

RIS3 Regional Assessment: South Aegean

A report to the European Commission, Directorate General for Regional Policy, Unit I3 - Greece & Cyprus

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Alasdair Reid, Nicos Komninos, Jorge-A. Sanchez-P., Panayiotis Tsanakas

Table of Contents

1. Executive summary: Overall conclusions and recommendations	1
2. Regional Innovation Performance and potential	3
2.1 Regional profile and specialisation	3
2.2 The strengths and weaknesses of the regional innovation system	5
3. Stakeholder involvement and governance of research and innovation policies	6
3.1 Stakeholder involvement in strategy design and implementation	6
3.2 Vision for the Region	7
4. Towards a smart specialisation strategy	8
4.1 The regional research and innovation policy	8
4.2 Cluster and entrepreneurship policies	11
4.3 Digital economy and ICT policies	13
5. Monitoring and evaluation	14
Appendix A List of people attending regional workshop	15
Appendix B List of key documents and reference materials consulted	15
Appendix C Key Actors in the regional innovation system	16
Appendix D Regional RTDI funding under the OP Competitiveness and Innovation	18
Appendix E Total Gross value added at basic prices – South Aegean	19
Appendix F Relative regional specialisation in 20 industries – South Aegean	20

Figures

Figure 1 Summary benchmark of regional innovation performance	3
Figure 2: SWOT of regional innovation potential and specialisation	4
Figure 3: Priorities and funding of OP South Aegean 2007-2013.....	8
Figure 4: regional priorities of research and innovation 2007-13.....	9
Figure 5: Innovation priorities 2014-2020.....	9
Figure 6: Technologies and clusters supporting tourism in the Balearic Islands	12

1. Executive summary: Overall conclusions and recommendations

Smart specialisation priorities and the innovation system

The limited scientific specialisation of the region does not match the industrial specialisation. The South Aegean has a relative regional industrial specialisation in construction, retail trade and tourism and is also well placed in fishing and quarrying of stone. These sectors account for a high share of employment and an important share of the regional added value. The region is thus specialised in rather low-tech sectors. The expert team **recommends** that regional specialisation should focus on cross-sectoral technology upgrading and adaptation of production processes to reduce energy use, reduce material input and waste generated; in addition to building higher value added products and services in sectors connected to tourism.

The expert team **recommends** that the region explores the possibility of creating a single business support and innovation agency, potentially in partnership with the North Aegean and Crete regions, and that a system of client management is introduced with a view to providing a holistic support to key regional businesses in the design and implementation of their investment plans. The model of Highlands & Islands Enterprise from Scotland is one example that could be used.

Recommendations on governance

The previous experience of the South Aegean region in collaborative innovation policy is limited. The region implemented one only project from the RIS, RIS+, PRIA family, the programme ISTOS (Innovation for Sustainable Tourism and Services) (2004-2006). However, no follow-up was possible during the period 2007-2013 since, as was the case in all Greek regions, R&I policy was centralised and undertaken by the GSRT.

We **recommend** a decision making and management structure of smart specialization strategy composed of three tiers: (a) the regional council composed by the Governor and elected council as top decision making body; (b) a Steering Committee composed of regional stakeholders from the business and academic communities and the public administration, to consolidate and introduce the smart specialization strategy to the regional council, and (c) thematic working groups focusing on main sectors of smart specialisation under the coordination of IMA and the regional programming team.

The third layer - working and consulting groups for S3- retained most of attention during the second meeting. Regional Government and stakeholders consider tourism as core sector of South Aegean and all other sectors (transport, local products, services) depending and existing through tourism. We recommended the formation of working groups similar to Balearic Islands. Tourism is placed at the centre of concern and is supported by thematic groups of connected to tourism technologies of (1) ICT and digital media, (2) creative services for marketing and promotion, (3) organic food production and foods for health, (4) green energy, and (5) smart government.

We proposed also a vision for growth combining the constant pursuit for 'green islands' based on resource efficient production and global branding; 'quality islands' based on high quality products for selective niche markets; and 'smart islands' based on a wide deployment of ICT for business and governance.

Recommendations on innovation policy

In the framework of the South Aegean OP 2007-2013, initial plans foresaw that close to a €100m would be allocated to digital convergence and entrepreneurship in order to increase competitiveness of tourism, manufacturing and trade, and foster extensive use of ICT in public administration and transportation. However, very little has been achieved in the field of research and innovation policy. Given the decision to consolidate available funding in a national OP managed by the GSRT, only 5 projects have been funded in the region for a total budget of just under half a million euro.

The innovation policy for 2014-2020 proposed by the regional government is focused on the productive tissue and the use of ICT. More innovation and knowledge oriented are the actions suggested by the University of Aegean. The two approaches focus on tourism as main export sector, but also look for diversification and enlargement of the regional economy. The goals and actions described are achievable if public funding is used to generate critical mass and public-private partnerships leverage private funding and generate sustainability.

The expert team **recommendations** deal with three areas: the vision, the technology focus, and innovation platforms. The vision of “Quality Islands – Green Islands - Smart Islands” should guide the overall strategy of South Aegean. SWOT and priority setting should be based on operational goals for turning this vision into reality. Strategic planning demands also the recognition of areas in which interventions have high multiplier effects and linkages enabling the impact to spread out in more sectors.

We recommend a technology focus based on the diversification and discovery of niche opportunities in global markets. Tourism is the starting point for this discovery in connection to technologies that can diversify the offered products and services away from mass tourism. Technologies to focus on include: (1) ICT and digital media, (2) creative services for marketing and promotion, (3) organic food production and foods for healthy living, (4) green energy, and (5) smart city technologies.

Innovation support actions included in the RIS3 should take the form of “Innovation Platforms”: frameworks of various types (legal, organisational, natural resources, physical facilities, digital, funding, etc.) enabling a large number of firms to participate. Platforms should give comprehensive support to the entire innovation cycle, including financial, technological, productive, and market support.

Recommendations on clusters and entrepreneurship

The South Aegean Region lacks previous experience in cluster policies, no cluster “culture” and there are no mature clusters operating in the region. The cluster policy of the Balearic Islands could serve as a model to enhance the technology domains related to tourism. The policy has been implemented in clusters that develop technologies related to tourism. It is **recommended** to replicate a competitive technology industrial cluster approach to facilitate the rapid spread of good practice (e.g. Balearic Islands, Corallia Clusters Initiative).

