



Log In Green

Erasmus+ Project

Output 2 - LogInGreen Competence Map

International Report

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General information about the survey

INTRODUCTION

The LogINGreen Competence Map – Output 2 has the objective to create a competence map for Green Logistics managers. In order to reach this goal, online questionnaires have been administered by all partners in their countries in order to identify the level of importance of certain competences in green issues for logistics managers and trainers, and possible green competences which could be added to support business sustainability. This document reports data collected from each partner country, in order to identify which are the most important elements in common and to elaborate them for a standard training. Furthermore, this document collects all suggestions provided by participants, in order to collect suggestions or add competences a logistic manager should acquire for the green areas identified by the partnership. The green areas identified are:

- Green Transportation
- Green Packaging
- Green Warehousing
- Green Waste Management
- Green Data Collection and Management

The survey has been conducted in Austria, Bulgaria, Finland, Italy, Spain and Switzerland. Thirty managers and 5 trainers have answered the questionnaire in each country; there is an exception for Austria which managed to collect data from 12 managers and 3 trainers, and for Switzerland which collected answers' only from trainers. Each partner collected own results in reports, which are presented in this document and are followed by final common conclusions.

Austria

RESULTS OF THE QUESTIONNAIRES – LOGISTICS MANAGERS

Background of the survey

1. Dates and duration during which the survey took place: June 2018
2. Main means used to contact the respondents: e-mails, paper questionnaires
3. Overall around 50 companies were contacted. 12 filled in the questionnaire. 12 questionnaires were complete.

Manager Profile

All of the respondents were male (100%). The respondents had an age between 35 and 55 years. All of them had an educational level of a secondary diploma. Most of the respondents stated to be managers or employees responsible for transport and logistics in their companies.

Enterprise Information

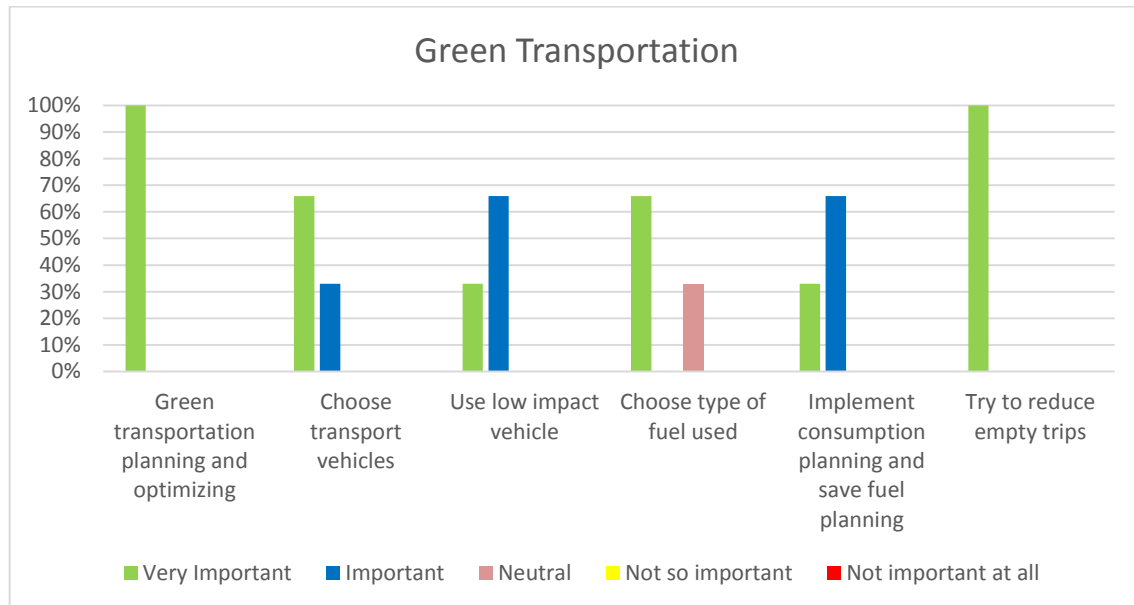
Most of the companies have received an environmental certificate (Environmental Management System or Environmental Certificate) such as ISO 14001 (66%) or ECOPROFIT (33%). Also, environmental strategies are available at the companies. Especially in the sectors of transport, waste management and warehousing (100%), but also some in Eco-Data collection (60%) and packaging (35%). The respondents stated that they are able – or at least partly able – to influence these strategies via proposals to the management, assistance and contributions while setting up environmental programs and strategies.

In general, the companies prefer to “make” their own strategies, especially the environmental one, instead to “buy” or “copy” them. So, they also think that their current environmental policies are good and sufficient, which reflects their high efforts in this sector. Nevertheless, they reflect honestly, that they need more competences in all the Green Logistics Areas as shown below.

Competences in the Green Logistics Areas

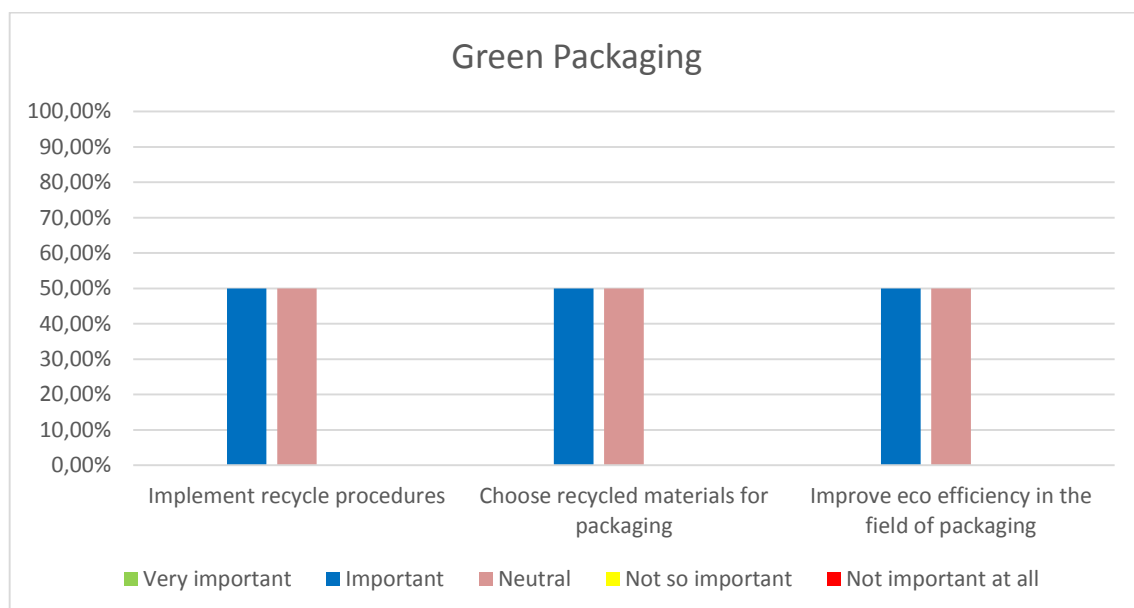
Independently from the specific answers to the questions about green competences, almost all of respondents indicated that their companies need more competences in all of these areas. On the other hand, the results are more or less clear and show the general importance of green issues for the logistic sector. In detail the questionnaires document the following:

Green Transportation



In this area the planning and optimizing of transport and the reduction of empty trips are considered as the most important by all the respondents. Only the choose of type of fuels used is seen by some of them as neutral, while all the other points are at least evaluated as important.

Green Packaging

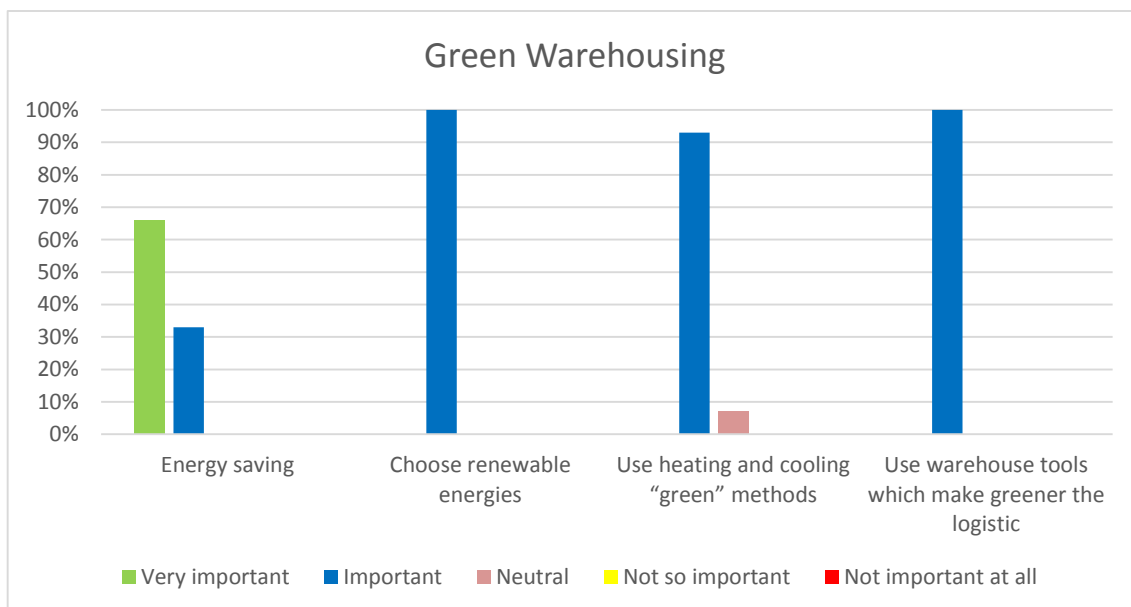


In the area of green packaging all the questions are seen equally as important or neutral. That means that this area is not of highest relevance among the green topics.

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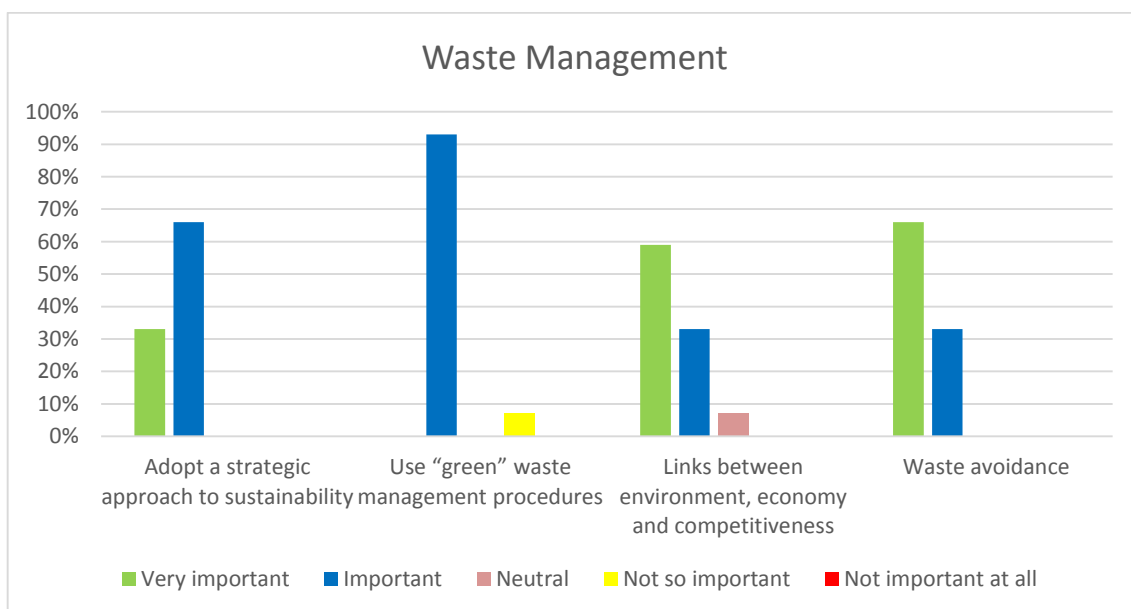
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Green Warehousing



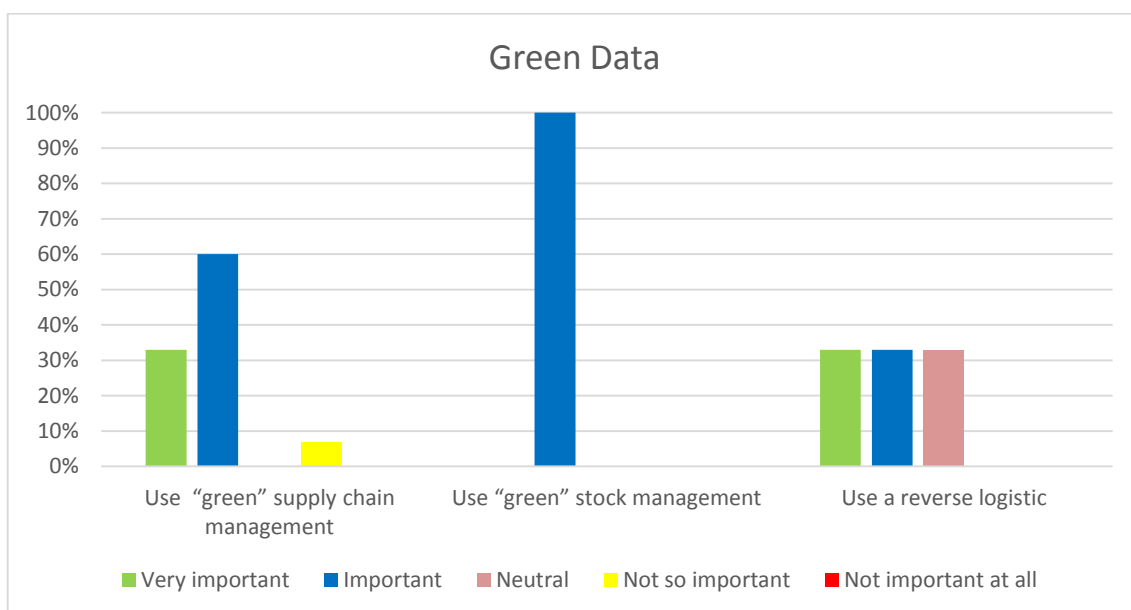
Environmental issues in the field of warehousing are seen as relevant for most of the respondents as most of them rated the respective points as important.

Green Waste Management

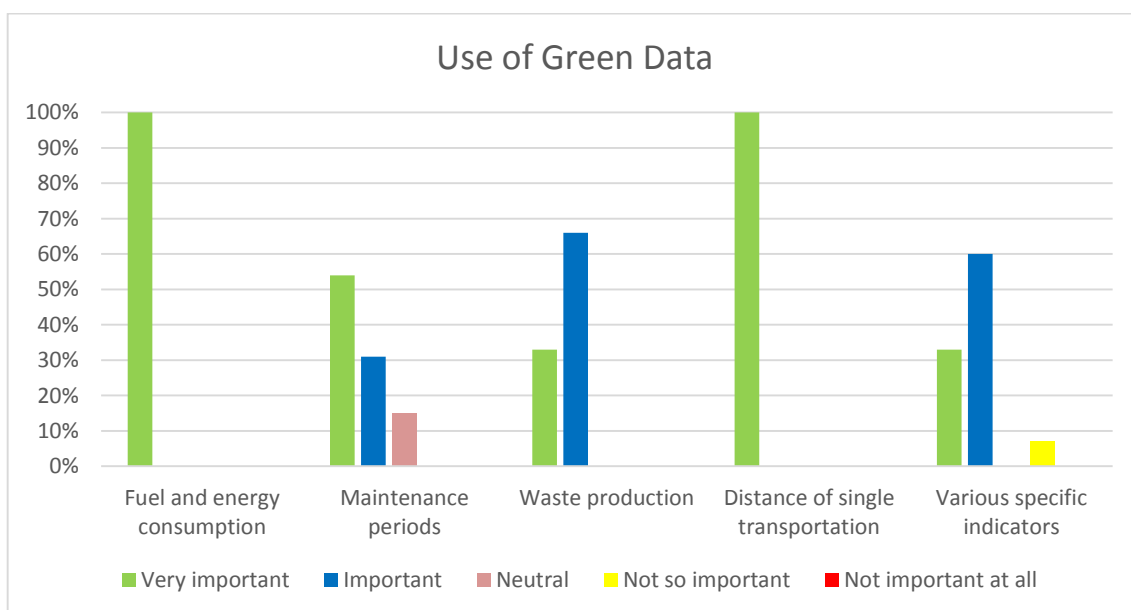


In terms of waste management many companies see these question as an important part of this area. And in this area the need for further training was declared very clear.

