MED-LINKS

Data-enabled Business Models and Market Linkages Enhancing Value Creation and Distribution in Mediterranean Fruit and Vegetable Supply Chains (MED-LINKS)

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DELIVERABLE 3.3 – BUSINESS MODELS' OPTIMIZATION STRATEGIES AND GUIDELINES FOR IMPLEMENTATION

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EXECUTIVE SUMMARY

This deliverable is composed of 2 parts:

- **PART 1 – Report on the proposition of guidelines for optimization strategies**
- **PART 2 – Training content from WP3**

PART 1:

This part provides a "Report on the proposition of guidelines for optimization strategies for enhanced Business Models" within Task 3.3 in WP3 "Enhanced business models and market access strategies" of MED-LINKS project.

The report aims to identify optimal solutions among the business models depicted in deliverable 3.2, according to the SCS of reference, more precisely SFSC and EOSC. To this end, the deliverable provide optimal solutions starting from the previously developed SWOT analysis (deliverable 3.2), optimal solutions are identified on the basis of the emergent primary and secondary values among points of strengths and trying to exploit the major opportunities related to each business model.

PART 2:

This part contributes to the presentation of training content modules (TM) drawing from a selection of key information developed within WP1 and presented in deliverables D3.1, D3.2, and D3.3.

Deliverable 3.1 – Review and analysis of existing farm-level business models within three Supply Chain Systems (IHU),

The objective of this deliverable was to develop a theoretical framework on how short food supply chains, export-oriented supply chains and green public procurement schemes produce value by using the Triple Layered Business Model Canvas. Then, a questionnaire to collect data needed to analyze existing business models has been constructed. After collecting data from Greece, Italy, Morocco, France, and Egypt, an analysis has been performed.

The training content drawn by Deliverable 3.1 is contained in TM3.1

Deliverable 3.2 – – Definition of a benchmark framework to conceptualize and select optimized Business Models suited to local clusters (AUTH),

The objective of this report was to develop a benchmark framework for conceptualizing the ways through which the business models used in supply chain systems lead to the production of value. Value was distinguished between primary and secondary, where the first is the value spreading across the supply chain, and the second is the value extending beyond supply chain limits.

The training content drawn by Deliverable 3.2 is contained in TM3.2 and TM3.3

Deliverable 3.3 – Proposition of guidelines for optimization strategies for enhanced Business Models (UNICAS).

The aim of this deliverable was to collect, organize, and produce operational tools to design the business models optimization Toolkit. It was also provided a set of guidelines for the optimization of selected business models, adapted to specific contexts and conditions.

The training content drawn by Deliverable 3.3 is contained in TM3.4

The main contributions to Sustainable Development Goals (SDGs) of the activities performed and the results obtained are outlined at the end of the report.

PART 1 – REPORT ON THE PROPOSITION OF GUIDELINES FOR OPTIMIZATION STRATEGIES

1.1 Introduction

The Main purpose of this deliverable is to identify the best-fit business models for each supply chain system among those depicted in WP3.2. Therefore, a synthetic overview of the main characteristics of each of the 8 business models will be recalled, by making reference to the primary and secondary values each business model has drawn on. Accordingly, the results of the SWOT analysis will be reconsidered, with the purpose of eliminating weaknesses, emphasizing strengths, exploiting opportunities, and avoiding threats. These analyses will be done for each supply chain system (export-oriented supply chain, short food supply chain, and green public procurement) by focusing on both primary/secondary values.

1.2 Theoretical background: contextualizing optimization strategies for enhanced business models

In this report, the following statement by Ovans (2015) is a point of reference for the identification of guidelines for optimization strategies for enhanced Business Models: "*A good business model answers Peter Drucker's age-old questions, 'Who is the customer? And what does the customer value?*". The answers to these questions are differentiated on the basis of the supply chain system of reference and can be addressed by considering the so-called compatibility issue, being compatibility defined by Rogers (1983, p.14) as the *degree to which an innovation is perceived as compatible with the existing values, past experiences, and needs of potential adopters*.

A clear definition of compatibility is provided by Lioutas and Charatsari (2020). They consider:

a) actual compatibility: familiarity, affordability, fit with small farms issues;
b) value compatibility: relations between the personal/relational dimension and the cyber physical-social systems supporting the adoption of smart technologies.

Consequently, the identification of optimal solutions is grounded on the "contextual turn" in entrepreneurship research (Baker, Welter, 2020), where the wider concept of context is taken into account. More precisely, the analysis is carried out by distinguishing:

- Types of supply chain (GPP, SFSC, EOSC)
- Types of proposed /business model and digital solutions.

As far as types of supply chains are concerned, business models belonging to the three different typologies of supply chain systems are rooted in different "where" contexts (Welter, 2011):

- Business context, which takes into account the number and nature of competition. As widely evidenced in the previous deliverables, the EOSC is characterized by high levels of competition at the global level and by the presence of numerous actors with different contractual power along the food supply chain. The GPP can be characterized by the presence of a so-called "constrained institutional context" (Gittins et al., 2022), in account of the constraints defined within public procurement policies. The constrained institutional context may represent a barrier to the market for public procurement which may limit the potentialities of small and medium enterprises. Finally, the business context of SFSC is characterized by localized modes of food provisioning, where the relationships between consumers and producers are mediated by civic conventions where personal interrelations and the reputation of farmers are determinant factors in the consumers' choice (Boltanski, Thevenot, 1991).
- Social context that considers the network's relationships, emphasizing the fact that each SCS has a differentiated set of traded and untraded interdependencies (Storper, 1997), more formalized in both EOSC and GPP, more informal and based on reciprocal trust in the SFSC.
- Spatial context, which does not take into account only the "classic" distinction between rural and urban contexts, knowing that the rural may be furtherly classified as rural periurban or rural remote, which hold different strategic issues. Of course, when EOSC is at stake, a place-less economy emerges, wherein the opposite side, the SFSC is embedded in regional agrifood systems.
- Institutional context, including both formal and informal institutions. As posited by North (1990), the first one regards the system of property rights, statutory law, normative law, etc. informal institutions involve cultural values, beliefs, social trust, habits, and mental models or, as Storper posits, "framework of action" (Storper, 1997).

As far as digital solutions are concerned, two elements need to be considered with reference to the impact of digital technologies across the various SCS.

The first one has been clearly stressed in literature and concerns the disruptive character of digital technologies under the hypothesis that, most frequently, digital technologies are not scope-neutral devices (Lioutas, Charatsari, 2022). As pointed out by Klerkx (2020), these new (potentially) disruptive technologies will address the transformation of the future food systems and will shape new future organizational arrangements.

The second element refers to the compatibility issue. As pointed out by Brunori (2022, p.4), "*digitalization has mainly benefited the dominant agricultural model, based on specialization and large-scale farms, which was the most profitable market for technology providers*"**.**

As a consequence, in our perspective, digitalization could be more suitable and coherent with the EOSC or with the GPP, and potentially less compatible with the SFSC. Moreover, the potential adoption of digital solutions by larger farms makes it possible to enlarge di digital divide between smallholder farmers and big farmers.

With the purpose of clarifying these issues, the next paragraphs will try to identify optimal solutions in each SCS.

1.3 Methodology

With the purpose of analyzing the compatibility and impact of the proposed digital solutions for three different supply chain systems (short food supply chains, export-oriented supply chains, and green public procurement schemes), we carried out conducted a qualitative analysis with the purpose of comparing the previously conducted analyses (deliverable 3.2), with special reference to the SWOT analyses.

The optimization will be achieved, by trying to eliminate weaknesses, stressing the points of strengths, addressing the potential for exploiting opportunities, and minimizing threats. This will be done by referring to the primary and secondary values described in deliverable 3.2. a brief description of the benchmark framework is reported in the following paragraph.

1.3.1 A recap of the main dimensions of each business model

The generic benchmark framework adopted in the WP takes into account primary and secondary values: the first is created and distributed across the supply chain, while the second one is created inside the supply chain but it has relevant impacts on the environmental and socio-cultural context. Therefore, secondary values have impacts on actors not directly involved in the supply chain productive system.

As far as primary values are concerned, the dimensions of reference are:

- managerial (product quality, innovation, consumer orientation, effective marketing channels);
- relational (attention to either workers' security and training, promotion of associative and cooperative forms of networking, with the purpose of fostering information exchange);

- economic (efficiency in the use of resources, through cost minimization and profit maximization, fair distribution of income among actors involved in the supply chain, the economic sustainability of the SCS, and their capability of time persistence);
- organizational (efficient organizational structure, able to follow external changes and impacts through efficient and shared decision-making processes.

As far as secondary values, dimensions of reference are related to the social and environmental aspects of sustainability, calling into action the relational dimension of the supply chain system, which raises compatibility issues to be widely analyzed. More precisely:
- cultural dimensions make reference to the cultural embeddedness of the farmers, to the compatibility of the supply chain with the cultural contexts, to the capability of promoting cooperation among the stakeholders of the supply chain;
- social dimension is related to the attitude of respecting human rights, with special reference to the health rights of the workers, to the capability of activating relational assets in the form of social capital across the supply chain;
- ethical dimension secures the fair distribution of value across the supply chain, adoption of fair trade practices, reduction of food waste, and promotion of responsible consumption;
- environmental dimension pays attention to the ecological footprint, the energetic efficiency, the adoption of sustainable methods of production, and the fight against climate change.

The relevance of each dimension has been previously measured on the basis of dedicated ranges of values, which has allowed the identification of a quantitative measurement of each value. This framework of reference has been adopted within the proposition of the 8 digital solutions and business models to be validated by stakeholders of each supply chain. The evaluation process has been carried out with the support of a SWOT analysis.

1.3.2 SWOT analysis

In the WP3.2 SWOT analysis is realized through ex-ante identification of 20 variables. Ten variables identify points of strengths/weakness (compatibility of the model with the SCS, level of potential adopters' skills and experience, technology readiness of the potential adopters, impact of the business model on the quality of cooperation among actors, availability of the supply chain actors to adopt the BM, economic, social and environmental impacts in the adoption of the BM), while other 10 variables identify opportunities/threats (impact of agricultural policies, the national regulatory system concerning the BM applicability, the support provided by research organisms, the current economic

situation, the role of technology development to boost the adoption of the model, the degree of competition as a barrier to the adoption, the consumer's mindset, the support provided by the local community, the public approval of the BM, eventual opportunities of funding).