In terms of business support, it is **recommended** to create a **one-stop-shop** by merging existing structures to support investors/SME in designing and implementing business plans with an export orientated focus. It is also **recommended** to undertake a feasibility study for the establishment of an incubator, hosting new technology based firms complementary to tourism. Finally, it is **recommended** to support the creation of a business angel network and co-investment fund, in partnership with other regions (e.g. Crete and North Aegean) to ensure a large enough deal flow.

Recommendations on ICT policy – broadband – eservices

In addition to incorporating ICT as a core topic in the RIS3 strategy, the region should strengthen support on ICT for the most crucial sectors of the regional economy i.e. tourism & culture, transportation, aquaculture, and environmental protection. The region should investigate viable policy tools to provide incentives for new IT-enhanced products and services from local enterprises, and also award funds for the fast transformation of traditional businesses using ICT tools.

Smart transportation and wireline/wireless broadband expansion are crucial for the competitiveness of the whole economy, mostly including the tourism industry. The hidden growth potential of remote areas and isolated islands, within the Region, should attract special attention, since it can be exploited using affordable ICT technologies. Particular emphasis should be placed in setting proper rules for the substantial involvement of the private sector, by assuming part of the risk of the planned investments. An emphasis should be given to the conditions for a substantial role for the private sector in assuming part of the risk of the planned ICT investments.

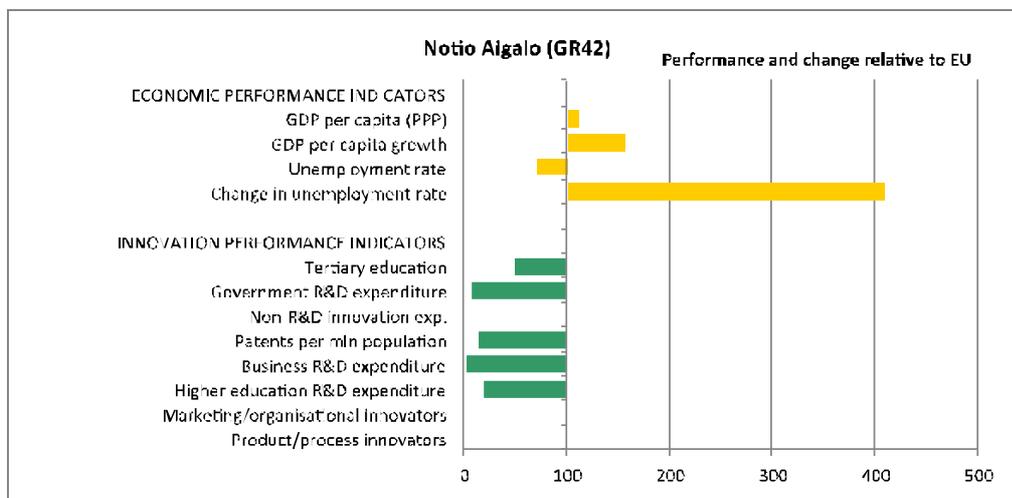
2. Regional Innovation Performance and potential

2.1 Regional profile and specialisation

The South Aegean region is composed of 79 islands (31 inhabited) divided in two prefectures, the Cyclades and the Dodecanese, covering an area of 5,286 km² (4% of Greece) and with a population of 310,805 in 2011 (2.75% of the Greek population)¹. Endowed with a rich cultural and natural environment, the region is an internationally renowned tourism hot spot that however lacks conventional energy resources. The region is characterised by a large number of traditional settlements. The limited natural resources, its geographical fragmentation and relative isolation have been significant obstacles for the region's development. However these are gradually fading due to investments in tourism and infrastructures, including research and innovation, and a growing service sector.

The region is relatively wealthy with a GDP per capita of €26,800 in 2009(114% of the EU27 average), ranking it 2nd, after Attica, in Greece (3.3% of national GDP). While constantly improving, the education level is low: 14.7% of the population aged 25-64 has tertiary education (25.4% in Greece, 26.8% in EU27), the lowest performance of Greek regions. Despite the strength of tourism, the region has been hit by the economic crisis and unemployment increased from 8.1% in 2008 to 15% in 2011. Most small businesses, due to reduced demand and a simultaneous increase in taxation, face severe liquidity problems and limited access to finance to fund current operations never mind investments. Regional manufacturing and services firms have found it difficult to switch from local to export markets (RIM, 2012).

Figure 1 Summary benchmark of regional innovation performance



Source: Regional Innovation Monitor, data used is 2011 or latest available year. Trend data is over latest three year period for which data is available.

The tertiary sector dominates the economy accounting for 84.9% of the regional GDP in 2009; industry and construction 12.8% and agriculture only 2.3%. Tourism is the most important sector followed by trade, transportation services and real estate activities. Other growing services segments are financial and insurance activities, education and creative, arts and entertainment activities. Within the manufacturing sector, dominated by small firms, the most important industries are the food and beverages, textiles, manufacture of products of wood & cork and manufacture of other

¹ All data is sourced from Eurostat unless stated differently.

non-metallic mineral products. These local firms however have not managed to exploit economies of scale due to their size and their relative isolation and so far have found difficulties in exploiting public funding for their modernisation and incorporation into national or international value chains (RIM, 2012).

The regional economic structure is such that, in 2005, gross expenditure on R&D (GERD) was only €9.15m or 0.12% of GDP (Greek average 0.6%, EU27 average 1.83%). Moreover, regional businesses invested only €883k in R&D or 9.6% of the regional GERD (compared to 31% nationally and 63% in the EU27). Since 2008, private R&D investments have most probably not improved given the liquidity crisis. Hence, regional R&D activities are concentrated in the higher education sector (essentially the University of the Aegean) which invested (2005) €6.92m on R&D, or 75.6% of regional GERD (Greece 47.5%, EU27 22.5%). The government sector invested €1.37m or 15% of regional R&D (Greece 20.3%, EU27 13.6%). Despite low R&D investment, the region made double (16.34 per million inhabitants) the Greek average (8.04) of patent applications to the European Patent Office in 2008, although this is still well below the EU27 average (111.58).

