

AlpBioEco

Regional Recommendations on the Realisation of a Business Model

Region (NUTS 2, ITH1): Autonomous Province
Bozen/Bolzano

Business model: **Disposable tableware and
biodegradable packaging**



TABLE OF CONTENTS

1. INTRODUCTION	3
2. METHODS	3
3. PRODUCT DESCRIPTION	5
3.1 PILOT ACTIVITIES	5
3.2 BUSINESS AND MARKETING OPPORTUNITIES	5
3.3 ADDITIONAL INFORMATION AND CONTACTS	6
4. THE STATUS QUO	7
4.1 BIOECONOMY	7
4.2 RAW MATERIAL	8
4.3 MARKET AND CONSUMPTION BEHAVIOUR ESTIMATE	8
4.4 RESEARCH AND DEVELOPMENT	8
4.5 FUNDING AND STATUTORY FRAMEWORK	9
4.6 SYNOPTIC TABLE	10
5. REGIONAL RECOMMENDATIONS AND SUGGESTIONS	11
5.1 POSITIVE, FAVOURABLE ENVIRONMENTAL FACTORS FOR THE BUSINESS MODEL ..	11
5.2 NEGATIVE, UNFAVOURABLE ENVIRONMENTAL FACTORS FOR THE BUSINESS MODEL	11
5.3 PRIORITISATION OF NEGATIVE ENVIRONMENTAL FACTORS	12
6. ROADMAP	12

1. INTRODUCTION

The ecosystems of the Alps are exposed to environmental problems caused by economic activities and climate change. Moreover, agricultural businesses, producers, and manufacturers in the European Alps face fierce competition in the global marketplace. There is enormous potential for green ecological growth and job creation in the development of a sustainable bioeconomy. The innovative use and appreciation of regional resources strengthen regional business. Currently not all bioeconomic potential is used. One problem is that many supply chains in the European Alps are not sufficiently connected. Many waste and by-products are simply dumped or composted instead of reused to develop new products in accordance with good ecological recycling management.

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

The overall goal of AlpBioEco is to foster a sustainable economy and support the markets and the competitiveness of a bio-based economy in the European Alps. It focuses on supply chains of bio-based food and plant extracts. The project is focused particularly 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 is intended to speed up the implementation of these business models and the development of the bioeconomy. It provides clear recommendations for involved decision makers in politics and economy, such as different chambers, clusters, and research institutions. But at the same time, the guide is also directed at all producers and businesses that are looking for market niches and further development. A detailed guideline shows all steps for implementing new business models – from market research to product development.

2. METHODS

In order to develop a guide for all project regions with a particular focus on these business models, Regional Advisory Boards (RABs) were created for each of the 10 regions. An 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 work together on the successful implementation of the business model. The RAB dynamically connects all relevant stakeholders in a region in order to create and foster new supply chains and new opportunities which were not taken into account previously. The RAB consists of the most important stakeholders of the bioeconomy sector within a region and thus also provides a network which is important for future platforms/projects/recommendations.

The first step was to collect information from a given region and present the current situation. This was done by the RAB in different workshops under the supervision of an AlpBioEco project partner. The second step was to develop a common vision of how to formulate recommendations for politics based on the project. This was done in a second workshop using creative workshop methods such as Lego Serious Play®, Mural Tool, or PESTEL. Due to the current health situation (COVID-19), all meetings were held online, offline, or as hybrid versions.

**Regional Advisory Board
(RAB)**

2 Workshops

Regional recommendations



Workshop 1:
Current situation,
regions & business
model



Workshop 2:
Development
of regional
guidelines



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 recommendations prepared during the workshops at an international meeting, the "Transnational Transfer Meeting". This meeting not only served to present the regional guides but also to develop a transnational and transregional guide. 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.

**Chairman/Chairwoman
(1 person per RAB)**

**Transregional
Advisory Board**

1 Workshop

**Transnational and
Transregional guides**



Transfer
Meeting



Work steps performed when developing transnational guides

Overview of Regional Advisory Board members in the Autonomous Province Bozen/Bolzano region:

Function	Name	Company/Organisation
Chairman	Klaus Egger	Administration of the Autonomous Province of Bozen/Bolzano
RAB member	Christian Hoffmann	Eurach Research, Institute for Regional Development
RAB member	Astrid Weiss (Deputy: Werner Micheletti)	South Tyrol Farmers' Association (Südtiroler Bauernbund)
RAB member	Simon Jaist	Fructus Meran
RAB member	Daniele Zatelli	VOG Products
RAB member	Ben Schneider (Deputy: Andreas Winkler)	NOI Techpark

3. PRODUCT DESCRIPTION

Bio-based and biodegradable packaging based on apple pomace is a highly promising alternative to existing conventional plastic products which can help reduce environmental pollution caused by plastic waste. Its relevance will become even greater when single-use plastic products will be forbidden by EU legislation by mid-2021. Disposable tableware and biodegradable packaging made from apple pomace is likely to be accepted by consumers due to their increased awareness of this topic and their increasing need for better alternatives to conventional plastic.