Judgments are collected, through the help of a scale ranging from -5 to +5.

1.4 Results

1.4.1 Short Food Supply Chain System

The first business model, whose SWOT analysis is synthesized in Figure 1, evidences some points of weaknesses referring to the lack of farmers' skills and expertise. The digital skill gap is a key element in the potential adoption of digital solutions across the analyzed supply chains and, in many cases, is linked to past negative experiences, where farmers have pointed out the costs associated with the acquisition of dedicated resources able to work with digital solutions. This brings many farmers about to still privilege paper to digital solutions.

The proposed business model offers relevant points of strength, which regard the potential economic environmental, and social performance. Moreover, consumers' mindset, technology development, public acceptance, and economic situation are depicted as major opportunities to be fully exploited in the adoption of the BM, despite some threats are indicated in terms of funding opportunities.

Figure 1

Business model 1: Combinations of facilitating digitally-enabled solutions and voluntary certification schemes in short food supply chains

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On the basis of this picture, we think that either the weaknesses or the threats could be removed through effective rural policies. For instance, training courses might support an "easier" digital transition, through the possibility of gathering familiarity with the new business model. Likewise, another means of support is provided by potential rural policies, such as the rural development policies of the EU. For instance, the long-term vision for rural development (EU, 2021) addresses the issue of digital connectivity as a key element to removing vicious circles in rural areas. The related policies implemented at the European level aim to encourage transformative actions aimed to stimulate sustainable digital transition, by providing farmers with sound tools and support for reskilling farmers through digital and entrepreneurial competencies; moreover, funding opportunities to support the investments in digital technologies may easily remove the threats in terms of funding opportunities.

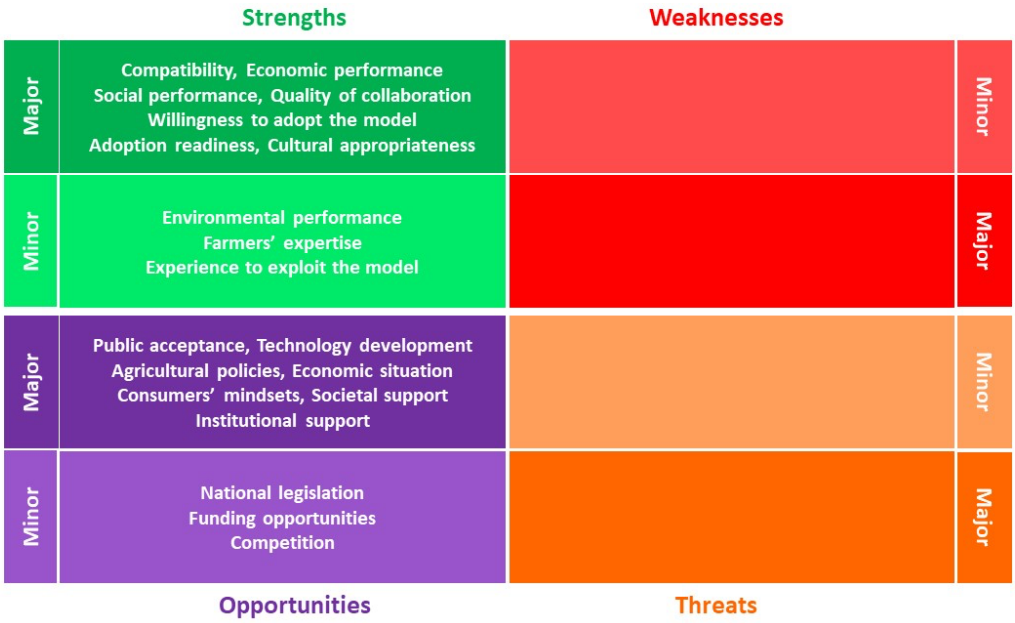
Framed in the SWOT analysis, these policies may provide contribution to eliminating either weaknesses of competencies and the threat of "funding opportunities", through raising awareness about the policy support as means to acquire knowledge and get funded to introduce investments aimed to improved the business models.

Second BM does not evidence points of weakness nor threats (figure 2). As a consequence, both internal and external factors are considered as functional to the implementation of the BM. In the second business model, both actual and symbolic compatibility emerge: as a matter of fact, both economic performance and cultural appropriateness are stressed as major points of strength, which ideally align the solution with the characteristics of the SFSC. Furthermore, it should be considered that compatibility is indicated as a major strength, jointly with adoption readiness and cultural appropriateness.

Despite the prevalence of economic and social performance (environmental effects are evidenced as minor strengths), we think the advantage of this business model solution relies on the "natural" environmental effect because it is applied to an SFSC organized through the farmer's markets, like Campagna Amica Foundation. Moreover, with respect to the previous model, funding opportunities are not revealed as a weakness, while they are considered minor opportunities, jointly with agricultural policies which are considered major opportunities. This may be considered a strategic element to identify this business model as the preferred one. As a matter of fact, the gap to be filled seems less wide with respect to the previous business model.

Figure 2

Business model 2: Digitally-supported certification in short food supply chains



Finally, as far as the third BM is concerned, the same points of weaknesses of the first one typify this third solution, but, differently from the first, in this case, funding opportunities are not identified as threats. Moreover, with respect to the previous model, economic, social, and environmental performance and compatibility are all indicated as major strengths. What limits access to the digital solution is farmers' expertise and experience to exploit the model, which is not indicated in the previous one. However, as indicated for the first BM, also in this case, the possibility of removing weaknesses strongly depends on the opportunities provided by the recourse of effective rural policies, like the European policies framework within the Common Agricultural Policy.

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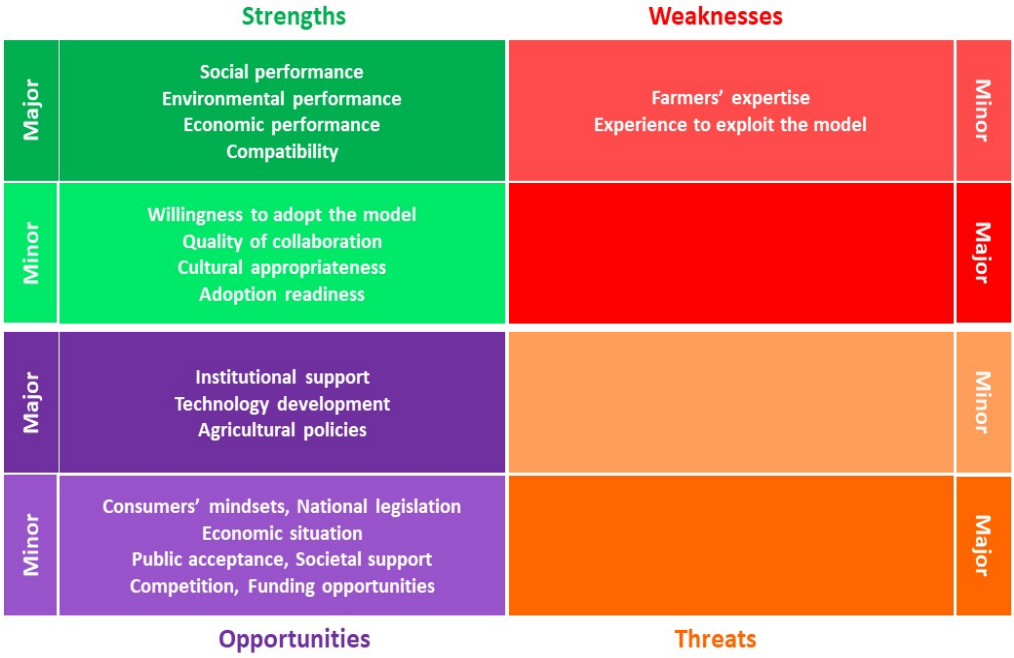
Figure 3

Business model 3: Developing responsible marketing schemes through digital solutions in short food supply chains



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On the basis of the previous consideration and by making reference to the concept of compatibility, it is possible to identify the second business model as the optimal solution in terms of (Lioutas, Charatsari, 2020):

- Actual compatibility, which regards familiarity, affordability, and fitness with small farms issues. Compatibility has been clearly stated by the respondents, jointly with the availability to adopt. The farmers have clearly declared that they hold the necessary competencies and skills to adopt the model, which makes the digital solution actually compatible with the SFSC.
- Symbolic compatibility, which refers to the fitness between smart technologies and the symbolic meaning of SFSCs. Cultural appropriateness and the presence of public acceptance and public support as major opportunities suggest the fitness of this business model for the SFSC.

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BOX 1 - Possible recommendations to secure a higher level of adoption in SFSC

1) First of all, it is necessary to raise institutional support, by connecting the farms with the research centers and the universities. This cooperation represents a valid contribution to the farm's innovation capability, by counting on the farmers' ability to adopt the new digital solutions and familiarize themselves with the new technological paradigms.

2) We recommend stressing the importance of informational transparency across the supply chain system. This will help to either secure the higher quality of certified products and to nourish reciprocal trust among operators of the SCS. This can be done by empowering both the cultural and territorial identity and through facilitating new forms of collaboration and cooperation.

3) Strictly linked to the previous point, it is necessary to strengthen the validity and effectiveness of the proposed business model, with the aim to consolidate the potential operators' availability to adopt the model.

In order to pursue points 2 and 3, awareness campaigns are strongly recommended.

4) The planning of training courses is another guideline that could improve the rates of adoption of the new business model, with particular regard to both soft and hard skills.

5) Finally, bridging the farms with the available financial funds through favorable conditions could reduce effective and perceived barriers to adopting the business model.