The importance of Human Resources in Science and Technology (HRST) in the South Aegean is slowly improving, from 14.4% of the workforce² in 2000 to 21.2% in 2011 (Greece, 2011, 32.4%), but remains the lowest performing Greek region with only 1.7% of total HRST in Greece. In 2005, there were only 147 full-time equivalent (FTE) R&D personnel, 0.11% of the regional active population (0.69% in Greece, 0.95% in EU27), of which 14 were in the business sector, 127 in higher education and 17 in the government sector. Looking specifically researchers (0.07% of active population against 0.4% in Greece and 0.59% in EU27), 91 FTE researchers were working in the higher education sector, only five in a company and six in the government sector.

Figure 2: SWOT of regional innovation potential and specialisation

Strengths	Weaknesses
<ul style="list-style-type: none"> • Relatively wealthy region • Natural and cultural environment • Rapidly expanding ICT diffusion • Presence of regional research capacities with one multi-campus university • Renowned tourism hotspot • Better level of patenting than Greek average • Several areas of regional economic specialisation 	<ul style="list-style-type: none"> • Isolated area geographically fragmented • Lack of energy resources • Lack of R&D investments, in particular by businesses • Low level of education of the population and life-long learning practices • Low level of science-business collaboration • Lack of innovation culture within firms • Traditional structure of the economy focussed on low-tech sectors
Opportunities	Threats
<ul style="list-style-type: none"> • Better use of scientific outputs in businesses, in particular from natural sciences • Better science-industry collaboration and knowledge transfer • More focus on eco-innovation projects, eco-tourism • Improved support to upgrading of SMEs technological capacity 	<ul style="list-style-type: none"> • Damages to the environment • Competition from low-cost economies

In terms of scientific output, the University of the Aegean (covering both the South Aegean and the North Aegean regions through its multiple campuses) ranks 9th out of

² This indicator gives the percentage of the total labour force in the age group 15-74, that is classified as HRST, i.e. having either successfully completed an education at the third level or is employed in an occupation where such an education is normally required.

the 21 Greek universities with 959 publications over the period 2006-2010 (201 in 2010), representing 2.5% of Greek universities papers³. With a total of 2,340 citations over the same period, the University had a citation impact⁴ of 0.71 (ranked 14th) with activity mainly in natural sciences (736 publications, 1,955 citations, citation impact of 0.74), engineering and technology (229 publications, 494 citations, citation impact 0.61), and social sciences (148 publications, 203 citations, citation impact 0.6).

This scientific specialisation does not necessarily match the regional industrial specialisation. The South Aegean has a relative regional industrial specialisation (see Appendix E) compared to other European regions⁵ in: building, retail sale of new goods in specialised stores, repair of personal and household goods and activities of travel agencies and tour operators, tourist assistance activities. The region is also well placed in fishing, quarrying of stone, hotels and restaurants. Interestingly, these sectors also account for a high share of employment and an important share of the regional added value. The region thus appears specialised in rather low tech sectors.

The expert team **recommends** that regional specialisation should focus on cross-sectoral technology upgrading and adaptation of production processes to reduce energy use, reduce material input and waste generated; in addition to building higher value added products and services in sectors connected to the core regional business sector: tourism (as recommended in the section on clusters).

2.2 The strengths and weaknesses of the regional innovation system

Looking at the overall innovation performance of the region, the European Regional Innovation Scoreboard⁶ ranks the region of South Aegean (grouped in the mega-region Nisia Aigaiou, Kriti) as a modest-high innovator (the lowest of four performance categories) along with all other Greek regions aside from Attiki. Similarly, the 2011 Regional Innovation Monitor (RIM) annual report classified the region amongst a group of knowledge absorbing innovating regions (again along with all other Greek regions except Attiki). From a positive perspective, this group of 19 EU27 regions has the highest average score (amongst the RIM regional grouping) on 'innovative entrepreneurship' (based on the share of SMEs that have introduced innovations) but the lowest score on 'technological innovation': business R&D and patenting is very low, while the non-R&D innovation expenditures (as a % of turnover) are higher than in any other group. This implies that innovation is mostly through integrating knowledge created elsewhere by purchasing 'off-the-shelf' technologies.

Box 1: RegioStars Award for an eco-innovative project in the South Aegean region

The Region of South Aegean received a special mention at the RegioStars Awards in 2007 for its innovative project "Floating, Autonomous and Environmentally Friendly Desalination Unit". The floating, autonomous and environmentally friendly desalination unit developed in the South Aegean region utilises renewable energy to produce potable water for the islands. The project was funded by the "Competitiveness" Operational Programme and was carried out by the University of the Aegean. It combines a desalination unit and a wind power generator that provides the energy needed to transform sea water into high-quality potable water, giving an innovative solution to the water shortage problem most Greek islands face during the summer months.

The main actors in the innovation system are summarised in Appendix C. The region is clearly not well placed in terms of potential knowledge creation and linkages to external technology and know-how providers is also complicated by insularity. In terms of academic research potential, the University of the Aegean has been developed, since 1984, as a 'networked university' with teaching and research activities

³ <http://metrics.ekt.gr/en/report02/index>

⁴ The relative number of citations to publications of a university compared to the world average

⁵ The minimum degree of specialisation is 1.5 (meaning that the region has 50% more employment in the industry than the size of the region), and the industry must have at least 500 employees in the region (in order to eliminate high specialisations in very narrow industries).

⁶ MERIT & Technopolis 2012, http://ec.europa.eu/enterprise/policies/innovation/files/ris-2012_en.pdf

dispersed over five Aegean islands and two regions (north and south Aegean). The principle scientific research areas in which the University of the Aegean is engaged are: environmental sciences and technologies, social sciences, finances and business administration, information and communications technologies, mathematics and actuarial science, humanities and sciences of education. The University has been involved in a number of projects of relevance to the regional economic development, notably in the environmental field (see box above). Given the islands location and multiple sites, the University has been one of the first in Greece to optimise the use of ICT, according to its website. However, it appears that, unlike similar universities (e.g. the University of the Highlands and Islands in Scotland), the use of video-conferencing to deliver courses is not yet widespread. This may be a future opportunity to develop further education services at lower cost (reducing need to travel between islands, etc.) or to a wider number of students.

