Cohesion Fund – contribution towards a green economy

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Abstract

Since 1993 the cohesion fund has contributed significantly to social and economic cohesion in Portugal, namely through positively impacting on the wealth the country generates. The Fund established by the UE in 1993 contributed to 250 major projects that included, in the Transport Sector, Motorways, Airports and Harbours, Railways and Underground Railways, and in the Environmental Sector, Water Treatment and Supply, Wastewater Treatment and Urban Solid Waste Treatment. The final evaluation of the contribution of the Cohesion Fund to the Portuguese Society (in which the authors participated) was carried out in 2006-2007 under the auspicious of the Portuguese Authorities (Ministry of the Environment, Spatial Planning and Regional Development) and emphasized the importance of the infrastructures built, and above all, the pertinence of the choices made and its contribution to a sustainable development. The total investment was up to 9,000 M€ and the environmental sectors results were clearly the most successful, whereas the transport sector presented mixed results, namely, because of the external costs that CF could generate as far as urban development is concerned.

1. Introduction

The Green Economy Initiative, led by United Nations Environmental Program (UNEP, 2010), was designed to assist governments and other decision-makers to reshape and refocus policies investments, and public spending towards low-carbon and environmentally-friendly sectors such as clean technologies, renewable energies, agriculture and waste management, while sustainably using and preserving natural assets such as the planet's ecosystems or soil.

In a different context, the European Union's Cohesion Fund (CF) was established in 1993 (following the Maastrich Treaty) for the purpose of strengthening the economic and social cohesion of the Community in the interests of promoting sustainable development (Council of the European Union, 2006a, p. 25). Assistance from the CF shall be given to projects and actions in the following areas: (a) trans-European transport networks and (b) the environment within the priorities assigned to the Community environmental protection policy under the policy and action programme on the environment.

In the last case, the CF may also intervene in areas related to sustainable development which clearly present environmental benefits, namely energy efficiency

and renewable energy and, in the transport sector outside the trans-European networks, rail, river and sea transport, intermodal transport systems and their interoperability, management of road, sea and air traffic, clean urban transport and public transport (Council of the European Union, 2006a, p. 26).

The Member States eligible for funding from the Cohesion Fund are those whose Gross National Income (GNI) *per capita*, measured in purchasing power parities, is less than 90 % of the average GNI of the European Union (Council of the European Union, 2006, p. 37).

Originally (1993), only Greece, Ireland, Spain and Portugal are covered by the CF whose co-financing rate could be up to 85% of the total public expenditure. Since May 2004, the FC covers also the 10 new Member States of EU-25. In Portugal, the CF leveraged a total investment up to 8,999.5 M€ since 1993, co-financed by that fund in 6,307.9 M€ (cf. Table 1). The distribution of the funding between Transport and Environmental sectors was approximately 50%-50%.

Table 1 – Total expenditure and Cohesion Fund co-financing: Portugal (1993-2006)

Period	**Total Expenditure (M€)**	**CF Co-financing (M€)**
1993-1999 (CF I)	4,365.3	2,990.8
2000-2006 (CF II)	4,634.2	3,317.1
Total	**8,999.5**	**6,307.9**

Source: IFDR (2010)

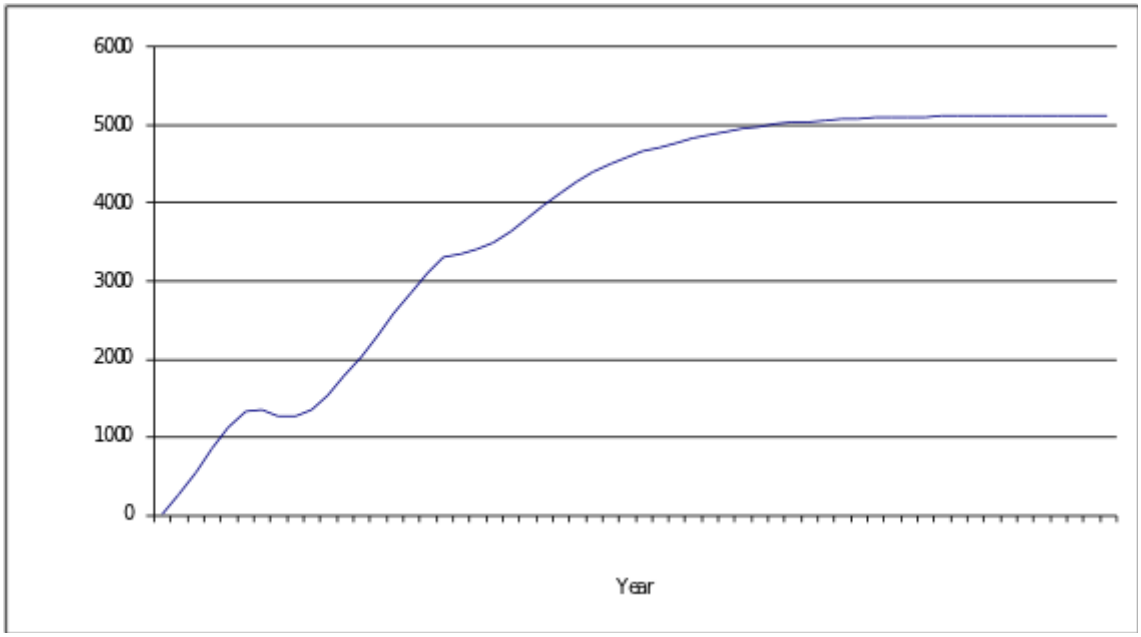
Despite their different nature, CF and The Green Economy Initiative shares the same goal of promoting sustainable development, namely, by supporting the *Environmental Sector* (including water treatment and supply, sewerage networks, wastewater treatment and urban solid waste treatment) and more environmental-friendly transport systems and infrastructures, specially since 2007 (Council of the European Union, 2006a).