1.4.2 Export-Oriented Supply Chain System

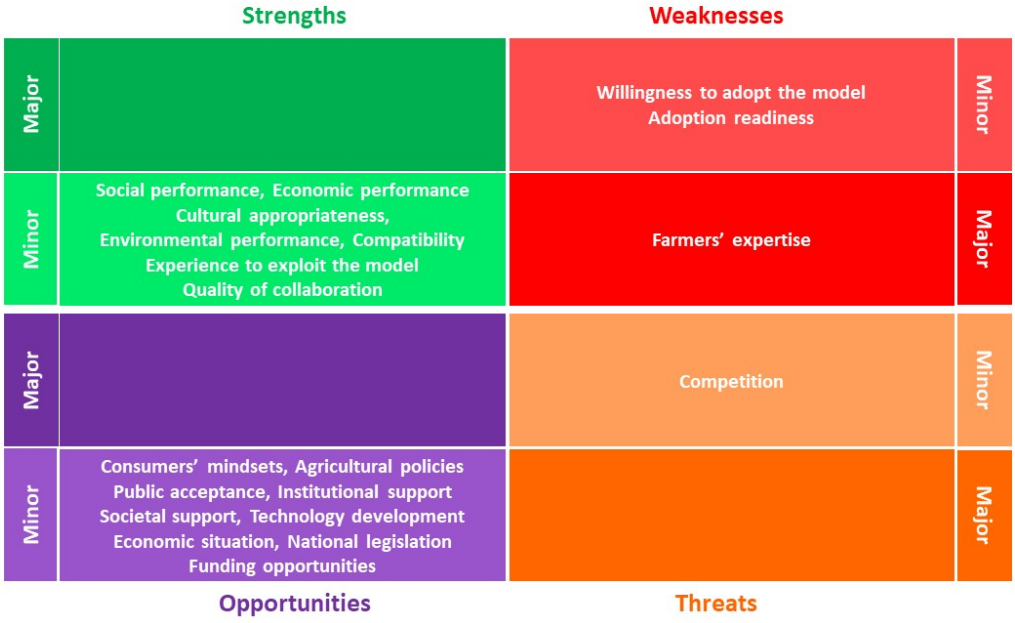
As far as the EOSC is concerned, three business models have been identified. As clarified in deliverable 3.2, business model 4 is grounded on the use of efficient communication channels, innovation promotion, on the importance of the quality of products and of consumers' preferences. Consequently, it foresees the use of a digital platform, which facilitates the exchange of information concerning quantities and qualities of production across the agri-food supply chain. After processing, filed information may address effective and useful comprehension of the mechanisms behind the price/quality setting. Furthermore, this allows a better comprehension of how these mechanisms may affect the final demand.

In addition, the information that is shared on the platform may support the quality and effectiveness of the strategic process adopted by the operators of the EOSC, by addressing sound decision-making regarding distribution channels and strategies to implement on either the provisioning or end markets. Finally, relevant information on consumer behavior with reference to the variation of products characteristics. With all these opportunities of utilization, the digital platform is a valid tool to raise the effectiveness of the supply chain.

The SWOT analysis carried out in the deliverable 3.2 shows that the model has not major points of strength (mean score > 2.5). Moreover, opportunities, which allow exploiting its potential, do not emerge. Main constraints that limit the potential adoption by the farmers are related to the scarce experience the farmers declare to use this tool. Another constraint refers to the limited availability provided by the stakeholders and, most important, by the lack of skills declared by the actors across the supply chain. All these aspects represent determinant of non-adoption of this business model. However, it cannot be neglected that a competitive rather than cooperative approach emerges, which is a typical element witnessing a limited availability of social capital, which may be considered as a major threat in the adoption of the business model. As a matter of fact, if, on the one side, the lack of skills is a limit that could be removed through dedicated strategies of interventions (for instance, training activities), building up social capital implies the capability of getting things done collectively (Marsden, van der Ploeg, 2008), which is not an easy to reach objective.

Figure 4

Business model 4: Digitally-enabled management of export-oriented supply chains



The second business model proposed for the EOSC (figure 5) is characterized by the relatively higher importance provided by primary values, like economic efficiency, development of cooperation, efficient use of available resources, effectiveness of the organizational structure, network development for sharing information and economic sustainability. The business model provides a digital platform aimed to boost new forms of cooperation among actors of the EOSC. New forms of

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collaboration should facilitate information exchange and sharing, so boosting transparency of relationships. Moreover, this platform allows filing economic and financial data, so significantly contributing to costs reduction, profits increase and efficient use of resources. The main purpose of the platform is to set up an effective organizational structure able to support the actors to reach the economic sustainability, with special reference to the small-size farmers.

The SWOT analysis evidences how important is the economic performance of the business model, while social and environmental performance are evidenced as minor points of strength, jointly with the compatibility of the business model to support the EOSC and the actors' experience to exploit the potentialities of the business model.

Figure 5

Business model 5: Platforming for increasing the economic performance of export-oriented supply chains

As far as points of weakness are concerned, farmers' expertise is revealed as major weakness, while willingness to adopt the model, adoption readiness, lack of social capital and cultural appropriateness emerge as minor weaknesses. If we also consider the (minor) threats represented by the competition among the actors of the EOSC, the difficulty of sharing information, which are of paramount importance for securing the model's effectiveness, may represent a key obstacle to the adoption of the business model.

If, on the one side, it is possible to reduce the skills gap of farmers in the short term (also thanks to the recourse to the policies for supporting the upgrade of farmers' competencies), on the other side, it seems more difficult to affect in the short-term farmers' individualistic perspective and their scarce

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inclination to cooperate. As said in the previous BM, the lack of social capital and reciprocal trust seems a difficult to overcome barrier in this regard. Building up a climate of trust, which addresses relationships that are more cooperative, is at the basis of the effective working of the business model, through avoiding risks of opportunistic behaviors.

The third business model is processed through considering criteria drawn on both primary and secondary values. With this purpose, the model puts forward a voluntary standard of certification on the degree of sustainability applied to the EOSC. The certification addresses sustainability issues by looking at both environmental and sociocultural dimensions. On the digital platform characterizing the business models, environmental and social data of impact are filed by each operator of the supply chain, from the production to distribution side. Moreover, data on operational management and information concerning the quality of interactions and relations across the actors of the supply chain are filed too, jointly with sound information about the quality of products.

These data are able, on the one hand, to provide consumers and operators with useful information to better comprehend the efforts carried out by the operators of the chain to realize the objectives of sustainability. On the other side, data about management support actors in decision-making process with the aim to target objectives of economic sustainability.

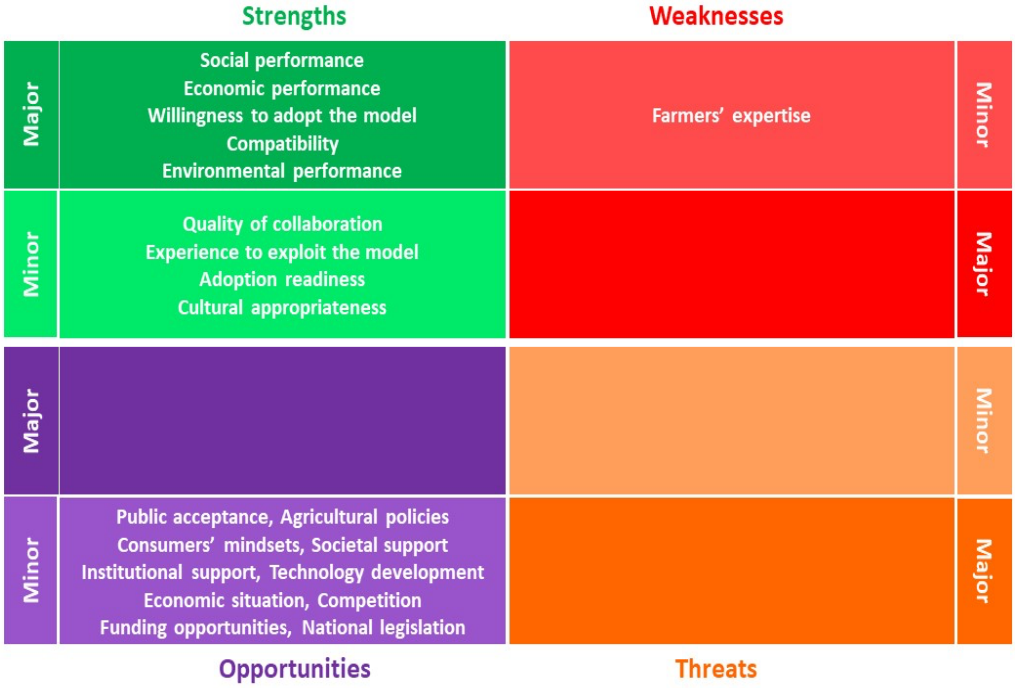
The SWOT analysis evidences 5 major and 4 minor points of strengths (figure 6). In terms of sustainability impact, major points of strengths are identified from economic, environmental and social perspectives. Quality of collaboration, experience to exploit the model and adoption readiness seems important (despite minor) strengths, jointly with cultural appropriateness, which may address the issue of symbolic compatibility.

A point of weakness regards the lack of farmers' competencies in the adoption of the business model, which, as seen before, can be considered as a "transversal" point of weakness. The voluntary standard is considered as a very important point to raise the relational assets across the supply chain. The effectiveness of the informational content of the certification represents a quality cue to be addressed in order to effectively communicate the EOSC actors' capability to target the objectives of cultural, social and natural sustainability and that these objectives have impact on their economic performance. This creates a strong interdependency between social capital, sustainability and economic performance. The voluntary certification is an effective solution to the low quality of the relationships across the supply chain. In a context where all external factors represent an opportunity and all internal factors represent points of strength, the only point of weakness (farmers' skills and competencies) may be easily overcome trough investments on training and boosting generational renewal, in account of the higher level of human capital hold by young farmers.

Faced with the absence of threats, very interesting (minor) opportunities emerge in this BM, like public acceptance, funding opportunities, with special reference to the potential adoption of rural policies aimed to stimulate digitalization in rural areas, consumers' mindset and technology development seems addressing the soundness of this BM.

Figure 6

Business model 6: Enabling primary and secondary value creation in export-oriented supply chains through certification and digitalization



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Therefore, based on previous consideration, business model 6 can be considered as the optimal business model, able to grant upgrading of social capital and impacting positively on the economic performance.

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BOX 2 - Recommendation and guidelines to stimulate higher levels of adoption of the business model in EOSC

1) To spread the potential of the business model, it is necessary to widen the awareness about the informational transparency of the business model across the entire supply chain. This will a) secure the high quality of certified products, b) will increase the probability of gaining the trust of all the operators of the supply chain, and c) will stimulate higher levels of cooperation along the supply chain system.

