

**Transport and sustainable development strategies in low density areas – dilemmas
between equity and efficiency in Alentejo, a Portuguese convergence region**

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1. Introduction

“Transport” was not only one of the four domains of European Spatial Development Perspective (1999), but is actually one of the axes of the EU Sustainable Development Strategy. The relevance of this theme is not only explained by direct needs of families and the economy, but also by its interrelationship with many other thematics, as “environment”, “energy”, “health” or “land use”. To promote the European principles of sustainable transport and Cohesion Policy, both national and regional plans should be coherent with each other and integrate the European orientations, adapted to specific regional characteristics, as territory, economy, population or infrastructures, and its territorial strategy. Thus, it is essentially that the investments from the programming framework could correspond to the proposed objectives of regional planning.

Considering these concerns, SPOTIA Project¹ intends to understand the dynamics of the regional policy in the actual programming cycle (2007-2013) in “Transports, accessibility and mobility”, having Alentejo region, in Portugal, as case study. Alentejo region is an eligible region under the Convergence Objective of Cohesion Policy that aims to accelerate the convergence of regions and less developed Member States in economic and employment growth terms. In this case, the objectives about transport and mobility presented in the Regional Operational Programme are mostly related with infrastructuring, while Alentejo

¹ SPOTIA Project - Sustainable Spatial Policy Orientations and Territorial Impact Assessment – Contribution to Portuguese context, coordinated by Eduarda Marques da Costa (CEG-UL) (PTDC/CS-GEO/105452/2008).

Regional Spatial Plan focus the need of a sustainable mobility promoted by the transport system, with the goal of consolidate a polycentric urban system and the territorial equity. However, in this last six years, most of approved projects of NSRF are related essentially with the improvement or upgrading of roads, and barely related with sustainable transports or mobility improvements, as public transportation system or bikeways.

This paper will be structured in three parts, being the first two parts divided in two. Firstly, it will be highlighted some of the main orientations proposed by the European Commission and the national governments through a brief look to the main documents and policies related with the theme “Transport and mobility”, considering, some publications as the White Paper “European transport policy for 2010: time to decide” (2001), the Green paper “Towards a new culture for urban mobility” (2007) or the “Action Plan on Urban Mobility” (2009); and after considering two national territorial documents, central in the national planning system as the National Plan for Management of Territory - PNPOT (DGOTDU, 2007) and the National Strategy for Sustainable Development - ENDS (APA, 2007). The second part, pretends to discuss the place of “Transport and mobility” on regional policies in Alentejo Region, considering two distinct instruments: the Regional Spatial Plan – PROT - and the Regional Operational Programme - Regional OP - both for Alentejo region, in a first moment reflecting on the main goals proposed by the previous instruments, and, after that, the perspective will cross from the planned to the executed, considering the approved projects in the actual cycle by NSFR 2007-2013 in the domain of “International connectivity, accessibility and mobility”, specifically for the operation typologies of “Territorial mobility” and “Transport Equipments and Networks”. It will be deepened the characteristics of the projects that meet the criteria above, knowing the promoters and the approved funds. The last point will reflect about the coherence of all these elements: diagnosis, objectives and approved projects based on regional instruments for Alentejo Region. The third and last part is intended to final considerations.

2. Sustainable “Transport and Mobility” at European and National policy spheres

The “Sustainable Development” concept don`t have a unique definition. In fact, there are a lot of definitions according to each approach, being one of the most frequent definitions "Sustainable development is development that meets the needs of the present, without compromising the ability of future generations to meet their own needs." (Brundtland,1987). Realizing this ample concept attending an approach related with the “transportation and mobility”, there are a set of objectives to pursuit the sustainability presented in “Developing

Sustainable Urban Land Use and Transport Strategies – A Decision Makers` Guidebook” (EC, 2003), where is included: the “Economic efficiency”, “Protection of the environment”, “Liveable streets and neighbourhoods”, “Safety”, “Equity and social inclusion”, “Contribution to economic growth” and “Intergeracional equity” (Table 1). However, other two axes will be considered: the “Infrastructuration” and the “Planning and Policy instruments” that could promote a more sustainable transportation and mobility.

Economic efficiency	Economic efficiency involves maximizing the benefits which users can gain from the transport system, after taking account of the resource costs of provision and operation of the transport system.
Protection of the environment	The Protection of the environment involves reducing a number of adverse impacts of the transport and land use system: regional pollutants such as NOX and SO2; local pollutants such as particulates, and their impacts on health; noise and vibration; visual intrusion; fragmentation and severance of settlements and biodiversity; urban sprawl; and loss of cultural heritage and natural habitats.
Liveable streets and neighbourhoods	This objective is focused on streets and outdoor conditions in residential areas. It includes the positive external effects on social, cultural and recreational activity in neighbourhoods, increased freedom of movement on foot and bicycle, and reduced sense of danger for these modes. It is linked to, but separate from the environmental and safety objectives.
Safety	This objective straightforwardly involves reducing the numbers of accidents for all modes, and reducing the severity of those which occur. However, since some locations, age groups and modes have higher accident rates than others, the safety objective also has equity implications.
Equity and social inclusion	Under equity the principal concerns are the need for reasonably equal opportunities to travel, costs of travel and environmental and safety impacts of travel. Within social inclusion we include accessibility for those without a car and accessibility for those with impaired mobility. True equality of opportunity will never be feasible, but consideration needs to be given to compensating those with the fewest opportunities or the greatest costs.
Contribution to economic growth	Land use and transport policies should support economic growth. Transport improvements which improve access or enhance the environment can lead to increased economic activity and possibly to sustained economic growth.
Intergeracional equity	While all of the above objectives are important for today`s cities, many of them will have implications for future generations also. But three impacts of today`s activities will particularly impact on future generations: greenhouse gas emissions, and particularly CO2, which will affect longer term climate change; consumption of land; and depletion of non-renewable resources, of which oil is perhaps the most important.

