

# Country Report: Portugal

## Introduction

This report has been written as a part of the Europe INNOVA Cluster Mapping Project. One part of the project is a mapping of cluster policies, cluster institutions and cluster programmes in European Countries.

For each country, a separate report has been written. Oxford Research AS in Norway has been responsible for the mapping of cluster policies. Oxford Research has developed the structure of the mapping and prepared the final reports. Most of the work has however been done by research institutes or consultancies in the different countries. These organisations are members of “The European Network for Social and Economic Research – ENSR” or partners in the Europe INNOVA Cluster Mapping Project.

Based on the national reports, the main findings have been summarised by Oxford Research in a separate report.

The Europe INNOVA Cluster Mapping Project has been financed by the European Commission. The views expressed in this report, as well as the information included in it, do however not necessarily reflect the opinion or position of the European Commission and in no way commits the institution.

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Please find more information about the Cluster Mapping Project and the Authors of this report on:

[www.clusterobservatory.eu](http://www.clusterobservatory.eu)

[www.oxfordresearch.eu](http://www.oxfordresearch.eu)

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Main ministries responsible for implementing cluster policy	Finance/ Economy	Science/ Research	Trade/ Industry	Interior	Other
	x				
Key agencies responsible for implementing cluster policy	The Ministry of Economy, IAPMEI, The SME Institute, The Directorate General of Enterprise				
	Is cluster policy their only task?	Yes		No	x

Are there any national cluster programmes?	Yes	x	No		Number of programmes	4
Are there any regional cluster programmes?	Yes		No	x		

Source of financing	National programmes	Regional programmes
National ministries	x	
EU structural fund	x	
Regional budget		
Business	x	
Other		

Importance of cluster policy		Low	Medium	High
	National level			x
Regional level		x		
Policy papers on national level	Yes	x	No	
Cluster policy over time	Increased importance		Reduced importance	Shifted
				x
Since when has cluster policy been used?	1990-95	1995-2000	2000-05	2005-
				x
Cluster development related to a particular person/organization?	Yes		No	x
	Individual		Business org.	
	Political party		Agency	
	Research inst.			
Successful cluster programmes				

Is there a cluster or competitive council?	Yes	No	A general council exists	
		x		
Degree of obstacles when building cluster policy	No/Low	Medium	Important	
		x		
General assessments of competitiveness?	Yes	x	No	

Role of clusters as framework in policy areas	Low	Medium	High
Business network policy		x	
FDI attraction policy		x	
Export promotion policy		x	
Sectoral industry policy		x	
Science and education policy			x
Competition and market integration		x	

Source: Oxford Research

## 1. Terminology

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In each country there will be one or possibly several **terms** or **phrases** used to describe clusters. In some cases, different terms represent “competing” perspectives on clusters and, as perspectives change over time, one term may gradually replace another.

In Portuguese a cluster is called “cacho” or “aglomerado”.

## 2. Cluster development programmes and cluster organisations

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In many countries, there are **programmes** set up specifically to promote cluster development. Such programmes can be carried out by existing **actors** (for example a government agency), or new actors can be set up to run them. Often, one of the purposes of such programmes is to help initiate **cluster organisations**, that is, the programme provides financing or otherwise promotes the formation of cluster-specific organisations, typically in some form of public-private partnership. A country can have many (even hundreds) of such cluster-level organisations in operation.

Below is an identification of both cluster agencies and cluster programmes at national and regional level in Portugal

Though some statutory responsibilities concerning clusters (“to contribute to the identification and development of economic clusters...”) are assigned to the Directorate General of Enterprise<sup>(1)</sup>, an organisational unit of the Ministry of Economy, the main responsibility for development policies concerning the promotion of economic clusters in Portugal lies with the Ministry of Economy itself. All major governmental initiatives regarding the promotion of the clusters in Portugal were defined by this Ministry and implemented throughout various agencies and organisations of the same Ministry. More recently<sup>(2)</sup>, one of the ongoing programmes is being implemented with the participation of other ministries: the “maritime cluster” policy is coordinated by an interdepartmental commission (led by the Ministry of Defence, and including several other ministries: economy, environment, agriculture & fisheries, transportation).