Green Data



Not all the participants in that survey are collecting and taking benefits from environmental related data and indicators. Therefore, they see the priority of this area as not so high than others.

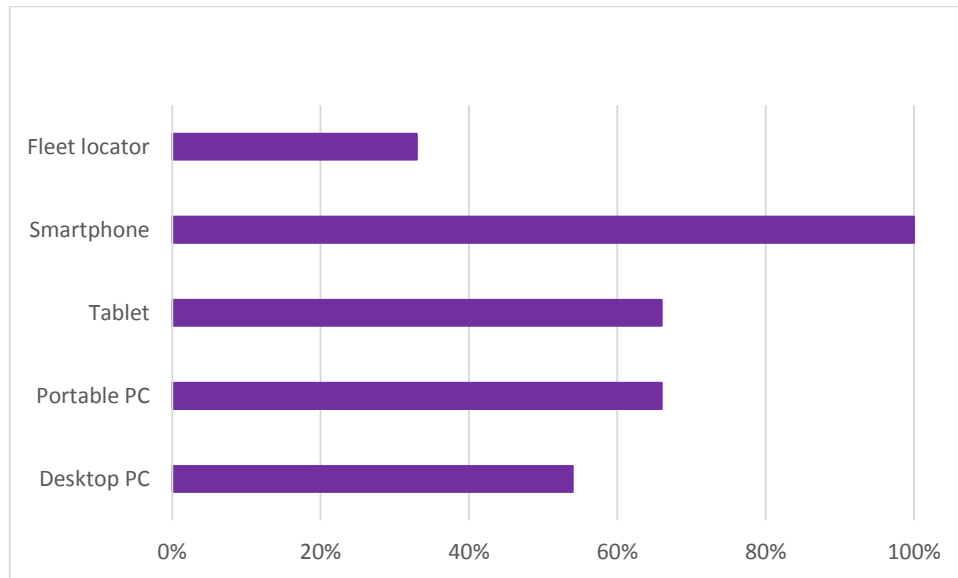


Some more general indicators and transport-specific data are collected and analyzed regularly by the companies (fuel consumption in l/100km, distances in km). To go into more details is not the case due to lack of time and knowledge. Here we find a big demand for further training and showing good examples.

Two third of the respondent mentioned, that environmental aspects – either on the basis of data or not – are important to make every day decisions or they help to support the process of decision-making.

ICT

The use of IT equipment at the day by day job is illustrated in the figure below.



As illustrated all of the asked logistic managers are using their Smartphone for their daily work. Some of them are equipped with tablets or laptops but only a few of them use ICT tools such as the Fleet Locator.

RESULTS OF THE QUESTIONNAIRES – TRAINERS

Background of the survey

1. Dates and duration during which the survey took place: June 2018
2. Main means used to contact the respondents: e-mails, paper questionnaires
3. Overall 8 trainers were contacted. 4 filled in the questionnaire. Only 3 questionnaires were fully complete.

General Information about Trainers

All the trainers who filled in the questionnaire are male and between 45 and 55 years old. Their educational level ranges from bachelor of applied science to a 2nd level school education. Most of them have a long term practical experience in the field of logistics. They are trainers now but not in the field of environmental trainings.

Competences in the Green Logistics Areas

Without going in details or showing facts and figures, all the trainers stated clearly the high importance of

- Green Transportation
- Green Packaging
- Green Warehousing
- Green Waste Management
- Green Data Collection

They pointed out, that it is obvious when talking about Climate Change and Sustainability also the transport/logistic sector has to take over responsibility and has to focus also on these issues. While consumption of fuel is in mind of many logistic managers, topics like green packaging or green data are underestimated by many companies.

The trainers highly recommend strengthening green issues in the trainings and see a lot of room for improvement.

ICT

The respondents stated that they mainly use laptops and smartphones (86% and 100% respectively) in their training practices, and they use mainly internet to get information and to learn (e-learning). Finally, the most used social media were Facebook. Less trainers use Twitter (20%). Other social media which are used are WhatsApp, IG, XING, Youtube.

Bulgaria

RESULTS OF THE QUESTIONNAIRES – LOGISTICS MANAGERS

Background of the survey

1. Dates and duration during which the survey took place: April-May 2018
2. Main means used to contact the respondents: online tool
3. Overall 50 companies have been contacted. 30 filled in the questionnaire. 30 questionnaires were complete.

Manager Profile (questions number: 1-2-3-4-5)

Most of the respondents were male – 67% while female were 33%. The respondents had an age above 50 - 71% and the rest were between 35-50 years old. Higher school diploma was the main educational level respondents gained, 30% of them stated to have a Bachelor degree, and others had Masters degree – 68%, 2 - PHD. Most of the respondents stated to be owners, managers and directors of logistic companies.

Enterprise Information (questions number: 6-7-8-10-12-14-16-18-19-20-21)

All companies answered that they do not have an environmental certificate. Some of the companies have developed environmental strategies, mainly warehousing – 3 % , packaging – 2 %and data collection – 5 %

Most of the respondents (72% stated that they are able to influence on the above strategies presenting their opinion to the decision makers. 28% was not able to influence any of the strategies.

According to the green areas proposed in the questionnaire, almost all of respondents indicated that the companies they work in needed more competences in each area.

AREA – Green Transportation

	Very Important	Important	Neutral	Not so important	Not important at all
Green transportation planning and optimizing (Organizing the route considering related consumption, distance, CO2 emissions)	91 %	9 %			
Choose transport vehicles (size, emission classification, type of fuel needed)	92 %	8 %			
Use low impact vehicle	32 %	41 %	27%		
Choose type of fuel used	32 %	41 %	27%		
Implement consumption planning and save fuel planning	29 %	71 %			

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Try to reduce empty trips	100 %				
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Companies need more competences in Green Transportation area (100%)

All of respondents indicated that the companies they work in needed more competences in Green Transportation area. They stated that:

The world is changing dynamically and new knowledge is changing dynamically.

It is necessary to be more competitive;

New skills connected to innovations are important

The competences can positively affect costs and foster business growth

Companies need more competences for this activities area - 100%.

Common answer: The world is changing dynamically and new knowledge is changing dynamically.

AREA – GREEN PACKAGING

	Very Important	Important	Neutral	Not so important	Not important at all
Implement recycle procedures		24%	76%		
Choose recycled materials for packaging		24%	76%		
Improve eco efficiency in the field of packaging	21 %	79%			

Companies need more competences in Green Packaging area (100%) because there is no good knowledge of environmental packaging measures and their relation to economic benefit

Companies still plan to save resources than to follow long-term environmental strategies and underestimate the importance of this area

AREA – GREEN WAREHOUSING

	Very Important	Important	Neutral	Not so important	Not important at all
Energy saving	100 %				
Choose renewable energies	19 %	81 %			
Use heating and cooling “green” methods		47 %	53 %		
Use warehouse tools which make greener the logistic		49 %	51 %		

Very important for the companies are the following elements:

Energy saving is very important for all; Choosing renewable energies - 19% very important; 81% - important; Use of heating and cooling “green” methods – 47% important; 53% - neutral; Use warehouse tools which make greener the logistic – 49% - important; 51% - neutral

100% of the companies needs more competences for this activities area, they explain that they need new knowledge.

AREA – GREEN WASTE MANAGEMENT

	Very Important	Important	Neutral	Not so important	Not important at all
Adopt a strategic approach to sustainability	52%	48%			
Use “green” waste management procedures	52%	48%			
Links between environment, economy and competitiveness	100%				
Waste avoidance	76%	24%			

The companies evaluate following elements: Adopt a strategic approach to sustainability – 52% -very important; 48% - important; Use “green” waste management procedures - 52% -very important; 48% - important; Links between environment, economy and competitiveness – 100% very important; Waste avoidance – 76% very important; 24 % - important.

All companies needs more competences for this activities area beacuse they are intersted in Innovations.

AREA – GREEN DATA COLLECTION AND MANAGEMENT

	Very Important	Important	Neutral	Not so important	Not important at all
Use “green” supply chain management	56 %	44 %			
Use “green” stock management	52 %	48 %			
Use a reverse logistic	59 %	51 %			

The companies consider the following elements for their companies: Use “green” supply chain management – 56% - very important; 44 % - important; Use “green” stock management - 52% - very important; 48 % - important; Use a reverse logistic – 59% very important; 51% - important

All companies confirm that they need more competences for this activities area , especially good practices.

More than 50% of the companies use “to make” strategy than or “to buy” strategy, because of financial reasons.

According to all companies the used strategy “green” is convenient, environmentally friendly.

For all companies is important documenting and recording periodically the following “green data”. Fuel and energy consumption – 100% very important; Maintenance periods – 50% very important; 50 % important; Waste production – 60 % important; 40 % neutral; Distance of single transportation – 100% very important; Various specific indicators – 20% very important; 80 % – important.

All companies representatives analyze the collected data and it leads to actions and changes in practise.

All companies representatives consider green values of each area important when making every day decisions, beacuse it guarantee correct decisions.

ICT

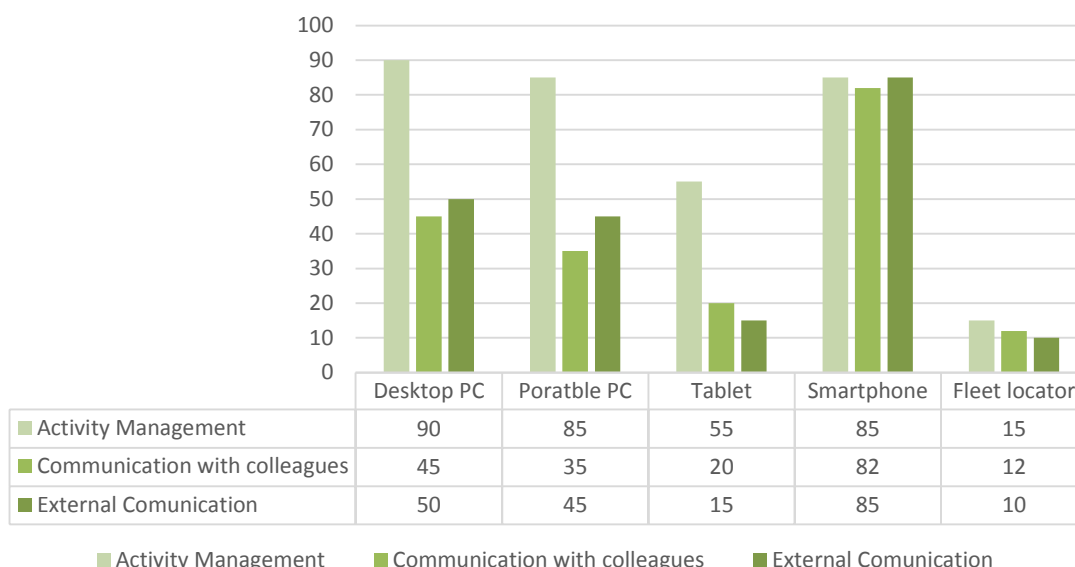
Purpose	Activities	Communication with	External
Devices	Managements	colleagues	Communication
Desktop PC	90 %	45 %	50 %
Portable PC	85 %	35 %	45 %
Tablet	55 %	20 %	15 %
Smartphone	85 %	82 %	85 %
Fleet locator	15 %	12 %	10 %

The average value of usage of different digital devices on job is:

Desktop PC – 61.67 %; Portable PC – 55 %; Tablet – 30 %; Smartphone – 84 %; Fleet locator – 12.33 %.

All of them are used for communication in different situations.

Usage of different ICT on jobs (in percentage)



ICT (Questions number: 24-25)

As illustrated in the charts, all ICT tools in working contexts by the respondents are very important and used.

RESULTS OF THE QUESTIONNAIRES – TRAINERS

Background of the survey

1. Dates and duration during which the survey took place: April-May, 2018
2. Main means used to contact the respondents: e-mails
3. Overall 7 trainers were contacted. 5 filled in the questionnaire. 5 questionnaires were complete.

General Information about Trainers (questions number: from 1 to 4)

The respondents were 3 male and 2 female and were. Age 35,35,50,51,62 – 46,6 years average

Education Level: Masters - 3, PHD -2

Competences in the Green Logistics Areas (questions number: from 5 to 16)

Competences in the Green Logistics Areas

The most important elements, according to trainers, for each area are reported below.

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Green Transportation

Trainers considered as very important all elements proposed in this area, in particular transportation planning and optimizing, and choosing transport vehicles - 100%

	Very Important	Important	Neutral	Not so important	Not important at all
Green transportation planning and optimizing (Organizing the route considering related consumption, distance, CO2 emissions)	100%				
Choose transport vehicles (size, emission classification, type of fuel needed)	100%				
Use low impact vehicle	90%				
Choose type of fuel used	90%				
Implement consumption planning and save fuel planning	95%				
Try to reduce empty trips	95%				

Up to the trainers Logistic Managers need other competences related to this area -

Law training, use of economical mathematics; In most companies, logistics managers have a low level of knowledge of innovation in the sector; The knowledge about alternative fuels and refueling infrastructure must be expanded.

AREA – GREEN PACKAGING

	Very Important	Important	Neutral	Not so important	Not important at all
Implement recycle procedures	100%				
Choose recycled materials for packaging	100%				
Improve eco efficiency in the field of packaging	30%	70%			

More than half of the trainers stated that logistic managers need more competences for this area, such as knowing the proactive supply chain procedures and being able to carry out professional market analysis.

Learn more about new trends and technology for using environmentally friendly and recyclable packaging materials.

AREA – GREEN WAREHOUSING

	Very Important	Important	Neutral	Not so important	Not important at all
Energy saving	100%				
Choose renewable energies	50%	50%			
Use heating and cooling “green” methods	100%				
Use warehouse tools which make greener the logistic	100%				

Almost all trainers stated that logistic managers need more competences in this area, such as elements regarding the energy sector, being able to optimize resources, and to spread the culture of sustainability in order to increase environmental protection.

Trainers consider Logistic Managers doesn't need any other competences related to this area.

AREA – GREEN WASTE MANAGEMENT

	Very Important	Important	Neutral	Not so important	Not important at all
Adopt a strategic approach to sustainability	100%				
Use “green” waste management procedures	50%	50%			
Links between environment, economy and competitiveness	100%				
Waste avoidance	100%				

80% of the trainers think Logistic Managers needs other competences related to this area -

Interdisciplinary training, economics, law, design, optimization,

AREA – GREEN DATA COLLECTION AND MANAGEMENT

	Very Important	Important	Neutral	Not so important	Not important at all
Use “green” supply chain management	100%				
Use “green” stock management	50%	50%			
Use a reverse logistic	50%	50%			

According to most of the trainers, using “green” supply chain management are very important but using reverse logistics are important and “green” stock management is important.

All of the respondents believe that logistic managers don't need more competences in this area

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Most of the trainers stated that “to make” strategy is more convenient and eco-friendlier than “to buy” strategy, because the “to make” strategy guaranties more sustainability and environmental protection issues, as it engages managers to carry out an appropriate assessment of the activities.

At first, the resources and opportunities available in the company should be addressed and then proceed to the purchase of new technologies.

Some of the trainers thinks that definitely the "buy strategies" are more convenient and eco friendlier, because they provide better possibilities to achieve economies of scale due to consolidate larger volume than it possible in term of using "to make strategies". Moreover, they garanty better eco-synergy options along the whole supply chain.

	Very Important	Important	Neutral	Not so important	Not important at all
Fuel and energy consumption		100%			
Maintenance periods		100%			
Waste production	50%	50%			
Distance of single transportation	100%				
Various specific indicators	50%	50%			

100% of the trainers consider that is very important for a logistic manager to learn to record several elements in a company. The most important element referred to is fuel and energy consumption (100%), while the element referred to various specific indicators was considered as very important by 50% of the trainers.

Almost all of the trainers use all digital devices in their training practice:

Desktop PC – 100%; Portable PC – 100%; Tablet – 80%; Smartphone – 70%

Trainers use the internet in their training practice for all their activities:

Learning – 100%; Getting Information – 100%; Sharing experience – 100%; Group work – 80%

All trainers use the following social media:

facebook, linkedin, Other: ResearchGate

ICT (questions number: from 17 to 19)

The trainers stated that they used all digital devuces in their training practices, and they used mainly internet to get information (100%) and to group work (80 %). Finally, the most used social media were Facebook (respectively 100%). Less trainers used Linkedin (60 %) and 10% Research Gate.