The subchapters 3.1 and 3.2 describe the results achieved by our project partner Business Upper Austria as part of the 3rd work package regarding the pilot activities conducted in Austria as well as insights gained on business opportunities with regard to the business model.

3.1 PILOT ACTIVITIES

The AlpBioEco project included collaboration with a research centre for scientific analysis of the apple pomace in order to gain more in-depth knowledge of the raw material. Among other things, scientific studies were conducted to find out whether different varieties of apple pomace required different production parameters, and which raw material was best suited for further processing for disposable tableware and biodegradable packaging. Four different samples were analysed. To compare and contrast the different samples, they were all subjected to the same procedure (same solvents, temperature, and duration used for extraction). The results of the analysis show that the composition of contents and nutrients is affected by the drying process of the apple pomace. Apple pomace with high nutrient levels should not be used for packaging. Instead, it should preferably be used to further process products intended for human or animal consumption, as a high level of, for example, sugar and protein is beneficial.

3.2 BUSINESS AND MARKETING OPPORTUNITIES

Apple pomace is currently largely used for animal feed. For apple juice producers, selling apple pomace to packaging companies (which produce and/or sell disposable tableware and biodegradable packaging) would be an attractive opportunity to increase the valorisation of their

by-product. The first choice for the marketing of disposable tableware and packaging products would be business-to-business ("B2B"). For example, standardised products and single-use dishes could be sold and distributed through restaurant suppliers and wholesalers. A second promising opportunity would be B2B marketing through cooperation with food companies which are in need of more sustainable alternative packaging materials. A great opportunity lies, for example, in the replacement of conventional plastic yoghurt cups. In general, biodegradable packaging is perceived as a possibility to stand out from the competition, as it offers a unique selling point on the market, which can in turn have a positive effect on the companies.

3.3 ADDITIONAL INFORMATION AND CONTACTS

Please see [here](#) for further information on the business model for disposable tableware and biodegradable packaging.

If you would like to learn more about this business model or our associated research activities, please contact our AlpBioEco project partner:

- Austria/Business Upper Austria/Heidrun Hochreiter/email: heidrun.hochreiter@biz-up.at | www.biz-up.at | www.lebensmittel-cluster.at

4. THE STATUS QUO

4.1 BIOECONOMY

Comparison of European Bioeconomy Strategies

For their Bioeconomy master programme, four students at Hohenheim University analysed and compared and contrasted for their Bioeconomy master programme selected national bioeconomy strategies (France, Austria, Germany, Slovenia, Italy) for the development of a sustainable bioeconomy. A comparative overview of the strategies may serve as the basis for the development of suggestions to improve existing strategies and for a simpler innovation and implementation process of sustainable, ecologically innovative business models and the promotion of transregional, interdisciplinary collaboration in the Alpine region.

In the course of that work it was found that bioeconomy strategies in different countries are not all equally well-formulated and detailed. Some few countries have not defined any bioeconomy strategies at all or do not have any action plans in place to implement their strategies. Strategies also strongly depend on the background against which they were first formulated. Germany, for example, focuses heavily on industrialising the eco-economy, while in France the strategy was published by the Ministry of Agriculture and is consequently more focused on that area.

The Italian Bioeconomy Strategy

According to its national strategy, the Italian bioeconomy relies on all major sectors of primary production, i.e., agriculture, forestry, fisheries and aquaculture, those processing biological resources, such as the food and drink, wood and pulp and paper industries, as well as biorefineries, and parts of the chemical, biotechnological, energy, marine, and maritime industries.¹

The Italian bioeconomy strategy focuses on:²

- Improvement of the sustainable production and quality of products in each of the sectors and the efficiency of interconnecting and leveraging the sectors
- Effective valorization of national terrestrial and marine biodiversity, ecosystem services and circularity by creating longer and more locally routed value chains
- Regeneration of abandoned and marginal lands and former industrial sites
- Investment in research, start-ups, education, training and communication
- Improving the coordination between regional, national and EU stakeholders and policies along with the engagement with the public and tailored market development

¹ "Bioeconomy in Italy: a unique opportunity to reconnect economy, society and environment", Italian bioeconomy strategy (2019)

² "Bioeconomy in Italy: a unique opportunity to reconnect economy, society and environment", Italian bioeconomy strategy (2019)

4.2 RAW MATERIAL

South Tyrol is the largest contiguous apple farming area in Europe,³ and with an area of approx. 18,400 hectares,⁴ apple farming plays a major role.

