



# REPAIR

## REsource Management in Peri-urban AReas: Going Beyond Urban Metabolism

### D3.2 Socio-cultural/socio-economic and company-related investigations for pilot cases

Final Version

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## Change control

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## Acronyms and Abbreviations

AMA	Amsterdam Metropolitan Area
EMAS	Eco-Management and Audit Scheme
EMS	Environmental Management System
ESL	Early School Leaving
EU	European Union
FA	Focus area
GDP	Gross Domestic Product
GNI	Gross National Income
ISCED	International Standard Classification of Education
ISO	International Organization for Standardization
ISTAT	Italian Statistical Office
OECD	Organisations for Economic Co-operation and Development
MAN	Metropolitan Area of Naples
PSCA	Primer empirical analysis
R&D	Research and Development
SEA	Socio-economic analysis
SSCA	Secondary socio-cultural analysis
TPB	Theory of Planned Behaviour
TRA	Theory of Reasoned Action
UAA	Utilized Agricultural Area
WCB	Waste-conscious Behaviour
WP	Work Package
WTO	World Trade Organisation

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## Publishable Summary

Task 3.3 of the REPAiR project is dealing with the linkages between socio-cultural and socio-moral features and social sensitiveness and awareness about general environmental issues, and particularly about waste and resource management. The basic assumption is that the different agents' understandings and behaviors related to ecological sustainability and more specific natural environmental aspects are deeply embedded into certain, collectively accepted, respected and followed social values, norms, rules, conventions, customs and attitudes. Accordingly, these social patterns influence the agents' way of thinking (perceptions and interpretations, i.e. concepts) and way of doing things (i.e. praxes) about environmental challenges. It is important to note that 'agent' in this research refers to both involved stakeholders (decision-makers, experts, experience-holders, etc.) and any member of the general population, therefore, the aforementioned hypothesis is assumed to be true regarding to expert and lay knowledge-holders as well.

To analyse this fundamental question and presumption, the research is focusing on four different tasks. Firstly, there is a theoretical phase that, based on certain value-concepts, aims to provide an explanatory framework for the general assumption. Secondly, Task 3.3 is dealing with a multi-phased comprehensive secondary socio-cultural analysis (SSCA) to investigate empirically the proposed theoretical linkages. Thirdly, the research provides a primer empirical analysis (PSCA) about the perceptions of different stakeholders on the relevancy of various factors and social, cultural and moral features for waste and resource management. Finally, a socio-economic analysis (SEA) aims to map out crucial aspects about each case study areas. Task 3.3 has a multilevel scope: the secondary socio-cultural inquiries are focusing on national level specificities, while the primer socio-cultural stage of the research and the socio-economic investigation is done on local (focus area) level.

## 1. Introduction

Our age is pervaded by ecological challenges. The natural ecosystem is badly polluted, exploited, burdened and damaged by ignorant human interventions that make the whole environment drastically changing. These are universal challenges affecting everybody irrespective to her national, ethnic or religious background, political view, cultural and sexual orientation, social status and position, education, wealth, livelihood and neighbourhood (Beck 1992). Of course, people have different resources and means to reduce the impacts of these ecological pressures on their lives, yet the right solution is rather to increase awareness and to shift ones' praxes to make them more environmentally sustainable. An individual's action is generally based on her behaviour; the latter is influenced by her perceptions and interpretations, i.e. concepts on herself, on Others, and on the constructed reality around her; while these discursively emerging concepts are affected by certain socio-cultural and socio-moral patterns (what others expect from the one), by self-interests (what the one expects from herself), and by knowledge (what reality expects from the one to accept as objective truths).

To start with the latter aspect, knowledge on reality is never independent from the knower, so even there are 'things' (facts and events) out in the real world, to know about these phenomena it means to construct them (Collier 1994). To put it in another way, what the one does not know, it does not exist for her, and what she knows, it is (also) constructed by her. It is impossible to compare one's knowledge about reality to the 'objective' circumstances out there, as the latter is inaccessible; it is always embedded into subjective discourses and individual concepts (Danemark et al. 2002). Accordingly, impulses and inputs from reality are understood by the one through theory-laden constructions communicated in different discourses (Archer 1995). For anti-foundationalist philosophy the 'real' world is purely constructed, while foundationalist philosophy, like the critical realist approach which is appreciated by this research, claims that there has to be something out there, yet to grasp it, it is surely done through theory-laden perceptions and interpretations (Bhaskar 1978). The crucial question to answer is the following one: are these individual understandings theory-laden or rather rigidly theory-determined?

Secondly, individual interests are seemingly based on a very simple principle sounds like to maximize profits and minimize losses (Coleman 1990). This is the reason followed by every rational, interest-oriented agent. Of course, there are interactions when one is tempted to put aside interests and act according to sentimental feelings, devoted emotions, or fiduciary and benevolent intentions, yet most of our dealings with others are not that much intimate. Although most rational thinkers accept that people are tempted to make unreasonable choices and decisions, however they claim that the more one is informed about her options, the more she is able to pick the right (i.e. rational) alternative (Davidson 1982). The problem with this argument is that to make a decision based on

information, it means to construct knowledge at first, and as it was elaborated above, knowledge is anything but objective. Two people in the same situation could grasp quite different understandings from the same inputs, so their rational interests might be different as well.

Consequently, one's perceptions and interpretations, i.e. concepts are truly based on knowledge, individual interests and socio-cultural and socio-moral features, yet these latter aspects, the social patterns have a touch on how the one is constructing knowledge and identifying her interests. Therefore, these are the dominating domains as the one is a more or less alienated, more or less reified, more or less socially recognized, more or less over-socialized, and more or less individualistic social agent who needs to deal with other people, i.e. needs to take into consideration collective expectations presented as values, norms, conventions, rules, customs and attitudes. Of course, these patterns should not be seen as fully determining factors as people have different understandings on them, and socio-cultural and socio-moral constraints are shaped and reshaped through times as well, so these are not rigid and unchangeable frameworks (North 1990). Instead, these informal structures should be addressed as guidelines which are considered by the one when she is continuously constructing her own codes, beliefs and attitudes. Accordingly, both for scholars and for the self the interesting aspect to reveal is that how the one is consciously building up in an auto-poietic sense (i.e. discursively in a narrative and performative way) her own cultural and moral understanding in comparison to the collective patterns; yet it is not less crucial to shed light on how she is unconsciously internalizing certain features in the meantime. For this latter endeavour, the one needs to be critical and reflexive, just as science has to be the same as scholars are also affected by certain socio-cultural and socio-moral constraints (Beck 1992).

If we accept that our age is pervaded by ecological challenges because the ecosystem is badly polluted, exploited, burdened and damaged by ignorant human interventions – how it was put it in the beginning of this introduction –, then it means that the socio-cultural and socio-moral features were so far, or they are still pathologically distorted, and these patterns make people insufficiently aware about natural environmental crisis and alerted about the need for more sustainable praxes. It is important to redesign discourses by producing better information for more adequate individual knowledge, and by explaining to the ones that it is in their interest to act 'green'. Yet, the shift would just really happen when the collective expectations, i.e. the social values, norms, rules, conventions and attitudes will push the individuals to reconstruct their perceptions and interpretations, i.e. concepts. In brief, this is the argument based on the current research task, and particularly this paper, assumes that in societies where socio-cultural and socio-moral constraints are in favour of taking collective responsibilities and actions, promoting solidarity and tolerance, grounding trust and openness, and deepening integration and cohesion, there the people's



**ecological awareness are higher and their environmentally sustainable praxes are more common.**

## 2. Conceptual Background – Theory of Planned Behaviour

As it was said, Task 3.3 is using a multi-theoretical approach to contextualize conceptually and to test empirically the basic assumption through a series of papers as part of a multi-phased secondary socio-cultural analysis (SSCA). The addressed value-theories will be Shalom H. Schwartz's (1992, 1994) moral norm activation concept, Ronald Inglehart's (1997, 2000, 2005) post-materialist theory, and Mary Douglas and Aaron Wildavsky's (1982) grid/group cultural approach throughout this task. These fundamental concepts will be linked to certain environmental sociological and psychological frameworks, such as the value-belief-norm theory of Paul C. Stern and Thomas Dietz (Stern et al. 1999), and the new ecological paradigm of Riley Dunlap et al. (1978, 1992, 2000).

This first paper, though, starts with a concept that is applied by other WPs in this project too, called the theory of planned behaviour (TPB). TPB is an extended version of its predecessor, theory of reasoned action (TRA) elaborated also by the Polish-born social psychologist, Icek Ajzen and his co-author, Martin Fishbein (for a full description of TRA see: Fishbein and Ajzen 1975). The aim of these approaches is to understand and to make predictable human actions. They are using a linear cause-effect relationship where behaviour is the explained variable. The argument sounds as the following: those who behave in a certain way, in an exact situation, they would presumably act in a strongly related fashion. An impressive body of social-psychological works is attracted by this scientific endeavour to map out basic attitudes, individual dispositions and personality traits that drive human behaviours, yet for long theoretical conceptualizations were generally richer than the empirical evidences (Mischel 1968, Wicker 1969). During the '70s and early '80s some scholars suggested that behaviours should be analysed across precisely situated occasions and forms of action, and then by aggregation the various other factors, as influencing aspects, unique to the specific contexts will cancel each other, hence the underlying general attitudes and individual features of a certain behaviour could be measured more adequately (Epstein 1983, Fishbein and Ajzen 1974). Although this attempt sufficiently demonstrated that behaviours are grounded in some basic personality traits and dispositions, yet it could not explain behavioural variability across situations, so it was not able to make human actions predictable either. What had to be realized was that one's behaviour in a given situation is affected not just by her attitude and her individual features, but by other factors as well (Ajzen and Fishbein 1980). The task was to conceptualize these other aspects.

Fishbein and Ajzen (1975) by TRA introduced new variables to understand behaviour. Firstly, they placed intention into the model to serve as an intermediary factor between the original causes (explanans) and the effect (explanandum) which remained behaviour. By invoking intention, the authors emphasized that showing certain behaviour, and – based on that – acting in a potential way, it highly depends on the actor's volatile aspirations. Therefore,

even if the actor has basic attitudes and personal dispositions and traits – which are all original causes in the investigated relationship – that motivate her to behave in a certain fashion, yet other influencing factors could overshadow these individual inspirations, and drive her to have different intentions. Accordingly, the TRA model assumes that action is based on behaviour, while the latter is explained by intention. To put it differently, one could have the intention to behave in a certain way, yet it is not determined to happen, and even if she behaves that sense, it does not mean that she would act in certain fashion in an exact situation. So, the original causes rather explain one's intention sufficiently, and just much uncertainly her behaviour and her potential action.

What are these generative factors in TRA? On the one hand attitudes, dispositions and traits, while on the other subjective norms which refer to one's understanding about how important others expect her to behave in a given situation. Consequently, TRA is using a double-hermeneutical approach which is an unavoidable specificity of social science's ontological, epistemological and methodological endeavours (Vandenberghe 2014). It means that the subject of the research is proposing perceptions and interpretations, i.e. concepts on the object's perceptions and interpretations, i.e. concepts on herself, on Others, and on the constructed reality (Sayer 1992). In the case of TRA, the scholar conceptualizes how the analysed individual understands her personality and others' expectations about her. Consequently, nothing is factual in this explanatory framework, every aspect and every linkage is constructed; both by the object and the subject of the research. More, the one is interested in how the scholar understands her, so she perceives the goals of the researcher, and react according to these assumed expectations (just as she takes into consideration important others' values and norms during her interactions). Therefore, a triple-hermeneutical scenario is also possible if the scholar is not enough cautious. This is why it is so important to take an agent-based perspective and not to overemphasize misleading structural determinants (Vandenberghe 2014). By applying the multi-layered, intention-behaviour-action relationship the TRA leaves options for individual actorness (and scholarly reconsiderations as well). This is crucial, yet it also means that the model is not proposing a fully developed explanatory framework.

Hence, it is not a surprise that Ajzen later elaborated an extended version of TRA, called the theory of planned behaviour (TPB) (Ajzen 1988, 1991). In the TPB he kept the whole structure of TRA, while also introduced a new original cause variable, the perceived behavioural control. This additional indicator refers to how the one evaluates it would be easy or hard to behave in a certain way. Consequently, in the new chain of linkages of TPB action depends on behaviour; behavioural features based on the volatility of intention; while the latter is influenced by (1) individual attitudes and personality dispositions and traits, (2) expectations as norms proposed by important others, and (3) one's perceptions on her abilities, capabilities, capacities, competencies, qualities, resources and all

other contextual elements that could make it easier or harder for her to behave in a certain fashion. Obviously, with this latter composite variable Ajzen invited broad theoretical assumptions and complex empirical observations as well (Figure 1). Possibly, the explanatory power of the model got strengthened due to this freely operationalizable extension, yet there is also a chance that this new, rather fuzzy dimension explains intentions, behaviour and actions more adequately because individuals are using these factors as common justifications for their deeds or passivity. To put it simply, it is more reasonable for the one to perceive that she would behave in a certain way because of rationally assessable 'hard' factors, such as time, money, knowledge, opportunities, risks, etc., than under the influence of sensible inner-motivations like dispositions and traits, or social pressures such as collective values and norms. Perceived behavioural control is still about one's perception of self-control which is more appealing for the Ego than being driven by personality features or others' expectations.

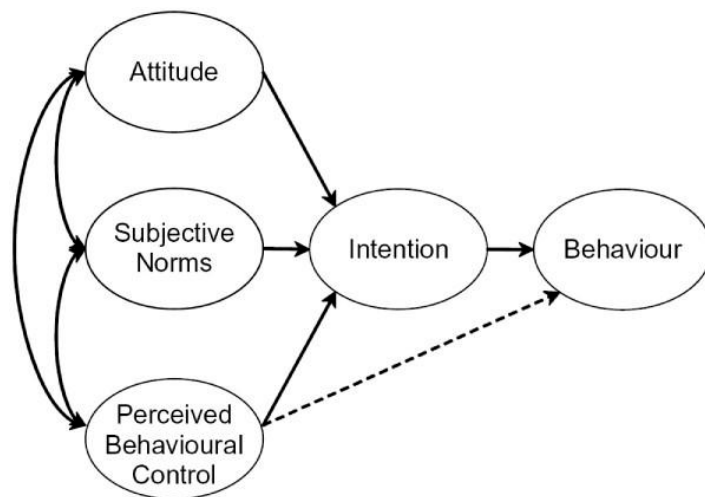


Figure 1. The model of theory of planned behaviour

Source: Ajzen 1988

There are plenty of revised, reconsidered or extended versions of the TPB model in the literature. Even if we overview just the papers which applied the approach with some alternations from the perspective of environmental sociology or psychology, there is a rich source of scholarly works to study. For instance, TPB has been used successfully to understand environmentally responsible behaviour such as recycling (Boldero 1995, Cheung et al. 1999, Taylor and Todd 1995), composting (Taylor and Todd 1995) energy use (Harland et al. 1999), water conservation (Harland et al. 1999, Kantola et al. 1982), adoption of sustainable agriculture practices (Beedell and Rehman 1999, 2000, Carr and Tait 1991, Fielding et al. 2008a, 2005), and also environmental activism (Fielding et al. 2008b).

This working paper does not aim to reconsider the theoretical model, neither ontologically, nor epistemologically. As the empirical part is based on a secondary analysis, the accessible data also constrained this attempt. The focus was more on to use TPB as a comprehensive framework and just to address some specific, potential explanatory features of it. Therefore, this inquiry is rather a basic investigation, a preliminary overview that can serve as a background study for more sophisticated and elaborated analyses planned for the later phases of this research.

As it was developed above, TPB is based on three kind of original causes: 1) general attitudes and personality dispositions and traits; 2) subjective norms proposed by important others; 3) perceived behavioural control. The theoretical aspect that interlinks these causes is the agent's social embeddedness, her quality of being firmly and deeply ingrained into a collective milieu. The argument behind this claimed link is that the social context produces expectations about the one how to behave. These expectations are formulated as socio-cultural and socio-moral values, norms, rules, conventions and customs, and the one constructs her own attitudes and codes in consideration to these collective patterns. Yet, the social milieu also produces socio-economic conditions and socio-political frames for the interactions, and these latter aspects possibly influence the perceived behavioural control of the one (her qualities, resources, opportunities, etc.). Accordingly, the following empirical chapter aims to analyse if there are linkages between one's social milieu and her behaviour, her actorness.

