPT) as the 'one-stop shop' for adaptation information in Europe.

3. Promoting adaptation in key vulnerable sectors through agriculture, fisheries and cohesion policy, ensuring that Europe's infrastructure is made more resilient, and encouraging the use of insurance against natural and man-made disasters.

Implementation of the EU Adaptation Strategy is based on eight actions

1. Encourage all Member States to adopt comprehensive adaptation strategies
2. Provide LIFE funding to support capacity building and step up adaptation action in Europe (2014-2020)
3. Introduce adaptation in the Covenant of Mayors framework (2013/2014)
4. Bridge the knowledge gap
5. Further develop Climate-ADAPT as the 'one-stop shop' for adaptation information in Europe
6. Facilitate the climate-proofing of the Common Agricultural Policy (CAP), the Cohesion Policy and the Common Fisheries Policy (CFP)
7. Ensuring more resilient infrastructure
8. Promote insurance and other financial products for resilient investment and business decisions

CULTURE

knowledge
experience
tradition
family dynamic
planification / anticipation
social support
family composition

laws

Adaptive strategies to climatic variability and change in Aosta Valley

ENVIRONMENT

verticality
adret-envers
mountain climate
topography, characteristics
flora, pasture land
cattle type

particular management

alpeggio dynamic (HHL)

economy

technological development

production

DIVERSIFICATION

INTENSIFICATION

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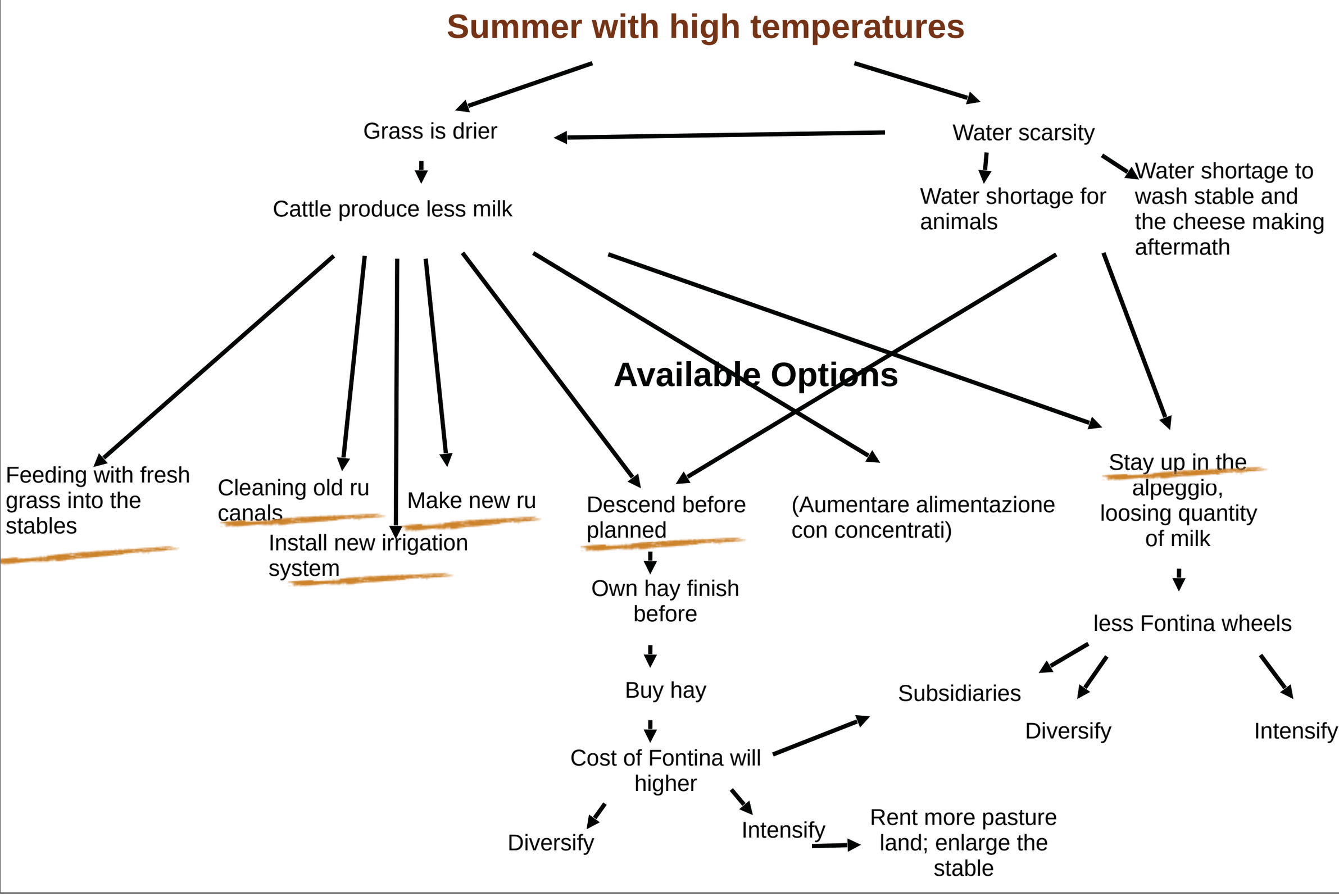
Coping strategies in Valle d'Aosta

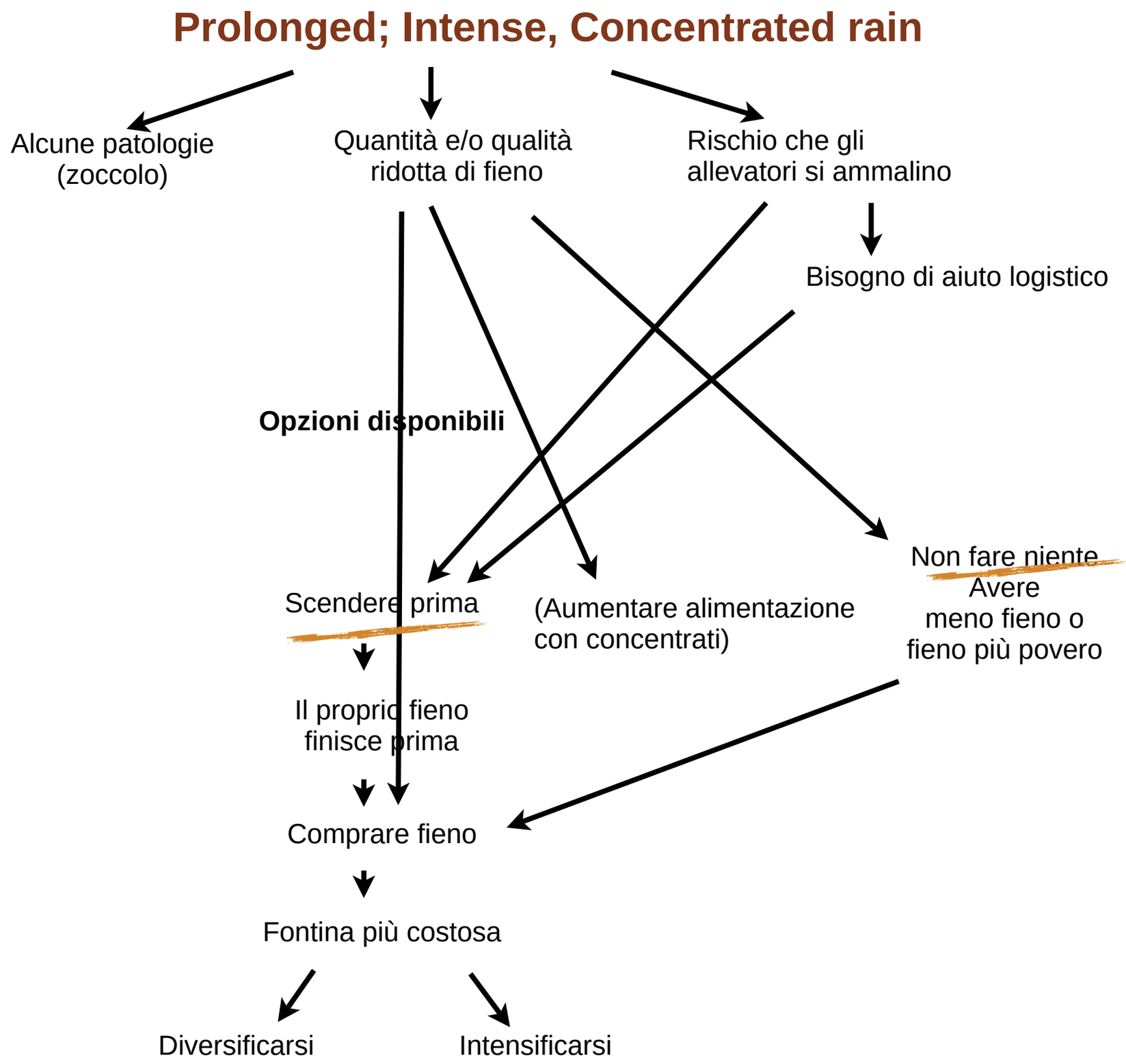
Capturing the complexity of Adaptation process through

Options and Choices

Available Options



Available Options



Available Options

Anticipation of the Spring

↓

Maturazione anticipata dell'erba

↓

Diminuisce qualità e quantità di latte

Opzioni disponibili

Salire prima

Pulire i vecchi ru

Fare nuovi ru

Istallare nuovi irrigatori

Scendere prima

↓

Il proprio fieno finisce prima

↓

Comprare fieno

↓

Fontina più costosa

↙ Diversificarsi

↘ Intensificarsi

(Aumentare alimentazione con concentrati)

Non fare niente
Rimanere su perdendo quantità di latte

↓

meno quantità di Fontina

↙ Diversificarsi

↘ Intensificarsi

Available Options

Posticipated Events (snow in June)