Finland

RESULTS OF THE QUESTIONNAIRES – LOGISTICS MANAGERS

Background of the survey

1. Dates and duration during which the survey took place: 15th May – 28th May 2018
2. Main means used to contact the respondents: Webropol online survey tool
3. Overall 55 companies were contacted. 30 filled in the questionnaire. 30 questionnaires were complete or partly complete.

Manager Profile

1. Gender: 6 Female, 24 Male
2. Age: Average 41,8 year (between 35 - 50 year)
3. Country: Finland
4. Education level: 3 elementary school, 15 VET (EFQ 4), 12 engineers (EFQ 5)
5. Role in the company: 3 CEO, 18 Logistic manager, 9 unknown

30 respondents filled in the questionnaire and they were 24 male (80%) and 6 female (20%). The average age was 41,8 years, aged between 35 and 50 years. The respondents were the Finnish nationality (100%) and represented different educational levels. 18 of the respondents were logistic managers, three was CEO and nine we do not know.

Enterprise Information

3/5 respondents (60%) stated that the companies they work in do not have an environmental certificate. All of the companies in any case adopt environmental strategies. In every company had a strategy for packaging, and almost all had strategies for transportation, warehousing and waste management.

Does your company have an environment strategy for	Yes	No	TOTAL
transportation (investments for environment friendly vehicles, contracts for environment friendly fuel)	24	6	30
	80%	20%	
packaging (use of recycled or environment friendly materials for packaging)	30	0	30
	100%	0 %	
warehousing (use of renewable energies)	24	6	30

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	80%	20%	
waste management	24	6	30
	80%	20%	
data collection (use of data of ecodriving) and management	18	12	30
	60%	40%	

Most of the respondents (60%) stated to be able to influence on the above strategies because they are part of the decision making process and are responsible of the daily actions. One of the respondents was not able to influence on environmental strategies and one only partly.

According to the green areas proposed in the questionnaire, all respondents felt that additional competences are not essential. One respondent mentioned that "No one is perfect and always more information helps to further develop" with the area of Green transportation. Also one respondent mentioned that "Data collection systems are inadequate" and the additional competences are needed. The respondents seem to rely on their own knowledge and receive outside help if needed.

Half of respondents stated the companies they work in used "to buy" strategies and other half of the companies "to make" strategies. They did not give any explanations for their answers.

Some of the respondents considered the strategies used in their companies as "green" because:

Answers
Environment friendly
our business itself favors green values (public transport). Of course, this can be enhanced by the right equipment purchasing by favoring electricity, gas or similar.
We make choices and act as environmentally friendly as possible.

According to the respondents, data that are very important to periodically record are fuel and energy consumption, maintenance periods and distance of single transportation.

	Very important	Important	Neutral	Not so important	Not important at all
Fuel and energy consumption	24	6	0	0	0
	80%	20%	0%	0%	0%
Maintenance periods	18	12	0	0	0
	60%	40%	0%	0%	0%
Waste production	0	12	12	6	0

	0%	40%	40%	20%	0%
Distance of single transportation	12	0	6	0	6
	50%	0%	25%	0%	25%
Various specific indicators	6	18	0	0	0
	25%	75%	0%	0%	0%

Competences in the Green Logistics Areas

Regarding Green Transportation area, the elements considered very important by respondents were transport planning and optimizing (50%), using low impact vehicles (50%), implementing consumption planning and save fuel planning (60%), and trying to reduce empty trips (60%); other elements were considered as important or neutral by rest of respondents.

Green transportation	Very Important	Important	Neutral	Not so important	Not important at all
Green transportation planning and optimizing (Organizing the route considering related consumption, distance, CO2 emissions)	12	6	0	0	6
	50%	25%	0%	0%	25%
Choose transport vehicles (size, emission classification, type of fuel needed)	12	12	6	0	0
	40%	40%	20%	0%	0%
Use low impact vehicle	12	12	0	0	0
	50%	50%	0%	0%	0%
Choose type of fuel used	12	6	12	0	0
	40%	20%	40%	0%	0%
Implement consumption planning and save fuel planning	18	6	6	0	0
	60%	20%	20%	0%	0%
Try to reduce empty trips	18	6	6	0	0
	60%	20%	20%	0%	0%

Regarding Green Packaging area, all the elements proposed were considered as very important or important by most of the respondents.

GREEN PACKAGING	Very important	Important	Neutral	Not so important	Not important at all
Implement recycle procedures	12	12	6	0	0
	40%	40%	20%	0%	0%
Choose recycled materials for packaging	6	12	0	0	6
	25%	50%	0%	0%	25%
Improve eco efficiency in the field of packaging	6	12	6	0	6
	20%	40%	20%	0%	20%

Within the Green Warehousing area, energy saving was considered as very important by 80% of respondents, other elements were considered more or less neutral or slightly important.

GREEN WAREHOUSING	Very important	Important	Neutral	Not so important	Not important at all
Energy saving	24	6	0	0	0
	80%	20%	0%	0%	0%
Choose renewable energies	6	6	18	0	0
	20%	20%	60%	0%	0%
Use heating and cooling "green" methods	6	6	18	0	0
	20%	20%	60%	0%	0%
Use warehouse tools which make greener the logistic	6	12	6	0	0
	25%	50%	25%	0%	0%

Regarding the Green Waste Management area, most of the respondents considered all elements proposed as very important or important, in particular the elements referred to the Links between environment, economy and competitiveness and Waste avoidance.

GREEN WASTE MANAGEMENT	Very important	Important	Neutral	Not so important	Not important at all
Adopt a strategic approach to sustainability	12	6	12	0	0
	40%	20%	40%	0%	0%
Use "green" waste management procedures	12	6	12	0	0
	40%	20%	40%	0%	0%
Links between environment, economy and competitiveness	12	12	6	0	0
	40%	40%	20%	0%	0%

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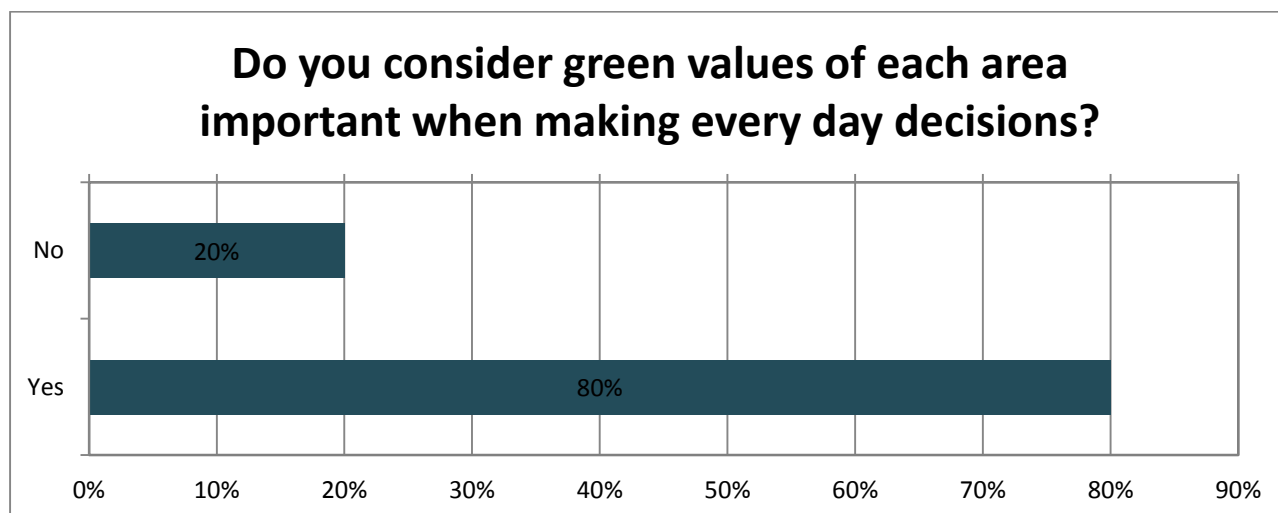
Waste avoidance	18	6	6	0	0
	60%	20%	20%	0%	0%

Also in the Green Data Collection and Management, all elements proposed have been considered as very important or important (60%) by most of the respondents.

GREEN DATA COLLECTION AND MANAGEMENT	Very important	Important	Neutral	Not so important	Not important at all
Use "green" supply chain management	12	6	6	6	0
	40%	20%	20%	20%	0%
Use "green" stock management	6	12	6	6	0
	20%	40%	20%	20%	0%
Use a reverse logistic	6	12	6	6	0
	20%	40%	20%	20%	0%

The respondents were also asked if they analysed collected data; 66,67% answered positively, 33,33% do not analyze the data collected, while 16,67% analyse the data to implement improvements and adjustments. The remaining respondents skipped the question. One respondent mentioned that "Yes, we analyzed, albeit by resources, not systematically. The results guide decision-making." and another respondent mentioned "Monitoring fuel consumption is part of our daily work and is discussed with the drivers."

Overall, 80% of the respondents considered green values important in making every day decisions.



ICT

Respondents were asked which digital devices do you use on your job. The result for this was that the respondents are using all devices asked.

	No	Yes
Desktop PC	0	24
	0%	100%
Portable PC	12	12
	50%	50%
Tablet	6	18
	25%	75%
Smartphone	6	24
	20%	80%
Fleet locator	12	18
	40%	60%

RESULTS OF THE QUESTIONNAIRES – TRAINERS

Background of the survey

1. Dates and duration during which the survey took place: 15th May – 28th May 2018
2. Main means used to contact the respondents: Webropol online survey tool
3. Overall 40 trainers were contacted. 30 filled in the questionnaire. 30 questionnaires were complete or partly complete.

General Information about Trainers

1. Gender: 6 Female, 24 Male
2. Age: Average 49,5 year (between 30 - 62 year)
3. Country: Finland
4. Education level: 1 elementary school, 10 VET (EFQ 4), 19 engineers or bachelor of applied science (EFQ 5)

The respondents were 24 male and 6 female and were between 30 and 62 years old. Half of them had a diploma for engineering or was a bachelor of applied science.

Competences in the Green Logistics Areas

AREA – Green Transportation

Trainers considered as very important all other elements proposed in this area, but the areas of Use low impact vehicle and Choose type of fuel used were only important. The thing with these areas might be, that the logistics manager may not influence on these decisions.

GREEN TRANSPORTATION	Very Important	Important	Neutral	Not so important	Not important at all
Green transportation planning and optimizing (Organizing the route considering related consumption, distance, CO2 emissions)	18	7	5	0	0
	60%	23,33%	16,67%	0%	0%
Choose transport vehicles (size, emission classification, type of fuel needed)	18	10	2	0	0
	60%	33,33%	6,67%	0%	0%
Use low impact vehicle	14	15	1	0	0
	46,67%	50%	3,33%	0%	0%
Choose type of fuel used	8	14	8	0	0
	26,67%	46,66%	26,67%	0%	0%
Implement consumption planning and save fuel planning	19	10	1	0	0
	63,33%	33,33%	3,34%	0%	0%
Try to reduce empty trips	18	11	1	0	0
	60%	36,67%	3,33%	0%	0%

According to 68,18% of the trainers, logistic managers need to acquire more competences in green transportation area such as

- Selection of modes (train, ship, airplane, etc ...), Logistic process management and management of entities
- Competence for realistic timetables
- Vehicle technology
- Monitoring and ensuring the driving behavior of drivers
- Learn to guide drivers in the right driving style
- Generally fuel saving training
- Proactive driving, cleanliness
- Compensation between green values and costs
- Change of mindset
- The driver's savings and ecology are off
- Human resources management

AREA – GREEN PACKAGING

For this area most of the trainers considered choosing recycled materials for packaging and improving eco efficiency in the field of packaging as important. While implementing recycling procedures was voted fifty-fifty between “very important” and “important”.

GREEN PACKAGING	Very important	Important	Neutral	Not so important	Not important at all
Implement recycle procedures	10	10	6	3	0
	34,48%	34,48%	20,69%	10,35%	0%
Choose recycled materials for packaging	9	11	9	1	0
	30%	36,67%	30%	3,33%	0%
Improve eco efficiency in the field of packaging	7	15	8	0	0
	23,33%	50%	26,67%	0%	0%

The majority of the trainers, logistics managers don't need other competences related to green packaging. But according to 47,37 % of the trainers, logistic managers need to acquire more competences in green packaging area such as

- The overall picture of the packing cycle (from natural raw material to back to nature)
- When to reduce packaging material
- Reducing loss material
- Avoid unnecessary packaging

AREA – GREEN WAREHOUSING

63,33% of the trainers considered as very important the element referred to energy saving. All other elements of the green warehousing was referred mostly as important.

GREEN WAREHOUSING	Very important	Important	Neutral	Not so important	Not important at all
Energy saving	19	9	2	0	0
	63,33%	30%	6,67%	0%	0%
Choose renewable energies	10	13	4	3	0
	33,33%	43,34%	13,33%	10%	0%
Use heating and cooling “green” methods	8	12	7	3	0
	26,67%	40%	23,33%	10%	0%
Use warehouse tools which make greener the logistic	11	12	6	1	0
	36,67%	40%	20%	3,33%	0%

The trainers voted fifty-fifty when they were asked about needed competences to acquire in green warehousing. The needed competences could be such as

- Choice of energy forms for buildings
- Interaction between different companies
- the long-term increase in green values = market value
- information about green energy
- From the new energy-saving technology
- Designing and utilizing the right size warehouse

AREA – GREEN WASTE MANAGEMENT

Most of the trainers considered very important or important the elements proposed within the Green Waste Management area. Links between environment, economy and competitiveness received the highest preferences (83,33%) and second was waste avoidance (51,72%).

GREEN WASTE MANAGEMENT	Very important	Important	Neutral	Not so important	Not important at all
Adopt a strategic approach to sustainability	10	14	6	0	0
	33,33%	46,67%	20%	0%	0%
Use "green" waste management procedures	8	18	4	0	0
	26,67%	60%	13,33%	0%	0%
Links between environment, economy and competitiveness	19	10	1	0	0
	63,33%	33,33%	3,34%	0%	0%
Waste avoidance	15	13	1	0	0
	51,72%	44,83%	3,45%	0%	0%

70,59 % of the respondents answered that logistic managers need more competences for a green waste management, and they suggested to train logistic managers on recycling, waste management and company selections, waste handling, proper sorting and recycling, etc.

AREA – GREEN DATA COLLECTION AND MANAGEMENT

According to most of the trainers, using green supply chain management is very important while using green stock management is only important. Using reverse logistics is fifty-fifty between very important and important.

GREEN DATA COLLECTION AND MANAGEMENT	Very important	Important	Neutral	Not so important	Not important at all
Use “green” supply chain management	16	13	1	0	0
	53,34%	43,33%	3,33%	0%	0%
Use “green” stock management	9	18	3	0	0
	30%	60%	10%	0%	0%
Use a reverse logistic	11	11	7	1	0
	36,67%	36,67%	23,33%	3,33%	0%

Most of the trainers (56,25%) thinks that no additional competences are needed, but the rest highlighted several topics such as:

- Separating essential things from the most irresistible
- Listening to the staff, new ideas.
- Knowledge and skill to implement things
- What is Reverse Logistics and how is it utilized at the design stage?
- Leadership

Slightly more than half of the trainers (56%) stated that “to buy” strategy is more convenient and eco-friendlier than “to make” strategy, because the “to buy” strategy guaranties

- better responds to seasonal variations
- products from larger centralized production plants
- the same alternatives and methods are suitable for several operators
- someone who does a service centrally, can do it better and more efficiently than the company itself, whose main job is possibly someone else
- focus on the essentials
- make clear choices, centrally less pollution.
- no storage
- Concentrating Activities
- No production facilities are required
- Can compete and emphasize errors in values

Also “to make” strategy was defended strongly with arguments such as:

- Better commitment to the matter
- Better overall management
- Better to do it yourself. employs at home and can control methods
- The right product and the right amount

All trainers stated that is very important for a logistic manager to learn to record several elements in a company. The most important element referred to is fuel and energy consumption (70%). The other element referred to various specific indicators was considered as very important or important.

	Very important	Important	Neutral	Not so important	Not important at all
Fuel and energy consumption	21	8	1	0	0
	70%	26,67%	3,33%	0%	0%
Maintenance periods	14	13	3	0	0
	46,67%	43,33%	10%	0%	0%
Waste production	11	14	4	0	0
	37,93%	48,28%	13,79%	0%	0%
Distance of single transportation	12	9	7	1	0
	41,38%	31,03%	24,14%	3,45%	0%
Various specific indicators	7	13	6	0	1
	25,93%	48,15%	22,22%	0%	3,7%

ICT

The respondents stated that they mainly used portable PCs (96,67%) and smartphones (79,31%) in their training practices, and they used mainly internet to get information (100%) and to learn (100%). Finally, the most used social media were Facebook (62,07%). Less trainers used Twitter (20%). Other social media what was used were WhatsApp, IG, XING, Youtube, Steam, Spotify.

