



**RE-BRANDING BREAD TO IMPROVE
QUALITY OF PRODUCTION AND
REDUCE FOOD WASTE**

G U I D E B O O K



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RE:BREADING: Re-Branding bread to improve quality of production and reduce food waste.

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Discover the Power of Bread: Enhancing Quality, Nutrition and Sustainability!

ReBreeding is a collaborative initiative that brings together an array of experts, including master bakers, food scientists, nutritionists, educational institutions, entrepreneurs and sustainability enthusiasts. Our joint efforts aim to unlock the true potential of bread, making it not only delicious but also healthier and more sustainable.

At ReBreeding, we believe that bread has the power to transform lives, and our mission is to transform the world of bread and bakery products by re-branding bread to improve its quality, nutritional aspects and sustainability.

The aim is to increase awareness of the importance of sustainability and promote good practices in the bread-making industry by educating in-potential bakers and educators and providing sustainability tools to new professional bakers. Reducing food waste in the artisan sector is our main goal!

The main objectives of ReBreeding project:

- Infuse the benefits of artisan baking in the mindset of both new and future baker professionals as well as Vocational education and training (VET) educators, as a concept that can promote and defend healthy and sustainable products.
- Redefine the role of new baker professionals in the food waste chain, giving them skills for becoming “green” agents in their work environment (choice of healthy/sustainable raw material, collaboration with local millers / farmers, reduce of material / food waste).
- Reenforce the learning of the new baker professionals by creating a live community among them at local, regional and European level and by using experiential learning, which will combine the use of best practices and applied theory through workshops.
- Raise “green” awareness among VET institutions and educators and infuse sustainability in their curricula and teaching while adopting the training curriculum of the Re-Breeding.
- Offer VET educators and learners a common online platform that will promote digital literacy and will align a common path for the professionals, the market, and the consumers.
- Impact the habits of the consumers and raise “green” consciousness by providing them local, nutritional, and healthy bakery products.

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INTRODUCTION

Bread Production

Welcome to the guidebook that aims to revolutionize the way vocational education and training (VET) institutions approach the art and science of baking. In an era where sustainability is no longer an option but a necessity, this guide is a pivotal resource for educators and institutions seeking to adapt their courses to produce skilled bakers and conscientious environmental stewards.

This Guidebook sets the stage for what will be an enlightening journey through the multifaceted world of baking with a sustainability lens. The purpose of this course is twofold. Firstly, it's designed to provide a comprehensive understanding of the baking industry, including traditional and modern techniques, entrepreneurial skills, and the artistry involved in creating delectable baked goods. Secondly, it's structured to infuse a strong sense of sustainability and ethical responsibility in future bakers. This course is a commitment to transforming the baking industry from the ground up, encouraging practices that are environmentally friendly, socially responsible, and economically viable.



The objectives of this Guidebook:

- **Establishing Context:** To outline the critical need for sustainability in the baking industry and how it aligns with global efforts towards a more sustainable future. We'll explore the significant impact that baking has on the environment, economy, and society, and why a shift towards sustainable practices is imperative.
- **Introducing Core Concepts:** To familiarize educators and trainees with key sustainability concepts that will be woven throughout the course. This includes understanding the Farm-to-Fork strategy, the pillars of sustainability, and the importance of local and cultural context in baking.
- **Highlighting Course Structure:** To provide an overview of the course is structure, detailing the various modules and how each contributes to the overarching goal of integrating sustainability into every aspect of baking - from ingredient sourcing and energy-efficient practices to waste management and consumer education.
- **Setting Learning Outcomes:** To outline the specific skills and knowledge that educators and students can expect to gain. This includes not only advanced baking techniques but also a profound understanding of how to run a sustainable baking business, implement eco-friendly practices, and make ethical decisions that benefit the community and the planet.
- **Inspiring Change:** To motivate educators and future bakers to become advocates for change, driving the industry towards a more sustainable and ethical future. We aim to inspire a new generation of bakers who create nutritious bread and contribute positively to their communities and the environment.

1 IDENTIFIED NEEDS, GAPS AND EXPECTATIONS

This chapter is dedicated to understanding the intricacies of bread-making across various cultural and geographic landscapes, with a keen focus on seven distinct regions: Greece, Lithuania, Cyprus, Poland, Turkey, Ireland, and the broader European Union. By delving into the local contexts, we aim to uncover and honor the unique bread-making traditions and current practices that define each area, providing a rich tapestry of culinary artisanship.

A critical component of this chapter is the Gap Analysis. Here, we engage directly with the heartbeats of the baking community—local bakers, educators, and trainees—through surveys and interviews. This approach is designed to surface the skill gaps, set realistic expectations, and pinpoint areas ripe for development and innovation in the bread-making sector. Our goal is to bridge these gaps, fostering growth and excellence in the craft.

Furthermore, this chapter doesn't shy away from the broader picture. It includes an array of references to studies focusing on current trends in bread-making, with a particular lens on nutritional guidelines and sustainability practices within the EU. This holistic view ensures that the reader is grounded in traditional and current practices and attuned to the evolving landscape of bread-making, guided by health and environmental consciousness.



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Local context: bread-making traditions and current practices



In the ever-evolving landscape of bread-making, it is crucial to understand the current state of practices, traditions, and expectations across different regions. This section delves into the bread-making traditions and contemporary practices in Greece, Lithuania, Cyprus, Poland, Turkey, Ireland, and the broader EU context. It also explores the latest trends, nutritional guidelines, and sustainability practices within the EU, forming a foundation for the 'ReBreeding' training program.

Greece: Greek bread-making is steeped in history, with a focus on traditional loaves like 'Horiatiko' (village bread). Modern trends see a blend of ancient grains like spelt and barley, emphasizing health and heritage. Greek bread-making, while rooted in tradition, is also adapting to modern dietary trends. The use of ancient grains not only taps into historical practices but also caters to the growing demand for healthier options. For instance, a bakery in Athens has gained popularity for its Horiatiko bread made with a mix of ancient grains, reporting a 20% increase in sales over the past year. Nationally, there's a trend towards lower gluten and higher fiber breads, aligning with the EU's nutritional guidelines that advocate for healthier diets.

Local context: bread-making traditions and current practices

Lithuania: Lithuanian bread is characterized by its use of rye. 'Duona' (rye bread) remains a staple, with contemporary bakers experimenting with new flavors and techniques while respecting traditional methods. This traditional rye bread, 'Duona', is experiencing a renaissance with artisanal bakeries combining age-old techniques with innovative flavors. For example, a "Vilnius Duona" bakery has successfully introduced Duona with cranberries and nuts, seeing a 15% growth in customer base. Statistically, rye bread constitutes approximately 35% of all bread sales in Lithuania, indicating its cultural significance. There is also a push towards organic farming, supported by EU agricultural policies, ensuring sustainable grain production.

Cyprus: Cypriot bread-making reflects its multicultural influences. The integration of local ingredients like olives and halloumi into bread products not only adds a unique flavor profile but also supports local agriculture. A recent study showed that 25% of consumers in Cyprus prefer bread with local ingredients, suggesting a shift towards supporting regional producers. This aligns with the EU's Farm to Fork Strategy, which aims to make food systems fair, healthy, and environmentally friendly.



Local context: bread-making traditions and current practices

Local context

Poland: Polish bread-making honors its past with breads like 'Chleb Żytni' (rye bread). Modern Polish bakeries are increasingly adopting organic and whole grain ingredients, adapting to health-conscious trends. Organic bread production has seen a 10% increase in the past five years. An initiative in Warsaw promoting organic grain farming has led to a 20% increase in organic wheat and rye supply to local bakeries. This reflects the broader EU goal of increasing organic farming land to 25% by 2030, as part of the European Green Deal.

Turkey: Turkish bread, especially 'Ekmek,' is central to daily life. There's a growing trend towards sourdough and whole grain breads, blending traditional methods with new health-driven preferences. A survey in Istanbul revealed that 30% of consumers now prefer whole-grain bread for its health benefits. Additionally, initiatives promote local wheat varieties, contributing to biodiversity and sustainability in line with EU agricultural policies.

Ireland: Bakers are now emphasizing local, organic ingredients and gluten-free options. Irish bread-making, particularly soda bread, is increasingly focusing on artisanal techniques and local ingredients. A notable example is a bakery in Dublin "**Bread41**" that sources all its ingredients within a 50-kilometer radius, reducing its carbon footprint. Gluten-free options are also on the rise, catering to approximately 10% of the population with gluten sensitivities or preferences.

Real Bread, in its purest form, is bread made without the use of processing aids or any other artificial additives. Real Bread is simply flour, water, salt and fermentation. The opportunity as we see it is great, all it takes is courage, imagination... and a little dough!

Eoin Cluskey – Head baker & owner
Bread 41 Bakery Dublin
<https://bread41.ie/>



Activity



WATCH THE VIDEO MAKING SOURDOUGH WITH EOIN CLUSKEY
FROM BREAD 41 BAKERY (DUBLIN)

[HTTPS://WWW.YOUTUBE.COM/WATCH?V=WLT07YS-0HC&T=75S](https://www.youtube.com/watch?v=WLT07YS-0HC&T=75S)



Discuss the baking process of sourdough bread



Organize a sourdough bread baking workshop. Check the recipe on page 81

Local context: bread-making traditions and current practices



EU Context: Europe artisan bakery market accounts for the second-largest market share. Europe is known for its long-standing bread-making and baking traditions. The baking legacy is continued through artisanal bakery made with traditional methods. Across the EU, there's a pronounced shift towards sustainable and environmentally responsible bread-making practices. The emphasis is on local sourcing, reducing carbon footprint, and using natural fermentation methods. Statistics indicate that artisanal bread makes up about 15% of the EU's bread market, which has been steadily growing. The EU's Farm to Fork Strategy is a significant driver, aiming to make food systems sustainable. Efforts include reducing food waste, which accounts for approximately 20% of total food produced in the EU and promoting organic farming practices.

Current Trends In Bread-making



The bread-making industry in the EU is at a crossroads, balancing tradition and innovation to meet contemporary needs and expectations. By embracing current trends, adhering to nutritional guidelines, and implementing sustainability practices, the industry is not only enhancing the quality and variety of bread available but also contributing to a healthier, more sustainable future. As consumers become more informed and conscious of their choices, the industry's commitment to quality, health, and the environment will continue to shape the future of bread-making in the EU.

Current Trends In Bread-making

Key trends in the bread-baking industry:

Artisanal and Handcrafted Techniques: There's a growing appreciation for handcrafted, artisanal breads across Europe. This trend is driven by a desire for quality, taste, and traditional baking methods.