↓

Neve in primavera

↓

Fieno rovinato

Opzioni disponibili

↓

Comprare fieno

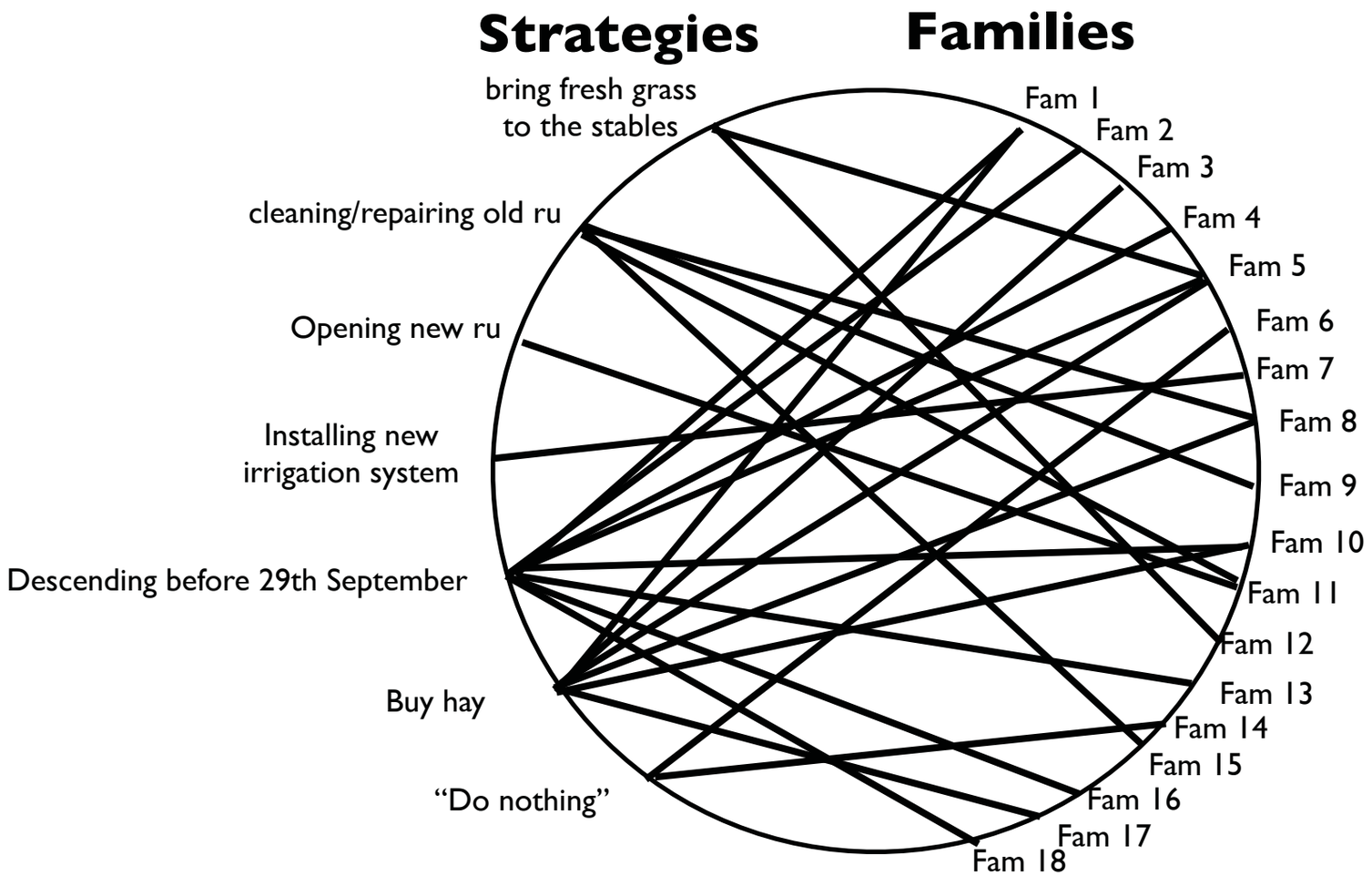
↓

Fontina più costosa

↙ ↘

Diversificarsi Intensificarsi

Strategies adopted during summer 2003 (of high water shortage)



Perception and Immediate strategies towards climatic variability

- Some grass species are disappearing;
- Weather unpredictable;
- Anticipation of the spring (more summer days eating fresh grass);
- Changes in water availability: water scarcity Cambiamento nella disponibilità di acqua; changes in

Perception and Immediate strategies towards climatic variability

- Perception that pasture lands need to be watered more often or more abundant;
- Weather forecast prevalence between observation of the ravens or wild deers, indicating bad weather 2. local TV; 3. internet (sons/daughters)

Perception and Immediate strategies towards climatic variability

- Less snow;
- Winds are stronger or sometimes last for more days than usual;

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Similar Case Study

Vulnerability

Scarce grasslands. Climate: haze and ice cover, rain, snow, thunderstorms and cold. Fast temperature shift. Water scarcity.

Paropata, Perù. Valentin Ccasa Champi © 2012

Peru, altiplano: Options

- Plant bushes or cover the terrain

- Diversification of crops

- Go down to other ecological niches

- Diversifying incomes (wool; tourism)

Peru

Difficulty to move towards intensification: Lands are communal with laws based on equality.Earth is considered a “mother”, “it is not for sale not for buy”.

Choices
1- Diversification of crops
2- Finding jobs outside the herding

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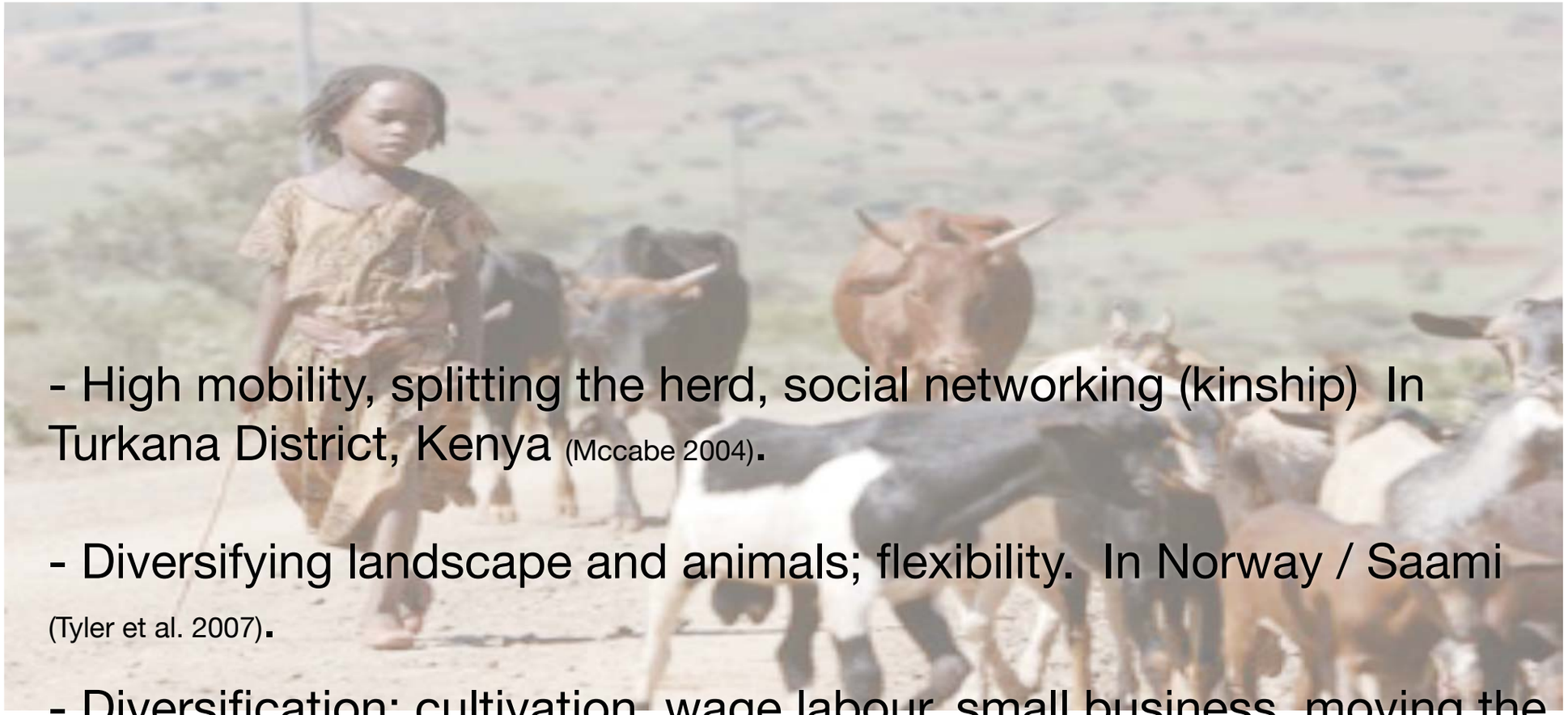
Adaptation around the world



- High mobility, splitting the herd, social networking (kinship) In Turkana District, Kenya (Mccabe 2004).

- Diversifying landscape and animals; flexibility. In Norway / Saami (Tyler et al. 2007).

- Diversification: cultivation, wage labour, small business, moving the livestock over very large areas of land. In Kejiado district, Kenya and diversed cultivation Ngorongoro C.A, Tanzania (Thornton et al 2007).

- Selecting herd composition by age/sex. For cultural display herd maintained large; In S.Africa / communal vs commercial land tenure (Thornton et al 2007).

- Through “cow and kin” system of exchanging labour and products; HH subsistence production. In Siberia / Sakha (Crate 2009; 2006).

- Timing, location, methods of harvesting animals, globalized technological equipment. In Arctic / Inuit (Henshaw 2009).

a. Diversified resource base
b. Change in varieties and species
c. Change in the timing of activities
d. Change of techniques
e. Change of location
f. Changes in resources and/or life style
g. Resource management

Salick and Byg 2007

Motivation

Aesthetics - cattle features

Comfort/Accessibility - herder age vs race

Wealth display - black vs red cattle

Tradition - Stars; superstitions

Spiritual - Saints; Stars; superstitions

Networking / Labour force

Relatives; family; friends availability

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Adaptation in Valle d'Aosta

Adaptation through genetic selection of cattle
Adaptation to water availability
Adaptation to the exploitation of vertical ecological niches *(tramuto)*

Adaptation to the vertical exploitation of resources (transhumance)

Vulnerability: availability and accessibility of grass

Bionaz, Valle d'Aosta. Marcela Olmedo © 2011

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Verticality

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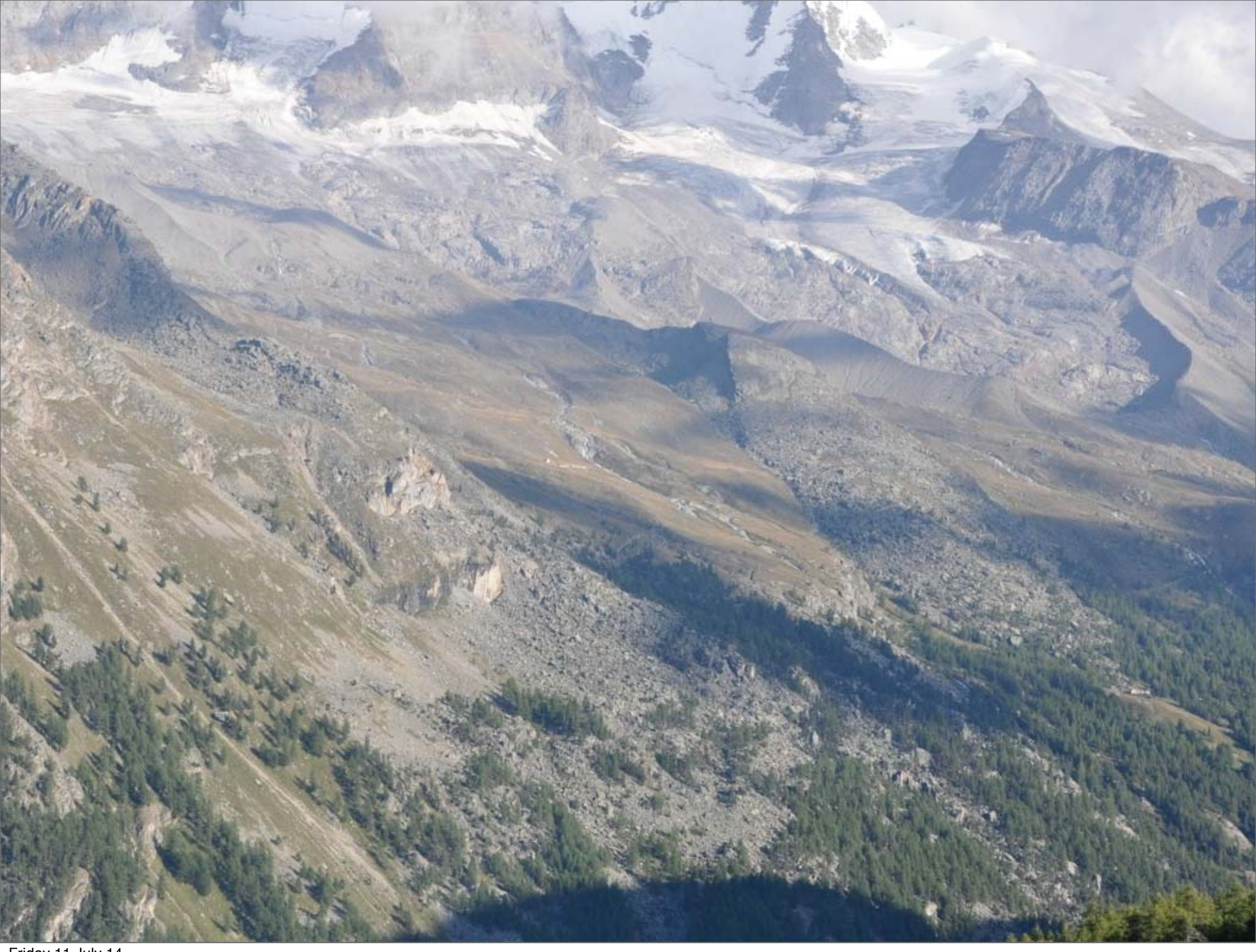
Adaptation to Weather and Climate Changes in Aosta Valley



