



Module title	Short Supply Chain Logistics
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Introduction (general)	This trainer's guide has been produced for the course on short supply chain logistics. The aim of the training module is for participants to understand efficient logistics processes, identify existing challenges in supply chains and learn how to optimise transport and stock management tasks. Interactive activities and case studies help participants to assimilate theoretical knowledge through practical examples and subsequently apply it to the development of their own businesses.
Chapter title (and subchapter, if applicable) and the knowledge contained therein to which the guide refers	Chapter 1: Fundamentals of logistics processes: Efficiency and planning based on the 9M principle Theory (duration: 15 minutes) This teacher's guide has been developed for training on short supply chain logistics. The aim of the training module is for participants to understand efficient logistics processes, identify challenges in supply chains, and learn how to optimise transport and stock management tasks. Interactive activities and case studies help participants acquire theoretical knowledge through practical examples and subsequently apply it to the development of their own businesses.
Duration	45 minutes
Reference to relevant slides in the PPT presentation, description of related tasks and their methodology, expected outcomes	Slides 4–12 1. Group activity (slide 11): What does compliance mean? (15 minutes) Work with the participants to create a mind map whose branches collect the elements/characteristics related to the 9 aspects of compliance in logistics, in the case of a cheese manufacturer. The aim of the task is for as many participants as possible to contribute as many perspectives as possible to the map. The structure of the mind map can be prepared in advance using an online programme of your choice or drawn on the board, and completed together with the participants. To create the mind map, you can use the suggestions below: How to create a mind map? DIA Knowledge Base



M1: Appropriate product

A product must be produced to meet customer expectations.

- High-quality raw materials (e.g. fresh milk)
- Local and natural ingredients
- Artisanal character
- Variety of cheeses (e.g. mature cheese, fresh cheese, flavoured cheeses)
- Compliance with food health and safety standards

M2: Suitable location

Cheeses must be sold in a location accessible to customers.

- Local markets
- Farm shop
- Distribution points, mobile shop, collection points
- Delivery to local restaurants and shops
- Online orders and home delivery

M3: Right time

The product must arrive fresh, tailored to customer requirements.

- Weekly deliveries
- Seasonal production plan
- Pre-arranged delivery schedule
- Flexible ordering options
- Automatic notifications for customers

M4: Consistent quality

The product must reach customers with the same, consistent and appropriate quality.

- Refrigerated transport vehicle
- Proper storage conditions (e.g. cold store)
- Compliance with hygiene standards
- High-quality packaging that protects the cheese from spoilage
- Collecting and taking customer feedback into account

M5: Appropriate quantity

The quantity required by customers must be produced and delivered.

- Implementation of a pre-order system
- Monitoring seasonal demand
- Flexible stock management



- Assessing the requirements of loyal customers
- Drawing up a production plan

M6: Appropriate cost

Logistics processes must be carried out in a cost-effective manner.

- Optimisation of transport routes
- Shared transport with other local producers
- Reducing packaging costs (e.g. reusable or recyclable packaging)
- Use of local raw materials to reduce procurement costs
- Reducing online marketing costs through local campaigns

M7: Suitable customer

The product must be delivered to customers for whom it has value.

- Local communities (e.g. visitors to rural markets)
- Loyalty scheme
- Catering establishments (e.g. local restaurants and cafés)
- Direct sales to consumers
- Maintaining personal relationships with customers

M8: Appropriate information

All participants in the supply chain must have access to the necessary information.

- Product labels (e.g. origin, use-by date, allergen information)
- Customer information (e.g. newsletters, social media)
- Electronic tracking system
- Product information via QR code
- Prompt responses to customer enquiries

M9: Appropriate energy

Optimisation of energy consumption in production and transport processes.

- Use of electric vehicles for transport
- Energy-efficient storage
- Avoiding unnecessary transport
- Use of eco-friendly packaging

Exercise 2. (Slide 12): My sales channels (15 minutes)

Participants must present the sales channels they use in their own business and explain why they chose them.