One of the most notable trends in bread-making is the resurgence of artisanal and heritage bread. Consumers increasingly seek authentic, high-quality products with a story, leading to a revival of traditional bread-making techniques and the use of ancient grains. Sourdough bread, with its natural fermentation process and distinct flavor, has particularly seen a surge in popularity.

The shift towards artisanal, organic, and sustainable bread-making practices in the EU is evident in several trends and policies. This movement is characterized by a growing interest in healthy, wholesome bread, as reflected in the increased sales of bread-making equipment and organic flour. This trend is part of a larger movement away from mass-produced bread with additives, towards bread made with ethical and sustainable ingredients.[1].

European Union policies play a significant role in supporting this shift. The Common Agricultural Policy (CAP) and Common Fisheries Policy, for example, are integral to the transformation of EU food systems. The CAP ensures that Member States consider the objectives and targets of the Farm to Fork Strategy in their National Strategic Plans. This includes promoting sustainable practices in agriculture and the provision of healthy food. The Farm to Fork Strategy itself is a comprehensive plan aiming to make food systems fair, healthy, and environmentally friendly. It includes various measures like reducing the use of antimicrobials, promoting organic agriculture, and improving animal welfare.

Current Trends In Bread-making

Key trends in the bread-baking industry

Health and Nutrition: The rise in health-conscious consumers has increased demand for breads made with whole grains, ancient grains, and low glycemic index ingredients. Simultaneously, there's a growing demand for functional breads enriched with proteins, fibers, vitamins, and minerals. These breads cater to health-conscious consumers looking for more than just taste and convenience. Innovations in bread-making have also led to the development of low-carb, gluten-free, and vegan options, making bread accessible to a wider audience with diverse dietary needs and preferences.

Sustainability: Sustainable practices are becoming increasingly important. This includes the use of locally sourced ingredients, organic farming methods, and energy-efficient baking techniques.

Artisanal and small-scale producers are crucial in this movement. They practice sustainable food production and ethical farming processes, which are key to achieving environmental conservation while ensuring high-quality produce. Supply chain accountability and traceability are vital in this regard, as they involve scrutinizing the entire process of a product's origins and responsible sourcing. This helps ensure sustainability and ethics in the supply chain.

Technological Advancements: Technological advancements in baking equipment and techniques are enabling bakers to produce nutritionally enhanced bread without compromising on quality and taste.

Current Trends In Bread-making

Nutritional Guidelines and Bread-Making

The EU's nutritional guidelines have significantly influenced bread-making practices. With an increased focus on combating obesity and promoting a balanced diet, there's a push for breads with reduced salt, sugar, and fat content. The guidelines advocate for whole grains due to their beneficial fiber content and associated health benefits, including reduced risks of heart disease, diabetes, and certain types of cancer. EU nutritional guidelines are influencing bread-making, with a focus on reducing salt and sugar content, and increasing fiber through whole grains.

In response to these guidelines, manufacturers are reformulating recipes and exploring alternative ingredients to create healthier bread options without compromising on taste or texture. The emphasis is on transparency and clean labeling, ensuring consumers are well-informed about the bread they consume. With the increasing awareness of health and nutrition, the industry is under significant scrutiny to adhere to various nutritional guidelines. These guidelines are not just critical for public health but also influence consumer preferences and industry standards.



Current Trends In Bread-making

Current Trends

Nutritional guidelines in the bread baking industry are more than just regulatory requirements; they represent a shift towards health and wellness in food consumption. The EU's comprehensive approach ensures that bread products not only meet the dietary needs of the populace but also cater to the growing demand for healthier food options. As the industry continues to evolve, staying abreast of these guidelines is crucial for bakers, businesses, and educators alike.

Understanding EU Nutritional Guidelines:

- 1. EU Regulatory Framework:** The EU has a comprehensive regulatory framework for food nutrition which bread manufacturers must adhere to. This framework includes directives and regulations on food additives, nutritional labeling, and health claims.
- 2. Key Nutritional Components in Bread:** Bread is primarily composed of carbohydrates, but it also contains proteins, fibers, vitamins, and minerals. The nutritional content varies significantly based on the ingredients used, such as the type of flour, grains, and additional components like seeds or nuts.
- 3. Dietary Reference Values (DRVs):** DRVs provide guidelines on the recommended intake of various nutrients. Understanding these values is crucial for bakers to ensure their products contribute appropriately to a balanced diet.

Current Trends In Bread-making

Application of guidelines in bread baking:

1. Ingredients and Nutrition: The choice of ingredients significantly impacts the nutritional value of bread. Whole grain and multigrain breads, for instance, offer more fiber and a broader range of vitamins and minerals compared to white breads made from refined flour.

2. Nutritional Enhancement: Bakers have the opportunity to enhance the nutritional value of bread through fortification and the use of alternative ingredients. Fortification involves adding vitamins and minerals, while alternative ingredients like almond flour or flax seeds can provide additional health benefits.

3. Reducing Unhealthy Additives: Reducing the use of unhealthy additives such as excess salt, sugar, and certain preservatives is crucial in aligning with nutritional guidelines. This requires a balance to maintain taste and texture while enhancing health benefits.

Labeling and Consumer Information:

1. Nutritional Labeling: EU regulations require clear nutritional labeling on bread products. This includes information on energy value, fats, carbohydrates, sugars, protein, and salt. Educating consumers through labeling helps them make informed dietary choices.

2. Health Claims: Any health claims made on bread products must be in compliance with EU regulations. Claims must be based on scientific evidence and are strictly monitored to prevent misleading information.

Current Trends In Bread-making

Sustainability practices

Sustainability is another critical area of focus within the EU bread-making industry. There's a concerted effort to reduce the environmental footprint of bread production, from sourcing to packaging. This includes using locally sourced, organic ingredients to minimize transportation emissions and supporting local agriculture.

In terms of sustainable food consumption, the EU is working on improving the availability and affordability of sustainable food. Key elements of this initiative include improving consumer information and encouraging the adoption of fiscal measures that support sustainable food consumption. The EU also proposes to implement mandatory criteria for sustainable food procurement, particularly in schools and public institutions.

Energy-efficient technologies and waste reduction strategies are increasingly adopted in bakeries. Many are implementing recycling programs, reducing water usage, and finding innovative uses for by-products like bread crumbs and stale bread. There's also a noticeable shift towards sustainable packaging solutions, with biodegradable and recyclable materials becoming more prevalent.

The shift towards sustainable bread-making in the EU is a multifaceted effort involving changes in consumer behavior, advancements in agricultural practices, and comprehensive policy support. These efforts collectively aim to create a more sustainable and health-conscious food system.



Needs and Gap Analysis

The desk research and interviews conducted by each ReBreeding project partner provides an in-depth analysis of perceptions, barriers, enablers, and proposals related to bakery and food waste based on the feedback from various stakeholders including bakers, food and agricultural engineers, nutritionists, entrepreneurs, educators, and other participants. Here's a summary of the key findings:

- **Shift Towards Healthier Bread: There's** a notable shift towards natural, additive-free bread, driven by consumer demand for healthier options.
- **Bread Waste:** A significant problem highlighted is the waste of bread due to overproduction, consumer habits, and lack of awareness.
- **Best Practices and Innovations:** Incorporation of enzymes in bread to retard staling, use of non-invasive measurement for quality control, and emphasis on texture measurement.
- **Cultural Significance:** Bread holds a significant cultural place, yet there's an increasing need to balance tradition with modern health and environmental concerns.
- **Awareness and Education:** The need for widespread education on food waste, sustainability, and better consumption practices is emphasized across the board.

Needs and Gap Analysis

While there's a clear appreciation for the cultural and nutritional importance of bread, the industry faces challenges related to sustainability, waste management, and health. Addressing these through education, innovation, and policy can meet growing consumer expectations and ensure the industry's long-term viability and environmental responsibility.

Key Skill Gaps:

- **Lack of Skilled Artisans:** There's a noted shortage of skilled bakers, particularly in traditional methods like sourdough baking.
- **Technical Knowledge:** A gap in understanding and utilizing modern technologies and practices that enhance bread quality and shelf life.
- **Sustainability Practices:** Limited knowledge and practice in sustainable production methods, waste management, and efficient use of resources.
- **Consumer Education:** Bakers and industry professionals need skills to educate consumers effectively about bread quality, sustainability, and waste.

Expectations:

- **Healthier Options:** Expectations are growing for healthier, quality bread with fewer additives and more natural ingredients.
- **Sustainability:** Both consumers and regulatory bodies expect the industry to move towards more sustainable practices.
- **Innovation:** There's an expectation for continual innovation in bread production techniques, ingredients, and flavors.
- **Cultural Preservation:** Maintaining the cultural significance and traditional tastes of bread while adapting to modern needs and health standards.

Areas for Development:

- **Training and Education:** Enhanced education and training programs focusing on modern baking techniques, sustainability, and waste management.
- **Sustainable Practices:** Development of practices that reduce the environmental impact, such as better resource management, waste reduction strategies, and sustainable packaging.
- **Consumer Awareness:** Initiatives to raise consumer awareness about bread quality, health aspects, and waste reduction techniques.
- **Research and Development:** Encouraging research into healthier ingredients, longer-lasting freshness without preservatives, and methods to reduce production waste.
- **Policy and Regulation:** Development of supportive policies and regulations that encourage sustainable practices and reduce food waste in the industry.

2

RE:BREADING'S METHOD AND APPROACH

This chapter focuses on Re-Breading's educational philosophy, curriculum overview, and case studies. It details the innovative strategies and techniques employed in sustainable and nutritious bread-making. The chapter emphasizes the importance of local collaboration, understanding of raw materials, and respect for traditional bread-making processes. It discusses the need for new professional bakers to adapt to labor market demands and act as agents of green change, such as reducing food waste and emissions. The chapter showcases successful strategies from specific bakeries, highlighting their commitment to sustainability, waste management, and social contribution, providing a comprehensive overview of the industry's move towards more sustainable and ethical practices.

Re-breading aims to support VET providers and educators adapt their training to changing skills needs, green and digital transitions. Furthermore, in combining the Green Deal requirements with VET education priorities, Re-breading contributes to the objective of developing 'sustainability competences of educators and education leaders and support the planned approaches of the participating organisations regarding environmental sustainability.



Educational Philosophy

Re-Breeding provides the necessary tools (online training platform), know-how and incentives for new bread-making professionals, recently graduated or present students, that wish to work in the artisan sector of bread-making or have their own enterprise, to both respond to new labour market demands and become agents of green change (avoid and reduce food waste, collaborate with local farmers / flour millers and reduce emissions due to transportation, increase plastic-free packaging use, adopt sustainable methods in their work environments). Underlining the importance of the close cooperation between the professionals of the first line in the production of bakery products and the area of primary production, ReBreeding contributes to the goal of European Green Deal (2019) that consumers should 'know where the food comes from, its nutritional value, and its environmental footprint'.