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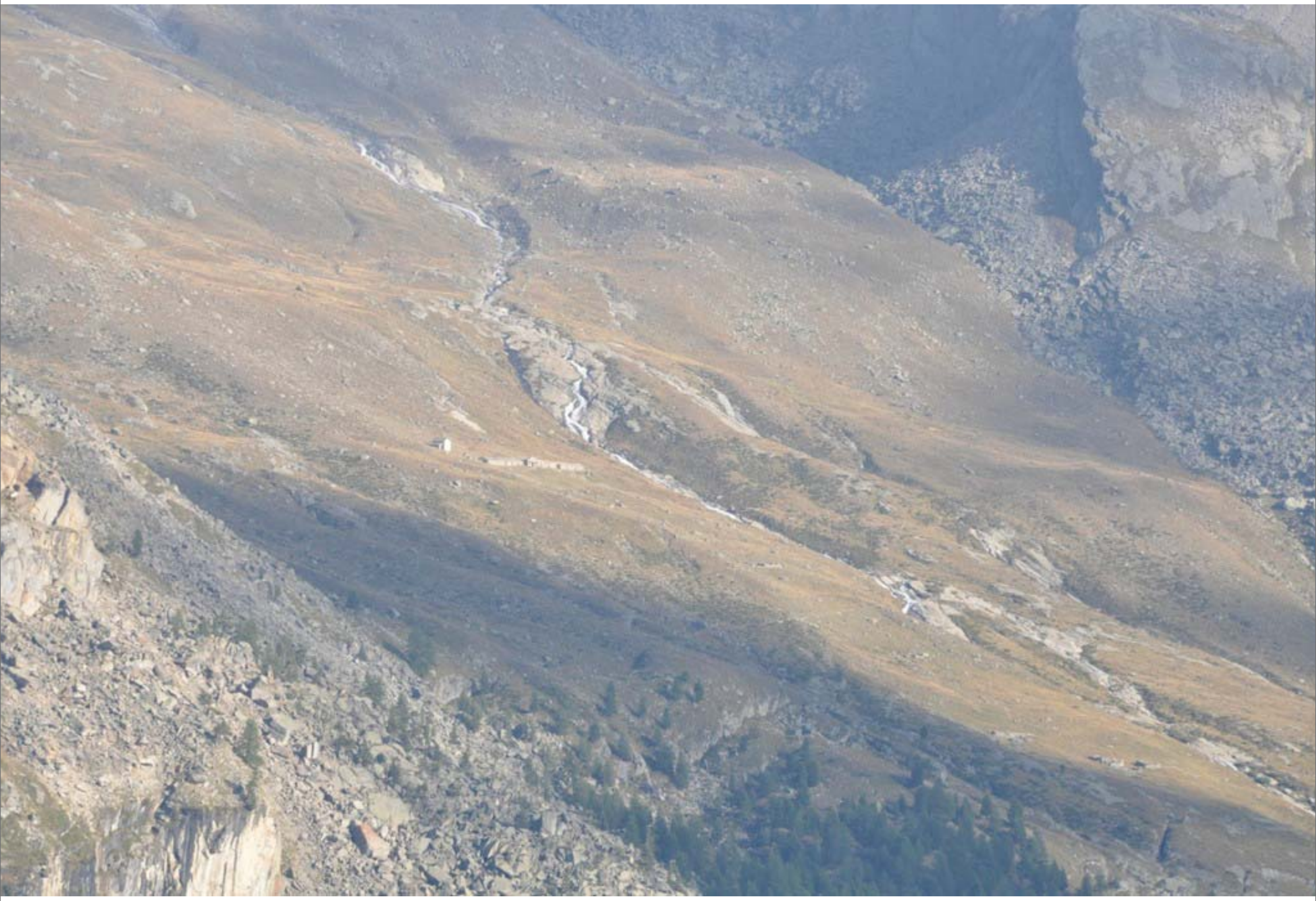

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Alpeggi

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Valdostan herding family

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Valdostan herding family

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Valdostan herding family

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Valdostan herding family

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Valdostan herding family

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Women's role

"Our work is invisible"

Women's role

Women's role

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Women's role

Women's role

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Women's role

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Women's role

Women's role

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Young members

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Young members

Young members

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Young members

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Young members

Aosta Valley - farming system

Stables and Alpeggi

Stables and Alpeggi

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Stables and Alpeggi

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Stables and Alpeggi

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Stables and Alpeggi

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Stables and Alpeggi

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Stables and Alpeggi

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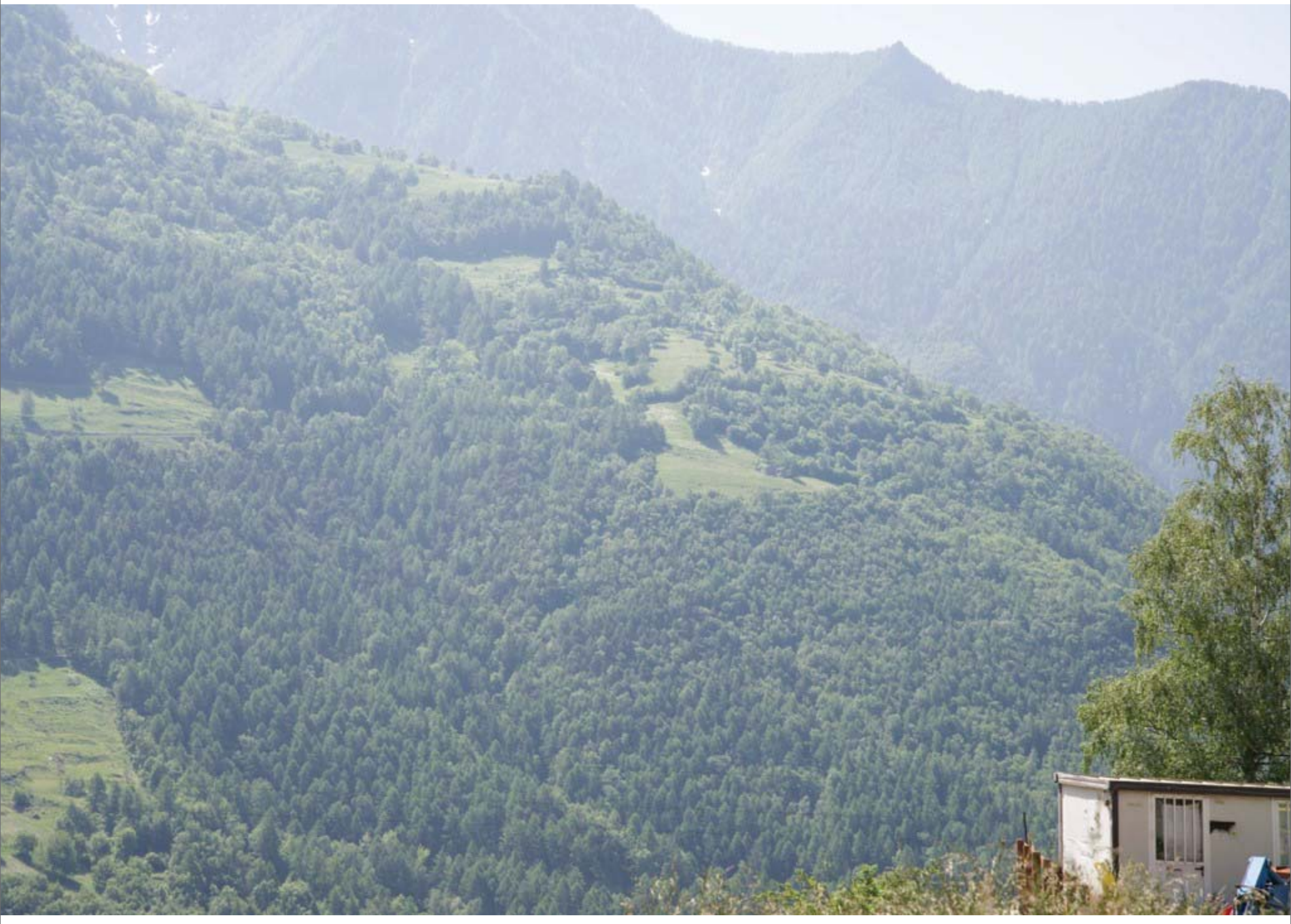
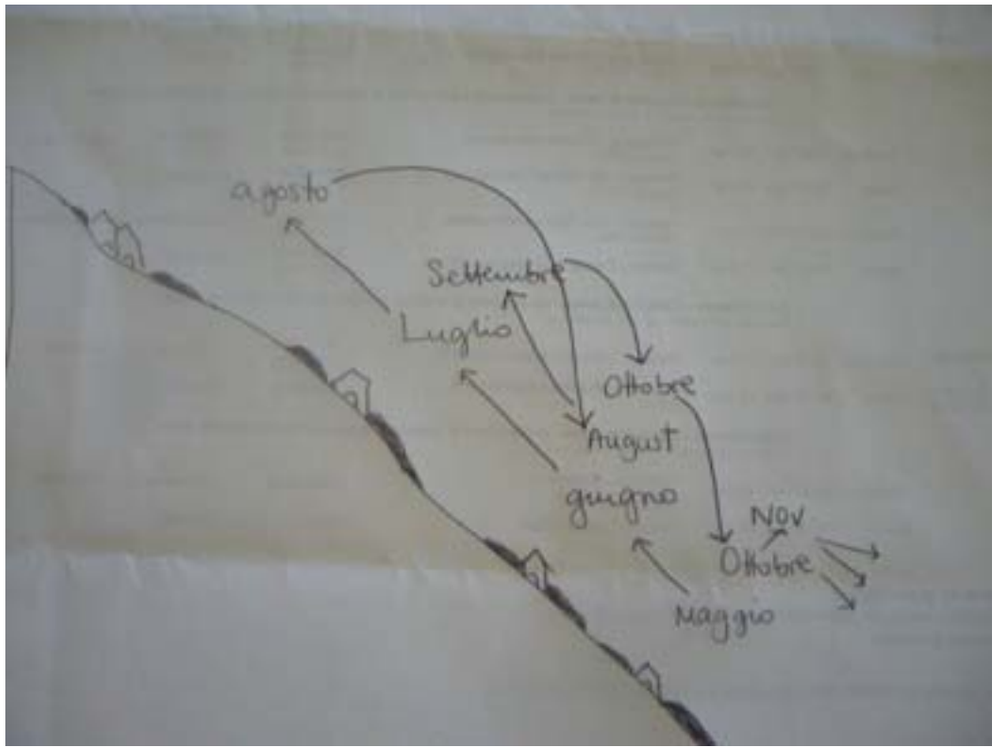
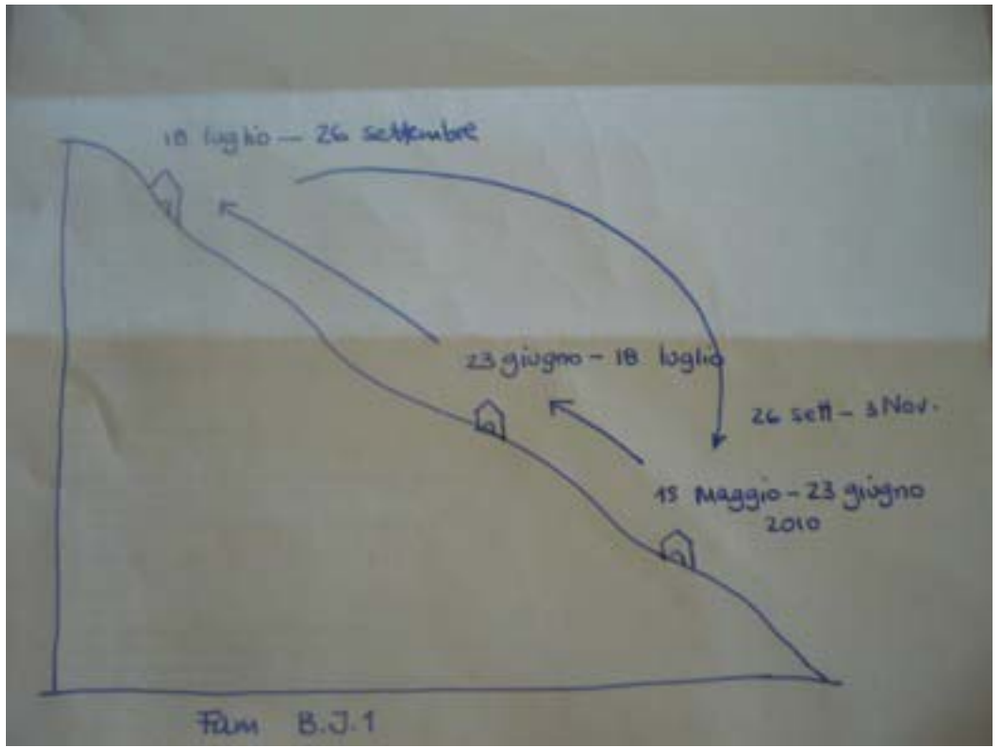
Inarpa (June)