### 3. Empirical findings

At first, the database needs to be introduced. As it was said above, the current paper provides a secondary analysis. The source for the basic data was the Flash Eurobarometer<sup>1</sup> 388 (*Attitudes of Europeans towards Waste Management and Resource Efficiency*) survey published in 2014. It was conducted by the TNS Political & Social Network in all the 28 Member States of the European Union between the 3rd and 7th of December 2013. Almost 26.600 respondents from different social and demographic groups were interviewed via telephone (landline and mobile phone) in their first language on behalf of the European Commission, DG Environment. The survey "seeks to understand citizens' perceptions, attitudes

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<sup>1</sup> Eurobarometer covers the population of the respective nationalities of the European Union Member States, resident in each of the 28 Member States and aged 15 years and over. The survey covers the national population of citizens as well as the population of citizens of all the European Union Member States that are residents in these countries and have a sufficient command of the national languages to answer the questionnaire. The basic sample design applied in all states is multi-stage random (probability). The used methodology (that is deeply described in every Eurobarometer reports) allows stratification sampling by NUTS2 region and urbanisation to approximate a geographically representative sample.

and practices related to efficient use of resources, generation and management of waste, as well as elements of the so-called 'circular economy' (including second-hand products and alternatives to buying new products)" (Report of Flash Eurobarometer 388, 2014:5). It comprises 20 questions about various aspects of the general theme.

The main findings of the report are structured into four chapters. The first provides an overview of the issue of European resource management from the perspective of the respondents: how important is it that Europe uses its resources more efficiently? What impact would a more efficient use of resources have on quality of life, economic growth, and employment opportunities? Finally, which actions should be prioritized to improve the efficient use of resources? (ibid:6). As it seems, this chapter is interested in the people's general attitudes and perceptions. Unfortunately, however, the questions are posed in a way that the respondents were able to show serious commitments to resource management without taking into consideration the more holistic context of other socio-political or socio-economic issues. To take an example, surely, a more efficient European resource management is desired by most of the people (96% according to the report), yet it would have been crucial to ask the respondents if they perceive resource management just as important as, for instance, improving employment, education, health care, institutional transparency, etc. Therefore, the attempt to contextualize this social desire, it is utterly missing from the questionnaire.

The second chapter of the report is dealing with waste generation and waste management. The previous aims to reveal the amount of different kind of (paper, plastic, metal, glass, food-related, hazardous chemicals, etc.) wastes generated by respondents and the actions they take to reduce that amount. The second part explores the household waste management practices of respondents and the initiatives that might convince them to separate their waste (ibid:6). Accordingly, this chapter is focusing on the agents' praxes which aspect is pretty fundamental for the inquiry of the theme. Yet, another operational flaw of the questionnaire undermines the interpretation of the answers. About a lot of individual practices it is unclear if the respondent is applying the given praxis because of environmental-awareness or waste-related consciousness, or due to something absolutely different inspiration and motivation (maybe pressure or constraint). That would have been more than important to reveal.

The third chapter concentrates on a specific form of waste – plastic – as well as on littering in general. It surveys respondents' attitudes towards plastic waste and litter comprehensively, and it also evaluates the extent of the litter problem in the respondents' own area. Finally, the fourth chapter addresses the 'circular economy' aspect from the point of view how the agents assess the durability, recyclability and reparability of certain products; if they prefer new or second-hand products; and what are their perceptions about remanufactured, rented or

shared products (ibid.:6).<sup>2</sup> The questions related to this last chapter are problematic mostly because of the same reason as the ones posed in the second thematic block.

All in all, as the survey is using plenty of variables about individual praxes related to waste and resource management, so it is applicable for the aim of this working paper to analyse the potential links between agents' behaviour and their social milieu. Yet, because of the aforementioned operational problems of the questionnaire, a careful selection had to be made among the variables. Since TPB interprets behaviour as the aspect needs to be explained, so this paper also takes behaviour in the cause-effect relationship as an explanandum. For this, a composite index was developed which comprises 11 items. It is called 'Waste-conscious Behavior' (WCB). All of these items are dichotomous variables based on two distinct values: yes or no. The index has a maximum value of 11 and a minimum of 0 as every 'yes' answer to a given item means 1, while every 'no' means 0. Accordingly, the WCB index is based on individual responses later aggregated on national level.

The applied 11 items are the following ones:

*Q5a Which of the following actions are you undertaking to reduce the amount of household waste that you generate?*

- (1) Q5a\_2 You avoid buying 'over packaged' goods
- (2) Q5a\_4 You undertake home composting

*Q6 Do you sort the following types of waste, at least occasionally?*

- (3) Q6\_1 Paper / Cardboard / Beverage cartons
- (4) Q6\_2 Plastic bottles or other plastic materials
- (5) Q6\_3 Metal cans
- (6) Q6\_4 Glass
- (7) Q6\_5 Kitchen waste
- (8) Q6\_7 Household hazardous waste (paint, chemicals, batteries, etc.)

*Q11 Which of the following aspects do you consider most important when buying a durable product, like a washing machine or a fridge?*

- (9) Q11\_3 The product is made from recycled materials
- (10) Q11\_4 The product can be recycled after you use it
- (11) Q11\_5 The product is environmentally-friendly

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<sup>2</sup> Circular economy as a notion is not defined by the Report of Flash Barometer. Based on the questionnaire, it is understood simply as buying second-hand products and using other kind of alternatives to avoid purchasing new products.

<i>Position</i>	<i>Member state</i>	<i>M. value</i>	<i>Position</i>	<i>Member state</i>	<i>M. value</i>
1	Austria	7.81	15	Czech Republic	6.80
2	<b>Belgium</b>	<b>7.70</b>	16	Denmark	6.75
3	<b>Germany</b>	<b>7.65</b>	17	Slovakia	6.71
4	Luxembourg	7.55	18	<b>The Netherlands</b>	<b>6.32</b>
5	Sweden	7.51	19	Greece	6.08
6	France	7.28	20	Estonia	6.05
7	Portugal	7.17	21	Malta	5.98
8	Spain	7.13	22	<b>Hungary</b>	<b>5.90</b>
9	Ireland	7.11	23	Croatia	5.55
10	Finland	7.03	24	Cyprus	5.22
11	United Kingdom	7.02	25	Lithuania	5.07
12	Slovenia	7.01	26	Latvia	5.01
13	<b>Italy</b>	<b>6.98</b>	27	Bulgaria	4.86
14	<b>Poland</b>	<b>6.82</b>	28	Romania	3.76

Table 1: WCB index mean values by EU member states (N=26595)

Source: Authors' elaboration based on data from Flash Eurobarometer 388

The EU's average WCB score is 6.89. So, based on the data presented in Table 1, it is important to note that there is a kind of rift between the Western and Eastern European/South-eastern Mediterranean countries. Above the average there is just one post-Socialist, new member state, Slovenia (7.01), while below there are only two Western European countries, Denmark (6.75) and the Netherlands (6.32). All the three are pretty close to the EU's mean value, though. Accordingly, almost all of the Eastern European states are under the average, some of them are really lagging behind, for instance, Lithuania (5.07), Latvia (5.01), and Bulgaria (4.86), while Romania's (3.76) WCB mean value is surprisingly low. The best score is produced by Austria (7.81), followed by two states, Belgium (7.70) and Germany (7.65), that are particularly studied by the REPAiR project. From the other four case study areas, three – Italy, Poland, and the Netherlands (already mentioned above) – are close to the EU's average, while Hungary is rather in the lower third of the table. *Figure 2* shows these findings on a map of Europe that visually represents the aforementioned rift.



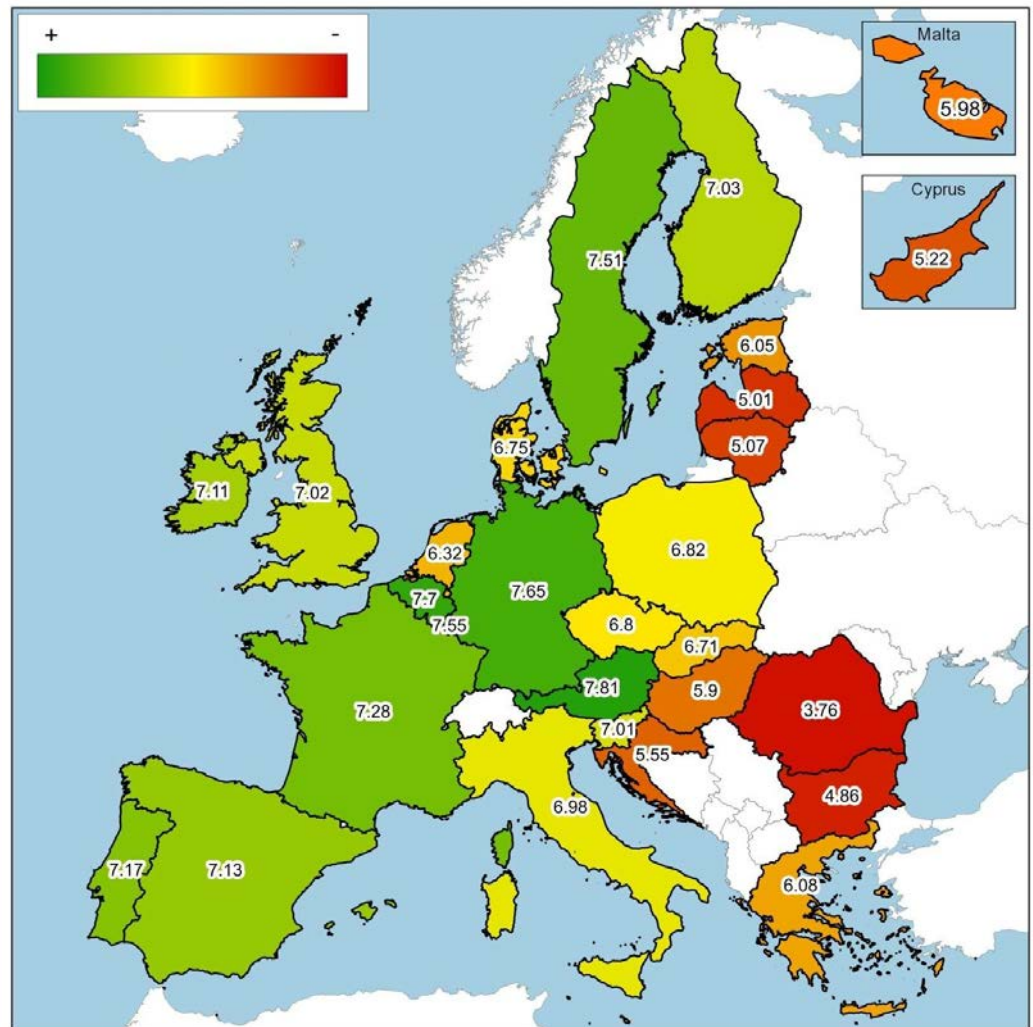


Figure 2 - WCB index mean values by EU member states (N=26595)  
Source: Authors' elaboration based on data from Flash Eurobarometer 388)

As it was said, the index of Waste-conscious Behaviour is the explanandum, the effect to be impacted (or not). The paper is interested in the potential linkages between the agents' behaviour and their social milieu. Therefore, the latter is the cause which is identified in this inquiry by two variables. On the one hand, by types of settlement the agents are living in, while on the other, by the region the given settlement belongs to. In the following, the current paper presents the links between WCB and social milieu by the six case study areas of the REPAiR project.

The Flash Eurobarometer 388 survey uses a socio-demographic variable about the subjective perception of the agent's neighbourhood if it is part of a (1) rural area or village; a (2) small or middle sized town; or (3) a large town.<sup>3</sup>

<sup>3</sup> As it is a subjective perception, the respondent is the one who defines her own neighbourhood.

	Rural area or village	Small or middle sized town	Large town	Total	Significant (p<0.05)
Belgium	7.91	7.60	7.29	7.70	yes
Germany	8.03	7.45	7.31	7.65	yes
Hungary	5.90	5.95	5.85	5.90	no
Italy	7.19	7.12	6.62	6.98	yes
Netherlands	6.66	6.34	5.68	6.32	yes
Poland	7.32	6.75	6.27	6.82	yes

*Table 2 – WCB index mean values by types of settlement in the six cases (N=866–954)*

*Source: Authors' elaboration based on data from Flash Eurobarometer 388*

Based on the data presented in Table 2, it is crucial to note that, except of Hungary, in five cases there are significant differences about the WCB index mean values regarding to the types of settlements. Namely, in Belgium, Germany, Italy, in the Netherlands, and also in Poland agents who are living in rural areas or in villages generally have higher WCB scores, than those who have places of residency in small or middle sized towns, or in large towns. More, also agents who are living in small or middle sized towns generally have higher WCB mean values than those who are from large towns. Accordingly, it is possible to make a claim based on this data that the smaller the settlement where the agent is living in, the more her behaviour is waste-conscious.

The other variable used in this paper to identify the agents' social milieu refers to the regions where the respondents are living in. This is a very simple and objective category which does not need further explanation. Figure 3 presents the WCB mean values by regions. Except of Hungary, in five countries there are significant differences among the regionally aggregated WCB scores. In Belgium, the Flemish region – studied by REPAiR – has a higher mean value than the Brussels region and the Walloon region which two have close to similar scores. In Germany the diversification of the regional mean values are quite high, yet because of the low number of respondents in each regions, it would be irresponsible to make strong statements. Anyhow, it is worth to underline that the Hamburg case study region of the project has the lowest mean value in Germany. Regarding to Italy, there is a clear rift between the Northern regions and the Southern one and the islands, while the Centro – our case – is little under the national average. Among the Dutch regions the Eastern and the Southern ones have higher mean values compare to the other two (REPAiR's choice, the Western one has the lowest mean value). Finally, in Poland the regional differences are significant, yet three-four regions have closely similar scores, while two are rather lagging behind (the project's case is the closest one to the national average).

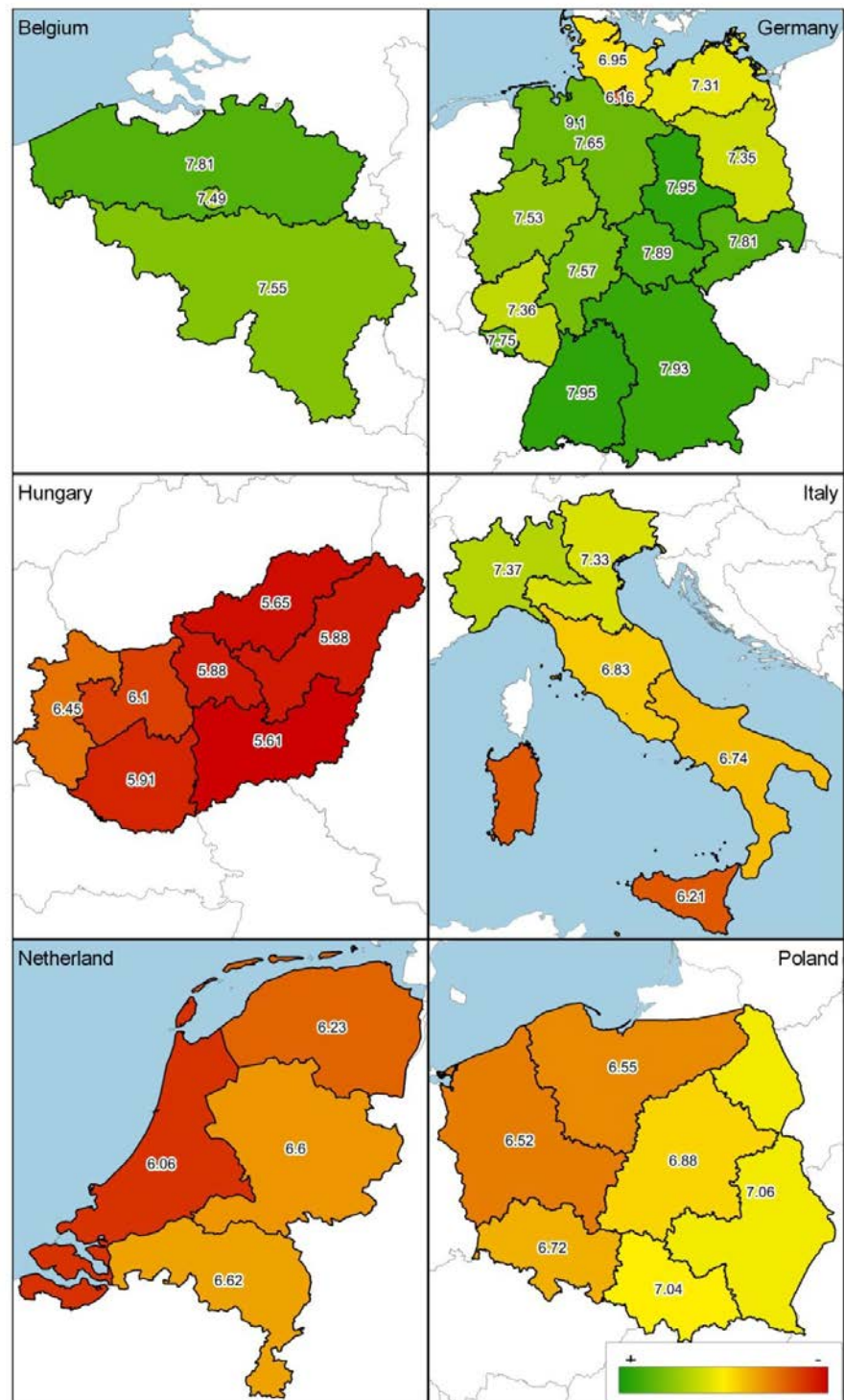


Figure 3 – WCB index mean values by regions in the six case study areas (N=871–949)

Source: Authors' elaboration based on data from Flash Eurobarometer 388

Note: (1) Differences in the case of Hungary are not significant; (2) In Germany the number of respondents in regional distribution is low, the differences are statistically significant, though.