In particular, the final evaluation of the application of the CF in Portugal during the 1993-2006 period (NEMUS, CISED & CIDEC, 2007) suggests a overall positive impact in several variables (cf. § 2). Nevertheless, the CF and other instrument which finance infrastructures such as the European Regional Development Fund (ERDF) could generate some inefficiencies, namely, in territorial development (cf. § 3).

2. Main benefits: the Portuguese experience

The CF has been contributing significantly to social and economic cohesion in Portugal, namely through positively impacting on the wealth the country generates. In fact, in the long run, it is estimated a positive impact on the Gross Domestic Product (GDP) of over 5,000 M€, at 1995 prices and considering a discount rate of 3% (cf. Figure 1). This sum is the equivalent to nearly 6% of the 1995 Portuguese GDP.

The CF's effects in direct employment creation are temporary, as is also the case with the remaining incentives to infrastructure construction, *e.g.* co-financed by the ERDF. Therefore, no significant direct effects are expected in the long run in this matter. However, by 2015, CF's cumulative effects on employment are expected to remain significant still. More precisely, over 50 thousand workplaces would be created and/or maintained in Portugal as a direct result of public investments associated with the CF by 2011.



Source: IFRD (2010)

Figure 1 – Long-term impact of the total expenditure leveraged by the CF 1993-2006 on Portuguese GDP (constant prices of 1995; 3% discount rate)

The CF has also been playing a key role in the implementation of the relevant sectoral policies as well as in improving the populations' quality of life, fostering the implementation of the trans-European transport network and the Community Directives on the Environment, although the goals established for the sectors have not been accomplished in full in either of the two programming periods evaluated, 1993-1999 and 2000-2006 (NEMUS, CISED & CIDEC, 2007).

In particular, Portugal has already consolidated its water supply infrastructures, which now serve the entire territory in almost absolute terms. The current Portuguese standing, thus, is not so different from that of the remaining Member States. However, the bulk system is generally more developed and conserved than the retail system, with the latter one having greater investment needs for the period 2007-2013.

Portugal does not rate so good in the sewage and wastewater treatment subsector when benchmarked against the previous subsector (more so with regard to the Azores, Madeira and Mainland North regions). The advent of integrated multimunicipal systems has boosted bulk operations, but there are, nevertheless, cases where interception and treatment facilities are in place but collection networks have not been catered for and situations where investment has gone into retail systems previous to completion of bulk facilities that would enable treatment processes.

With the investments co-financed by the CF till 2008, a service level of 80% is expected to be attained; this will be major progress in view of the baseline values registered prior to CF implementation (sewerage networks connection rates of 69.2% and 49.9% with adequate service level – population served by Wastewater Treatment Plant), but, even so, far from the envisaged targets for 2000-2006 (90%).

As far as urban solid waste treatment is concerned, there has been a major progression, with current collection service level of 100% (in contrast to 41% in 1991). However, the current state of affairs shows that not all of the goals traced for the sector have been met by the 2000-2006 programming closure: (i) the planned evolution toward

Urban Waste Technical Confinement Plants has not been effected, and furthermore, 63% of waste produced have been deposited in sanitary landfills, clearly in excess of the 23% national target; (ii) waste incineration presents a result closely nearing on the target; (iii) biodegradable waste valuation accounts for only 7% of all solid waste and not the 25% targeted; (iv) recycling ranks far below the 25% established mark; (v) estimated reduction in overall urban solid waste growth rate has not occurred (5% decrease to 1995), in spite of relevant numbers for 2005 being inferior to the 3% forecast for 2000.

The accelerated development of the Portuguese road networks stands also as a clear success throughout the period analyzed, with Community resources including the CF having quite a significant part in the matter. Portugal's success in stepping up to EU's average rates for road traffic casualties and in developing its road network (which now has a motorway density higher than the EU average) is undeniable.