Apples are the most exported product of South Tyrol and are exported to more than 50 countries worldwide.⁵

The majority of the Advisory Board considers the availability of this raw material to be unproblematic (see synoptic table, 4.6).

4.3 MARKET AND CONSUMPTION BEHAVIOUR ESTIMATE

The RAB agrees that biodegradable packaging as a substitute for plastic packaging is a very good and, above all, necessary idea. In light of the EU Directive on Packaging and Packaging Waste (Directive (EU) 2018/852 of 30 May 2018), new biogenic alternatives and concepts are sorely needed in order to facilitate the adoption of that Directive.

The market potential was deemed high. The RAB names various companies (commerce, food service industry) which may well be interested in biodegradable packaging. Co-operatives and fresh food markets (also known as “wet markets”) are also considered good customers, if economically feasible.

Paper made from apples is already produced and sold in South Tyrol.

4.4 RESEARCH AND DEVELOPMENT

Research and development on packaging materials does not seem to be very strong in South Tyrol. There is no research institution currently known to the Advisory Board which is working specifically in the area of packaging.

Furthermore it has been pointed out that there are only packaging wholesalers in the region but no manufacturers of packaging material. A few partners, from the raw material to the finished packaging, could be conducive to the development process.

Regarding the development process it was also pointed out that with regard to recycling management and extended product lifetime, reusable packaging would be more appropriate than disposable packaging.

³ <https://www.suedtirolerapfel.com/media/4cdb4d2e-dd3e-4ebb-bd40-7f09d4317818/broschuere-apfeland-%20suedtirol.pdf>

⁴ <https://www.suedtirolerapfel.com/de/suedtirol-und-der-apfelanbau/anbauegebiet.html>

⁵ <https://www.apfelwelt.it/de/apfelwiki/apfelwirtschaft--2-98.html>

4.5 FUNDING AND STATUTORY FRAMEWORK

There are several funding programmes at the EU, national, and regional level which would be eligible for consideration concerning the implementation of the business model.

The [website](#) of the State Administration of South Tyrol provides an overview of the regional contributions to innovation and research. Apart from admission requirements, the website also states the necessary documentation required for each contribution as well as the costs and indicates applicable laws and regulations.

Moreover, South Tyrol has also built a research partnership with four other countries: Germany, Austria, Switzerland, and Luxembourg. These partnerships give South Tyrolean research institutions the opportunity to get involved in programmes and research bids together with universities, colleges, or institutes in the partner countries.⁶

⁶ http://www.provinz.bz.it/news/de/news.asp?news_action=4&news_article_id=645299

4.6 SYNOPTIC TABLE

The table below has been completed by the Regional Advisory Board based on their experience, assessment, and standard of knowledge concerning the business model. As this board is made up of people from different fields looking at the model from a variety of angles, it provides a good overview of the current situation in the region. The answers of the respective RAB members were inserted in the table.

The term “abundant/unproblematic” is defined to indicate that these items are available to such an extent that implementing the business model will be possible without a lot of effort and/or that the framework conditions are such that there is no need to modify them any further.

The term “scarce/”problematic” serves to sum up all those areas which still require changes to be made in order to implement the business model.

	Abundant/ unproblematic	Adequate	Medium	Scarce/ problematic
Raw material in the region	✓ ✓ ✓	✓ ✓	✓	
Raw material manufacturers in the region	✓ ✓ ✓	✓ ✓	✓	
Market, consumers		✓ ✓ ✓ ✓ ✓ ✓		
Rival products	✓ ✓ ✓	✓	✓ ✓	
Distributors, buyers		✓ ✓ ✓	✓ ✓ ✓	
Interested project partners	✓	✓ ✓	✓ ✓ ✓	
Possible processors and implementers of the business model		✓	✓ ✓ ✓ ✓	✓
Research institutions in the area relevant to the business model		✓ ✓ ✓	✓ ✓ ✓	
National research/national experts		✓	✓ ✓ ✓ ✓	
International research/international experts	✓	✓ ✓	✓ ✓	
Statutory framework		✓ ✓	✓ ✓	✓ ✓
Promoters of the business idea (stakeholders/areas/people)	✓	✓ ✓	✓ ✓ ✓	
Regional funding	✓	✓ ✓ ✓	✓ ✓	
National funding		✓	✓ ✓ ✓ ✓ ✓	
International funding	✓ ✓	✓ ✓	✓	✓
Research funding	✓	✓ ✓ ✓	✓ ✓	
Product development funding	✓	✓ ✓ ✓	✓ ✓	
Market maturity/marketing funding	✓	✓ ✓ ✓	✓ ✓	
Additional financing possibilities		✓	✓ ✓ ✓ ✓ ✓	