The expert team **recommends** that the region explores the possibility of creating a single business support and innovation agency, potentially in partnership with the North Aegean and Crete regions, and that a system of client management is introduced with a view to providing a holistic support to key regional businesses in the design and implementation of their investment plans. The model of Highlands & Islands Enterprise from Scotland is one example that could be used.

3. Stakeholder involvement and governance of research and innovation policies

3.1 Stakeholder involvement in strategy design and implementation

The previous experience of the South Aegean Region in collaborative innovation policy initiatives (such as regional innovation strategies and innovative actions) is limited: one only project Innovation for Sustainable Tourism and Services (ISTOS 2004-2006)⁷ has been completed. The objective was to build an environment for sustainable development through regional innovation and the strategy was based on three interconnected themes: sustainability, innovation, ICT. The main projects were (1) the development of Local Agenda 21 for two islands, (2) the creation and application of a regional standard for sustainable tourism, (3) the creation of two specialised centres for information and consultancy to regional tourism stakeholders (4) the creation of a digital platform for the Aegean Islands, and (5) the development of e-business tools for the tourism sector. ISTOS was managed by a Steering Committee, composed of stakeholders from the region, under the coordination of the Regional Authority of South Aegean and financially managed by the Regional Development Fund.

During 2007-2013, as happened in all Greek regions, R&I policy was centralised and undertaken by GSRT, which implemented a 'shadow' OP for research and technological innovation based on aggregated funds from the 13 regional OPs. Continuity with regional innovation initiatives implemented was lost. The 'shadow' programme is top-down and it is being implemented without informing the regions.

For the 2014-2020 period, the policy design started in April 2012. However, the first Ministerial Directive strategy did not provide guidance on a collaborative and bottom-up elaboration of the SWOT analysis and innovation priorities as foreseen in the conditionality for RIS3. Hence, the strategy submitted in reply to the Ministry of Development by the Region is not a S3 strategy, but does provide a SWOT and first priorities for 11 objectives of EU 2020 strategy.

In the view of the expert team, a bottom-up elaboration of a South Aegean RIS3 now needs to start. A first discussion about the RIS3 (ex-ante conditionality and

⁷ http://ec.europa.eu/regional_policy/archive/innovation/pdf/programme/south_aegean_en.pdf

methodology) was launched during the meetings held in November between the DG Regio Expert Group with, firstly the elected Regional Authority of South Aegean, the IMA, and, secondly, invited stakeholders held on 25 and 26 November in Syros at the headquarters of the Region (see participants list in Appendix A). Prof. Spilianis presented on behalf of the University of Aegean a memo about the role of the University in the elaboration of the development programme 2014-2020 and the smart specialisation strategy. It describes a bottom-up planning approach based on five principles: (1) collaboration for growth among the academic, entrepreneurship, and public administration communities, (2) increase of knowledge and technology absorption capacity of companies, (3) human mobility and exchange programs and vocational training with active participation of companies, (4) common liaison mechanisms for communication among the academic and business communities, and (5) dissemination of knowledge in the framework of an open environment for information exchange and collaboration. The University of Aegean is willing to contribute to the Mirror group of the Region and to support the regional authority in the design of the 2014-2020 development programme.

The intention of the regional government is to base the RIS3 on stakeholders involvement and external consulting for entrepreneurial discovery. However, this strategy elaboration structure has not been launched yet. Since the South Aegean, is amongst the more developed EU regions and because of its spatial specificity (island area), the Regional Government suggests to adopt a multi-fund Operational Programme combining resources from all available financial instruments (ERDF, ESF, Cohesion Fund, Agricultural, Fishery Fund) and managed by the South Aegean Region (Region of South Aegean 2012, p. 13). The regional authority is highly critical about the centralised management of competitiveness and digital convergence programmes during 2007-13 and clearly will not endorse a similar management in the forthcoming programming period. No other synergies between policies and funding sources (such as Horizon 2020) are described at this stage of the South Aegean RIS3 planning.

The expert team **recommends** a decision making and management structure for the smart specialization strategy composed of three tiers: (a) the regional council composed by the Governor and elected council as top decision making body; (b) a Steering Committee composed of regional stakeholders from the business and academic communities and the public administration, to consolidate and introduce the smart specialization strategy to the regional council, and (c) thematic working groups focusing on main sectors of smart specialisation under the coordination of IMA and the regional programming team.

The third layer - working and consulting groups for S3- retained most of attention during the second meeting. Regional Government and stakeholders consider tourism as core sector of South Aegean and all other sectors (transport, local products, services) depending and existing through tourism. We recommended the formation of working groups similar to Balearic Islands⁸. Tourism is placed at the centre of concern and is supported by thematic groups of connected to tourism technologies of (1) ICT and digital media, (2) creative services for marketing and promotion, (3) organic food production and foods for health, (4) green energy, and (5) smart government.

3.2 Vision for the Region

The recent document 'Formulation of guidelines for national development strategy of the programming period 2014-2020' (Region of South Aegean 2012) provides some elements of future vision in terms of development objectives linked to innovation and digital convergence. According to this document, the challenge for the South Aegean Region is to make efficient use of limited resources to be allocated from EU funds for a balanced development, reversing the downturn and crisis in the economy of the islands, create new jobs, and removing inequalities.

⁸ <http://s3platform.jrc.ec.europa.eu/documents/10157/0/RIS3%20Balearic%20Islands%20V2.pdf>

The main comparative advantages of the region are still the dynamic demographic composition, the exceptional natural and built environment, tourist and cultural resources of international scope, the potential of indigenous entrepreneurship and the historical tradition of openness. To exploit these comparative advantages the Region should exploit opportunities such as application of new technologies, international demand for specific forms of tourism, liberalization of transport, energy and communications, and the reorganization of administrative frameworks for decentralisation.