The aim of the task is for participants to become aware of their sales



opportunities, recognise the advantages and limitations of each channel, and receive suggestions – directly from their colleagues – for expanding or testing new channels.

Prepare worksheets for the participants to hand out. Allow 5 minutes to complete the task, then discuss the results together!

Example worksheet:

Sales channel	Why did we choose this sales channel?
Market (local or rural)	
Parcel lockers	
Home delivery	
Local shop (e.g. village shop)	
Catering establishments (e.g. restaurants, cafés)	
Online sales (online shop, social media)	
Mobile shop	
Supermarket or wholesale	
Vending machine	
Parcel collection points	
Others, namely:	

Additional materials
(with links, if
available):

- articles,



- figures, - infographics, - YouTube videos (high quality)	
Knowledge assessment questions, these are usually multiple-choice questions (e.g., tick the correct answers)	1. Which statement characterises short supply chains? A) Manufacturers sell to customers without a direct link. B) Understanding customer requirements is not necessary, as all products are standardised. C) In short supply chains, manufacturers are directly connected to customers. ✓ D) The length of the supply chain does not affect logistics costs.
	2. Which of the following logistics activities is an example of production logistics? A) Purchasing raw materials from the market. B) Delivering products to customers on time. C) Scheduling the grape harvest at a winery. ✓ D) Managing customer feedback.
	3. Which of the following does NOT fall within the main categories of the 9M principle? A) The appropriate use of energy. B) Appropriate advertising and marketing. ✓ C) Delivery to the correct location. D) Appropriate packaging.
	4. What is the main purpose of careful planning of logistics processes? A) To produce as few products as possible. B) To ensure products reach customers on time, with the right quality and in a cost-effective manner. ✓ C) To offer the same range to all customers. D) To minimise customer relations.



	5. Which of the following logistics activities is an example of reverse logistics? A) The production of new products. B) Collecting used packaging for reuse. ✓ C) Delivering products to customers. D) Checking the quality of product packaging.
Self-reflection exercise (e.g. questions or visualisation, during which the participant can imagine themselves in a future state or situation. This can help in setting and achieving goals).	1. How could you reduce the cost of transporting goods on your farm? 2. What steps would you take to improve your direct relationship with customers? 3. How do you ensure that products always reach customers in the right condition? 4. What new sales channel would you try on your farm? 5. How would you respond to rapid changes in customer requirements?
Questions to encourage reflection <i>(With the help of the answers to these questions, participants can immediately formulate something achievable that they can incorporate into their practice.)</i>	• What does on-time delivery of products mean to you? • Why is IT logistics important in today's world? • How does the choice of distribution channels influence the success of your farm? • What benefits could reverse logistics bring to your farm? • What challenges do you observe in short supply chains?
Appendix (if any)	

Chapter title (and sub-chapter, if applicable) and the information within it to which the guide refers	Chapter 2: Methods for identifying logistical problems and challenges Theory (duration: 12 minutes): This chapter presents the practical application of the cause-and-effect diagram (fishbone diagram) and Pareto analysis for
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	identifying and managing the logistics problems of small-scale producers. Participants will learn how to identify root causes and how to focus on the problems with the greatest impact, thereby increasing efficiency and reducing costs. The analytical tools help to find practical and targeted solutions to the difficulties encountered in the day-to-day management of the farm.
Duration	35 minutes
Reference to relevant slides in the PPT presentation, description of related tasks and their methodology, expected outcomes	<i>Slides 13–21</i> Exercise 3 (slide 20): Together with the participants, carry out a ‘fishbone’ diagram analysis of the major issues raised in customer complaints to a producer offering weekly vegetable box subscriptions, specifically regarding the quality of products delivered to consumers! (duration: 12 minutes) Possible causes: • People (Human) – human-induced non-conformities, sources of error (insufficient attention, lack of information, low motivation, damage caused by pests, ignoring damage, etc.) • Material – non-conformities in materials, semi-finished goods or finished products, as a possible source of error • Method – non-conformities in the method applied (damage during harvesting or transport) • Machine – errors caused by equipment faults or non-conformities (vehicle suspension system, other vehicle defects that may cause damage, failure of the vehicle’s air conditioning system) • Measurement – non-conformities in the measurement process, certain errors go unnoticed (defects in measuring instruments, etc.) • Management – errors arising from the improper management or organisation of processes (harvesting too late or too early, excessive or insufficient irrigation, lack of plant protection) • Mother Nature – errors caused by unexpected natural conditions (unexpected heavy rainfall, drought, etc.) Exercise 4. (slide 21.): Participants should reflect on their field of activity and identify why the application of the Pareto analysis would be justified! (duration: 10 minutes) For this task, prepare worksheets to distribute to participants, on which they can indicate which areas of their work they consider problematic and, if they