Table 1 - Objectives to pursuit of sustainability. Source: Developing Sustainable Urban Land Use and Transport Strategies – A Decision Makers` Guidebook” (EC, 2003)

Having the “Transport and Mobility” such impact in the territory and land use, in human`s quality of life and health, and in economy, among other spheres, it`s understandable its relevance in the context of Sustainable Development approach for territorial policies at several scales, since the European until the local scale. Some trends still further reinforce its role (CE, 2009):

- At local scale, the elderly people generally travel less, but with the recent dynamic of an active aging, the transports and mobility options should be appropriated to the new and multiple needs and adapted to people with reduced mobility;
- The actual transport dynamic promote a huge negative impact on environment, as when it is referred to the resources consume, as the land use, or some phenomena as the excessive gas emission, influences the air quality and, consequently, the human health;
- The excessive consume of oil and fossil fuel is one of the main actual problems, not only by the existing limited resources, promoting higher prices of it and, at the same time, the air pollution;
- The growing of urbanization and urban population represent two sides of the same coin: if the concentration of people, economic activities, collective equipments and infrastructures could promote its proximity and the reduction of the number of movements, its distance and time spent. However, this density is part of the phenomena that causes the traffic congestion and the huge gas emission in urban areas, especially with the crescent use of private transport;
- At the same time, another territorial dynamic – the urban sprawl – have impact in the transport and mobility sector, being another challenge for mobility management;
- At international scale, the migration dynamic among european countries and from non-european to European countries searching for more labour opportunities, promote the need of long distance trips, recurring to motorized vehicles;
- The Globalization promotes the reduction of the distances not only with the improvement of the transports but with the development of communication technologies too, for example, the teleworking or the video-calls.

For European Commission, “Transport and Mobility” is a “key challenge of the EU Sustainable Development Strategy (...) objective is to ensure that our transports systems meet society`s economic, social and environmental needs whilst minimizing their undesirable impacts on the economy, society and the environment.” So, analyzing the Sustainable Development Indicators promoted by Eurostat for the EU countries, there is one theme only related with transportation and mobility and its impacts – Theme 7. Sustainable Transports (see Table 2). This collection of indicators cross areas as the “Energy consumption of transport”, “Gas emissions”, “Modal splits”, “Accidents” and “Investments in infrastructures”, among other subjects, organized in this way: this theme have as headline indicator – “Energy consumption of transport relative to GDP”; as contextual indicator –

“Price indices for transport”; and the other variables are grouped in two operational objectives – “Transport and mobility” and “Transport impacts”.

Headline indicator	Operational objectives and targets	Actions/explanatory variables
Energy consumption of transport relative to GDP	<i>Transport and mobility</i>	
	Modal split of passenger transport	Volume of freight transport relative to GDP
		Volume of passenger transport relative to GDP
	Modal split of freight transport	Energy consumption by transport mode
		Investment in transport infrastructure by mode
	<i>Transport impacts</i>	
	Greenhouse gas emissions by transport mode	Emissions of nitrogen oxides from transport
	People killed in road accidents	Emissions of particulate matter from transport
Average CO2 emissions per Km from new passenger cars		
Contextual indicator	Price indices for transport	

Table 2 – Sustainable Development Indicators, Theme 7 – Sustainable Transport. Source: Eurostat

Considering the EU Sustainable Development Strategy, there are some positive trends identified between 2000 and 2011 related with this subject, such as:

- Energy consumption of transport has grown slightly slower than GDP;
- Increased share of road in freight transport;
- Absolute decoupling between freight transport and the economy. Relative decoupling of passenger transport and GDP;
- Road still takes the major share of infrastructure investment;
- Prices for road and rail transport services have grown faster than air transport;
- Growth in greenhouse gas emissions from transport has slowed down;
- Progress in reducing average CO2 emissions of new car fleet;
- The steady decrease of air pollutants accelerated in 2008;
- Deaths due to road accidents continue to fall.

In this context, it's relevant to highlight some main available documents and proposed orientations at European and National scales, especially by the European Commission and the National Government, to promote a more sustainable transport and mobility.

2.1. European guidelines for a more sustainable transport and mobility

The European Commission has a working axe totally focused on “Mobility and Transport”, where is possible to find some guiding documents that discuss concepts as “urban mobility” or “sustainable transport”. In these collection of documents it's possible to find some European trends or some proposed actions for national agents. Since 2000 there were

available some relevant documents, such as the White Paper ‘European transport policy for 2010: time to decide’ (2001); the Communication “Keep Europe moving – sustainable mobility for our continent” (2006); the Green Paper “Towards a new culture for urban mobility” (2007); the Communication “A sustainable future for transport: Towards an integrated, technologized and user friendly system” (2009); the Action Plan on Urban Mobility (2009); or the White Paper “Roadmap to a Single European Transport Area – Towards a competitive and resource efficient transport system” (2011), among others.

For example, the Green Paper “Towards a new culture for urban mobility” (2007) identify five main challenges and some possible actions. The challenges include: “Improve fluidity in towns”, “Reduce pollution”, “Intelligent urban transportation”, “Accessible transportation”, and “Safety and security”; and it’s stressed the need of an urban mobility culture that includes new means of education and training and the use of several financing options.