Italy

RESULTS OF THE QUESTIONNAIRES – LOGISTICS MANAGERS

Background of the survey

1. Dates and duration during which the survey took place: from April 2018 to June 2018
2. Main means used to contact the respondents: online tool; e-mails; face to face meetings.
3. Overall 150 companies were contacted. 30 people filled in the questionnaire.

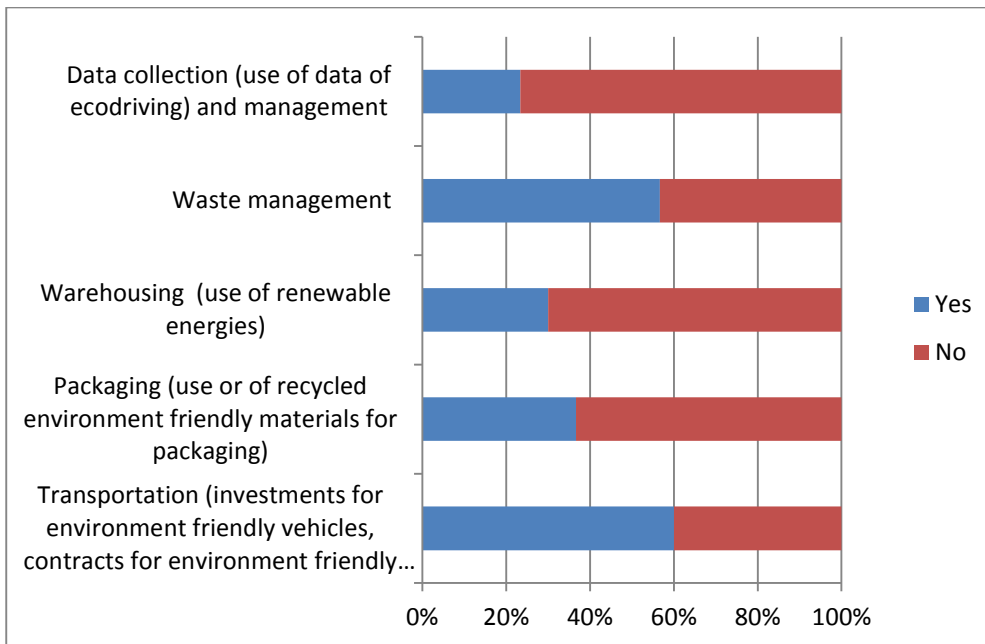
Manager Profile

Most of the respondents were male (25 people), while a small part was female (5 people). The respondents had an age between 25 and 70 years, but the most were between 30-50 years old. High school diploma was the main educational level respondents gained, ten of them stated to have a degree, and others had lower secondary diploma. Most of the respondents stated to be owners, managers and directors of logistic companies, others were employees.

Enterprise Information

Almost all respondents stated that the companies they work in do not have an environmental certificate, but some of their companies adopt environmental strategies, mainly in transportation and waste management.

Does your company have an environment strategy for:



Most of the respondents (43,33%) stated to be partly able to influence on the above strategies because a council of members or owners make choices and decisions. 30% of respondents was able to influence on environmental strategies as directors, while other 26,67% was not able to influence any of the strategies.

According to the green areas proposed in the questionnaire, slightly more than 50% of respondents indicated that the companies they work in needed more competences in each area. They stated that:

- Companies needed more competences in Green Transportation area (73,33%) because
 - It is important to be more competitive;
 - It is requested by new investment programmes;
 - A modernization programme is needed
 - These competences can positively affect costs and foster business growth
 - It is important to consider to invest in green factors.
- Companies needed more competences in Green Packaging area (56,67%) because
 - The economic benefit of this aspect is not well perceived yet
 - This area is growing in importance
 - Companies aim to save rather than to protect the environment

Companies needed more competences in Green Warehousing area (60%) because optimizing resources is important; regarding Green Waste Management area (56,67%), more competences could help to grow in this area; while more competences in Green Data Collection and Management area (60%) could allow to advance in using data and communicating with suppliers and customers. Respondents who stated their companies did not need more competences, was because their companies did not deal with the aforementioned areas or entrusted third companies to carry out the specific activities.

63,33% of respondents stated the companies they work in used “to buy” strategies because they are small enterprises and lack specific competences; the remaining 36,67% of respondents worked in companies

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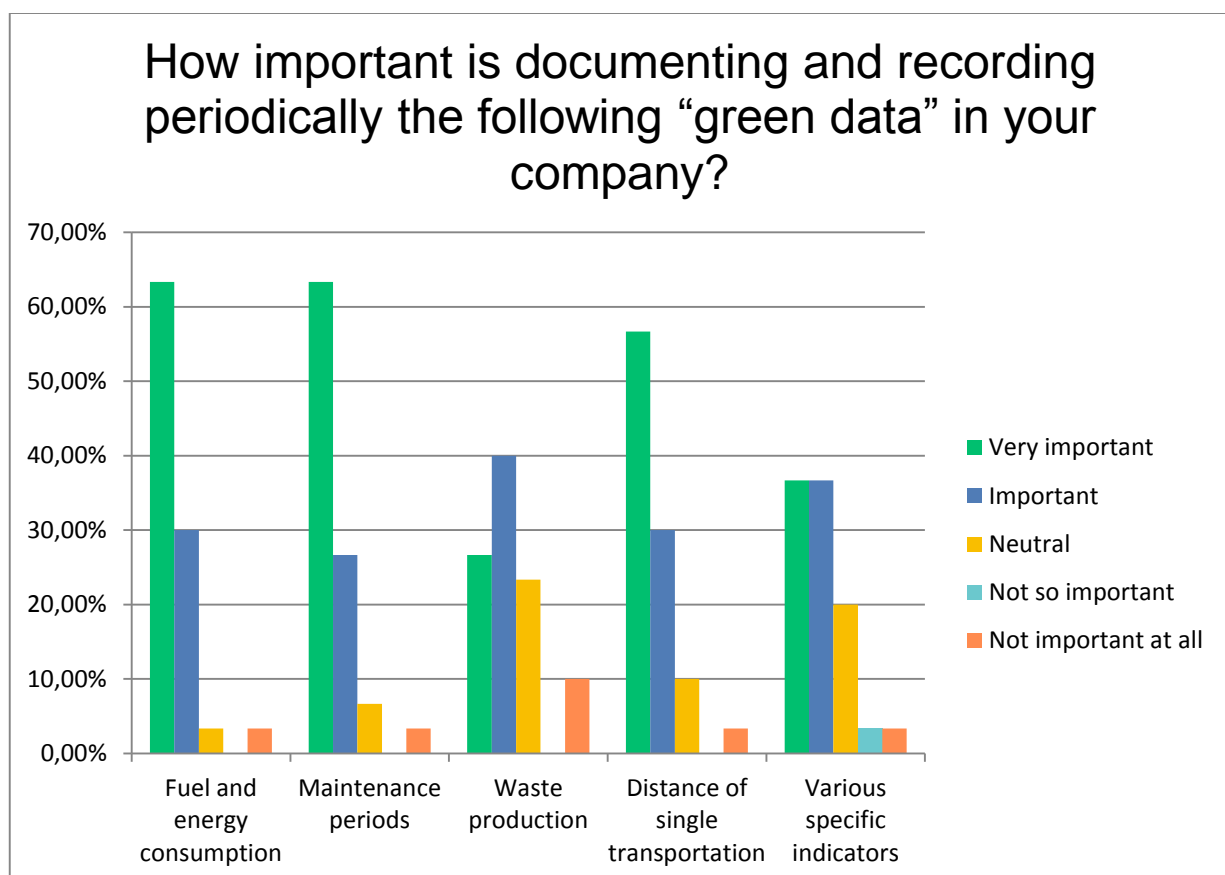
using “to make” strategies because the companies have adequately prepared human resources to carry out certain functions, and because maintenance costs are lower.

Most of the respondents considered the strategies used in their companies as “green” because:

- “The company is committed to choose eco-friendly working ways for their activities”;
- “Sustainability makes company more competitive”;
- “The company tries to renovate their working ways and to find green methodology for some sectors”;
- “The company tries to constantly reduce the vehicle emissions”;
- “The company constantly looks for low impact vehicles”;
- “The company tries to optimize empty trips and time organization”.

Other respondents stated that the companies don’t use enough green strategies and that the green strategies used don’t cover all business aspects.

According to the respondents, data that are very important to periodically record are fuel and energy consumption, maintenance periods and distance of single transportation.



Competences in the Green Logistics Areas

Regarding **Green Transportation area**, the elements considered very important by respondents were implementing consumption planning and save fuel planning (50%), and trying to reduce empty trips (80%); other elements were considered as important by half of respondents.

	VERY IMPORTANT	IMPORTANT	NEUTRAL	NOT SO IMPORTANT	NOT IMPORTANT AT ALL
Green transportation planning and optimizing (Organizing the route considering related consumption, distance, CO2 emissions)	43.33% 13	46.67% 14	0.00% 0	6.67% 2	3.33% 1
Choose transport vehicles (size, emission classification, type of fuel needed)	40.00% 12	50.00% 15	6.67% 2	0.00% 0	3.33% 1
Use low impact vehicle	30.00% 9	56.67% 17	10.00% 3	0.00% 0	3.33% 1
Choose type of fuel used	26.67% 8	56.67% 17	13.33% 4	0.00% 0	3.33% 1
Implement consumption planning and save fuel planning	50.00% 15	40.00% 12	3.33% 1	0.00% 0	6.67% 2
Try to reduce empty trips	80.00% 24	16.67% 5	0.00% 0	0.00% 0	3.33% 1

Regarding **Green Packaging area**, all the elements proposed were considered as important by most of the respondents, in particular the implementation of recycling procedures (53,33%).

	VERY IMPORTANT	IMPORTANT	NEUTRAL	NOT SO IMPORTANT	NOT IMPORTANT AT ALL
Implement recycle procedures	13.33% 4	53.33% 16	20.00% 6	3.33% 1	10.00% 3
Choose recycled materials for packaging	16.67% 5	36.67% 11	33.33% 10	3.33% 1	10.00% 3
Improve eco efficiency in the field of packaging	13.33% 4	40.00% 12	26.67% 8	6.67% 2	13.33% 4

Within the **Green Warehousing area**, energy saving was considered as very important by slightly more than 50% of respondents, other elements were considered as important by the most of them.

	VERY IMPORTANT	IMPORTANT	NEUTRAL	NOT SO IMPORTANT	NOT IMPORTANT AT ALL
Energy saving	53.33% 16	40.00% 12	0.00% 0	3.33% 1	3.33% 1
Scelta di energie rinnovabili	26.67% 8	53.33% 16	13.33% 4	3.33% 1	3.33% 1
Uso di metodi di riscaldamento e di raffreddamento "green"	20.00% 6	50.00% 15	23.33% 7	3.33% 1	3.33% 1
Uso di strumenti per il magazzino che rendono la logistica più "green"	26.67% 8	46.67% 14	20.00% 6	3.33% 1	3.33% 1

Regarding the **Green Waste Management area**, most of the respondents considered all elements proposed as important, in particular the elements referred to the use of green waste management procedures and the waste avoidance.

	VERY IMPORTANT	IMPORTANT	NEUTRAL	NOT SO IMPORTANT	NOT IMPORTANT AT ALL
▼ Adopt a strategic approach to sustainability	23.33% 7	46.67% 14	23.33% 7	0.00% 0	6.67% 2
▼ Use "green" waste management procedures	16.67% 5	56.67% 17	20.00% 6	0.00% 0	6.67% 2
▼ Links between environment, economy and competitiveness	23.33% 7	50.00% 15	20.00% 6	0.00% 0	6.67% 2
▼ Waste avoidance	26.67% 8	56.67% 17	6.67% 2	3.33% 1	6.67% 2

Also in the **Green Data Collection and Management**, all elements proposed have been considered as important by most of the respondents.

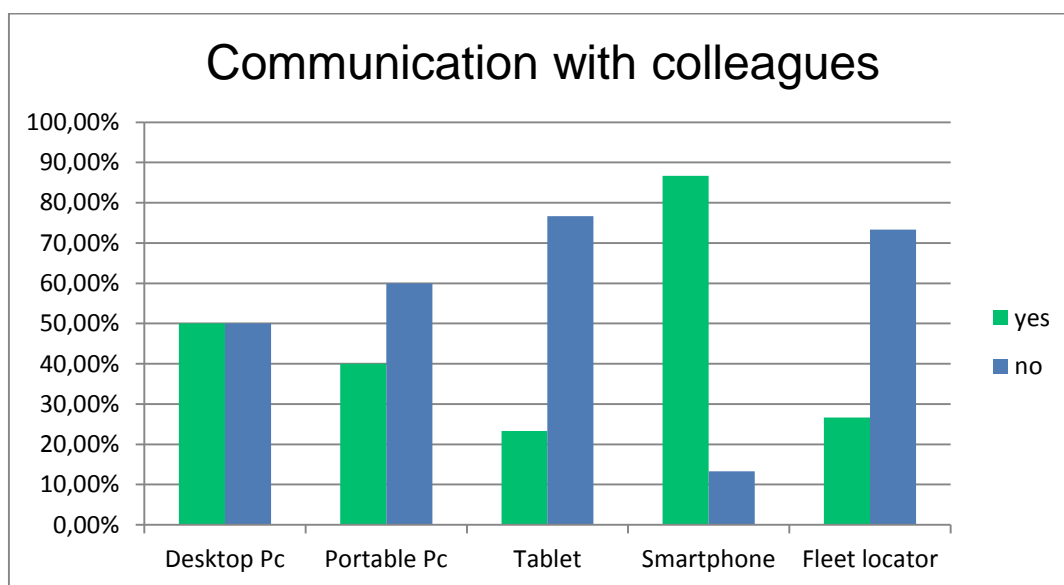
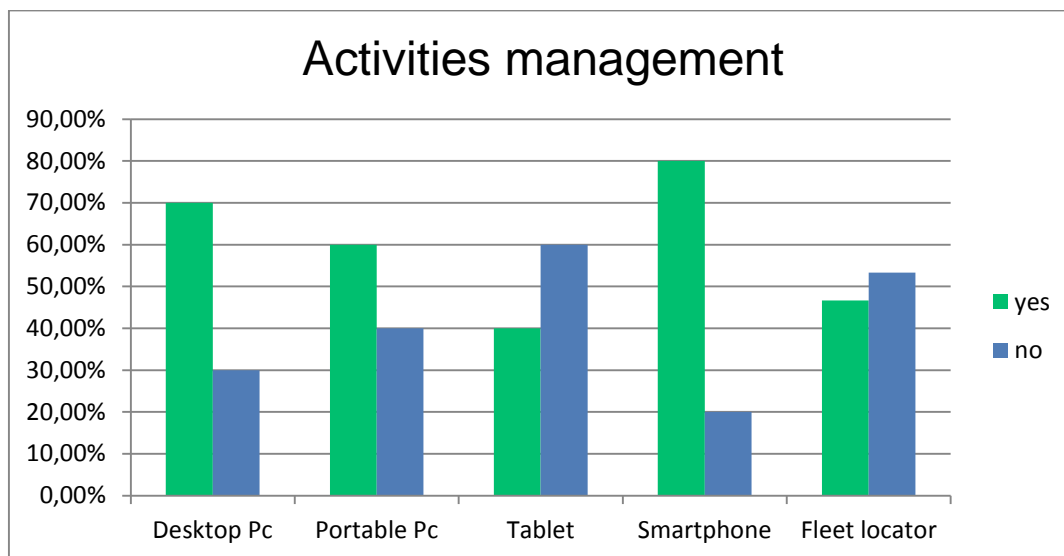
	VERY IMPORTANT	IMPORTANT	NEUTRAL	NOT SO IMPORTANT	NOT IMPORTANT AT ALL
▼ Use "green" supply chain management	13.33% 4	53.33% 16	20.00% 6	3.33% 1	10.00% 3
▼ Use "green" stock management	16.67% 5	40.00% 12	30.00% 9	3.33% 1	10.00% 3
▼ Use a reverse logistic	16.67% 5	46.67% 14	23.33% 7	3.33% 1	10.00% 3

The respondents were also asked if they analysed collected data; 36,67% answered positively, 26,67% do not analyse the data collected, while 16,67% analyse the data to implement improvements and adjustments. The remaining respondents skipped the question.

