

## AlpBioEco

# Regional Implementation Guidelines

Regio Im Walgau – BM: **Revegetation with Alpine hay seeds**



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## 1. INTRODUCTION

The ecosystems of the Alps are exposed to environmental problems caused by economic activities and climate change. Moreover, agricultural business, producers and manufacturers in the European Alps face fierce competition on the global marketplace. There is an enormous potential for green ecological growth and workplace creation due to the development of a sustainable bio-economy. Innovative use and value of regional resources strengthens regional business. Currently not all bio-economic potential is used. One problem is that many supply chains in the European Alps are not sufficiently connected. Many waste and by-products are not used; they are just dumped or composted instead of reusing them to develop new products in accordance with a good ecological Recycling Management.

In addition, there is a lack of coherent policies and strategies to support bio-based supply chains. This is exactly where the project AlpBioEco comes into play: It fosters a territorial development of the agricultural sector using innovative methods, above all innovation for small and medium-sized businesses and strengthens economy and cooperation in the European Alps.

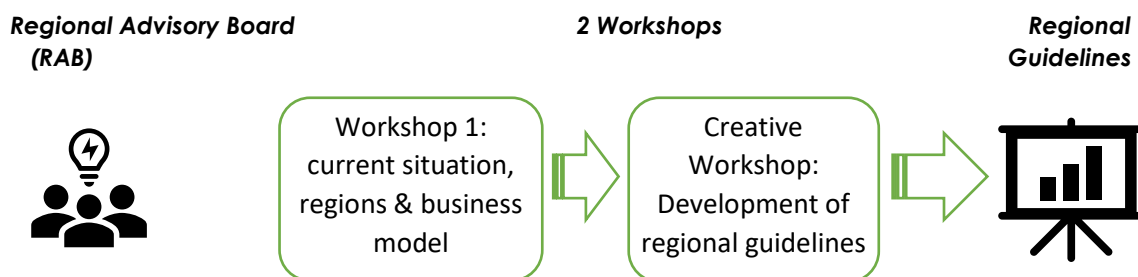
The overall goal of AlpBioEco is to foster a sustainable economy and support the markets and competitiveness of a bio-based economy in the European Alps. It focuses on supply chains of bio-based food and plant extracts. The project works especially on walnuts, apples and herbs which were analysed to identify their potentials. AlpBioEco uses 'open innovation concepts' to develop proper business concepts for different regions.

The following guide should speed up the implementation of these business models and the development of bio-economy in Upper Austria. The guide provides clear recommendations for involved decision makers in politics and economy like different Chambers, Clusters and Research Institutions. On the other hand, the guide is also directed to all those producers and businesses that are searching for market niches and further development. A detailed guideline shows all steps for implementing new business models – from market research to product development. It includes important facts about raw material and financial funding to facilitate the implementation of the new business model.

## 2. METHODS

In order to develop a guide for all project regions, which specifically focuses on this business models, Regional Advisory Boards (RAB) for each of the 10 regions were created. The RAB consists of experts from different fields (politics, economy, regional development, agriculture, food production, food supply, legal representatives of interests). All those experts provide their expertise and together they work on a successful implementation of the business model. The RAB dynamically connects all relevant stakeholders of a region in order to create and foster new supply chains and new opportunities that have not been taken into account previously. The RAB consists of the most important stakeholders of the bio-economy sector within a region and so it also provides a network which is of importance for future platforms / projects / recommendations.

First step was to collect information from a region and show the current situation. This was made by the RAB in different workshops under the supervision of an AlpBioEco project partner. Second step was to develop a common vision of how to elaborate recommendations for politics based on the project. This was made in a second workshop with creative workshop methods like for example: Lego Serious Play®, Mural Tool or PESTEL. Due to the current health situation (Covid 19) all meetings were held online, offline, or hybrid versions.