## 4. Socio-economic analysis for the two pilot cases

The socio-economic analysis is based on a template that aims to gather geography-, demography, and economy related basic quantitative inputs about the focus areas and the wider regions. SEA is important for the basic introduction of the cases. The representation of the data is descriptive without statistical or other kind of inquiries.

### 1.1 Italy

This chapter attempts to analyse the social, economic, natural factors of Italy, focusing on the most relevant facts we need to take into account when trying to sub serve the achievement of circular economy<sup>4</sup>. We consider the recent changes and trends, effects of the crisis and the problematic areas as well as the general demographical conditions, and developmental issues in the economy and society. Furthermore, we emphasize the Campania region and the New Metropolitan area of Naples.

#### 4.1.1. Demography

Italy is composed of 20 regions, of which experiencing population increase can be summed up, except for the region of Molise. The current population of Italy is 60,665,551 according to latest Eurostat statistics, stating Italy as the 6th most populated European country. Approximately 69% of this population is urban dweller, which means this proportion raised 10% since 1960. The female population-as usual in Europe-has a slight majority (51,7%) of the total. The land experienced massive and steady growth in the 20th century as its population doubled between 1901 and 2017, although the natural increase shows decline in the past decade, as the numbers of annual deaths exceeds the annual live births. In the year 2016, natural decrease meant -141.823 people (Eurostat). The demographical growth is largely due to external immigration, ever since 1970's, making the population density unevenly distributed in the country (*Figure 4*).

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<sup>4</sup> The definition of circular economy as used in the REPAiR project can be found in the Deliverable No. 3.1 of this project.

**RESIDENT POPULATION DENSITY ON 1 JANUARY 2016**

Inhabitants per km<sup>2</sup>

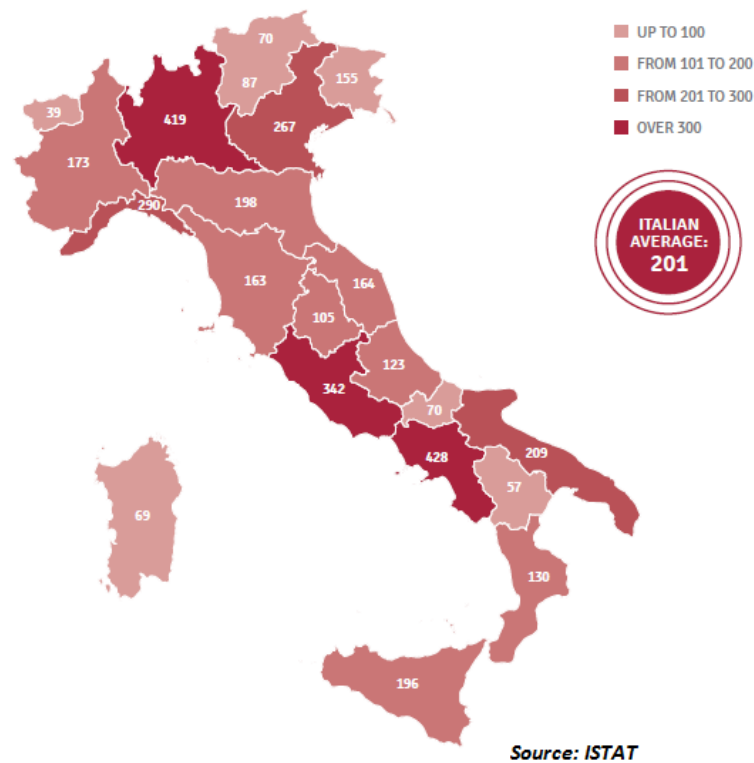
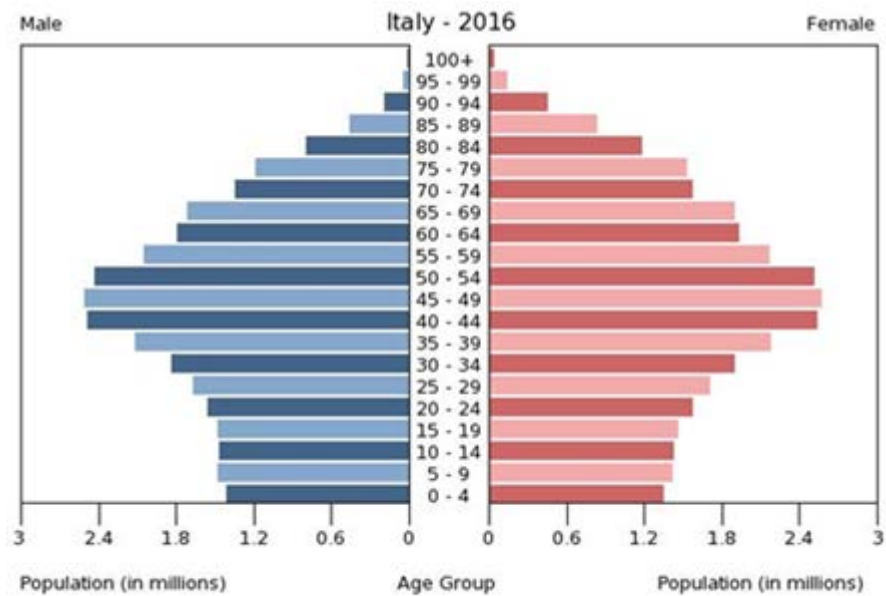


Figure 4: Population density in Italy (2016)

Source: ISTAT

In 2015, 280.078 immigrants entered the country from which 9,3% was native born, 20% came from another EU-member country, while the significant 70% came from a non EU-member land. The population of Italian coastal cities, land consumption and urbanization rates have increased consistently from the 1950s to the Noughties and at a much higher pace than in other areas of the country (Romano & Zullo, 2014; ISPRA, 2015a). As of 1st January 2013, Italy had a total of 8092 municipalities, however, over a quarter of the Italian population (over 16 million people) lived in 644 coastal municipalities with a population density (388 capita/km<sup>2</sup>) twice as high compared to inland municipalities (166 capita/km<sup>2</sup>) (ISTAT 2013a).

Italy is the most rapidly ageing society within Europe, with an 1,43 birth/women fertility. rate (well below the OECD average) and life expectancy of 82,2 years that is among the highest in the OECD (Figure 5). Concerning the specifics of age groups in Italy, the population of ages 0-14 constitutes 13,69% of total, those between the ages 15-64-meaning the active work class-has a share of 64,93 percent of the whole population (Figure 6). Regarding the share of persons aged 65 or older in the total population, Italy has the highest share in Europe (21.37%).



Source: CIA World factbook

Figure 5: Age structure in Italy (2016)

Source: CIA World factbook

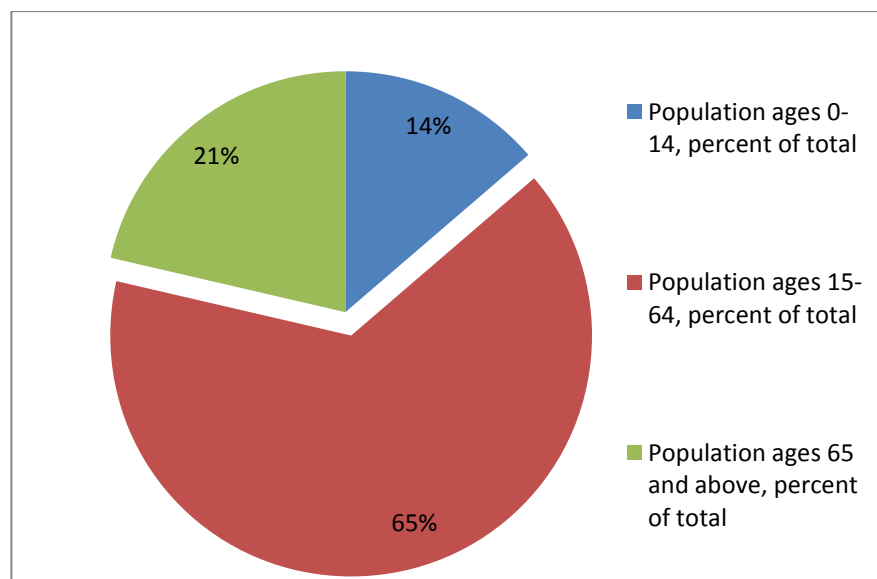


Figure 6: Distribution of age groups within the Italian society (2016)

Source: Own edition based on ISTAT data

There is a high elderly dependency ratio which is 35.1%, while the population growth rate is 0,23%. The steady increase of the elderly, especially in Italy where

the cultural habits include generations living together, puts the younger, shrinking working class under greater pressure. This proportion of ageing is an alarming indicator, that implies economic consequences. According to ISTAT population forecast over the coming decades the Italian economy will experience an ageing process that will lead to a significant decline in the growth rate of the labour force and consequentially lower productivity rate. Apart from labour force pronounced ageing society also has a direct impact on the consumption structure. Increase in the share of old people produces a shift in consumption towards a more energy intensive mix of goods and services. (Garau et al. 2013). The environmental implications are also in account, as there is evidence that older people use more energy than younger people (Brounen et al., 2012; Faiella, 2011; O'Neill & Belinda, 2002),

The median age of the society is 45.5 year while the life expectancy is 82,2 years, one of the highest within Europe, after Switzerland and Spain.

#### **4.1.2. Labour force and human capital**

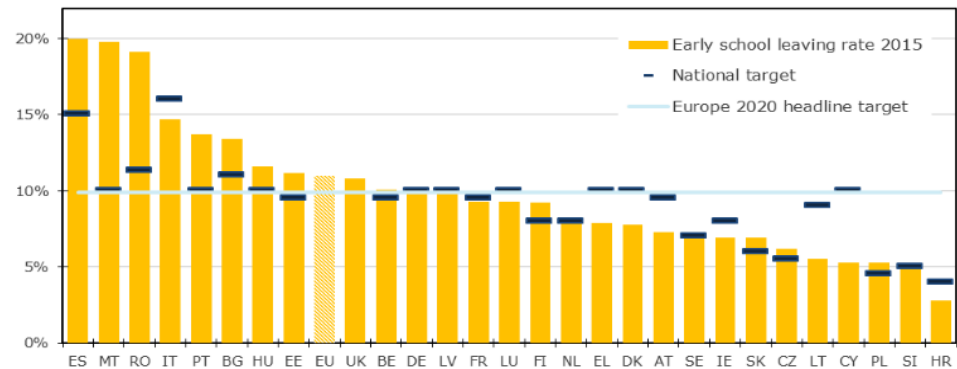
In today's society, future growth and social welfare will depend on knowledge-intensive industries and services (Dumciuviene, 2015), therefore low qualification contributes directly to the poverty and it inhibits the development and competitiveness of a country.

The human development index of Italy is 0.887, making the country the 26th in the world.

'Early leavers from education and training' means those young people aged between 18-24 who only achieved lower secondary education or less (equivalent with ISCED 0-2 levels) and are no longer in education or training. In Italy, the compulsory school leaving age is set for 16 years, synchronized with the age one can legally pursue a fulltime job. However, early school leaving still has high individual, social and economic impacts. Young people with only lower secondary education or less are more likely to be unemployed. The economic costs include lower productivity, lower tax revenues and high social costs. The target set by the European Union is that by 2020 this rate should be below 10 % (Figure 7). Italy currently holds 13.8% rate in this matter (in which male has a considerably bigger share with 16.1%, compared to female school leavers with 11.3%), although it has effectively decreased from 19.5% since 2007. Young people with migrant background in Italy are over-represented among ESL. In 2016, 53.4% of ESL young people were foreign born.



Figure 1 – Early school leaving, Europe 2020 headline target and national targets



Source: Eurostat (LFS, table [t2020\_40]). National targets follow different definitions of the indicator in some countries. Further information on national targets and their definitions: [http://ec.europa.eu/eurostat/documents/4411192/4411431/Europe\\_2020\\_Targets.pdf](http://ec.europa.eu/eurostat/documents/4411192/4411431/Europe_2020_Targets.pdf)

Figure 7: Early school leaving, Europe 2020 headline target and national targets

Source: Eurostat

After 2008, several cycles of state rescaling are seen as being mobilized in the wake of the crisis (Lobao et al., 2009). When the global financial crisis resulted sectors -such as real estate, house-building and cars- in collapse, industries reacted in various ways, one of them was that they reduced the number of full-time, permanent jobs on offer (Figure 8). While growing unemployment mainly affected young and low-paid workers, dismissal of higher-paid permanent staff was rare (Bugamelli et al., 2009: 20), at least in large and medium-sized firms. Ever since, unemployment and nonperforming loans (NPLs) have declined somewhat from their crisis-driven peaks. Nevertheless, Italy's strong divide into south and north is measurable in many socio-economic meanings: like the fact that out of the 943,000 Italians who became unemployed between 2007 and 2014, circa 70% were southerners (Figure 9), which also reflects the structural differences between north and south.



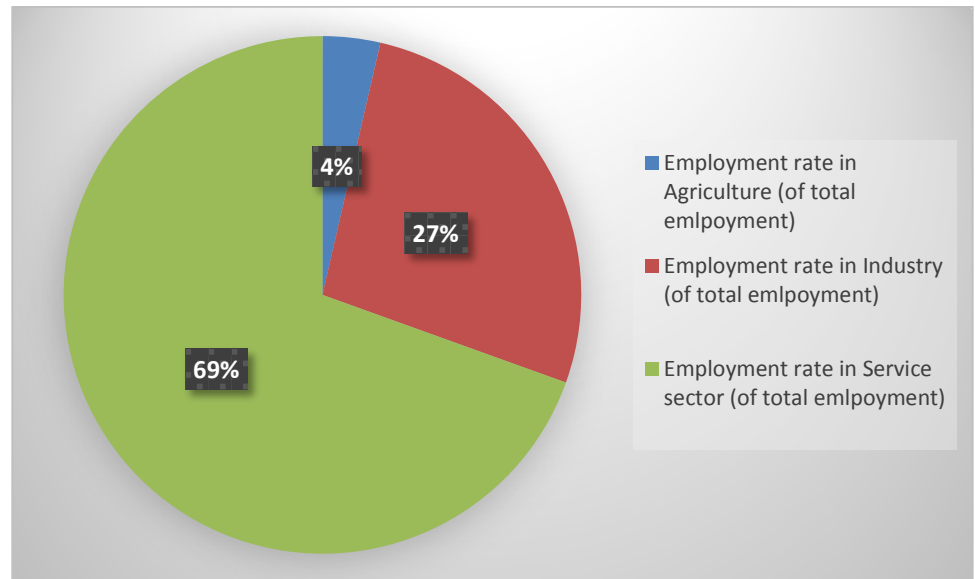


Figure 8: Employment participation by sector (2015)

Source: Own editing based on ISTAT data

### Unemployment rate, 2012 regional disparity

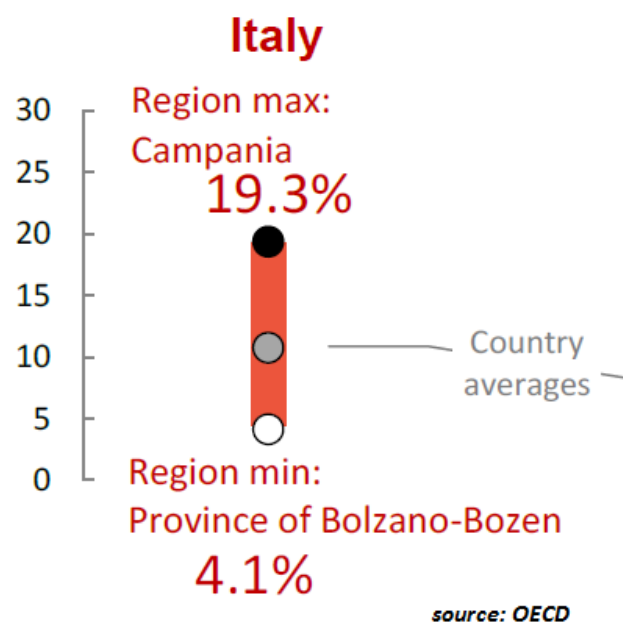


Figure 9: Regional disparity of unemployment rate in Italy (2012)

Source: OECD

As it was previously mentioned above, the active working age class (people between the ages 15-64) constitutes the 65% of the Italian society. To find labour market observations, we examine the specifics of this very same age group. Among this part of population, 41.6% has less than primary, primary, or lower than secondary education (in Europe only Spain, Turkey and Portugal have higher rate), 58.4% of the residents has high school/secondary education, and 15.7% finished university/tertiary education, although, when it comes to tertiary education attainment, its logical to examine an age group between 25-64, in which 17.7% of Italian pursued the degree -well below the EU main indicator 30.7% (Figure 10). The Italian labour force counts 25.28 million people, and the unemployment rate is 11.7% of the active population, and it is slightly higher among women (12.4%) than among man (10.6%). This 11.7% rate is the third highest unemployment indicator in the EU, after Greece and Spain. The long term unemployment rate (more than 180 days are unemployed) is 6,7%.

