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MOuntain Valorisation through INterconnectedness and Green growth

Policy Brief

SWISS ALPS | Mountain grain in the Grisons Alps

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MOVING
MOUNTAIN VALORISATION THROUGH INTERCONNECTEDNESS AND GREEN GROWTH

Mountain grain in the Grisons Alps

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Summary

The mountain grain value chain represents traditional highland farming practices enhanced by innovative approaches to new production methods and marketing schemes. Mountain grain cultivation diversifies the region's traditional animal agriculture with sustainable plant products.
However, the value chain faces challenges such as difficult growing conditions, and the lack of specific infrastructure (e.g. mills, silos), skilled labour, or adapted seeds. Policies to address these challenges encompass innovation, financial support and investment, education, and connectivity.
This policy brief aims to describe a summary of the results collected in the region during the MOVING project and make policy recommendations for the future to increase resilience and sustainability.

Figure 1: Malting barley and wheat harvest in Tartar (around 990masl), source: still from Cuci-Hof, 2020.

Key Policy Messages

- ☞ Education, training, and advisory service
- ☞ Infrastructure improvement
- ☞ Financial support and investment

1. *Scaling heights: Mountain grain cultivation in the Swiss Alps*

The Grisons Alps – ranging from around 200 to over 4'000 m.a.s.l. – form the entire south-eastern part of the Swiss Alps. Grisons is both the biggest canton of Switzerland and the one with the lowest population density with around 28 people per km^2. The most important economic sectors are energy production (mainly hydro power), tourism, secondary industry, and agriculture.

Agriculture in the Grisons Alps is demanding: In higher regions, growing seasons are up to two months shorter than in the valleys and yields are comparatively lower. The poor accessibility and steep slopes are challenging and require special equipment and infrastructure as well as a lot of manual labour. Nevertheless, agriculture has a long tradition in the Grisons Alps and plays a major role in forming the cultural heritage and landscape.

The agricultural production in the area is highly dominated by livestock production, making use of the abundant grassland resources. However, one-sided business models (like a focus on livestock) have shown to be less resilient under changing environmental, political, societal and economic conditions. In contrast, diversification enhances the ecological, socio-cultural, and economic value of the

region in a way that is enriching for farmers and many actors.

Plant production, such as grain, can be an attractive diversification for farmers in the Grisons Alps. The Gran Alpin cooperative provides a prime example of the diversification of traditional farming practices at high altitudes. The cooperative plays an important role by managing the mountain grain production in the Grisons Alps. It was formed in the 1980s and over 100 farmers count as member today. The value chain focuses on the production and distribution of premium organic cereal products such as pasta or beer, which are popular with both private customers and retailers.

Our research has shown that infrastructure in the farming (small machinery) and processing stage, availability of site-appropriate seeds, and the current support for livestock production in the region are the main factors holding back grain production on farms. The main problems of the processing facilities are the small volume and high variety of grains and the insufficient local infrastructure. In addition, difficult logistics and long transport distances due to the remote location of the farms, as well as a lack of qualified staff in the processing stages, affect the productivity of the value chain.

Success factors have been the cooperative's drive, partnerships with local processors and retailers, as well as premium pricing through organic and regional branding. The challenges of marketing are taken on by the cooperative on behalf of the farmers, which reduces the effort needed to increase grain production or even start it in the first place. The value chain has high demand and the potential to contribute significantly to local sustainability and economic, socio-cultural and environmental value creation, but requires investment and further support strategies to maintain its position.

Overall, this value chain shows that plant-based value chains combined with livestock farming are visionary in mountain areas and that innovative cooperative projects can accelerate development by combining traditional approaches reinvented for current trends, so called retro-innovations.

2. Value chain contribution to resilience and sustainability

As described in the first chapter, the challenges facing the MRR are related to both socio-economic factors and the natural environment. The mountain grain value chain is one way for the MRR to produce alternative agricultural products that do not rely on livestock farming. The production of niche products or products where the market is not yet saturated can create significant additional value for the MRR. This can be achieved, for example, by promoting innovative products. The mountain grain value chain has great potential to increase value creation in the Grisons Alps, create jobs and thus reduce the emigration of young people. Gran Alpin products are in great demand, as the trend in Switzerland is increasing towards local, artisanal, and organic products.

Furthermore, it is well known that livestock farming is a major contributor to climate change. While alpine grassland-based extensive livestock production is comparatively "sustainable", alternative plant production is additionally favourable. Also, the mountain grain value chain offers the

chance to positively meet the threat of climate change by choosing the right grain varieties and profiting from warmer temperatures.

However, there are several obstacles that we have been able to identify so far to achieving sustainable development of the MRR. The most important obstacles are socio-economic. There is a lack of infrastructure along the growing value chain and investments are not possible either for financial reasons or, more often, because there is a lack of labour power, time, and knowledge.

One of the most pressing infrastructural challenges is at the processing stage, particularly due to the limited number of mills and storage silos in the region. The area has three small traditional mills, but all are operating at their capacity. Larger, more commercial mills often lack the specialized equipment required for processing some of the rarer grains, such as traditional rolled barley. Storage also presents a significant issue. Mountain grain farmers produce relatively small quantities of each variety, necessitating separate storage for each type. This quickly exhausts the available silo capacity. Additionally, the grain collection points are typically owned by large companies that show little interest in storing such small quantities, further complicating the storage situation for these farmers.