In 2009, it was published the “Action Plan on Urban Mobility” by the EC, organized in 6 themes and 20 actions, proposing short and medium-term practical actions in an integrated way to be launched progressively until 2012, implemented through existing EU programmes and instruments:

- Theme 1 — Promoting integrated policies
 - o Action 1 — Accelerating the take-up of sustainable urban mobility plans
 - o Action 2 — Sustainable urban mobility and regional policies
 - o Action 3 — Transport for healthy urban environments
- Theme 2 — Focusing on citizens
 - o Action 4 — Platform on passenger rights in urban public transport
 - o Action 5 — Improving accessibility for persons with reduced mobility
 - o Action 6 — Improving travel information
 - o Action 7 — Access to green zone
 - o Action 8 — Campaigns on sustainable mobility behavior
 - o Action 9 — Energy-efficient driving as part of driving education
- Theme 3 — Greening urban transport
 - o Action 10 — Research and demonstration projects for lower and zero emission vehicles
 - o Action 11 — Internet guide on clean and energy-efficient vehicles
 - o Action 12 — Study on urban aspects of the internalization of external costs
 - o Action 13 — Information exchange on urban pricing schemes
- Theme 4 — Strengthening funding
 - o Action 14 — Optimizing existing funding sources
 - o Action 15 — Analyzing the needs for future funding
- Theme 5 — Sharing experience and knowledge
 - o Action 16 — Upgrading data and statistics
 - o Action 17 — Setting up an urban mobility observatory
 - o Action 18 — Contributing to international dialogue and information exchange
- Theme 6 — Optimizing urban mobility
 - o Action 19 — Urban freight transport
 - o Action 20 — Intelligent transport systems (ITS) for urban mobility

Based on some guidelines promoted by the EC, is relevant to understand if the national and regional instruments pay attention to it in its own guidelines.

2.2. Portuguese guidelines at national and regional scales

Framed by SPOTIA Project, and considering two of the main policy instruments at national scale with impacts in the territory – PNPT and ENDS - it's relevant to understand, firstly, if there are any kind of objectives and actions to respond the "Transports and mobility" needs, and secondly, the link between the previous objectives or actions and the Sustainable Development principles for "Transport and Mobility" previously referred. it's possible to find several measures of both documents that promote the Sustainable Development objectives for "Transport and Mobility" (appendix 1), highlighting:

- The reinforce of "Economy efficiency" promoted through actions directed for passenger transport systems as the physical and logical tariff integration;
- There is suggested the regulation of the use of motorized vehicles or the promotion of environmental certification for public transport to "Protect the environment";
- The implementation of policies as "National Road Safety Plan" or new urban solutions could promote a "Liveable area, safety and health";
- For "Equity and social inclusion", the encouragement of plans for safety and inclusive mobility for all population are some examples;
- The investment in road network at several degrees of hierarchy, in the rail system or in logistic platforms in "Infrastructuration" domain will influence all the others spheres;
- At last, about "Planning and Policy instruments" it's possible to highlight some suggestions as the elaboration of Sustainable Urban Transport Plans, Intercities Mobility Plans, Metropolitan Transportation Plans; and, at the same time, are referred the relevance of link the mobility and accessibility planning with the urban planning through the Municipal Master Plans, for example.

In this reading, there are two fundamental ideas to remember:

- The first idea is that these two documents are guiding documents, don't having an associated execution neither an available budget, despite PNPT suggests a collection of actions identifying the main and complementary agents and the approximate budget to spend; However, these documents are central in the national planning system being the basis for all territorial planning instruments;

- The second idea is that the referred actions don't have only impact in this particular theme ("Transports and Mobility"), but in others as the Economy, Tourism, Social Equity, etc. In other hand, other kind of indirect measures could promote a more sustainable transport and mobility, for example, related with the equipment and services network management.

Considering now the main programmatic instruments at national scale, one of the three Thematic Operational Programmes for this cycle 2007-2013 - "Operational Programme of Territorial Enhancement" pay attention to the "Transport and Mobility" issues, especially focused on the highway system (eg. Contribute to the strengthening of the railway network interoperable with other integrated TEN-T, to enhance connectivity outside the territory; Contribute to the consolidation of urban rail systems, enhancing environmental gains), rail system (eg. Enhance connectivity of the territory through the completion of the main roads of the National Road Plan and the completion of the road network of the Lisbon Metropolitan Area) and port and maritime system (eg. Reorganization and strengthening of the maritime-port system and its articulation with logistics chains, Improve levels of efficiency and safety of maritime transport in the Azores archipelago, Contribute to the economic development of Madeira region through the construction or improvement of port infrastructure).

In other perspective, but maintaining the focus in the policy framework at national scale, there are identified some sectoral instruments, crossing areas among the "Transportation" and "Mobility", or among the "Infrastructures" and the "Services and Population". In this last package of sectoral instruments, there are highlighted with a direct perspective: "Strategic Plan for Transport – Sustainable Mobility – 2011-2015", "National Road Safety Strategy 2008-2015", and with indirect relations to society or environment spheres: "National Action Plan for Inclusion", "National Plan for the Promotion of accessibility", "Action Plan for Inclusion of People with Disabilities", "National Strategy on Disability", "National Action Plan for Energy Efficiency", "National Programme for climate Change", "Program for the National Emissions", or "Plans and programs to improve air quality in the region of Lisbon and Tagus Valley and Northern Region", among others (Figure 1).

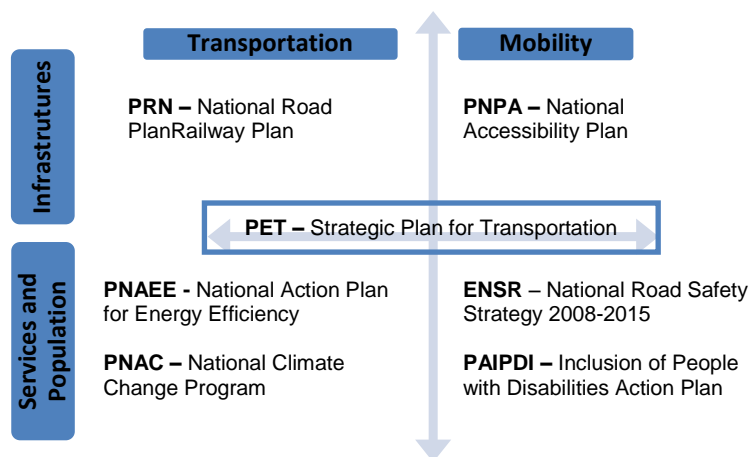


Figure 1 – Sectoral Portuguese planning instruments for “Transports and Mobility” theme

3. Links between the guiding and the implementation instruments for regional planning - Alentejo Region as case study

Alentejo Region is one of Portuguese NUT II, presenting 33% of the mainland Portugal area (more than 31.000 km²) and about 7,6% of the mainland Portugal residents (more than 757.000 residents in 2011, being 43% of urban population (INE, 2001)), composed by 58 municipalities, and presenting 20 cities in its urban system. To better know the needs of the regions, in appendix 2 it's possible to analyze the SWOT analysis and the challenges identified by the two regional planning documents in study – Alentejo Regional Operational Programme (QREN, 2007) and the Alentejo Regional Spatial Plan (CCDR, 2010).