In Portugal, the Ministry of Economy has a wider range of responsibilities besides supporting economic clusters. This government department is responsible for the formulation and implementation of the government policies concerning industry, trade and services, including competition and consumer affairs, as well as the promotion of direct investment in Portugal.

### 2.1 Agencies for cluster policy implementation

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## 2.2 National cluster programmes

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- Programme name: **INAUTO** (Automotive Industry)<sup>(1)</sup>
- Financing:
  - Source of programme financing (ministries, EU structural funds, regional budgets, etc): Ministry of Economy and structural funds in partnerships with private industry<sup>(2)</sup>
  - Budget: over Euro 13.8 mn. for about 5 years<sup>(2)</sup>
  - Time horizon: 2002/2006
- Actor:
  - Programme initiator: CEIIA, a public private partnership: 1 government agency (IAPMEI, the small business institute), 4 trade associations/chambers of commerce & industry and 21 SMEs of the automotive industry
  - Carried out by CEIIA, the centre for the excellence and innovation of the automotive industry
  - The actor was formed for this purpose in 1999.
  - The actor has no other tasks apart from this program.
  - Organisational set up at programme and project level: CEIIA has 3 organisational units (CE – Engineering Centre; PP – Public-private Partnerships; VET – Technology Enterprise Valorisation) and manages REDIA, a network of excellence for the development of the national automotive industry, encompassing R&D units of several universities (INEGI and INESC from the Oporto University, PIEP from Minho University, and IN+ from IST, the Engineering School of the Lisbon Technical University) and an Innovation Centre, INTELI jointly owned by CEIIA and IAPMEI.
- Scope and target:
  - Geographic coverage: The country, with special emphasis in the Lisbon/Setubal area (in the South), and Oporto and the North region, with some interactions with the Spanish neighbouring region of Galicia.
  - Policy focus (please see the table at p. 17 from the OECD report in the end of this document and relate your comments to this): INAUTO is a programme clearly oriented to the development of technologies relevant to the automotive industry in Portugal. Its main objectives were stated as follows: (a) to increase the technology, strategic, organisational and innovation competences and capabilities of the automotive companies (b) to foster the com-

petitiveness of the Portuguese automotive industry, and (c) to strengthen the automotive cluster in Portugal.

- The automotive cluster in Portugal is in the last stages of the emerging phase.
- Programme contents: The INAUTO programme develops along 4 main axis: (a) Technology development and enhancement of managerial practices (creation of new competences and capabilities aiming at increasing productivity and competitiveness); (b) Upgrading of human resources (qualification of human capital through knowledge transfer to industry); (c) Technology management (development of market, technology and product intelligence systems to support decision making at strategy level); (d) Fostering domestic automotive industry (diffusion of the capabilities of the companies, promotion of the industrial image of the cluster and supporting the internationalisation of firms)
- INAUTO, through its associates and the REDIA network (see above) is providing research, development, consulting and other services to the cluster companies. These services cover namely the following areas: Axis (a): development of product and process engineering systems, advanced technologies for stamping new materials, product testing, development of strategies for automotive industry logistics, computer modelling of technical costs for the automotive components manufacturers, eco-efficient development of new automotive components, support to the use of broad-band data communications by the automotive industry, development of innovative materials for car interiors. Axis (b): assessing the training needs of the industry (by surveying companies and creating and maintaining a database), support to the conception, design and technology management for the automotive sector (through design studios, workshops and seminars). Axis (c): monitoring of systems used by the automotive industry for product development, case studies on innovation, learning and co-operation within networks of suppliers of the automotive industry, strategy information system for the Portuguese automotive industry. Axis (d): research study on the incorporation of local content for the various branches of the automotive cluster, development of a methodology for supporting assessment studies concerning the impact on the automotive sector of compensation mechanisms associated with major contracts of foreign suppliers of defence equipment and materials, diagnostic study on the cross border automotive cluster (North of Portugal/Galicia and of interfaces amongst its main actors (industry, technology centres, universities) in order to develop an co-operation strategy.
- Activities: Priority is on the technology and strategy areas to move the Portuguese automotive cluster from the manufacturing/production paradigm to the design/engineering paradigm.
- Ambitions/goals: These were only stated in a general manner (see above): to increase the competences and capabilities of the automotive companies, to foster the competitiveness of the Portuguese automotive industry, and to strengthen the automotive cluster in Portugal.
- Target group: Automotive cluster in Portugal
- Particular focus on SMEs: Somehow: the vast majority of the Portuguese automotive industry companies are SMEs, the exemptions being local subsidiaries of multinational companies. Though not discriminating on the base of the nationality, INAUTO is more focused on local companies, mostly