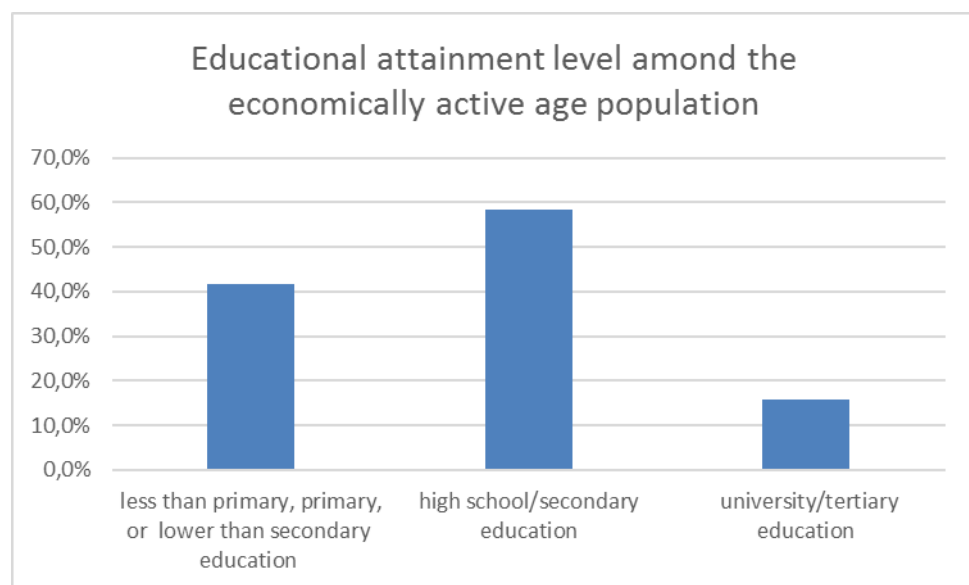


Figure 10: Educational attainment level among the economically active age population (2015)

Source: IASTAT

As the Italian population is ageing, one of the potentials for increasing labour supply lies with bringing more women into the workforce<sup>5</sup>. The female labour force participation out of the female population aged between 15-64 years is 39 %, up against the male participation rate that is 58%. Out of the total labour force, 42 % of the workers are female. Considering the earnings, the gender pay gap is 7.3 %, slightly fairer than the EU average (16.4%) A typical diagnosis points to notes an underlying reform gap in Italy; which has produced a stagnant economy

<sup>5</sup>

[http://ec.europa.eu/europe2020/pdf/themes/2016/labour\\_market\\_participation\\_women\\_201605.pdf](http://ec.europa.eu/europe2020/pdf/themes/2016/labour_market_participation_women_201605.pdf)

and a labour market in which average earnings are largely decoupled from productivity and demand conditions. (Triffin, 2014).

Gini index stands at 32,4 (on a scale 0-100), somewhat higher than the average of Euro area (31), the medium equalised annual net income 15846 euro, (means a monthly salary ~1321.33)

A new kind of economic indicator is the so called "Creative Seed" in the labour force. This connects with the much contested, yet increasingly considered factor, the "Global Creativity Index", influenced by Richard Florida, which is a broad-based measure for advanced economic growth and sustainable prosperity. We are witnessing the emergence of a new economic order, that faces more challenges due to the globalization, deindustrialization, depletion of resources, etc. Therefore the presence of the super-creative seed in a labour force is essential. According to Florida (2002), these creative members primary function is innovative and creative, and apart from problem solving, their work can also be the problem finding. The "super creative seed" includes a wide range of professionals, from science, engineering, research to art and design.

Italy is currently the 21th in the world ranking of Global Creativity Index, and 12th in Europe. This index has a wide range of components concerning technology, talent and tolerance. Technology is a key factor for efficient and productive economy, essential for biotechnology or innovation in manufacturing, etc. To assess the technology capacity, financial and human investment in R&D, and the patents granted per capita (as measure of innovative output), are considered. Italy's share of R&D in GDP is 1,33%, while the numbers of granted patent in 2016 was 3207, more than in the Netherlands or in Sweden (despite both countries have a higher investment in R&D)

Previously we examined the human capital in Italy, we must add an extra notice. The human capital itself seems not to be a guarantee of economic stability and presumable quick recovery from crisis. On the contrary we see countries like Spain or Cyprus where the level of human capital, expressed as a percentage of tertiary educated population, is relatively very high but the unemployment reaches critical levels and economic growth is weak or negative. Human capital must reflect the economic structure to foster the economic growth (Zadil et al. 2014).

#### **4.1.3. Economy**

After the global crisis in 2008 and ever since, Italy's economy continues to struggle with modest recovery and slow growth. According to IMF, growth is projected (on current policy settings) to moderate to around 1 percent in 2018–20, but the uncertainty of U.S. policies and Brexit implications put it to risk. Traditionally it has been surging exports that have pulled Italy out of recessions,

but since the euro crisis, the country export rate is disappointing<sup>6</sup> when compared to its former proportion and euro-area average, although shows mild prosperity since the relative economic upturn in 2015. Export market share losses appear associated with rigidities in resource allocation (sectoral, geographical, technological) relative to peers and lower productivity gains in high value-added sectors. (Lissovolik, 2008). Viewed in a longer-term perspective, the market shares of Italian exports, which tended to shrink in the twenty years between 1990 and 2010, have stabilized in the past few years<sup>7</sup> and the country is still ranked among the world's leaders in merchandise export (ranked as 9<sup>th</sup> in 2016, according to WTO, with a 2.9% of share) The current export rate of the registered businesses is 26.1%, while the import rate is 24.2%.

The main trade partners of Italy are Germany, France, and the United States. The export to import ratio of the past decade is shown in *Figure 11*. Values higher than one indicate a positive trade balance whereas values smaller than one indicate a negative trade balance.

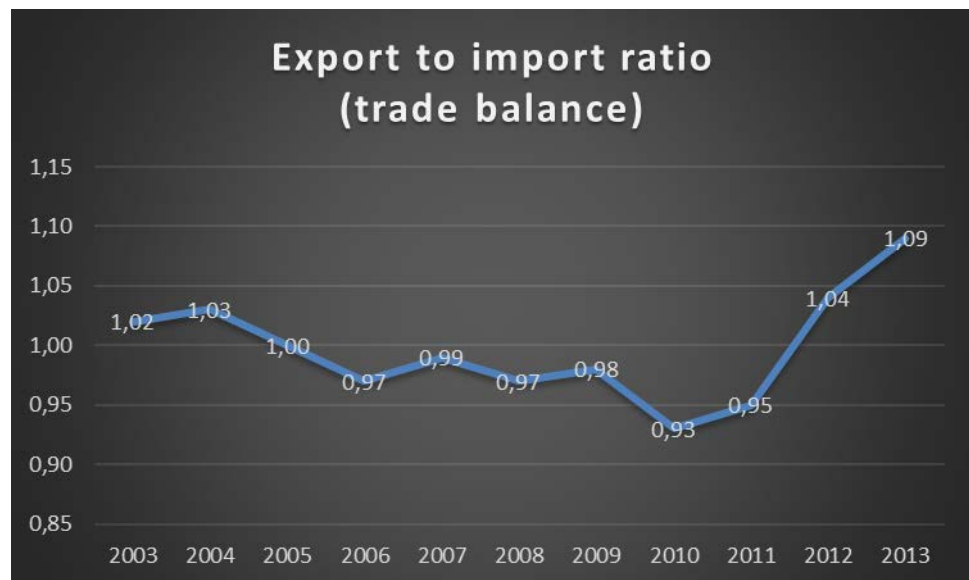


Figure 11: Trade balance of Italy

Source: Eurostat

Italy's surplus of trade in May of 2017 was EUR 4.34 billion, which is a decline when compared to previous year (5 billion). The *Figure 12* and *13* show the most important exported and imported product groups in Italy in 2016.

<sup>6</sup> <https://www.economist.com/news/europe/21685509-other-peripheral-economies-take-italys-just-so-so-mezza-mezza>

<sup>7</sup> [http://www.italtrade.com/Sintesi\\_inglese\\_RCE2015\\_16.pdf](http://www.italtrade.com/Sintesi_inglese_RCE2015_16.pdf)

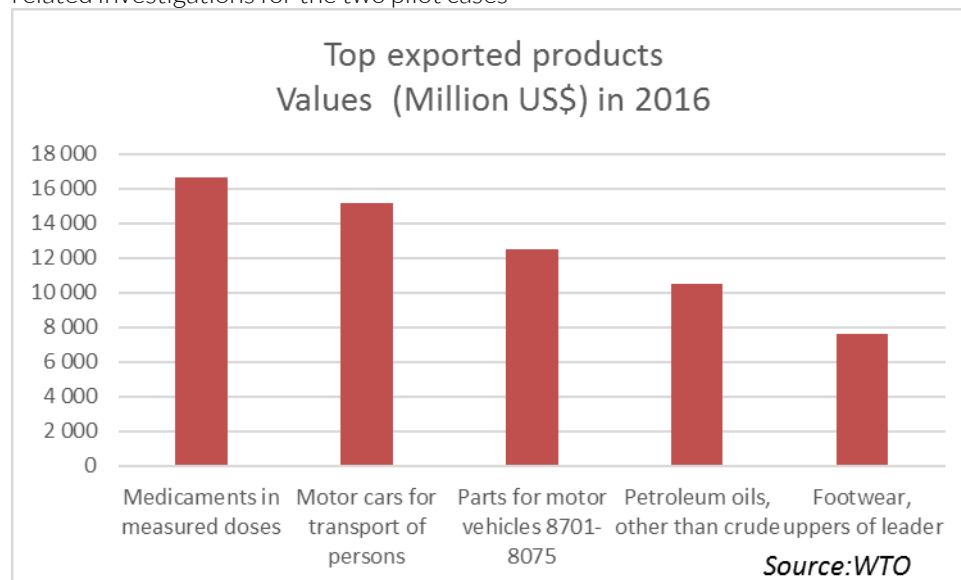


Figure 12: Top exported products from Italy (2016)

Source: WTO

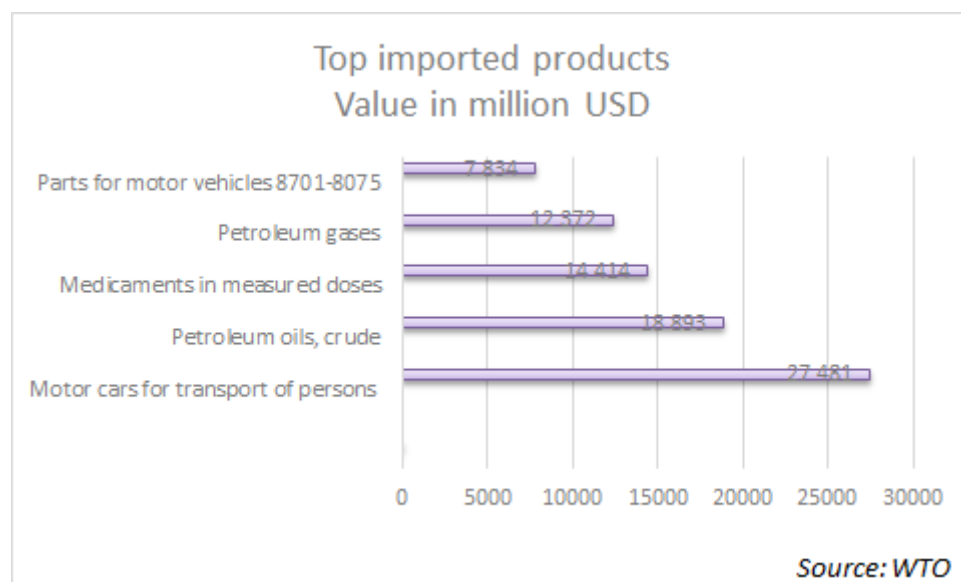


Figure 13: Top imported products to Italy (2016)

Source: WTO

Figure 14 shows the decline in Italy's share of world merchandise export between 2006 and 2015. The decline in shareholding has triggered measures that have increased competitiveness recently.

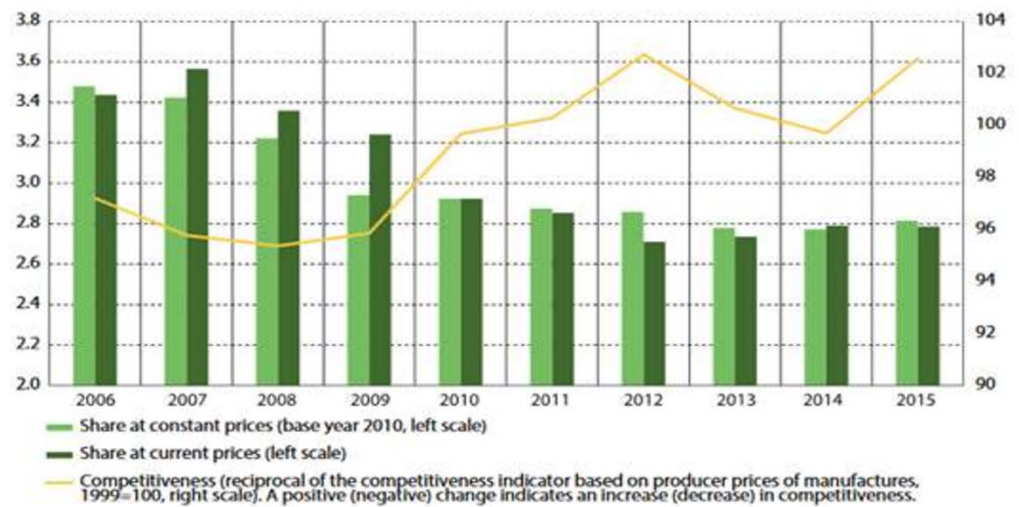


Figure 14: Italian merchandise exports' competitiveness and world market shares

Source: Based on Bank of Italy and WTO data

Comprehensively, most substantial component of Italian export is the specialized-supplier sector, where small to medium sized firms (often family owned) are the dominant. This sector develop and produce equipment tailored specifically to a particular production process or need. This sector has continued to remain competitive despite apparently adverse developments across Italy's price-based competitiveness indicators. (Triffin 2014).

Figure 15 illustrates how specialized-supplier sector remains dominant over the past decades, scale- intensive sector (which, in Italy, has a majority in resource based-scale intensive sector, like industrial chemicals) is growing in extend, while traditional products (agricultural goods, textile, furniture) declined to be the third main component in exports. Italy thus went through structural changes from being an agricultural based economy to be the second largest manufacturer in Europe (behind Germany.) that currently holds 453 industry enterprises, (this number is excluding construction).