*Work steps performed when developing regional guides*

A chairman/chairwoman was nominated for each RAB. This chairman/chairwoman is responsible for presenting and discussing the elaborated recommendations at an international meeting, the so called 'Transnational Transfer Meeting'. In this meeting not only the regional guides are presented, but also a transnational and transregional guide is developed. In this guide's transnational and transregional guidelines the project regions are presented as role models and pioneer regions and serve as model regions for others.



*Work steps performed when developing transnational guides*

### Overview Members RAB Region Vorarlberg

Role	Name	Business/ Organisation	Sector	Network
Chairwoman	Marina Fischer	Regio Im Walgau	AlpBioEco Project	International
Member RAB	Christiane Machold	Department for environment and climate, provincial government of Vorarlberg	Politics (administration)	International
Member RAB	Katrin Löning	Austrian Ecology institute	Research	Regional/ International
Member RAB	Christian Meusburger	Chamber of agriculture	Chamber	Regional
Member RAB	Monika Bischof	Biosphärenpark Großes Walsertal	Regional development	Regional
Member RAB	Anna Weber	Biosphärenpark Großes Walsertal	Regional development	Regional
Member RAB	Alexander Heller	HELFE GmbH & Co KG	SME	Regional



### 3. DESCRIPTION OF THE BUSINESS MODEL

In the Alpine area, the hay meadows (rough pastures) can be used to produce seed material. Every three years, the flowers of Alpine hay meadows can be harvested with a specific machine, brushing off only the top parts of the meadows to harvest the flower seeds, still leaving all the hay standing on the meadows for the farmers to harvest it as conventional hay to be fed to animals. The harvested flowers are then dried, stored and packed into large sacks in order to be sold for revegetation purposes. To complete the offer, a revegetation service or advice can be booked, as some knowledge is required to successfully seed Alpine hay flowers. Regional seed material is particularly interesting for the revegetation of building sites, road construction sites, embankments, roofs or other renaturation projects. In addition, the harvested material can also be used for the cosmetics industry, serving as a basis for the production of hay flower distillates and essences. The produced seed material can be used for approximately three years before it loses its germination capacity. For providing the species-rich rough pastures the farmers receive an expense allowance.

All this information is based on experiences from a pilot project of the Biosphärenpark Großes Walsertal, Daniel Gartenbau and the Austrian Institute of Ecology.



*Harvesting Alpine hay seed material for revegetation use in Austria. © Conrad Amber*

#### 3.1 BUSINESS AND MARKETING OPPORTUNITIES

Experience shows that there is a small, constantly growing demand for local seed material in Vorarlberg. The main target groups of the products and the related services are architects, property developers, public institutions and also private individuals. Currently, there is no local seed material available in the region, most likely location-like seed material from Switzerland, Southern Germany or other parts of Austria. Rough pastures are mowed once a year and are then mostly used by farmers as animal feed. However, if they are made available for a fee for the seed harvest, farmers can derive greater economic benefit from their meadows.

Harvesting the flower seeds every three years does not affect the productivity or biodiversity of the meadows. Farmers can also continue to mow their meadows for fodder production. This concept is therefore economically interesting and a win-win situation for both sides, for local farmers and for the producer of rough pasture seed, who does not need to own meadows in order to obtain the required raw material. In addition, the business model contributes to a greater appreciation of alpine rough pastures, farmers and agriculture. This business model is interesting for horticultural businesses as they can meet a specific demand with regional seed material. As awareness of the importance of biodiversity and regional ecosystems grows, it is expected that demand will also increase. In addition, harvesting rough pasture seed is also interesting for companies in the cosmetics industry: They can use fresh, but also "older" rough pasture seed/hay flowers, which are no longer germinable and are possibly cheaper than fresh material. And finally, if the material is too old, it can still be used as animal feed.