Overall, 56,67% of the respondents considered green values important in making every day decisions because, according to one of them: *"verifying the uniformity of the applied strategies is important"*. However, 43,33% of respondents stated that green values are not so important, in particular one of them explained that not all areas have the same importance.

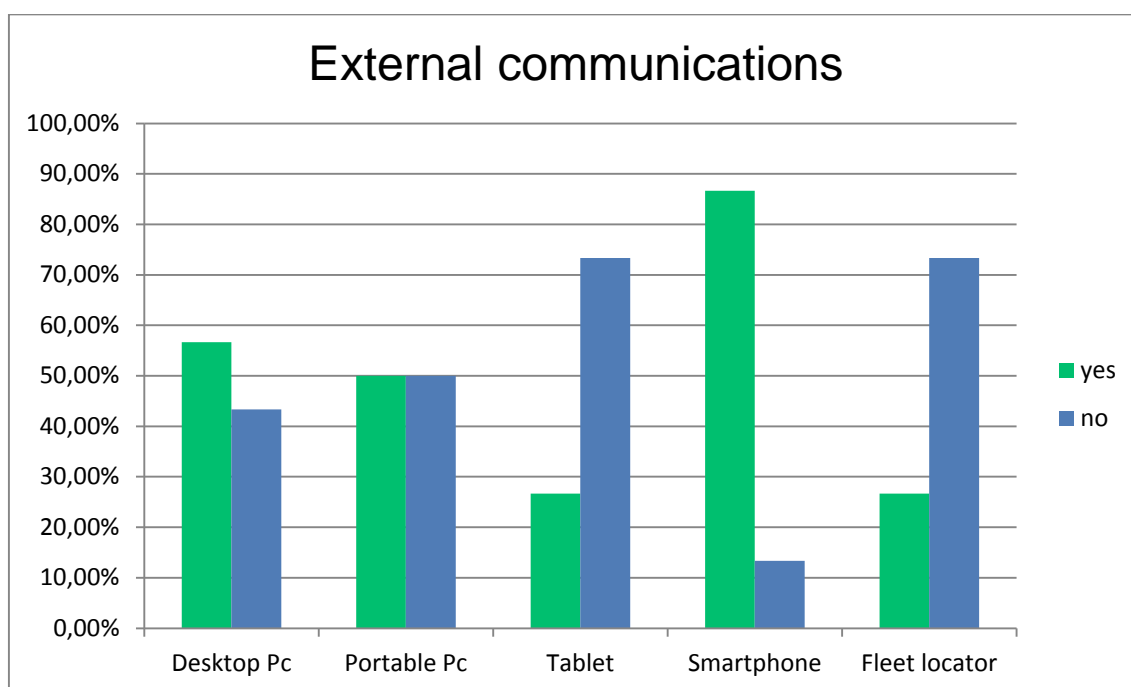
ICT

“Which digital devices do you use on your job? What do you use it for?”



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As illustrated in the charts, the most used ICT tools in working contexts by the respondents resulted to be smartphones and desktop PCs, which have the highest percentages. Other ICT tools used are GPS and social media.

RESULTS OF THE QUESTIONNAIRES – TRAINERS

Background of the survey

1. Dates and duration during which the survey took place: from April 2018 to June 2018
2. Main means used to contact the respondents: online tool; e-mails; face to face meetings
3. Overall 15 trainers were contacted. 6 filled in the questionnaire.

General Information about Trainers

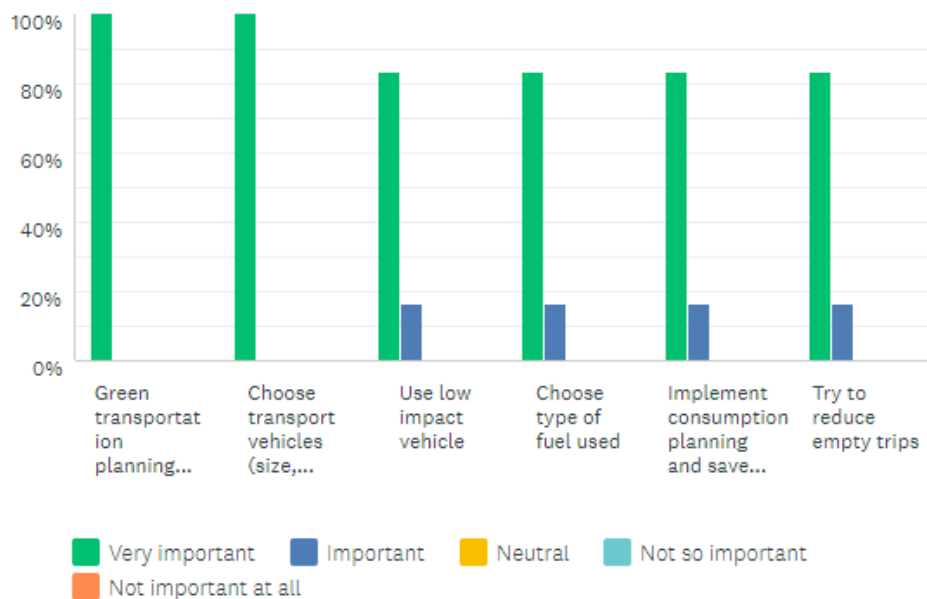
The respondents were 5 male and 1 female and were between 47 and 61 years old. Half of them had a high school diploma and other half had a degree.

Competences in the Green Logistics Areas

The most important elements, according to trainers, for each area are reported below.

Green Transportation

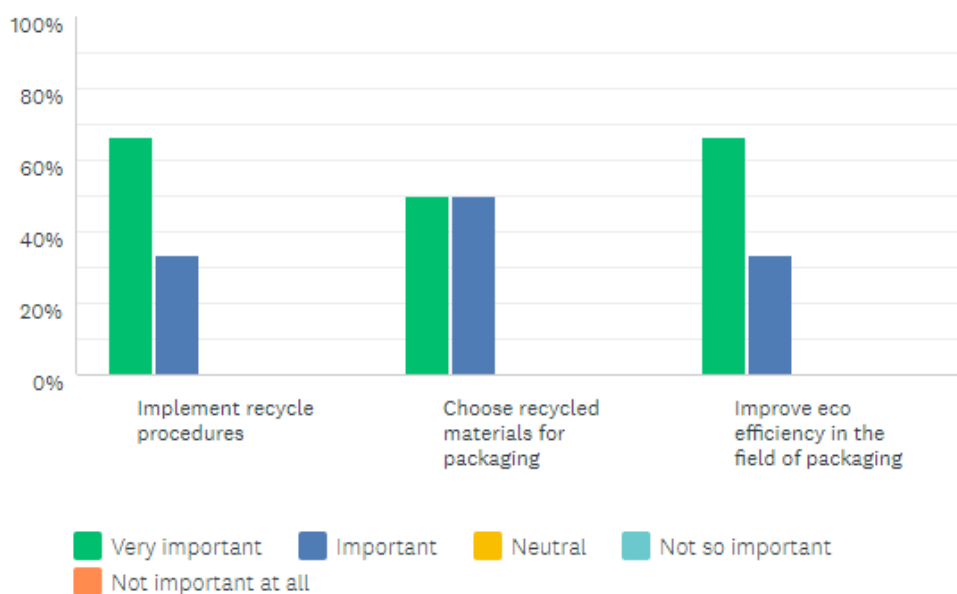
Trainers considered as very important all elements proposed in this area, in particular transportation planning and optimizing, and choosing transport vehicles were voted unanimously.



According to 83,33% of the trainers, logistic managers need to acquire more competences in green transportation area such as being able to create a green culture, specific knowledge of the legislation, loading practices, and learning to use new technologies.

Green Packaging

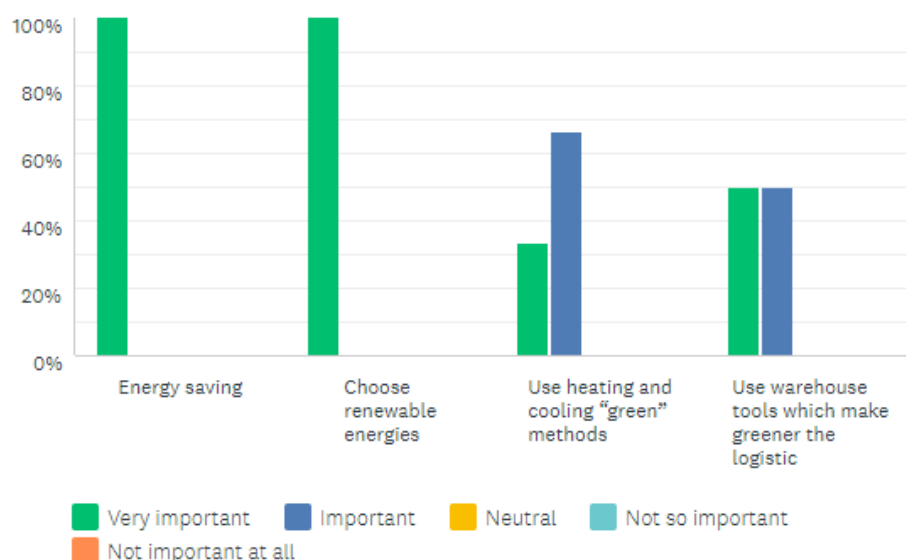
For this area most of the trainers considered implementing recycling procedures and improving eco efficiency in the field of packaging as very important. While choosing recycled materials for packaging was voted fifty-fifty between “very important” and “important”.



66,67% of the trainers stated that logistic managers need more competences for this area, such as knowing the proactive supply chain procedures and being able to carry out professional market analysis.

Green Warehousing

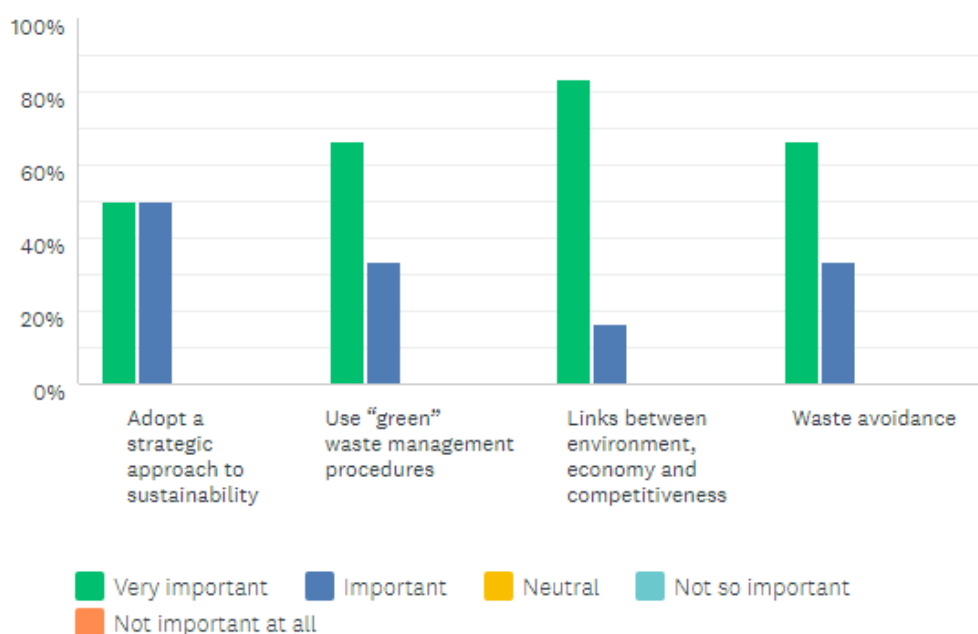
All trainers considered as very important the elements referred to energy saving and choosing renewable energies. 66,67% of them considered as important using heating and cooling “green” methods, while half of trainers considered as very important using warehouse tools which make logistics greener.



Almost all trainers stated that logistic managers need more competences in this area, such as elements regarding the energy sector, being able to optimize resources, and to spread the culture of sustainability in order to increase environmental protection.

Green Waste Management

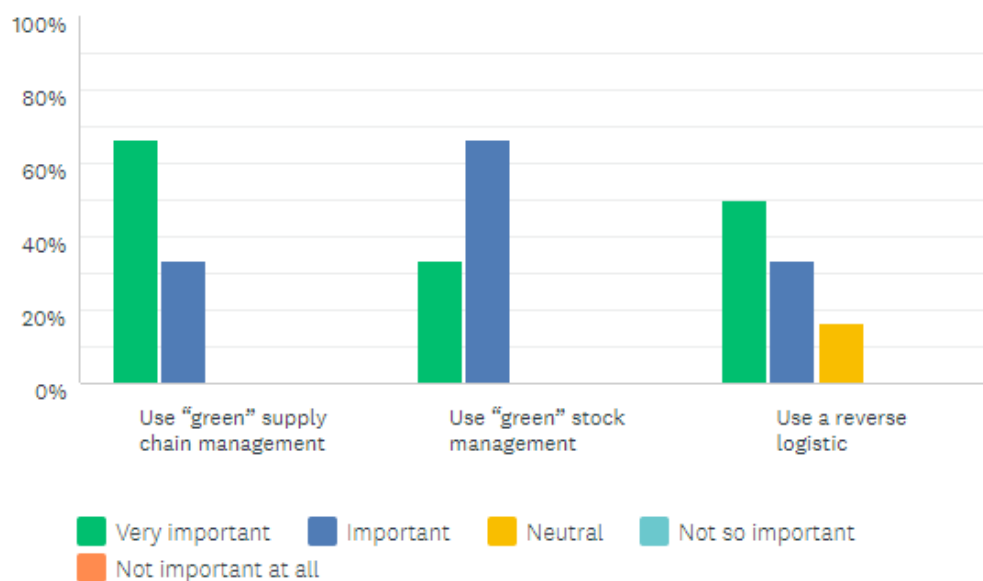
Almost all trainers considered very important the elements proposed within the Green Waste Management area. Links between environment, economy and competitiveness received the highest preferences (83,33%).



83,33% of the respondents affirmed that logistic managers need more competences for a “greener” waste management, and they suggested to train logistic managers on producing savings, and on optimizing management, recycling, storage and tracking processes. Furthermore, the respondents suggested to enhance competences about waste disposal.

Green Data Collection and Management

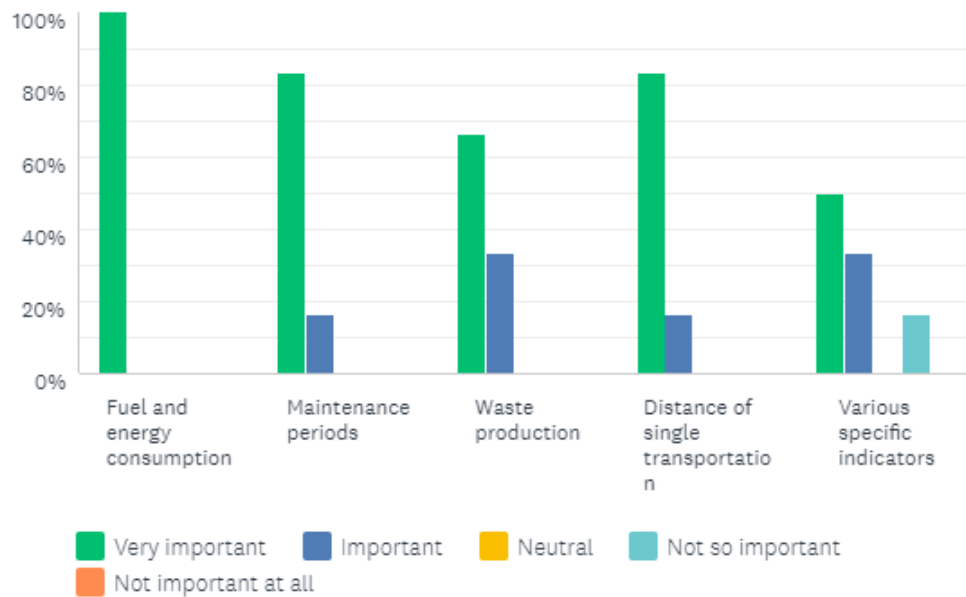
According to most of the trainers, using “green” supply chain management and using reverse logistics are very important, while using “green” stock management is important.