To address these issues, dedicated promotional campaigns should be encouraged.

2) The sustainability of the business models can be pursued by reducing price competition (which put at risk quality-oriented strategies) and by maintaining price stability (and, consequently, farm income stability). Moreover, favourable access to financial markets (for instance through raising the share of farm funded by public policies for agricultural and rural development) are also recommended to stimulate innovation adoption.

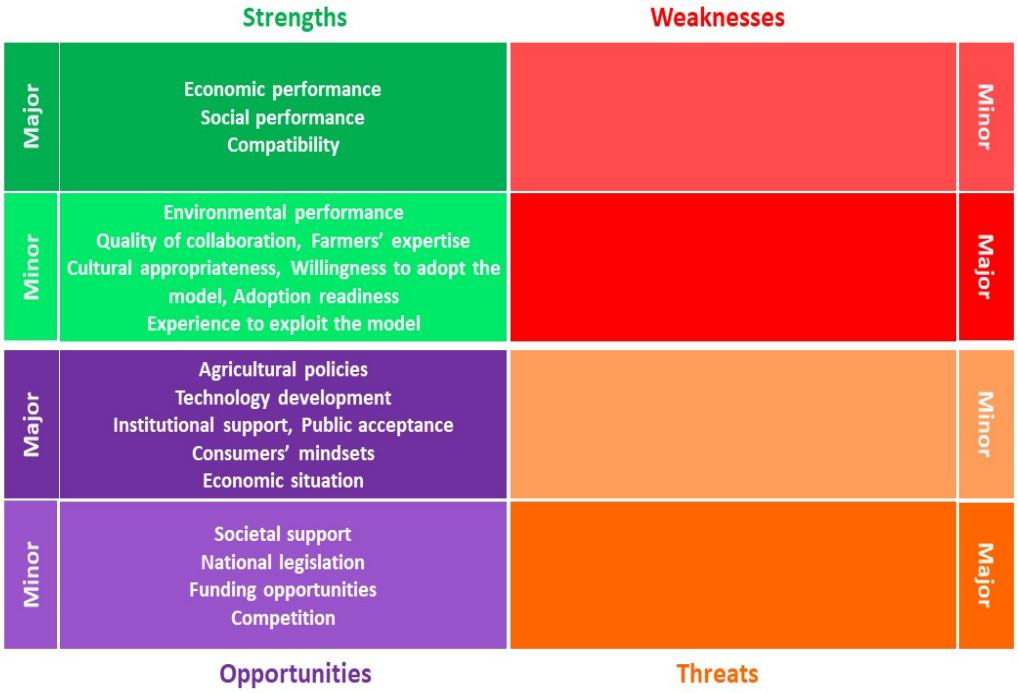
3) The constant support of research institutions is fundamental to secure a punctual analysis and monitoring of market conditions and dynamics. The cooperation with the public sector should be also boosted through an initiative of permanent networking, for instance through the adhesion to funded partnerships for innovation, such as the European innovation partnership (EIP-AGRI).

1.4.3 GPP Supply Chain Systems

As far as the GPP SCS is concerned, two business models have been identified. As for the previous SCS, the optimal solution is coherent with the results from the SWOT analysis carried out in deliverable 3.2. The first business model under investigation is typified by the lack of either points of weakness or threats (figure 7), which raises the compatibility of the model with the characteristics of the GPP supply chain

Figure 7

Business model 7: Connecting farmers to the public sector through digital platforms and voluntary certification schemes



The business model is characterized by the presence of managerial, ethical, and mostly environmental dimensions in value production. This model gives priority to product quality, by taking into account consumers' preferences that, in this specific case, are represented by public administrations. This is coherent with final consumers of the GPP systems which feed, among others, school, university, and hospital canteens. Other features of the business model are efficient communication channels, the fair distribution of value among the actors of the supply chain, and the purpose of minimizing food waste.

As a consequence, positive economic, environmental, and social impacts are revealed ass major points of strength.

At the basis of the supply chain, there is the promotion of ethical and responsible consumption, which brings about a limited environmental footprint, so contributing to fighting climate change. This opens a window of opportunities in terms of social support, which is evidenced as a minor opportunity.

In order to secure potential consumers about the environmental sustainability incorporated in the business model, a dedicated certification scheme is required. The model is also integrated with a digital platform, which is considered indispensable to share information on the quality of products, and on the needs of public administration. Therefore, it is a fundamental tool to connect the public

sector and companies adhering to the certification schemes. Finally, the model evidences good social and economic performance.

The second business model is focused on all the dimensions of both primary and secondary values (figure 8). The model collects both economic and sustainability issues, identifying digital solutions and certification schemes assuming a voluntary-based adoption that guarantees the respect of the shared responsibility principle by the companies and public administrations.

Despite this second model evidencing high compatibility, and social and economic performance, some differences with the first BM are evident. The main difference with the first GPP business model relies on the skills necessary to manage the two platforms, which recalls the lack of expertise and competencies by the actors of the supply chain, with special reference to the farming sector. As a matter of fact, experience to exploit the model is depicted as a major weakness, while in the first business model no weaknesses emerge. This lack of expertise puts the operators at risk of a not full exploitation of the potentialities of the digital solution.

Figure 8

Business model 8: Responsible green public procurement

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Accordingly, based on previous considerations, the choice of the optimal solution will consider the business model where all internal and external factors are identified as points of strength and as opportunities. The second model, despite the presence of high levels of compatibility and high social and economic performance, reveals points of weaknesses and (minor) threats, while the first one does not provide any weakness and any threats. This suggest identifying it as the optimal solution. However, we believe that the choice of the first business model can be considered as optimal solution within a stepwise process. This process aims to replace the first business model with the second, within an evolutionary approach, where the acquisition of skills and familiarity with the digital tools by the actors of the supply chain will allow integrating digital tools with the second solution.

BOX 3 - Recommendation and guidelines to stimulate higher levels of adoption of the business model in GPP

1) In the GPP, it is important to plan training courses aimed to strengthen the operators' soft and hard skills. This would raise the level of human capital among the operators, with special reference to the farming sector, where a "digital skills gap" could limit the potential adoption of the new business model. Moreover, a higher level of human capital allows for better production planning and management within a relatively "new" SCS, like the GPP.

2) A further way to improve the effectiveness of the business model is necessary to raise public awareness about the effectiveness and validity of the business model, by looking at its sustainability: the positive environmental impact, the preservation of local traditions and cultures, the safeguarding of people working in the farming sector and across the supply chain. Therefore, informational and promotional campaigns are strongly recommended, to reduce informational asymmetries regarding the reliability of the certification schemes and on the sustainability of the entire supply chain.

5. Conclusions

In this deliverable, we have carried out a comparative analysis, with the purpose of identifying optimal solutions in terms of the business models among the 8 solutions depicted in deliverable 3.2. A context-related framework has been adopted, which has considered various dimensions of "context".

The objective to identify optimal solutions has been realized starting from the previously conducted SWOT, by eliminating weaknesses, emphasizing strengths, exploiting opportunities, and avoiding threats, by focusing on primary and secondary values described in deliverable 3.2.

The analysis points out some elements of reflection which should drive the choice of the BM and digital platforms to be adopted. The first one concerns the concept of actual compatibility, which refers to the familiarity and affordability of the proposed business models and digital solutions. Lack of expertise, digital gaps, and cost of adoption have been identified as the main obstacles and points of weakness. Moreover, looking at symbolic compatibility, the analysis of secondary values has allowed some issues related to cultural appropriateness and to the development of social capital to emerge.

Set against this background, the identification of the optimal solution here proposed should be integrated by the adoption of a so-called "conjuncture pragmatism", looking at a sort of step-wise adoption of more simple solutions on which to overlap more complex solutions in a relatively short span of time.

This could allow them to overcome the constraints evidenced by all operators of the various supply chain, allowing them to acquire familiarity with the tools and, therefore, to be more inclined to adopt other digital solutions.

PART 2 – TRAINING CONTENTS FROM WP3

This report contributes to the presentation of training content in modules for deliverables 3.1, 3.2, and 3.3. Training content will be designed based on the research questions, data elaboration and final recommendation included in the three deliverables in three levels of basic, intermediate, and advanced modules, grouped in 1 Training Package (TP3).

TP3: BUSINESS MODELS OPTIMIZATION
Basic module
→ TM3.1: Business Models: concept and value,
Intermediate modules
→ TM3.2: How business models help to create value,
→ TM3.3: How to develop alternative business models,
Advanced module
→ TM3.4: How to optimize business models,

Each module is articulated in following sections:

1. An **introduction** and the **learning goals** of the module;

2. **Learning units** dealing with the specific topics of interest;

3. A **self-assessment test**;

4. A **glossary** of the most relevant abbreviations or definitions.

The contents of each module are described in detail in next sections of this report, and they have been designed to deployed in different ways. A first possible implementation would be as e-learning courses of around half an hour each. In fact, the modules are suitable to be distributed on any web-based electronic educational platform that, when implementing international standards and certifications will allow for their widest dissemination among stakeholders.

Specifically, the training modules will be published on the **MED-LINKS online platform** available at: https://www.med-links-platform.eu

As a second option, the training modules provide a valuable knowledge base to be shared with stakeholders also as printed documents during both online and live events (webinars, fairs, master courses, …).

1.5 Training Module 3.1: Business Models: concept and value,

This module aims to familiarize trainees with the business model concept and help them understand its meaning and importance for agrifood supply chains. It also presents the main functions that a business model serves (ANNEXE 1).

The module concludes with a self-assessment test to ensure understanding of the key concepts, followed by a glossary of terms for further clarification.

1.6 Training Module 3.2: How business models help to create value

This training module aims to outline a benchmark framework for conceptualizing how the business models used in supply chain systems lead to the production of value. It analyzes different aspects of primary and secondary value (ANNEXE 2).

The module includes a self-assessment test to ensure participants can evaluate their understanding of the material provided. Additionally, a glossary is provided to clarify technical terms and enhance comprehension.

1.7 Training Module 3.3: How to develop alternative business models

This module presents a procedure that can be exploited for developing and evaluating alternative business models, offering illustrative examples concerning the creation of alternative business models for short food supply chains, export-oriented supply chains, and green public procurement schemes (ANNEXE 3).