However, the previous diagnosis is referred to the conception and made year of the documents, 2007. To overcome this delay between diagnosis and reality, Table 3 summarizes some of the concerns regarding the current trends of the spheres “Population and Education, “Housing”, “Land use” and “Economic activities and employment”.

Population and Education
Represents 7,2% of the resident population, 7,5% of classic families of Portugal and 7,5% of institutional families
Have the lowest population density comparing with the national average (24 vs 115 hab./Km ²)
Rejuvenating population pyramid, similar to national trend, having more elderly people (more than 65 years) than the national average
The number of young people (0-14 years) slightly decreases (- 4%) but the elderly people didn't increase exaggeratedly (only 5% when compared with the high national average – 19%)
The education levels are below the national average: is the region with the higher illiteracy rate (9,6% vs 5,2% on national average), have the higher proportion of “No level of education” (12,2% vs 8,5% on national average) and the prevalence is for people with the Basic education (1 st to 9 th grades) (total of 56,5%)
There is the region with lower number of university graduate (13% against 16% on national average)
Housing
Have about 11% of classic buildings

<p>Present the lowest alojamentos density comparing to the national average (15 vs 64 aloj/km²) Have 8% of total alojamentos, being the second region with the lowest percentage of non-classic alojamentos (15%) Is the region with the lowest percentage of collective alojamentos (12%)</p>
<p>Land use</p>
<p>Represents 34,3% of Portugal area In 2006, Alentejo Region represents 11,3% of the “Artificial surface”, 46,6% of the “Agricultural Areas” and 30% of “Forest and seminatural areas” of Portugal</p>
<p>Economic Activities and Employment</p>
<p>The Tertiary sector have a strong presence in the region, attracting 69% of the employed population, the Secondary sector have a proportion below the national average (22% vs 27%) and the Primary sector have a tenth of employed population (9,4%) The Unemployment Rate is slightly above the national average (12,8% vs 13,2% in Portugal) and there is higher among the Females than among the Males (13,9% vs 11,9%), an opposite trend comparing to national average Focus on establishments, stands up the activities in “Wholesale and retail trade, repair of motor vehicles and motorcycles” (27%), followed by the “Agriculture, livestock, hunting, forestry and fishing” establishments (17%), a lot higher than the national average (4%), the “Accommodation and food services” (10%) and the “Manufacturing industries” (9%)</p>

Table 3 – Some recent trends of Alentejo region. Sources: INE, 2011; CLC 2006; GEP, 2011.

In both of previously referred planning instruments - PROT and Regional OP – there are a few objectives related with the theme “Transports and Mobility”. In PROT Alentejo objectives, the only direct reference verses about the general accessibility system, including the transportation system, and its link with the urban system, with the main goal of promote a more sustainable mobility, and, at the same time, a more polycentric urban system and territorial equity. To respond to the previously objective and considering the framework of actions of the document, there are several proposed actions (see appendix 3)

In the Regional Operational Programme for Alentejo (2007, revised in 2011), it's possible to find three main objectives for “Transport and mobility”, that should be answered at the end of the 2007-2013 policy cycle through the approved and executed projects for Alentejo region, either as a territorial unit as a whole or in the various municipalities that composed the region. The three specific objectives in focus are:

- The first related with the airport system, and the relevance of reinforce the competitiveness of the Alentejo airport system in favor of the region's connectivity;
- The second is about the highway system and the objective of improve the articulation of regional road network;
- And the third objective is related with the accessibility, strengthening the territorial and population coverage of passenger's transportation services.

In this context, and attending to the approved projects since 2007 until March 2013 for Portugal (including both Thematic and Regional Operational Programmes) (Source: Portuguese NSRF 2007-2013), there is a unique Intervention Area that could frame the

previously referred objectives – “International connectivity, accessibility and mobility”, and two Types of Operation – “Territorial mobility” and “Transport Networks and Equipments”. This subject will be deeply explored in the next point.

3.1.A first approach to the approved projects framed by the NSRF 2007-2013 for “Transports and Mobility”

The analysis of the approved projects is the next step. In this case, still analyzing the approved projects framed by the Portuguese NSRF 2007-2013, there are counted a total of 563 projects included in “International connectivity, accessibility and mobility” Intervention Area for Mainland Portugal, being almost all categorized in “Territorial mobility” Type of Operation (counting 555 approved projects), against a very little number of projects of “Transport Networks and Equipments” Type of Operation (8 approved projects), these last all coming from the Territory Enhancement Operational Programme. The Region of Alentejo, through the respective Regional Operational Programme, presents 132 projects included in the “Territorial Mobility”, just below the North Region (199 approved projects) and Centro Region (with 196 approved projects).

Framed by SPOTIA Projects, all projects considered in this analysis were codified according three main domains in order to distinguish the basis of each project within the “Territorial Mobility” Type of Operation: “Infrastructure”, “Modernization of transport system” and “Sustainable mobility”. The characteristics of the region - population density and economic activities, environmental context, network infrastructures and equipment, etc. - promote different types of projects, not forgetting the current discussion of territorial policies in finding a balance between equity and efficiency. Some trends could be highlighted according to the approved projects for Alentejo region (see Table 4), specifically:

- There are 137 projects for Alentejo Region within this theme, majorly for “Infrastructure” domain (92%), and a few projects for “Sustainable mobility” (5%) and “Modernization of transport system” (3%);
- The Approved eligible investment and the Approved community fund, with a very similar distribution, reinforce the relevance of the domain “Infrastructure” (98% of each type of investment). This domain congregates more than 300 million euro of approved eligible investment and more than 267 million euro of approved Community fund.