ReBreeding delivers a common, open-access, interactive and user-friendly platform for in-potentia artisan bakers and VET educators who teach baking science. ReBreeding cultivates scientific thinking and understanding through regional / European best practices connected to nutritional breads and/or related to food waste prevention (i.e., local artisan bakeries, creative use of potentially discarded products within food safety regulations, collaborations with local farmers) - study visits during LTT, and videos integrated in training material (approximately 5 hours).

ReBreeding project has also developed an **E-book** with local flours, main characteristics, local recipes, using a variety of methods for kneading, hydrating, fermenting, etc., in order to promote knowledge on the local products and collaboration with local farmers / flour millers.

E d u c a t i o n a l P h i l o s o p h y

ReBreeding promotes innovative approaches to strengthen the cooperation between industry and education towards entrepreneurship and propose innovative practice-based methods. ReBreeding has an innovative approach in the following ways:

- It forms an innovative approach for professional bakers, which combines digital media (platform, e-books, videos), learning by doing, and applying theoretical approaches in practice.
- It promotes the use of best practices in the field in order to inspire new professionals to build their own path, having as role-models other professionals, in an attempt to leave as less as possible ecological footprint through their careers. It promotes important skills needed in the food sector in order to defend the food, avoid the food waste, and increase the quality of bakery products. These include problem-solving, creativity, entrepreneurship, digital literacy, and scientific thinking, through the study of best practices at all levels.
- It works on parallel levels at the same time, in order to have a more significant impact (new professionals, students, VET educators and institutions, consumers, and retail sector).
- It covers different geographical points to promote collaboration among Erasmus+ programme countries in the field of food waste prevention and bread re-branding.

Curriculum Overview

Adapting this course in VET institutions requires a multifaceted approach, focusing on sustainability, environmental impact, traditional techniques, and the promotion of health and local culture. By implementing these recommendations, educators can develop comprehensive programs that teach the art of baking and instill a deep respect for sustainable and nutritious practices.

Based on the actual activities and content covered in the training modules for bakers, here's an overview of the course modules and recommendations for VET trainers and educators how to adapt this course for VET institutions, along with suggestions on how to develop sustainability competences of educators.

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Curriculum Overview

Module 1

MODULE 1: The Significance of Local Materials in Bread Production

1. Introduction:

- **Guidebook Recommendation:** Include a section exploring local ingredients and culinary traditions. Encourage educators to incorporate local bread varieties and ingredients into their teaching, fostering a deeper connection between the students and their cultural heritage.
- **Educator Development:** Train educators on the cultural significance of various bread types and ingredients. Encourage them to incorporate field trips or guest speakers from local bakeries or cultural organizations.

2. The Importance of Using Quality Materials:

- **Guidebook Recommendation:** Provide guidelines on how to identify and source high-quality ingredients. Include information on the health benefits of various bread types and ingredients, as well as the effects of processing on nutritional value.
- **Educator Development:** Offer workshops or courses on nutrition and health, focusing on how bread and its ingredients can contribute to a healthy diet. Educators should be able to pass this knowledge on to students effectively.

3. Integration of Local and Cultural Context:

- **Guidebook Recommendation:** Include practical activities and experiments that allow students to work with various ingredients and understand their properties. Activities could range from baking different types of bread to experimenting with gluten-free or organic ingredients.
- **Educator Development:** Ensure educators are skilled in various baking techniques and can guide students through hands-on activities. They should also be able to facilitate discussions and reflections on the results of these experiments.

MODULE 1: The Significance of Local Materials in Bread Production**4. Sustainable use of materials in bread production:**

- **Guidebook Recommendation:** Highlight sustainable practices in bread production, including the use of organic, non-GMO ingredients, and techniques to minimize waste. Discuss the environmental impact of different production methods.
- **Educator Development:** Provide training on sustainable agricultural practices and their importance. Educators should understand the environmental impact of their ingredient choices and production methods and be able to convey this to students.

Learning Outcomes: Understand the role of local ingredients in quality bread production, the health benefits, and the cultural context.

Teaching Methodologies: Lectures on the significance of local materials and their environmental impact. Activities include exploring best practices and adopting them in artisan bakeries.



Activity



Ask students to prepare a comparative chart of different bread types (sourdough, whole wheat, rye) and their key ingredients, along with their regional origins.

Let students organise a photo gallery or descriptions of traditional bread from various other cultures, like French baguette, Indian naan, or Mexican tortilla.

Curriculum Overview

Module 2

MODULE 2: Ensuring quality and nutrition in bread production

1. Quality Assurance in Bread Making:

- **Guidebook Recommendation:** Outline the importance of quality assurance in bread making. Include protocols and checklists for quality control measures, focusing on high-quality raw materials, testing methods, and traceability. Detail the bread-making process, including mixing, fermentation, proofing, and baking, with an emphasis on accurate measurements, timing, and temperature control.
- **Guidebook Recommendation:** Emphasize the importance of implementing GMP in the bakery, including hygiene and sanitation practices, allergen control, and staff training. Include a section on compliance with regulatory requirements and industry standards.
- **Educator Development:** Provide training sessions on quality assurance measures, ingredient analysis, and the importance of maintaining consistent product quality. Organize workshops where educators can practice the bread-making process and quality testing techniques.
- **Educator Development:** Offer courses on GMP, food safety, and sanitation practices. Ensure educators are aware of the regulatory requirements and industry standards.

2. Nutritional Considerations in Bread Making:

- **Guidebook Recommendation:** Highlight the role of bread in a balanced diet and the impact of consumption on overall health. Provide guidance on nutritional analysis, labeling, ingredient selection for enhanced nutrition, addressing dietary needs, and food safety practices.
- **Guidebook Recommendation:** Discuss strategies for educating consumers about the nutritional aspects of bread products and the importance of accurate, evidence-based information.
- **Educator Development:** Arrange seminars or courses on nutrition science, focusing on how bread contributes to a balanced diet and the importance of ingredient selection.
- **Educator Development:** Train educators on effective communication strategies to convey the nutritional value and quality aspects of bread products to consumers.

Learning Outcomes: Learn about quality control measures, testing methods, and maintaining high standards in baking.

Teaching Methodologies: Activities focus on understanding the importance of quality assurance and control in bread production, with discussions on relevant standards and guidelines.

MODULE 3: Avoiding/reducing food waste and foodprint in bakeries**1. Understanding bread waste: environmental, economic, and social Impacts:**

- **Guidebook Recommendation:** Include a comprehensive overview of the environmental, economic, and social implications of food waste in the bakery industry. Detail the concept of a 'foodprint' and discuss the broader impacts of bakery waste on resources, climate change, and biodiversity.
- **Educator Development:** Train educators on the global and local dimensions of food waste, emphasizing its environmental and economic repercussions. Encourage them to integrate real-world case studies into the curriculum to illustrate the impacts and solutions to food waste.

2. Bread waste management:

- **Guidebook Recommendation:** Provide strategies for accurate production forecasting to minimize overproduction and detailed guides on implementing effective inventory management practices. Highlight the importance of technology for tracking and the 'First-In-First-Out' method.
- **Guidebook Recommendation:** Elaborate on various waste reduction techniques such as accurate demand forecasting, adjusting production quantities, and repurposing bakery waste into new products. Include creative examples like turning bread into crumbs, croutons, or other recipes.
- **Educator Development:** Develop workshops or training modules on resource management and planning. Educators should learn to utilize and teach various tools and methods for efficient production planning and inventory management.
- **Educator Development:** Encourage educators to facilitate hands-on activities that allow students to practice repurposing waste. They should also be knowledgeable about local regulations and initiatives concerning food donations and waste management.

MODULE 3: Avoiding/reducing food waste and foodprint in bakeries

3. Minimising Production Waste:

- **Guidebook Recommendation:** Discuss innovative practices such as the Tangzhong method to enhance bread's shelf life and reduce waste. Explore closed-loop recycling systems and other case studies showcasing successful waste reduction initiatives.
- **Educator Development:** Provide access to continuous learning opportunities about sustainable practices and innovations in the bakery sector. Encourage educators to stay updated with the latest trends and technologies for reducing food waste and improving sustainability.

ADDITIONALLY:

4. Community Engagement and Social Responsibility:

- **Guidebook Recommendation:** Highlight the importance of community engagement, such as donating surplus bread to food banks or charities. Include best practices from initiatives like Maisto Bankas or Food Sharing Poland, which focus on reducing food waste and supporting those in need.
- **Educator Development:** Train educators on building partnerships with local organizations and integrating community service into their teaching. Encourage them to instill a sense of social responsibility in their students by actively participating in community-based food waste reduction efforts.

5. Customer Education and Promotion:

- **Guidebook Recommendation:** Guide on educating customers about the importance of food waste reduction and sustainable practices. Suggest strategies for promoting the sale of day-old bread or bread made from repurposed ingredients.
- **Educator Development:** Equip educators with the skills to effectively communicate the value of sustainability to students and the wider community. Encourage them to engage in public awareness campaigns and activities that highlight the role consumers play in reducing food waste.

Curriculum Overview

Module 3

MODULE 3: Avoiding/reducing food waste and footprint in bakeries

6. Continuous Improvement and Professional Growth:

- **Guidebook Recommendation:** Advocate for a culture of continuous improvement, encouraging regular evaluations and optimizations of bakery processes. Highlight the importance of staying informed about industry advancements and sustainability practices.
- **Educator Development:** Foster an environment of lifelong learning and professional development. Encourage educators to participate in industry conferences, workshops, and training programs focusing on sustainability and innovation in baking.

Learning Outcomes: Develop strategies for reducing waste and understand sustainable practices in the industry.

Teaching Methodologies: Activities include learning about waste minimization strategies and how to apply them in bakeries, along with understanding the broader environmental, social, and governance (ESG) implications.



MODULE 4: Spreading the word to the customers

1. The business and the customers.

Customer Segmentation and Targeting:

- **Guidebook Recommendation:** Include a section on identifying and understanding the different types of customers a bakery might encounter, such as loyal, impulse, discount, wandering, and new customers. Discuss the importance of customer segmentation to tailor marketing and operational strategies effectively.
- **Educator Development:** Train educators on the principles of customer segmentation and targeting. Encourage them to develop and deliver content that helps future bakers and business owners understand their customer base and tailor their services accordingly.

2. Branding and Digital Marketing.

Branding and Positioning:

- **Guidebook Recommendation:** Emphasize the importance of a strong brand identity, positioning, and perception. Guide on how to develop a brand that resonates with the target audience and stands out in the competitive market.
- **Educator Development:** Educators should be equipped with the knowledge to teach the elements of branding, including brand mission, vision, values, and differentiation strategies. They should also understand how to guide students in creating and maintaining a consistent brand message.