The Module first presents:

- An alternative business model for Short Food Supply Chains (SFSCs), focusing on local production, direct consumer-producer interactions, and sustainability.

Assessing value-generating capacity:

- Perform an expert-based SWOT analysis for the SFSC model.
- Evaluate Strengths and Weaknesses (internal factors).
- Assess Opportunities and Threats (external factors).
- Provide ratings for each SWOT element and visualize findings with a SWOT graph.

The Module then presents:

- An alternative business model for Export-Oriented Supply Chains (EOSCs), highlighting scalability, global market access, and the use of advanced technologies.

Assessing value-generating capacity for EOSCs:

- Conduct a SWOT analysis to evaluate the model's strengths, weaknesses, opportunities, and threats, focusing on its ability to generate value in international markets.

The module concludes with self-assessment tests to ensure understanding and application of the concepts presented. A glossary is also included to clarify technical terms and enhance comprehension.

1.8 Training Module 3.4: How to optimize business models

This module aims to identify the digital platform that best fits each supply chain under investigation (short food supply chains, export-oriented supply chains, and green public procurement). It also offers recommendations to secure a higher level of adoption of these schemes (ANNEXE 4).

Guidelines for optimization strategies have been identified with the purpose of reaching high penetration rates, through pointing out compatibility issues, by considering:

- actual compatibility: familiarity, affordability, fit with small farms issues;
- value compatibility: relations between the personal/relational dimension and the cyber physical-social systems supporting the adoption of smart technologies;
- Set against the perspective of sustainability of the business models, primary and secondary values have been taken into account.

The module concludes with a **self-assessment test** designed to reinforce the key concepts and ensure participants can apply their learning effectively. Additionally, a **glossary** is provided to clarify technical terms and enhance understanding.

CONTRIBUTION TO SUSTAINABLE DEVELOPMENT GOALS (SDGS)

Deliverable D3.3 "Report on BMs' optimization strategies (Toolkit) and guidelines for implementation" and its training contents make meaningful contributions to several Sustainable Development Goals (SDGs). These contributions are detailed below:

SDG 1: End poverty in all its forms everywhere: This deliverable contributes to SDG 1 by offering guidelines for the optimization of business models tailored to different supply chain systems (SFSC, EOSC, GPP). These models emphasize creating economic sustainability for smallholder farmers and improving income distribution across supply chains. By increasing the economic resilience of small farms, the deliverable addresses the structural barriers that often perpetuate rural poverty.

SDG 2: End hunger, achieve food security, and promote sustainable agriculture: The report supports SDG 2 by proposing optimization strategies that enhance food security through efficient supply chain systems. For example, models for short food supply chains (SFSC) promote local sourcing and reduce food waste, while export-oriented models (EOSC) integrate sustainable agricultural practices into global markets. These strategies also highlight the importance of minimizing resource use, such as water and fertilizers, fostering sustainable agricultural practices.

SDG 8: Promote sustained, inclusive, and sustainable economic growth: The deliverable emphasizes creating value within supply chains through enhanced managerial, relational, and organizational strategies, fostering economic growth. The digital platforms and certifications outlined improve transparency, fairness, and market access, creating job opportunities and enabling decent work conditions for rural farmers and stakeholders.

SDG 12: Ensure sustainable consumption and production patterns: This deliverable actively contributes to SDG 12 by promoting voluntary sustainability standards (VSS) and business models that incorporate certifications addressing sustainable production practices. These include reducing pesticide use, adopting low-carbon practices, and encouraging responsible consumption through certified products that meet environmental and social criteria.

SDG 13: Take urgent action to combat climate change and its impacts: The optimization strategies focus on business models that incorporate environmental sustainability practices, such as low-carbon production processes, water conservation, and reduced food waste. These measures align with SDG 13 by mitigating the environmental footprint of agricultural supply chains.

SDG 17: Strengthen the means of implementation and revitalize the global partnership for sustainable development: The deliverable fosters international collaboration through its focus on green public procurement (GPP) and export-oriented supply chains, both of which depend on partnerships across governments, private sectors, and civil societies. The digital platforms proposed also promote knowledge-sharing and capacity-building among stakeholders.

REFERENCES

Baker T., Welter F. (2020); *Contextualizing Entrepreneurship Theory*, New York, Routledge

Boltanski L., Thévenot L. (1991); Les économies de la grandeur, Gallimard, Paris.

Brunori G. (2022) Agriculture and rural areas facing the "twin transition": principles for a sustainable rural digitalization, *Italian Review of Agricultural Economics* 77(3): 3-14. DOI: 10.36253/rea-13983

Drucker, P. (1994), "Theory of the business", Harvard Business Review, September/October, pp. 95-106.

European Commission (2021); A long-term Vision for the EU's Rural Areas - Towards stronger, connected, resilient and prosperous rural areas by 2040, Bruxelles, COM(2021) 345 final

Gittins P., McElwee G., Lever J. (2022); Constrained entrepreneurship in UK agriculture: A Weberian analysis, Journal of Rural Studies 95: 495-504. https://doi.org/10.1016/j.jrurstud.2022.09.021

Lioutas E.D., Charatsari C. (2022); Innovating digitally: The new texture of practices in Agriculture 4.0, Sociologia Ruralis 62(2): 250-278, DOI: 10.1111/soru.12356

Lioutas E.D., Charatsari C. (2020); Smart farming and short food supply chains: Are they compatible?, *Land use policy*, 94: 104541

Marsden T., van der Ploeg J.D. (2008); *Unfolding webs*, van Gorcum, Assen

North DC (1990); Institutions, institutional change, and economic performance. Cambridge University Press, Cambridge

Ovans (2015); What is a business model? Harvard Business Review

Rogers E.M. (1983); *Diffusion of innovations*, Third edition, New York, The Free Press

Storper M. (1997); *Regional Worlds*, New York Guilford

Welter F. (2011); Contextualizing entrepreneurship. Conceptual challenges and ways forward. Entrepreneurship: Theory and Practice, 35(1):165-184. https://doi.org/10.1111/j.1540-6520.2010.00427.x

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ANNEXES

ANNEX 1 - Business model optimization Toolkit

This Annex aims to identify a toolkit, whose purpose is to optimize newly adopted business models and to verify potential adoption of new digitalized business models.

The Toolkit will include three modules:

- competitiveness' self-assessment;
- business model's design;
- performance monitoring.

The most appropriate solutions are of course identified on the basis of firm characteristics, which allows to build tailored processes of optimization.

Competitiveness self-assessment:

In the first step, the farm is invited to answer questions concerning the farm performance under the three levels of sustainability (economic, environmental, social. In what follows, we describe the questions per each dimension.

- **Economic dimension**

I the last three years the following farm's economic indicators were positive	*0 = no; 1 = yes.*
Income increase	
Income level/work remuneration	
Income security and stability	
Resilience and capability of adapting external shocks	
Sale price level	
Access to market	
More favorable market conditions (payment terms, contractual arrangements, etc.)	
AVERAGE MARK	

- **Environmental and social dimension** (reduction of negative environmental effects, fairness and social justice, support local community, preserving local human and cultural resources)

How do you evaluate the environmental sustainability and the social dimension of your agricultural practices?	*0 = no; 1= yes*
In the last 3 years we have adopted certificates of sustainability standards	
In the last three years we have reduced food waste through better production planning	

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In the last three years we have improved the efficiency in the use of energy	
In the last 3 years we have introduced the GRASP certification (other than Global gap)	

Do you agree with the following sentences?	*0 = no; 1 = yes*
Your activity has positive impacts on your local community	
It is useful to provide access to food from all over the world	
My activity contributes preserving local culture and identity	
AVERAGE MARK	

	0 = no; 1 = yes
In the next future	
In the next 3 years we are going to adopt certificates of sustainability standards	
In the next three years we will reduce food waste through better production planning	
In the next three years we will improve the efficiency in the use of energy	
In the next 3 years we are going to adopt the GRASP certification (other than Global gap)	
AVERAGE MARK	

Business model design:

This part is identified as descriptive, and serves to gain information about the actor's typology. The analysis of the business model is articulated in the "classic" three dimension (value creation, value delivering, value capturing).

- **Type of company**
  □ individual farm
  □ cooperative
  □ producers' organization

- **Value creation**:

Which supply chain do you belong to?

□ EOSC exporting to extra-EU countries

□ EOSC EU exporting to EU countries

□ managed SFSC extra-EU (for instance Fondazione Campagna Amica Coldiretti)

□ not managed SFSC (for instance: direct selling, or other alternative short food channels)

- **Value delivering**

What are the key activities you carry out?

- EOSC

  □ production and transport to distribution centers

  □ production and delivering to a cooperative /producer organization transport to distribution centers

  □ production and transport to distribution centers

- SFSC

  □ daily direct selling of fresh products at the farm

  □ production and transport to managed farmers markets (for instance, Campagna Amica Coldiretti)

  □ production and transport to local shops

- **Value capturing (See competitiveness self-assessment)**

Performance monitoring:

DIGITALIZATION:

Digitalization is (1= useless; 5= fundamental)	
How do you qualify your digital competencies (1= no digital skills; 5= excellent digital skills)	
Are you willing to be trained for upgrading your digital skills? (1 = Not at all ; 5= yes, it is fundamental))	
How do you define digital competencies of your farm advisory services? (1= inadequate; 5= excellent)	
Are you aware about the opportunities provided by public institutions of getting funded to introduce digital solutions? (1= not at all; 5= completely aware and available to apply)	
AVERAGE MARK	

TECHNOLOGICAL INFRASTRUCTURE:

- Does the farm currently **use** digital or information technology equipment? (year of introduction)

Type of activity	*No = 0 ; yes = 1*

accountancy	
management of crop production	
management of animal farming	
management of other gainful activities	

- **Degree of satisfaction** (1= unsatisfied; 5 very satisfied) …..

- Are you **willing to introduce** digital or information technology equipment

Type of activity	*No = 0 ; yes = 1*
accountancy	
management of crop production	
management of animal farming	
management of other gainful activities	

IMPLEMENTATION:

The implementation analysis regards the idea of verifying if, either in case of adoption or not, the actor is planning for a future adoption or (in case of an already adopted innovation) a consolidation of the digital solution.