	have expectations regarding the most problematic areas, to note them down or share them.		
	Process	Is the application of Pareto analysis justified? (Y/N) Why?	Within the process, what do you consider to be the most critical points?
	Revenue and costs		
	Time management		
	Quality control		
	Transport		
	Complaints handling		
	Human error		
	Packaging		
	Storage		
	Sales channels		
	Procurement		
	Environmental impact		
Additional materials (with links, if available): - articles, - illustrations, - infographics, - YouTube videos (high quality)			



**Knowledge check
questions**

*These are usually
multiple-choice
questions (e.g. select
the correct answers)*

1. What is the purpose of a 'fishbone' diagram?

- A) To forecast customer demand.
- B) To calculate production costs.
- C) To manage logistical issues immediately and efficiently.
- D) Identifying the root causes of problems from multiple perspectives. ✓

2. Which example falls under the category of 'Human Errors' in the 'fishbone' diagram?

- A) Cooling system failure.
- B) Inaccurate communication with the customer. ✓
- C) Transport routes that are too long.
- D) Changes in weather conditions.

3. Which of the following CANNOT be considered a root cause category in the 'fishbone' diagram?

- A) Material
- B) Method
- C) Marketing ✓
- D) Management

4. How can losses caused by unnecessary transport be reduced in practice?

- A) We deliver only one order at a time.
- B) We deliver multiple orders on the same route. ✓
- C) We outsource all transport tasks.
- D) We avoid communicating with the customer.

5. Which situation best justifies the application of the Pareto analysis?

- A) Administrative simplification.
- B) Treating all errors with equal importance.
- C) Reducing sales costs by identifying a few items with a major impact. ✓
- D) Increasing customer requirements by surveying all customers.

**Self-reflection
exercise (e.g.
questions or**

1. What common logistical problems do you face on your farm?



visualisation, during which the participant can imagine themselves in a future state or situation. This can help in setting and achieving goals).	2. How could you apply the 'fishbone' diagram on your own farm? 3. What do you consider to be the root cause that generates the most problems in your daily work? How could you support this with indicators or data?
Questions to encourage reflection <i>(With the help of the answers to these questions, participants can already formulate something feasible that they can incorporate into their practice.)</i>	• Why is it important to identify root causes when managing logistics issues? • What do you consider to be the most common logistical problems in short supply chains? • How could the impact of natural factors be reduced on your farm?
Appendix (if any)	