A vision more focused on sustainable growth in South Aegean is described by the General Secretariat of Aegean and Island Policy (2012). It is based on the quest for a specific treatment of the islands because of the inequality produced by the insular character of the Region. The vision for 2020 is two-fold:

- **Qualitative Islands:** Despite the effects of size and isolation (small market, low accessibility), there are examples where the island products based on local resources and expertise are competitive. This success can be extended to services, such as tourism, instead of consuming the limited resources of the islands in a mass activity. New knowledge, innovation and skilled human resources are prerequisites for the success of such a strategy, which must be oriented in specific markets niches.
- **Green Islands:** given the limited natural resources on the islands, the strategy is based on reducing the use of scarce resources such as water, land, energy, and recycle waste generated by both businesses and the local population.

The expert team **recommends** that:

- The Aegean Islands do not need any specific treatment and regime because of their unique comparative advantages. Aegean is among the most beautiful archipelagos globally and their natural and cultural advantages offer multiple opportunities for sustainable growth and prosperity.
- Growth can be generated with a vision shared by the authorities and stakeholders combining the constant pursuit for ‘green islands’ based on resource efficient production and global branding; ‘quality islands’ based on high quality products for selective niche markets; and ‘smart islands’ based on a wide deployment of ICT for business and governance.

4. Towards a smart specialisation strategy

4.1 The regional research and innovation policy

The 2007-13 South Aegean regional operational programme (ROP) includes four priority axes, with the following breakdown of funds (Figure 3) and research and innovation priorities (Figure 4). Clearly, the OP foresaw a significant allocation of funds to increase competitiveness of tourism, manufacturing and trade, and foster the use of ICT in the public administration and transportation.

Figure 3: Priorities and funding of OP South Aegean 2007-2013

Priority axis	Total funding EU + national	%
1. Infrastructure and accessibility	56.576.099	16,26
2. Digital convergence and entrepreneurship	96.861.193	27,84
3. Sustainable development and quality of life	121.894.564	35,03
4. Spatial cohesion	66.581.340	19,13
5. Technical support	6.066.018	1,74
Total	349.192	100,00

A substantial investment has been made in support of SMEs expansion by 1100 new investments supported and realised in tourism, manufacturing, trade and services funded through relevant programmes and the development law.

Figure 4: regional priorities of research and innovation 2007-13

Policy Documents	Priorities and objectives
<p>Operational Programme of South Aegean, Athens 2007.</p> <p>Επιχειρησιακό Πρόγραμμα Περιφέρειας Νοτίου Αιγαίου 2007-2013, Αθήνα 2007</p>	<ul style="list-style-type: none"> • Improving the services and applications for the citizen (e-governance, administrative services with innovative applications). • Promoting the use of ICTs by businesses in the Region. • Strengthening investment plans of firms in manufacturing, trade, tourism and services with emphasis on promoting innovation, protection environment and environmental management, and diversification of products. • Fostering entrepreneurship within the population. • Promotion of research, technology and innovation with a focus on the productive fabric of the region. • Strengthening the resilience of the business in the new economy. • Ensuring adequate telecommunications. • Modernization of institutions and organizations related to the operation of businesses. Strengthening the entrepreneurship support structures and "one stop shop" services. • Modernization of businesses, facilities and services in the sector of tourism; promotion of specific forms of tourism. • Promotion of culture as an important incentive to attract high income tourism. • Development of cross-border tourism programs in the Mediterranean. • Promotion of tourism. • Strengthening partnerships between businesses (clusters). • Improving road safety through telematics.

However, very little has been achieved in the field of R&I policy. According to data from the GSRT Appendix D), funding awarded to RTDI projects in the South Aegean is 494,750 Euro, which represents about 0,5% of available funds under the respective axis. We have to conclude that no innovation policy was implemented in the Region since 2007, beside the considerable amount of funds that are available.

The design of the innovation policy for the period 2014-2020 started with the 1st Directive of the Ministry of Development (ΕΥΣΣΑΑΠ) in April 2012. Innovation priorities at national and regional levels are listed below.

Figure 5: Innovation priorities 2014-2020

Policy Documents	Priorities and objectives
<p>Region of South Aegean (2012) Διαμόρφωση των κατευθύνσεων εθνικής αναπτυξιακής στρατηγικής προγραμματικής περιόδου 2014-2020 (Formulation of guidelines for national development strategy of the programming period 2014-2020).</p>	<p>Based on regional advantages and opportunities, but also the directions of Europe 2020, key strategic objectives of the Region are (p. 12-13):</p> <ul style="list-style-type: none"> • Support the employment and retention of population and productive ages, strengthening the skills of human resources, targeted training in entrepreneurship and information and communication technologies, and strengthening of Universities and Technological Educational Institutes located in the region. • Strengthening the economic base, by creating and developing new industries, the recovery of manufacturing, and by diversifying the productive base of the islands away from an exclusive specialization in tourism. • Strengthening of ICT by improving networks and services. <p>These objectives are to be realised through initiatives in the thematic axis '1-Strengthening research, technological development and innovation' and '2-Improving access to ICT use and quality'.</p>

Policy Documents	Priorities and objectives
<p>University of Aegean (2012) Αναπτυξιακή Στρατηγική για την Προγραμματική Περίοδο 2014-2020 στην Περιφέρεια Νοτίου Αιγαίου (Development Strategy for the Programming Period 2014-2020 in the Region of South Aegean).</p>	<ul style="list-style-type: none"> • Creation of National Centre of Industrial Design in Syros (Post-graduate studies and vocational training). • Creation of Centres of Excellence in sectors such as Tourism, Environment, Sea Transport, which will support the local economy • Creation of Knowledge Transfer Office of South Aegean. • Development of ICT applications for citizens and living in the Region. • Development of a management system for natural disasters. • Creation of a system for managing the cultural and physical environment in view of climate change. • Summer schools of e-learning in industry, design, tourism, environment and energy. • Promotion of sustainable transport and strategic decision making in civil and cargo transports.

The innovation policy proposed by the regional government is focused on the productive tissue and the use of ICTs. More innovation and knowledge oriented are the actions suggested by the University of Aegean. It is clear that the two approaches focus on tourism as main export productive sector, but also look for diversification and enlargement of the regions' productive base. The goals and actions described are achievable if funded publicly. Critical mass and sustainability based on PPPs and private funding are questionable. However, in both cases more effort is needed to turn these objectives and actions into strategy and strategic planning.