- **Implementation** (without points)

Implementation	
Not adopted and not willing to adopt	
Not adopted but willing to adopt	
Adopted but not available to maintain it	
Adopted and willing to maintain	

Output: entrepreneurial profiles:

1. competitiveness self-assessment (average of the selected indicators)

2. digitalized business models

Potential typologies

- Skilled with optimal digitalized business models
- Skilled with unsatisfactory digitalized business models
- Unskilled with unsatisfied digitalized business models
- unskilled unsatisfied digitalized business models
- Skilled with not-digitalized but willing to digitalize business models

Unskilled unwilling not-digitalized business models

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ANNEX 2
Training Module 3.1
Business Models: concept and value.

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MED-LINKS

Data-enabled Business Models and Market Linkages Enhancing Value Creation and Distribution in Mediterranean Fruit and Vegetable Supply Chains

MED-LINKS TRAINING CONTENTS

Training Package 3

Business Models Optimization

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Business Models Optimization
Executive summary

BASIC MODULE

→ Training Module 3.1: Business Models: concept and value

INTERMEDIATE MODULES

→ Training Module 3.2: How business models help to create value

→ Training Module 3.3: how to develop alternative business models

ADVANCED MODULE

→ Training Module 3.4: How to optimize business models

MODULE 3.1: Business Models: concept and value

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Module 3.1: Business Models: concept and value
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The term "business model" is almost a buzzword.

Nevertheless, what a business model is?

And what does it offer to a company, organization, or supply chain?

In this video pill, we will explain the term, also offering some basic information about the function of a business model.

More video pills are coming soon.

Image adapted from: https://www.publicdomainpictures.net/en/view-image.php?image=320200&picture=post-it-2

Business Models Optimization

Module 3.1: Business Models: concept and value

Value is a core concept for the business model term. Actors create, exchange, and interpret value within networks or systems of actors, including consumers, partners, suppliers, and so on. The way they choose to approach value describes their business models.

In other words, the business model is a "story" depicting who the customers of a business unit are and how the business unit attempts to supply them with what they want and need.

Image adapted from: https://freesvg.org/two-way-sign

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Business Models Optimization

Module 3.1: Business Models: concept and value

Image: "Team Recipe", available at: https://www.publicdomainpictures.net/en/view-image.php?image=2566&picture=team-recipe

Business models serve some pivotal functions.

First, they taxonomize the organizational structure of an organization, thus letting conclusions emerge on how the value can easily be created.

Second, they are what their name implies: models. In plain words, they are prototypes explaining how business is done.

Third, they are recipes helping organizations to achieve the right results in the right way. They encompass architectures and templates used to create value. They describe manners through which transactions that permit value generation are made.

To uncover the potential of a business model it is crucial to understand what value means. Despite what some may believe, value is not an attribute of the products exchanged between actors.

It is an attribute emerging through actors' or organizations' practices and value co-creating behaviors.

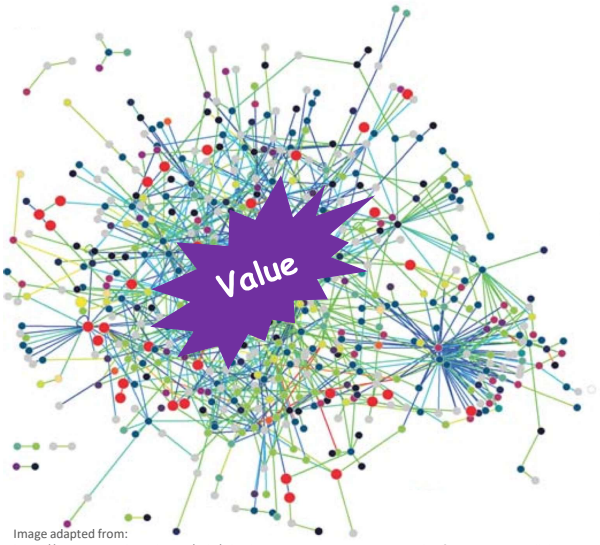

Image adapted from: https://commons.wikimedia.org/wiki/File:The_protein_interaction_network_of_Treponema_pallidum.png

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Business Models Optimization

Module 3.1: Business Models: concept and value

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Let us take an example. Two neighboring farmers cultivate tomatoes on their small farms.

Both of them apply best practices to produce. They harvest their products when they are at their best maturity stage and use the same packages to store them.

The first one sells the products to a wholesaler, who distributes them in local supermarkets.

The second sells her tomatoes on the farm to families living in the region. Consumers can visit the farm and buy the products.

Image: https://www.flickr.com/photos/unitednationsdevelopmentprogramme/20636451494

Although both of these producers use the same cultivation methods, and despite the fact that their profit margins may continue to be the same, the ways value emerges are different.

In the case of the first farmer, the value emanates from the exchange of products and money.

In the second case, the farmer can create linkages with local consumers, develop a loyal customer base, and receive feedback from buyers on their specific preferences. In addition, the value experienced by consumers might be different in the two cases.

Those consumers who buy tomatoes directly from the farm may enjoy a value emerging from the opportunity to interact with the farmer and to understand what a farm is like.

Image: "Cherry Tomatoes", available at: https://www.publicdomainpictures.net/en/view-image.php?image=57754&picture=tomate-cereja

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Business Models Optimization
Module 3.1: Business Models: concept and value
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In other words, the ways value is created – and, consequently, the business models applied by different organizations – affect how organizations and consumers experience value.

Hence, the term "business model" has to do with a set of decisions made by any business unit about:

- the strategies used,
- the markets addressed, and
- the value proposition they offer to (potential) customers.

MODULE 3.1
Self-assessment test

Business Models Optimization
Module 3.1: Business Models: concept and value
Self-assessment

1. What is the core concept for understanding a business model?

A) Revenue Generation

B) Value

C) Strategy Execution

D) Consumer Markets

2. Which of the following is NOT one of the pivotal functions of a business model?

A) Taxonomizing organizational structure

B) Providing a revenue-focused analysis

C) Acting as a prototype explaining how business is done

D) Offering templates to create value

3. According to the slides, what does the term "business model" primarily describe?

A) A business's financial operations

B) A "story" depicting customers and the value proposition offered

C) The governance model of an organization

D) Marketing strategies used in competitive markets

Correct Answers

1. B) Value
2. B) Providing a revenue-focused analysis
3. B) A "story" depicting customers and the value proposition offered

MODULE 3.1
Glossary

Glossary

Business Model: A framework or "story" that outlines how a business identifies its customers and delivers the value they seek. It involves strategies, markets, and value propositions.

Value: A central concept of business models. Value is not an intrinsic attribute of products but emerges through practices and co-creation among actors in a system.

Value Proposition: The specific benefits or solutions a business promises to deliver to its customers. It defines how the organization creates value for its stakeholders.

Prototypes: Functional examples or models explaining how organizations operate to achieve specific outcomes.

Taxonomizing: The process of organizing or categorizing the structure of a business to better understand its mechanisms for value creation.

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Thank You!

ANNEX 3
Training Module 3.2
How business models help to create value.

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MODULE 3.2: How business models help to create value

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MODULE 3.2: How Business Models help to create value
MED-LINKS

The goal of this module is to outline a benchmark framework for conceptualizing the ways through which the business models used in supply chain systems lead to the production of value.

Generic benchmarking is a procedure that can be used to propose good practices, not only to uncover differences between a business or system and best-in-industry or best-in-class examples.

Through generic benchmark frameworks, one can uncover what the current performance of a system is, what the ideal state would be, and how it can be achieved.

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MODULE 3.2: How Business Models help to create value
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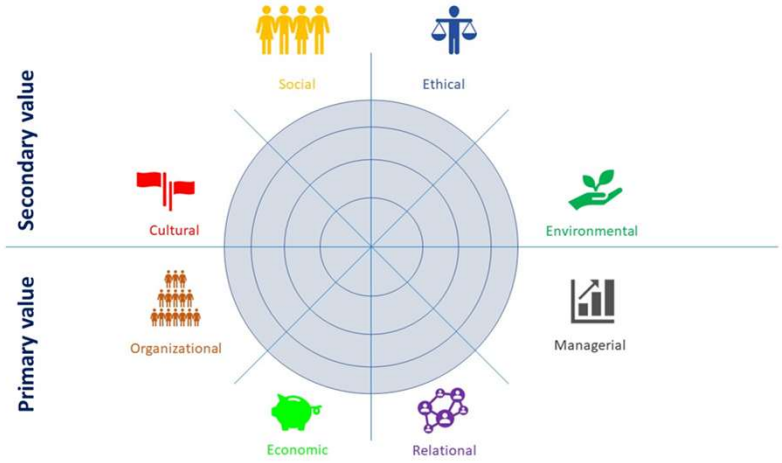
Supply chain systems produce two types of value.

The first one concerns the value emanating from supply chain systems' operation and spreading across the supply chain. To describe it, we use the term "primary value."

The second type of value – "secondary value" – is produced and diffused beyond the boundaries of the supply chain.



Each type of value includes four dimensions.

Primary value involves the organizational, economic, relational, and managerial dimensions.

Secondary value is constructed upon the environmental, ethical, social, and cultural dimensions.

Source: Charatsari, C., Lioutas, E. D., Michailidis, A., Aidonis, D., De Rosa, M., Partalidou, M., ... & Camanzi, L. (2023). Facets of value emerging through the operation of short food supply chains. *NJAS: Impact in Agricultural and Life Sciences*, *95(1)*, 2236961.

To produce **managerial value**, a supply chain system should:

- Prioritize the quality of products,
- Pursue innovation,
- Respond to consumers' needs and wants,
- Use effective communication channels.

Relational value is secured through:

- Emphasizing workers' safety,
- Offering education/training opportunities to employees,
- Developing partnerships and alliances,
- Developing information-sharing networks that promote transparent relations.

Economic value involves:

- Using the available resources in an economically efficient way,
- Operating in a way that minimizes costs and maximizes profits,
- Offering a fair income to the actors involved,
- Leading to economic viability.

The creation of **organizational value** requires:

- An effective organizational structure,
- Ability to change when needed,
- Reliance on democratic decision-making processes,
- Engaging stakeholders and societal groups.

To pursue **environmental value**, a supply chain system should:

- Reduce its environmental footprint,
- Be energy efficient,
- Use green practices,
- Contribute to the fight against climate change.