SMEs, operating as 1<sup>st</sup> and 2<sup>nd</sup> tier suppliers of international car manufacturers.

- Level of R&D involvement: Quite intense
- The programme provides the above mentioned services, costs of which are subsidised by the government budget and the EU structural funds.
- The program has cross-country\interregional activity. There are interactions with the automotive industry of Galicia, a Spanish region with a common border with the northern region of Portugal.
- Process:
  - Based on both applications and appointments:
  - Top down and bottom-up approach in selection of clusters to support. Though the initiative was triggered by a government agency, IAPMEI (the small business institute), this initiative was a response to the needs for support services voiced at the time by the Portuguese automotive components manufacturers as well as by the local operations of international car makers such as Renault, Ford, and Volkswagen. Later on, when defining the IN-AUTO strategy, the Portuguese automotive industry was consulted and actively participated in strategy formulation.
  - Main elements in applications if that is used: To obtain funds from public grant systems CEIIA and IAPMEI had to submit applications to the PRIME Incentives system, public-private partnerships sub-programme. These applications include some substantiation of the costs eligible for support, stating the objectives and the rationale of the action plan, the expected results and their impact on the operations of the organisation and of the cluster. Usually these applications also have to show qualifications of the team in charge and that the eligibility criteria are met by the applicants.
- Evaluation:
  - Results so far/conclusions from evaluations: So far there is no independent evaluation of INAUTO.

Opinions from governmental circles are quite favourable: “Public policy will have an central role in creating the conditions for the development of the [auto-motive] industry (...) fundamentally through the development of specific actions. These are the cases of INAUTO I and II programmes (...)”<sup>(3)</sup>.

Though, recently, the president of AFIA, the industrial association of component manufacturers, when interviewed on the current crises of the Portuguese automotive industry, mainly due to the re-location to Eastern Europe of a number of multinational operations (Lear, Johnson Controls, General Motors), expressed a different opinion:

The technology plan: There are a number of companies, conformant to a certain ratio, that were invited to sign-up this protocol and that have assumed certain obligations towards the State. Though, I think the management of the “vectors” in place should be assigned to CEIIA. These are the strategic vectors: to define, within the technology plan, what can and should be developed. It is the automotive industry – not the universities, not IAPMEI, not INTELI – that knows better than anybody else its own needs. We have to “separate the waters” and to give industry the role it deserves and the role it plays in the society.

The entrepreneurs have not been heard insufficiently, but the conclusions that are implemented are not the ones the entrepreneurs wished.

Hindrance [caused by the government] in the automotive industry:

Hindrance or omission. The industry was never consulted in relation with any project coming to Portugal [FDI projects attracted by investment grants of the Portuguese government]. It would seem normal to me that we were asked about our opinion on a project, its objectives and possible benefits [to the components industry], instead of the decision being made by some “enlightened” person that, after 2 or 3 years, leaves office because the government was replaced.”<sup>(4)</sup>

Notwithstanding some differences of opinion between government officials and industry leaders, and irrespective of which factors were the main causes, a sure fact is that the automotive cluster in Portugal experienced a remarkable evolution since the mid-nineties. Many Portuguese firms were certified as direct or indirect suppliers of international carmakers, manufacturing processes were streamlined into lean production and just-in-time systems and, in the last 10 years, the turnover and exports of the cluster doubled and total employment increased by 14% to about 40 thousand people. Though, the ambition to “position Portugal as an important location for the development of complete programmes (design and production) of small scale niche vehicles”<sup>(5)</sup>, thus creating more opportunities for the participation of Portuguese SMEs along the entire value chain, “promoting the consolidation of engineering, product development and R&D competencies”<sup>(5)</sup>, has yet to be fulfilled. Some steps were made to that direction, but the implementation of a major project based on the development of a new city car is still missing.