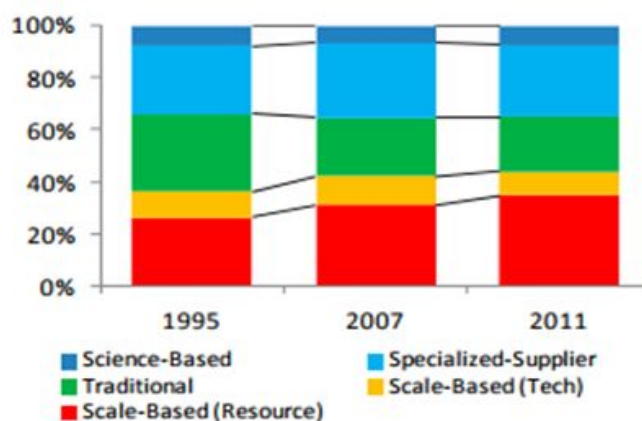


Figure 15: Export shares by industry group

Source: COMTRADE, IMF staff calculations

However, even today, Italy remains as a substantial agricultural producer, possessing 1621 agricultural holdings, a territory of 128,560,50 ha utilized agricultural area (UAA), from which 1,492,579 ha area is under organic farming, and this is - in Europe - the second largest organic surface area after Spain's. The share of this organic area out of the usable agricultural area is 11.8%.

Organic agriculture in the world is evolving at a rapid pace (Figure 16) in response to increasingly marked deterioration of health of the environment, the decreasing availability of natural resources and the deterioration of the quality of the food, and, as an indicator, shows a dynamic process of growth and development, especially in economically developed countries (Svetlana Roljević Nikolić, Predrag Vuković, Biljana Grujić, *Measures to support the development of organic farming in the EU and Serbia*, 2017) Italy concentrates a remarkable number of organic producers (52609 farmers), with this number leading in Europe.

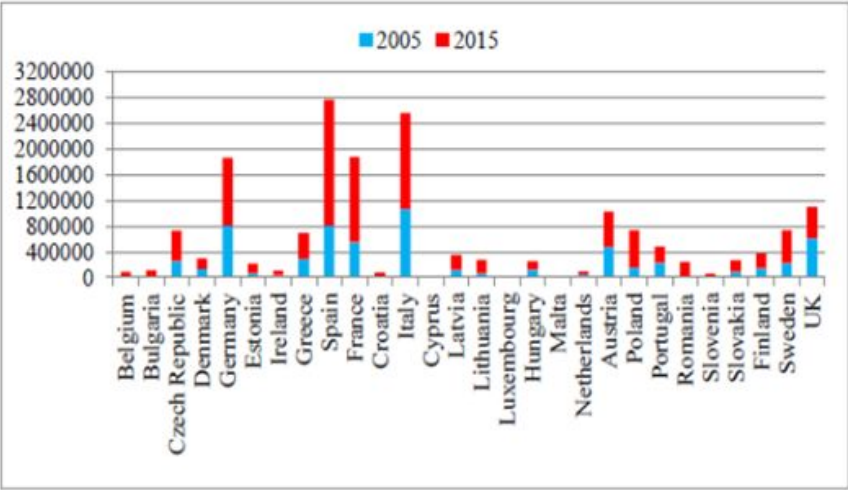


Figure 16: Area under organic farming use in Europe

Source: Eurostat



#### 4.1.4. Transport specifics and infrastructure

As Italy is significantly separated into north and south in many aspects, so is the transport infrastructure when compared the northern region to the southern (Figure 17). In a recent study, there is a stand that in Italy a higher degree of decentralization in transport sector is particularly important. The main argument is that devolution is more sensible when there is a lot of heterogeneity between regions both in terms of per capita income and in terms of corruption (Carlucci et al. 2017).

Years 2011 and 2014, absolute values in kilometers

Geographical area	2011			2014		
	Bus and trolleybus	Tram	Underground	Bus and trolleybus*	Tram	Underground
North	7,964	259	72	8,058	270	100
Centre	6,352	46	37	6,414	61	52
South and the Islands	6,976	25	21	7,015	27	25
ITALY	21,292	330	130	21,487	358	177

\* data refer to 2013

Figure 17: Local public transport network in provincial capitals by main type.

Source: ISTAT

The country has a total 255000 km long road network with a density of 850m/km<sup>2</sup> with uneven distribution of motorways (Figure 18) and, characterized by 610 cars per 1000 inhabitant, a high motorization rate.. The annual road transportation (in ton=1000 kg) was 957,006 last year, while the transportation on rail was 92.273 (in ton). The railway density 5,69 (km/100 km<sup>2</sup>).

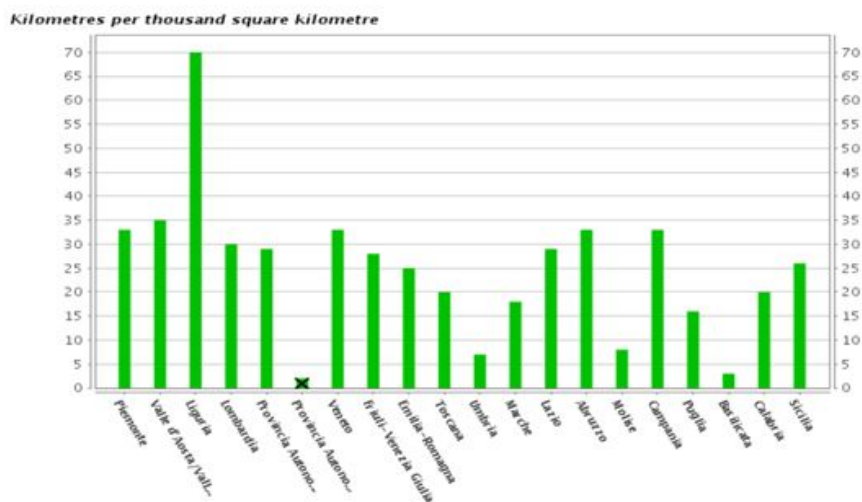


Figure 18: Motorways network by NUTS2 regions (2015)

Source: EUROSTAT

Investments in transport infrastructure have been widely used by decision makers to encourage economic growth, particularly during periods of economic downturn. (Melo et al. 2013). Examining the evolution of transport policy in the EU and in the US, it appears that institutions for planning, financing and operating transport systems were initially motivated by mobility and productive efficiency. Later, “external goals” became important political objectives. Safety, economic development and technological innovation are examples of external goals (Stough & Rietveld, 1997). Greater transport infrastructure doesn’t only imply more output.

One of the objectives of European transport policy and many national policies is a decoupling of the environmental pressures and impacts from transport and economic growth<sup>8</sup>.

<sup>8</sup> <https://www.eea.europa.eu/soer-2015/countries-comparison/transport>

## 4.2. Campania and MAN

### 4.2.1 Demography

Located in the southern part of Italy, with its capital Naples, the 13,670.0 square km territory of Campania with 5,850,850 inhabitants is the third most densely populated region of Italy, but the distribution of density is very uneven. Although the territory is largely rural, and the urbanization is concentrated on the coastal area, the region was famously one of the earliest urbanised regions in Europe. Campania consists of 4 provinces: Napoli, Caserta, Salerno, Benevento, and Avellino. The province of Naples has 2,642 inhabitants /sq. km (one of the highest density rates in Europe) on the other hand, rest of the provinces are well below this density, and the difference is most measurable when compared with inland areas like Benevento (135,3/km<sup>2</sup>) (Figure 19).

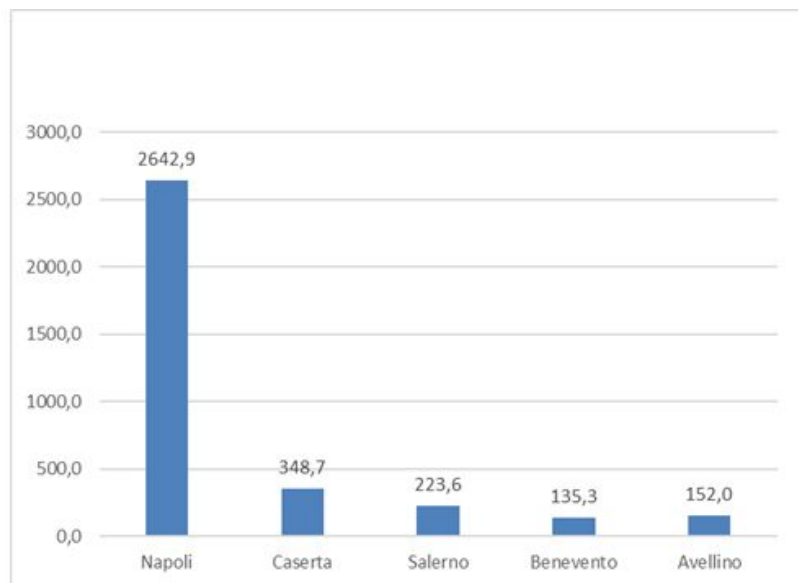


Figure 19: Population density in the provinces of Campania (2016)

Source: ISTAT

Concerning ISTAT data, in the beginning of 2016, the region counted 5,850,850 inhabitants (2.846.720 males and 3.004.130 females) from which 3,906.9 are in the economically active age. While in the past decades the increasing of population was typical, observing the last 3 years statistics, there is a slight decline. This is due to the fact that natural increase turned into natural decrease. (The number of live births in 2016 were 50.384, while number of deaths 53,044, causing -2660 lives natural change) and the volume of immigration is less intense. (net migration was -7600 in the last year)

The old age dependency ratio is 27.2, and the ageing index is (121.6), which continually increased over the years. The proportion of people aged 65 or over is

18.2% out of the whole (Figure 20). The median age is highest in Benevento (45.3 years), and the lowest in Napoli (41.1).

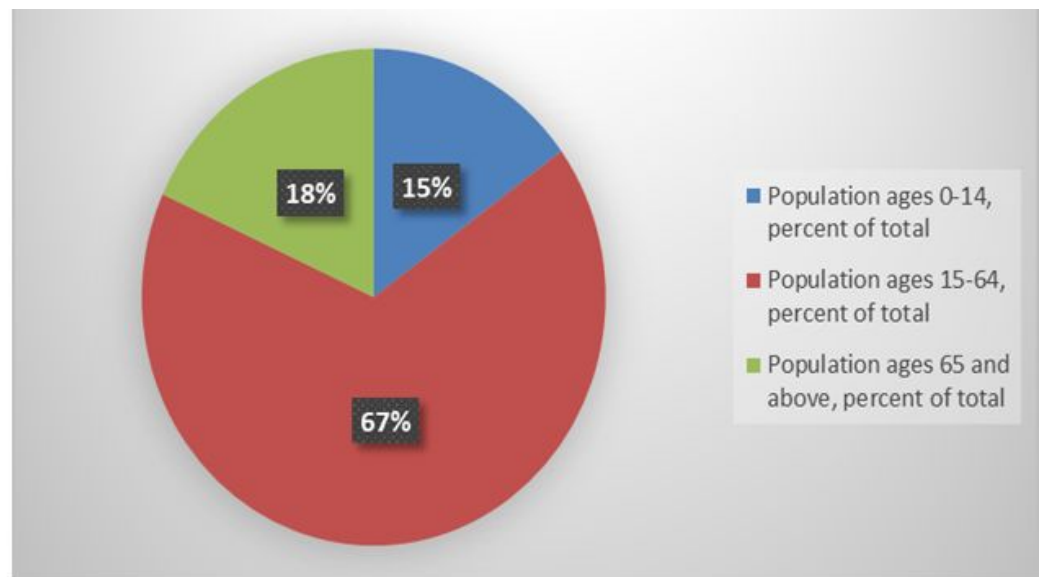


Figure 20: Campania's age structure (2016)

Source: Own contribution based on ISTAT

The metropolitan region of Naples covers a 1,162 square kilometres area. and has a population of 3,118,149 people.(1,608,409 females and 1,509,740 males). In the last decade the density decreased in parallel with population growth, due to urban sprawl. As the natural decrease is seen in the perspective of the whole country and in Campania, so is in Naples, where the natural change of population was -103 (based on EUROSTAT data). In population projections, Naples population will peak in 2020, and from then, a gradual decline is anticipated.

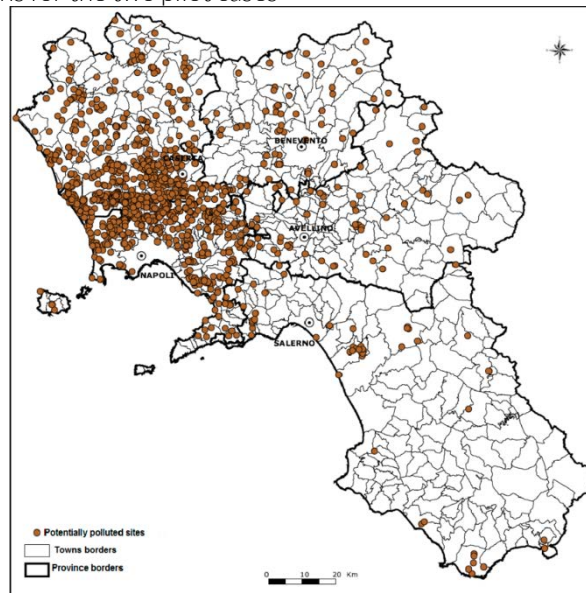
#### 4.2.2 Economy

As it was stated before, from Campania's total population, 3,906.9 are in the economically active age (67 % of the residents). Narrowing to this active population, among them currently 44.3% are unemployed, it's an alarmingly high rate and reflects the disadvantaged position of the region. Regional GDP per capita is the second the lowest in the country (17200 Euro), and within the region, the province of Benevento and Caserta has the lowest (both provinces with 15300 Euro of GDP/capita) followed by Avellino (16300), Salerno (17000) and Naples (17800). The GDP of the region is Gross domestic product: 99,880 million euro.). The average disposable income of private households is: 11,500.00 Euro (annual).

Campania's economy lags behind the national level of development and productivity. The number of economic activities in Campania is low (51 enterprises per 1,000 inhabitants vs. 63.8 in Italy. (Eurostat). EU territorial pacts require cooperation between all sectors, including third-sector associations. The task is that encourage measures that bring together industrial modernization and service creation. As far as models of cooperation are concerned, the regional and provincial administrations still lack to varying degrees the culture and capacity to innovate and change (Zeitlin & Trubek, 2003). The main pillars of region are the agro-food industry and the manufacturing of metal products, as well as tourism, making Naples a relatively better situation the rest of the region.

In the GDP composition, agriculture in Campania has bigger slice (3.6) than it has in the national share. The region has 74,360 farms, with 509,000 ha utilized agricultural area (UAA). In the composition of UAA, arable lands are most dominant, (49.9%), followed by permanent grassland (25.4%), permanent crops (24,1%), and kitchen gardens are in minority (0.6%) The standard output from agricultural activity is 2,163,342,650 Euro. Moreover, organic agriculture plays a strategic role in Campania. Organic farming is a production system that sustains the health of soils, ecosystems and people, has positive effects on economy and environment. However, in recent years the Campania Region has faced serious problems of environmental pollution and food safety that have generated strong mistrust and insecurity among the public towards the quality of local agricultural food production, and undermined consumers' trust in the safety of local agri-food systems with particular reference to the topic of food chains contamination. (Annunziataa & Vecchiob, 2016).

As the *Figure 21* is showing, illegal toxic waste dump in Campania is covered a huge area. Tons of waste have been dumped in agricultural areas and illegally burned (Mazza et al, 2015).



*Illegal toxic waste dump in Campania*

Source: ARPAC

The industrial sector, though unable to provide sufficient work to ease the pressure of unemployment, is still the leading sector of its kind in the south of Italy. Since the start of the century, however, industrial expansion has always been restricted to a number of privileged areas, particularly round Naples, also Sarno and Salerno, giving rise to pollution and environmental problems associated with the heavy concentration of factories close to inhabited zones. The major industries are engineering and metalworking (Pomigliano d'Arco, Casoria, Castellammare di Stabia, Naples), chemicals and petrochemicals (Naples, Pozzuoli, Torre Annunziata), construction materials (Naples), food and food processing (Torre Annunziata, S. Giovanni a Teduccio, Nocera Inferiore, Pagani, Battipaglia), textiles garment manufacturing and footwear<sup>9</sup>.

