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INFRASTRUCTURE INVESTMENT LONG TERM CONTRIBUTION: ECONOMIC DEVELOPMENT AND WELLBEING

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Abstract

This paper builds on the empirical research carried out for the "Ex post evaluation of investment projects co-financed by the European Regional Development Fund (ERDF) or Cohesion Fund (CF) in the period 1994-1999", recently finalized by the European Commission. The study evaluated the long term contribution, direct and indirect, expected and unexpected, of ten selected environment and transport infrastructure investments to economic development as well as to quality of life and well-being of society. In fact, investment projects can foster economic development, which is generally quantifiable by economic welfare metrics, as e.g. reflected in the cost-benefit analysis. Although the concept of economic development is not disconnected from the wellbeing of society, it is acknowledged that there are a number of other factors that may affect public welfare, which are not usually captured by the traditional economic indicators. Social cohesion, environmental effects, territorial cohesion, institutional learning and social happiness are for instance factors that affect the level of social satisfaction, the perception of social reality and other dimensions which are outside the conventional economic dimension. An innovative methodology was therefore applied for the context of this study to integrate traditional quantitative tools, such as ex-post cost-benefit analysis, with analysis of qualitative evidence. This allowed to study, in a structured way, project effects on economic development together with the determinants of wellbeing to society. The results showed that effects on wellbeing vary from project to project to a high extent. In particular, social satisfaction or dissatisfaction can take place in reference to expectations and, when this is the case, effects (either positive or negative) are of a large magnitude. When social (dis)satisfaction is related to "objective" factors, the intensity of the effects is lower. For example, the introduction of tolls in the motorways reviewed had negative impacts on social happiness, partially counterbalancing general satisfaction arising from factors such as increased leisure opportunities, civic pride, etc. In other cases, delays in implementation generated widespread feelings of frustration among the public, thus limiting the satisfaction regarding the new infrastructure. In the case of the waste water treatment plants reviewed, satisfaction was rather limited by shortcomings intrinsic to the projects' operations (odours, under-capacity, etc.). On the contrary, when specific measures are taken to purposely alter the perception of projects by the population, effects are magnified. In this respect, the two solid waste treatment projects in Galicia and Portugal are interesting to contrast the role played by awareness-raising campaigns. Both projects "objectively" contributed to citizen's quality of life through the elimination of landfills and their replacement with green areas, but they both also had to deal with the necessity of "selling" the choice of the incinerator technology. While awareness-raising activities positively contributed to the satisfaction associated with the latter project, they were (at least initially) a negative factor in the former case. Pressure from environmental organizations also played a role in limiting the positive perception of the project. Finally, it is worth stressing that the level of satisfaction is important not only because it contributes to determining overall project performance in static terms, but also because it can have an influence on project functioning and achievements in dynamic terms. For example, in the solid waste field, social acceptance is an important issue since it may have an influence on the functioning of the projects by making possible better waste separation with regard to recycling and composting.

Keywords: infrastructure investment, economic development, wellbeing, social satisfaction

JEL codes: H54, H75, I38

This version: March 2013

1. Introduction

This paper analyses the long term contribution on wellbeing from large transport and environment infrastructures financed by the Cohesion Policy. The focus is on those effects materialized after project implementation that affect the social development sphere, including the level of social satisfaction, the perceptions about social reality and other dimensions that are usually outside the conventional concept of economic development. Although not suitable for a quantitative measurement, these effects affect public welfare and are a driver - or, conversely, a constraint - to the success of the projects.

In fact, large infrastructure investments can foster economic development. There is an extensive literature supporting the relation between infrastructure endowment and economic development, which can be defined as the economic growth stemming from the accumulation of production (capital and labour) and other factors (such as human capital, technology and organisational change) on output[1]. The concept of economic development is straightforward, generally well-understood and measurable by economic welfare metrics. GDP growth rate is the most used measure of output and data are regularly produced by national and international statistics offices. There are, however, a number of limitations in the use of GDP as indicator of development from single investments. Above all, GDP does not fully capture consumer benefits, i.e. the excess of willingness-to-pay for a good or service over the actual price paid[2]. For this reason, the main tool used for infrastructure investment evaluation is the cost benefit analysis, which measures welfare change at the micro level. By calculating economic performance indicators such as Economic Net Present Value and Economic Rate of Return, the cost benefit analysis measures in quantitative terms the main direct economic effects attributable to a project and the (quantifiable) externalities. However, following Dasgupta (2001), there are a number of other factors that affect society, but are not captured by the traditional production function. Hence, another category of effects which refers to those elements that affect the social welfare function, without influencing or being determined by economic growth, has to be considered when assessing the contribution to welfare from infrastructure investments. Health status, working conditions, education and skills, social connections, civic engagement and governance, environmental quality, personal security and subjective wellbeing are all dimensions that can be, more or less, affected by new public investments. The cost-benefit analysis, founded on the assumption the effects need to be identified, quantified and monetized, cannot capture well these dimensions. Thus, adopting an evaluation methodology which integrates traditional quantitative tools with the analysis of qualitative evidence to study the determinants of wellbeing to society is preferable.

These issues have been widely discussed in the empirical research carried out for the "Ex post evaluation of investment projects co-financed by the European Regional Development Fund (ERDF) or Cohesion Fund (CF) in the period 1994-1999", which this paper draws its evidence from.

The study, recently finalized by the European Commission, DG Regional and Urban Policy, evaluated the long term contribution, direct and indirect, expected and unexpected, of ten selected environment and transport infrastructure investments to economic development as well as to quality of life and well-being of society. A review of the theoretical and empirical literature in the economic and social science spheres allowed the evaluation team to identify a list of possible effects expected to be produced by infrastructure projects (CSIL, 2012b). Two groups, one related to economic development and one to overall quality of life, have been identified. On the one hand, effects on direct economic growth and endogenous dynamics of growth have been assessed to measure projects' contribution to economic development. On the other hand, effects on social and territorial cohesion, environment, institutional quality and social happiness have been analysed to measures contribution to social wellbeing. The methodology adopted a combination of qualitative and quantitative evaluation techniques to detect, measure and analyse the different kinds of effects and the determinants of project performance. In particular, the evaluators combined ex-post cost benefit analysis methodology with direct interviews and observations (including reviews of the media).

On the basis of the information collected and the results of the aforementioned study, this paper focuses on social happiness dimension, as reported in the project evaluation reports. Social happiness, according to the definition provided by CSIL, has to do with the project's influence on those variables which may affect the subjective perception of people's wellbeing, such as psychology, family context, religion and cultural traits.

The projects analysed in the "Ex post evaluation of investment projects co-financed by the European Regional Development Fund (ERDF) or Cohesion Fund (CF) in the period 1994-1999" are:

- Dublin Waste Water Treatment (Ireland)

1 See for example Solow (1956), Aschauer (1998), Armstrong and Taylor (2000).
2 Ses Stiglitz et al. (2009)

- Egnatia Motorway (Greece)
- M1 Motorway (Ireland)
- Madrid Metro Line 8 (Spain)
- Mediterranean Corridor (Spain)
- Port of Gioia Tauro (Italy)
- Solid waste treatment in Galicia (Spain)
- Urban solid waste treatment in Lisbon (Portugal)
- Waste water treatment in Ría de Vigo (Spain)
- Water supply in Palermo (Italy)

The objective of this paper is to review the extent to which these projects have contributed, positively or negatively, to social happiness, as well as to discuss the differences occurring between projects and between countries, and to understand in general terms how infrastructures investments may influence social wellbeing.