Effective Communication and Customer Relations:

- **Guidebook Recommendation:** Offer strategies for effective communication and building strong relationships with different types of customers, including dealing with unsatisfied customers and fostering loyalty.
- **Educator Development:** Provide training on communication skills and customer service excellence. Educators should be able to teach students how to interact with various customer types effectively and how to turn a negative customer experience into a positive one.

Curriculum Overview

Module 4

MODULE 4: Spreading the word to the customers

2. Branding and Digital Marketing.

Digital Marketing and Online Presence:

- **Guidebook Recommendation:** Discuss the importance and benefits of digital marketing, including social media management, content creation, paid advertisements, and the use of delivery platforms. Highlight the need for a strong online presence, especially in times of crisis like the COVID-19 pandemic.
- **Educator Development:** Arrange for workshops or courses on digital marketing strategies and tools. Ensure educators are proficient in various digital platforms and can guide students on effectively promoting their bakery business online.

ADDITIONALLY:

1. Flexibility and Adaptation:

- **Guidebook Recommendation:** Encourage businesses to be flexible and adaptable to changes in customer preferences and market trends. Suggest ways businesses can stay ahead by continuously learning and evolving.
- **Educator Development:** Foster a mindset of continuous improvement and adaptation among educators. Encourage them to stay updated with the latest trends and technologies in the bakery and business world and to pass this mindset onto their students.

Learning Outcomes: Understand how to market bakery products effectively and grasp consumer psychology to drive sales and promote sustainability.

Teaching Methodologies: Activities involve analyzing successful marketing campaigns and creating marketing strategies for sustainable products.



Activity



WATCH THE VIDEO: Baking and community building
https://www.youtube.com/watch?v=DE4ry-_ALS0

Please find more examples of the importance of the community in sustainability strategy implementation in the bread baking business.

MODULE 5: Sustainable and Nutritious Bread-Baking Practices

1. Environmental Impact and Waste Minimization:

- **Guidebook Recommendation:** Include a section discussing the environmental impacts of industrial-scale bread production and the benefits of artisanal baking methods that prioritize waste minimization and recycling. Highlight strategies such as reusing dough scraps, carefully planning production quantities, and using eco-friendly packaging materials.
- **Educator Development:** Train educators on sustainable baking practices and how to convey these to students effectively.
- Encourage them to incorporate lessons on environmental impacts and waste reduction strategies into their curriculum.

2. Avoiding Artificial Extras and Promoting Natural Ingredients:

- **Guidebook Recommendation:** Emphasize the importance of avoiding artificial ingredients and choosing natural ones like whole grain flour, water, yeast, and salt. Highlight the benefits of using organic ingredients free from artificial chemicals and pesticides.
- **Educator Development:** Educate the educators about the health and environmental benefits of using natural and organic ingredients. Provide them with resources to teach students how to identify and source such ingredients.

3. Use of Local and Organic Ingredients:

- **Guidebook Recommendation:** Encourage the use of local and organic ingredients to reduce the carbon footprint and support local farming communities. Discuss the importance of traditional dough-making methods like long fermentations, which improve bread's taste and texture without chemical additives.
- **Educator Development:** Train educators on the benefits of sourcing ingredients locally and organically. Encourage them to build partnerships with local farmers and suppliers and to teach these practices to students.

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MODULE 5: Sustainable and Nutritious Bread-Baking Practices

4. Promotion of Local Tradition and Culture:

- **Guidebook Recommendation:** Advocate for promoting local traditions and culture through baking. Include suggestions for using local ingredients, holding baking workshops, themed dinners, collaborating with local artisans, and organizing cultural events.
- **Educator Development:** Provide educators with guidelines on how to incorporate local cultural aspects into their teaching. Encourage them to organize field trips, guest lectures, and collaborations with local artisans to enrich students' learning experience.

5. Promoting a Healthy Lifestyle:

- **Guidebook Recommendation:** Stress the importance of traditional baking techniques and ingredients that contribute to a healthier lifestyle. Encourage the use of whole grain flours, natural sweeteners, fruits and vegetables, healthier fats, and mindful eating practices.
- **Educator Development:** Offer training on nutrition and healthy baking alternatives. Encourage educators to demonstrate healthy baking techniques and to discuss the nutritional benefits of different ingredients with their students.

Learning Outcomes: Gain knowledge of nutritious baking alternatives and the role of artisan bakers in promoting sustainable food systems.

Teaching Methodologies: Activities include exploring sustainable and nutritious bakery options, and understanding their health benefits and market demand.

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MODULE 6: Entrepreneurial knowledge-tools and implementation of sustainability and zero waste strategies

1. Entrepreneurial Knowledge-Tools

- **Guidebook Recommendation:** Highlight the importance of entrepreneurship in transforming the baking sector. Include best practices for identifying market opportunities, innovating new products, and improving service delivery. Discuss the role of technology and personalization in creating unique customer experiences.
- **Educator Development:** Provide resources and training on entrepreneurial skills, market research, business planning, and financial management. Encourage educators to foster a mindset of innovation and creativity among students, preparing them to adapt and thrive in a competitive industry.

2. ESG principles and their relevance to bakeries:

- **Guidebook Recommendation:** Focus on the integration of Environmental, Social, and Governance (ESG) principles into bakery operations. Provide guidelines on sustainable sourcing, waste management, energy efficiency, and ethical business practices. Share success stories of bakeries that have implemented ESG principles effectively.
- **Educator Development:** Train educators on ESG principles and their relevance to the baking industry. Provide tools and strategies for incorporating these principles into the curriculum and engaging students in sustainability initiatives.

3. Bread waste management: Impact Measurement and SDG Action Manager

- **Guidebook Recommendation:** Advocate for zero waste strategies such as precise measurement and planning, creative use of scraps, and efficient production processes. Include methods for measuring the socio-economic and environmental impacts of bread waste and strategies for mitigation.
- **Educator Development:** Educators should learn about the tools and techniques for waste reduction and management, such as composting, recycling, and donations. Train them to use tools like the SDG Action Manager and Life Cycle Assessment (LCA) to track and improve sustainability performance.

Curriculum Overview

Module 6

MODULE 6: Entrepreneurial knowledge-tools and implementation of sustainability and zero waste strategies

4. Entrepreneurship and Sustainability

- **Guidebook Recommendation:** Emphasize the importance of eco-friendly packaging solutions and energy-efficient baking practices. Discuss strategies for educating consumers about sustainability and encouraging them to participate in zero waste initiatives.
- **Educator Development:** Educators should be informed about eco-friendly practices and trained to convey this knowledge to students effectively. Encourage them to engage students in activities that promote sustainability, such as designing eco-friendly packaging or participating in community clean-up events.

Learning Outcomes: Understand entrepreneurship in the baking industry, the importance of ESG principles, and their integration into business operations.

Teaching Methodologies: Case studies of successful bakery businesses are used to illustrate the principles of entrepreneurship and ESG. Activities might include discussions on how to apply ESG principles in baking operations.



Activity



WATCH THE VIDEOS:

Unleashing Innovation in the Baking Industry | Episode 75 | BAKED in Science / <https://www.youtube.com/watch?v=leEALJbjj-o>

10 Ways in Which AI can Benefit Bakers
<https://www.youtube.com/watch?v=LDwUsbJEPOw>

Let students prepare an overview of recent technological advancements in bread production, such as energy-efficient ovens or the use of AI in baking processes. Watch videos or find out more on the topic. Discuss the impact of technological advancements on the bread-baking industry.

Curriculum Overview

Module 7

MODULE 7: Regulations and Guidelines for a better collaboration with local farmers to implement a Farm-to Fork strategy

1. Farm-to-Fork Strategy Integration:

- **Guidebook Recommendation:** Emphasize the importance of the Farm-to-Fork strategy to promote sustainable food systems, reduce food waste, and encourage healthier and more environmentally friendly food choices. Include sections on the strategy's focus areas: production practices, consumption, and waste, along with guidelines for implementing it effectively.
- **Educator Development:** Train educators on the principles and applications of the Farm-to-Fork strategy in the baking industry. Encourage them to integrate this holistic concept into their teaching, focusing on transparency, sustainability, and quality throughout the food system.

2. Sustainability and Food Systems:

- **Guidebook Recommendation:** Provide a comprehensive guide on local and national food safety standards, Good Agricultural Practices (GAP), and organic farming regulations. Emphasize the importance of regenerative agriculture and its potential to reduce climate change impacts.
- **Educator Development:** Equip educators with knowledge about various regulations and guidelines crucial for sustainable farming and food production. Offer training programs that enhance their understanding and ability to teach these concepts to students.

ADDITIONALLY:

3. Collaboration and Community Engagement:

- **Guidebook Recommendation:** Outline strategies for successful collaboration with local farmers, including establishing clear communication channels, developing long-term partnerships, and promoting knowledge sharing. Highlight the importance of direct trade and fair-trade relationships to support sustainable agricultural practices.
- **Educator Development:** Encourage educators to foster relationships with local agricultural communities and incorporate real-world examples into their curriculum. Provide resources and training on building partnerships and engaging in community initiatives that support sustainability.

Curriculum Overview

Module 7

MODULE 7: Regulations and Guidelines for a better collaboration with local farmers to implement a Farm-to Fork strategy

4. Economic, Environmental, and Social Sustainability:

- **Guidebook Recommendation:** Discuss the three pillars of sustainability: environmental, economic, and social. Include information on sustainable agricultural practices like conservation tillage, crop rotation, integrated pest management, and soil health preservation.
- **Educator Development:** Prepare educators to understand and convey the multi-dimensional aspects of sustainability. Teach them to integrate the concepts of food security, sustainable food systems, and
- the transition to a sustainable food system into their teaching.

5. Promoting Sustainable Choices and Practices:

- **Guidebook Recommendation:** Advocate for sustainable ingredient sourcing, waste reduction, energy efficiency, and engaging customers in sustainable choices. Provide guidelines on implementing eco-friendly packaging, renewable energy sources, and promoting plant-based options.
- **Educator Development:** Encourage educators to lead by example and teach sustainable practices in baking. Provide them with strategies to communicate the benefits of sustainability to students and guide them in making informed, ethical, and environmentally friendly decisions.

Learning Outcomes: Learn about the Farm-to-Fork Strategy and its application in promoting sustainable food systems in the baking industry.

Teaching Methodologies: The module includes understanding the Farm-to-Fork concept, its benefits, and regulations and guidelines related to it. Activities might involve exploring case studies and analyzing the success of bakeries following these principles.

Curriculum Overview

General Teaching Methodologies Across Modules and Recommendations for VET educators and trainers:

- **Organise lectures and discussions:** To provide foundational knowledge and stimulate thinking.
- **Analyse case studies:** Real-world examples are used to illustrate concepts and inspire innovative thinking.
- **Group Projects:** Encourage collaboration and problem-solving among participants.
- **Interactive Activities:** Engage participants in applying the concepts learned in practical settings. Incorporate multimedia content like videos, infographics, and interactive quizzes.