Region / Domains	Approved projects		Approved Eligible Investment		Approved Community Fund	
	N°	%	Euros	%	Euros	%
Alentejo Region - Convergence objective						
Infrastructure	126	91,97%	300.304.123	97,82%	267.859.006	98,30%
Modernization of transport system	4	2,92%	2825634	0,92%	1369034,84	0,50%
Sustainable mobility	7	5,11%	3874071	1,26%	3275484,86	1,20%
TOTAL	137	100,00%	307003828	100,00%	272503525,5	100,00%

Table 4 – Approved projects, eligible investment and Community funds for Alentejo projects.

Source: NSRF 2007-2013 database, own treatment.

Analyzing the same package of approved projects for Alentejo region through the NSFR 2007-2013, there are highlighted three main promoters:

- The “Municipalities, associations of municipalities and municipal services” are strongly represented in the majority of these projects (95%), in the three previously referred domains (“Infrastructure”, “Modernization of transport system” and “Sustainable mobility”);
- The “Business sector”, where is included Port of Sines Administration, S.A. and Enterprise Development Beja Airport the with four projects, is present in “Infrastructure” and “Modernization of transport system” domains;
- The “Direct or indirect Central Government” focus its investments in three projects about “Infrastructure”.

Distinguish the dynamic among the urban and non-urban municipalities of Alentejo², more than 60% of the approved projects are in non-urban municipalities, corresponding to only 11% of the approved Community Fund of the region, 38% of projects are located in urban municipalities, attracting 60% of the approved Community Fund, and 1% of the projects don't have municipality identification but received 29% of the regional approved Community Fund.

3.2. Coherence among the instruments and the approved projects in Alentejo

After the previous analysis, it's relevant to understand if there is any coherence among the two regional territorial documents (PROT and OP), the execution of the Cohesion Policy 2007-2013, the type of projects, the number and the obtained funds; and the link to the

² Considered as urban municipalities those that comprise at least one city

starting diagnosis that framed the considered policies options (see Table 5). In this reading it's possible to highlight some main aspects:

- There is a great coherence among the regional planning instruments in analysis – the PROT and Regional OP for Alentejo, and the execution of policies through the NSRF 2007-2013 – for the referred objectives and suggested actions by the regional documents, there are approved projects that pretend to respond to them (although we cannot affirm that the projects executed respond to 100% of the objectives);
- There is a relevant coherence too among the regional diagnosis and the executed actions; however, it's too early to evaluate the impact of the executed actions in spheres as Economy, Environment or Social cohesion;
- In this theme, it's possible to identify some domains with a reduced number of projects but with a very high budget (eg. the port infrastructure development) against other domains with a great number of projects but with a smaller budget per project on average (eg. Road infrastructure);
- Related with the impact evaluation, it's possible to consider that the approved projects could be some impacts in other spheres beyond its own specification. For example, the interventions with touristic interest could be a positive trigger not only for the tourism, leveraging the main positive local aspects, as the natural and cultural heritage, the landscape and the water, but for enhance the quality of life of residents with leisure equipments and bikeways, the local economy and employment. The enhancing of the airport regional system could promote better trends on economy and tourism sectors; or even the promotion of the accessibility by road could have positive effects on community daily life to an easier and faster access to services and equipments, on local and regional economy and its links to other regions, as Lisbon or Algarve;
- Due to the national crisis conjuncture, some relevant axes for “Transport and mobility” were removed from the national priorities, with impact in the regional territorial policies. For example, the accessibility by rail, and especially the High Speed Train (TGV) was one of the mega-projects that lost its primacy in the context of the national policies and the priority on investment.

Orientations and Regional Policy Programming			Policy executions	
PROT Alentejo Proposed actions	OP Alentejo Specific objectives		Types of approved Project on NSRF 2007-2013 **	
1. Projects of Regional Economic Base System	Fisheries		Expansion of the Port of Sines, operating systems, supervision and safety	
		Diagnosis	Strengths: Complex of Sines (Sines port and industrial zone and Logistics) has unique physical conditions at the national level	
		TOTAL Approved Community Fund	14.389.677 euros / 2 projects *	
	Planning and Business Development			Expansion of the Port of Sines, operating systems, supervision and safety
		Diagnosis	Strengths: Complex of Sines (Sines port and industrial zone and Logistics) has unique physical conditions at the national level Opportunities: creation of logistics platforms of Sines and Elvas / Caia – possible economic development poles to attract enterprises and employment	
		TOTAL Approved Community Fund	14.389.677 euros *	
	Tourism			Interventions in the context of the Water Sports Center of Albufeira Maranhão Bikeways Improving access to points of interest
		Diagnosis	Opportunities: Excellent conditions for recreation and tourism, due to its environmental and patrimonial quality Challenge: Implement a model of sustainable tourism	
		TOTAL Approved Community Fund	4.258.010 euros / 12 projects	
2. Projects of Urban System and Support to Territorial Cohesion	Mobility plans			
	Transportation interfaces	Strengthen intra-regional mobility, by improving infrastructure and transport systems	Strengthen territorial and population coverage of passengers transportation services	Development of bus terminal Sustainable development of public transport
		Diagnosis	Weaknesses: The services of road transport collective show deficiencies (low frequency or lack of service), making universal access to community services / social (such as ensuring social and territorial cohesion).	
		TOTAL Approved Community Fund	956.116 euros / 4 projects	
3. Projects of Accessibility and International Connectivity System	Accessibility by road	Strengthen intra-regional mobility, by improving infrastructure and transport systems	Improve the articulation of regional road network	Huge number of projects for create or requalify the road network, especially municipal roads
		Diagnosis	Weaknesses: National Road Plan (PRN 2000) is needed to implement and / or conclusion on several axes of networks essential and complementary Strategic positioning in the Iberian Lisbon-Madrid corridor and hallways national Lisbon-Algarve and Central Algarve, and now have a fair coverage by the road network Opportunities: The proximity to LMA for enterprises installation Challenge: Enhancing the effect of major infrastructure (regional and national);	
		TOTAL Approved Community Fund	56.868.678 euros / 111 projects	
	Accessibility by rail			(1)