- Planned future: Some mishaps and misunderstandings happened since 2005. CEDP, a Centre for Product Engineering and Development in the automotive industry, created by CEIIA, closed down due to lack of funding. This centre main objective was to develop the P3 Project, a partnership of IN-TELI, Pininfarina SpA and the Portuguese Government, seeking to promote the co-operation of the Portuguese components making industry with Pininfarina to design and manufacture a new hybrid urban vehicle. Following this, the industry “took over” CEIIA (the current chairman is the president of AFIA, the industrial association of components manufacturers) and re-directed its strategy. Now the emphasis is on developing cross-border co-operation between the North of Portugal and the Spanish region of Galicia (notably with CTAG, the automotive technology centre of Galicia) as well as between Vigo (a Spanish town near the northern border of Portugal) with the Portuguese region of Palmela, where AutoEuropa (see above) and its 1<sup>st</sup> tier local suppliers are located, the latter with the support of Volkswagen and PSA Peugeot Citroen. As the current market conditions are different [less favourable], CEIIA is re-defining the P3 Project, focusing on the major automakers and aiming at a enhanced participation of the Portuguese automotive industry.

### **2.3 Regional cluster programme**

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Currently, there are no cluster programmes managed by regional or local authorities.

## 2.4 Successful cluster programmes

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As stated before, there are different opinions as to the success of the INAUTO cluster programme, the only one that has passed the initial development phase. All other on-going cluster programmes are in earlier stages of development.

There are though some clusters that developed quite successfully without the support of any specific cluster-type government programme. Probably the cluster which is more cited in the literature is the Precision Engineering or plastic moulds in the “Marinha Grande” Region. This is a small regional cluster: about 7,600 persons employed by 144 companies, 70% of which are located in Marinha Grande.

## 3. Cluster policies

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Above the level of agencies and programmes is the policy level. On the policy level, plans and strategies are developed in the form of policy documents, directives and legislation, rather than concrete programmes and organisations.

There may be one overarching policy for clusters, a “cluster policy”, outlining specifically how cluster development should be pursued. In addition, clusters may form a framework in a long range of policy fields. Primarily, this is often the case in three key areas: innovation and technology policies, regional economic development policy, and entrepreneurship/SME policy. However, it can also occur in many other policy areas.

### 3.1 Overarching cluster policy

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Since long, economic clusters attracted the attention of government and the business community in Portugal. But only in the last 2 years there are policies being implemented by government agencies having specifically in mind to foster the creation of new clusters and to support the development of existing ones. This lack of specific policy deployment was noted in a report prepared in 2003 for the European Commission<sup>(1)</sup>: Portugal was one of the 8 EU-15 member states, which did not make any explicit use of clusters policies.

Though, efforts to promote the creation of cluster activities in Portugal can be traced back to 50 years ago when the Portuguese government tried to attract international car manufacturers to create production platforms in the country, thus inducing opportunities to further develop the indigenous automotive industry.

The publication of the 2<sup>nd</sup> framework law for the automotive sector in 1979 enabled the 1<sup>st</sup> significant outcome of these efforts with the selection of the “Renault project”, among several others that were submitted following a international call from the government. The contract signed with Régie Renault in 1980 led to the establishment of 3 greenfield plants: an assembly plant (80,000 units/year, with local added value of at least 50%, and catering to the export markets at least 25% of its production), a gearbox manufacturing plant (80,000 units/year) and a motor manufacturing plant (220,000 units/year). These new projects were quite instrumental for the development of the “horizontal industry”, the manufacturers of automotive components and sub-systems, and entailed the introduction of new technologies in the Portuguese industry<sup>(2)</sup>.