#### 3.2 ADDITIONAL INFORMATION AND CONTACTS

If you would like more information on this business model or on our related research activities, please contact the following AlpBioEco project partner

Austria / Regio Im Walgau / Marina Fischer /  
E-Mail: [marina.fischer@imwalgau.at](mailto:marina.fischer@imwalgau.at) /  
[www.walgau-wunder.at](http://www.walgau-wunder.at)



We have worked with the following organizations to develop this business model:

- Austria / Daniel Gartenbau / Daniel Meusburger / E-Mail: [info@daniel-gartenbau.com](mailto:info@daniel-gartenbau.com) / [www.daniel-gartenbau.com](http://www.daniel-gartenbau.com)
- Austria / HELFE GmbH & Co KG / Alexander Heller / E-Mail: [office@helfe.com](mailto:office@helfe.com) / [www.helfe.com](http://www.helfe.com)

## 4. STATUS QUO

### 3.3 BIO-ECONOMY STRATEGIES

#### European bio-economy strategies in comparison

Four students from the University of Hohenheim analysed and compared selected national bio-economy strategies (France, Austria, Germany, Slovenia and Italy) for the development of a sustainable bio-economy as part of their Master's degree in bio-economy. A comparative overview of the strategies can serve as a basis for the development of proposals to improve the existing strategies and to facilitate the innovation and implementation process of sustainable, ecologically innovative business models and to promote interregional and interdisciplinary cooperation in the Alpine Space.

It was found that the elaboration of bio-economic strategies is at different stages of development in the individual nations and is of varying detail. A few countries have not defined a bio-economy strategy or do not establish action plans following the strategy. The strategies are also strongly dependent on the background on which they have been written, e.g. Germany focuses strongly on the industrialization of the eco-economy, while in France the strategy has been published by the Ministry of Agriculture and accordingly focuses on this issue.

#### Austrian bio-economy strategy

Since March 2019, Austria has a strategy for bio-economy, which provides orientation for all bio-economy-relevant fields of action until 2030. The strategy points out areas of action and indicates concrete measures that will lead to the establishment of the bio-based economy in Austria in many sectors. Based on the strategy, an action plan for bio-economy is currently being developed, which is directed at all relevant actors in this field. Taking into account all existing programs and the participation of all relevant stakeholders, the topics identified in the bio-economy are to be implemented. The goal of the Austrian bio-economy strategy is to promote knowledge and know-how about the bio-economy and to advance the decarbonization of the economic system.

Austrian Bio-economy Strategy:

<https://www.bmk.gv.at/themen/innovation/publikationen/energieumwelttechnologie/biooekonomiestrategie.html>



## Vorarlberg

The state of Vorarlberg has not defined any further measures and orients itself on the Austrian bio-economy strategy.

### 3.4 ADVANTAGES FOR THE REGION

Vorarlberg is - just like large parts of the Alpine region - rich in species-rich rough pastures. However, these ecologically highly valuable habitats can only be preserved with the active management of farmers, as they would otherwise gradually become overgrown. More and more farmers are giving up this work because it is unprofitable, low-yielding and extremely arduous due to the often steep slopes. Making their meadows available as seed donor areas is intended to provide a further, albeit small, incentive to continue mowing these important ecosystems and thus protect them from becoming covered with scrub. Farmers can thus act as nature conservationists and receive greater appreciation. Possibly it also provides an incentive to manage more sustainably and thereby achieve a greater biodiversity on the meadows. Another important aspect is the promotion of cycles in nature, for example when butterflies depend on certain native forage plants.

Furthermore, it is a great benefit for the region if regional and site-adapted seeds can be used for sowing on renaturation areas, slope construction or for green roofs. Such seed leads to the continued existence of native species diversity, which is gradually being displaced by imported seed. Farmers from the immediate surrounding area are thus supported and at the same time the transport distances for obtaining the seed are shortened.

Depending on the scale of the business model, new jobs may be created. At least in the summer months, a lot of manpower is needed at short notice to inspect the meadows, mow, dry the seed and manage all the logistics behind it. If a greening service is also offered in this context, manpower is also needed for consulting, spreading and maintaining the areas. New jobs or additional income opportunities for farms can also result from training courses.