In this case, half of the respondents believe that logistic managers need more competences in this area, and a trainer suggested to train them in catching better opportunities.

Half of the trainers stated that “to make” strategy is more convenient and eco-friendlier than “to buy” strategy, because the “to make” strategy guaranties more sustainability and environmental protection issues, as it engages managers to carry out an appropriate assessment of the activities.

All trainers stated that is very important for a logistic manager to learn to record several elements in a company. The most important element referred to is fuel and energy consumption (100%), while the element referred to various specific indicators was considered as very important by half of the trainers.



ICT

The respondents stated that they mainly used portable PCs (83,33%) and smartphones (66,67%) in their training practices, and they used mainly internet to get information (100%) and to learn (83,33%). Finally, the most used social media were Facebook and Twitter (respectively 50%). Less trainers used LinkedIn (33,33%).

Spain

RESULTS OF THE QUESTIONNAIRES – LOGISTICS MANAGERS

Background of the survey

1. Dates and duration during which the survey took place: From May 2018 to June 2018.
2. Main means used to contact the respondents: email, face to face in informal meetings.
3. Overall 32 companies were contacted. 30 filled in the questionnaire.

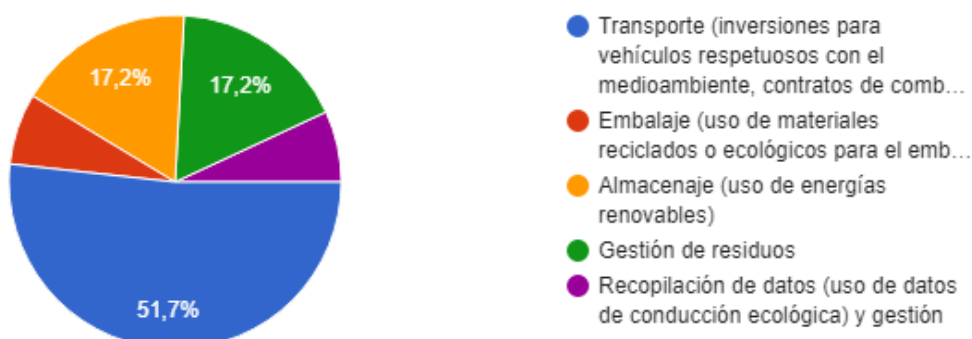
Manager Profile

30 respondents filled in the questionnaire: 20 male and 10 females. The respondents had an age between 29 and 63 years old. 27 of the respondents are Spanish, 1 Italian, 1 Rumanian, and 1 French.

Most of them had a university degree (46,7%), and a 26,7% had a Certificate of Higher Education, a minority had a master's degree, Vocational Education and Training and a General Certificate of Education. Most of them were managers, directors and clerks.

Enterprise Information

A 63,3% of respondents stated that their companies they work in do have an environmental certificate, being principally ISO14001 (environmental management systems). In addition, companies of 29 respondents adopt environmental strategies, mainly in transport (51,7%), waste management (17,2%) and warehousing (17,2%).



Most of the respondents (63,3%) stated to be able to influence in the above strategies, and a 36,7% are partly able to influence, in general because they are part of the decision chain in their companies.

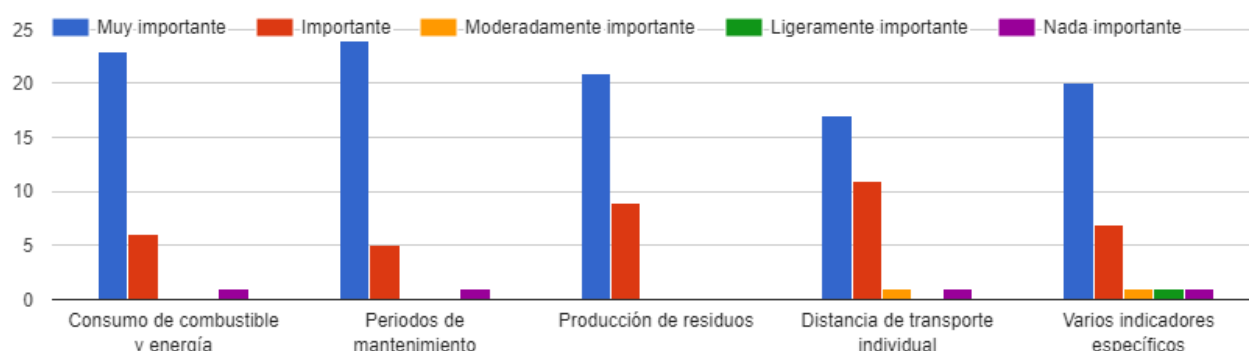
According to the green areas proposed in the questionnaire, most of the respondents felt that additional competences are not essential:

- Green Transportation: 76,7% were against, and 23,3% in favour. Some of the comments that support “no” were “is not necessary by this moment” or “we fulfil with the administrative obligations”. Supporting “yes” some respondents thought that it “improves sustainability, the environment and is an energy savings”.
- Green packaging: 86,7% were against, and 13,3% in favour. They thought that companies need more competences on it because “improve environmental quality”, “improve decisions” and “it is appropriate”.
- Green Warehousing: 70% were against, and 30% in favour. Who support their necessity argued that “is for to be more competitive”, “improve environmental quality”, “have better decision power”, or “because the company doesn’t fulfil the standards”.
- Green Waste Management: 90% were against, and 10% in favour. Their reasons to be in favour were: “improve environmental quality”, “it is appropriate” and “recycling saves money”.
- Green Data Collection: 86,2% were against, and 13,8% in favour. They thought that companies need more competences on it because of “commercial efficiency”, and “to be pioneers”.

72,4% of respondents stated the companies they work in used “to buy” strategies because they are transport companies; the remaining 27,6% of the respondents worked in companies using “to make” strategies.

Most of the respondents considered the strategies used in their companies as “green” because: “make an appropriate use of the energies”, “have a correct waste management”, “are environmentally friendly”, and “their vehicles fulfil with legal regulations”. Highlight one answer that said that the company doesn’t have a green strategy “for lack of financial means”.

According to most of the respondents all the aspects asking are very important to periodically record.



Competences in the Green Logistics Areas

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- Regarding **Green Transportation** area, all elements are considered very important and important by the majority of the respondents.

	Muy importante	Importante	Moderadamente importante	Ligéramente importante	Nada Importante
Planificación y optimización del transporte sostenible (organización de la ruta considerando consumo relacionado, distancia, emisiones de CO2)	24	5	0	0	1
	80%	17%	0%	0%	3%
Elección de vehículos de transporte (tamaño, clasificación de emisiones, tipo de combustible necesario)	18	11	1	0	0
	60%	37%	3%	0%	0%
Uso de vehículos de bajo impacto ambiental	22	6	1	0	1
	73%	20%	3%	0%	3%
Elegir el tipo de combustible usado	19	9	1	0	1
	63%	30%	3%	0%	3%
Implementar la planificación del consumo y el ahorro de combustible	23	6	1	0	0
	77%	20%	3%	0%	0%
Intentar reducir los viajes vacíos	23	7	0	0	0
	77%	23%	0%	0%	0%

- Regarding **Green Packaging** area, all elements are considered very important and important by the majority of the respondents.

	Muy importante	Importante	Moderadamente importante	Ligéramente importante	Nada Importante
Implementar procedimientos de reciclaje	18	12	0	0	0
	60%	40%	0%	0%	0%
Elegir materiales reciclados para embalaje	14	11	4	0	1
	47%	37%	13%	0%	3%
Mejorar la eficiencia ecológica en el campo del embalaje	15	10	4	0	1
	50%	33%	13%	0%	3%

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- In relation to **Green Warehousing** area, energy saving was considered as very important by all respondent. Other elements were considered by more than 50% of respondents very important.

	Muy importante	Importante	Moderádamamente importante	Ligéramente importante	Nada Importante
Ahorro de energía	30	0	0	0	0
	100%	0%	0%	0%	0%
Elegir energías renovables	27	2	0	0	1
	90%	7%	0%	0%	3%
Usar métodos sostenibles de calentamiento y enfriamiento	19	9	2	0	0
	63%	30%	7%	0%	0%
Utilizar herramientas de almacén que hagan más ecológica la logística	16	11	2	0	1
	53%	37%	7%	0%	3%

- In **Green Waste Management** area, all respondents considered all elements very important and important, being always very important with more than 50%.

	Muy importante	Importante	Moderádamamente importante	Ligéramente importante	Nada Importante
Adoptar un enfoque estratégico para la sostenibilidad	20	10	0	0	0
	67%	33%	0%	0%	0%
Utilizar un procedimiento de gestión de residuos sostenible	20	10	0	0	0
	67%	33%	0%	0%	0%
Vínculos entre medio ambiente, economía y competitividad	17	13	0	0	0
	57%	43%	0%	0%	0%
Evitar desperdicios	20	10	0	0	0
	67%	33%	0%	0%	0%

- Also in **Green Data Collection and Management**, except one person that thought all elements were not important at all, the rest of the respondents considered all elements very important in their majority and important.

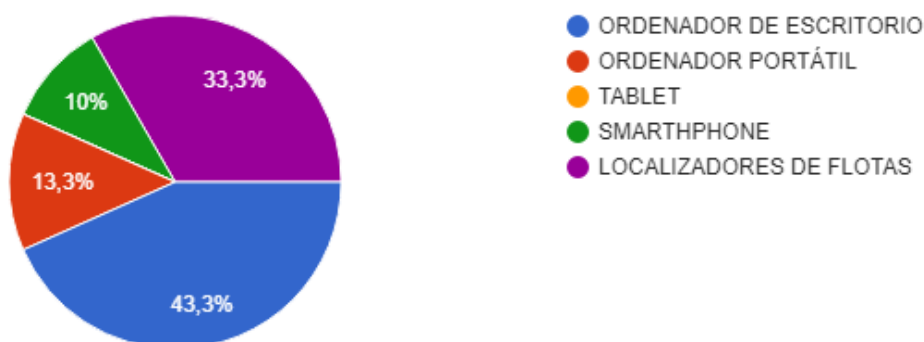
	Muy importante	Importante	Moderadamente importante	Ligéramente importante	Nada Importante
Utilizar la gestión sostenible en la cadena de suministro	27	2	0	0	1
	90%	7%	0%	0%	3%
Utilizar la gestión de stock sostenible	19	10	0	0	1
	63%	33%	0%	0%	3%
Usar la logística inversa	21	8	0	0	1
	70%	27%	0%	0%	3%

According to the respondents, a 63% of them analysed collected data in order to improve quality and efficiency of the company, observe changes, ...

A 78,6% of the respondents considered green values important to making every day decisions, they argue in their majority that it is important to improve quality and the environment, one said "Society demands ever more ecological products". A 21,4% of the respondents stated that green values are not so important.

ICT

Respondents were asked "which digital devices do you use on your job". The result for this was that the respondents are using all devices asked except tablet. Most of them used desktop pc (43,3%), and fleet locator (33,3%).



RESULTS OF THE QUESTIONNAIRES – TRAINERS

Background of the survey

1. Dates and duration during which the survey took place: From May 2018 to June 2018.
2. Main means used to contact the respondents: email, face to face in informal meetings.
3. Overall 7 trainers were contacted. 5 filled in the questionnaire.

General Information about Trainers

The respondents were 3 male and 2 female and were between 35 and 63 years old. All were from Spain.

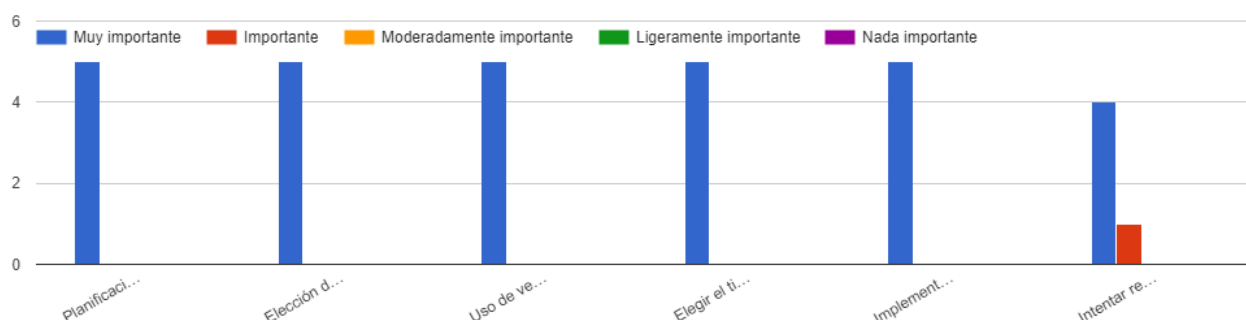
2 of them had a university degree, 2 had a master's degree, and 1 a certificate of Higher Education.

Competences in the Green Logistics Areas

The most important elements, according to trainers, for each area are reported below.

- **Green Transportation**

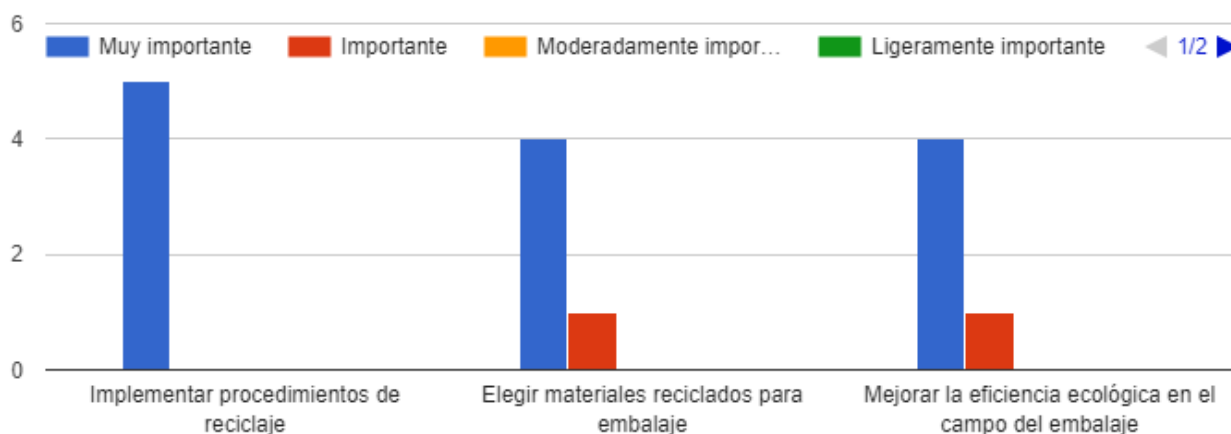
For this area all elements proposed are considered very important for all trainers, only in “try to reduce empty trips” one trainer think that is important instead of very important.



According to 80% of the trainers, logistic managers need to acquire more competences in green transportation area such as optimize transport with existing necessities or improve in the sector.

- **Green Packaging**

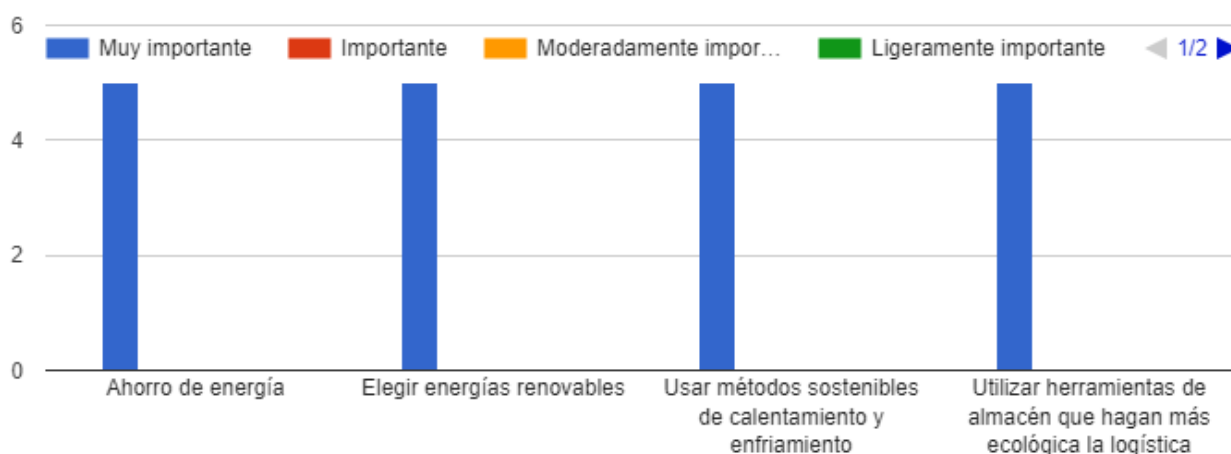
For this area most of the trainers considered all the elements very important, in particular “implement recycle procedures” was voted unanimously.



