

**HOW TO PROMOTE SUSTAINABLE LAND-USE CHANGES THROUGH
DEVELOPING INTERMODAL HIGH-SPEED RAILWAY STATIONS: a case study
in Portugal**

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Abstract

The literature shows that the development of the railway system in most European countries had a key role both in the evolution of urban systems and regional dynamics. On the other hand, it can be said that railway stations might act as important drivers for promoting sustainable land-use changes, namely if node and place functions can be consistently balanced.

The Portuguese High-Speed Railway (HSR) project is as a major strategic transport scheme at both the Iberian and national levels. Its first stage comprises three routes. Of these, one links the Lisbon Metropolitan Area with the Spanish border of Badajoz, being an integral part of the HSR between both Iberian capitals, whereas the other two form the Atlantic Axis, encompassing a system of cities ranging from Lisbon to Porto, and from the latter point to Braga, Vigo and Coruña, concentrating nearly 80% of the whole Portuguese population, and serving an area generating about 90% of Portugal's GDP.

The Lisbon to Porto HSR will be a 292 Km-long standard-gauge (1435mm) corridor, supplementing an historic and congested 146-years old main railway line. The new HSR line is expected to open by 2015, and will feature a limited number of intermediate stations, enabling an easy interchange with other transport modes, namely with the broad-gauge (1668mm) conventional rail network.

The future intermodal "Leiria-AV" HSR station, one of the four intermediate railway stations within the Lisbon – Porto line, will be located between the neighbour cities of Leiria (circa 42.785 inh. in 2004) and Marinha Grande (38.599 inh. in 2008), in the industrial zone of Barosa, at around 140 Km North of Lisbon Metropolitan Area (LMA). This new intermodal HSR station is expected to function as a major regional interchange, by providing access to various urban centres, with support on both the tangential Western main railway line, and the A8 motorway. One can say that the foreseen centrality, which will be at a 30 minutes travel time from LMA, will be an opportunity to integrate railway development, activity location and spatial planning both at the regional and local levels, aiming at sustainable patterns of development.

The work presented in this paper is part of a broader research project on the topic “High Speed Railway in Portugal: Impacts and Intermodality within the Leiria Region” which covers a wide range of HSR impacts. The questions addressed in this research are as follows:

- What are the potential territorial implications of the HSR network in the region of the “Leiria-AV”?
- How to promote sustainable land use and transport changes using the new intermodal HSR station as (local and regional) development anchor?
- How to balance expected HSR impacts if the aim is to achieve both sustainable and healthier communities along with maximizing economic and other potential positive impacts?

The research methodology will comprise two major steps: i) a benchmarking exercise of other reference cities in Europe where HSR was already implemented, such that a list of potential impacts can be now anticipated for the case of the intermediate city of Leiria; ii) the implementation of an attitudinal and stated choice survey to a representative sample of economic agents and other stakeholders that will assess individuals’ (local communities) and group (firms) perceptions regarding the impacts of the HSR project and specific intermodal scenarios set for promoting sustainable land use or transport mode changes. Effective and perceived impacts will be then critically evaluated.

Research results are expected to contribute towards future policy formulation with respect to railway and land use developments both at the community and regional level aiming at achieving sustainable patterns of development.