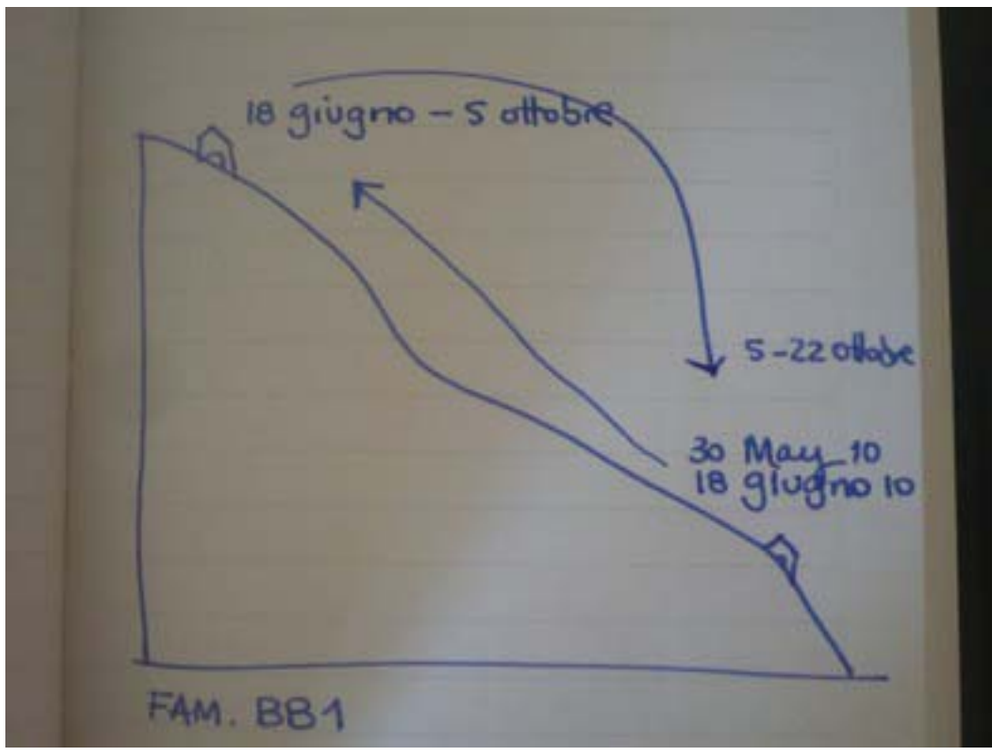
F Munier, June 2014



Adapting to the vertical exploitation of resources (tramuto)







Verticality - *Inarpa* - 24th June / St John

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Inarpa by track

New vulnerabilities: Impact on environment

Munier, family Saint-Pierre, Valle d'Aosta. Marcela Olmedo © 2014

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Verticality

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Desarpa - 29th August

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Desarpa - 29th September

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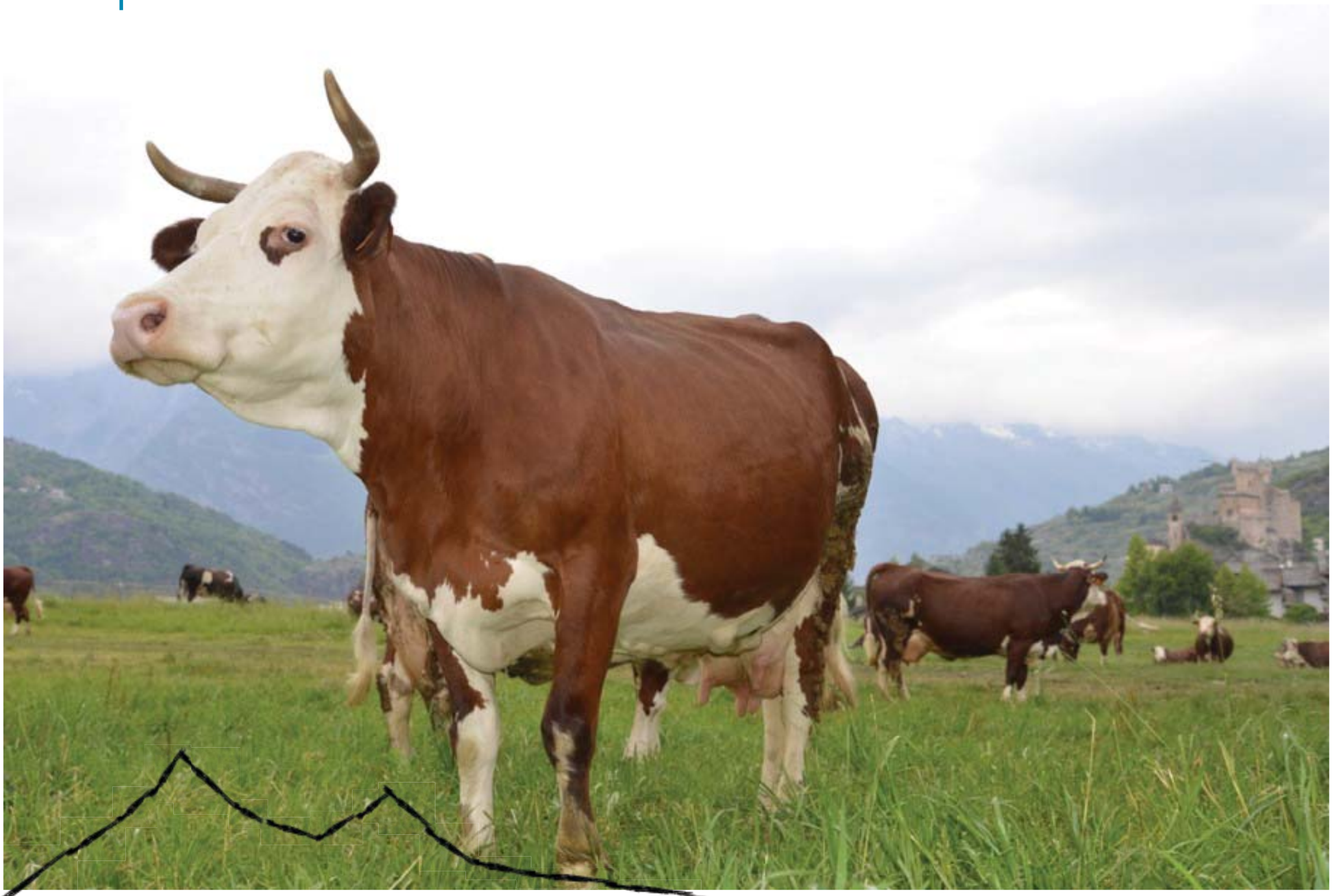
Adaptation - Genetic selection of Valdostan cattle



Munier family's cattle, Saint-Pierre, Valle d'Aosta. Marcela Olmedo © 2014

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Valdostan Bovine

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Valdostan Bovine

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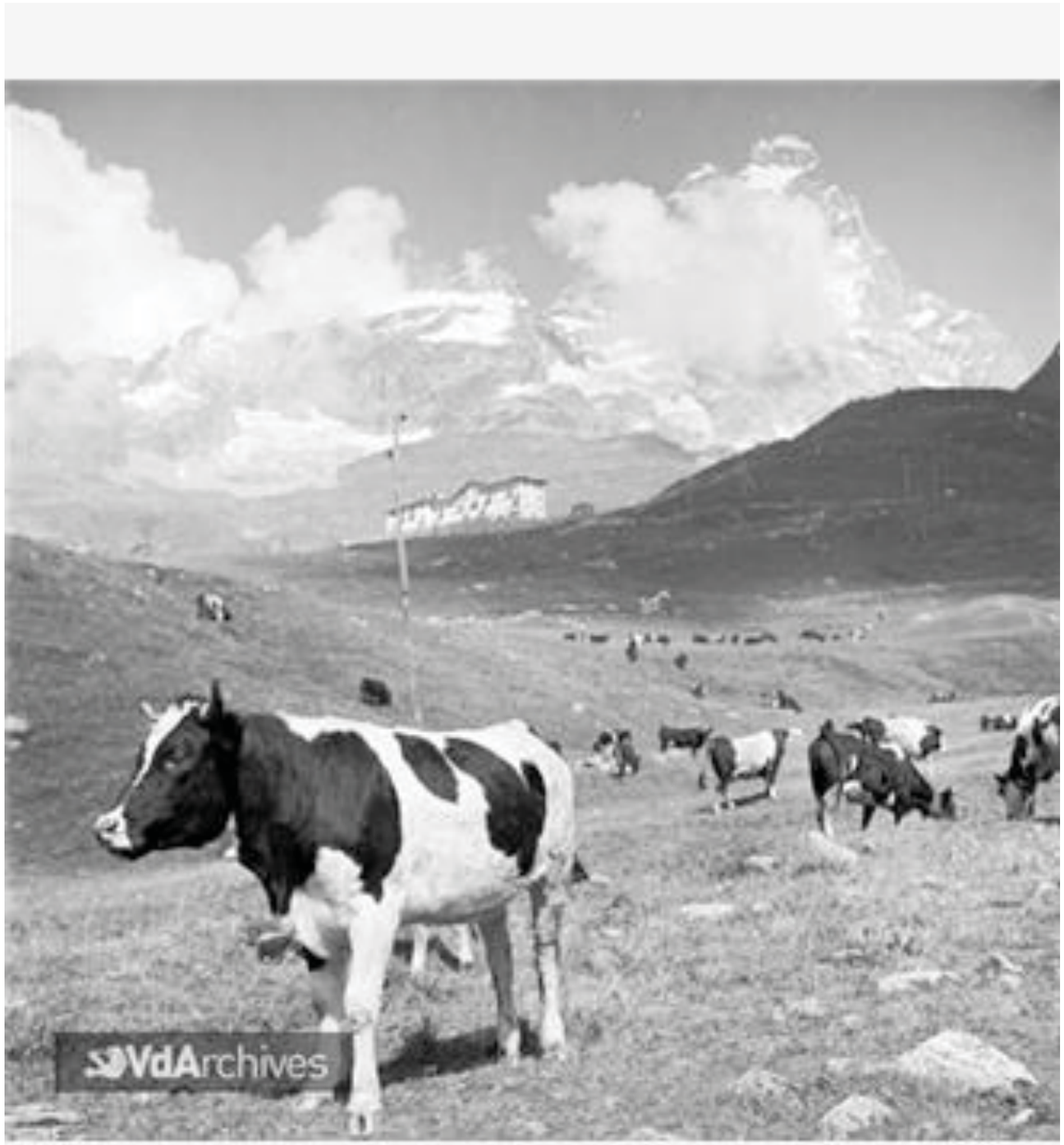
Valdostan Bovine