The main research questions the papers aims to answers are:

- How can large infrastructure investments affect wellbeing?
- Are beneficiaries overall satisfied with the projects' implementation and outcomes?
- How is project's contribution to wellbeing "perceived" by citizens?
- Did the projects affect the sense of security of the beneficiaries?
- Is it possible to identify patterns of contribution to wellbeing in relation to the sector/country?

The structure of the paper has been vertically oriented at the beginning, i.e. the social happiness dimension is reviewed singularly for each project. Then, it has been horizontally oriented, i.e. effects and dynamics have been analysed across the projects, in order to outline cross-cutting issues and draw conclusions.

2. Social happiness in ten observed projects

The present section summarizes and briefly discusses the evidence gathered in the study about the contribution to social happiness of each of the selected projects.

2.1. Dublin Waste Water Treatment

Project synthesis
The project, completed in 2003, consists of a comprehensive expansion and up-grading of the Ringsend treatment plant which accommodates most of the waste water arising in the Dublin region, as well as the construction of a pumping station and underwater pipeline to carry wastewater from the north of the city to the Ringsend. The project was designed to meet the standards of the European Urban Waste Water Directive[3], but the plant also tackled a genuine water quality problem in Dublin Bay and surrounding waters, areas with high amenity value for the city of Dublin. The project was completed in stages over a number of years, during which the economy and population grew strongly. Thus, the key aspect of investigation is whether further future investment is required to meet on-going demand and environmental requirements.

The implementation of the Dublin Waste Water Treatment plant had a mixed social wellbeing impact.

On the one hand, the evaluation report points out that the plant had a broadly positive impact on environment, which, in turn, increases wellbeing. Water quality has improved significantly, and can be expected to improve further when the long sea outfall and the increased capacity are in place. This will also enable full compliance with Directive 91/271/EEC, in the context of the Liffey Estuary being designated a sensitive water body. The plant also incorporates state-of-the art sludge treatment, which contributes 40% of the plant's energy needs and stabilises the sludge into a useful product. Also, by removing constraints on development, notably on the north-side of the city (many parts of which are generally less well-off than the average for Dublin), it enabled the provision of new housing and economic opportunities where they were not previously available.

On the other hand, the evaluation highlights that there has been a serious odour problem that negatively affected social wellbeing, albeit it is now resolved. In particular, the residents of Ringsend/Irishtown, a less affluent part of the city, would have borne the brunt of the serious odour problem in the early years of the plant's operation. There remains a significant degree of resentment in the area on account of this, intensified by the perception that all the city's waste was being "dumped on their doorstep", particularly the waste from the north of the city. There was a perception that better off and more politically connected residents neighbouring the proposed plant at Baldoyle managed to have that plant cancelled, to the detriment of the Ringsend residents. At a more general level, some local residents have argued to the effect that the decision to direct all of Dublin's wastewater for treatment to a single constrained site, at the centre of Dublin Bay and the Liffey Estuary, and particularly to abandon the option for a separate plant at Baldoyle, was a sign of institutional and political weakness in the face of public opposition to the Baldoyle plant. One of the people interviewed during data gathering process, argued that that "the prospect of a long planning process in the face of a rapidly approaching deadline for meeting the terms of Directive 91/271/EEC was a factor in choosing to concentrate all investment at the existing Ringsend site." The evaluation, however, concludes that this decision was more pragmatic than reflective of a wavering to public opposition and that this would have been the case regardless of the location of any new waste water treatment plant.

In light of the evidence presented in the study, we can conclude that net social happiness impact of the investment is likely to be slightly negative. Despite positive experiences of those who use Dublin Bay as an amenity have been reported, the negative experiences of residents of neighbouring districts in terms of the odour problems in the first few years of the plant's operations, and the negative public perceptions about the institutional and political weakness seems to be determinant. This is confirmed by reviews of the media which indicate that the project, together with the planned incinerator on a site adjacent to the plant itself, has exacerbated negative local feelings and are generating mutually reinforcing negative perceptions.

3 EU Directive 91/271/EEC.

2.2. Egnatia Motorway

Project synthesis
The project concerns the construction of the Egnatia motorway, 670 km long, running from Igoumenitsa to Kipoi and crossing five regions in Northern Greece. The project also includes one service station and five toll stations. The project is of particular interest because it represents a "mega project", the most important modern infrastructure project for the development and connection of Greece with Europe, the Balkans and the Middle East. The motorway, part of the TEN-T Network, is connected with five ports, six airports and nine vertical axes creating access to the Balkans and other Eastern European countries, and responds to well-documented needs to improve accessibility of isolated and remote areas. The wider economic effects produced on growth and people's quality of life, and the way these materialised, are the key aspects of this project.

The evaluation suggests that the economic and territorial impacts generated by the project have positively affected the satisfaction levels of people living in Northern Greece. Reductions in journey time, and more comfortable and safer trips are perceived by everyone. The satisfaction of people mainly relates to the positive changes generated by the project on their lifestyles. By halving travel times, many people were no longer forced to move from their original locations for work purposes, but they can travel daily to work. Interviewees also confirm that the project has improved people's capacity to enjoy leisure activities because natural and historical sites located in Northern Greece, as well as the tourist attractions of the Ionian Islands, became more accessible.

However, despite the overall satisfaction of road users, general opposition is expressed with the introduction of tolls. Several protests have been occurring since the first toll station (Polymylos) was opened in 2010 during which drivers get out of their cars, raise the barriers of the toll station and continue their trips without paying.[4] It is worth mentioning, however, that protests did not concern only the Egnatia motorway but all the highways in the country. Movements demonstrating against the payment of tolls are continuously growing in light of rights recognised at constitutional level to provide roads as public goods[5]. The dissatisfaction of road users is expected to increase after the possible privatisation of the motorway, which, according to many interviewees, will lead to an increase in the toll price. Evidence from the literature[6] confirms that countries like Greece, where the public sector is economically important, tend to record more opposition to privatisations, probably because of the perceived greater role of the State in the provision of services and uncertainty about the role of the new private owners. A further dissatisfaction of road users relates to the lack of a sufficient number of service stations along the Egnatia motorway. As a matter of fact, only one service station is currently opened. This creates unease for drivers, especially trucks, who are forced to exit the motorway and enter the surrounding cities for refuelling.

Figure 1. Road users refuse to pay toll fees



Source: CSIL (2012c).

4 "Polymylos' toll station was symbolically occupied for two hours by local citizens and organisations. The mobilisation was organized by Kozani's Labour Centre, asking for the banning of the toll fees. During the mobilisation, drivers were allowed to pass through without paying any fee, since protesters kept the barriers lifted up. «We say "no to haratsi " of toll fees. We ask tolls to be banned right now» Source: the president of Kozani's Labour Centre, Aris Kourkoutas, mentioned To Vima, Dec. 31, 2010

5 Balezdrova A., Greek drivers refuse to pay toll fees, concessionaire companies are looking for a way to collect the lost revenues, GRReporter, 8 January 2011,

6 Checchi, D., Florio, M. and Carrera J., (2005).

Finally, the opposition expressed by the environmental organisations during the project design and implementation also affected people perceptions. The main issue concerned the crossing of the motorway by animals, allowed by the former lack of proper fencing measures, which initially caused some accidents. Nowadays, the Egnatia motorway is completed fenced-off and it is acknowledged that it is an environmental friendly infrastructure in line with the "landscape guidelines" adopted by the Greek State. However, a certain level of dissatisfaction remains with its vertical axes, which are not yet properly faced.