Campania's economy strongly relies on its touristic attractiveness as well, and is managing to maintain multi-day tourism, which we can measure with the numbers of nights spent at touristic accommodations. Within Italy, the leader is Veneto as a touristic destination, (63,257,174 nights spent), but Campania still has a total number of 18,855,907 nights in the matter, which claims the region as a significant host. Hence the contribution of the tourism and service sector to the GDP in Campania is significant (*Figure 22*).

<sup>9</sup> <http://ospitiweb.indire.it/~naps0001/Comenius/napoliinfo.htm>

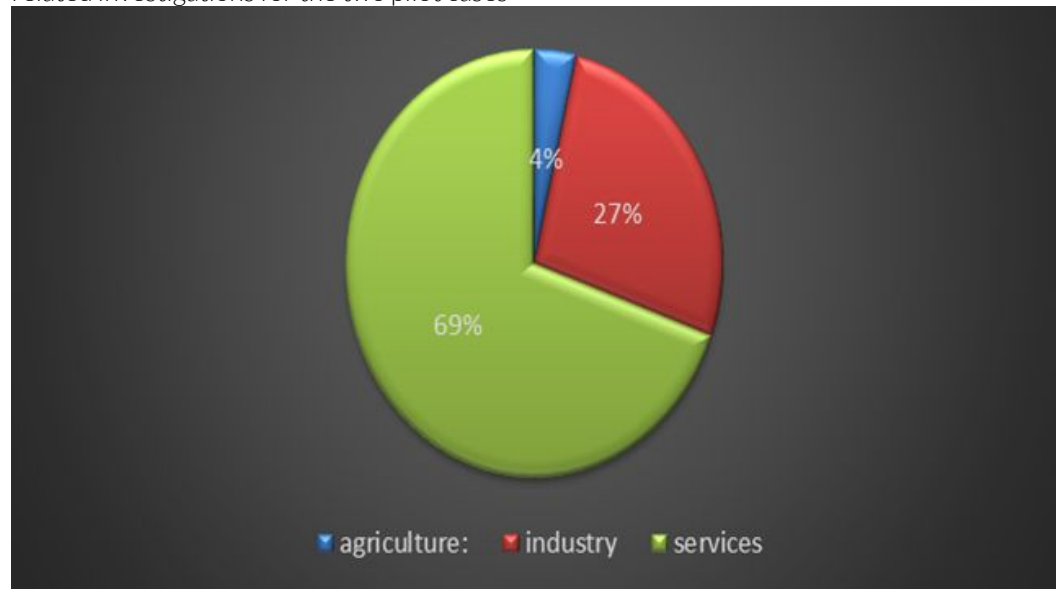


Figure 22:GDP structure by sector in Campania (2015)

Source: ISTAT

The Metropolitan area of Naples is the main employment centre in the region, it gives jobs for 955800 people currently. The distribution of labour force (*Figure 23*) does not much the share of GDP among sectors. Gross domestic product of Metropolitan region of Naples is 55,170 million Euro, with this, the 4th among the Italian metropolitan areas. The main pillars of the Napolitan economy are the previously mentioned agri-food industry (operating mainly on small sized firms), construction and manufacturing (including luxurious products like Alfa Romeo, but shipbuilding, metal processing also), and above all, tourism plays a big role as well.

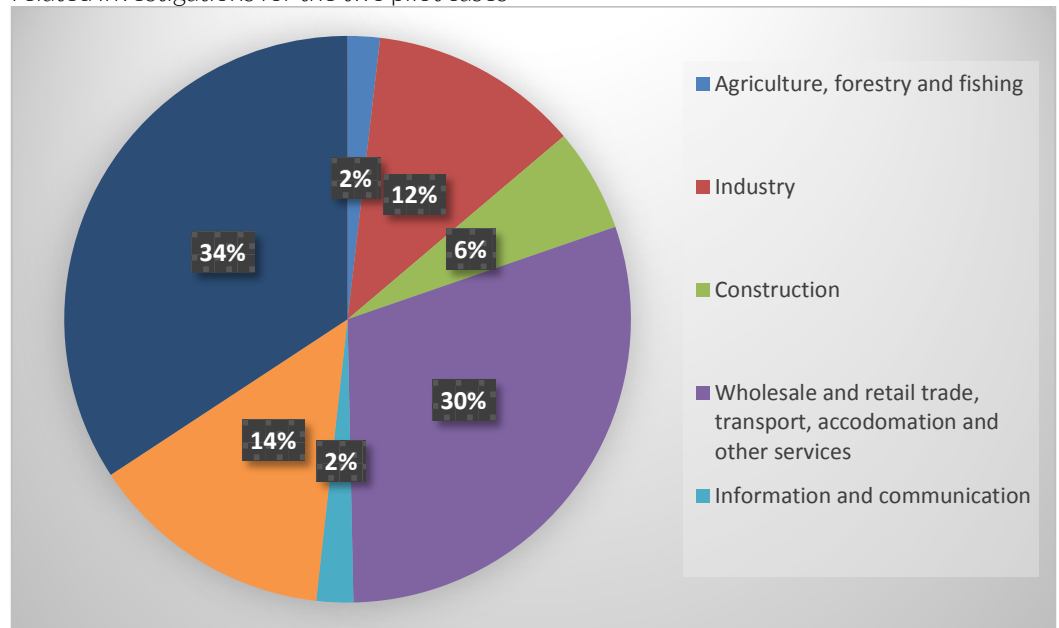


Figure 23: The distribution of the labour force in the Metropolitan area of Naples (2015)

Source: ISTAT

### 4.2.3 Human capital and intellectual factors

In the economically active population the employment rate is currently 55.7 %. It's an alarmingly high rate and reflects the disadvantaged economic position of the region. The share of long term unemployment rate peaked in 2014 with 15%, and stood at 13.9% at the end of 2016. The rate of those young people (aged 15-25) neither in employment nor in education or training is 28.2, third highest among the Italian regions, after Insole and Sicily, again, this aggravates greater risk of poverty or social exclusion. According to Eurostat, 46.1% of Campania's residents are affected by this risk.

There is an evidence of mismatch between labour supply and demand. Previously mentioned the high rate of young people neither in work nor in education, contributes strongly to the lack of economic performance and to poverty.

15.2% of the population aged 25-64 years has completed tertiary education, in the same age group: 39.9 % has less than primary, primary or lower secondary/ upper secondary, / post-secondary non tertiary education attainment.

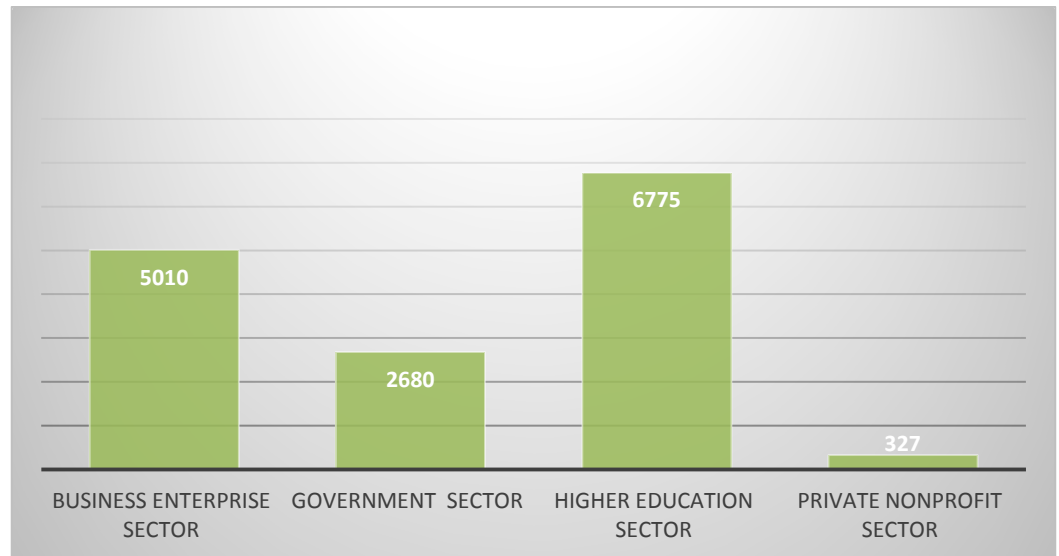
Proportion of the early school leavers is high (18.1), not only exceeds EU target but also when compared with the national rate (13,8.)

As a percentage of total employment in Campania, high tech has a 2% share. The R&D expenditure in GDP is 1,3 %. Campania has improved its innovation



performance over the years. However, it remains a 'moderate performer' (Eurostat). Behind this performance the labour force facts are the followings:

The total number of people in R&D personnel in Campania is 14,792 which is composed by the sectors illustrated in the *Figure 24*.



*Figure 24: Number of employees in Campania's R&D by sector (2016)*

Source: Eurostat

#### 4.2.4 Regional transport

Campania has a relatively complex transport system, mostly appropriate in all modes of transport which means the followings: a 1,095 km long rail network, fairly complex when compared with the other Italian regions (7<sup>th</sup> in the ranking of complexity), motorways network of 442 km, with the density of 33 km/thousand square km. With the Port of Naples (one of the biggest in the Mediterranean Sea) the proper maritime transport (for both goods and for passengers) is insured. Maritime transport of freight was 23590 tons in 2015, highly contributing to the commerce of Naples. The International Airport of Naples (Aeroporto Internazionale di Napoli - NAP) operates transport both in goods and passengers. The Airport of Salerno is modest regional airport. Air transport of freight in Campania was 8 thousand tons in 2015. Naples also acts as an important cargo terminal.

## 4.3. The Netherlands

### 4.3.1. Demography

The total population of the Netherlands is around 17 million. Even though the population is growing steadily, it cannot be connected to the number of births, but rather the increasing number of immigrants every year which is explained later in the mobility section. In the year of 2015, 170 510 babies were born, which is a setback not only compared to the previous year, but it is equal to the early 1980s' rate. This may be caused by the fact that the average women bear 1.658 children (data from 2015, the estimation for 2016 is 1.654) which is not exceptional in developed countries, but it will have several effects on the structure of society in the coming years. Although probably more young women will postpone motherhood the same way both men and women postpone their first marriage, but still demographers estimate that the number of births will increase in the next few years.

Life expectancy at birth in 2014 was 79.9 years for men and 83.3 for women. While the men's rate is higher than the EU average (78.1), the women's rate is under the EU average (83.6 years). Even though there is a considerable gap between men and women's life expectancy this gap closes if you look at healthy life expectancy. [A research from the early 2000s has shown that the difference for healthy life expectancy between men and women is very little (Groenewegen P. et al. 2003). This indicator also displays a regional pattern in the healthy life expectancy (later referred as HLE). For men at age 65 years the highest rates are in the northern part of the country. The rate of men's HLE at birth shows roughly the same pattern, but women's have a much more scattered arrangement. Regions with high HLE rates for women at age 65 can be found in the Midwestern part of the country, in the central area, and also in Northern parts. The main variables that have a positive or negative effect on HLE are education, smoking, unemployment, income et cetera (Groenewegen P. et al. 2003).]

The number of deaths has grown significantly since last year. 147 thousand people died in the Netherlands, almost 8 thousand more than in 2014. Annual mortality is expected to rise by an average of 1.5 thousand, mostly because of the ageing population. The rates were particularly high from January until June because of the long-lasting flu epidemic the country was plagued by (Statistics Netherlands 2016). The main causes of death were neoplasms, diseases of the circulatory system, diseases of the respiratory system and mental and behavioural disorders. These illnesses develop because people are exposed to more stress that causes several dysfunctions. The men - women rate is close to equal, a small surplus can be observed on the women's side, as 50.45% of the Dutch population is female. Presumably this will grow in the future, since women have a markedly higher life expectancy rate.

In January 2016, there were about 5 million people under the age of 25; they make up approximately 29% of the population which was just above 17 million according to the Statistics Netherlands. Even though the number of young people has showed a slight increase, their share of the whole declined due to longer life expectancy and immigration (Annual Report 2016 Youth Monitor). *“The number of children under the age of 12 has declined over the last decade, mainly as a result of a lower birth rate since the turn of the century. The number of 12 to 17-year-old children has increased slightly.”* (Annual Report 2016 Youth Monitor). One-quarter of the population under 25 can be connected to immigration; the main issuing countries vary, from Poland to Belgium, even North African countries such as Morocco.

More and more children grow up in a family where the parents are not married, and the number of single parents is also rising, as divorces became accepted more. Young people tend to be independent, while in 2006 the average age of becoming independent was 23.6 years, in 2016 this number has increased to 24.6.

The youth have an excellent perspective according to the Annual Report Youth Summary 2016 which shows that 90% of people from 15 to 21 are satisfied with their living conditions, education, they have a strong relationship with their parents. 64% of the people between 15 to 26 years were in permanent employment during the time of the research. This is more common among people who have already left the public funded education system. The main jobs taken by the group mentioned are part of the retail market, such as shop assistant, shelf stacker, unloader, et cetera. Other factors can be observed on the *Figure 25*. Besides the youth the middle aged and ageing population should not be forgotten either considering that they will be a highlighted part of the Dutch population in the coming years. The problems of the ageing society are explained more specifically in the section of labour force later. The next figure shows the population pyramid of the Netherlands which has the shape of an urn as most of the developed countries. On the pyramid (*Figure 26*) a fairly large surplus can be observed from the age 40 until the age 75.

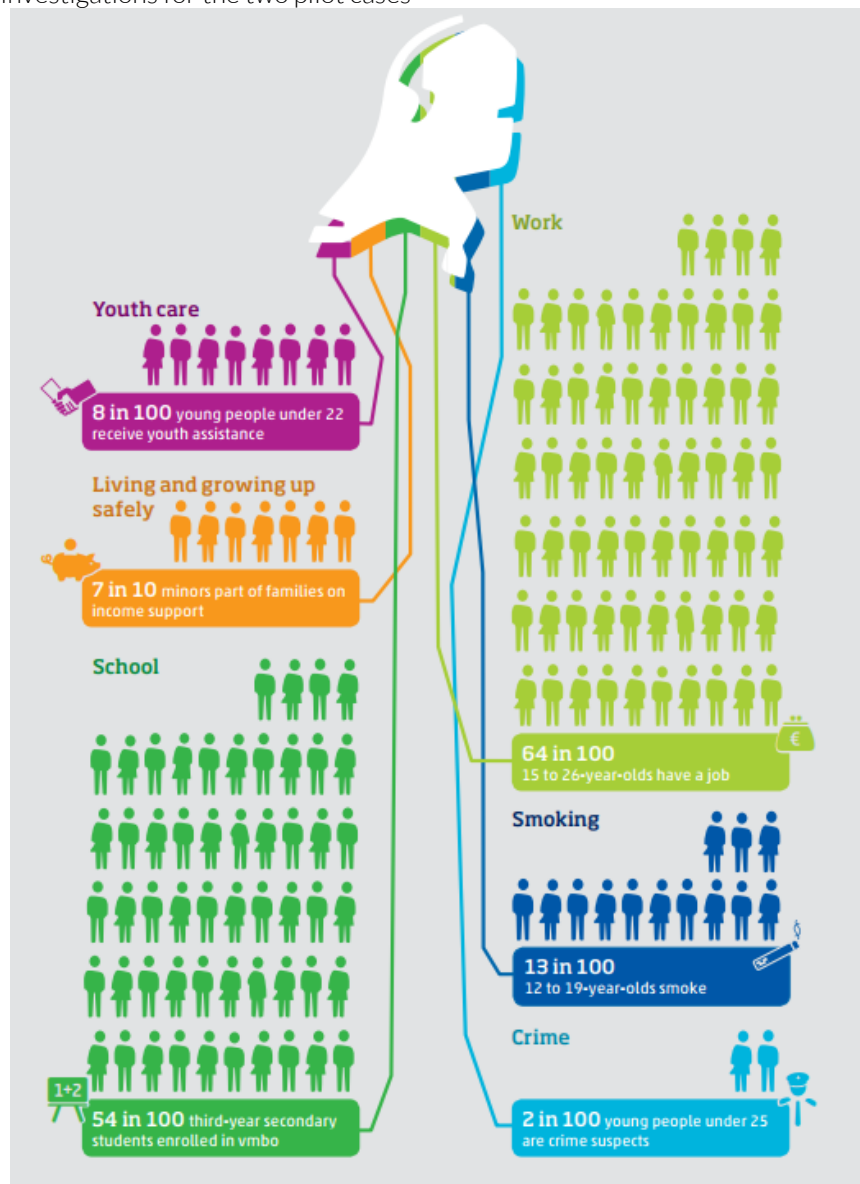


Figure 25. Indicators of the Dutch youth  
Source: Annual Report 2016 Youth Summary

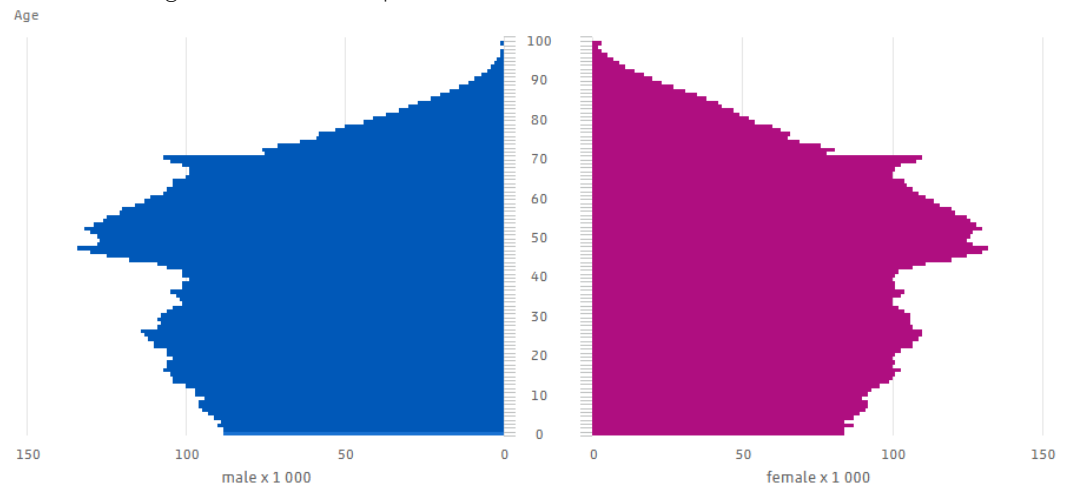


Figure 26: Population Pyramid of the Netherlands in 2017

Source: Statistics Netherlands

### 4.3.2. Mobility

From rural areas younger, higher educated people tend to move to urban areas. The average Dutch people travel around a minimum of one hour a day, about 30 km. This occurs mainly because of the better working conditions, salaries in farther areas, but it cannot be traced back to a single cause.