60% of the trainers stated that logistic managers need more competences in this area, in particular to know better the different materials that are in the market, their decomposition and the final products that are generated.

Green Warehousing

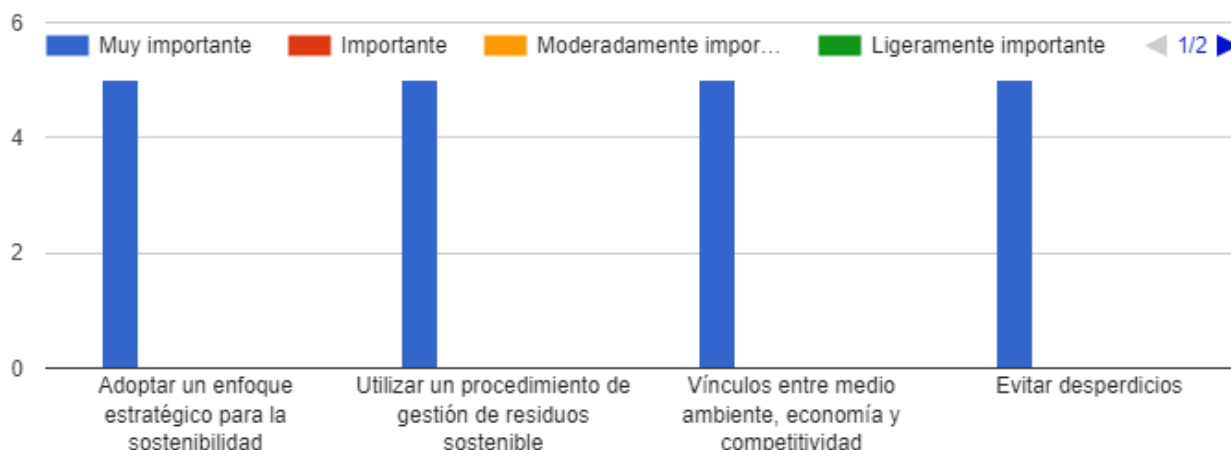
For this area, all trainers considered unanimously that all aspects are very important.



60% of the trainers stated that logistic managers need more competences in this area, such as know better the different types of energy in order to choose the less polluting and cost-effective for the transport, and to improve the environmental quality.

Green Waste Management

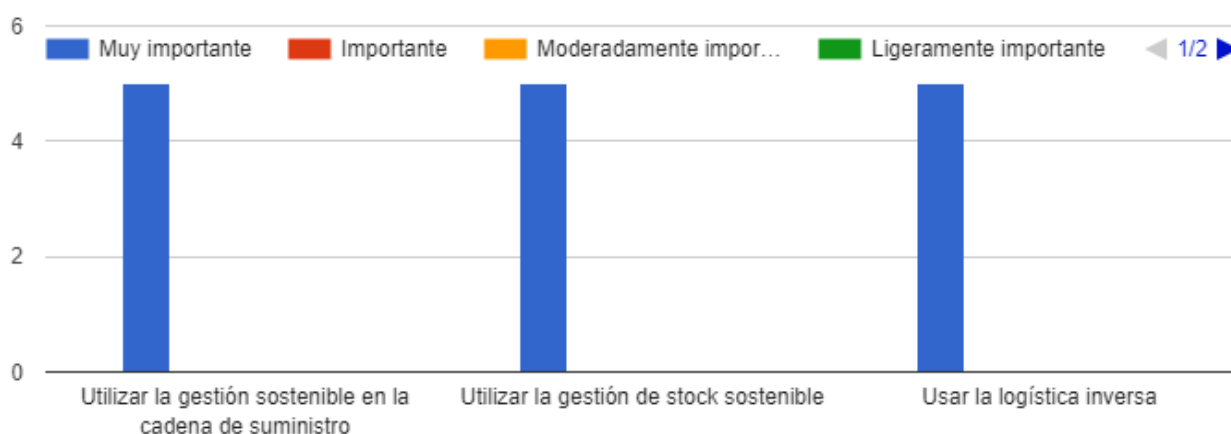
For this area, all trainers considered unanimously that all aspects are very important.



60% of the trainers stated that logistic managers need more competences in this area, such as to have responsibility with the waste and reduce the harmful residues.

Green Data Collection and Management

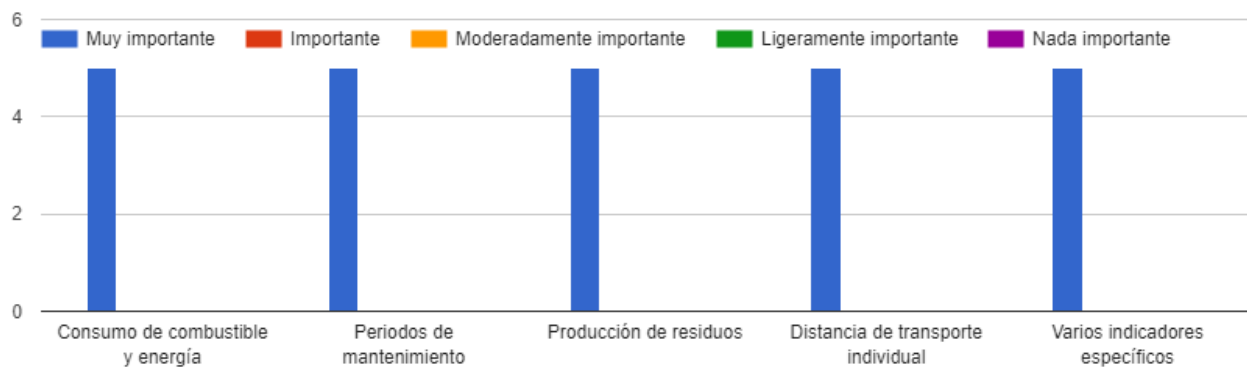
For this area, all trainers considered unanimously that all aspects are very important.



60% of the trainers stated that logistic managers need more competences in this area, such as improve quality and fulfil with ISO standards, and know the supply chain management and the effects produced by the stocks.

80% of the trainers stated that “to make” strategy is more convenient and eco-friendlier than “to buy” strategy.

Again there were unanimously related to record several elements in a company, where all thinks that are very important.



ICT

The respondents stated that they mainly used portable PCs (60%) and Desktop PC (40%) in their training practices, and they used mainly internet to get information (80%) and to learn (80%). Finally, the most used social media were Facebook (100%) and LinkedIn (60%).

Switzerland

RESULTS OF THE QUESTIONNAIRES – TRAINERS

Background of the survey

1. Dates and duration during which the survey took place: from May 2018 to June 2018
2. Main means used to contact the respondents: e-mail, telephone, face to face meetings
3. Overall 12 trainers were contacted. 5 filled in the questionnaire.

General Information about Trainers

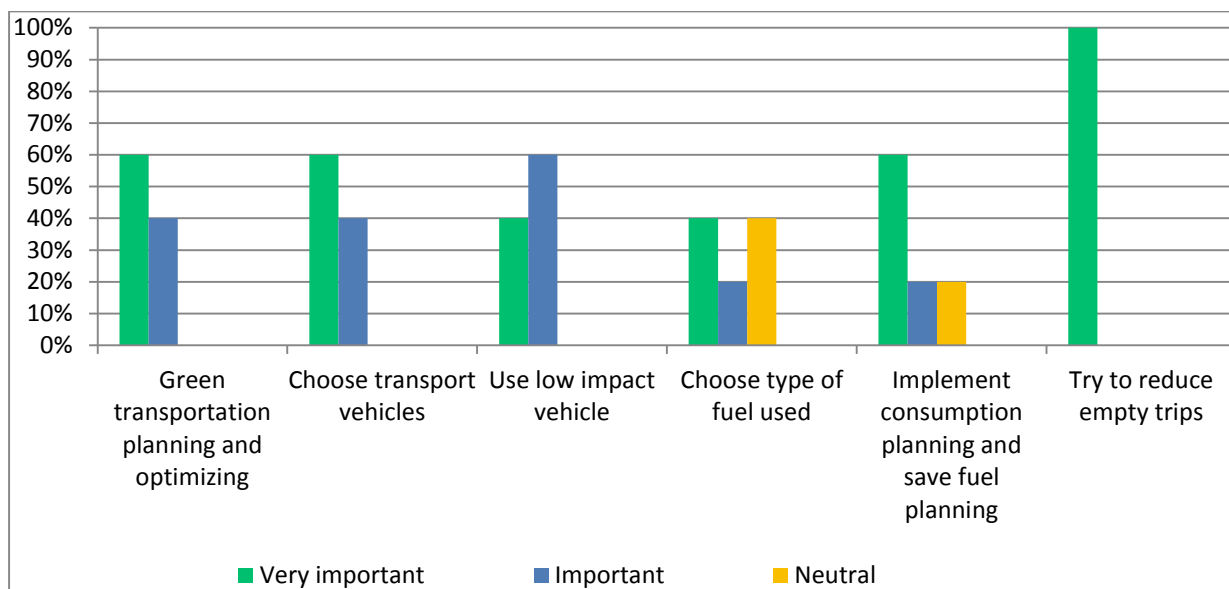
All respondents are male, they are between 47 and 58 years old. Their school degree ranges from high school diploma to PhD.

Competences in the Green Logistics Areas

Competences have been divided in 5 five areas: green transportation, green packaging, green warehousing, green waste management. For each area, the most important competences emerge in the following diagrams.

Green Transportation

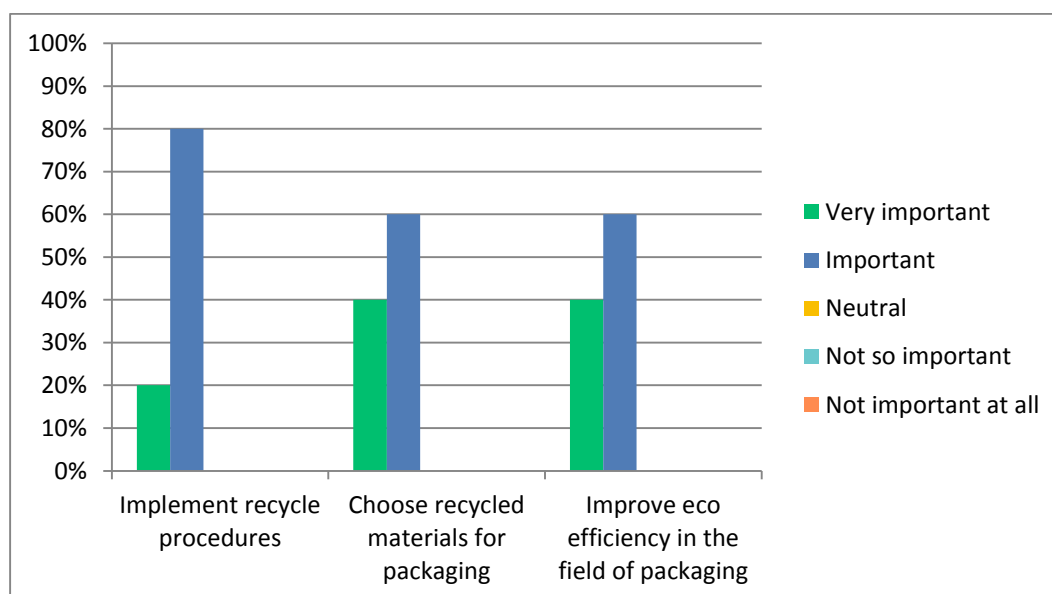
Trainers consider very important, important or are neutral about the competences in this area. "Try to reduce empty trips" is the best rated, followed by "Green transportation planning and optimizing" and "Choose transport vehicles". "Choose type of fuel" gets the lowest score.



According to 60% of the trainers, logistic managers do not need to acquire further competences in the green transportation area. The others suggest introducing a specific training on green transportation and increasing knowledge on pollution factors and consequences.

Green Packaging

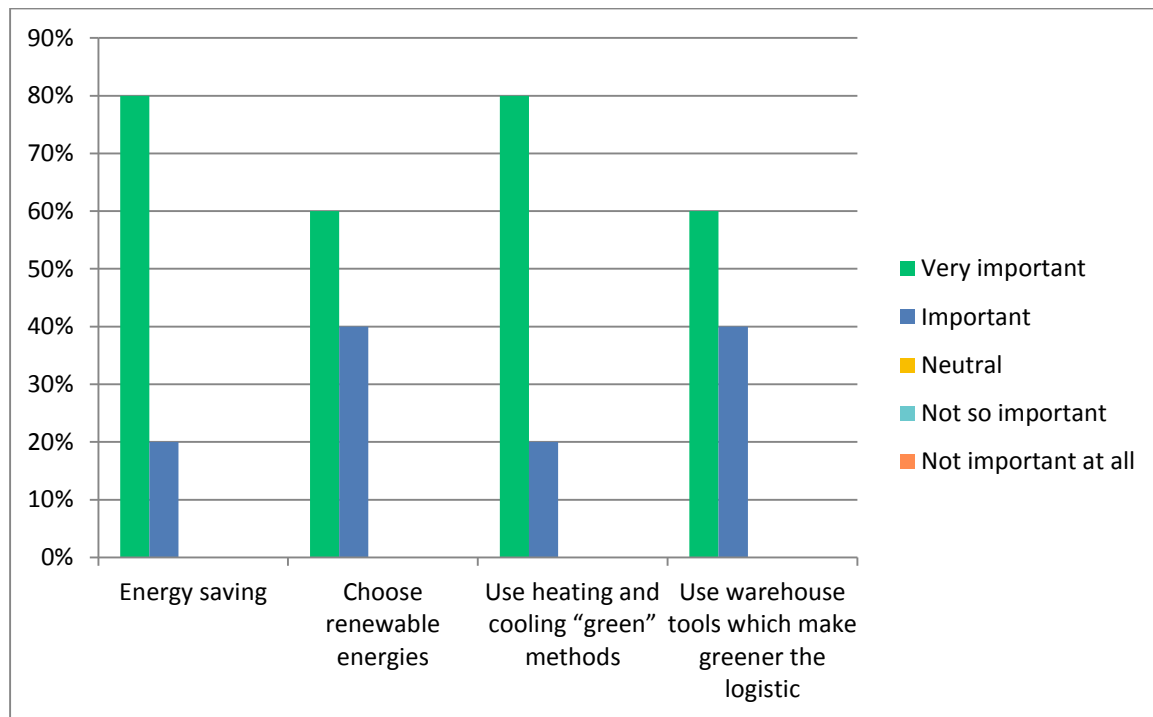
Trainers consider important and very important all the competences proposed in this area, in particular “choosing recycled materials” and “improving eco efficiency in the field of packaging” are the best rated.



According to 60% of the trainers, logistic managers need to acquire further competences in the green packaging area: in particular concerning materials (their properties and handling) and circular economy.

Green Warehousing

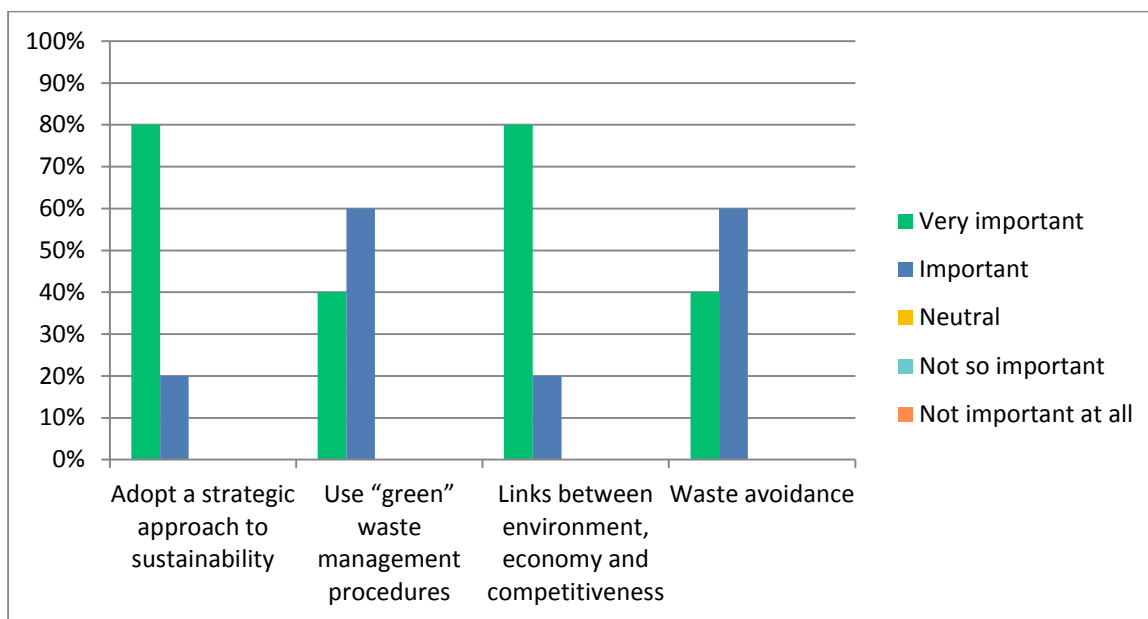
All trainers consider important or very important all the competences proposed in this area, being “energy saving” and “using heating and cooling green methods” the best rated.