To achieve **ethical value** it is pivotal to:

- Create fairly distributed value,
- Ensure fair competitive relations,
- Limit food waste,
- Promote ethical consumption.

Social value is about:

- Respecting human rights and workers' health,
- Cultivating social capital among supply chain nodes,
- Promoting community well-being,
- Increasing community resilience.

To produce **cultural value**, a supply chain system should:

- Respect farmers culture,
- Be compatible with the local culture,
- Promote a culture of collaboration among supply chain nodes,
- Build and be built on a corporate responsibility culture.

Business Models Optimization
MODULE 3.2: How Business Models help to create value

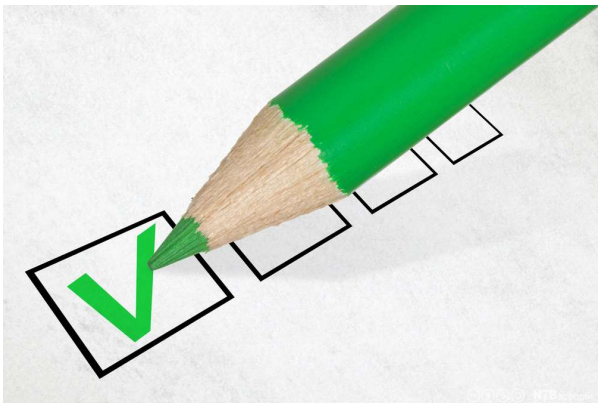
Assessing the criteria presented before, one can evaluate the capacity of a supply chain system to produce value.

Keep in mind that each supply chain is unique, and its value-generating capacity depends on structural and contextual factors.

MODULE 3.2
Self-assessment test

1. Which of the following dimensions refer to the primary value of supply chain systems?
(There can be more than one correct answer)

a) Managerial
b) Cultural
c) Organizational
d) Economic
e) Environmental
f) Relational



2. Which of the following dimensions refer to the secondary value of supply chain systems?
(There can be more than one correct answer)

a) Organizational
b) Environmental
c) Cultural
d) Ethical
e) Relational
f) Social

Self-assessment tests answers

1. a) Managerial, c) Organizational, and f) Relational

2. b) Environmental, c) Cultural, and d) Ethical

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ANNEX 4
Training Module 3.3
How to develop alternative business models.

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MODULE 3.3: How to develop alternative business models

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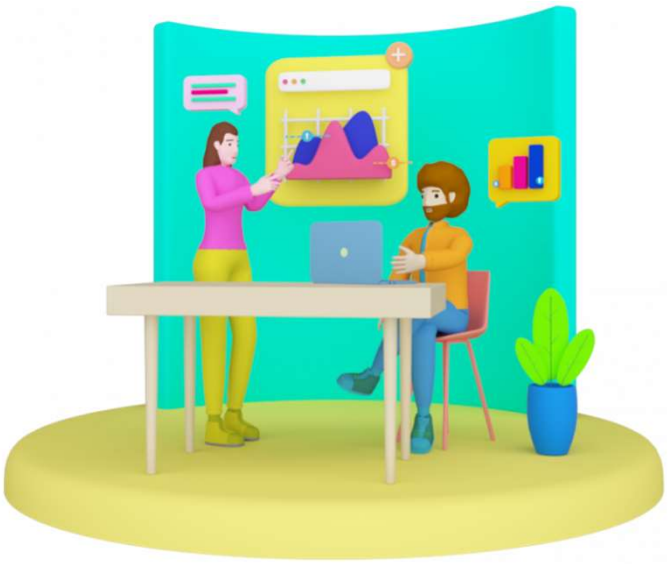
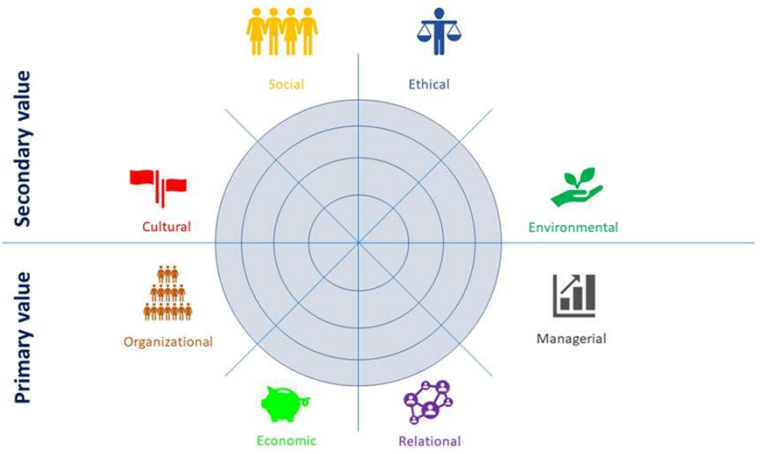
Business Models Optimization
MODULE 3.3: Development of alternative business models
MED-LINKS

The goal of this module is to present a procedure that can be exploited for developing and evaluating alternative business models.





A business model, as we explained in previous modules refers to how a company or supply chain produces and delivers value to consumers.

In Module 3.2a we presented the eight dimensions of value.

Source: Charatsari, C., Lioutas, E. D., Michailidis, A., Aidonis, D., De Rosa, M., Partalidou, M., ... & Camanzi, L. (2023). Facets of value emerging through the operation of short food supply chains. *NJAS: Impact in Agricultural and Life Sciences*, *95(1)*, 2236961.

Business Models Optimization
MODULE 3.3: Development of alternative business models

To create an alternative business model, one should:

- Integrate different and innovative elements that can lead to value production,
- Draw the model,
- Evaluate it by assessing its strengths and weaknesses, and estimating the existing opportunities and threats and their potential impacts.

In this module we will offer some illustrative examples, creating alternative business models for short food supply chains, export-oriented supply chains, and green public procurement schemes.

First, let's present an alternative business model for **short food supply chains**.

Let's consider that we can alter the value-productive capacity of the chain by developing and exploiting a digital platform.

We can also exploit voluntary certification schemes.

What is important is to make both the platform and the certification schemes working under the aim of generating value for the supply chain and the society.

It is also crucial to understand how the proposed model will affect different aspects of short food supply chains.

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Short food supply chains
MED-LINKS

Here is our alternative business model.

Some digital solutions are used to store information on suppliers, amounts of products sold per distribution channel (e.g., farmers' markets, direct sales in local restaurants), prices, costs, and revenues. These solutions are expected to facilitate the economic monitoring of farms, thus helping farmers make informed decisions, reduce their costs, and choose the most suitable distribution routes. Hence, farmers can increase their income and enhance the viability of their farms.

Here is our alternative business model.

A digital platform will serve as a bridge, connecting farmers and consumers, thus offering producers the opportunity to understand their customers' needs and wants. The platform can also be used as a space for the engagement of societal groups with short food supply schemes.

In parallel, voluntary certification schemes will be adopted by local short food supply chains to ensure the high quality of the products.

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MODULE 3.3: Development of alternative business models
Short food supply chains
MED-LINKS

After developing the business model, the next step is to assess its value-generating capacity.

To this end, we can perform an expert-based SWOT analysis, assessing its strengths and weaknesses, and evaluating external opportunities and threats.

During our analysis, we can use ratings for each one of the elements included in the SWOT analysis.

To provide a more detailed classification, we divided strengths, weaknesses, opportunities, and threats into major and minor, depending on the scores they received.

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Business Models Optimization

MODULE 3.3: Development of alternative business models

Short food supply chains

MED-LINKS

Working in this way, we can have a SWOT graph like that presented here.

The graph summarizes the factors that catalyze the ability of our model to produce value.

For example, in our case, the lack of farmers' expertise and their limited experience are barriers in exploiting the proposed model.

	Strengths	Weaknesses	
Major	Economic performance Environmental performance Cultural appropriateness Social performance	Farmers' expertise Experience to exploit the model	Minor
Minor	Adoption readiness Quality of collaboration Compatibility Willingness to adopt the model		Major
Major	Consumers' mindsets Technology development Public acceptance Economic situation	Funding opportunities	Minor
Minor	Institutional support Societal support National legislation Competition Agricultural policies		Major
	Opportunities	Threats	

Now, let's see an alternative business model for **export-oriented supply chains**.

Again, we will consider that we can alter the value-productive capacity of the chain by developing and exploiting a digital platform and a new organizational structure.

We have always to keep in mind that the platform and any other element we include in our model must facilitate the production of value for the supply chain and the society.

Here is our alternative business model for export-oriented supply chains.

The core of the business model is a digital platform in which actors participating in export-oriented supply chains will voluntarily add financial data.

User-friendly applications will help small-scale actors (who do not always have the expertise needed to design and perform proper economic plans) make sense of the economic performance of their enterprises and understand factors that increase costs, reduce profits, and decrease the efficient exploitation of resources.

Here is our alternative business model for export-oriented supply chains.

Actors can add content to the platform, exchanging information related to their partners' performance, thus allowing others to compare potential collaborators and make better decisions.

The user-generated content of the platform can be available to all users or only to those being authenticated, thus preventing unsubstantiated evaluations.

The process is expected to strengthen the exchange of transparent information among supply chain actors, facilitating, in parallel, the reorganization of supply chains.

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MODULE 3.3: Development of alternative business models
Export-oriented supply chains
MED-LINKS

After outlining our model, we have to assess its ability to generate value by performing a SWOT analysis.

Here, we present the analysis conducted in the framework of the MED-LINKS project.

Focusing on these elements that represent the major weaknesses of the model is critical.

In our case, the lack of farmers' expertise is a major weakness.

Therefore, offering training opportunities for helping them build competence is a significant first step.

Now, an alternative business model for **green public procurement** schemes.

The basis of the model is a digital platform that will serve as a space for proposing, forming, and adopting digital innovations, which, after a public negotiation process, will be selected as tools that can help farmers, public organizations, and actors participating in the scheme meeting relevant standards.

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Business Models Optimization

MODULE 3.3: Development of alternative business models

Green public procurement

MED-LINKS

Now, an alternative business model for **green public procurement** schemes.

Depending on the national legislation and the available resources, farmers and public organizations can develop a relevant certification scheme (e.g., Responsible Green Public Procurement), setting forth clear rules for both ends of the chain.