Ten years later, a new international automotive project was attracted to Portugal: the AutoEuropa project, a joint venture between Volkswagen and Ford (Ford Werke and Ford of Europe Inc.), aiming at manufacturing a new multipurpose vehicle, production of which started in 1995. This project helps in further developing the automotive components industry in Portugal having been responsible for the introduction of an additional array of new technologies and production systems, such as the just-in-time methodology. The project attracted local and international 1<sup>st</sup> and 2<sup>nd</sup> tier suppliers and fostered the formation of new joint-ventures thus creating a hub-and-spoke industrial district in the automotive industry in the greater Lisbon and Setubal peninsula regions<sup>(2)(3)</sup>.

In the early nineties, following a 12-month research and fact finding programme aiming at identifying the areas where Portugal could capitalise on comparative advantages and the main development challenges of the country, a report was published by Michael Porter and his consultancy organisation, the Monitor company. In this research, commissioned by the Ministry of Industry and Energy (at the time, nowadays Ministry of Economy), and funded by about 50 Portuguese private and public organisations, Porter identified more than 30 clusters which were screened on the basis of their contribution to the GNP and to exports. The final selection encompassed 6 clusters deemed to be the most relevant ones: wine, tourism in the Lisbon coast, automotive, shoemaking, knitwear, and wood products. For these clusters, as well as for 5 factor conditions where the government should play a major role (education, science and technology, financing and management training), the report recommended comprehensive action plans<sup>(4)</sup>. This initiative attracted much interest and mobilised many businessmen, analysts, government officials, trade associations, chambers of commerce & industry and other organisations and was responsible for the creation of a private association (Forum para a Competitividade, *Competitiveness Forum*) geared to help the implementation of those action plans. Though, not much was done in the next 10 years along the lines prescribed by Porter: no major support programme aiming cluster development was initiated by the government, with the exception of the automotive cluster, which was already object of government funded support policies. The Competitiveness Forum progressively turned into a watchdog of government policies, not a tool to foster cluster development as its founders intended it to be<sup>(5)(6)</sup>.

In 2001, a government initiative (PROINOV) identified a set of mega clusters (food, habitat, fashion, mobility, health & personal services, and information & leisure), but the study did not translated into any specific programme. Some trade associations and technology centres, though, continued to provide support to the industrial clusters they were affiliated with (such as the shoemaking industry, the precision engineering and mould making industry, and, to a lesser extent the made-up industry) by combining some general support programmes made available by the government into cluster oriented initiatives.

In the last 2 years or so, a new impetus is being inserted in the cluster policy of the Portuguese government. The major initiatives that should be mentioned to this respect are the cluster initiatives in the following industries: renewable energy, marine industries and fashion.

In the section III.1 (“To support the development of the enterprises”) of the Chapter 1 of the Programme of the current government (inaugurated in March 2005) a mention is made to “support the updating of traditional clusters through clearly directed public policies and to exploit sectoral potential where the creation of compe-

tences is possible”<sup>(1)</sup>. Though conceding that the selection of sectors to be supported should not be a government responsibility, the government considers that the state can facilitate the creation of partnerships aiming at fostering innovation in clusters where Portugal already has competences, and provides some examples from the traditional industries to this respect (textiles, made-up, shoemaking, automotive, aeronautics, mould making, forestry, software, winemaking, horticulture, tourism, health). This policy orientation was taken up in more detail by the Technology Plan (approved by the government in November 24, 2005) where several references are made to cluster policies or measures:

Measure 11 – To foster the entrepreneurial collaboration (“Enterprise partnerships” programme) through promoting the co-operation among SMEs, inducing new organisational and management methods, stimulating the use of ICTs and creating and consolidating centres of competence and promoting the cluster logic. This measure is operationalised by establishing the following targets: to execute 260 dissemination actions and to support 32 partnership projects at a cost of Euro 82mn, in the 2005-2008 period.

Measure 13 – To re-launch the “Dinamo” programme, aiming to combine the textile, made-up and shoemaking industries with design and distribution in order to develop the “fashion” cluster. This programme is taking place between October 2005 and the end of 2008 and has 2 strategic lines: (a) image and internationalisation; (b) qualification of human resources; (c) innovation and development.