The further processing of the flower heads or the entire rough pasture hay in pharmaceutical companies or cosmetics manufacturers promotes the networking of the regional small and medium-sized enterprises.

### 3.5 RAW MATERIAL

The basis of the project and thus the source material are species-rich rough pastures. They may not be fertilized and may only be mowed once from the beginning/mid July. There are not too much but sufficient of them in Vorarlberg. Since the meadows differ in altitude, exposure, subsoil, etc., different products are created. To protect the meadows, they should only be harvested every three years using a gentle brushing method so that they can regenerate in the years in between.

The only regional "competition" to the seed is the mowing transfer, although it differs greatly in its application. Harvesting hay for fodder purposes is not in conflict with each other, since the meadow can be mowed normally and without any loss of volume after the seed harvest.

Currently, no regional wildflower standard seed is produced in Vorarlberg. Here one is dependent on Swiss and German seed producers. The mixtures offered there partly contain species not native to Vorarlberg or originate from ecotypes that are foreign to the region. Furthermore, the mixtures are hardly to be found in Vorarlberg's trade. Often "flower meadows" and "bee pastures" - seed



mixtures are available in the trade which consist only of annual plant species and/or of plants with double flowers without stamens and/or species from other continents. Often, however, fast-greeners with few grass species and no flowering plants are used, which hardly contribute at all against insect extinction.

### 3.6 ASSESSMENT OF MARKET AND CONSUMER BEHAVIOR

It is estimated that awareness of the importance of the regional aspect of rough pasture seed is already well advanced. This is also reflected in the demand from various construction companies, communities or schools. The issues of insect mortality and loss of biodiversity are becoming increasingly present and many consumers would like to make a contribution to counteract this.

### 3.7 SUBSIDIES AND LEGAL FRAMEWORK

At present, neither producers nor buyers in Vorarlberg have the possibility of obtaining subsidies.

### 3.8 SUMMARY TABLE

This table is together completed by the RAB based on their experiences, assessments and level of knowledge. Since this advisory board is made up of people from different disciplines with perspectives from many directions, this table will provide a good overview of the current situation in the region with regard to the business model.

The term "excessive / unproblematic" defines that these areas are available to such an extent that the BM implementer only has to select without a lot of work in the search or that the framework conditions are in such a way that they no longer need to be changed to ensure implementation of the BM.

The term "too less / problematic" includes all those areas in which changes have to be made so that the BM can be implemented.

	Übermäßig/ un- problematisch	Ausreichend	Mittel	Zu wenig/ problematisch
Raw material in the region			x	
Raw material producers in the region				x
Market and consumer			x	
Competing products	x			
Dealer and Trader				x
Interested project partner				x
Possible processors and implementers of the BM				x





Research institutions in the area of the BM	not relevant			
National research / nationale experts	not relevant			
International research / International experts	not relevant			
Legal framework			x	
Promoter of the business idea (stakeholders / areas / people)				x
Regional funding				x
National funding				x
International funding				x
Research funding	not relevant			
Project development funding				x
Market maturity / marketing promotion				x
Additional financing possibilities				x

## 5. RECOMMENDED ACTIONS FOR PRODUCERS

To whom are the recommendations addressed: persons/companies who want to harvest and sell seeds, farmers with meadows, herb processing companies,...

### • Requirements and time schedule

The most important prerequisite for people interested in implementing the business model is the purchase of one or more seed brushing devices suitable for harvesting.

In principle the implementation is possible as a sole trader, but more manpower will be required as demand increases. The time window for harvesting is quite short and depends on the weather, which is why a large number of meadows have to be harvested at the same time.