The name of the chapter (and sub-chapter, if applicable) and the information contained therein to which the guide refers	Chapter 3: Value stream analysis and reducing losses in logistics processes Theory (duration: 20 minutes): This chapter presents methods for value stream analysis and the management of the 7+1 types of waste, which enable small producers to identify which processes bring real value to customers and which generate unnecessary costs or time wastage. Participants will learn how to develop their logistics processes by reducing waste of time and resources, whilst increasing revenue and efficiency. By applying these analytical tools, they will be able to consciously manage sources of waste and develop more sustainable solutions.						
Duration	40 minutes						
Reference to relevant PPT slides relating to the given knowledge, description of related tasks and their methodology, expected results	Slides 22–28 Exercise 5. (slide 28.): Value stream analysis and losses (duration: 20 minutes): Hand out the following worksheet to participants! On the worksheet, they will see the elements of the value stream analysis for a family-run beekeeping business. The participants' task is to connect the parties involved, mark the direction of the value stream between them, and note down possible sources of loss for each element of the process. Time allocated for the task: 10 minutes, followed by 10 minutes of discussion and analysis of the results. <table border="1" data-bbox="491 1370 1517 2016"> <tr> <td data-bbox="491 1370 1002 1585">Suppliers of honeycombs (glass)</td><td data-bbox="1002 1370 1517 1585">Manufacturer's health authority</td></tr> <tr> <td data-bbox="491 1585 1002 1800">Beekeeping product retailers</td><td data-bbox="1002 1585 1517 1800">Marketing specialist, graphic designer</td></tr> <tr> <td data-bbox="491 1800 1002 2016">Household customers</td><td data-bbox="1002 1800 1517 2016">Manufacturers of veterinary products</td></tr> </table>	Suppliers of honeycombs (glass)	Manufacturer's health authority	Beekeeping product retailers	Marketing specialist, graphic designer	Household customers	Manufacturers of veterinary products
Suppliers of honeycombs (glass)	Manufacturer's health authority						
Beekeeping product retailers	Marketing specialist, graphic designer						
Household customers	Manufacturers of veterinary products						



	Restaurants, catering establishments	
Knowledge assessment questions <i>These are usually multiple-choice questions (e.g. select the correct answers)</i>	1. Which example illustrates the losses caused by unnecessary transport? A) A farmer sells his produce at the same market every morning. B) A cheese producer delivers orders immediately after receiving them, individually. ✓ C) A winery organises a combined weekly delivery for customers. D) A beekeeper delivers all orders to a collection point for customers.	
	2. Which statement is true about the 7+1 losses? A) To avoid losses, all processes must be accelerated. B) Value-adding processes are always more expensive than waste. C) Unnecessary transport and waiting can be identified as waste in logistics. ✓ D) Losses due to rejects arise exclusively from equipment failures.	
	3. How can storage losses be reduced? A) We keep all products in large quantities to avoid shortages. B) We carry out regular stock checks and, where possible, implement shorter, more frequent production cycles. ✓ C) We manufacture only seasonal products to avoid unnecessary stock. D) We put all products on the market immediately, regardless of demand.	
	4. Which of the following activities does NOT create value? A) Assessing customer requirements. B) Packing customer orders. C) Sorting products after harvesting. D) Unnecessary movement and searching in the warehouse. ✓	
	5. What is the main purpose of value stream mapping? A) Identifying only the processes that create value. B) Minimising all costs, regardless of customer satisfaction. C) Separating value-adding processes from those that do not add value and	



	reducing waste. ✓ D) Continuously increasing prices to offset losses.
Self-reflection exercise (e.g. questions or visualisation, during which participants can imagine themselves in a future state or situation. This can help in setting and achieving goals).	1. Which processes do you consider do not create value on your farm? 2. How could you reduce losses caused by transport? 3. Is there any activity on your farm that you consider to be over-processing? 4. How would you identify unnecessary waiting times in your own work process? 5. Which type of waste causes you the most problems and what could you do to reduce it?
Questions to ponder <i>(With the help of the answers to these questions, the participant can already formulate something feasible that they can incorporate into their practice).</i>	• Why is value stream analysis important for small manufacturers? • How can identifying the 7+1 types of losses help to reduce costs? • Which processes could be simplified on smallholder farms? • How can producers avoid overproduction? • Why is it important to focus on simplifying administration in farm management?
Appendix (if any)	