While the Gran Alpin cooperative coordinates and does administrative work, there is still little exchange of knowledge within the network of the mountain grains value chain and especially not with external partners.

Finally, there are also natural obstacles. As already mentioned, the persistent dry periods are a problem. But almost more important are the constraints imposed by the nature of the landscape. Currently, the market demand for Gran Alpin grain is greater than what can be produced. With a strong orientation towards livestock production only few farmers are currently interested to diversify their production through arable farming.

We hope that with our value chain analysis we can show the importance and potential of this value chain for the region to put it on the political agenda and convince bigger players to support these mountain entrepreneurs. This value chain shows how innovative projects can accelerate development and are often mixed with originally traditional approaches that are reinvented for current demands.

3. Policy experiences

The challenges faced by agricultural producers in mountain areas have led to special support to agriculture in mountain areas by the federal government. This includes higher contributions for the construction of agricultural infrastructure, higher direct payments for keeping livestock in difficult terrain and slope contributions. The farmers of the cooperative Gran Alpin also received additional financial support from the cantonal government for growing mountain cereal, in addition to the state direct payments.

However, agricultural policy was identified as one of the key constraints to transformation. Current support is heavily biased towards livestock production. The same orientation is

reflected in agricultural education. Few incentives and trainings are currently provided for mountain grain production. In general, transitions at farm level face several constraints, as they require know-how, financial investments, and additional work. There is often a lack of framework conditions to support farmers to innovate.

4. Recommendation for future policies

During the MOVING project, observations were shared that provide opportunities for transformation, including success stories of pioneers, changes in the support system, collaborations and research that foster innovation, but also the opportunity to build on local traditions.

These are the pressing recommendations for the future:

Education, training, and advisory service

Changes in agricultural education as well as in the processing stages are needed to provide farmers and other skilled labour with innovation skills and the know-how needed for diversification and the establishment of new production systems. Increasing collaboration with other value chains and actors in the region to leverage knowledge and resources can further promote the value chain.

Infrastructure improvement

We recommend the adaptation of infrastructure, especially in the processing and storage stage of the value chain. Well-functioning processing facilities and storage silos for small quantities are crucial for the value chain. On farm level, adequate machinery for mountain grain production and well-established transport logistics are needed. Innovation in these areas reduce costs, increase efficiency, and eventually improve product quality.

Financial support and investment

This recommendation addresses financial support to both individual actors and collaborative groups, to encourage and explore innovative, mountain-specific practices. In addition, direct financial support for the introduction of machinery and technologies adapted to the value chain, aims to increase attractiveness and resilience. Ensuring access to funding mechanisms and credit facilities for farmers and other stakeholders will enable essential investment in infrastructure development.

Eventually, agricultural policies need to be reoriented to allow for greater flexibility, ownership, innovation and openness to mountain crop production. Innovation centres, pioneers and research will also play an important role in this process. In addition to the supply side, adaptations on the demand side are also needed, e.g. incentives for local products through increased availability, marketing or pricing strategies. Specifically building on local traditions and identities will be an important strategy to guide future demand.

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Reference

Bardsley, D. K. and Bardsley, A. M. (2014) 'Organising for socio-ecological resilience: The roles of the mountain farmer cooperative Genossenschaft Gran Alpin in Graubünden,

Switzerland', Ecological Economics, 98, pp. 11–21. doi: 10.1016/j.ecolecon.2013.12.004.

BFS (2021) 'Landwirtschaft', Bundesamt für Statistik BFS. https://www.bfs.admin.ch/bfs/de/home/statistiken/land-forstwirtschaft/landwirtschaft.html (Accessed: 30 July 2021).

Cuci-Hof (2020) 'Video: Getreideernte auf dem Cuci-Hof 2020 – Bio Braugerste & Weizen – Schweizer Landwirtschaft', Youtube. Available at: https://www.youtube.com/watch?v=x0xeFBaQuME (Accessed: 30 July 2021).

Forrer, C. (2022). Development of social networks in organic farming and mountain cereal cultivation in a Swiss Alpine region. ZHAW - Zurich Universtiy of Applied Sciences.

Geiser, A., Forrer, C., & Lazzarini, G. (2023). Scaling New Heights: Strengthening the Mountain Cereal Value Chain with Collaboration, Innovation and Education for Greater Resilience (MOVING, p. 2) [Practice Abstract]. ZHAW - Zurich University of Applied Sciences. https://www.moving-h2020.eu/wp-content/uploads/2023/08/20-MOVING_PA_Swiss-Alps.pdf

Geiser, A., Jaisli, I., & Schmitt, E. (2022). Swiss Alps: Mountain grain (p. 6) [MOVING - Policy Brief]. ZHAW - Zurich University of Applied Sciences. https://www.moving-h2020.eu/wp-content/uploads/2022/02/20_Swiss_Alps_CH_Policy_Brief.pdf

Geiser, A., Schmitt, E., & Trüb, N. (2022). Extended Value Chain Analysis for the Grisons Mountain Grain Value Chain in Switzerland (MOVING) [Report Deliverable 4.2, unpublished]. ZHAW - Zurich University of Applied Sciences.

Moschitz, H. and Oehen, B. (2020) 'Creating value(s) by integrating local and extra-local resources in cereal production in the Swiss Alps', International Journal of Sociology of Agriculture and Food, 26(1), pp. 48–68. Available at: http://ijsaf.org/index.php/ijsaf/article/view/62

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