Measure 14 – To enhance the tourism cluster by upgrading the attractiveness and competitiveness of multi-thematic and sustainable tourist products, fostering public-private partnerships for product engineering and marketing. Specific activities of this measure are: (a) Creation of the satellite account of the Portuguese tourism by the end of 2007 (Euro 1.8 mn.); (b) Development of geographical information system (GIS) to support the territorial planning of tourism by the end of 2006 (current report information at the Technology Plan web site shows that the various sub-activities of planned GIS have execution performance varying 40 and 100%); (c) To contract tourism advertising and promotion to regional agencies to be created under a public-private partnership approach; (d) Development of 5 pilot-projects as examples of differentiated innovative tourism products until the end of 2006 (oceanic, cultural, natural and health and well-being, including senior tourism)<sup>(2)</sup>.

There is also a reference to the wind energy cluster, a new cluster to be created and developed around suppliers and manufacturers of wind energy equipment. Government will support the emergence of this cluster by consolidating the establishment of wind farms through public tenders and providing funding through the PRIME investment incentive programme.

In a working document published by the managing office of the technology plan, 3 the main motivations for the government to provide support and to otherwise favour the emergence and/or consolidation of clusters were pointed out:

- to foster the co-operation (horizontal, vertical, institutional) as a critical instrument to increase competitiveness of the companies (and the country);
- to attract foreign direct investment;
- to increase the local and regional competitiveness, thus reducing transaction costs and foster complementarities

Cluster policy have been used for a single case (Automotive) since 1999. More recently (2005) this policies have been extended to other clusters.

Facts show that the first approach to a cluster policy was introduced in the early nineties, when the ruling party was PSD (Social Democrat Party)\* and the Minister of Industry and Energy was a member of this party (Mira Amaral).

Since 1995, when the PS (Socialist Party)\*\* took office, the cluster policy was suspended and only taken up again by the end of the 2<sup>nd</sup> mandate of this party. Though, the current re-launch of cluster initiatives is led by a government majority formed by the Socialist Party who is (somehow) re-enacting a short trend that was suspended, this time, by the Social Democrat Party.

Though sometimes the introduction of the cluster approach is associated with Mira Amaral and the PSD party, the more precise characterisation of cluster policy in Portugal is that cluster policy has been “volatile due to political shifts”, as it was acknowledge both by the Thematic Report on Cluster Policies to Enterprise Directorate-General (“Seems to be subject to the changing government and policy. After the introduction of the second initiative there has been another change in govt – which has lead to a standstill on clusters.”<sup>(1)</sup>) and by the current Management Office of the Technology Plan<sup>(2)</sup>.

### **3.2 Clusters as framework in key policy areas**

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The government policy on innovation considers the co-operation for competitiveness to be one of the 3 major motivations to develop a policy to consolidate existing clusters and to create new ones<sup>(1)</sup>. In the recently approved EDP web site: <http://www.edp.pt/>, the objective of creating conditions to foster sustainable growth of the Portuguese policy includes a cluster policy, in connection with the objectives of increasing innovation and fostering competitiveness at enterprise level, of upgrading of the national science & technology system and the commercialisation of the results of publicly funded research and development. A specific mention is made to relevance of the role of (public-private) sectoral technology centres in providing support activities to cluster development.

Territorial upgrading and cohesion is one of the 3 major objectives of the government strategy. The instrumental role of de-centralisation and regional clustering is stressed in this document as a pre-requisite to obtain higher levels of territorial cohesion.

As the promotion of entrepreneurship and SMEs is deemed to be important factor on a par with policy on innovation, thus such policy is also a motivation for a clustering policy.

### **3.3 Clusters as framework in various policy areas**

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In the past some government funded programmes played a role in fostering business networking (e.g.: the enterprise partnership programme of the PRIME incentive system)<sup>(1)</sup>. Though this programme closed in December 2006, it is likely that a similar programme will be implemented in the future. Actually, in the programming document National Strategic Reference Framework, government emphasises the importance of business networks, co-operation among enterprises and collective actions and states that some upgrading will made in the current support systems, namely

concerning collaborative R&D projects, upgrading of regional poles of competitiveness and technology, specific grants to sets of activities organised in clusters or other forms of agglomeration