		Diagnosis	Opportunities: Construction of Lisbon-Madrid TGV with 2 stops – Évora and Elvas/Badajoz – economic development Opportunities: Railway from Sines port to Spanish border – port as the “entry of Europe” Weaknesses: The railway accessibility continue to show a structural weakness, not seen satisfactorily connect the major urban centers of the region, the rail service has been guided by the progressive abandonment of most lines and services Challenge: Enhancing the effect of major infrastructure (regional and national);	
Airport Infrastructure	Promote regional integration on national airport system		Reinforce of the competitiveness of the Alentejo airport system in favor of the region`s connectivity	Beja Airport - Construction equipment and ancillary facilities, and other buildings Municipal aerodrome Ponte de Sor - expansion of the maneuvering area and construction of hangars
	Diagnosis		Opportunities: Adaptation of Beja military base for the edification of future Beja Airport – touristic development, support to regional economy and production Challenge: Enhancing the effect of major infrastructure (regional and national);	
	TOTAL Approved Community Fund		17.064.051 euros / 5 projects	
Port Infrastructure				Expansion of the Port of Sines, operating systems, supervision and safety
	Diagnosis		Strengths: Complex of Sines (Sines port and industrial zone and Logistics) has unique physical conditions at the national level Challenge: Enhancing the effect of major infrastructure (regional and national);	
	TOTAL Approved Community Fund		14.389.677 euros / 2 projects *	

Table 5 – Coherence among the regional planning instruments.* The same typology and total approved Community Fund; ** Approved Projects considering all projects territorialized for Alentejo region (link to the Territorial Enhancement OP and Alentejo Regional OP). Diagnosis source: SWOT (Alentejo Regional OP), Challenges (PROT-Alentejo)

This first exercise it`s relevant for a future evaluation of the territorial policies and the coherence of the planning system, not only as basis for a result evaluation but, in a few more years, an impact evaluation of these same policies.

4. Final considerations

Although the concept of sustainable development is of utmost importance for the Cohesion Policy and for Territorial Policies of Portugal, not only by a top-down approach starting with the European Commission orientations, but also through a bottom-up logic, starting from the municipalities and regions, the truth is that the application of this concept in Convergence regions, regions with some limitations and problems in the spheres of economy, society and environment, as the case of the Alentejo, is still limited. In this specific case, it was observed that the regional documents in study absorbed the concept of Sustainable Development in

their main objectives, but analyzing the execution of the regional policies, through the Cohesion Policy 2007-2013, a large share of the budget is allocated to the construction or rehabilitation of infrastructure, especially road networks, and very little in the projects of innovative solutions for mobility and transport, for example by adapting the fleets of public transport or bikeways. In the other hand, it is understandable that a less competitive region seeks to develop the infrastructures that could promote its economy or its position in national and even European network. This is the case of Alentejo region and investment in port infrastructure that would become more competitive as a "gateway" to the country and to Europe. The same perspective could have the investment in road network, promoting a better quality of life for the residents and better conditions for the economy.

The characteristics and policies of convergence regions may be one of the reasons for this mismatch among the several levels of policies –european, national and regional, since the logic of cohesion has been beneficating infrastructuration while sustainable development look for adapt existing infrastructures and make it more efficient through innovative actions. In the Portuguese case, enlarged by an economic recessive context, current cohesion policies have been affected particularly sensitive regions such as Alentejo, where the recessive population framework, the rationalization of services and the infrastructure investments affect regional economy, population and environment spheres of the desired sustainable development. One representative example is the “end” of the High Speed Train planning network that would link the region and the country of Spain and Europe.

However, despite the majority of the approved projects by NSRF 2007-2013 are concentrated on infrastructures and are promoted by the municipalities or transportation business sector; there are other kind of options and partnership that could develop the proposed objectives by the Regional, National and European plans and orientations. For example, the Portuguese Environment Agency in partnership with other governmental institutions (as the Institute for Mobility and Land Transport (MOPTC) and National Road Safety Authority (MAI)), university`s research centers and municipalities developed a project in 2006 with the main goal of elaborate Sustainable Mobility Plans for 40 municipalities, among them were seven projects of Alentejo`s municipalities.

Concluding, for a low density region as Alentejo, framed by the Convergence objective in European Cohesion Policy the balance between equity and efficiency is still open. There are difficulties to promote the sustainable development guidelines for transport and mobility, through innovative initiatives, when the basis networks are not fully adapted to the region

reality either by their absence in certain areas, either by their poor condition. Only after meet the minimum levels of service to all population and area, it can enhance their efficiency.