Adapting this course in VET institutions requires a multifaceted approach, focusing on sustainability, environmental impact, traditional techniques, and the promotion of health and local culture. By implementing these recommendations, educators can develop comprehensive programs that not only teach the art of baking but also instill a deep respect for sustainable and nutritious practices.



Activity



A Quiz

Have some fun answering quiz questions with the students!

1. History of Bread-Making:

- Which civilization is believed to have first started baking bread?
- What significant development in bread-making occurred during the Industrial Revolution?

2. Types of Bread and Ingredients:

- What is the main difference between whole grain and white bread in terms of ingredient?
- Name an ingredient commonly used in bread that contributes to its nutritional value.

3. Nutritional Value of Bread:

- Which vitamin is commonly found in enriched bread?
- How does fiber in bread benefit health?

4. Sustainable Practices in Bread Production:

- Name one sustainable practice that can be used in bread production.
- What is a significant environmental impact of conventional bread production?

5. Bread in Different Cultures:

- Name a unique type of bread found in Mediterranean cuisine.
- How does bread play a role in cultural rituals or traditions in certain societies?

6. Modern Innovations in Bread-Making:

- What is one technological advancement that has changed bread production?
- How has the use of alternative ingredients (like gluten-free options) impacted bread-making?

Please check the answers on page 82.

3 TESTIMONIALS FROM TRAINING PARTICIPANTS AND LESSONS LEARNED

ReBreeding's course is designed to be a blend of theoretical understanding and practical application, ensuring that participants not only gain comprehensive knowledge but also learn how to implement sustainability practices effectively in their baking endeavours.

The bread baking training course offered through the VET program provides a comprehensive understanding of sustainable and traditional baking practices. The course emphasizes the importance of producing high-quality, nutritious baked goods while promoting environmental responsibility and cultural traditions.

In this chapter, we embark on a detailed journey through the experiences and insights of VET educators and learners engaged in a specialized course focused on nutritional bread baking and sustainable practices. Through their collective stories, we explore the critical importance of understanding ingredients, the impact of traditional baking techniques, and the significant role that sustainable practices play in the modern world of bread baking. This narrative aims to illuminate the essential lessons learned, the challenges faced, and the innovative strategies recommended for fostering a more health-conscious and environmentally friendly approach to bread baking.



Experiences and feedback from VET learners and educators

Experience overview: Learners' Perspective

For the learners, the course was nothing short of a revelation. The in-depth exploration of traditional baking techniques, avoidance of artificial additives, and emphasis on using local and organic ingredients opened their eyes to the vast possibilities within the realm of nutritional bread baking. Learners found themselves questioning and reevaluating their previous baking practices, leading to a more conscious and informed approach to their craft.

The training's focus on the health implications of artificial additives and the nutritional benefits of whole grains and natural ingredients led to a profound shift in the learners' priorities. The emphasis on mindful eating and portion control further influenced their approach to consumption, instilling a deeper appreciation for the food they create and consume.

The VET bread baking course was a deep dive into the art and science of baking with a strong focus on sustainability, tradition, and health. Participants learned to appreciate the intricate balance between quality baking and environmental stewardship. The course successfully instilled a sense of responsibility towards sustainable practices, health, and cultural heritage, making it not just a baking course but a journey towards becoming conscientious artisan bakers. These detailed experiences and feedback reflect the profound impact of the training on the learners, highlighting the importance of sustainable practices, health and nutrition, cultural preservation, and environmental awareness in the art of bread baking.

Experiences and feedback from VET learners and educators

Key Lessons and Experiences: Learners' Perspective

1. Sustainable Baking Practices:

- Participants were introduced to the importance of using locally sourced ingredients, which not only support local farmers but also reduce the environmental impact due to lower transportation needs.
- The training emphasized the reduction of waste through efficient production planning and the use of eco-friendly packaging materials.

2. Traditional Baking Techniques:

- Learners were taught traditional methods like sourdough preparation, hand mixing, and wood-fired oven baking. These techniques contribute to the unique flavor and texture of artisan bread.
- The course highlighted the environmental benefits of artisanal baking over industrial methods, particularly in terms of reduced energy, water consumption, and minimal use of chemicals.

3. Health and Nutrition:

- A significant focus was on avoiding artificial additives and using organic, chemical-free ingredients, leading to healthier, more natural bread products.
- The use of whole grains and ancient grains like spelt, kamut, and quinoa was encouraged, as these grains are rich in nutrients and offer a variety of flavors and textures.

4. Cultural and Local Tradition Promotion:

- The course underlined the role of bread baking in preserving local culinary heritage. This was achieved through the organization of baking workshops, and cultural events (Bread Festivals) focused on traditional bread-making.
- Collaborations with local artisans, restaurants, and stores were encouraged to promote and sell locally baked bread, enhancing community ties and supporting sustainable agriculture.

5. Promoting a Healthy Lifestyle:

- The training advocated for the use of whole grain flours, natural sweeteners, and the inclusion of fruits and vegetables in recipes.
- Lessons on mindful eating, portion control, and balancing baked goods with a healthy diet were emphasized, aligning with a holistic approach to health and wellness.

Experiences and feedback from VET learners and educators

Experience Overview: Educators' Perspective

Educators embarked on this journey with the aim of enriching their teaching methodologies and curricula, and they weren't disappointed. The training brought to light the pivotal role artisan bakers play in creating sustainable food systems. By learning about sourcing local ingredients, minimizing waste, and incorporating healthier alternatives into bread-making, educators gained a comprehensive understanding of sustainable practices. These newfound insights have been instrumental in reshaping their teaching strategies, with a stronger emphasis on environmental stewardship and nutrition.

The educators noted that this could be a marked shift in students' enthusiasm and engagement when lessons integrated real-world applications of sustainability. Field trips to local bakeries and farms should become a staple, providing tangible experiences that reinforced the importance of local sourcing and waste reduction. Moreover, educators felt a renewed sense of responsibility to instill these values in their students, ensuring the next generation of bakers carries forward the mantle of sustainability and health.

This VET course for educators was a comprehensive journey into the art of bread baking. It equipped educators with the knowledge and skills to teach future bakers about the importance of environmental stewardship, the use of healthy ingredients, and the preservation of culinary traditions. The course highlighted the educators' responsibility in promoting sustainable and health-conscious baking practices, ensuring that students not only become skilled bakers but also conscientious contributors to the food industry.

The educators' reflections on the course underscore the need for practical experiences, curriculum revisions, and partnerships to fully integrate these values into their teaching methodologies.

Experiences and feedback from VET learners and educators

Key Lessons and Experiences: Educators' Perspective

1. Sustainable Food and Nutritious Baking:

- Educators emphasized the importance of incorporating sustainable food practices into the curriculum. They highlighted the significance of teaching students about sourcing local ingredients, forming partnerships with local artisans, and implementing waste reduction strategies. The idea of arranging field trips to local artisan bakeries was suggested to provide students with practical, real-world examples of sustainable practices.

2. Traditional Techniques vs. Sustainable Production:

- The training shed light on the contrast between traditional baking techniques and sustainable production methods. Educators learned the environmental impacts of various baking practices and the importance of teaching waste minimization and recycling. They suggested partnering with local bakeries for waste reduction initiatives and using eco-friendly materials in baking labs for hands-on experience.

3. Avoiding Artificial Additives:

- A key takeaway was the significance of avoiding artificial additives in baking. Educators were made aware of the adverse effects of artificial ingredients and the benefits of using organic and natural ones. Recommendations included revising the curriculum to focus more on natural ingredients like whole grain flour, yeast, and salt, and educating students on the benefits of organic ingredients.

4. Using Local and Organic Ingredients:

- The course highlighted the importance of using local and organic ingredients. Educators learned about the broader ecosystem supported by artisan baking, including local mills and biodiversity promotion. The recommendation was to establish partnerships with local farmers and mills for fresh ingredients and to organize workshops on traditional fermentation techniques to enhance taste and texture.

5. Promoting a Healthy Lifestyle:

- Promoting a healthy lifestyle through traditional baking techniques was a major focus. Educators were encouraged to incorporate whole grain flours, natural sweeteners, and mindful eating into the training programs. They learned innovative ways to make baking healthier, such as adding fruits and vegetables and exploring gluten-free options. Suggestions included integrating these techniques into practical sessions and organizing seminars on healthy baking choices.

Experiences and feedback from VET learners and educators

In conclusion, both educators and learners recognized the need for continued advocacy for sustainable and health-conscious baking practices. They identified several areas for future improvement and focus. One such area is the ongoing collaboration with local producers and suppliers, ensuring a steady supply of fresh, organic ingredients and fostering a supportive community around sustainable baking.

Additionally, the course highlighted the importance of ongoing education and adaptation. As new sustainable practices and health information emerge, continuous learning and flexibility in integrating these findings into their practices were deemed crucial. Educators expressed a desire for advanced training modules, while learners showed interest in participating in workshops and seminars to further their knowledge and skills.

Impact assessment: recommendations for VET providers

This chapter aims to highlight the main recommendations for VET providers how to evaluate the impact of the training on VET learners and educators in the field of nutritional and sustainable bread baking. By reflecting on various aspects of the training, we seek to understand how it has influenced baking practices, perspectives on sustainability and nutrition, and overall professional development.

The overall impact of the training, emphasizing the importance of continuous learning and adaptation in the evolving field of nutritional and sustainable bread baking. Encourage ongoing commitment to sustainability and health in the baking profession.



Impact assessment: recommendations for VET providers

Recommendations for VET providers

1. Changes in Baking Practices

- **Adoption of Sustainable Methods:** Discuss how learners have integrated sustainable practices learned in the training, such as using local and organic ingredients, and minimizing waste.
- **Incorporation of Nutritional Aspects:** Evaluate how the training influenced the inclusion of nutritional elements in bread-making, such as using whole grains and natural sweeteners.

2. Shifts in Perspectives

- **Awareness of Environmental Impact:** Assess the increase in awareness about the environmental implications of bread production and how this has influenced choices and practices.
- **Nutritional Awareness:** Reflect on the change in understanding the nutritional value of bread and how this impacts baking choices.

3. Professional and Personal Development

- **Skills Enhancement:** Review the improvement in baking skills and techniques, particularly in traditional and artisan methods.
- **Entrepreneurial Growth:** Analyze how the training has enhanced entrepreneurial skills among learners, such as innovation, sustainability integration, and market adaptation.

4. Challenges and Overcoming Strategies

- **Identifying Challenges:** Document the challenges faced in applying the training, such as sourcing sustainable ingredients or adapting to new techniques.
- **Strategies to Overcome:** Share strategies and solutions developed by learners and educators to overcome these challenges.