While in the common talk Germany is the main destination of nowadays immigrants, especially for people coming from the war affected areas of the Middle East, the amount of people the Netherlands accept cannot be neglected. In 2015 the country welcomed 204615 immigrants. Although the rate of 2016 is only provisional yet, it gives an estimation of 25000 people surplus compared to 2015. The origins of these immigrants vary; the main issuing countries are Poland and Syria and many Middle-North African countries as they have already been mentioned previously. *Figure 27* shows the growth of migration.

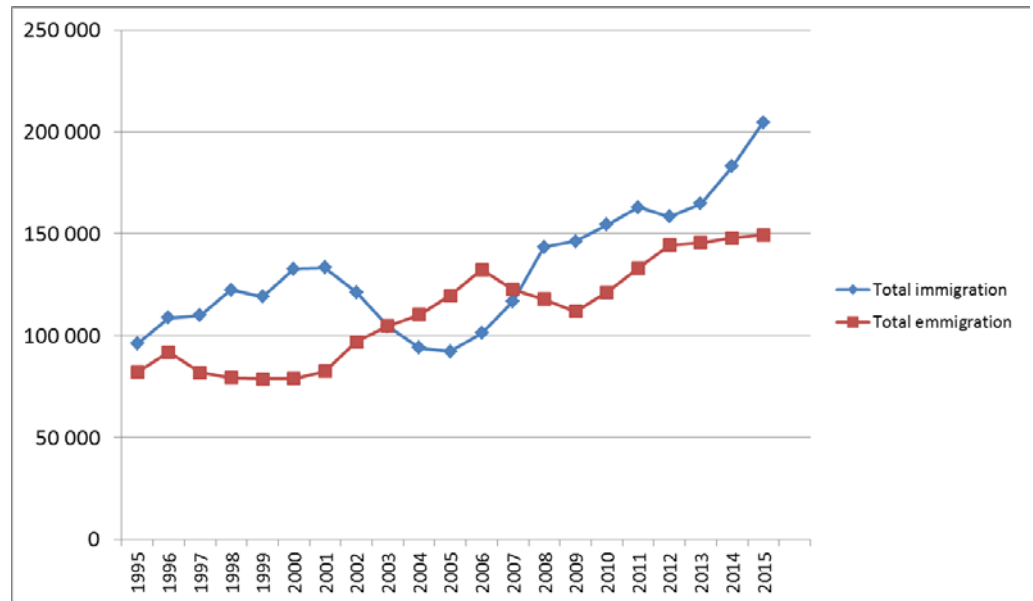


Figure 27. Total migration

Source: Self edited, based on data from Statistics Netherlands

#### 4.3.3. Education

One of the main reasons behind the well above average living conditions on the Netherlands is probably their outstanding education system. According to the PISA test of 2015 the Dutch pupils perform above the OECD average in science, mathematics, and reading (although the first two are decreasing since 2006). The equality among boys and girls reaches a higher rate than the OECD average, while social background that indicates if students are provided with the same level of education regardless of their parents' education or career is only around the OECD average, but it is not declining since 2006. Another interesting rate that needs to be observed considering the recent events and trend is similar to the last one. This indicator measures the difference of performance between native and immigrant students. Even though the performance gap is getting smaller year by year, it is still bigger than the rate of the other pilot country. In 2012 the average pupil learned 2.1 languages, what is better by 0.1% than the EU average (Eurostat 2012). The following educational data about the population comes from the OECD so its categories differ. The education level can be observed on the next table (Table 3). The most important of all is probably the tertiary education also known as higher education. The Netherlands is in the top 10 from the 28 European countries, which is a solid position, with its increase of 0.91 since 2014. Even though the country is well developed, the amount of people with only below upper secondary education is fairly high, but it is constantly decreasing.

Level of education	Percent of population (25-64 years)
<b>Below upper secondary</b>	23.60%
<b>Upper secondary</b>	41.07%
<b>Tertiary</b>	35.33%

*Table 3. The education level of the population*

*Source: Own edition, data from OECD, 2015*

#### 4.3.4. Labour

The labour force indicators of the Netherlands show the typical characteristics of a developed country. The GDP per capita is one of the highest among European countries (it was 39300 EUR per capita in 2014 according to Eurostat the provisional data for 2016 is 41300 EUR per capita), and the labour force gross participation is 70.1% (Statistics Netherlands 2017). According to the Statistics Netherlands 9,010,000 people were involved in the labour force in May 2017. As the population is constantly ageing the number of labour force will decrease slowly therefore more product per person will be needed to maintain the same rates and to support the silver hair generation. This problem is not unique; many other Western countries face with the problems of ageing such as Germany or Italy for example. The problem is augmented by the fact the people retire early as they want to enjoy the advantages of it, or their employers dismiss them although they should keep their older workers to generate additional income, that could contribute to the financing of pensions. The *Table 4* shows rate of each age category in percentage.

	2012	2013	2014	2015	2016
<b>0 to 20 years</b>	23.28%	23.07%	22.85%	22.65%	22.49%
<b>20 to 40 years</b>	24.76%	24.56%	24.47%	24.46%	24.52%
<b>40 to 65 years</b>	35.73%	35.54%	35.33%	35.09%	34.82%
<b>65 to 80 years</b>	12.14%	12.64%	13.08%	13.45%	13.76%
<b>80 years or older</b>	4.10%	4.19%	4.26%	4.35%	4.41%

*Table 4. Age structure of the Netherlands in percentage.*

*Source: Self edited, based on data from Statistics Netherlands*

The total unemployment rate was 5.1 in May 2017, for men it was slightly lower, 4.7 while it was 5.5 for women. The improvement compared to previous year is a decrease of 1.1%. As most of the world the Netherlands also felt the effects of the economic crisis, it caused an increase in long term unemployment which affected especially the older groups of the labour force. In the Netherlands 40 percent of the long term unemployed workers (more than 180 days are unemployed – this rate was around 7 percent in 2015) were over the age 50 according to a research (Graaf-Zijl M. et al. 2015) while in the EU as a whole or the US this is 20-25%. This may affect their chances of getting a job again as they are on the margin of labour market. The average wage for a year was approximately 46300 EUR (3858 EUR in monthly breakdown) in 2016 according the OECD. (Minor differences may occur in case of other sources or currencies since rates have been converted from USD.) The gender wage gap is slowly closing; in 2014, the Netherlands was the 10<sup>th</sup> with the smallest inequality out of the European Union's list containing 28 countries.

#### 4.3.5. Economy

After two years of stagnating the Human Development Index (HDI) of the Netherlands finally started to grow slowly as it reached the rate of 0.924 in 2015. This indicator displays the development of the country from a different perspective, it includes both the Gross National Income (GNI) a general economic indicator, but it also takes in consideration the progression of the population. It summarises many aspects of the population such as life expectancy at birth, the education level (expected years of schooling). This rate provides evidence about its development, compared to the other pilot country (Italy) which reached an index of 0.887 in 2015. The Netherlands possesses one of the lowest rate of the GINI coefficient in the world. According to the Human Development Reports of the United Nations the country is fourth on the world chart with a rate of 0.303 (2015). This indicator shows how equally the incomes are distributed. Zero means total equality 1.0 would indicate that everything is concentrated in one person's hand. As it has been already mentioned the GDP per capita was 39300 EUR in 2014. On the next table (*Figure 28*), the comparison of the two pilot countries' GDP per capita can be observed.



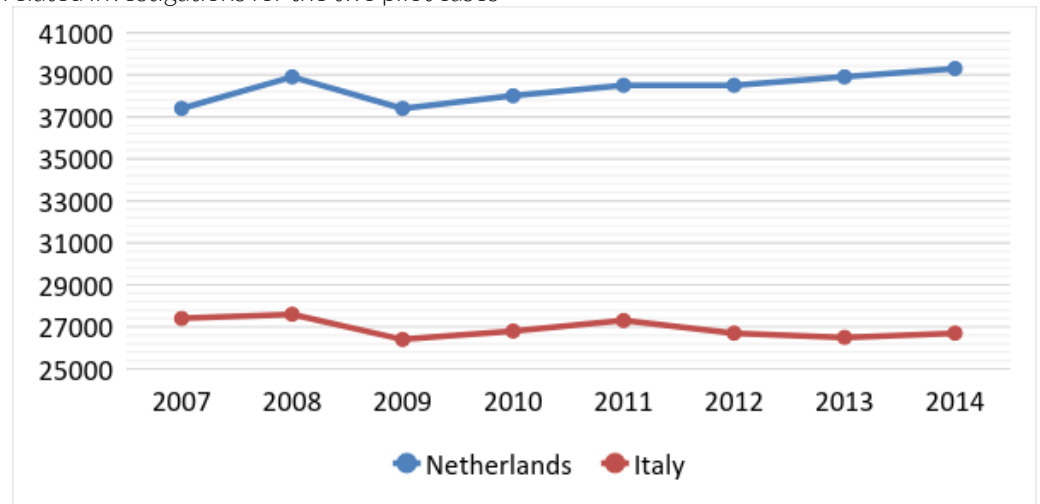


Figure 28. The GDP per capita (in EUR) comparison of the two pilot country

Source: Self edited, data from Eurostat

Unfortunately, the detailed breakdown of the GDP is not yet available, some parts were available from different statistic sites. The gross domestic spending on R&D was 2.015% in 2015. This is only a slight increase of 0.015 since last year, but still it still above the EU average that was 1.950%. The GDP is a bit crude on its own, on the other hand GDP per capita at purchasing power parity takes into account the costs of living and inflation rates, so it gives a better perspective about a country's standard of living. This rate was 46353 USD in 2015 and it has been constantly increasing since 2013. The Gross National Income differs a little bit in 2013 it was 49360 USD, the provisional data for 2015 is 49390 USD. This rate includes the income of those who work abroad, but spend it inside the country. This is most common among those who live close to the borders. The economic advancement of a country can also be examined by observing the share of the main sectors. As in the 1800's the industrial activity was the main indicator of development, nowadays this has been relocated around the service sector. The amount of people working in the three main sectors can be reviewed on the next table (Table5).

Economic sector	Thousand people
Agriculture	175.1
Industry (including construction)	1275.9
Service	6976

Table 5. Employment number in three main economic sector

Self edited data from: Eurostat 2016

Especially in the case of the Netherlands the service sector that includes transportation is an essential part of the country since its foundation. In 2015 the annual quantity of transportation via road freight have reached 641,538 thousand

tonnes, that is a bit of a progression compared to 2014 but it is still under the highest rate of the last ten years (2011 – 658,030 thousand tonnes). Even though the data is almost 8 years old now, the average road density of the Netherlands is one of the highest in the world, it was 5000 km/km<sup>2</sup> in 2010 while the length of state, provincial and communal roads were 129,436 in 2014. Although it is not related directly to the economic indicators but it should be mentioned that there were 471 cars for 1000 inhabitants in 2013. This is a relatively small number, the Netherlands is somewhere in the middle among the countries of the European Union, while Italy had the 4<sup>th</sup> highest amount of cars per 1000 inhabitants with a rate of 608. After the short bypass, we have to talk about probably one of the most important transportation modes that made the country strong throughout history. The maritime transportation deals with the highest gross weight of goods among the European Union's countries. This rate is constantly growing, in 2015 the gross weight of goods handled in all ports was 594,272 thousand tons as reported by the statistics of Eurostat. The transportation via train is far behind the previously mentioned ones, in 2015 it was 41,721 thousand tonnes.

#### 4.4. Flevoland, Noord-Holland, Groot-Amsterdam<sup>10</sup>

On the following pages, the focus will be narrowed to the two examined provinces of the Netherlands, Flevoland and Noord-Holland where the focus, the Amsterdam Metropolitan Area can be found.

##### 4.4.1. Population

These two regions are the home of 3.8 million people, a little bit less than 20 percent of the country's population. Given by the fact that so-called Groot-Amsterdam (1,335,980 people) lies in the province of Noord-Holland, the population concentrates here, which is more than three times bigger than the whole province of Flevoland. The population development shows very minimal contrast, the Noord-Holland province increased by 1.0083 percent from 2015 to 2016 while the Flevoland by 1.0056 percent. A slightly bigger difference can be seen in the number of live births as a result of the higher level of urbanisation in the Noord-Holland province, and the more rural features of the Flevoland. The number of births in the Noord-Holland province decreased by 0.015 in 2015 while in the Flevoland it dropped by 0.037 percent. In the smaller Groot Amsterdam region this rate dropped 0.007 percent, which is a moderate setback compared to the Flevoland. The reason behind this might be connected to the progression of the net migration. While the more urban province has a decent amount of surplus (16392), the Flevoland had a shortage of 210 people in 2015. To the positive balance of the Noord-Holland province, the Groot-Amsterdam area contributed a lot, it had a surplus of 9435 in 2015. As the metropolitan areas can give better livelihood to people, the population concentrates there as the numbers also show it. No significant difference can be observed in the number of deaths, as the population is ageing it is growing in all three examined area by 1.04-1.06 percent. As it has been mentioned multiple times the Netherlands is among the most developed countries in the world, but still, developmental differences occur among its provinces in many aspects. A good example for this is the tendency of fertility rate, which is much lower in the urban region. In the Noord-Holland province the fertility rate was 1.57 while in the Flevoland it reached 1.82. It is particularly low in Groot-Amsterdam, the rate only reached 1.49 in 2015. This trend is common amidst metropolitan areas, women tend to focus more on their career, bear fewer children every year, and they also postpone motherhood. The life expectancy likewise, it differs a bit, while women tend to live longer in both provinces, men has a shorter life expectancy in the Noord-Holland region (*Table 6*).

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<sup>10</sup> In the REPAiR project our case study area is the Amsterdam Metropolitan Area (AMA) that does not cover the COROP statistical unit of Groot-Amsterdam precisely. As from the Dutch Statistical Office statistics for Groot-Amsterdam was available for us, here we use and describe this area in statistically sense.

	Noord-Holland	Flevoland
<b>Male life expectancy</b>	79.8	80.6
<b>Female life expectancy</b>	83.3	83.3

Table 6. Life expectancy at birth (2015).