The estimated amount of seed harvest has to be reported to AGES (Agency for Health and Food Safety) by the end of February at the latest. In late spring/early summer - before the first mowing in July - the meadow can then be harvested. The harvested seeds are transported in large cotton/linen bags and brought to the storage hall for drying. Suitable for this are dry, air-permeable rooms such as old hay barn with roof light or also modern drying facilities. Good ventilation must be provided to keep the risk of mold as low as possible. The size of the drying area varies depending on the seed composition - the more herbs, the less area is required. *Example: Required area: 80-100m<sup>2</sup> for drying the harvest of 1.5-2 hectares of mowed meadow → is sufficient for seeds for ½ hectares of greenery.* If drying is done in this natural way, no information about the duration can be given, as it depends on the weather (humidity).

Direct use of the seeds in the first year should be aimed for, but after three years at the latest, as otherwise the germination capacity is no longer given.

A proposal for the use of the seed:

- 1st year: high quality rough pasture seed
- 2nd year: Use as rough pasture seed or supply to herb-processing companies
- 3rd year: Sold as premium pet food for rabbits, hens, ...

### • Dispenser areas and quality assurance

For the harvest of the seeds, species-rich rough meadows with flat topography up to slopes with a medium incline can be used. The species composition shall not have been changed by sowing and shall correspond to the plant community typical for the ecological site. Mapping in advance is recommended in order to better describe the species composition and to guarantee that no invasive neophytes are present in the area. The height of growth is less important, as the height can be varied with the harvesting machine. This means that both high-standing flowers and low-growing herbs can be harvested if necessary.

When harvesting, never 100% of all seeds are collected, some of them always remain standing or fall to the ground. In order to prevent overuse of the meadow, it should be harvested at most every third year. For the insects and small animals on the field, the harvest does not pose a risk, because the gentle and slow harvest gives all animals the opportunity to escape.

The ideal time for harvesting is shortly before mowing on July 15th (legally defined; in exceptional cases, the mowing time can be postponed for a few days). As a guideline for the remuneration of the farmers, the amount of € 100,- to € 200,- per hectare can be used.

In order to ensure the high quality of the meadows and the seeds derived from them, only mapped meadows of the '[Wiesenmeisterschaft](#)' (= championship of rough pastures) from the past three years are currently used in Vorarlberg.

Important aspects of quality assurance:

- Mapping of the occurring plant species -> independently or assignment to biologists/environmental office
- Ensure that no neophytes are present -> mapping results should therefore not be older than three years
- Traceability and batch marking management -> rough pasture seed from different meadows must also be stored, packed and marked accordingly
- Database structure
- Sound out tracking & tracing possibilities

### • **Marketing**

Good marketing is the key to the successful implementation of the business model. The advantages of the regional rough pasture seed must be pointed out and actively communicated. The right wording must be observed: no false expectations should be raised -> squeaky-colored meadow instead of natural lean meadow; area-wide coverage of green immediately the following year.

Marketing addresses two target groups: on the one hand, new meadow owners who would like to be recruited as seed donors, and on the other hand, new buyers, trade partners and multipliers.

Suggestions:

- Website: Information about the project, contact form for interested meadow owners and buyers, purchase possibilities, package sizes and price, fields of application, noteworthy aspects of seed application, project partners, further links
- Explanation video: Shows in a simple way graphically and with accompanying text the harvesting process and the application possibilities
- Boards & Banners: Beside a freshly sown area, boards or a large banner with information about the seeds and photos of what will be created from the still empty area can be attached
- Print: Flyer
- Social media, YouTube
- Articles and interviews on television and newspapers
- Advertising
- Accompanying reporting on successfully planted areas
- Inspections/Training

### • **Sales**

The rough pasture seed can be sold either as such or as a complete offer in combination with advice, application and accompaniment (maintenance pruning, replanting or similar). Different package sizes are recommended.

Suggestions for the sale:

- Webshop
- On-site sale
- Sales via trade partners
- Sale directly in the region e.g. biosphärenpark.haus Großes Walsertal

For official invitations to tender, it is advisable to include a sample text on the actual application of the regional rough pasture seed.