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Appendix 1

	PNPOT - Measures	ENDS – References actions
Economic efficiency	<ul style="list-style-type: none"> Review the institutional design of transport in metropolitan areas Integrating the financial dimension of transport systems and mobility in municipal and inter-municipal planning Launch programs to fully integrate physical and logical tariff systems, passenger transport 	<ul style="list-style-type: none"> Launching programs to fully integrate physical and logical tariff systems of passenger transport
Protection of the environment	<ul style="list-style-type: none"> Develop sustainable urban transport plans Regulating the use of vehicles in urban areas, Promote environmental certification of public transport companies of goods Review the institutional design of transport in metropolitan areas Implement a Metropolitan Transportation Policy on the mainland 	<ul style="list-style-type: none"> Adoption of a program of financial incentives for public transport operators (...) with the aim of in 2013 could make the use of vehicles with hybrid or electric engine, or using cleaner fuels Policies and measures to reduce emissions of greenhouse gases (GHGs) - expansion of the Lisbon subway, the Metro do Porto, increasing energy efficiency in vehicles and promotion of alternative fuels.
Liveable area, safety and health	<ul style="list-style-type: none"> Implement a Metropolitan Transportation Policy on the mainland, Implement the National Road Safety Plan 	<ul style="list-style-type: none"> Promotion of pilot projects demonstrating new urban solutions – ex. in mobility
Contribution to economic growth		
Equity and social inclusion	<ul style="list-style-type: none"> Encourage the creation of integrated transport systems that ensure, in rural and urban areas, accessibility to educational establishments including by students with special needs in mobility Integrate in plans for road infrastructure, the issues of transport safety and mobility for all segments of the population, encouraging accessible transportation 	<ul style="list-style-type: none"> Enforce in Infrastructure Roads Plans the integration of mobility issues for all segments of the population
Infrastructura tion	<ul style="list-style-type: none"> Promoting investment in the joint between the top-level road network and the lower hierarchy of networks Launch programs to fully integrate physical and logical tariff systems, passenger transport Building the New Lisbon Airport Ensure the planning of High Speed Rail Network 	<ul style="list-style-type: none"> ongoing investment in infrastructure mode of transportation and light rail Investment in the interfaces of public transport in Lisbon and Porto Construction of logistics platforms in the Metropolitan Areas Construction of a new high speed railway line between Lisbon and Porto, articulating with the conventional network
Planning and Policy instruments	<ul style="list-style-type: none"> Develop sustainable urban transport plans Review the institutional design of transport in metropolitan areas Restrict the government's support for the complementation of stations trucking interfaces Review the National Road Plan Promote the development of intercity mobility plans Review the legal framework (...) between the development of new housing developments and the transport system Ensure the review of the Municipal Master Plans, in conjunction with the preparation of Municipal Mobility Plan Implement the National Road Safety Plan 	<ul style="list-style-type: none"> Implement a Metropolitan Transportation Policy on the mainland Ensure that the review of the Municipal Master Plans networks of transport and mobility, taking into consideration the Mobility Plans of persons and goods, are considered key elements in the processes of redefinition of land use Development of plans for metropolitan transport and mobility of people and goods and consolidation of the powers of Metropolitan Transport Authorities in Lisbon and Porto

Identification of Measures from PNPOT (DGOTDU, 2007) and References actions from ENDS (APA, 2007)

Appendix 2

Source: OP Alentejo	Strengths
	<ul style="list-style-type: none"> - Rich natural heritage, based on extensive and relevant nature conservation areas (protected areas, Natura 2000 Special Protection Areas, ...) in a coastal among the best preserved in Europe and in forest ecosystems of Mediterranean character - Strong cultural identity, based on tangible and intangible heritage elements of high character and uniqueness: from historical centers and clusters typical (Evora UNESCO world heritage site, historic towns and villages), the archaeological sites, through the castles and fortifications, the traditions (the "sing", ...), gastronomy, crafts, among others. - The region is generally well ordered, and the predominant use of space adjusted to the characteristics of the territory - Strategic positioning in the Iberian Lisbon-Madrid corridor and hallways national Lisbon-Algarve and Central Algarve, and now have a fair coverage by the road network -Complex of Sines (Sines port and industrial zone and Logistics) has unique physical conditions at the national level - The agro-forestry sector presents important developments question, particularly with investments in Venture Multi Purpose alqueva (EFMA) and the reorganization of land - Within the agri-food there is a wide range of products of recognized quality, many with names protected, with a strong reputation in the domestic market - Leading national cork production in a country that leads the world market in this product, there are already some investments linked to transformation in the region itself - Holds considerable reserves of natural stone (marble, granite, schist bags) of commercial value, as well as a major European reserves of metal ores (polymetallic sulphides) - The profile of productive specialization of the region has been diversifying in recent years with the introduction of industries medium / high-tech industries such as automotive components, manufacture of electronic components and aerospace - Multifaceted mosaic of tourism resources, marked the uniqueness and authenticity, allowing sustainable tourism development and diversified products and motivations - Indicators of well-being and social cohesion experienced a significant qualitative leap, with good coverage of social / collective in the regional territory
	Weaknesses
	<ul style="list-style-type: none"> - Historical centers of cities in need of urban regeneration, associated with the loss of the economic and housing growth disqualified from the suburbs, where scarce public facilities, employment and urban functions - Urban system in the region weak: few major cities have interrelationships and a lack of complementarity in the provision of collective goods and services - The phenomenon of depopulation of smaller clusters (villages and places) due to dynamics of displacement to larger towns - National Road Plan (PRN 2000) is needed to implement and / or conclusion on several axes of networks essential and complementary - The railway accessibility continue to show a structural weakness, not seen satisfactorily connect the major urban centers of the region, the rail service has been guided by the progressive abandonment of most lines and services - The services of road transport collective show deficiencies (low frequency or lack of service), making universal access to community services / social (such as ensuring social and territorial cohesion). - Difficulty "chronic" and trigger and sustain a process of real convergence with the country and Europe, based on the competitiveness of the regional economy in terms of intra-regional - Reduced "business density" patent incipient levels of membership / business cooperation, and the lack of services to support the development and innovation of economic - Employment, public administration has a higher relative weight in the region compared to the national average, - Opening of the regional economy to international trade flows is less than the national average; - Economic fabric denotes a reduced allocation of resources (financial and human) for research and development, higher education being the main performer of R & D in the region - Entrepreneurship, measured by the creation of new businesses, is below the national average - Cooperation and partnership between companies is relatively incipient Most companies do not dominate the value chain of your sector / cluster - Is notorious one poor enjoyment and promotion of the natural heritage of the region