Recommendations

The vision of “Quality Islands – Green Islands - Smart Islands” should guide the overall strategy of South Aegean. SWOT and priority setting should be based on operational goals for turning this vision into reality. Strategic planning demands also the recognition of areas in which interventions have high multiplication effects, and linkages enabling the impact to spread out in more sectors.

We recommend a technology focus based on the smart specialisation perspective for diversification and discovery of niche opportunities in global markets. Tourism is the starting point for this discovery in connection to technologies that can diversify the offered products and services away from mass tourism. Clearly other forms of tourism than summer tourism, taking place all year round, should be considered. Technologies to focus should include: (1) ICT and digital media, (2) creative services for marketing and promotion, (3) organic food production and foods for healthy living, (4) green energy, and (5) smart city technologies.

Most innovation support actions to be included in the strategy should take the form of “Innovation Platforms” that create a framework (legal, organisational, natural resources, physical facilities, digital, funding, etc.) grouping a large number of innovation initiatives. Platforms should give comprehensive support to the entire innovation cycle, including financial, technological, productive, and market support. There are a number of examples of activities based on natural resources and ecosystems (climbing in Kalymnos, bird watching in Lesvos) that created platforms for new activities all year round.

The criteria used to select platforms should include sustainability after the funding period; creation of capabilities; integrated solutions to technology-production-market-funding; private leverage; number of potential beneficiaries; and contribution to development goals. Viability will be higher if combined with PPPs and private funding.

4.2 Cluster and entrepreneurship policies

Box 2 exhibits the South Aegean sectors, with the highest combined scores in Size⁹, Specialisation¹⁰ and Focus¹¹, according to the Cluster Observatory Star Rating System.

Box 2 Sector Size, Specialisation and Focus in South Aegean

3 stars: *None*
 2 stars: *Tourism & Hospitality*
 1 star: *Transportation & Logistics, Maritime, Construction*

The South Aegean does not have a mature cluster, however, Tourism & Hospitality, is a dynamic organic cluster around which other emerging sectors could be further developed if the appropriate cluster policies were applied (see Box 3). This Box provides hints for the identification of opportunities at the interface between Tourism and other disciplines/industries/clusters and the deployment of cross-clustering policies. The analysis is based on data from 2009 and the region should update with more recent data wherever possible to base the RIS3 on good foundations.

Box 3: Mature and Emerging Clusters in South Aegean

Mature Clusters:
 None

Emerging Clusters:
Tourism & Hospitality (building completion, retail sale of goods and food, activities of travel agencies and tour operators; tourist assistance activities, hotels, restaurants, bars, museums and other cultural activities, eco-tourism), Farming & Animal Husbandry (fishing, fish farming and related service activities), Quarrying of Stone, Construction Materials (manufacture of cement, lime and plaster), Transportation & Logistics (sea and coastal water transport, supporting transport activities), Maritime (building and repairing of ships and boats), Stone Quarries, Jewellery and Precious Metals, Financial Services, Processed Food, Agriculture (biological, wine).

At the meeting held on 26 November 2012 and as mentioned in the SWOT analysis of the regional strategy 2014-20, the South Aegean Region lacks previous experience in **cluster policies**, no cluster “culture” and **there are** no mature clusters operating in the region. The cluster policy of the Balearic Islands (a specialised, connected and sophisticated regional innovation system) was extensively discussed and the participants stated their willingness to study and implement similar types of cluster policy. Figure 6 presents the Balearic Islands model to organise RDI based policies in clusters of companies that develop technologies related to tourism. It is **recommended** to replicate a competitive technology industrial cluster approach to facilitate the rapid spread of good practice (e.g. Balearic Islands, Corallia Clusters

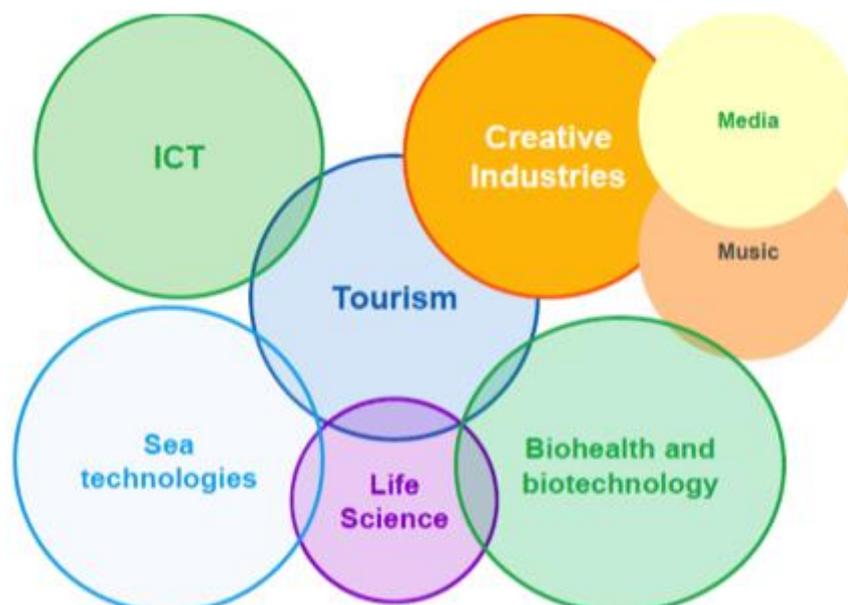
⁹ The 'size' measure shows whether a cluster is in the top 10% of all clusters in Europe within the same cluster category in terms of the number of employees. If employment reaches a sufficient share of total European employment, it is more likely that meaningful economic effects of clusters will be present. Those in the top 10% receive one star.

¹⁰ The 'specialisation' measure compares the proportion of employment in a cluster category in a region over the total employment in the same region, to the proportion of total European employment in that cluster category over total European employment. If a region is more specialised in a specific cluster category than the overall economy across all regions, this is likely to be an indication that the economic effects of the regional cluster have been strong enough to attract related economic activity from other regions to this location, and that spill-overs and linkages will be stronger. If a cluster category in a region has a specialisation quotient of 2 or more it receives a star. If a cluster category in a region has a specialisation quotient of 2 or more it receives a star.