- **Consulting network**

A consulting network consisting of biologists, farmers, landscape gardeners etc. could be established. These qualified persons take over the meadow mapping and clarify over the application possibilities and remarkable points. Particularly interesting for larger applications in municipalities, if municipality coworkers are trained on it.

Suggestion: If a project budget is available, the first half hour of the consultation could be offered free of charge. If further consultation or support is needed, this should be paid out of the interested parties' own pockets.

- **Use of by-products**

Interesting for this business model is also the cooperation with herb-processing/pharmaceutical companies (e.g. Firma Helfe). For the production of distillates and essences, both hay flowers and the hay as a whole are used. Therefore, not only the hay flowers can be bought from the meadow owner/leaseholder, but also the entire remaining hay. This leads to multiple use and thus to an increase in the value of the meadow. The requirement for the hay is a cut size of 5-7cm and can be collected directly from the farmer if required.

Also the further use of the too old, no longer germinable seeds (maximum 14 months after harvest) offers great advantages for both sides.

- **Miscellaneous**

All legal requirements for harvesting and sowing rough pasture seed are laid down in the "Implementing guideline for the authorisation of seed of fodder plant mixtures and the marketing of seed of these mixtures" issued by the Federal Office for Food Safety and in the "Test guideline for the production and marketing of regional wild grasses and wild herbs (REWISA®)" issued by the REWISA® association.

A network in the form of an association/initiative/interest group increases the visibility of the project.

The budding period of the rough pasture seed is relatively long. It requires a good clearing-up work, since many persons expect themselves in the next year immediately a completely covering, species-rich meadow. Therefore it is recommended to work with accompanying boards or banners at the beginning, so that at least on photos you can see what will develop from it.

- **Problems**

Public institutions and property developers often do not plan so far in advance or require large quantities of seed at short term. But with this harvesting method, spontaneous deliveries are not possible. The aim is to achieve such a high level of awareness that customers actively contact the seed producer and indicate and order the estimated quantity already in February.

- **Next steps**

- Create subsidies for initial investment.
- Find additional donor areas as demand is increasing and there is too little seed available.

- Forcing a leap from push to pull strategy.  
Example: Customers of architects and construction companies should actively ask for a greening with regional seeds, so that they make an effort and then use and recommend hay meadow seeds for further projects.
- Become active as early as the tendering stage for construction projects starts and approach the clients with the idea of using rough pasture seed.
- Finding an entrepreneur/group of entrepreneurs that is going into implementation.



## 6. RECOMMENDED ACTIONS FOR BUYERS AND USERS

To whom are the recommendations addressed: Communities, building owners, district authorities, architects, landscape gardeners, road maintenance companies ...

- **Why this seeds?**

Regional rough pasture seed not only brings advantages for the region as described in point 4.2 (support of the local (agricultural) economy, short transport distances, promotion of the region-specific characteristic species pool, creation of new habitats, ...), but also the user himself benefits in many ways. In comparison to conventional seeds, regionally produced seeds score in terms of location adaptation and climate resistance. Colorful seed mixtures are often imported from abroad and offer only a handful of (non-local!) species. Domestic animals, especially insects, may lack suitable food and wintering plants.

A meadow with Alpine hay seed is much easier to care for than an ordinary lawn or flower beds which require expensive maintenance, since only a single mowing is necessary. Mulching and fertilizing are completely unnecessary.

- **Procedure**

The required (annual) quantity is announced to the producer by mid-February at the latest. Either seeds from the previous year are already in stock or they are harvested and dried in early summer. It can then be purchased and sown. If required, there is the possibility of a professional application and accompaniment of the process (maintenance pruning, reseeded).

Note: As the different plant species have different germination times, it is possible that no comprehensive results will be seen in the first year.

- **Acquisition**

The points of sale of the seeds, the packaging sizes and the price are announced on the website.



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Please find more detailed documents on our homepage:  
[www.alpine-space.eu/alpbioeco](http://www.alpine-space.eu/alpbioeco)



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## PROJECT FUNDERS



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