In contrast, numbers for the modal split passenger/freight transport over the 1993-2006 period yield a change for the worst regarding the imbalance verified in 1993. As a matter of fact, in a context where rail and sea alternatives suffered from low competitiveness level, as faced by roads, and where it was necessary to counteract that trend, what has ultimately occurred is that the pre-existing imbalance has not been successfully handled, which in any case has also happened generally in other Member States, especially in passenger transport.

3. External costs

Urban sprawl, that is, the excessive spatial growth of the cities is typically associated with traffic congestion and air pollution (Brueckner, 2000, pp. 160-161). Additionally, environmental and aesthetic benefits related with open space and farmland may be loss. Suburbanization could also contribute for the decay of central areas and to reduce social interaction. Despite the benefits illustrated by the Portuguese experience, the CF could stimulate these phenomena by co-financing roads, water supply, sewage and other urban infrastructures, namely, in the border of the major urban areas.

In fact, the investment in motorways and other transportation infrastructures is a well-known cause of the natural and excessive spatial growth of cities (Mieszkowski & Mills, 1993). In particular, the CF was mobilized in order to complete Lisbon's network of metropolitan motorways originally planned in 1964 (*e.g.* A9/CREL, IP7/North-South Axis, IC17/CRIL). These investments reduced significantly the traffic congestion (from 80's levels) and make travel faster between Lisbon and its suburbs, reducing commuting costs and stimulating new housing development and job suburbanization, namely, in the form of *edge cities* (*e.g.* Tagus Park, Oeiras).

Additionally, the high co-financing rates associated with the CF (as compared with the ERDF ones) reinforces the market failure to fully account for the infrastructures costs of new urban development (Brueckner, 2000, pp. 166-167). In general, the infrastructure-related tax burden on developers and new homeowners is less than actual infrastructure costs they generate. By reducing the average cost of provision of roads or sewerage networks rather than stimulating the application of development or property taxes that levies the marginal cost of these infrastructures, the CF could reinforce the natural causes of suburbanization in less developed European countries.

The CF may be also related with the so-called «Blue Banana» phenomena. In fact, massive public investment in trans-European transport networks, namely in the form of high-speed train lines, stimulates the formation of "mega-city-regions" (Hall, 2003, p.

235). In several European countries, this kind of infrastructures already generates "discontinuous corridors or axes of urbanization" in the form of "clusters of urban developments, at intervals, around train stations and key motorway interchanges that offer exceptionally good accessibility" (Hall, 2003, pp. 228, 234).

4. Main conclusions and policy implications

The CF joint financed investments between 1993 and 2006 have been crucial for improving the populations' quality of life and modernizing Portugal. By supporting directly the *Environmental Sector*, it contributes also to a greener economy.

The emphasis laid in road and environmental infrastructures in major urban areas, during the first programming period (1993-1999), has produced the anticipated effects, contributing to the relative ease of present day circulation in Mainland Portugal as well as a highly favorable progress in terms of environmental service and coverage levels, especially as regards the water supply, wastewater treatment and solid waste treatment and deposition subsectors.

Additionally, the Community Added Value of co-financing, namely in terms of reinforcing internal social and economic cohesion, is self-evident, towards which case should certainly have contributed significant macroeconomic effects on the GDP and employment.

Despite its economic and environmental benefits, the CF could generate some negative external effects, namely, related with excessive expansion of cities and urban regions. These potential impacts are mainly related with the funding of metropolitan motorways, environmental infrastructures and high-speed train lines – the last ones, to be implemented in Portugal during the 2007-2013 CF's programming period (CSF III Observatory, 2007).

So, in order to assure the overall efficiency of its application, the CF must be complemented with other fiscal policies. In particular, development taxes on housing developers must be applied in order to avoid urban sprawl and/or the development of discontinuous axes of urbanization. Ideally, these taxes must capture the marginal cost of new infrastructures instead of the average cost which would be undervalued by the CF, the ERDF and other public funding, and they should assume an "impact fee" with lump-sum fashion (Brueckner, 2000, pp. 166-167).

Alternatively, the external effects of CF on urban development could be efficiently mitigated by the use of urban growth boundaries – UGB (Brueckner, 2000, pp. 167-168) (Bento, Franco & Kaffine, 2006, p. 135), namely, around motorway, airports and peripheral areas directly served by environmental infrastructures, specially sewage and water supply plants and networks, and other infrastructures co-financed by the CF, including high-speed train stations.

Additionally, the Portuguese 1993-2006 experience suggests the need for a greater articulation between CF's and ERDF's funding. As result from this evidence, since 2007 these two EU's funds are being allocated through a single operational programme (Territorial Competitiveness OP) as far as the Portuguese National Strategic Reference Framework 2007-2013 is concerned (CSF III Observatory, 2007).

In particular, a greater emphasis should be done as far as intermodal transport systems and clean urban transport are concerned in order to contribute towards a green economy.

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