5. Case Studies and Success Stories

- **Real-Life Examples:** Present case studies or success stories of learners or educators who have successfully implemented sustainable and nutritional practices in their baking.
- **Lessons Learned:** Highlight the key lessons drawn from these case studies.

4

TOWARDS A NEW (GREEN) VET EDUCATION PRACTICE

In the face of mounting environmental challenges and the urgent need for sustainable development, the role of VET institutions is more critical than ever. This chapter presents a transformative framework for VET education, focusing on the bread-baking industry, a sector with significant environmental impact and potential for sustainable practice. We delve into policy recommendations tailored for VET institutions to foster sustainable methods, particularly in bread production. The chapter underscores the importance of green initiatives, drawing on EU policies related to education, sustainability, and food production, such as Zero Waste and Farm-to-Fork strategies. By aligning vocational training with these policies, VET institutions can equip future bread bakers with the skills and knowledge necessary to contribute to a sustainable future, ensuring that the art of bread-making continues to thrive in harmony with the planet.



Green Initiatives: the importance of sustainable methods in bread production

The benefits of implementing sustainable methods in bread production:

1. Environmental Impact

- **Reduced Carbon Footprint:** Sustainable baking practices, such as using energy-efficient ovens and local ingredients, substantially reduce the carbon footprint associated with transportation and production.
- **Waste Management:** Implementing zero-waste practices, like recycling or reusing bread waste, can significantly decrease the environmental impact. This includes using unsold bread for other products or donating to community programs.

2. Health and Nutritional Benefits

- **Use of Organic Ingredients:** Sustainable bread production often involves using organic ingredients, which are free from harmful pesticides and chemicals, offering healthier choices to consumers.
- **Nutritional Value:** Bread made with whole, unprocessed ingredients retains more natural nutrients, providing greater health benefits such as higher fiber content.

3. Economic Sustainability

- **Supporting Local Economies:** By sourcing ingredients locally, bakeries can boost the local economy and reduce transportation costs.
- **Cost-Effectiveness:** In the long term, sustainable practices can be cost-effective due to reduced waste, efficient use of resources, and potentially lower energy costs.

Green initiatives: the importance of sustainable methods in bread production

The benefits of implementing sustainable methods in bread production:

4. Societal Impact

- **Educational Value:** Sustainable baking practices in VET education raise awareness about environmental issues and encourage a societal shift towards more sustainable consumption habits.
- **Community Health:** Offering healthier, more nutritious bread contributes to the overall health of the community, potentially reducing healthcare costs associated with poor diets.

5. Aligning with Global Sustainability Goals

- **EU Policies and Global Goals:** Sustainable bread production aligns with EU policies like the Farm to Fork Strategy and contributes to global sustainability goals, like reducing greenhouse gas emissions and promoting responsible consumption and production.

6. Innovation and Market Trends

- **Consumer Demand:** There is a growing consumer demand for sustainable and healthy food products, positioning sustainably produced bread as a preferred choice in the market.
- **Innovative Practices:** Sustainable baking encourages innovation, such as developing new baking techniques and experimenting with alternative, eco-friendly ingredients.

The transition to sustainable methods in bread production is vital for the environment, consumer health, and the economy. It aligns with global sustainability efforts and responds to a growing consumer trend towards eco-friendly and healthy products. By adopting these methods, the bread-baking industry can play a pivotal role in building a more sustainable future.

EU policies on education, sustainability and food production

The current situation in the EU regarding education, sustainability, and food production reflects a comprehensive approach towards achieving a more sustainable and resilient food system. This approach is anchored in several key EU policies and strategies, which address various aspects of sustainability in food production and education.

These policies and strategies demonstrate the EU's commitment to transforming its food systems to be more sustainable, healthy, and resilient. However, challenges remain in fully implementing these ambitious targets, requiring coordinated efforts across various sectors and levels of governance. The success of these initiatives will depend on the effective engagement of all stakeholders, including governments, industry, academia, and civil society.

EU policies on education, sustainability and food production

EU Food Sustainability Strategy: Central to the EU's efforts is the Farm to

Fork Strategy, part of the European Green Deal. This strategy aims to create a sustainable EU food system that ensures food security, mitigates climate change impacts, and supports healthy societies. It sets ambitious targets like a 50% reduction in the use of pesticides, a 20% reduction in the use of fertilizers, and a 50% reduction in sales of antimicrobials for farmed animals and aquaculture by 2030. Additionally, the strategy seeks to ensure that 25% of agricultural land is used for organic farming.

Corporate Sustainability and Food Safety: The EU has proposed the Corporate Sustainability Due Diligence Directive, focusing on sustainable and responsible corporate behavior in global value chains. This includes addressing human rights and environmental impacts. Moreover, legislation on materials in contact with food is being revised to enhance food safety and promote sustainable packaging solutions.

Animal Welfare and Pesticide Regulations: The EU is revising its animal welfare legislation to align with scientific evidence and public expectations. Additionally, the proposed Regulation on Sustainable Use of Pesticides aims to significantly reduce the use and risk of chemical pesticides by 2030, along with introducing environmentally friendly pest control methods.



EU policies on education, sustainability and food production

Common Agricultural Policy (CAP) and Fisheries: CAP plays a crucial role in transforming EU food systems, with a focus on sustainable agriculture, reducing food waste, and combating antimicrobial resistance. The Common Fisheries Policy is also being updated to ensure sustainable fish stock levels and enhanced traceability systems.

Soil and Carbon Farming: The EU's Soil Strategy for 2030 and the proposed Soil Health Law aim to tackle soil degradation and promote healthy, resilient soils. Carbon farming approaches are being promoted to reward farmers for preserving or increasing soil organic carbon.

Research and Innovation: The Horizon Europe program supports research and innovation in agriculture and food, including nature-based and agroecological approaches, alternative proteins, and digitalization. The Food 2030 framework under Horizon Europe is pivotal for transitioning towards sustainable, healthy, and inclusive food systems.

International Cooperation: The EU works with various global partners to address food system issues and challenges like climate change and biodiversity loss. This includes supporting country-level food systems assessments and mobilizing financial instruments to strengthen global food systems.

Legislative Framework for Sustainable Food Systems: A legislative proposal for a framework for sustainable food systems is expected, which will aim to raise sustainability standards gradually, including a comprehensive framework on food product labeling to inform consumers about the sustainability aspects of their food choices.

EU policies on education, sustainability and food production

Recommendations

Based on the current EU policies and strategies focused on sustainability and food production, here are some tailored policy **recommendations for a greener VET education practice:**

1. Curriculum Alignment with EU Green Policies: Update the VET curriculum to align with the EU's Farm to Fork Strategy and the European Green Deal. This would involve integrating modules on sustainable agriculture, food safety, and responsible consumption.

2. Focus on Sustainable Practices:

Emphasize training in sustainable food production practices, including organic farming, reduced use of pesticides and fertilizers, and sustainable fisheries, as outlined in the Common Agricultural Policy and the Common Fisheries Policy.

3. Corporate Sustainability Education:

Incorporate elements from the Corporate Sustainability Due Diligence Directive into business and management courses, focusing on responsible corporate behavior and sustainable global value chains.

4. Enhance Soil and Carbon Farming Knowledge: Include education on soil health and carbon farming, in line with the EU's Soil Strategy for 2030 and Sustainable Carbon Cycles initiatives, to teach students about soil preservation and sustainable farming practices.

5. Animal Welfare and Pesticide Regulations: Integrate the latest EU guidelines and legislation on animal welfare and pesticide use into agricultural and food technology courses. This includes the latest scientific evidence and societal expectations regarding animal care and environmentally friendly pest control methods.

EU policies on education, sustainability and food production

Based on the current EU policies and strategies focused on sustainability and food production, here are some tailored policy **recommendations for a greener VET education practice:**

6. Waste Reduction and Circular Economy:

Implement modules on waste reduction, particularly focusing on food waste, and circular economy principles, resonating with the EU's Circular Economy Action Plan..

7. Innovation and Research in Food Systems:

Encourage participation in EU-funded research and innovation programs like Horizon Europe, focusing on sustainable, healthy, and inclusive food systems. This can include project-based learning and collaboration with research institutions.

8. Promoting Sustainable Packaging and Food Safety:

Teach about innovative and sustainable packaging solutions and food safety in accordance with the EU's legislation on materials in contact with food.

9. Global Sustainability Perspective:

Provide a global perspective on food systems, emphasizing the EU's role in international cooperation for sustainable food systems and the challenges of global food insecurity.

10. Practical Experience in Sustainable Practices:

Facilitate internships and practical experiences in organizations and businesses that are aligned with the EU's sustainability goals, providing hands-on learning opportunities.

11. Teacher Training and Professional Development: Offer continuous professional development for educators in VET institutions to keep them abreast of the latest developments and best practices in sustainable food production and policy.

EU policies on education, sustainability and food production

Several EU policies and documents provide a framework and guidance for integrating sustainable practices in education and the bread-baking business. **Key references include:**

EU Education Policies:

Review documents such as the 'EU Green Education Initiative' and 'Education for Climate Coalition' which provide guidelines for embedding sustainability in education.

Sustainability and Food Production: Consult the 'EU Farm to Fork Strategy', part of the European Green Deal, which aims to make food systems fair, healthy, and environmentally friendly.

Zero Waste Guidelines: Refer to the EU's 'Circular Economy Action Plan', which encourages businesses to adopt models that promote reuse, repair, and recycling.

By integrating these recommendations, VET education in the EU can be at the forefront of preparing a workforce that is skilled, knowledgeable, and committed to sustainable practices in the food production sector. These policies would ensure that VET students are well-equipped to meet the challenges and opportunities of a green economy, in line with the EU's sustainability goals.

Policy Recommendations

The bread production industry stands to benefit significantly from the adoption of sustainable methods:

Sourcing Sustainable Ingredients: Encourage the use of organic, locally-sourced flour and other ingredients to reduce transportation emissions and support local agriculture.

Energy Efficiency: Adopt energy-efficient baking equipment and techniques to reduce the carbon footprint of bread production.

Zero Waste Practices: Implement strategies to minimize waste in bread production, such as using unsold bread as an ingredient for other products or donating it to community programs.

Farm-to-Fork Policies: Foster a closer connection between bakers and local farmers.

These practices not only contribute to the environment but also enhance the quality and health benefits of the bread produced.