Source: Self edited, based on data from Eurostat

#### 4.4.2. Education

The characteristics of the two provinces are also visible in the educational data. In the Flevoland, the number of those who attended only below upper secondary education, and upper secondary education is higher, than in the more urban Noord-Holland. From another perspective people in the Noord-Holland province gain tertiary level of education, as it can be seen on the next table. This is also usual, especially with the Amsterdam Metropolitan Area in the centre of the province, where the higher educational institutions concentrate. Compared to the national rates the Noord-Holland province has better percentage in tertiary education, while the Flevoland is under the that by 5 percent (Table 7). With a little exaggeration, the national rates are close to the median of the data of the two examined provinces.

25-64 years old	Noord-Holland	Flevoland
<b>Below upper secondary</b>	19,8%	24,7%
<b>Upper secondary</b>	37,3%	45,2%
<b>Tertiary</b>	42,9%	30,1%

Table 7. Level of education in the two provinces (2016).

Source: Self edited, based on data from Eurostat

#### 4.4.3. Labour

Examining the labour force, the first element that must be mentioned is its size. In the much more populous Noord-Holland province the number of labour force is also bigger, 1,526,300 people between the age of 15 to 75 years are on the labour market. While in the Flevoland only 221,900 people. The unemployment rate is higher in each case than the national average (5.1), in the more urban Noord-Holland it was 5.5 in 2016 but the Flevoland reached 8.0 percent, that may have affected the progress of the migration. The breakdown of the unemployment rate to genders is similar in all aspects to the national figures, even though the provincial data is from 2016 while the national is from 2017 May, so extensive conclusions should not be drawn. Women's rate is above the total rates in both

surveyed provinces, while men's numbers are well below (*Table 8*). Even though the numbers are only provisional but the long-term unemployment rate needs to be mentioned, in Noord-Holland it was 2.2 percent, while in the Flevoland it was 3.7 in 2016. The employment rate is quite the opposite of the previously discussed unemployment rate as expected. The men's rate is higher in both regions, while the women's rate is under the provincial total by approximately 5 percent.

	National (2017 May)	Noord-Holland (2016)	Flevoland (2016)
<b>Unemployment rate total</b>	5.1	5.5	8
<b>Unemployment rate for men</b>	4.7	5	7.6
<b>Unemployment rate for women</b>	5.5	6	8.5

*Table 8. Unemployment rate of the Netherlands, focusing on the two provinces.*

*Source: Self edited, data from Eurostat*

#### 4.4.4. Economy

The GDP per capita differs quite a bit in each of the two examined provinces, the more developed Noord-Holland produces a higher rate (51100 EUR) than the national average while the Flevoland is well under that rate (30600 EUR). The focus area generated an outstanding rate of 71100 EUR, but you may take into consideration that this data is from 2014.

## 5. Company related investigations

### 5.1. Corporate environmentalism

With the strengthening and far-reaching effect of environmental policy and sustainable development concept, the idea of Environmental Policy Integration came to the forefront in the last decades. The need for a paradigm change in environmental sustainability resulted in environmental policy having become not a standing alone policy, but an inte-grated one. It is taken into account by sectoral, development and cohesion policies alike (Lenschow 1997, Varjú 2013).

The recognition and integration of environmental concerns into a firm's decision-making process, is one way that business can address environmental issues (Banerjee 2002). The way towards cleaner production cleaner production 'is defined as developments in industrial processes and products aimed at reducing to a minimum all wastes, minimising risks to the environment and making efficient use of resources and raw materials' (Hillary & Thorsenb, 1999, p.1.). Since, using environmental management system can provide assurance to company

management and employees as well as external stakeholders that environmental impact is being measured and improved<sup>11</sup>.

Firm's pro-environmental behaviours can be twofold. One of them is 'externally' regulated (by a meta-governmental, governmental, local governmental organisation). The other one – that is more important from the point of view of environmental consciousness are self-regulatory mechanisms.

The latter approach – that is also called as corporate environmentalism (Banerjee 2002) – manifested in environmental management systems such as the EU's Eco-Management and Audit Scheme (EMAS) and the International Organization for Standardization's ISO 14001 (Hillary & Thorsenb, 1999; Neugebauer 2012). The first version of EMAS was issued in 1993 while the first version of ISO 14001 was launched in 1996. After a (sort of) competition than a revision phase of the two management tools the two standards became more compatible (Testa et al. 2014)

*Table 9.*

<i>Topic</i>	<i>ISO 14001</i>	<i>EMAS</i>
<i>Nature</i>	Private standard	Public regulation
<i>Validity</i>	Valid at international level since its first issuing in 1996	Valid in Europe until 2009 and at international level since 2010
<i>External communication</i>	It is not mandatory	It foresees to make available for the public an Environmental Statement
<i>Scope</i>	Organisations of all sectors	Organisations of all sectors and experimentally applied in industrial clusters.

*Table . Main differences between EMAS and ISO 14001*

*Source: Testa et al. 2014, p. 166.*

<sup>11</sup> <https://www.iso.org/iso-14001-environmental-management.html>

Testa et al. (2014) reviewed several researches on the effect of the two EMS on environmental performance. Although, most of the empirical studies analysed (by Testa et al. 2014) demonstrate a positive relationship between environmental management practices (especially ISO 14001) and firm (environmental) performance, a relevant number of studies revealed an unclear relationship. On the other hand, few of the studies analysing the liaison between EMS and firm's environmental performance observe the effects of EMAS registration on environmental performance (Testa et al. 2014).

Having regarded back to the "motivations", Neugebauer (2012) differentiate two types of reasons to adapt standards. While ISO14001 is often done in response to external pressure (e.g. to gain legitimacy, to suit customer or partner requirements and public image), EMAS tends to be motivated internally concerning Neugebauer's empirical work (Schaefer, 2007; Neugebauer, 2012).

To sum up the above mentioned, based on the literature it can be said that EMS can indicate environmental commitment of a company that can have an effect on its waste and resource efficiency. Certainly, there are environmental conscious organisations without EMS, however, EMS can indicate a pro-environmental behaviour of a company (regardless the motivation).

#### 4.5. Corporate environmentalism in the two pilot cases

For the REPAiR project we tried to analyse the spread of both EMS to get an overview about company related waste/environmental sensitivity on territorial level. As ISO 14001 can be certified by several quality management companies in a country, it was hard to find data publicly available. National organisations for standardisation did not have a register on companies with ISO 14001. ISO surveys (organised by iso.org) and communications can provide an overview for us. For comparison, we used the ISO 2016 survey<sup>12</sup>.

As EMAS certification is initiated by the EU, data are more easily available<sup>13</sup> for focus area analysis as well.

In general, it can be said, that there are more ISO 14001 certification than EMAS in the world and in the EU (112 646<sup>14</sup> ISO 14001 vs. 3654<sup>15</sup> organisation with EMAS (in 2016) in the EU27. ISO 14001 certifications has a massive increase since its launched (Figure 29).

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<sup>12</sup> <https://www.iso.org/the-iso-survey.html>

<sup>13</sup> <http://ec.europa.eu/environment/emas/register/reports/reports.do>

<sup>14</sup> iso.org

<sup>15</sup> <http://ec.europa.eu/environment/emas/register/reports/reports.do>

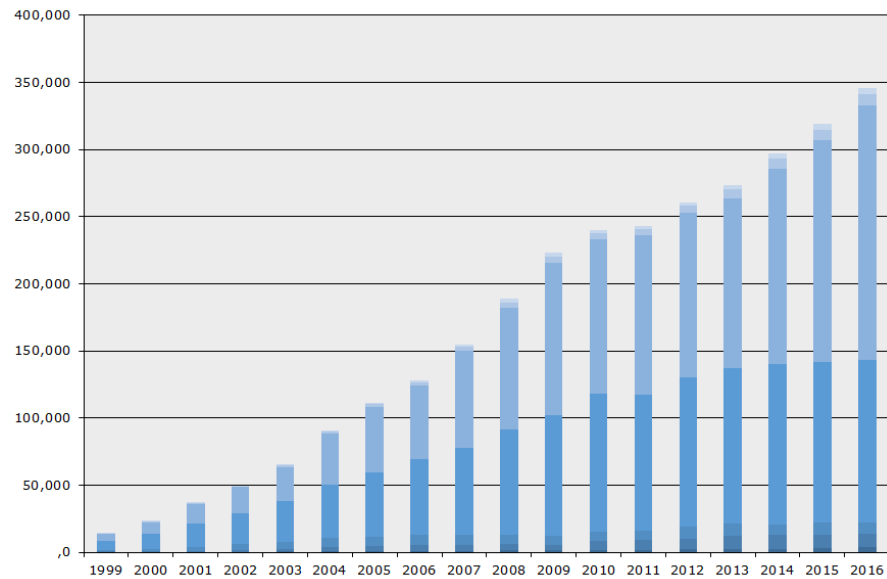


Figure 29: ISO 14001 in the World (1999-2016)

Source: <https://www.iso.org/the-iso-survey.html>

Based on the ISO 2016 survey, taking into account ISO 14001 we can see a significant increase of certification in Italy than in The Netherlands. In 2016, the absolute number certification was almost ten times more in Italy (26,655) than in The Netherlands (2667). However, taking into account the different size of the two countries, the difference “only” triple (439,851 in Italy and 157,286 in The Netherlands for 1 million people). The trend, however, is different. Although in both countries there is a continuous rising, in Italy the curve is more massively increasing (Figure 30, 31), either we project the numbers to capita or to company.



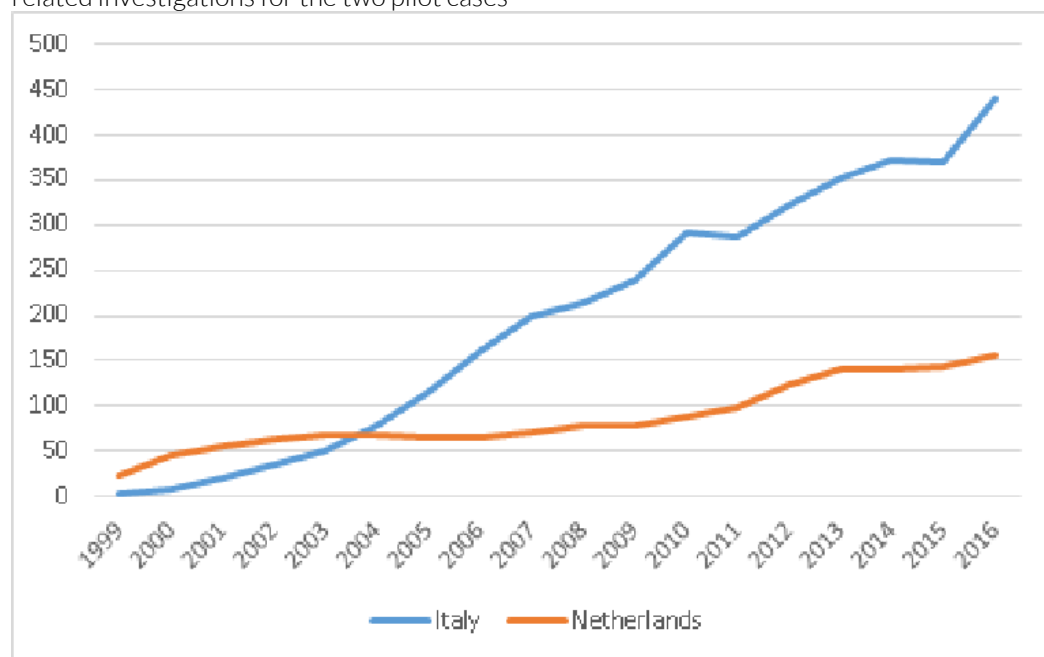


Figure 30: ISO 14001 certification per 1 million capita (1999-2016)

Source: ISO Survey 2016, <https://www.iso.org/the-iso-survey.html>

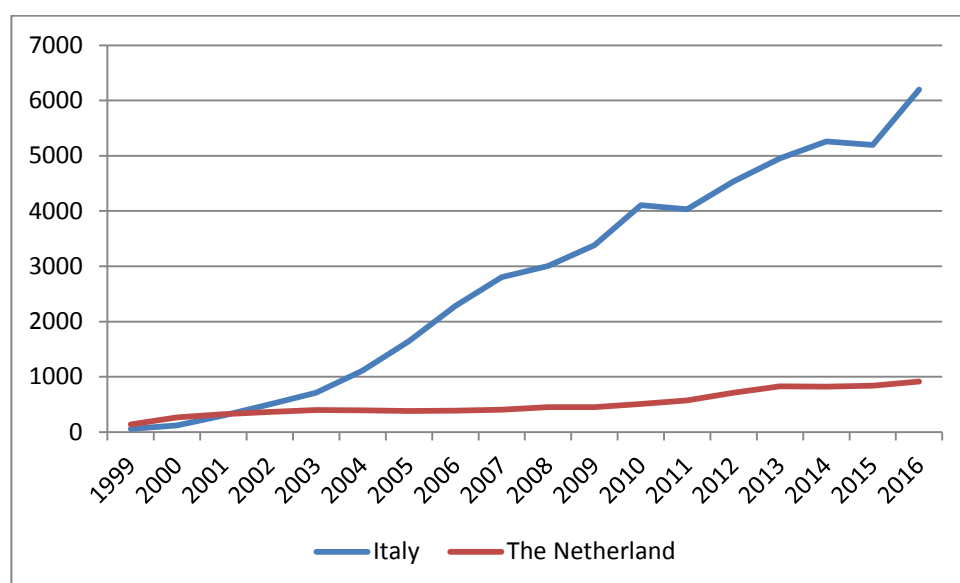


Figure 31: ISO 14001 certification per 1 million company (1999-2016)

Source: ISO Survey 2016, <https://www.iso.org/the-iso-survey.html> and ORBIS database (Bureau van Dijk (2017))

Taking into account the EMAS certification, there is a huge gap between the two countries as well. In The Netherlands there are only two companies who have the EMAS certification with an expenditure in 2016 or later, while this number in Italy

is 929 companies (in 5738 sites). In The Netherlands one company with EMAS is in Maastricht and one in Rotterdam. Concerning the NACE code, one out of the two is a manufacture of paper and paper board while the other one is in taxi operation.

In Campania, 32 companies out of the 929 Italian ones bear EMAS certification. 31 out of the 32 are small- and medium size enterprise (SME), 4 of them are micro. Concerning their NACE code seven of the enterprises (21,88%) are dealing with waste collection or waste treatment, while another six are in metal industry. Most of the companies (56,25%) are from processing industry (mainly manufacturing something) and 37,5% of them are from the service sector. Only two dealt with mining and quarrying sector. Only 28,12% of the companies seat in Napoli.

## 6. Conclusions

The first part of this deliverable presented a secondary socio-cultural analysis on the linkage between waste-consciousness and social milieu. This inquiry is part of a series of papers that aim to reveal how socio-cultural and socio-moral features are influencing social sensitiveness and awareness about general environmental issues, and particularly about waste and resource management. SSCA-1 used Flash Eurobarometer Report 388 as a source for data. Based on the conceptual argument that invoked the theory of planned behaviour elaborated by Ajzen, the empirical stage of the research developed a composite variable, the Waste-conscious Behaviour index which was the explanandum in the inquiry, and tested its relationship to the respondents' social milieus that were, accordingly, the explanans factors. SSCA-1 found that there is (1) relevant differences among the EU member states regarding to waste-conscious behaviour; and that (2) in 5 cases out of the 6 particularly investigated countries of REPAiR there are significant relation between waste-conscious behaviour and social milieu. Using this paper as a preliminary study, the following secondary socio-cultural analyses will address the identified research problem in a more in-depth sense.

Taking into account the secondary analyses of Eurobarometer and the two pilot countries we could see that both on household level and company level Italy has significantly higher waste-conscious behaviour or environmental sensitivity. Focusing on the case specific regional level the situation is the same, even we are having a look at the WCB index or the number of EMAS certifications.

Inglehart (1977, 2000, 2005) argues that in post-industrial societies post-material values, norms and attitudes are more common which socio-cultural and socio-moral phenomena – among other implications – are in favour of praxes like taking collective responsibilities and willingness for participation. Based on this argument, it is compatible to assume that societies with higher income rates are rather tempted to show more committed caring towards their natural environment, i.e. collective waste consciousness is more common. However, our first investigation did not support this presumption. Although, The Netherlands has higher GDP (with 10,000 EUR more) than Italy, waste consciousness is significantly higher in the latter country, and that finding is true also regarding to the Italian case study region compare to the Dutch one. Nevertheless, it is important to note that this preliminary inquiry needs further, more in-depth analyses. The planned empirical investigations can help to refine the first results.



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