In light of the evidence presented in the study, we can conclude that net social happiness impact of the investment is uncertain. The Egnatia project shows that although tangible benefits are related to building a transport infrastructure (reduction of travel time, increase of safety, etc), several oppositions may arise from the stakeholders concerned when they are asked to agree to certain compromises. The project is a clear example of an improved wellbeing not fully perceived by citizens. Beyond the problems of security deriving from citizens' protests which are not willing to pay the toll fees, the major concern is the financial sustainability of the infrastructure itself which is currently jeopardized. Finally, the project shows that the satisfaction of the local stakeholders about the project's design is essential for implementing such a large infrastructure. The opposition of the environmental organisations to the original design of the Egnatia has negatively influenced its implementation with significant delays in the completion of the works and cost overruns

2.3. M1 Motorway

Project synthesis
The project includes the construction of seven sections of road to deliver a continuous motorway stretching from Dublin airport in the south to just north of Dundalk at the northern end. This motorway offers the opportunity to analyse a range of indirect and wider effects, spilling over to third parties and involving other economic activities. In fact, the motorway's key feature is the potential for encouragement of industrial growth in its catchment area, which could have not occurred otherwise. The challenge of the analysis is to see whether industries previously located closer to Belfast or Dublin have relocated outside these major hubs because of the reduced transport costs now associated with these areas.

The evaluation of the M1 concludes that the motorway had a number of positive impact on social happiness including:

- Improved capacity to enjoy leisure activities, which might not be fully covered by the value of time saved on journeys (either on leisure-based journeys themselves or in terms of providing greater leisure time through reducing business or commuting travel time). The area around the northern end of the motorway is one of significant natural beauty and history, and would normally be a centre for tourism and leisure. However, it suffered greatly during the period of civil strife in Northern Ireland[7]. This has been reversed in recent years, and its greater accessibility due to the presence of the M1 is likely to have contributed to this.

- The Boyne Bridge has become something of an "iconic image" including appearing on sports logos[8]. Such iconic images may have a positive civic pride impact. In a similar vein, the presence of the M1 itself may be a source of regional pride, which may have a positive impact not included in other headings.

- Ireland's current economic crisis has inevitably impacted the population's view of economic prospects in general and contributed to a general atmosphere of pessimism[9]. In this context the roads investment programme is seen as one of the few positive legacies of the "Celtic Tiger" era (for instance, see White, 2010).

- As a possible negative, similarly to what happened for Egnatia, there was considerable resistance at the time of construction to the decision to toll the motorway, including calls for a boycott of the bypass, particularly by road hauliers[10]. The tolling of roads has always been controversial in Ireland[11] and it has invariably aroused public opposition. The report

7 South Armagh became known as "bandit country" at the time, due to both terrorist activity and illegal smuggling (http://www.independent.ie/opinion/analysis/the-good-republican-who-has-become-lord-of-bandit-country-1503201.html). Similarly Dundalk was known locally as "El Paso" (http://www.dundalk.ie/history.php).
8 Although this turned out to be a cause of controversy due to the location of the bridge (http://www.drogheda-independent.ie/lifestyle/review-of-the-year-november-cable-bridge-gets-the-boot-from-louth-county-crest-2001430.html).
9 For instance, see http://www.tradingeconomics.com/ireland/consumer-confidence.
10 See for example http://debates.oireachtas.ie/seanad/2003/06/24/00004.asp and http://www.irishtrucker.com/news/2002/april/0204026.asp.
11 Irish Times 27th June 2000 "NRA proposals for toll schemes attract strong criticism". http://www.irishtimes.com/newspaper/archive/2000/0627/Pg009.html.

concludes that dissatisfaction with the presence of tolls on the M1 has persisted most recently manifesting itself in a campaign to have the tolls on removed[12].

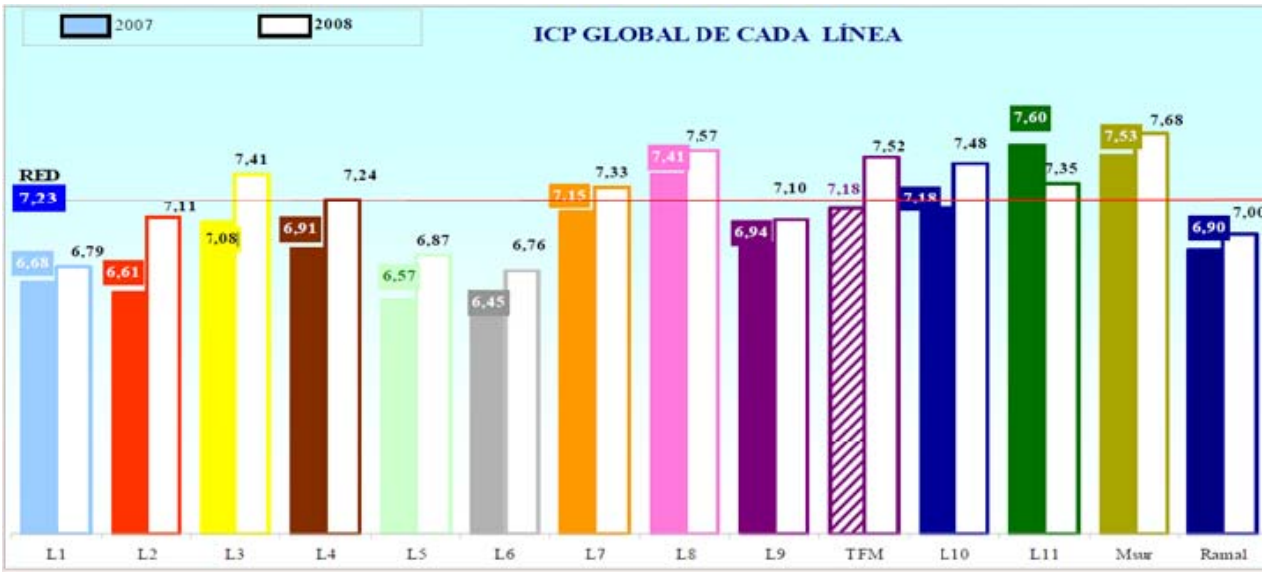
In light of the evidence presented in the study, we can conclude that net social happiness impact of the motorway is positive. While dissatisfaction with the tolls is often voiced, we can argue that it is difficult to ascertain to what degree it has a substantial impact on public perceptions of the road in general, or on behaviour. On the contrary, the civic pride stemming from the Boyne Bridge as iconic image has certainly positively contributed to raise the positive feeling of associated to the road.

2.4. Madrid Metro Line 8

Project synthesis
The project concerns the construction of the Madrid Metro Line 8, which connects the centre of Madrid with Barajas airport. The project was implemented in different stages between 1998 and 2007, when the Airport-Terminal 4 station was opened to public. This project gives an example of an intervention with the potential to radically change the behaviour of citizens by diverting traffic from road to rail, with further beneficial effects on the environment. It is therefore interesting to investigate the typologies of long-term effects, in terms of changes in private behaviours (citizens and firms), facilitating economic development on one side and improving quality of life on the other.