¹¹ The 'focus' measure shows the extent to which the regional economy is focused upon the industries comprising the cluster category. This measure relates employment in the cluster to total employment in the region. If a cluster accounts for a larger share of a region's overall employment, it is more likely that spill-over effects and linkages will actually occur instead of being drowned in the economic interaction of other parts of the regional economy. The top 10% of clusters which account for the largest proportion of their region's total employment receive a star.

Initiative). Finally, the region should create a **cluster secretariat** or co-operate with one in partnership with neighbouring regions or at national level.

Figure 6: Technologies and clusters supporting tourism in the Balearic Islands



Source: Smart Specialisation Strategy in the Balearic Islands

Furthermore, to move beyond the figures that are available for comparison, more qualitative focus studies should be carried out in the activity domains where the region shows relative specialisation to identify niches. This involves expert work on **value chain analysis**. It also involves an analysis of the linkages between clusters/industries/sectors, in order to examine whether one can talk about related variety across the areas of regional specialisation. Due to the fact that Tourism is the most significant sector the needs and requirements have to be initially collected, from the main actors in this sector, that is: tour operators, travel agencies, accommodation, vehicle hire, marine transport, land transport, air transport, airports, ports and marinas, sailing, restaurants, etc.

An emphasis should be given to facilitating **cross-clustering** and the identification of innovation opportunities at the interface between different clusters (e.g. incorporate ICT in priority sectors to increase competitiveness). Specific funding measures and support should be developed aimed at primary and secondary sector innovation and inter-linkages with tourism (for the primary sector to produce differentiated products and for the secondary to connect the primary sector with tourism, as stated in [x]).

A particular focus should be given to strengthening the cooperation of existing/emerging sectors/clusters to make **connections to local, national and global value chains**. In this respect and due to the fact that the Region is insular and has maritime borders with Turkey and other Greek regions, it should consider incentives for the development of transnational and trans-regional clusters.

In the South Aegean during the current programming period (2007-2013) entrepreneurial and innovation support services have been promoted by various organisations (e.g. Investor Reception Centres, etc), through Structural Fund projects. However, despite the efforts of such intermediaries, collaboration between the small number of innovation actors remains limited. It is **recommended** to create a **one-stop-shop** by merging existing structures to support investors/SME in designing and implementing business plans with an export orientated focus.

There are currently no industrial zones or industrial/science parks nor incubators established in the region and none are foreseen in the 2014-20 regional strategic. It is

recommended to undertake a feasibility study to examine the potential for the establishment of an **incubator**, linked to other policies like clusters that will host new technology based firms complementary to tourism. To ensure adequate early-stage and growth capital is available, it is **recommended** to support the creation of a **business angel network** and co-investment fund, in partnership with other regions (e.g. Crete and North Aegean) to ensure a large enough deal flow.

4.3 Digital economy and ICT policies

The South Aegean Region has a rather good broadband penetration compared to other Greek Regions. According to the “Internet Users in Greece” survey (March 2010)¹² of the Observatory for Digital Greece¹³, PC usage is at 45.4%, and use of the Internet had reached 47.2% of the regional population. The region hosts a small number of ICT companies, with limited turnover, mainly focused on system integration, maintenance, and software support for State agencies and for the hotel and retail sectors. This shortfall causes a significant drain of talented ICT professionals from the region, as the relevant jobs are limited.

The most notable ICT projects implemented in recent years were concerned with the digitising of cultural content, a system for physical disaster prevention, the implementation of metropolitan access optical networks (MAN) and the networking of the higher education institutions and the school units to the national research and education network and the Internet. Moreover, since 2011, a partnership between South Aegean and Crete has developed a network of e-services and applications that allows citizens to interact with the community and local government within the Cretan and South Aegean Living Lab¹⁴. The main fields of interest of this Living Lab are e-government, smart cities and ICT regional policy.

There is currently no detailed analysis of ICT needs per sector. However, according to the 2014-20 regional strategy¹⁵, the following sectors are best suited to benefit from ICT tools and technologies:

Tourism and Culture: entrepreneurs, content administrators and tourists should be empowered in order to enhance the value and the impact of this industry. The involved SMEs should be motivated to exploit modern technology and synergies to maximize the outreach of the south Aegean Islands and their monuments, extend the tourist season, minimise management and advertising costs, and thus create more and better jobs. Special emphasis should be placed in deploying virtual reality and mobile apps.

E-government and learning: The insular nature of the Region indicates that the cost of dealing with the regional public services is enormous both for citizens and for the regional and national government. Properly designed and interoperable e-government apps would be a major contribution towards efficiency and transparency. The services could be easily combined with proper e-learning applications, to overcome the double insularity of the Region.

There is no master plan for **e-government services**. Most (cadastre, e-prescription, e-invoicing, etc) are administered by national authorities, however, a number of other e-services, like local taxation or regional permits, may be regionally administered. All e-

¹² Ταυτότητα χρηστών internet στην Ελλάδα”, Παρατηρητήριο για την ΚτιΠ, Μάρτιος 2010. http://www.observatory.gr/files/meletes/A100526_%CE%A0%CF%81%CE%BF%CF%86%CE%AF%CE%BB%20%CF%87%CF%81%CE%B7%CF%83%CF%84%CF%8E%CE%BD%20internet%202010.pdf

¹³ See: <http://www.observatory.gr>

¹⁴ <http://www.openlivinglabs.eu/ourlabs/Greece>

¹⁵ “Προτάσεις Περιφέρειας Νοτίου Αιγαίου για τη διαμόρφωση κατευθύνσεων εθνικής αναπτυξιακής στρατηγικής για την περίοδο 2014-2020”, Περιφέρεια Νοτίου Αιγαίου, Σεπτέμβριος 2012.

government services should adhere to well-defined interoperability standards, and be based on dependable cloud computing platforms¹⁶.

Aquaculture: as a potential contributor to sustainable growth, with export potential, it is crucial to adopt modern ICT tools in the various production/distribution stages (real-time monitoring and control, logistics, e-commerce, procurement, etc).