	<ul style="list-style-type: none"> - Portuguese region of lower density -The aging index region is much higher than the national average, - The qualifications of the population in the region are lower than the average parameters of the country, the level of school failure are high (above the national average), there is some difficulty in accessibility to educational facilities for secondary and higher education, motivated by geographical isolation of populations school - The lowest rate of activity in the regions of the continent, the region of Portugal with the highest unemployment rate, the female unemployment rate is the highest in the country, unemployment is equally impressive with the younger (15-24 years) - The provision of health services has notable shortcomings, either in manpower or infrastructure
	Opportunities
	<ul style="list-style-type: none"> - The development of Multipurpose Alqueva Project enhances the multifunctionality of rural areas through the agri-food, energy, tourism, culture and heritage - Construction of Lisbon-Madrid TGV with 2 stops – Évora and Elvas/Badajoz – economic development - Rail way from Sines port to Spanish border – port as the “entry of Europe” - creation of logistics platforms of Sines and Elvas / Caia – possible economic development poles to attract enterprises and employment - The proximity to LMA for enterprises installation - Adaptation of Beja military base for the edification of future Beja Airport – touristic development, support to regional economy and production - Natural conditions favorable to the production of renewable and alternative energy - Excellent conditions for recreation and tourism, due to its environmental and patrimonial quality
	Threats
	<ul style="list-style-type: none"> - Intense depopulation in rural areas - contributes to the worsening of the urban-rural contrast, leads to the disappearance of smaller settlements, rural abandonment and loss of identity of the countryside - extremely sensitive to the effects of climate change (drought, flood, ...) - environmental risks linked to forest fires and environmental liabilities (arising from mining and manufacturing), which may jeopardize the sustainability of landscapes and public health and safety - Some of the major regional productions face strong international competition – eg. ornamental, wine, cork
	Challenges
Source: PROT Alentejo	<ul style="list-style-type: none"> a) To promote economic growth and employment; b) Halting the loss and demographic qualify and attract human resources; c) Consolidate the urban system and develop a new urban-rural relationship; d) Ensuring adequate levels of territorial cohesion; e) Enhance and preserve the natural, scenic and cultural; f) Implement a model of sustainable tourism; g) Enhancing the effect of major infrastructure (regional and national); h) Create scale and strengthen relations with the outside; i) Combating desertification processes.

SWOT analysis (Source: QREN, 2011); Challenges (Source: CCDR-Alentejo, 2010)

Appendix 3

1. Projects of Regional Economic Base System

▪ “Fisheries”

- Improve the conditions of the fishing port of Sines (expand terrestrial and marine infrastructures);
- Create the port infrastructure at intermediate level to support fishing in Vila Nova de Milfontes, complementarily to Sines;
- Continue and intensify the improvement of infrastructure support fishing activity in the nuclei existing traditional (Carrasqueira St. André, Porto Covo, Almogrove, Azenhas do Mar).

▪ “Planning and Business Development”

- Build logistics platforms: Sines, Elvas and Beja.

▪ “Tourism”

- Develop and qualify the port infrastructure to support the boating activity on the Alentejo coast the following equipment / support structures: Marina Sines and Troy, marina Vila Nova de Milfontes (this in conjunction with the port infrastructure of fishing) and small coasts fishery.
- Develop and implement plans for pedestrian, equestrian and bike lanes at regional, sub-regional, and urban district council, with a view to creating a regional network of Ecopistas

5. Projects of Urban System and Support to Territorial Cohesion

▪ “Mobility” referring the mobility plans and the transportation interfaces

- Studies/plans for intermunicipality mobility, including setting network transport interfaces.
- Implement a network transport interfaces that serve adequately the urban network in the region

3. Projects of Accessibility and International Connectivity System

▪ “Accessibility by road”, through the construction or requalification

- National corridors - Corridor Longitudinal Interior (IP2): A23 - Estremoz (com variante de Estremoz), Évora - São Manços, Vidigueira - Beja-Castro Verde-A2; Corridor Sines - Ficalho (IP8): Sines - IP1, IP1 - Beja e Beja – Ficalho; Corridor Sines - Évora (IC 33), Corridor Portalegre - Almeirim (IC13 / IC9)
- Regional corridors - Litoral Corridor: Alcácer - Sines, Sines - Odeceixe (IC4), South Corridor: Odemira – Ourique - Castro Verde, Castro Verde – Pomarão, Beja - Alcoutim Corridor (IC27), Frontier Corridor - Vila Viçosa – Mértola, Corridor Joint Border: Portel - Barrancos, São Manços – Reguengos; Corridor New Lisbon Airport - Galegos (Marvão): Ponte de Sôr - Coruche, Portalegre – Galegos; Corridor Ponte de Sôr – Elvas; Corridor Portalegre – Campo Maior – Elvas e Campo Maior-fronteira); Corridor Montemor-o-Novo – Almeirim, Corridor Évora – Montargil;
- Another road infrastructures - Variants of the Central Corridor road: road construction variants to Vendas Novas and Montemor-o-Novo

▪ “Accessibility by rail”

- Establishment of links the port of Sines to platforms of the National Logistics Platforms and establishment of a faster connection to Spain;
- Variant Train to Alcácer do Sal - Variant with about 29 km south from the top station of Pinheiro and 94 km South of the line;
- Study of Urban Areas Adjacent to Station of High Velocity of Evora - Assessment of area of influence resulting from the implementation of a high speed train in the area of Évora in terms of urban mobility and economic activities;
- Study of Urban Areas Adjacent to the International Station of High Velocity of Caia / Badajoz - Assessment of area of influence resulting from the implementation of a high speed train in the area of Elvas in terms of urban mobility and economic activities;
- High Speed Line Lisbon - Caia (variant Poceirão - Caia) - Integrated Project on priority axe Lisbon-Madrid, for mixed traffic

▪ “Airport Infrastructure”

- Beja Airport - Construction of Civil Terminal and support Building, facilities and equipment accessories
- Construction of local airfield

▪ “Port Infrastructure”

- Sines Port – Reinforce the Sines Commercial Port infrastructures: Terminal XXI and liquid bulk Terminal