5. REGIONAL RECOMMENDATIONS AND SUGGESTIONS

The following subchapters list the positive, favourable and the negative, unfavourable environmental factors for the business model with regard to its implementation in the region as prepared during the *Lego Serious Play* Workshops.

5.1 POSITIVE, FAVOURABLE ENVIRONMENTAL FACTORS FOR THE BUSINESS MODEL

a. Regionality

In South Tyrol, regionality is considered an essential distinguishing feature in the market. Many people in South Tyrol work in the manufacturing sector and in agriculture, producing products relating to the region. International companies in the food industry are also based in South Tyrol. However, as the packaging currently in use is not regional, the use of regional, sustainable packaging could be a success factor.

b. Raw material

The majority of the Advisory Board considers the availability of this raw material to be unproblematic. Generally speaking, not only is the raw material “apples” available in South Tyrol but also the processing by-product “apple pomace” (in varying degrees of drying quality).

c. Networking/competence

South Tyrol has already developed unparalleled competence in all things apples, from production to marketing. In addition, a multitude of cooperation structures in the apple industry have been set up over the years.

In light of the existing apple industry-related competence in South Tyrol, it may be possible to build similar competence in packaging by hooking up a variety of existing partners/resources, for example from the areas of agriculture, research & development, processing, etc., with (external, if necessary) partners from the area of packaging.

d. Cultural importance of apples

People in South Tyrol have a strong cultural bond with the whole topic of apples and care deeply about it. Ecologically sound packaging made from by-products from the value chain of regional apples would be highly appropriate, as it would be deeply rooted in local culture.

5.2 NEGATIVE, UNFAVOURABLE ENVIRONMENTAL FACTORS FOR THE BUSINESS MODEL

a. Packaging manufacturers

There are currently only packaging wholesalers in the region but no manufacturers. A few partners, from the raw material to the finished packaging, would be conducive to the development process.

b. Know-how and investment

Packaging technology is an extremely complex, highly specialised area with currently very high barriers. Building the required manufacturing capacity and product line will require high capital costs.

c. Awareness

There is a certain lack of awareness in our society of the issues of sustainability and current associated challenges facing us, as evidenced by, for example, the unwillingness to pay for sustainable packaging on the part of producers and customers.

d. Sustainable production chain

Pesticides and herbicides are still used in the apple industry's production chain. To communicate a sustainable production chain, it will not suffice to simply have ecologically sound packaging if pesticides/herbicides are still being used along that production chain.

e. Plastic

It will be difficult to find a replacement for plastic packaging, because this material has stood the test of time as packaging material for food products. Moreover, plastic is currently more affordable than sustainable packaging products.

5.3 PRIORITISATION OF NEGATIVE ENVIRONMENTAL FACTORS AND PROPOSED SOLUTION TO COMBAT HIGH-PRIORITY NEGATIVE ENVIRONMENTAL FACTORS

After the negative, unfavourable environmental factors named above were identified, they were prioritised to make it possible to propose possible solutions for the high-priority negative

a.) Raising awareness:

- A change of our culture and our awareness along the value chain (producer and consumer) is considered necessary. The recommendation is not to simply sensitise people with regard to packaging but generally with regard to sustainability. Awareness for sustainability and all it entails should already be raised in schools, so even the young generation knows how important sustainability is. Courses, trainings, etc. should also be available to sensitise people towards the issue.

- It is recommended to organise a round table discussion to promote public dialogue to facilitate the exchange between actors/stakeholders with regard to sustainability and to raise more awareness. That round table should be open for anyone who is interested.

- With regard to politics, it is recommended to define sustainability goals and standards. This also includes targeted financing.

b.) Know-how:

- Building "key partnerships" is recommended, i.e. bringing in expert knowledge of apples as the raw material (farming, processing, etc.) and provisioning the regional raw material combined with partners from the packaging manufacturing sector bringing in their specific packaging know-how.

6. ROADMAP

Several steps are necessary to build a successful business from the initial idea to market maturity. The image below provides an overview of important points which must be considered during implementation. The facts and figures pictured here will support you during the first few steps towards the implementation of the business idea and help you get an initial idea of the required raw material research as well as environmental and market analyses.