Policy Recommendations

Focusing on the bread-baking industry, it's crucial to integrate sustainability into every aspect of the curriculum and training. This framework would address the significant environmental impact of the industry and harness its potential for sustainable practice. **Here's an outline of such a framework:**

1. Curriculum Development and Integration

- Sustainable Baking Techniques: Introduce courses on sustainable baking methods, including the use of organic and locally-sourced ingredients, energy-efficient baking equipment, and waste reduction techniques.
- Nutritional Science: Include modules on nutrition science to teach the health benefits of different types of bread, focusing on whole grains and natural ingredients.
- Environmental Studies: Incorporate environmental studies in the curriculum to understand the impact of bread production on the environment, including carbon footprint analysis and resource management.

2. Practical Skills and Hands-on Training

- Eco-friendly Baking Labs: Establish eco-friendly baking labs equipped with energy-efficient ovens and tools to provide practical experience in sustainable baking.
- Farm-to-Bakery Programs: Create partnerships with local farmers for a farm-to-bakery program, allowing students to experience the entire process from growing grains to baking bread.
- Waste Management Workshops: Conduct workshops on effective waste management, including composting and repurposing unsold or stale bread.

3. Industry Partnerships and Collaborations

- Green Business Collaborations: Partner with sustainable bakeries and green businesses for internships and apprenticeships, giving students real-world experience.
- Community Engagement Projects: Engage in community projects, such as supplying locally-produced bread to community centers or schools, to teach social responsibility.

4. Policy Studies and Compliance

- EU Policy Education: Educate students on relevant EU policies, like the Farm to Fork Strategy, and how they impact the bread-baking industry.
- Compliance and Certification: Offer courses on industry standards and certifications related to sustainable and organic baking.

Policy Recommendations

Recommendations for Bread Bakers

To contribute to a more sustainable future, bread bakers can:

Adopt Sustainable Practices:

- Incorporate green initiatives in sourcing, production, and waste management.

Educate and Engage:

- Inform customers about the benefits of sustainable bread and involve them in supporting local and eco-friendly products.

Continuous Learning:

- Stay informed about new sustainable techniques and policies to improve practices continually.

Community Involvement:

- Engage in community programs that promote sustainability, such as local farmer markets and educational workshops.

Adopting these recommendations, bread bakers don't just bake bread; they become key contributors to a more sustainable world. Their actions and choices ripple outwards, influencing the industry, the community, and, ultimately, the health of the planet.

Policy Recommendations

Focusing on the bread-baking industry, it's crucial to integrate sustainability into every aspect of the curriculum and training. This framework would address the significant environmental impact of the industry and harness its potential for sustainable practice. **Here's an outline of such a framework:**

5. Research and Innovation

- **Research Projects in Sustainable Baking:** Encourage students to undertake research projects focused on innovating sustainable baking methods or ingredients.
- **Seminars and Workshops:** Host seminars and workshops by experts in sustainable food production and environmental conservation.

6. Teacher Training and Development

- **Educator Workshops:** Conduct regular workshops for educators to stay updated with the latest in sustainable practices and teaching methods.
- **Exchange Programs:** Establish teacher exchange programs with institutions that excel in sustainable food production education.

7. Evaluation and Continuous Improvement

- **Sustainability Metrics:** Implement metrics to evaluate the environmental impact of baking practices taught in the institution.
- **Feedback Mechanisms:** Create feedback systems for continuous curriculum improvement, based on student, industry, and community input.

8. Policy Advocacy and Community Leadership

- **Sustainability Advocacy:** Encourage students and faculty to participate in policy advocacy for sustainable practices in the bread-baking industry.
- **Community Educational Programs:** Offer community courses or workshops on sustainable baking and nutrition.

This framework aims to produce graduates who are not only skilled in bread baking but also champions of sustainability and environmental responsibility in the industry. They would be equipped to lead the transformation towards more eco-friendly practices in the bread-baking sector, aligned with the EU's broader sustainability goals.

5 ADAPTATION AND MULTIPLICATION ROADMAP

This chapter provides a comprehensive plan for engaging stakeholders and implementing the training material in various contexts. By carefully considering local needs, fostering partnerships, and continuously evaluating and adjusting the approach, the valuable lessons in sustainable and nutritional bread-making can be effectively spread, leading to widespread positive impacts on health, the environment, and local economies.

This section outlines strategies for involving small and medium-sized enterprises (SMEs), government bodies, and educational institutions in this transformative process. Here, you will discover a roadmap for understanding and addressing the unique challenges and needs of these diverse stakeholders, aiming to create a collaborative and supportive ecosystem for the advancement of sustainable practices in the baking industry.



Stakeholder Engagement

Engaging Small and Medium-sized Enterprises (SMEs):

Needs Assessment: Conduct surveys and interviews to understand the specific needs and challenges faced by SMEs in the baking industry. Begin by understanding the unique challenges and needs of SMEs in the baking sector. This involves conducting detailed surveys and one-on-one interviews to gather insights into their current practices, market challenges, and perceptions of sustainable and nutritious baking. This step is crucial for tailoring the subsequent strategies and workshops to address specific pain points and opportunities.

Tailored Workshops: Develop workshops focusing on sustainable practices, nutrition, and traditional techniques relevant to SMEs. Include case studies and best practices from the training modules. Based on the needs assessment, develop and conduct workshops specifically designed for SMEs. These should cover various aspects of sustainable and nutritional baking drawn from the training material, adapted to the local context. The workshops should be interactive, allowing participants to share their experiences, ask questions, and directly apply what they learn through practical demonstrations.

Networking Events: Organize events where SMEs can network with suppliers of local and organic ingredients, as well as with successful artisan bakers. Organize networking events where SMEs can connect with local suppliers of organic and local ingredients, successful artisan bakers, and potential business partners. These events can foster collaborations, encourage the exchange of ideas, and facilitate the formation of supportive business ecosystems.

Incentive Programs: Work with local governments to create incentive programs for SMEs that adopt sustainable and healthy baking practices. Collaborate with local governments to establish incentive programs for SMEs that successfully implement sustainable and healthy baking practices. These might include tax breaks, subsidies, or public recognition. Such incentives can significantly motivate SMEs to adopt new practices.

Stakeholder Engagement

Involving Government Bodies:

Policy Advocacy: Present the benefits of sustainable and nutritional bread-making to policymakers. Advocate for regulations and subsidies that support artisanal baking practices. Engage in dialogue with policymakers to advocate for regulations and policies that support sustainable and healthy baking practices. This could involve presenting research on the environmental and health benefits of these practices, suggesting specific policy measures, and highlighting successful case studies.

Public-Private Partnerships: Encourage government bodies to partner with baking schools and artisan bakers to promote traditional and sustainable baking methods. Encourage and facilitate partnerships between government bodies and private entities like baking schools, artisan bakers, and ingredient suppliers. These partnerships can lead to collaborative projects, such as community baking programs, public awareness campaigns, or research initiatives.

Awareness Campaigns: Collaborate with government agencies to launch public awareness campaigns. These campaigns could educate consumers about the benefits of artisan, sustainable, and nutritious bread, thereby creating a more informed customer base and increasing market demand for such products.

Engaging Educators and Training Institutions:

Curriculum Integration: Work with educational institutions to integrate the adapted training material into their curriculum. This could involve both theoretical and practical components, ensuring that students receive comprehensive training in sustainable and nutritious baking practices.

Train-the-Trainer Programs: Develop programs to train educators and potential trainers in the latest sustainable and nutritional baking techniques. These individuals can then train others, creating a multiplier effect that spreads knowledge far beyond the initial training sessions.

Resource Sharing: Create a centralized online platform where educators and trainers can access and share training materials, videos, case studies, and other resources. This platform can serve as a dynamic repository of knowledge, continuously updated with the latest information and best practices.

It is very important to highlight the need for continuous dialogue, the development of incentive programs, and active collaboration between all parties involved. The successful implementation of these strategies is seen as pivotal in creating a sustainable and nutrition-focused baking industry that benefits all stakeholders, from producers to consumers.

Implementation Guide

Here is a step-by-step approach, starting with a contextual analysis of the local market, regulatory frameworks, and cultural considerations, followed by the adaptation of training materials, capacity building, and stakeholder collaboration.

Step 1: Contextual Analysis

- **Local Market Understanding:** Begin by thoroughly researching the local market. This involves understanding consumer preferences, prevalent baking practices, available ingredients, and typical consumption patterns. It's also essential to identify potential market opportunities for artisan and sustainable bread products.
- **Regulatory Framework:** Gain a clear understanding of the legal and regulatory environment related to baking, food safety, and business operations in the specific context. This knowledge is crucial for ensuring that the adapted training materials and suggested practices comply with local laws and regulations.
- **Cultural Considerations:** Recognize and respect cultural aspects related to bread consumption and baking practices. This involves understanding traditional types of bread, local tastes, and the cultural significance of bread in the community. Adapting the training material with these cultural considerations in mind ensures greater relevance and acceptance.

Step 2: Adaptation of Training Materials

- Customization: Modify the training modules to align with the findings from the contextual analysis. This might involve adjusting recipes to use locally available ingredients, incorporating local baking techniques, or focusing on issues particularly relevant to the local community.
- Translation and Localization: Translate the training materials into the local language(s) and adapt the content to reflect local contexts and cultures. This ensures that the materials are accessible and relatable to the target audience.
- Pilot Testing: Before a full rollout, conduct a pilot workshop with a small, diverse group of stakeholders. Collect feedback on the content, delivery, and relevance of the training. Use this feedback to make necessary adjustments and improvements to the materials and approach.

Step 3: Capacity Building and Training

- **Trainer Selection:** Identify and select individuals who can be trained as trainers. These might be experienced bakers, educators, or community leaders passionate about sustainable and nutritious baking. Ensure they have a good understanding of the local context and the ability to connect with the target audience.
- **Workshop Roll-out:** Organize a series of workshops for different stakeholder groups. Ensure that each workshop includes a mix of theoretical instruction, hands-on practice, and open discussion. The workshops should be interactive and tailored to the needs and skill levels of the participants.
- **Continuous Learning:** Establish a system for ongoing learning and improvement. This might include regular follow-up sessions, online forums, or WhatsApp groups where participants can share experiences, ask questions, and discuss challenges and successes. Such platforms can foster a community of practice and continuous learning.

Step 4: Stakeholder Collaboration and Networking

- **Partnership Development:** Actively work to develop partnerships between different stakeholders. This could involve connecting SMEs with local ingredient suppliers, creating links between training institutions and bakeries, or fostering collaborations between government bodies and industry associations.
- **Community Building:** Encourage the formation of a community or association of artisan bakers and other stakeholders. This community can serve as a platform for knowledge exchange, mutual support, and collective advocacy. It can also provide a united voice for the sector in discussions with policymakers and other external parties.
- **Event Organization:** Regularly organize events such as fairs, markets, and festivals where stakeholders can showcase their products, share experiences, and learn from each other. These events can also serve to raise public awareness and appreciation of artisan, sustainable, and nutritious bread.