Valdostan Bovine



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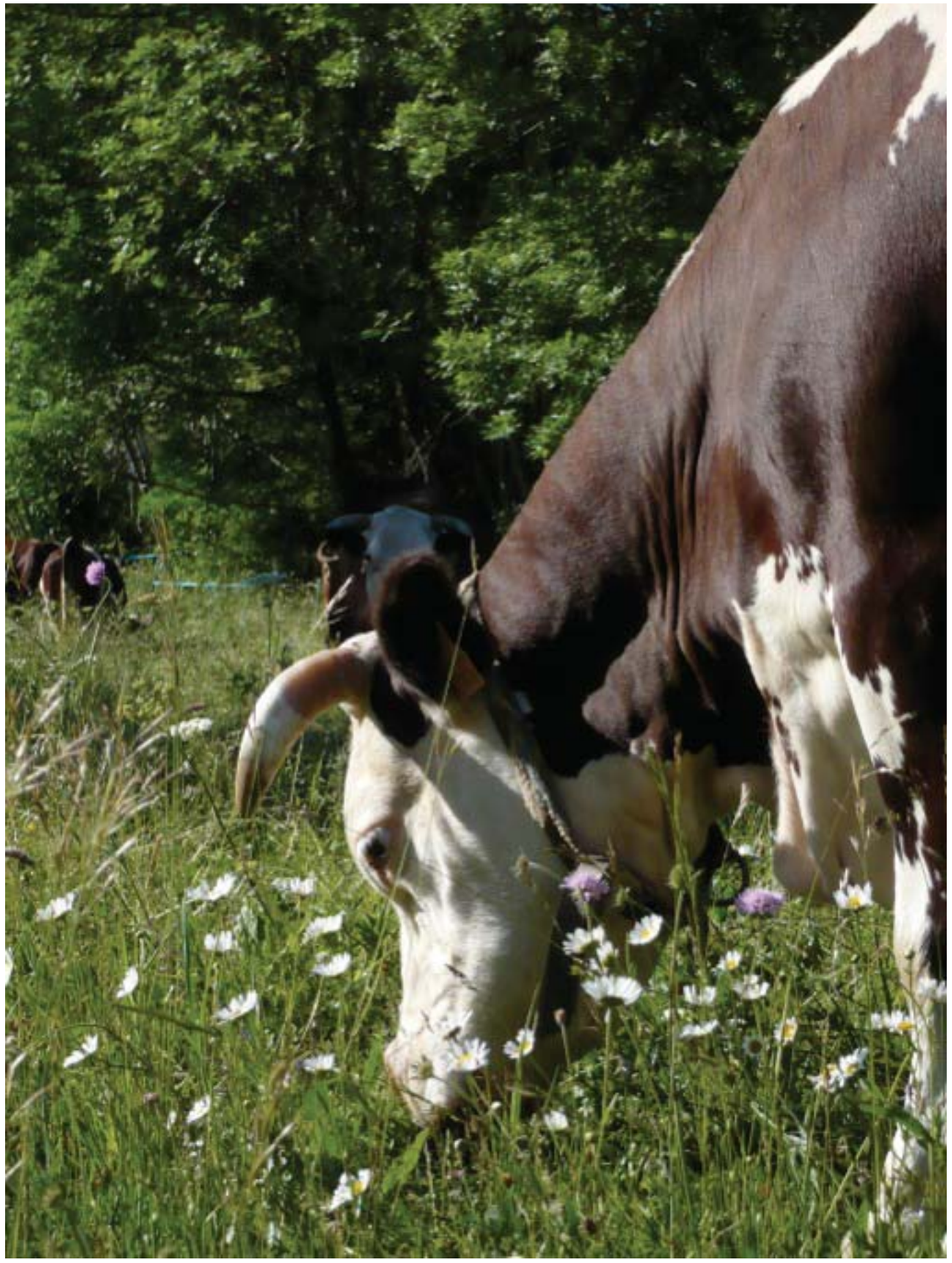
Valdostan Bovine



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Grassland

a built environment.

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Grassland

Grassland

Grassland

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Grassland

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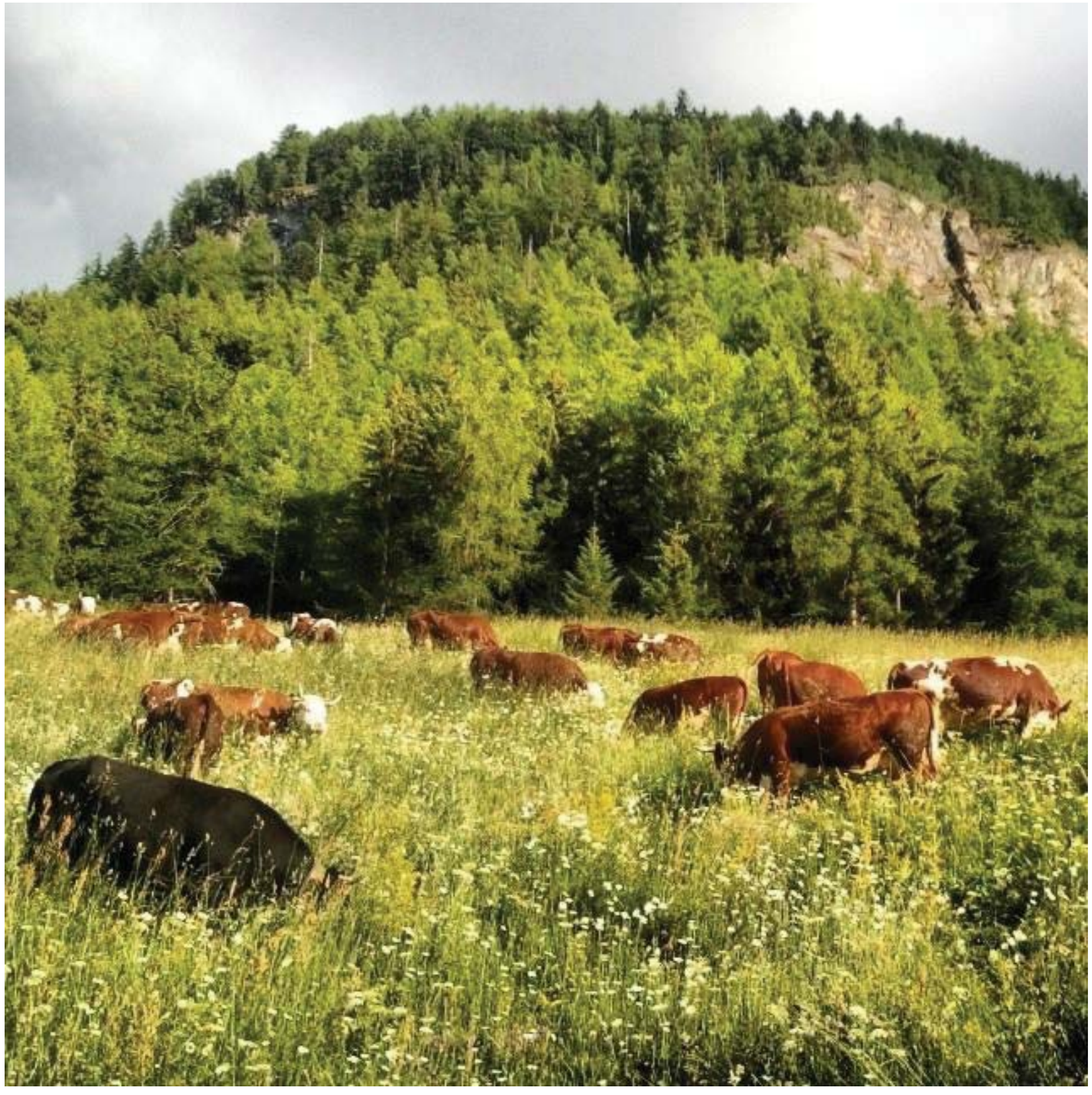
Grassland



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Grassland

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Grassland

Grassland

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Grassland

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Grassland

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adaptation to water availability

Charvensod, Valle d'Aosta. Marcela Olmedo © 2014

Adaptation to water availability

Vulnerability: less water availability; more pastureland to water

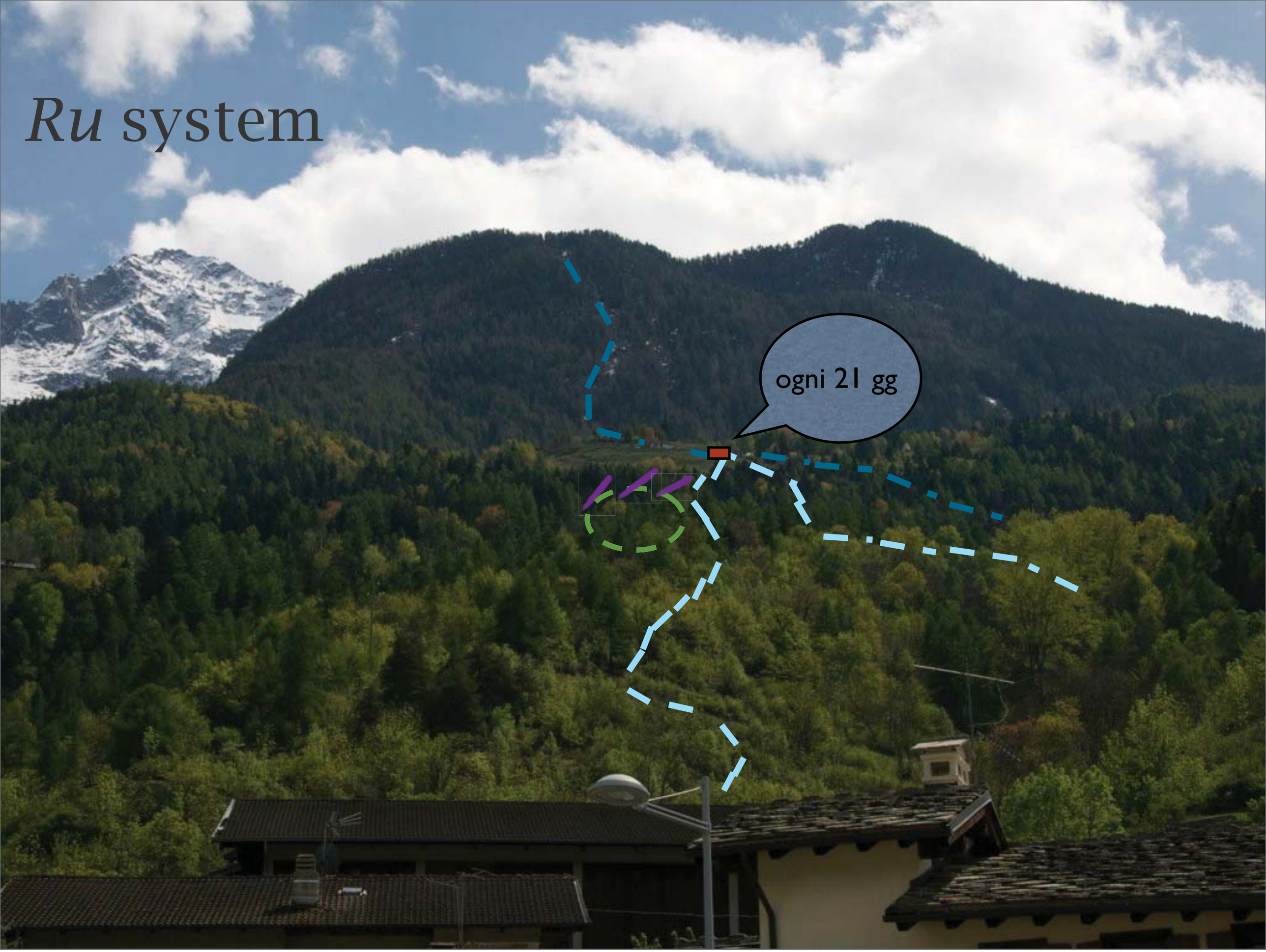
decreasing the use of *ru* (ancient canals / springs)