According to 60% of the trainers, logistic managers need to acquire further competences in the green warehousing area: in particular about zero stock managing processes, Inventory sizing to reduce waste and optimize warehouse layout and size, and green handling of materials.

Green Waste Management

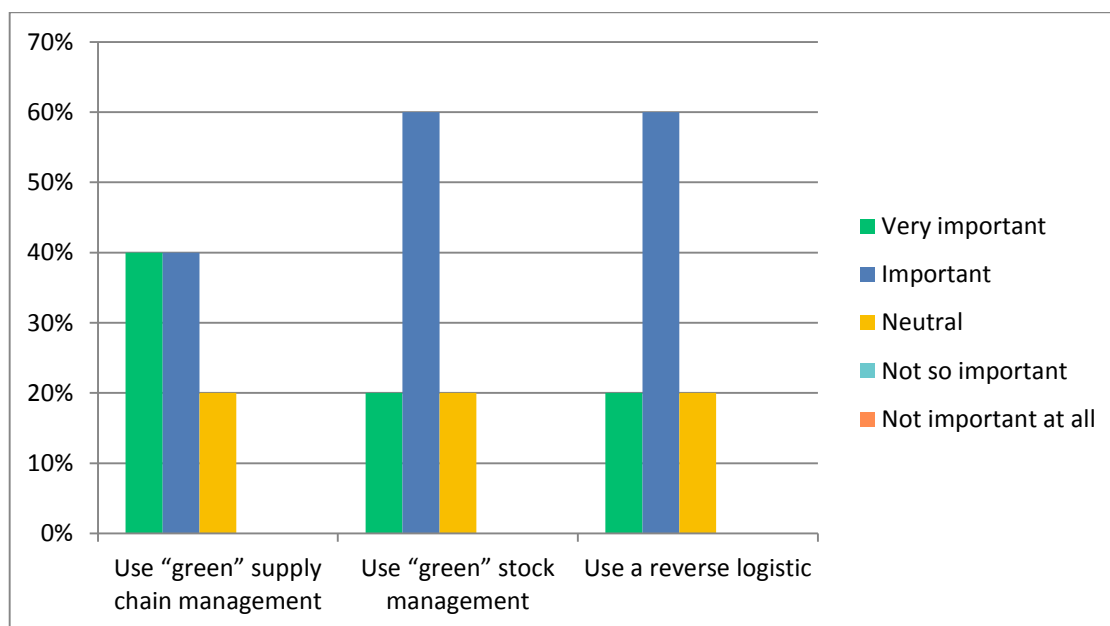
Almost all trainers consider very important the elements proposed within the Green Waste Management area. “Adopt a strategic approach to sustainability “ and “Links between environment, economy and competitiveness” receive the highest score.



According to 60% of the trainers, logistic managers need to acquire further competences in the green waste management area, in particular about zero emission disposal processes and circular economy.

Green Data Collection and Management

All trainers judge the competences in this area very important, important or are neutral. "Using green supply chain management" gets the highest score.



According to 60% of the trainers, logistic managers do not need to acquire further competences in this area.

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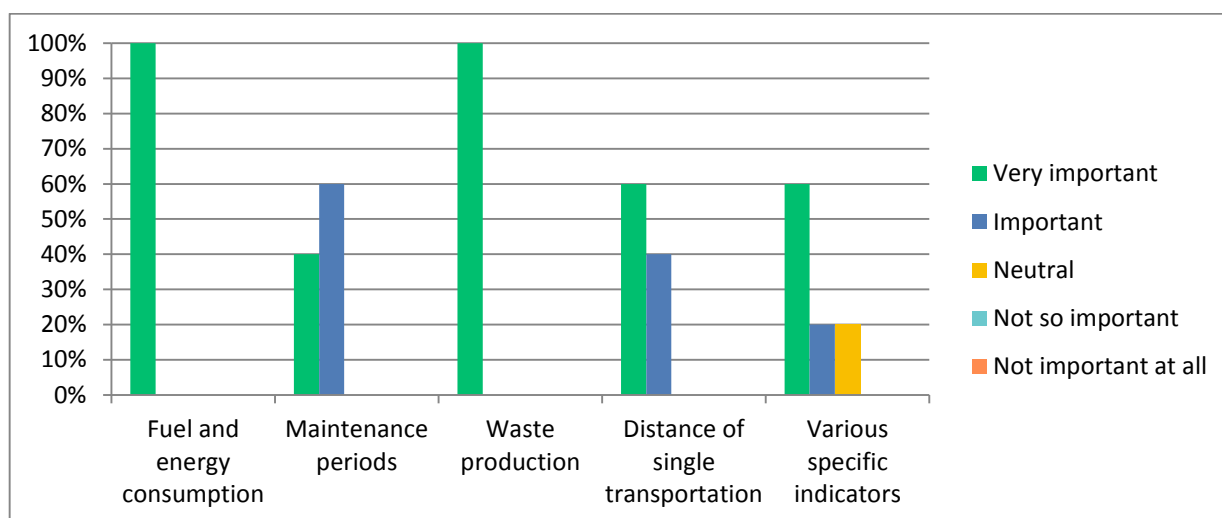
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Strategy

60% of the trainers states that “to make” strategy is more convenient than “to buy” strategy, because it has more impact and enables direct control on processes.

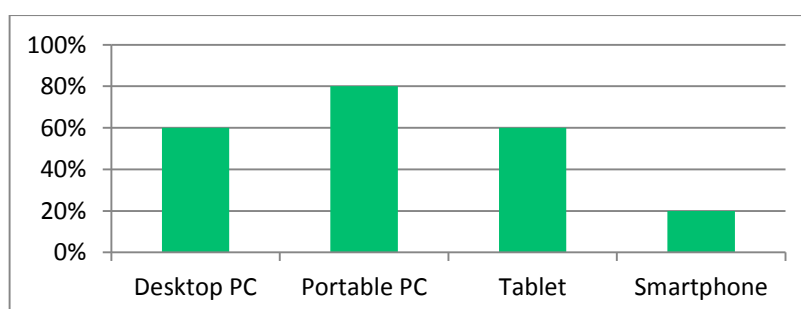
Element to record for a logistic manager

All trainers recognize the importance for a logistic manager to learn to record several elements in a company. The most important elements are considered by all trainers “fuel and energy consumption” and “waste production”.

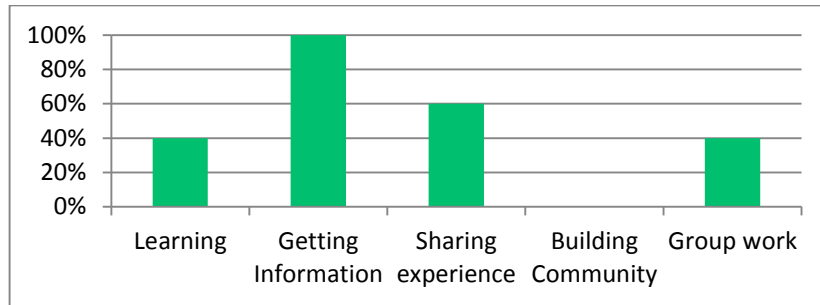


ICT

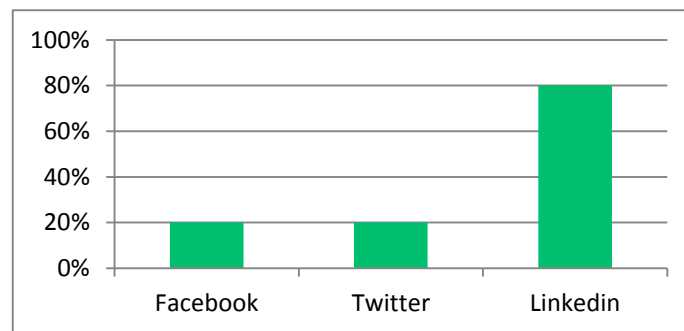
Devices: 80% of the respondents use portable computers in their training practices, 60% desktop computers and tablets, 20% smart phones.



Internet: all respondents use Internet to get information. A large part (60%) uses it to share experience, 40% for learning and group work.



Social Media: the most used social media is LinkedIn (80%).



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CONCLUSIONS

In total 132 managers and 54 trainers filled in the questionnaires.

As a result, most of the companies do not have an environmental certificate, except for Spain and Austria in which most of the managers stated that their companies possessed ISO14001 certificates (environmental management systems) or ECOPROFIT certificates. All companies adopt environmental strategies, mostly in transportation and waste management. According to the type of strategy used, the result was a fifty-fifty for both to make and to buy, the choice depends on the size of the company, how many resources and competences there are in a company, and production costs. Most of the managers are able to influence in the decision-making processes, and considered important to take in account green values in these processes. 50% of the respondents retain that their company does not need further competences.

The most important data to record for all partner countries were fuel and energy consumption, maintenance periods and distance of single transportation.

According to the green areas, the percentages of the “very important” value for each country are reported in the tables below:

Green Transportation

Managers

Green transportation	Austria	Bulgaria	Finland	Italy	Spain	TOTAL
Green transportation planning and optimizing (Organizing the route considering related consumption, distance, CO2 emissions)	100%	91%	50%	44%	80%	73%
Choose transport vehicles (size, emission classification, type of fuel needed)	65%	92%	40%	40%	60%	59%
Use low impact vehicle	33%	32%	50%	30%	73%	43%
Choose type of fuel used	65%	32%	40%	27%	63%	45%
Implement consumption planning and save fuel planning	33%	29%	60%	50%	77%	49%
Try to reduce empty trips	100%	100%	60%	80%	77%	83%

According to managers, the most important elements of the green transportation area are ‘Green transportation planning and optimizing’, and ‘Trying to reduce empty trips’.

Trainers

Green transportation	Bulgaria	Finland	Italy	Spain	Switzerland	TOTAL
Green transportation planning and optimizing (Organizing the route	100%	60%	100%	100%	60%	84%

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considering related consumption, distance, CO2 emissions)						
Choose transport vehicles (size, emission classification, type of fuel needed)	100%	60%	100%	100%	60%	84%
Use low impact vehicle	90%	46,67%	85%	100%	40%	72%
Choose type of fuel used	90%	26,67%	85%	100%	40%	68%
Implement consumption planning and save fuel planning	95%	63,33%	85%	100%	60%	61%
Try to reduce empty trips	95%	60%	85%	20%	100%	19%

According to trainers the most important elements a manager should learn are 'Green transportation planning and optimizing' and 'Choosing transport vehicles'. Austrian trainers' answer reflected this data, but were too few to calculate reliable percentages.

Relevant suggestions for this area were:

- Improving managers' knowledge about innovation and alternative fuels
- Improving competences about logistic processes management and human resources management, and in supporting drivers to adopt a eco-friendly driving style
- Improving knowledge about legislation
- Being able to create a green culture
- Increasing knowledge on pollution factors and consequences.

Green Packaging

Managers

GREEN PACKAGING	Austria	Bulgaria	Finland	Italy	Spain	TOTAL
Implement recycle procedures	0%	0%	40%	13%	60%	23%
Choose recycled materials for packaging	0%	0%	25%	17%	47%	18%
Improve eco efficiency in the field of packaging	0%	21%	20%	13%	50%	21%

According to managers, the most important element of the green packaging area is 'Implementing recycling procedures', but the percentage is very low in respect to the elements of other areas.

Trainers

GREEN PACKAGING	Bulgaria	Finland	Italy	Spain	Switzerland	TOTAL
Implement recycle procedures		34%	71%	90%	20%	63%

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	100%					
Choose recycled materials for packaging	100%	30%	57%	80%	40%	61%
Improve eco efficiency in the field of packaging	30%	23%	71%	80%	40%	48%

Also according to trainers, the most important element for this area is 'Implementing recycling procedures'.

Relevant suggestions for this area were:

- Improving knowledge of environmental packaging measures and their relation to economic benefits
- Improving knowledge of the proactive supply chain procedures
- Improving competences about the development of professional market analysis
- Understanding how to improve the overall process of the packaging cycle (from natural raw material to back to nature)

Green Warehousing

Managers

GREEN WAREHOUSING	Austria	Bulgaria	Finland	Italy	Spain	TOTAL
Energy saving	65%	100%	80%	53%	100%	80%
Choose renewable energies	0%	19%	20%	27%	90%	32%
Use heating and cooling "green" methods	0%	0%	20%	20%	63%	20%
Use warehouse tools which make greener the logistic	0%	0%	25%	27%	53%	21%

According to managers, the most important element for green warehousing area is 'Energy saving'.

Trainers

GREEN WAREHOUSING	Bulgaria	Finland	Italy	Spain	Switzerland	TOTAL
Energy saving	100%	63%	100%	100%	80%	88%
Choose renewable energies	50%	33%	100%	100%	60%	68%
Use heating and cooling "green" methods	100%	27%	43%	100%	80%	68%
Use warehouse tools which make greener the logistic	100%	37%	57%	100%	60%	68%

Also according to trainers, 'Energy saving' is the most important element for this area.

Relevant suggestions for this area were:

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- Enhancing the interaction between different companies
- Looking at green values as long-term benefits
- Knowing better the different types of energy in order to choose the less polluting
- Optimizing warehouse layout and size

Green Waste Management

Managers

GREEN WASTE MANAGEMENT	Austria	Bulgaria	Finland	Italy	Spain	TOTAL
Adopt a strategic approach to sustainability	33%	52%	80%	23%	67%	51%
Use “green” waste management procedures	0%	52%	20%	17%	67%	31%
Links between environment, economy and competitiveness	59%	100%	20%	23%	57%	51%
Waste avoidance	65%	76%	25%	27%	67%	52%

The most important elements of green waste management area, according to managers are ‘Adopting a strategic approach to sustainability’, and ‘Waste avoidance’.

Trainers

GREEN WASTE MANAGEMENT	Bulgaria	Finland	Italy	Spain	Switzerland	TOTAL
Adopt a strategic approach to sustainability	100%	33%	57%	100%	80%	74%
Use “green” waste management procedures	50%	27%	71%	100%	40%	57%
Links between environment, economy and competitiveness	100%	63%	86%	100%	80%	57%
Waste avoidance	100%	52%	71%	100%	40%	57%

Trainers stated that ‘Adopting a strategic approach to sustainability’ is the most important element a manager should know for green waste management area.

Relevant suggestions for this area were:

- Optimizing management, recycling, storage and tracking processes
- Enhancing competences about waste disposal and zero emission disposal processes

Green Data Collection and Management

Managers

GREEN DATA COLLECTION AND MANAGEMENT	Austria	Bulgaria	Finland	Italy	Spain	TOTAL
Use "green" supply chain management	33%	56%	4%	13%	90%	46%
Use "green" stock management	0%	52%	20%	17%	63%	30%
Use a reverse logistic	33%	59%	20%	17%	70%	39%

Managers considered 'using green supply chain management' the most important element for green data collection and management area.

Trainers

GREEN DATA COLLECTION AND MANAGEMENT	Bulgaria	Finland	Italy	Spain	Switzerland	TOTAL
Use "green" supply chain management	100%	53%	71%	100%	40%	72%
Use "green" stock management	50%	30%	43%	100%	20%	48%
Use a reverse logistic	50%	37%	57%	100%	20%	48%

Like managers, also trainers stated a manager should know mostly 'using green supply chain management' for the last green area.

Relevant suggestions for this area were:

- Searching good practise
- Improving competences about selecting essential data
- Catching better opportunity.

ICT

Almost all respondents mainly use desktop PC, portable PC, and smartphones; the most used social media are Facebook and LinkedIn, while trainers use internet mainly to get information and to learn.