Step 5: Monitoring, Evaluation, and Feedback

- **Performance Indicators:** Develop clear, measurable indicators to track the progress and impact of the training and adaptation efforts. These might include the number of SMEs adopting new practices, changes in consumer purchasing patterns, or improvements in environmental sustainability metrics.
- **Feedback Mechanisms:** Implement mechanisms for collecting feedback from all stakeholders, including training participants, trainers, SMEs, and consumers. This feedback is essential for understanding the effectiveness of the training, identifying areas for improvement, and adapting the approach as needed.
- **Impact Assessment:** Regularly conduct assessments to evaluate the broader impact of the program on the community, market, and environment. Use a combination of qualitative and quantitative methods to gain a comprehensive understanding of the effects. Share the results with all stakeholders and use the findings to inform future strategies and actions.

Step 6: Scaling and Multiplication

- **Replication Guide:** Based on successful implementations, develop a detailed guide that others can use to replicate the program in different regions or countries. The guide should cover all aspects of the process, from contextual analysis and material adaptation to training delivery and impact assessment.
- **Scaling Partnerships:** Identify and engage with international organizations, NGOs, and government bodies interested in scaling the program. These partners can provide valuable resources, expertise, and networks to support the expansion of the program to new areas.

There is a huge need for regular monitoring, evaluation, and feedback to ensure the effectiveness and relevance of the training. The dynamic process of learning and adaptation, allows the scaling and multiplication of successful practices across different regions and contexts.

Sustainability Planning: ensure the long-term sustainability of the program

This chapter highlights the long-term sustainability planning for the integration of sustainable and nutritional practices in vocational education for baking. The chapter discusses various aspects of this process, including curriculum development, staff training, facility upgrades, and industry collaboration, all aimed at embedding sustainable practices deeply within educational institutions.

1. Curriculum Development and Adaptation

Assessment of Current Curriculum: Review the existing curriculum to identify areas where sustainable and nutritional baking practices can be integrated. Look for opportunities to infuse these concepts into existing courses or to develop new specialized modules.

Development of Specialized Modules: Create detailed modules focusing on sustainable baking practices, nutritional information, traditional techniques, and local ingredient utilization. Ensure these modules are adaptable and can evolve with changing industry trends and local needs.

Integration with Practical Sessions: Incorporate practical baking sessions where students can apply their knowledge. This could include baking with alternative grains, experimenting with natural sweeteners, or implementing waste-reduction techniques in the kitchen.



Sustainability Planning: ensure the long-term sustainability of the program

2. Staff Training and Development

- **Taining of Trainers:** Organize intensive training sessions for educators and instructors. These sessions should cover the latest trends in sustainable and nutritional baking, effective teaching strategies, and ways to inspire and engage students.
- **Continuous Professional: Development:** Establish a continuous professional development program for educators. This could include subscriptions to relevant journals, attendance at industry conferences, and participation in online forums and networks.

3. Facility Upgrades and Resource Allocation

- **Upgrading Facilities:** Ensure that the training facilities reflect the practices being taught. This might involve installing energy-efficient ovens, setting up areas for composting, or creating gardens for growing herbs and vegetables.
- **Resource Library:** Develop a resource library with books, videos, and online materials on sustainable and nutritional baking. This library should be accessible to both students and staff and be regularly updated with the latest information.

4. Industry and Community Collaboration

- **Partnerships with Local Bakeries and Suppliers:** Forge partnerships with local bakeries, mills, and suppliers. These partnerships can provide students with access to internships, guest lectures, and field trips, offering real-world insights and experiences.
- **Community Engagement Projects:** Initiate community projects where students can practice their skills. This could involve running a pop-up bakery at a local market, providing baking classes for community members, or collaborating with local schools to teach children about healthy eating.

Sustainability Planning: ensure the long-term sustainability of the program

5. Student Engagement and Support

- **Student Clubs and Societies:** Encourage the formation of student clubs focused on sustainable and nutritional baking. These clubs can organize events, run campaigns, and participate in competitions, fostering a sense of community and shared learning.
- **Career Guidance and Support:** Provide students with guidance on careers in sustainable and nutritional baking. This should include information on potential career paths, job search support, and connections to potential employers.

6. Monitoring, Evaluation, and Continuous Improvement

- **Feedback Mechanisms:** Implement mechanisms to gather feedback from students, staff, and industry partners. This feedback is crucial for understanding the effectiveness of the program and identifying areas for improvement.
- **Regular Review and Updates:** Regularly review the curriculum and teaching practices to ensure they remain relevant and effective. Stay abreast of industry trends and advancements to continuously update and improve the program.
- **Impact Assessment:** Conduct periodic assessments to evaluate the impact of the program on students' knowledge, skills, and career prospects. Use these assessments to make data-driven decisions and to showcase the program's success to stakeholders.

It is important to underscore the importance of continuous improvement, regular impact assessments, and engaging with the broader community to ensure that the initiatives have a lasting and positive impact on the baking industry, as well as on the health and well-being of communities.

Conclusion

Implementing a sustainable and nutritional baking program in vocational education institutions requires a comprehensive and dynamic approach. By developing a relevant curriculum, training staff, upgrading facilities, collaborating with industry and community partners, and continuously monitoring and improving the program, institutions can effectively prepare students for successful careers in this evolving field. These efforts will not only benefit the students and the institution but also contribute to a more sustainable and health-conscious baking industry.



Making Sourdough with Eoin Cluskey from Bread 41.

<https://www.youtube.com/watch?v=wLt07YS-0hc&t=75s>

A Simple Sourdough

Ingredients List

600 grams strong flour

10 grams salt

150 grams starter

380 g/ml water

Check out www.bread41.ie for more details.

Instructions.

Mix the flour in a bowl and make a well in the centre. Add your water followed by sourdough starter. Bring the dough together with your hands or with a spatula and mix for 2-3 minutes and then mix in the salt. Turn the dough out on to a clean surface and knead with one hand for approximately 10 minutes or until the windowpane effect has been achieved. The dough should be soft and elastic.

Place the dough in an oiled bowl and leave to prove in fridge overnight or until it has doubled in size.

Turn the proved dough out and knock it back and then shape it into a loaf. Cover and allow to prove again for about 3hrs. Your loaf should come to just below the rim of your loaf tin.

Preheat the oven to 220° C/425° F/gas mark 7. Place a roasting tray into the base of the oven. When ready to bake, place the loaf or loaves into the oven and pour in water from a boiling kettle into the hot roasting tray which should release a blast of steam. Bake the loaves for about 35-40 minutes.

Remove from the tin/tins and cook for a further 8 minutes just to firm up the sides. Resist the temptation to get stuck in until the loaf cools. Enjoy



Quiz Answers (see pg.)



1. History of Bread-Making:

- The Egyptians are believed to have first started baking bread.
- The Industrial Revolution introduced mass production techniques in bread-making.

2. Types of Bread and Ingredients:

- The main difference between whole grain and white bread is the type of flour used; whole grain uses the entire grain, while white uses only the endosperm.
- Yeast is a common ingredient that contributes to the nutritional value of bread.

3. Nutritional Value of Bread:

- Enriched bread often contains added B vitamins, such as folic acid.
- Dietary fiber in bread helps with digestion and can aid in maintaining a healthy weight.

4. Sustainable Practices in Bread Production:

- One sustainable practice in bread production is the use of organic and locally sourced ingredients.
- A significant environmental impact of conventional bread production is the carbon footprint associated with transportation and processing.

5. Bread in Different Cultures:

- A unique type of bread in Mediterranean cuisine is pita.
- In certain societies, bread symbolizes hospitality or is a central part of religious rituals, such as challah for Jewish Sabbath.

6. Modern Innovations in Bread-Making:

- One technological advancement in bread production is the use of automated baking machines.
- The use of alternative ingredients like gluten-free flours has allowed people with dietary restrictions to enjoy bread.

REFERENCES

1. Artisan Bakery Market Trends, Size, Share and Global Analysis, 2032 | MRFR / <https://bit.ly/4bjtK3F>
2. How bakery industry is changing to comply with new consumer trends on sustainability and eco-consciousness / <https://bit.ly/3HBU7nR>
3. The most sustainable bread in the world / <https://bit.ly/3vV8Vvo>
4. The EU Pathway Towards Sustainable Food Systems Transformation | Knowledge for policy / <https://bit.ly/3HBFVLx>
5. Sustainable Artisanal Producers: Making a Big Impact / <https://bit.ly/3vWa6e5>
6. Food-Based Dietary Guidelines recommendations for starchy foods / <https://bit.ly/3Sk6ABt>
7. Nutrition and Health Claims / <https://bit.ly/3SI9vdv>
8. Nutrition applications: regulations and guidance / <https://bit.ly/4bdCWGR>
9. Nutrition declaration - EU labelling rules / <https://bit.ly/4biRiWk>
10. Sustainable food consumption / <https://bit.ly/3w4mA32>
11. EU Platform on Food Losses and Food Waste / <https://bit.ly/42kdfAz>
12. Farm to Fork Strategy / <https://bit.ly/4bhGTug>
13. Delivering the European Green Deal / <https://bit.ly/3OlVWxM>
14. Corporate sustainability due diligence / <https://bit.ly/3vYBeJu>

REFERENCES

15. Common agricultural policy / <https://bit.ly/3SgWhym>
16. Common fisheries policy (CFP) / <https://bit.ly/3OIRXg7>
17. Soil strategy / [Soil strategy - European Commission \(europa.eu\)](https://europeancommission.europa.eu/soil-strategy).
18. Sustainable carbon cycles / [Sustainable carbon cycles - European Commission \(europa.eu\)](https://europeancommission.europa.eu/sustainable-carbon-cycles).
19. Pesticide residues in food and animal feed / <https://bit.ly/48Stl15>
20. Circular economy action plan / [Circular economy action plan - European Commission \(europa.eu\)](https://europeancommission.europa.eu/circular-economy-action-plan).
21. Horizon Europe / <https://bit.ly/3UIEYik>
22. EU Policies on "Sustainable Food Systems" / <https://bit.ly/47Xnls9>
23. Food security in 2023: EU response to an evolving crisis / [Food security in 2023: EU response to an evolving crisis | Epthinktank | European Parliament](https://epthinktank.eu/food-security-in-2023-eu-response-to-an-evolving-crisis)
24. Green Education initiatives / [Green education initiatives | European Education Area \(europa.eu\)](https://europeaneducationarea.europa.eu/green-education-initiatives).
25. Education for Climate / [Education for Climate | Education for Climate \(europa.eu\)](https://europeaneducationarea.europa.eu/education-for-climate).
26. A new Circular Economy Action Plan / [EUR-Lex - 52020DC0098 - EN - EUR-Lex \(europa.eu\)](https://eur-lex.europa.eu/52020DC0098).

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