increasing artificial irrigation

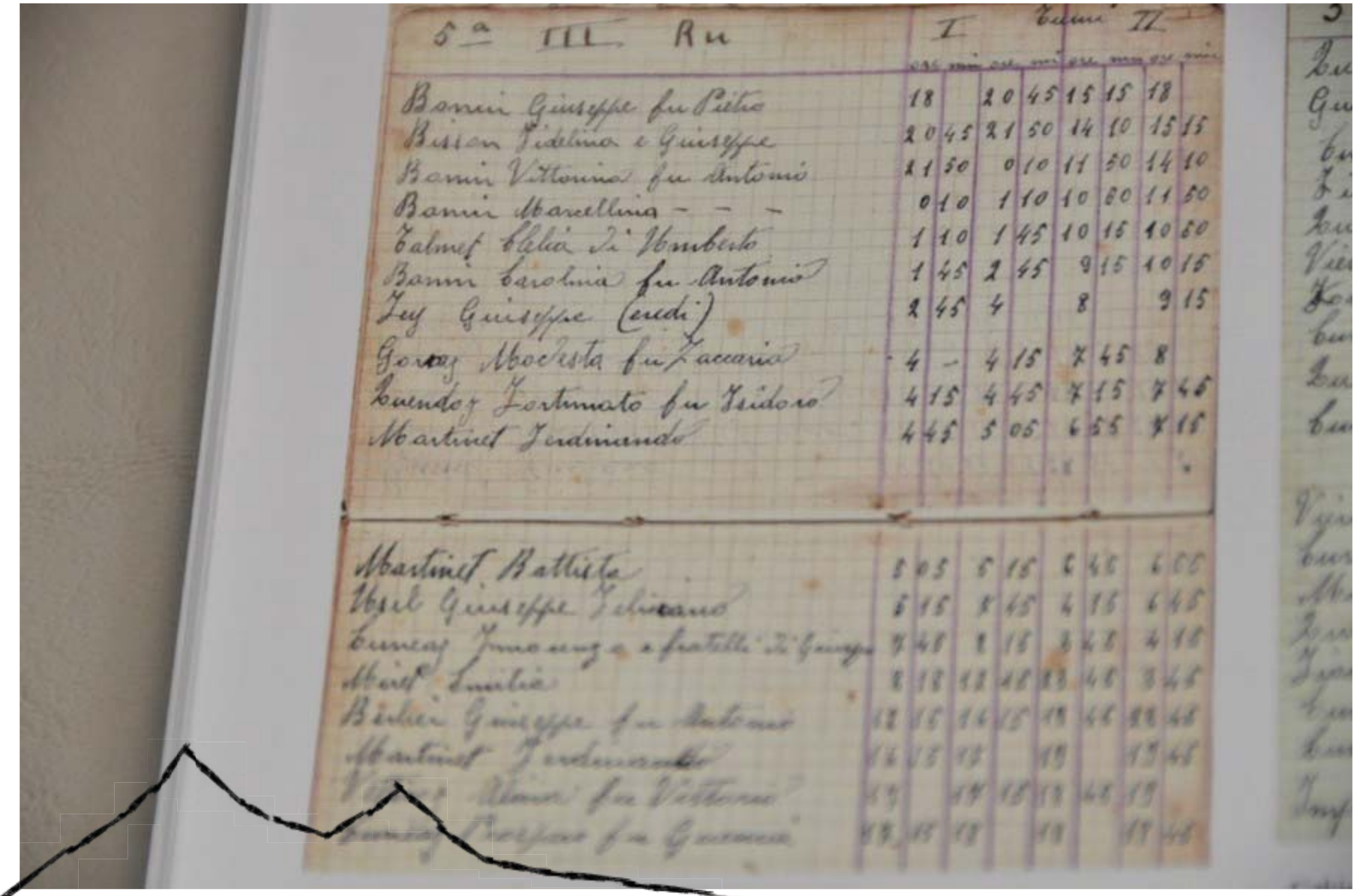
Ru system

Charvensod, Valle d'Aosta. Marcela Olmedo © 2014

Ru system



Ru system



Diario Consorzio, Valle d'Aosta.

L'AMMINISTRAZIONE COMUNALE DI DONNAS

CON LA PARTECIPAZIONE
DEI CONSORZI DI MIGLIORAMENTO FONDIARIO DI DONNAS

O R G A N I Z Z A

UNA GIORNATA DI CORVEE

PER LA PULIZIA DELLE STRADE
DELLA COLLINA DI VERT
DELLA COLLINA DI DONNAS
DELLA STRADA DEI VIGNETI

Sabato 3 Maggio 2014

(in caso di maltempo verrà rinviata al 10 Maggio 2014)

Ritrovo alle ore 7.30:

- Piazzale Montey per pulizia Collina Vert
- Piazzale Bec Renon per pulizia Collina Donnas e Strada dei Vigneti

L'iniziativa terminerà con un momento conviviale presso la sala del Consorzio M.F. Valbona-Borettaz

TUTTI SONO INVITATI A PARTECIPARE
ALL'INIZIATIVA DI INTERESSE COLLETTIVO

Ogni partecipante dovrà munirsi di attrezzatura idonea alla pulizia (pala, decespugliatore, falcetto, guanti, ecc.) ed interverrà a titolo personale.

Si declina ogni responsabilità per eventuali incidenti a persone o cose prima, durante e dopo la manifestazione.-

Comune di Saint Denis

Committente: Amministrazione Comunale di Saint-Denis

MISURA 313- Incentivazione di attività turistiche Azione C
"Valorizzazione dei percorsi storici- naturalistici lungo gli antichi rus"

RELAZIONE TECNICA

Indice

Progettista:
Geom. Neyroz Aldo – Via Challand n. 30 Aosta –
tel 0165 32127

IPROMO
Ormea (Italy)
8-13 July 2014

Ru system

Charvensod, Valle d'Aosta. Marcela Olmedo © 2014

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Ru system

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Ru system

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Ru system: adaptation, resilience and the future of the commons

Joseph Munier, Charvensod, Valle d'Aosta. Marcela Olmedo © 2014

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Ru system

Verres e Nus,Valle d'Aosta. Marcela Olmedo © 2014

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Networking, Reciprocity

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Networking, Reciprocity

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Dynamic life at Alpeggio

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Dynamic life at Alpeggio

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Fontina making

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Fontina making - Technology

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Fontina making - Technology

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Fontina maturing

Fontina

Fromazo

Seras

Reblec

Toma di Gressoney

Goat cheese

Salignön

Brossa

Butter

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Dynamic life at Alpeggio

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Butter - Technology

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Dynamic life at Stables

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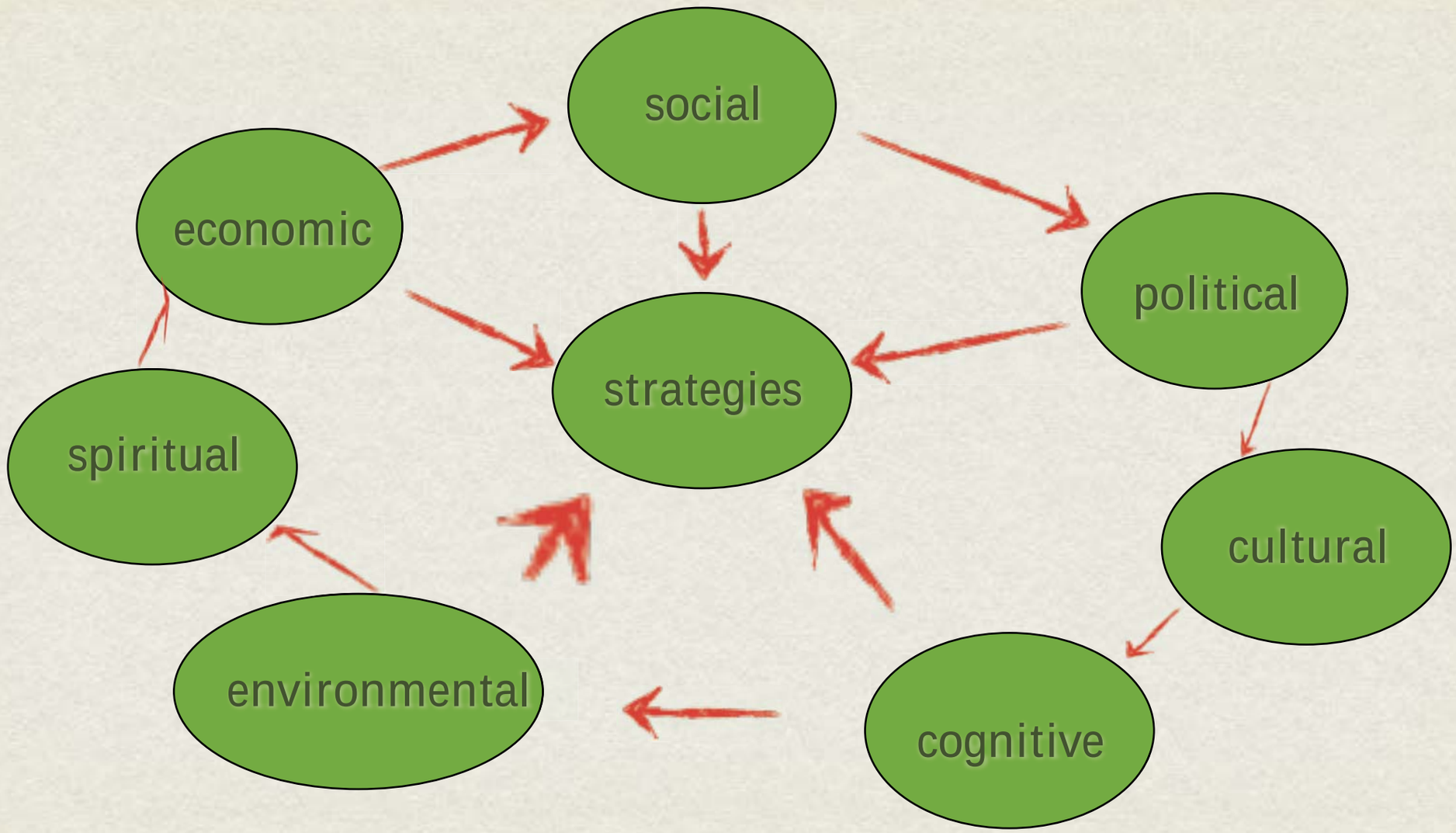
Stable activity