The automotive components industry leader claims that the local cluster have been neglected when FDI contracts in the automotive industry are negotiated (see section 2.2.2). Nevertheless, government is using the automotive cluster as an argument to attract FDI in the automotive industry, as it is documented by the following paragraphs extracted from the web site of the official investment promotion agency (API-see above): “The Portuguese automotive cluster has been attracting a growing number of companies, both leading industry players such as VW and Opel, and all the numerous suppliers and component firms that such a market commands. Most of the main component suppliers in the world, are present in Portugal (Visteon, Delphi Automotive systems, Robert Bosch, Faurecia, Lear and Johnson Controls). The industry offers an ideal setting for small batch production lines that have specific technical requirements, in a fast turnaround time. The current supportive business environment found in Portugal, together with the country’s communications infrastructure and strategic geographic position, form a prime investment location for OEM and large scale manufacturing units.”<sup>(1)</sup>

The case of the renewable energy cluster is another example of how a clustering policy can be instrumental in attracting FDI projects with industrial structuring properties

Both the INAUTO and DÍNAMO cluster programmes are illustrative of the role cluster play in promoting exports. Probably the best example that a cluster policy can be induced by a sectoral policy is the case of the emerging cluster of renewable energy. In this case it is a sectoral objective (to comply with Kyoto protocol) that induced the definition of a clustering policy. Education policy is a pervasive theme in government planning documents in Portugal, as the lack of qualifications is a major weakness of the country. Clustering policies tend to foster training programmes and to create opportunities for commercialisation of publicly funded R&D. Good examples of the role played by clusters in increasing company competitiveness and market integration are the INAUTO and DÍNAMO cases. The regional cohesion and territorial planning policies may also induce clustering initiatives at regional level in the future as it is foreseen in the National Strategic Reference Framework.

#### **4. Cluster or competitiveness councils**

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In some countries, councils have been set up to promote a dialogue about clusters and competitiveness. Often, these councils have representatives from the government sector as well as from the academic world and the business community.

There is no competitiveness council in Portugal. The body with more resemblance to this council, the Competitiveness Forum, does not have currently any impact in cluster policy.

#### **5. Other policy issues**

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Sometimes it is useful to know about any other issues that have an impact on clusters in a country. Such issues could be, for example, any macro economic policies that

may be relevant for clusters (tax regimes, etc), or if any general evaluation has been made about the country's competitiveness and barriers to competitiveness.

The regional cohesion and territorial planning policies may also induce clustering initiatives at regional level as it is foreseen in the National Strategic Reference Framework. Though some conflicts between private leaders and government officials arise from time to time, the main criticism concerns some lack of commitment from public bodies when a shift of the ruling party introduces changes in the cluster policy. In general clustering policies are favourably viewed by policy analysts and the academia. There is some criticism of the shifting behaviour of cluster policies induced by the frequent swapping of the ruling party.

Any general assessment of competitiveness in your country:

Yes. Probably the most comprehensive was the study on the competitiveness of Portugal led by Michael Porter in 1994<sup>(1)</sup> (and re-assessed in 2002<sup>(2)</sup>). According to Porter, the "Portuguese diamond" suffered from the following illnesses in 1994 and (again) in 2002:

1994 <sup>(1)</sup>	2002 <sup>(2)</sup>
Factor conditions	
(a) Lack of skilled workforce and management (b) Low level of R&D (c) High energy costs (d) Inefficient capital markets (e) Infrastructure still lagging despite some recent improvements	(a) Lack of skilled workforce and management (b) Low level of scientific and technological infrastructure (c) (d) (e) Infrastructure still lagging despite some recent improvements
Demand conditions	
(a) Relatively unsophisticated local consumer and industrial demand	(a) Relatively unsophisticated local consumer and industrial demand
Related and supporting industries	
(a) Significant regional clusters (b) Insufficient linkages (c) Lack of strong related and supported industries	(a) Significant regional clusters (b) Insufficient linkages within clusters (c) Lack of strong related and supported industries even in most significant clusters
Context for Firm Strategy and Rivalry	
(a) Goals discourage upgrading (b) Strategies do not emphasize upgrading and exporting	(c) Administrative barriers to business formation (d) Lack of local rivalry (e) Low level of private R&D expenditure

Sources:

(1) Porter, Michael, et al (1994)

(2) Porter, Michael (2002)

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