1. You are looking to evolve yourself and your company and have decided to produce biodegradable packaging and disposable tableware from apple pomace? This roadmap will guide you through the individual steps from selecting a business model to launching your product.



2. Develop an understanding of how large you plan your market contribution to be and do the necessary research about the quantity and quality of available apple pomace. Define your product more clearly with the aid of market research (disposable tableware, nets, cardboard, or film?) and research details on the state of the art to get your investment right on track. Consumers are demanding new solutions in biodegradable packaging; analyse the zeitgeist and plan your implementation.



3. Further research is necessary to develop biodegradable packaging. Depending on the type of packaging, apple pomace of the appropriate quality must be available. It is therefore essential to analyse different varieties of apple pomace. Further development will be necessary depending on the product idea. Find suitable research partners and submit your project for research funding.



4. Find the right partner to flesh out your ideas.



5. Develop your product with the aid of your partners. This requires standardised workflows. It must be ensured that there are no variations in product quality.



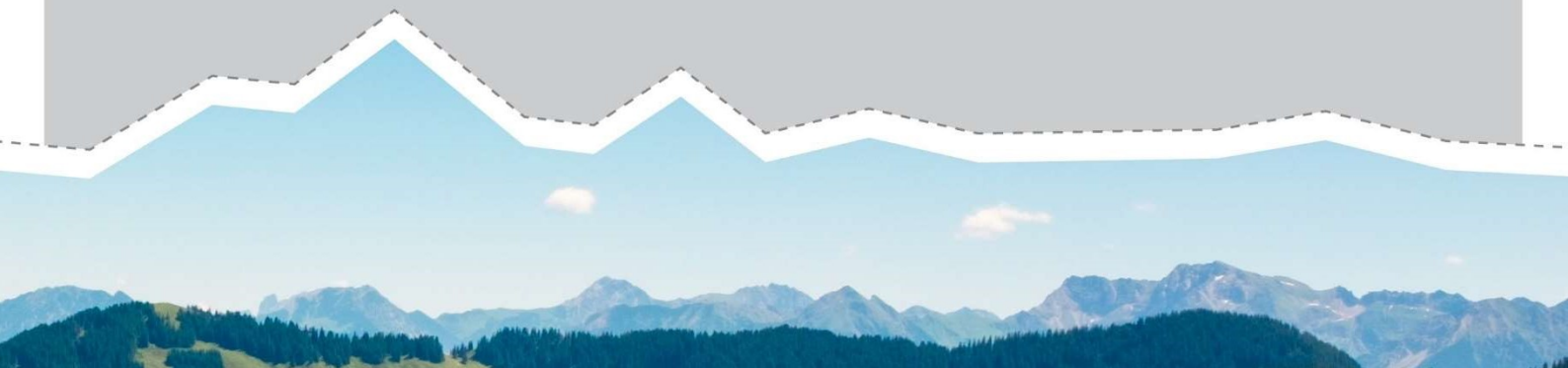
6. Choose the right partner for your market launch. Your first choice for marketing disposable tableware and packaging products would be a B2B—business-to-business—model. For example, standardised products might be sold and distributed through food industry suppliers and wholesalers. Another promising opportunity would be B2B marketing in the form of collaborating with food producers who are looking to use more sustainable alternative packaging materials.



7. Secure your customer and supplier relations and enter the market together with your partners. Targeted marketing campaigns help inform the customers and improve your chances in the market.



8. You and your company have gone through a process of evolution by collaborating with other companies and research institutions and have successfully added a first-class sustainable product to the market.





ABOUT US

You want to know more details about our project?



Please find more detailed documents on our homepage:
www.alpine-space.eu/alpbioeco



Interested in the latest news?
Subscribe to the newsletter on our website.

Follow us on:



AlpBioEco
#AlpBioEco



AlpBioEco



YouTube AlpBioEco

Please
contact us,
we will be
happy to
advise you!

CONTACT

Anna Bäuerle ||| Project coordination ||| EU Interreg Project AlpBioEco ||| alpbioeco@sigmaringen.de

PROJECT PARTNERS



PROJECT FUNDERS



EUROPEAN UNION

This project is co-financed by the European Regional Development Fund (ERDF) through the Interreg Alpine Space programme.
Support from the European Union:
1.820.666 €



Federal Ministry
of the Interior, Building
and Community

This project is funded by the "Federal Transnational Cooperation Programme" of the German Federal Ministry of the Interior, Building and Community