The evaluation of the Madrid Metro Line 8 reinforces that it is widely agreed among citizens that the creation of Line 8 greatly improved living conditions of residents in surrounding areas, by increasing accessibility and connectivity to the transports network. Evidence of this comes from opinion surveys undertaken amongst Metro users. They measure the users' level of satisfaction through the ICP, an indicator of perceived quality, which allows Metro de Madrid to monitor the level and trends in the opinions of customers regarding the quality of service. The rating of Line 8 is above average and one of the most highly valued lines (Figure 2).

Figure 2 Perceived quality rating for each metro line (2008)



Source: CSIL (2012c).

Line 8 has brought downtown Madrid closer to those people who previously were very dependent on car or forced to take more expensive, much less convenient and longer public transport services in order to access work or to enjoy the range of Madrid's services and leisure and cultural facilities. Moreover, Line 8 was the first line in the city fully provided with mobile telecommunication coverage.

Social happiness may also have a role in the aspect of tourist friendliness and in the improvement of the image of the City as a result of more comfortable and safer accessibility to and from the airport. From the point of view of users, Madrid is included in the top ten

12 http://www.drogheda-independent.ie/news/councillor-carries-on-the-fight-to-abolish-local-toll-2857426.html

of European cities with frequent public transport users, that is, using public transport at least once a week; furthermore, public transport is the means of transport mostly used by Madrid citizens (54%) to go to work or education and 78% of Madrid's public transport users reported being very or rather satisfied with public transport in the city[13]. It is not only users of public transport who appreciate the new line; non-users have taken advantage of the reduction in traffic on the streets and on the main access roads of Madrid in the area served by the metro line.

Line 8, as part of a large expansion plan to improve the public transport network, which is one of the factors attracting investment and talent to the city, had also a positive impact on pride among Madrid citizens because these works where a link in the chain of creating one of the longest subway networks in the world.

Finally, as a possibly negative impact, the report mentions the public discontent among inhabitants of Pinar del Rey, a neighbourhood in the district of Hortaleza, after the completion of the section to Nuevos Ministerios. Residents claimed that, as the route of the extension passed under their houses, they deserved a metro station. Eventually, the Government yielded to citizen demands and, in 2007, Pinar del Rey station was opened. The result of this action was twofold: on the one hand, residents of Pinar del Rey gained in terms of accessibility and of happiness in having viewpoint heard; on the other hand, the addition of an extra stop went against the objectives of the line: connecting the town centre to the airport and the fair in the shortest time span.

In light of the evidence presented in the study, we can conclude that net social happiness impact of the project is highly positive thanks to increased sense of national pride and improvement in living conditions.

2.5. Mediterranean Corridor

Project synthesis
The project includes the upgrading of the pre-existing rail line between Valencia and Sant Vicenç de Calders, close to Barcelona, for speeds of up to 200-220 km/h, with new layouts where radii were too small, some new stations and the doubling of some single track sections and new superstructure (catenaries[14], signalling). The project was structured in three stages, in order to limit the impacts on the track, between 1993 and 2002. The Mediterranean Corridor (MEDCORR) is a line used by both long, medium and short-distance passengers, but also with high potential demand for freight traffic. Given the strong political influence from the central and regional governments to which the MEDCORR was subject and the divergent interests around the project, it is interesting to analyse if and how the project managed to effectively satisfy both passenger and freight transport demand.

The evaluation suggests that upgrading of the line allowed rail passengers to travel faster, more comfortably and safely and with higher reliability. Besides the direct benefits to users, this has created option values for non-users[15] and a positive perception for the population of a better quality of life due to increased connectivity and the possibility of using a modern and cleaner transport mode.

This subjective satisfaction, which permeates through the interviews carried out, seems relevant as indicated by the social pressure observed in most major cities to have their own high-performance rail stations. It is also observed in the MEDCORR from those areas that have not benefitted from the service improvement due to the slow pace of its implementation or to the decision not to build additional stations that have been requested.

Not everybody is, however happy about the works. As a result of the relocation of Benicàssim station (located about 15 km East from Castellón town), a campaign of public opposition to the change arose. Formerly the station was located in the urban centre of Benicàssim but, due to problems arising from the growth of the village and the railway layout through urban areas, the new station has been built on the outskirts of the town. Local residents complained about this increase in the distance to the rail station and the owners of land which had to be expropriated resisted the execution of the works, delaying their beginning.

The evaluators highlight that another case of inhabitants' dissatisfaction was perceived in Tortosa, where the station was left out of the Mediterranean Corridor project. In this case, the feeling was of disappointment as they felt excluded from such an ambitious project. Moreover, the range of medium and short-distance services available from Tortosa station had been notably reduced. A dozen institutions and entities in Tortosa and the Ebro river mouth area asked the mayor to reach an agreement with the Ministry of

13 European Commission (2009). Eurobarometer. Perception survey on quality of life in European cities.
14 Contact system of trains to the overhead electrified line.
15 Option values are defined as the potential benefits not derived from actual use of a good or service, but for the possibility to use it in the future.

Public Works to maintain the old line as a by-pass serving the town. Tortosa station has only been left, however, as a dead-end for a few regional services from Barcelona.

Finally, the evaluation stresses that positive effects on social happiness were constrained by widespread feelings of frustration and lack of confidence about the future of the Corridor. These have been generated among local people, regional public administrations and transport associations and have been reflected in the press. Delays and deadlocks in the Valencia-Barcelona works and the lack of a plan for implementing the High-Speed Line along the entire rail section have become a recurring topic in comic strips of newspapers and websites (see Figure below), which reflect the local impression that the Corridor is left out of the political priorities of the central government.

Figure 3. Comic strip making fun of the lack of commitment of the Spanish government to finish the corridor



Note: Man: "Madame, here is the government's commitment to the works of the HSL Tarragona-Castellón". Woman: "Where should I file it?", Man: " With all the other commitments, of course" – "In politics, the unavoidable commitment is the most excusable one".
Source: CSIL (2012c).

In light of the evidence presented in the study, we can conclude that net social happiness impact of the investment is likely to be slightly positive. As matter of fact, these feelings of distrust and scepticism about the completion of the line, rather than discouraging supporters of the project, have acted positively, encouraging the creation of a number of organisations whose objective is to promote the Corridor and to convince both local and national stakeholders and international bodies of the need for this railway line. Lobbying from civil society channelled through these initiatives has been decisive in the recent declaration of the Mediterranean Corridor as one of the TEN-T priority projects for the 2014-2020 European programming period.

2.6. Port of Gioia Tauro

Project synthesis
The project includes the construction of a transhipment port in Gioia Tauro, Calabria, and the provision of additional port services necessary for the transhipment. The port is an interesting story which was initiated from a successful business intuition of a port terminal operator who agreed with the Italian Government about the destination of the already existing but unused port infrastructure. In fact, the port was originally designed to realise a cold rolling mill (steelworks), which was abandoned, the only facility actually constructed being the port (basin and quays). The vision of the private entrepreneurs in 1994 was to reconvert the already existing basin into a container terminal, primarily for transhipment purposes, becoming the premier transhipment port of the Mediterranean Sea for volumes of freight moved. The interesting aspect of investigation is to what extent the success of this container terminal (the only productive investment among those analysed[16]) brought about socio-economic development in the region. The governance aspects and the political and institutional local influences are the main interesting features depicting the project context.

16 Productive investments are defined as those investments producing or able to produce revenues from the production of goods or provision of services.