While adopting digital innovations aiming at improving the economic, managerial, relational, and organizational performance of green public procurement, actors will continue to take responsive actions when needed and collaboratively develop solutions to emerging problems, taking into consideration the societal well-being and the wealth of local communities.

As in the previous two examples, a SWOT analysis can reveal the points deserving attention.

	Strengths	Weaknesses	
Major	Compatibility Social performance Economic performance	Experience to exploit the model	Minor
Minor	Environmental performance Adoption readiness Cultural appropriateness Quality of collaboration, Farmers' expertise Willingness to adopt the model		Major
Major	Institutional support Technology development	Competition	Minor
Minor	Agricultural policies Societal support, Public acceptance Economic situation, National legislation Consumers' mindsets Funding opportunities		Major
	Opportunities	Threats	

For instance, competition can be a threat for developing responsible green public procurement schemes.

On the other hand, its high social and environmental performance, along with the compatibility of the model with the core principles of green public procurement, are major strengths.

MODULE 3.3

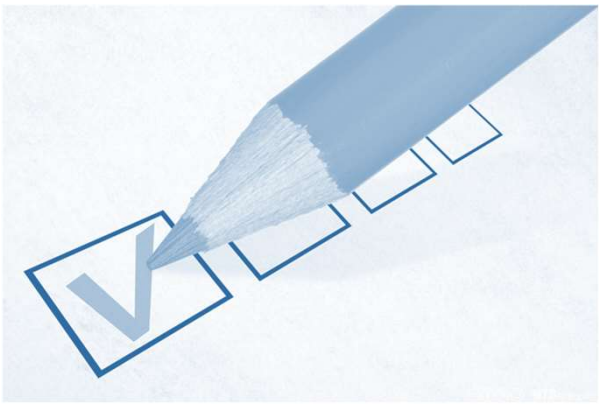
Self-assessment test

What is the next step after developing an alternative business model?

a) Applying it in real settings

b) Assessing it through the use of a SWOT analysis

c) Comparing it with other models



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Business Models Optimization

MODULE 3.3: Development of alternative business models

Self-assessment tests

MED-LINKS

What a SWOT analysis offers after the development of a business model?

a) The opportunity to evaluate the economic performance of the model

b) The opportunity to create a business model canvas

c) The opportunity to identify critical points of the model that deserve attention

Self-assessment tests answers

1. b) Assessing it through the use of a SWOT analysis

2. c)The opportunity to identify critical points of the model that deserve attention

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Thank You!

ANNEX 5
Training Module 3.4
How to optimize business models.

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MODULE 3.4: How to optimize business models

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Business Models Optimization
MODULE 3.4: How to optimize Business Models
MED-LINKS

The goal of the module is to identify the digital platform which fits best with each supply chain under investigation (short food supply chains, export-oriented supply chains, and green public procurement).

Guidelines for optimization strategies have been identified with the purpose of reaching high penetration rates, through pointing out compatibility issues, by considering :

- actual compatibility: familiarity, affordability, fit with small farms issues;
- value compatibility: relations between the personal/relational dimension and the cyber physical-social systems supporting the adoption of smart technologies.

Set against the perspective of sustainability of the business models, primary and secondary values have been taken into account.

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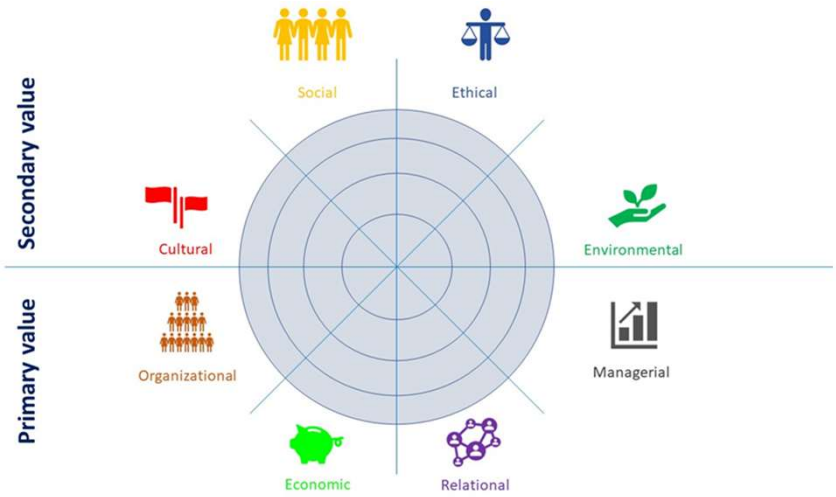
MODULE 3.4: How to optimize Business Models
A compatible solution
MED-LINKS



Here we present the two types of value produced through the operation of supply chains: primary and secondary value.

Source: Charatsari, C., Lioutas, E. D., Michailidis, A., Aidonis, D., De Rosa, M., Partalidou, M., ... & Camanzi, L. (2023). Facets of value emerging through the operation of short food supply chains. *NJAS: Impact in Agricultural and Life Sciences*, *95(1)*, 2236961.

Digitally-supported certification in short food supply chains

A digital platform supports digitally enhanced business model for the SFSC, built upon four pillars.

The pillars refer to the social, environmental, ethical, and cultural sustainability of the chain.

The certification scheme will be developed through an open negotiation process in which members of short food supply chains will be involved (farmers and producers organizations distributing products through short supply schemes, consumers).

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Business Models Optimization

MODULE 3.4: How to optimize Business Models

The selected optimal solution for SFSCs

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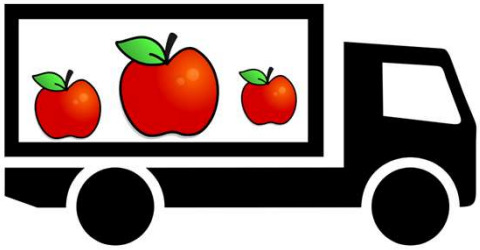
Recommendations to secure a higher level of adoption in short food supply chains

1. Connecting the farms with research centers and universities.
2. Stressing the importance of informational transparency across the supply chain system.
3. Strengthening the validity and effectiveness of the proposed business model.
4. The planning of training courses is another guideline that could improve the rates of adoption of the new business model.
5. Finally, bridging the farms with the available financial funds could reduce effective and perceived barriers to adopting the business model.

Enabling primary and secondary value creation in export-oriented supply chains through certification and digitalization

In this digital platform, a certification scheme that guarantees compliance with environmental, ethical, cultural, and social standards will be developed.



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Business Models Optimization

MODULE 3.4: How to optimize Business Models

The selected optimal solution for EOSCS

MED-LINKS

Recommendations to secure a higher level of adoption in export-oriented supply chains

1.To spread the potential of the business model, it is necessary to widen the awareness about the informational transparency of the business model across the entire supply chain.

To address these issues, dedicated promotional campaigns should be encouraged.

2.The sustainability of the business models can be pursued by reducing price competition (which put at risk quality-oriented strategies) and by maintaining price stability (and, consequently, farm income stability).

3.The constant support of research institutions is fundamental to secure a punctual analysis and monitoring of market conditions and dynamics.

First step of adoption	Second step of adoption
▶ ***Connecting farmers to the public sector through digital platforms and voluntary certification schemes***	▶ ***Responsible green public procurement***
Voluntary certification schemes will be developed/adopted to ensure the environmentally friendly character of the production and distribution within green public procurement.	The basis of the model is a digital platform that will serve as a space for proposing, forming, and adopting digital innovations, which, after a public negotiation process, will be selected as tools that can help farmers, public organizations, and actors participating in the scheme meeting relevant standards.

Business Models Optimization
MODULE 3.4: How to optimize Business Models
The selected optimal (stepwise) solution for green public procurement

Recommendations to secure a higher level of adoption in green public procurement supply chain systems

In the green public procurement, it is important to plan training courses aimed to strengthen the operators' soft and hard skills.

Informational and promotional campaigns are strongly recommended, to reduce informational asymmetries regarding the reliability of the certification schemes and on the sustainability of the entire supply chain.

The analysis points out some elements of reflection which should drive the choice of the business models and digital platforms to be adopted.

The first one concerns the concept of actual compatibility, which refers to the familiarity and affordability of the proposed business models and digital solutions.

Lack of expertise, digital gaps, and cost of adoption have been identified as the main obstacles and points of weakness.

Moreover, looking at symbolic compatibility, the analysis of secondary values has allowed some issues related to cultural appropriateness and to the development of social capital to emerge.

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MODULE 3.4: How to optimize Business Models
Conclusions
MED-LINKS

Set against this background, the identification of the optimal solution here proposed should be integrated by the adoption of a so-called "conjuncture pragmatism", looking at a sort of stepwise adoption of more simple solutions on which to overlap more complex solutions in a relatively short span of time.

This could allow them to overcome the constraints evidenced by all operators of the various supply chain, allowing them to acquire familiarity with the tools and, therefore, to be more inclined to adopt other digital solutions.

MODULE 3.4
Self-assessment test

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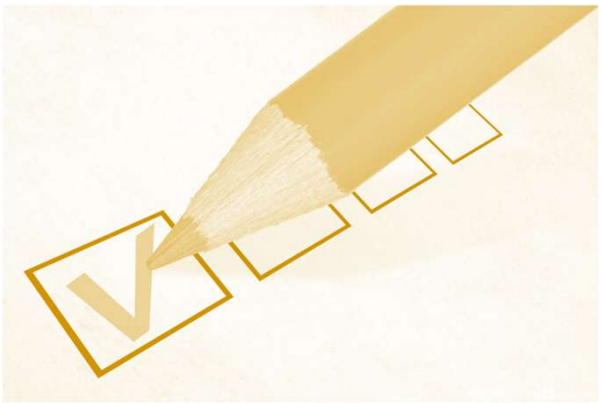
MED-LINKS

Self-assessment tests

How can we secure a higher level of adoption in short food supply chains?

a) By offering economic incentives
b) By connecting farmers with research centers and universities
c) By making the use of the proposed solution obligatory



How can we secure a higher level of adoption in export-oriented supply chains?

a) By ensuring constant support from research centers and other public institutes

b) By making obligatory the use of specific certifications

c) By making obligatory the use of digital platforms

Self-assessment tests answers

1. b) By connecting farmers with research centers and universities

2. a) By ensuring constant support from research centers and other public institutes

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