Stable in June-Ottobre

Conceptual framework



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Technology

Technology

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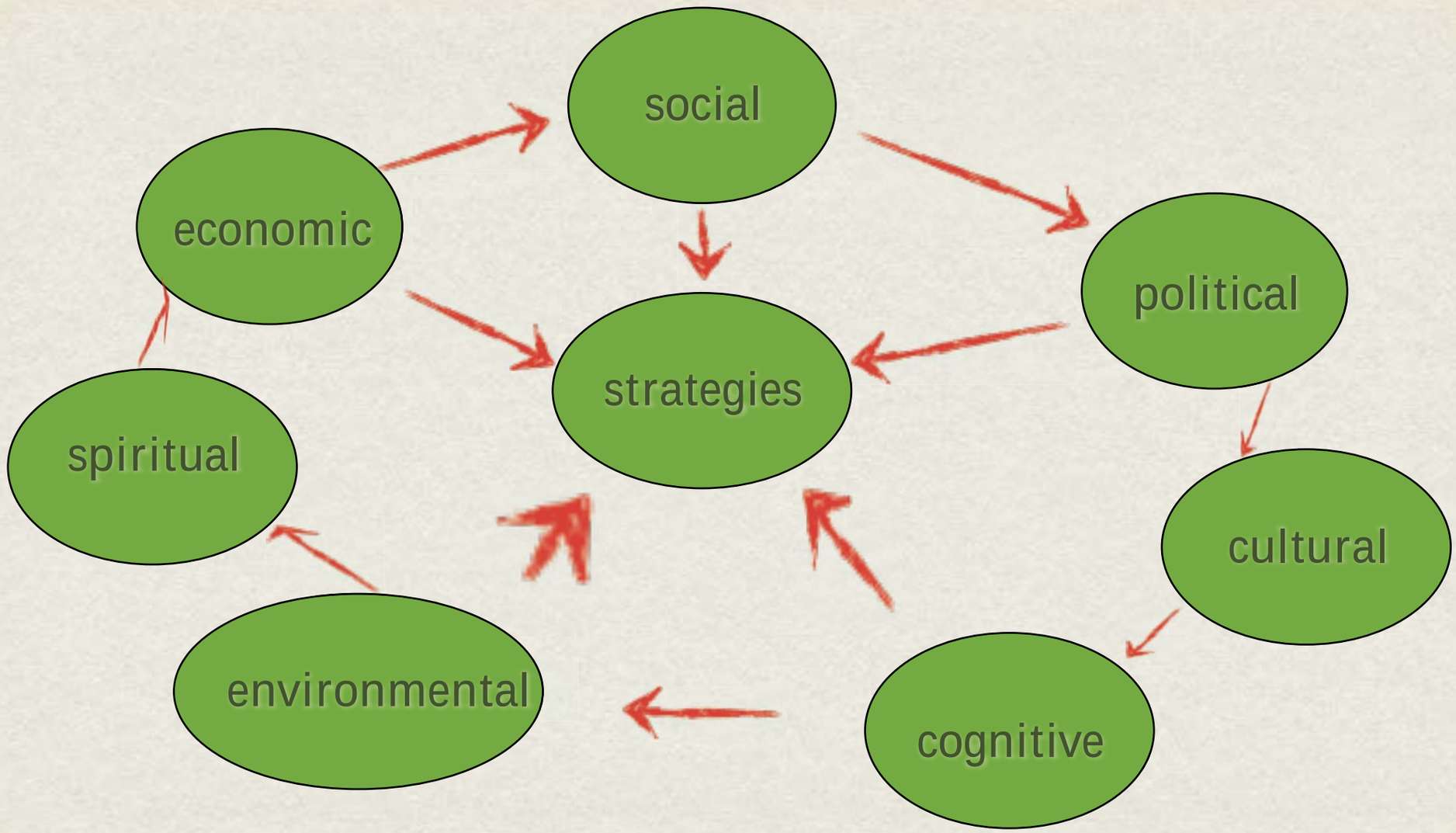
Technology

Technology

Technology

Technology

Conceptual framework



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Mobility

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Haymaking
July - August

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Haymaking

Technology

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Haymaking

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Haymaking

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Haymaking

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Haymaking

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Haymaking

"Hay is ready when it makes a sound"

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Haymaking

Valle d’Aosta
Progressive abandonment

Pila, Valle d’Aosta. Marcela Olmedo © 2013

RESULTS

Explanations about abandonment:

- Forestry commission employing young since ‘80
- Labour dedication activity (24/24)
- Milk market not updated to current costs of production;
- Heavy beaurocracy

Pila, Valle d’Aosta. Marcela Olmedo © 2013

RESULTS

Ranking the difficulties of herding activity

- (1.beaurocracy, 2.employees, 3.Fontina market, 4.climate)

- The impact of land re-arrangement which consequences are changes and modifications to land tenure terms and conditions.

- Choice of alpeggi and pasture land follows a political-economical trends.

Orvieilles, Valle d'Aosta. Marcela Olmedo © 2012

CULTURE

knowledge
experience
tradition
family dynamic
planification / anticipation
social support
family composition

laws

Adaptive strategies to climatic variability and change in Aosta Valley

ENVIRONMENT

verticality
adret-envers
mountain climate
topography, characteristics
flora, pasture land
cattle type

particular management

alpeggio dynamic (HHL)

economy

technological development

production

DIVERSIFICATION

INTENSIFICATION

Results:

Diversification in favor of Intensification

Marcel Bich stable, Valsavarenche, Valle d'Aosta.
Marcela Olmedo © 2012

Alma Chabod stable, Valsavarenche, Valle d'Aosta.
Marcela Olmedo © 2012

"We do it for passion"

Results:

Number of cattle are increasing

Gressan, Valsavarenche, Valle d'Aosta. Marcela Olmedo © 2012-3

Impact on resource? = new vulnerabilities?

Institutions and Future Challenges

FAO

Challenge 1: Improving the resilience and adaptation of agricultural and food systems to climate change

Challenge 2: Achieving more with less in food production and consumption

Challenge 3: Conserving, protecting and enhancing the state of natural resources

Challenge 4: Improving and safeguarding rural livelihoods and social welfare

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Institutions and Future Challenges

Implementation of the EU Adaptation Strategy is based on eight actions

1. Encourage all Member States to adopt comprehensive adaptation strategies

2. Provide LIFE funding to support capacity building and step up adaptation action in Europe (2014-2020)

3. Introduce adaptation in the Covenant of Mayors framework (2013/2014)

4. Bridge the knowledge gap

5. Further develop Climate-ADAPT as the 'one-stop shop' for adaptation information in Europe

6. Facilitate the climate-proofing of the Common Agricultural Policy (CAP), the Cohesion Policy and the Common Fisheries Policy (CFP)

7. Ensuring more resilient infrastructure

8. Promote insurance and other financial products for resilient investment and business decisions

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Rural world, Challenges and Adaptation

- Adapting taking into account the impact on the common resources?

- Adapting through new types of governance that go beyond Market and State?

- Adapting passing from an economy of possessing to an economy of sharing?

- Adapting enhancing the institutional platforms and capabilities?

COMMONS

The most efficient approach to protect the commons would be through what Ostrom used to call "polycentric systems," that operates at multilevels and each level is autonomous.

If people perceive that they benefit in the long term on how a resource is managed, they themselves will ensure that the rules are maintained.

Charvensod, Valle d'Aosta. Marcela Olmedo © 2014

The need of Adapting through a self-organized Governance?

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Adapting through the application of (traditional, local, indigenous) Knowledge?

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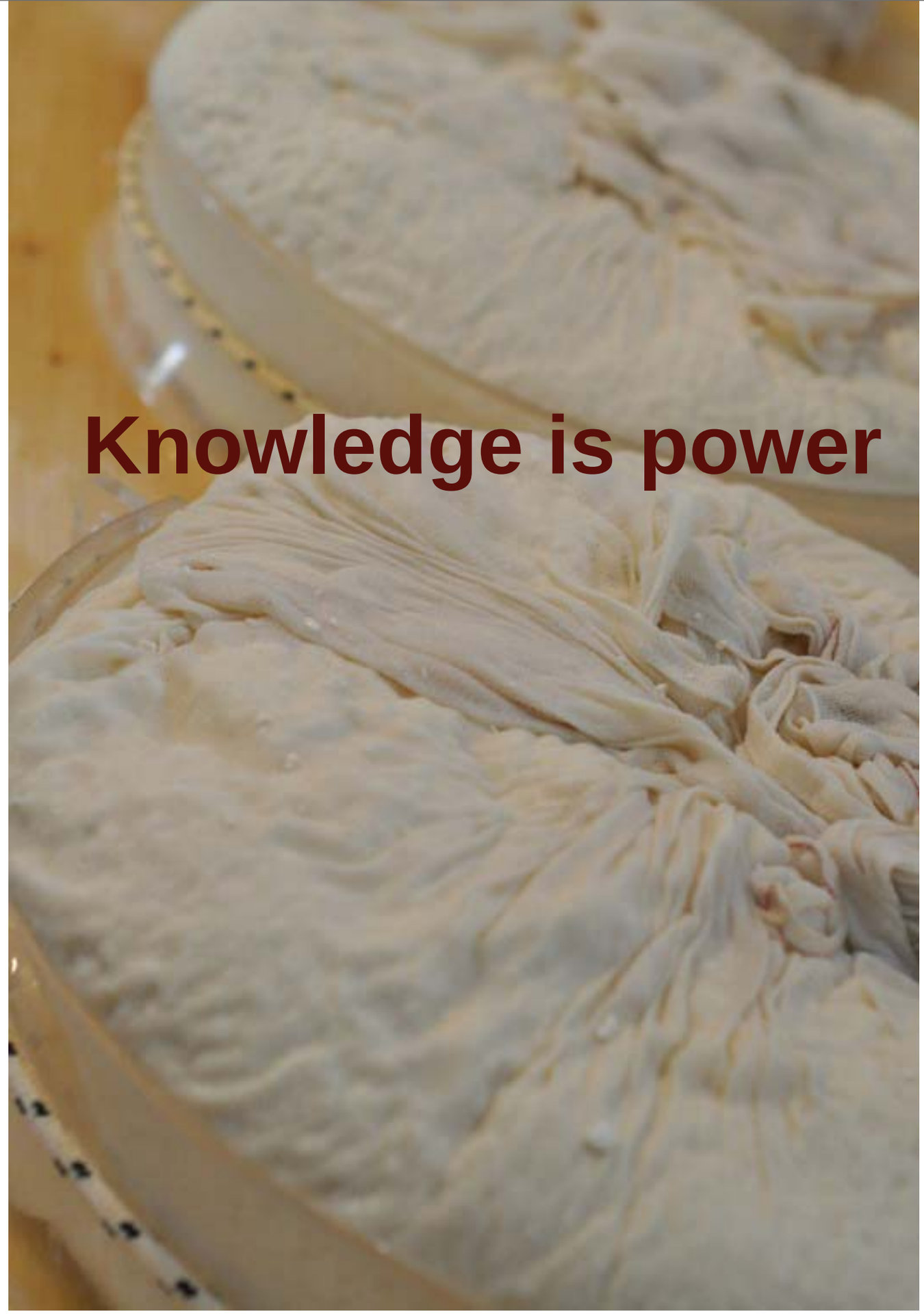

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Knowledge as an instrument of Governance = Adaptation?