The evaluation claims that, despite initial positive enthusiasm, today significant negative impacts prevail in terms of frustration local people have experienced. High expectations of development of the broader area of Gioia Tauro have been unfulfilled since the port failed to trigger additional investments, economic activities and entrepreneurship at local level, remaining an "isolated" experience. Social distrust and disillusionment are defined by the evaluators as tangible effects likely to influence future actions regarding the port. Those feelings have been perceived talking to people, especially in this current time of crisis and uncertainty about the future. As a result of past experience, citizens, but also relevant decision-makers in public and private bodies, are experiencing today a strong sense of pessimism and scepticism about the chances of solving the current problems and returning to the position of the relatively recent past when the port was thriving.

The evaluation discusses that this social distrust partly reflects an unrealistic level of expectations raised during the initial phase of the port development, which in turn reflected years of unmet promises. Still, it is undeniable that there is a significant unexploited potential related to the port's development despite many years (and much public resources) spent trying to trigger broader effects. Confused and overlapping responsibilities and lack of capacity and motivation of public and private managers are the determinants of this situation.

Also, social wellbeing has been negative affected by the poor or, better, nil institutional capacity building. Given the uniqueness of the opportunity offered by the port of Gioia Tauro, its international relevance and the strategic significance for Calabrian regional development, one would have expected the quality of public institutions to have increased significantly. This is however not the case; on the contrary this is by far the main reason for the failure of the project from a regional development perspective.

In light of the evidence presented in the study, we can conclude that net social happiness impact of the investment is negative. Interviews with policy makers, press and public debates confirmed that the development of the Gioia Tauro port brought the attention of national and international public opinion to one of the most neglected and poorly known Italian regions which became the location of an internationally-known, flagship project. By moving the Calabria region from the periphery of Europe to the centre of Mediterranean Sea, the port project had the potential to reduce the North-South divide and enhance the territorial cohesion feeling and identity of people and citizens. This potential, however, remained unexploited.

2.7. Solid waste treatment in Galicia

Project synthesis
The project consists of the construction of a set of facilities (operated by the public-private company Sogama) in the municipality of Cerceda, Galicia, for the separation of recyclable materials and the incineration of mixed waste with energy recovery. In addition, a number of transfer stations for receiving the waste collected at local level by municipalities and transporting it to Cerceda, by truck or rail, were spread all over the region. This project is a regional-scale intervention that involves facilities placed throughout the whole regional territory and its main cities, absorbing the demand of about two million users. At the moment of the project construction phase, a large number of municipalities were unsure about whether or not adopting the Sogama incineration technology. They decided to join the Sogama waste management system only later on, when the infrastructures had been already built. Because of the impossibility to exactly determine ex-ante the service demand, today the incinerator plant's capacity does not allow to valorise the total volume of waste collected. The project offers interesting insights for the investigation of what has been its impact as compared to a counterfactual scenario.

The project generated positive environmental benefit, which in turn had positive effects on the satisfaction level of people. The evaluators recognize that the improvement in waste management and treatment was evident compared to the ex-ante situation and this was acknowledged in all interviews they carried out. Thanks to the closure of unregulated landfills people can enjoy new regenerated areas and a cleaner and healthier environment. Moreover, inhabitants of Cerceda municipality said to be overall satisfied with the work opportunities provided by the Sogama complex, although there are some complaints about the low qualified professional profile characterising most of the local labour force, and although at first, when it was decided to build the infrastructures in Cerceda, local people were disappointed at not being involved in the decision process.

Yet, a general opposition to the project, and in general to the incinerator technology, expressed by environmentalist organisations and other movements promoted by ecologically-minded citizens, was also found in most of the press analysed, which affects citizens' satisfaction and, in general, people perceptions. These parties accuse Sogama of various faults, among which:

- the lack of valorisation of a large amount of waste that is instead dumped in the landfill of Areosa;

- the lack of separation of plastic and tetra pak products improperly included by the content of the black bags[17];
- the lack of compost production;
- the contamination caused by Areosa landfill, which in 2008 had negative environmental effects on the nearby river.

Even if the project was assessed as not directly responsible for all these issues, they are continuously remarked on by the press and the ecologist organisations, thus affecting the subjective perception of people's wellbeing and contributing to transforming Sogama into the "monster of waste", as people call it.

The evaluation sustains that blaming Sogama for all the weaknesses affecting the current waste management system of Galicia is a behaviour mainly aimed at discrediting incineration technology compared to other forms of waste treatment. Composting plants are promoted by the ecological movements as the best solution from an environmental point of view, even if in fact the very high initial positive expectations and enthusiasm for these waste treatment systems were not met: actually a large amount of waste going to the Nostián and Barbanza plants cannot be valorised and the facilities are not able to produce good quality compost for the agriculture sector because waste separation is not of the best quality. The importance of ensuring certain qualities and properties for compost, in order to make it usable, is widely acknowledged. Many studies[18] provide evidence that poor waste separation and handling standards will most likely result in large and unacceptable increases in concentration of undesirable and hazardous ingredients, including dioxins and heavy metals as well as glass, plastic and other physical inert materials, thus making the compost generated unusable and even harmful to the agriculture sector.

In reaction, Sogama is now striving to improve its corporate image, by ensuring a high level of transparency in its activities carried out and results achieved. Its website is particularly rich in information and data about the infrastructures and emissions; visiting tours for children, university students and academics, residents' associations and others are continuously organised in the complex to explain how waste is treated and the importance of carrying out good separation at home[19]. It seems, however, that these efforts are not enough to change the perception of most people.

In light of the evidence presented in the study, we can conclude that net social happiness impact of the investment is mixed. Certainly, the project has improved citizens' quality of life by improving environment. However, this was not fully recognized and accepted by people. Also, considering that a new incinerator plant has been planned in the South of the region[20], this will probably contribute to fostering strong opposition among citizens concerning its site decision. What could play a major role in limiting the influence of politicised interests and in improving social happiness related to the Sogama project is a better awareness on the part of people of the whole waste life cycle: in particular, citizens need to understand, first of all, the importance of improving waste separation for any treatment system to successfully work, regardless of the type of technology used to treat waste. If the regional government manages to improve waste separation, by means of awareness campaigns, more complete and objective understanding of the benefits brought about by Sogama will be achieved. This, in turn, will positively affect social happiness.

2.8. Urban solid waste treatment in Lisbon

Project synthesis
The project aims at the development of the Integrated Waste Management System in the metropolitan area of Northern Lisbon, implemented by the public company Valorsul. The initial design covered the construction of a Waste-to-Energy Plant, a sanitary landfill, a material sorting facility, a drop-off centre and a bottom ash processing and recovery installation, together with the sealing of uncontrolled open dumps and the implementation of separate collection of specific waste. Implemented between 1996 and 2005, other initiatives, co-financed by additional EU funds, for the construction of an Anaerobic Digestion Plant producing compost from organic waste, were added to the original intervention. This project is of particular interest considering that, prior to its implementation, landfills had been running out of capacity. A key feature of analysis is therefore the context situation, with low environmental awareness and the need to cope with EU environmental directives.