The name of the chapter (and sub-chapter, if necessary) and the information contained therein to which the guide refers.	Chapter 4: Logistical risks and their management in short supply chains Theory (duration: 15 minutes): This chapter highlights the importance of risks that may arise in logistics processes and presents the FMEA (Failure Mode and Effects Analysis) method, which helps small producers to identify and manage potential errors. Participants will learn how to conduct a risk analysis, prioritise issues based on the criteria S – Severity, O – Occurrence (probability/frequency of occurrence) and D – Detection (detectability), and then develop concrete solutions. Through anticipation and preparation, they can
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	significantly reduce losses, increase customer satisfaction and ensure sustainable operations in short supply chains.
Duration	30 minutes
Reference to relevant slides in the PPT presentation, description of related tasks and their methodology, expected results	Slides 29–35 Exercise 6. (slide 35): A small manufacturer of cream cheeses and spreads is conducting an FMEA analysis to prepare as effectively as possible, during market days, for the risks associated with its perishable products. Help them evaluate the results of the table below and develop proposals for managing the three non-conformities with the highest risk! In the table, the abbreviations stand for: S: severity, F: frequency, D: detectability. The participants' task is to multiply the factors, rank them in descending order based on the final result, and then analyse and attempt to manage the three non-conformities with the highest score (the most risky).



	(duration 15 minutes)				
	Name of risk factor	S	F	D	Total
	The customer who placed a pre-order arrives ten minutes before closing time, and the product has sold out in the meantime	8	8	2	
	During the tasting, the customer notes that the product has a chemical or sour taste	9	2	3	
	the manufacturer only realises, upon handing over the pre-packaged product, that the label states something different from what the package actually contains	4	6	7	
	the producer notices upon arrival that the products prepared for pre-orders are not in the vehicle	8	6	6	
	the customer lodges a complaint because the long-life product they bought last week went off after just one day	9	4	8	
	The manufacturer arrives at the market an hour late due to a traffic jam	6	10	4	
	the packaging of several products is damaged	8	8	7	
	the customer returns the pre-packaged product an hour after purchase, in its original packaging, because they noticed it was mouldy	10	5	10	
	it is very hot at the market and the products are melting, making them look less appealing	7	4	4	
	the producer only notices, upon handing over the pre-packaged product, that the production date on the label is 3 weeks earlier, whilst the use-by date is 2 weeks	9	8	7	
	the manufacturer notices during unloading that half of the products are frozen	10	4	4	
	A loyal customer complains that, recently, the product has on several occasions been much saltier or much blander than usual	9	3	10	
	Based on these, the three non-conformities with the highest risk are:				



al knowledge assessment questions <i>These are usually multiple-choice questions (e.g., select the correct answers).</i>	1. Which statement is characteristic of FMEA analysis? A) FMEA is used exclusively for financial risk analysis. B) FMEA helps to identify logistical errors and prioritise their management. C) FMEA is a method applicable only to large companies. D) FMEA does not take the severity of errors into account. Correct answer: B 2. What is the formula for calculating the Risk Priority Number (RPN)? A) $RPN = S + O + D$ B) $RPN = S \times O + D$ C) $RPN = S \times O \times D$ D) $RPN = (S + O) \times D$ Correct answer: C 3. Which of the following risks is NOT one of the common problems in logistics processes? A) Delivery delays B) Unexpected costs C) Product quality control D) Stock shortages Correct answer: C 4. What practical solution does FMEA offer to minimise delivery delays? A) Reducing fuel costs. B) Agreeing precise delivery windows with customers in advance. C) Scheduling all deliveries for weekends. D) Simplifying packaging methods. Correct answer: B 5. What does it mean if the value of the indicator associated with a failure mode (event) in the 'detectability' (D) category falls from 7 to 4 from one year to the next? A) The severity of the effect of that defect has decreased. B) Customers find it much harder to spot any quality issues with the product. C) We have managed to make it easier and quicker to detect the occurrence of a potential defect. D) The frequency of the defect's occurrence has increased. Correct answer: C