Sharing knowledge is empowering

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World café

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World café

Definition
Aim
Potential
Performance

World café -

- simple and clear questions
- provokes reflections
- generates energy
- focuses the objectives
- brings up unaware hypothesis
- promotes possibilities

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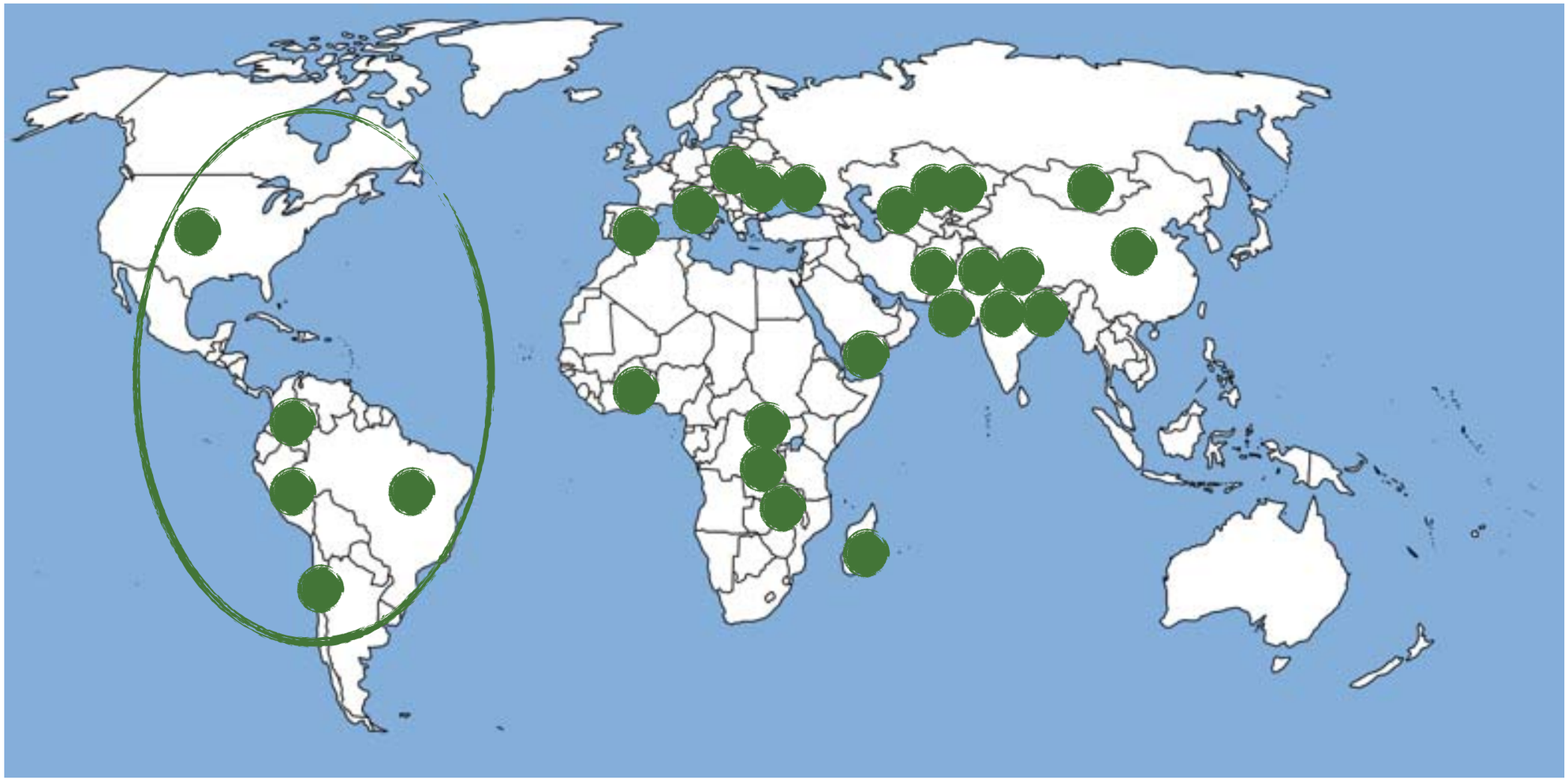
World café

Activity



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Activity

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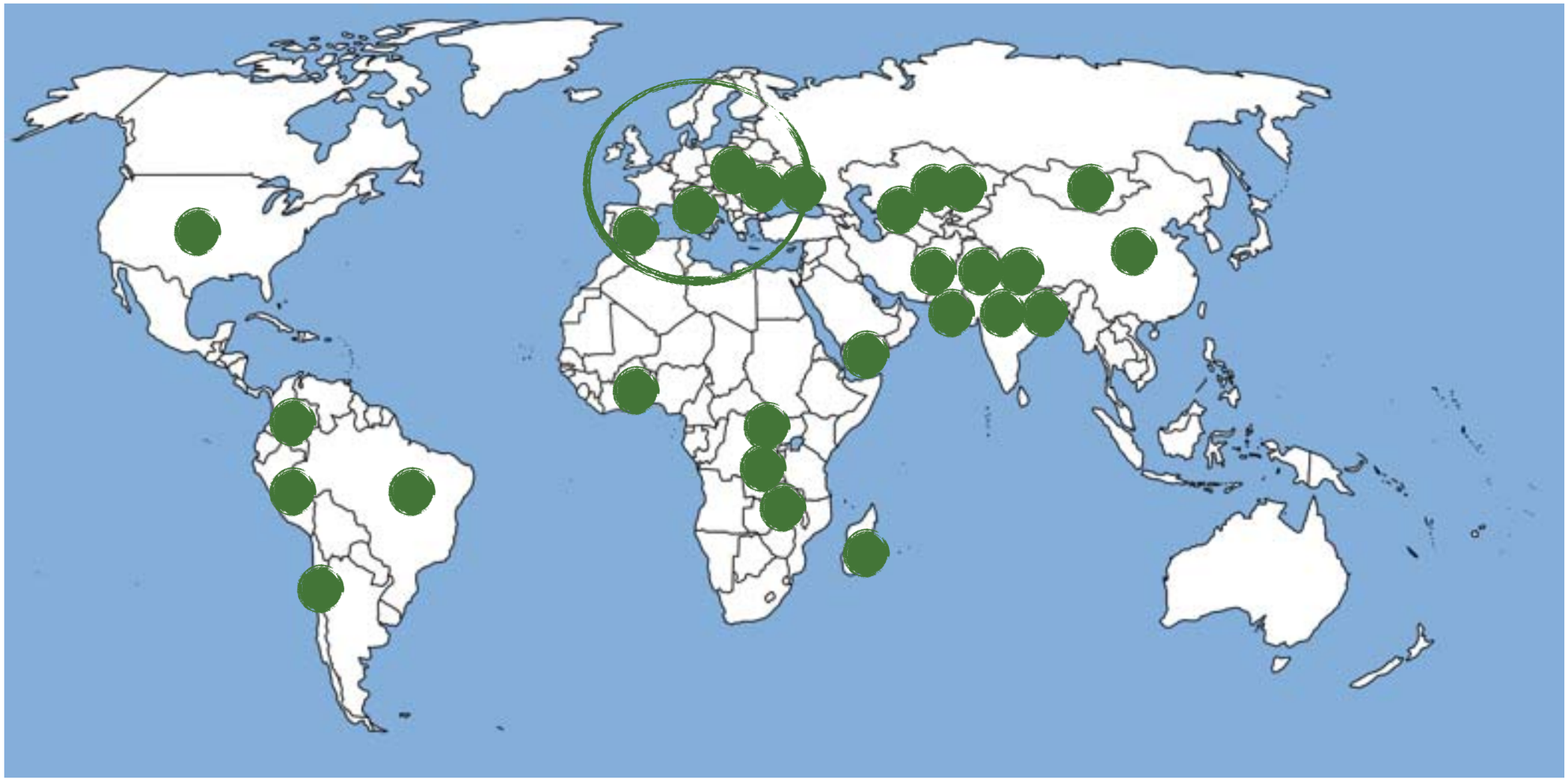
Activity



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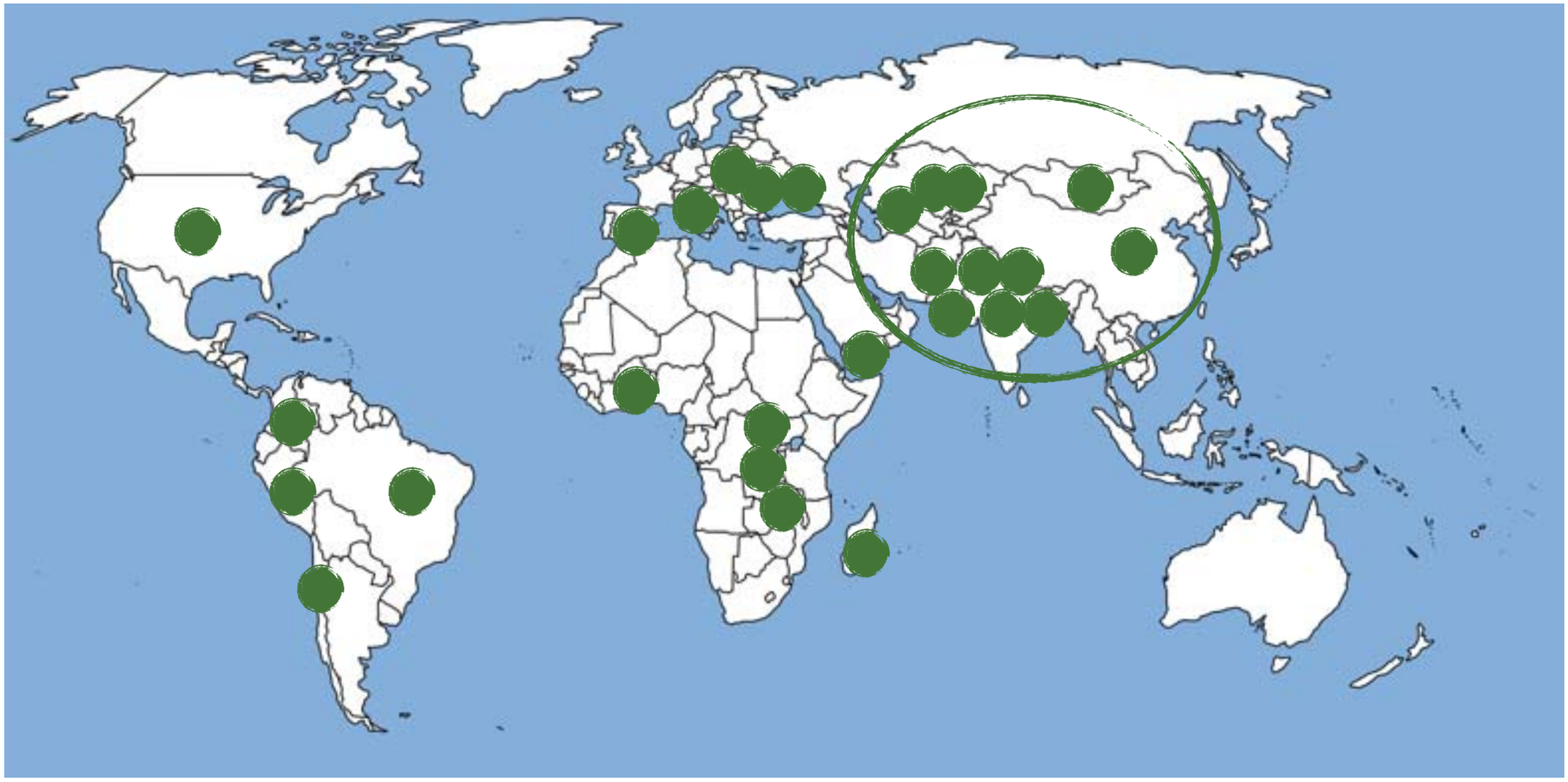
World café

Activity



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World café

Activity

- 1. Critical points / weakness: What are the sustainable issues most heard in your country /area of work? (in rural context) - brainstorm
- 2. Put them into Categories
- 3. Reflect
- 4. What did you learn in this school so far that can bring skills/mechanisms to tackle them?
- 5. what mechanisms, factors, facilitate or obstacle adaptation?

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culture-nature:
Abandonment of the activity

Globalization

Diversification in favour of intensification

Mechanisation

The implications of ...

Sustainability and landscape management

Sovereignity loss

Pressure on environmental sustainability

Territorial balance

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World café

Applied tools

- capacity building;
- improve formation on that topic;
- cooperation;
- knowledge exchange;
- governmental subsidiaries;
- self sufficiency
- challenges

Thank you for your attention!

m.olmedo@icrees.org

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