17 Sogama collects from the black bags content only the metal products.
18 Such as Vogtman et al. (1989), Mullet (1992), Sepa (1997) and Brinton (2000).
19 The Sogama complex welcomes about 8,000 visitors each year (source: press review. http://www.twinning-waste-bacau.ro/aspecte-generale/presa-sogama-la-voz-de-galicia).
20 It will be built in the South of Galicia, probably on the border between the provinces of Pontevedra and Ourense. It should enter operation in 2018 and it will have the capacity to treat 310,000 tonnes of black bag waste: after separated the recyclable packaging improperly put by citizens into the black bags, about 290,000 tonnes per year are expected to be valorised through incineration. In parallel, because part of the current Sogama's demand will be catered for by the new Waste to energy plant, the amount of waste to be transformed into RDF in the Cerceda complex is expected to decrease from the current 527,000 (in 2009) to 366,000 tonnes per year. Source: CSIL (2012c).

The evaluation of Valorsul project stresses that for the population of the area of activity, the project contributed to improving their quality of life by producing positive impacts on the environment, Waste management compared to the ex-ante situation of the project has changed considerably and, with this, the quality of life of the population in the area. Old open dumps have been closed and transformed into green areas and parks for leisure activities and a more efficient waste management system had been put in place.

As part of the policy of the service operator, the latter has developed further initiatives aimed at improving the quality of life of the population, increasing public awareness of waste management issues and supporting other activities to the benefit of the population: to name some of these, Valorsul financed the construction of an indoor swimming pool in collaboration with the municipality of Loures and the planting of 600 trees and 16,500 bushes in the area of Casal Ventoso. These initiatives have been positively welcomed by the population and have contributed to raise social happiness and the level of satisfaction with Valorsul's activities.

However, at its initial stage, the project faced opposition from several stakeholders, which could be classified into two groups: a) politicians and local communities, who initially opposed the project and b) environmental organisations, some of which are still against it. Opposition from local communities was a means to obtain the construction of waste treatment facilities across all the involved municipalities and their hostility vanished as soon as their demands were conceded. Environmental organisations, by contrast, did not oppose the project per se: in fact they recognised the need for taking urgent actions to improve the environment. Yet, they were mostly hostile to the technology selected (mass burning) and were instead more in favour of Mechanical Biological Treatment (MBT), which envisages the transformation of waste to produce compost and energy .

Today, after some years of operation, some NGOs have taken a more positive view of the impact of the project and have started to consider the incineration technology as an acceptable and necessary solution to the problem that area had. This has been achieved thanks to communication activities carried out by Valorsul, as well as higher level of involvement of these organisations in the decision process. Moreover, the opening in 2008 of an Anaerobic Digestion Plant to produce compost, strongly demanded by the environmentalist groups, certainly contributed to widening consensus.

A recent study by the University of Lisbon indicates that the psychosocial monitoring results over the last few years indicate no widespread disruption in the beneficiaries, since the average levels of annoyance and risk perception related to the Valorsul waste management infrastructures are low. In addition, the customer satisfaction data produced by the Portoguese Regulatory Authority for Water and Waste Services (ERSAR) shows positive results in relation to Valorsul Anaerobic Digestion Plant, as far as service coverage, selecting coverage, and claim responses are concerned.

Hence, in light of the evidence presented in the study, we can conclude that net social happiness impact of the investment is positive. Even if opposition from NGOs may have initially reduced to some extent people's perception of the project, Valorsul's efforts to increase the transparency of its operations and implement awareness-raising campaigns amongst stakeholders certainly helped to change local community perceptions and make them fully understand the benefits of the project on their wellbeing.

2.9. Waste water treatment in Ría de Vigo

Project synthesis
The project includes the installation of nine waste water treatment plants in eight municipalities of Galicia (Vigo, Redondela, Cangas, Moaña, Nigrán, Gondomar, Soutomaior and Vilaboa), about 260 km of waste water conveyor pipes and 59 pumps. This project, implemented by the regional public body Augas de Galicia, offers an example of facilities that are used by very large segments of the population living in an industrial, economically developed, area. The waste water treatment plants serve about one million inhabitants (a third of the whole Galician population), who exert significant environmental pressure on this fragile ecosystem, and in particular on the shorelines. Long-term environmental effects are the key challenge for this project.

The evaluation of the waste water treatment plants in Galicia specifies that the main short-term benefit of the project was to improve the water quality of the catchment area, to guarantee the overall sustainability of the fragile ecosystem of Ría de Vigo, which was subject to strong urbanisation pressure.

The provision of all waste waters generated in the area with secondary treatment and the elimination of all pipes directly discharging into the sea or rivers succeeded in significantly improving the water quality, and reducing bad odours and floating solids in the bay, thus better valorising the beautiful landscape of the Ría. UV disinfection further helped in reducing the contamination load, in compliance with the EU Directives for waters where bathing and shellfish harvesting take place.

According to the evaluation results, all the social groups affected by the project, including both the inhabitants and tourists, experienced a significant improvement in wellbeing. Project's effects were clearly perceived by the beneficiaries, as the ex-ante situation was particularly dramatic and an improvement of waste water management services was required. Cleaner water favoured the development of economic activities and environment, and it affected another, more subjective, dimension: people's pride and pleasure for living in a beautiful place such as Ría de Vigo. This effect was perceived during the field interviews and it is captured in the willingness to pay calculation.

Social happiness generated after the project's completion fully offset the inconveniences arisen during the construction phase including bad odours, noise and traffic jam. What still remains to limit people's perception of wellbeing is the disappointment and, in some cases, anger, over the failure so far to solve the problems affecting one of the implemented plants (that of Lagares). More specifically, since the plant commenced operations in 2000, its capacity has been inadequate with respect to the volume of water to be treated. After Spain was sanctioned for non-compliance with EU legislation for the shellfish waters in Ría de Vigo, a solution to the malfunctioning of the Lagares plant has been pursued by the Regional administration, in order to preserve the quality of the Ría's waters. Up to now, although many years have passed, no additional investments have been financed, and people complain that the problem is still there and that it will not be solved in the short run.

Citizens and the press also criticise the ineffective control over industrial sewage discharges and the illegal behaviour of some firms, which regularly causes episodes of contamination to the water basin. People interviewed agreed that any attempt to improve the urban waste water treatment system should be complemented by more effective interventions addressing industrial discharges, since both contamination sources have an effect on the Ría.

In light of the evidence presented in the study, we can conclude that net social happiness impact of the investment is positive. The provision of all the municipalities of the Ría with waste water treatment eliminated all sewage directly discharged into the Ría's water, which was putting at risk the sustainability of the natural ecosystem of Ría de Vigo. Cleaner water in the Ría affected the beneficiaries' quality of life, for instance thanks to improvements to the landscape, the possibility of enjoying better quality bathing water and increases in buildings' values. Also, better water quality and the new bathing beaches have favoured the development of tourism.

2.10. Water supply in Palermo

Project synthesis
The project consists of eight sub-interventions concerning the water distribution network of the municipality of Palermo. They include the completion of the external bypass, the replacement of six sub-networks, and the provision of a supervision and monitoring system. The project is an example of a rather stable project over time in terms of objectives pursued, type of service provided and demand served. Given its stability and the long time span of operation (since 1999), the project offers interesting hints to see whether it actually contributed to alleviate the strong deficiencies in the quality of the drinking water provision service in Palermo. This project enables investigation of the contribution to improving the quality of life and standard of living of the population.

Evidence form the evaluation shows that the water supply project in Palermo produced positive and significant effects mainly in terms of improvement in the quality of life of citizens. In particular, after project implementation a more reliable and secure service provision was ensured for most of the municipal population. This effect is an indicator of direct welfare and growth effects, as witnessed by the reduction in complaints.