Self-reflection exercise (e.g. questions or visualisation, during which participants can imagine themselves in a future state or situation. This can help in setting and achieving goals).	1. What logistical errors have occurred most frequently in your operation over the past year? How have you tried to resolve them? 2. How would you reorganise transport processes to reduce the frequency or duration of delays? 3. Has there been any customer feedback that highlighted a hidden risk in your operations? How did you respond to it? 4. What risks do you consider most likely in your own supply chain? How do you prepare for them?
Questions to ponder <i>(With the help of the answers to these questions, the participant can already formulate something feasible to incorporate into their practice.)</i>	• How can communication with customers be made more effective to reduce logistical risks? • Why is it important for manufacturers to be prepared for unexpected events, such as vehicle breakdowns? • How do on-time delivery and minimising errors improve customer satisfaction? • What practical example could you give of a situation where an unexpected error caused a serious problem? • Why do you think it is important for small manufacturers to analyse risks in advance within short supply chains?
Appendix (if any)	



The name of the chapter (and subchapter, if applicable) and the information contained therein to which the guide refers	Chapter 5: The application of logistics tools and the importance of logistics awareness in practice Theory (duration: 15 minutes): This chapter highlights that the conscious planning and development of logistics processes play a vital role in ensuring the competitiveness and sustainable operation of small producers. Learners will be introduced to practical tools through which they can reduce logistics costs, increase efficiency and improve customer satisfaction. By using pre-order systems, group transport, route planning and record-keeping solutions, they will be able to make their operations more transparent and predictable.
Duration	30 minutes
Reference to relevant PPT slides relating to the knowledge provided, description of related tasks and their methodology, expected outcomes	Slides 36–41 Exercise 7. (slide 41) (duration: 15 minutes): Ask the learners to choose two easy-to-implement logistical tools from those mentioned in the chapter (e.g. record-keeping system, pre-order system, etc.) and to present how they would apply them in practice! They should also address the benefits these tools would bring to the running of their business.
Knowledge assessment questions <i>These are usually multiple-choice questions (e.g., select the correct answers)</i>	1. What is the main advantage of using a pre-order system? A) It requires less administration for the manufacturer. B) It reduces product quality issues. C) It allows for more accurate planning of delivery processes. D) It reduces the risk of product damage during transport. Correct answer: C 2. Which tool can help optimise transport routes? A) Google Maps B) Excel spreadsheet C) Paper records D) Phone notification Correct answer: A



	3. Why are local collection points or parcel lockers worth using? A) Because they reduce packaging costs. B) Because they allow customers to collect their orders more flexibly. C) Because it is no longer necessary to notify customers before delivery. D) Because they completely eliminate transport costs. Correct answer: B 4. Which of the following is NOT one of the objectives of logistics process development? A) Cost reduction. B) Increasing customer satisfaction. C) Reducing production capacity. D) Improving time management. Correct answer: C 5. How can losses caused by unnecessary journeys (empty runs) be reduced? A) By abolishing the pre-order system. B) By organising joint transport with other manufacturers. C) By reducing stock levels. D) By repackaging the products. Correct answer: B
Self-reflection exercise (e.g. questions or visualisation, during which participants can imagine themselves in a future state or situation. This can help in setting and achieving goals).	1. What logistics solutions do you currently use to run your farm? How could these be improved? 2. Has there ever been a situation where transport costs or delays have affected customer satisfaction? How did you handle this situation? 3. How would you organise transport more efficiently if you operated a shared collection point with other producers? 4. What advantages do you see in introducing a pre-order system on your farm? 5. To what extent can you monitor transport costs? How could these be measured more accurately?
Questions to ponder <i>(With the help of the answers to these questions, the participant can already formulate something feasible that they can incorporate into</i>	How does the fact that products arrive on time and punctually influence customer satisfaction? Why is it important for small producers to constantly develop their logistics processes? How can transport costs be effectively reduced in a short supply chain?



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<i>their practical).</i>	What logistical challenges do small producers face, and how can they prepare to manage them? What opportunities for collaboration do you see with other producers in the field of transport or warehousing?
Appendix (if any)	