Reliability of water supply in Sicily is a long lasting problem. During one of the most severe drought episodes the citizens of Palermo have suffered, street protests were so intense to cause problems of public disorder (for example, in June 2002 protesters occupied the city Cathedral [21] - see Figure 4). Private water tanks were not adequate, and citizens as well as public buildings were supplied by tanker. It was recorded for example that in the municipal prison detainees were only allowed to take a shower twice per week.

21 See: Siccità: Palermo è a secco e la protesta diventa rivolta. (La Repubblica, 14 May 2002); Torna la guerriglia urbana nella Palermo senz'acqua (La Repubblica, 4 June 2002).

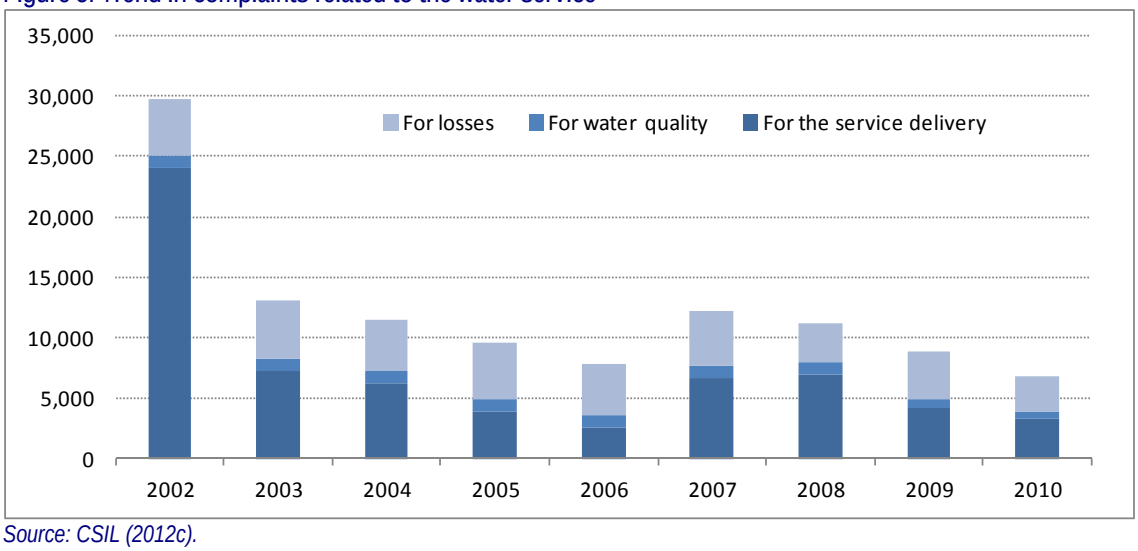
Figure 4. Street protests during a severe drought in 2002



Source: CSIL (2012c).

Project implementation had a positive and significant effect in terms of the sense of confidence and convenience derived from having a continuous water service as well as the sense of social pride from living in a municipality ensuring a certain quality level in a basic utility service. Citizens acknowledged the almost surprising improvement after the project's implementation. Since 2003 no similar events have occurred and satisfaction with the water supply system has improved. The customer satisfaction survey recently carried out by the service provider (AMAP) showed a decreasing trend of complaints (Figure 5).

Figure 5. Trend in complaints related to the water service



Source: CSIL (2012c).

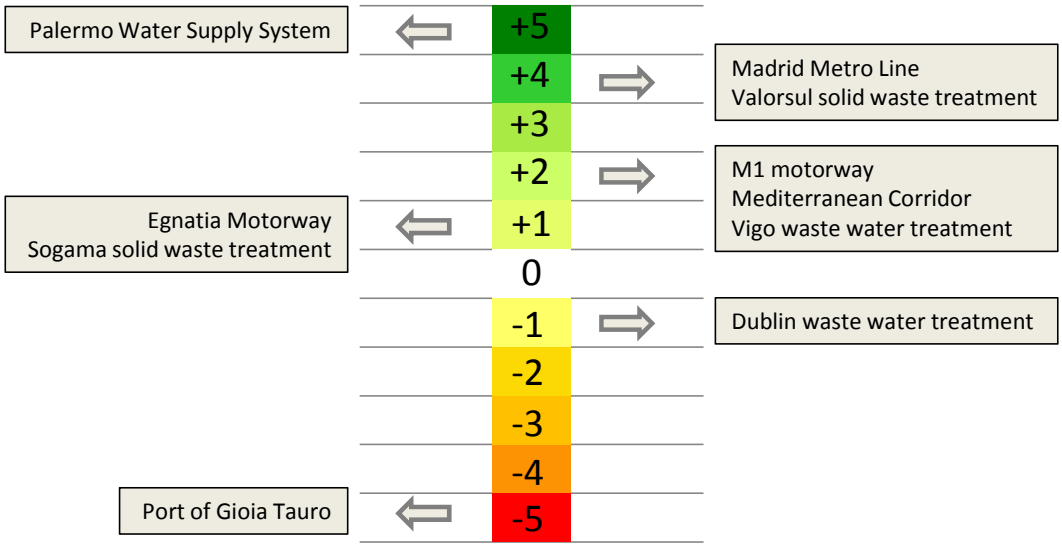
In light of the evidence presented in the study, we can conclude that net social happiness impact of the investment is fully positive. In particular, the more reliable and effective water supply in the entire city had direct welfare effects in terms of avoided costs for the large share of the population benefitting from the continuous water supply, as compared to the situation before the project.ù

3. Cross-cutting issues

The case studies show that projects have been successful in attaining the intended objectives, even if with different intensities of performance. While generating a positive welfare change, measurable in terms of economic development, they also increased wellbeing by improving people's living conditions. The only remarkable exception is that of the Gioia Tauro, where, excluding some positive effects in terms of jobs creation, the living conditions of the residents of the port's catchment area remained basically unchanged.

Project effects on the social happiness dimension of wellbeing appear very variable with no real difference between environment and transport sectors or between countries. In most of cases, they are positive, but not always (see Figure 6).

Figure 6. Social happiness effects at a glance



NB: The graph shows the scores given by evaluators in some selected projects in relation to the social happiness effects.
Source: CSIL (2012a)

The two cases of Palermo and Gioia Tauro are, in this regard, at the opposite. In Palermo, thanks to the choice of prioritising continuity of service delivery, at the expense of the financial profitability, there was very high public satisfaction among users, certainly also due to the unexpected success of a public endeavour. Conversely, in Gioia Tauro, expectations in terms of local development were so high and results so disappointing that this created deep resentment among citizens and local stakeholders.

Variable and contrasting effects on social happiness suggests that improving wellbeing does not always correspond to perceive it. Cases of social dissatisfaction, disrupt, protests, etc. have been reported more than one time, even in front of successful projects with tangible benefits. This happened, for example, for the two motorways. The introduction of tolls (or even the plan to introduce them) had negative impacts partially counterbalancing general satisfaction arising from factors such as increased leisure opportunities, civic pride, etc. In the M1 case, it is not clear how decisive this dissatisfaction was, while in the Egnatia case it had important consequences since it resulted in the delayed introduction of the tolling system and consequent financial losses, as well as problems of civil security.

In some cases "objective" constraints, occurred during project implementation (or at the beginning of operations), have limited the social satisfaction about the projects. The long delays in the MEDCORR's implementation, for instance, generated widespread feelings of frustration among the public, thus limiting the satisfaction regarding the new infrastructure. In the case of the two waste water treatment plants, satisfaction was rather limited by shortcomings intrinsic to the projects' operations: odour problems in the Dublin case, under-capacity of the Lagarès plant in the Ría de Vigo case.

Another important element of (dis)satisfaction seems to be the degree of involvement of local stakeholders in the decision making process. This aspect mainly relates to the localisation decision of the environmental plants. For example, in the case of Dublin waste water, a significant degree of resentment raised in in the residents neighbouring the plant because of the perception that without political influence they could not avoid that "all the city's waste was being dumped on their doorstep", as other communities did. A further example is represented by Sogama project, for which several negotiations occurred in order to find a suitable location to build the incinerator. Although an agreement was finally made with the town of Cerceda, the solution turned out not to be the best strategy and a certain level of dissatisfaction is still observed among local stakeholders. As most interviews stressed, project's benefits could have been higher if Sogama's facilities were built on a different location that would have minimised the distance from

all the transfer stations and reduced the total cost of transport[22]. The disappointment towards the site decision is likely to increase in the future, especially since a new plant has been planned in the South of the region.

On the other hand, thanks to communication activities carried out by Valorsul plant's operator, as well as the high level of involvement of NGOs and other organisations in the decision making process, a socially sensitive investment such as the incinerator technology has been widely accepted.

Another specific factor boosting social satisfaction is, the creation of option values. These are defined as the potential benefits not derived from actual use of a good or service, but from the simply possibility to use it in the future so as to have a range of choices at own disposal. This is particularly the case of the transport projects. For example, in the MEDCOR, besides the direct benefits on users to travel faster, more comfortably and safely, the project has generated on the population a positive perception of better quality of life, due to increased connectivity and the possibility of using a modern and cleaner transport mode in addition to the conventional ones. Similarly after the opening Madrid Metro line 8, citizens have now one additional means to reach airport. In Egnatia, the motorway has generated new holiday options, making the Ionian Islands easily accessible also to the communities of Northern Greece.

Awareness-raising activities and campaigns activated by project promoters as marketing strategy can also raise the level of social acceptance and satisfaction. In this respect, the two solid waste treatment projects in Galicia and Portugal are interesting to see the role played by these campaigns. Both projects objectively contributed to citizen's quality of life through the elimination of landfills and their replacement with green areas, but they both also had to deal with the necessity of "selling" the choice of the incinerator technology. In the latter project, awareness-raising activities have been very effective and positively contributed to the satisfaction associated. In the former, they needed more time to be understood and accepted, but the long term effect was at the end positive.

Expectations also play a role. In principle, high expectations are a symptom of potential very high social acceptance; however, these have to be realistic, on the one hand, and have to be fulfilled, on the other. Otherwise they can act as a "boomerang". This is what happened, in fact, for Gioia Tauro, where high (and quite unrealistic) expectations of socio-economic development existed. When it became clear the project failed to fulfil them, effects of social distrust and disillusionment contributed to further reinforce the negative perception of the project and even influence future actions regarding additional investments on the port.

Linked to this point, it is interesting thus to note that the relation between project performance and social happiness can be mutual. Public investments contribute to wellbeing and social happiness. Vice-versa, the level of satisfaction can also have an influence on project functioning, future development and achievements in prospective terms. For example, in the Sogama and Valorsul cases, social acceptance is key since it may have an influence on the functioning of the projects by making possible better waste separation with regard to recycling and composting, or influencing the construction of other plants (e.g. a new incinerator plant in the Sogama case).

What seems a neutral element, not increasing but neither diminishing the level of satisfaction, is the institutional learning projects may have triggered. None of the cases analysed indicated that social satisfaction was linked to capacity it building and/or better functioning of the public organisations involved in project implementation and operation. This aspects seems not influencing the perception of wellbeing from citizens.

Finally, social (dis)satisfaction was, in some case, "captured" by organised vested / localised interests. Local stakeholders can indeed become organised to demand specific benefits from the project (e.g. to obtain the construction of facilities all across the territory so as to share the burden of having a solid waste treatment plant in their territory, as in Valorsul, or to obtain one or several additional stop(s) in the path of a train or metro in Madrid or MEDCORR). In these cases, there is a trade-off between social satisfaction and profitability, efficiency or positive environmental effects.

22 Currently, only two transfer stations are currently connected to Cerceda by train, while for the remaining ones road transport remains the only means of access, causing some negative environmental effects, related to traffic noise and pollution. CSIL (2012c).

4. Lessons learnt

Analysing the cross-cutting issues discussed above, some lessons have been drawn about the relation between infrastructure investments and wellbeing:

- Whenever projects are relevant to the needs of the territory where they take place, their output increases wellbeing de facto by improving living conditions. In the case of transport projects, this improvement is usually the result of transportation costs reduction, better accessibility, safety, comfort and reduced urban-rural divide. Increased leisure time is another benefit that can flow from transport investments, thanks to the reduction of travel time. In the case of environment, better drinking water quality, security of supply, protection of environmental goods, healthier living conditions are the main factors improving quality of life.

- Social happiness dimension of wellbeing is affected by people's perception about the convenience of the investment. The positive achievements of a project are not enough to generate social happiness. This occurs if project's utility is perceived and shared by people and supported by public opinion. In turn, subjective perceptions may influence the functioning of a project itself, its future developments and achievements in the long-term. Therefore,

- Wellbeing improvements are not always recognized by people. In many cases, albeit public investments do generate welfare, citizens do not "perceive" it. Public perception of the investment is an aspect which is often neglected by policy makers, although it demonstrated (in the projects analysed) to be key in influencing strategic decisions. Marketing strategies, awareness-raising activities may play an interesting role for 'selling' the investment to the public opinion and enabling social acceptance and satisfaction. They may contribute to raise the perception about the benefits generated by the project and ensure that they are fully understood.

- Wellbeing materializes over time. Impacts on welfare needs time to unfold so that perception of benefits is mostly achieved in the long run. This is particularly true for environmental projects generating long term effects in terms of reduced morbidity.

- Social (dis)satisfaction is influenced by a number of factors which could be either objective or subjective. Objective factors negatively affecting satisfaction are implementation delays, technical problems generating annoyance (noise, odors, etc.) or introduction of new tariffs. The occurrence of these factors generate, per se, a reduction of the social happiness. On the other hand, communication and marketing strategies, such as awareness campaigns, are instruments that raise the level of social satisfaction. The net effect of the subjective factors, on the contrary, is more ambiguous and depends on how these are interpreted. For example, expectations are generally in positive but if too high and unrealistic they can become counterproductive. Participation in decision making process is positive, but the perception to have no political influence or being not enough involved generate frustration and discontent.

- When social dissatisfaction is not expressed by citizens or users but is "captured" by organised vested / localised interests, the effects on the project can be even greater and immediate. The role of organized vested interests is decisive in supporting or playing down the importance of an investment. If there is a certain disappointment with project's design, the voice of localized interests can be decisive in orienting the investment towards the local interests (by demanding specific benefits from the project) or even in paralyzing and delaying the completion of works.

- Social happiness seems somewhat disconnected from other areas of performance such as efficiency. It is sometimes the subject of a trade-off in the sense that positive effects are obtained at the expense of performance in other dimensions. Sometimes, responding to the needs of stakeholders brought about detrimental effects in terms of efficiency of the project and reduces positive environmental impacts.

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