Transportation: the cost and time lost on transportation for citizens and enterprises is enormous. Modern smart transportation approaches, based on ICT, should be deployed, to minimise the cost of travelling, reduce the consumption of fossil fuels, and improve the efficiency of businesses.

Environment: protecting the natural resources is a key component of a viable development strategy of a Region full of tourist attractions. ICT tools should be used by the relevant agencies to meet their goals, at a competitive cost.

Broadband Internet: the region should complement the related national- and EU-level actions, to further extend broadband. Possible actions include public free-access hot-spots in tourist sites, in ports, schools, sports/recreation areas, churches, etc. The Region can also investigate ways to improve the utilisation of existing metropolitan area networks, and provide proper incentives for the expansion of next generation cellular networks (e.g. LTE). There is no reference to viable plans for the deployment of new, and the extension of next generation access networks. Hence, the Region should prepare an operational inventory of ICT infrastructure

Finally, the Region should consider a flexible mechanism, tailored for its particular size and needs, to ensure a substantial private sector involvement in the project cycle and risk sharing. This can be best carried out by flexible PPPs, or by the establishment of targeted ICT Vouchers for selected households or SMEs.

5. Monitoring and evaluation

The capabilities for monitoring, evaluation and analysis of innovation programmes and performance should be further solidified and embedded in both the new regional government structures and the wider partnership. A specific budget line could be set aside for a partnership based regional innovation observatory that could fund studies and doctoral/post-graduate research into innovation practice in regional firms, etc.

Guidance on evaluation methodologies for innovation measures is already available for the 2014-20 period¹⁷ and the IMA, regional authorities, etc, should make themselves aware of and use such materials to develop an evaluation plan. At a minimum, one official should be specifically tasked with setting up an evaluation and monitoring system for innovation measures in the IMA.

¹⁶ http://ec.europa.eu/information_society/activities/cloudcomputing/docs/com/com_cloud.pdf

¹⁷ See: <http://bit.ly/Igzx5T>

Appendix A List of people attending regional workshop

Giannis Macheridis, Governor of the South Aegean Region

Ioannis SPILANIS, Prof of University of Aegean and Secretary General of Aegean and Island Policy

Eleftheria Ftalkaki, Vice Governor of Dodecanese

Makryonitis George, Vice Governor of Cyclades

Antonis Voutsinos, Head of IMA

Popi Tsngaraki, Development Corporation of Local Authorities of Cyclades

Antonis Maragos, Chamber of Cyclades

Alexandros Tsiantis, Chamber of Cyclades

Giorgos Maragos, Chamber of Cyclades

Giannis Rotas, Chamber of Cyclades

Vagellis Aragiannis, Intermediate Managing Authority of South Aegean

Andreas Gialoglou, Intermediate Managing Authority of South Aegean

Aggeliki Palaiologou, Intermediate Managing Authority of South Aegean

Appendix B List of key documents and reference materials consulted

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Eurostat data accessed on 5th December 2012, <http://epp.eurostat.ec.europa.eu>

Appendix C Key Actors in the regional innovation system

Leading Businesses:

Union of Cooperatives of Santorini (Santo wines), Union of Agricultural Cooperatives of Naxos, Volcan Wines, Pliotopos, Summerland Resort, Escala Yatching, Santorini Dive Center, Ef Zin, Blue Bay, Paros Kite Pro Center, Island, Maistrali Marin, Aegean Style, Bertos, Νεωριον, Πλαστικά Συρου, Τυποκυκλαδική, Κωστας Πρεκας, Καρναγια Συρου, Ξενοδοχείο Ερμης, Εργαστήρια Παραγωγής Τοπικών Προϊόντων (Λουκουμιών, Χαλβαδοπιττας), Αγροτουριστικός Συνεταιρισμός Γυναικών Συρου "Το Καστρι", Αργυρω Φυριου Κ Σια Ε.Ε, Γεωργιος Ζαννακης, Γεωργιος Καρλος Και Σια Ε.Ε, Αγροτικός Συνεταιρισμός Γυναικών Υδρουσας, Αφοι Γαρυφαλλου Κ Σια Ο.Ε, Λεωνιδας Ζαιρης, Γεωργιος Ιωαννη Χαλα, Α. Βερναρδη Τουριστική Κ Σια Ο.Ε, Α. Κ. Γονεος Α.Ε, Μαρινησ Εξαδακτυλος Ο.Ε, Ένωση Αγροτικών Συνεταιρισμών Τηνου , Ιωαννα Βασιλειου Σταη, Παναγιωτης Στυλιανου Τουφεκλης, Χαλαρης Προτυπη Μοναδα Παραδοσιακών Γλυκών Α.Ε., Παλαμαρης Εμμανουηλ Εταιρία Εμπορίας Ειδών Διατροφής-Αντιπροσωπείες Εισαγωγές Εξαγωγές, Ξενοδοχείο Tinos Beach, Παπαναστασιου Αφοι Ιδιοκτητη Μεταφορική Εταιρία Επε, S&B Βιομηχανικά Ορυκτά, Εξαγωγικές Επιχειρήσεις Εξορυξης & Εμπορίας Μεταλλευτικών Και Λατομικών Ορυκτών (6 Συνολικά), Εργωνια Ανωνυμος Εταιρεια, Α.Βηχος Και Σια Ανωνυμη Ξενοδοχειακη Και Τουριστική Εταιρεια, Lagada Beach Hotel, Hotel Santa Maria, Δωρική Α.Ε., Hotel Appolon, Χρ.Μπραουδογιαννη - Κατ. Καραντωνη Οε, Athena Travel, Ν. & Π. Πειρουνακης Ο.Ε., Συνεδριακό Κέντρο Μήλου - Γεωργιος Ηλιοπουλος, Μεταλλευτικό Μουσείο Μήλου (S&B), Επιχειρήσεις Σκαφών Εκδρομών Και Περιηγήσεων Θαλάσσιες (Πανώ Απο 20 Συνολικά), Α. Και Ν. Νινος Ο.Ε., S&B Βιομηχανικά Ορυκτά, Μπεντομιαίν Επιχειρήσεις Κιμώλου - Εισαγωγές - Εξαγωγές Μεταλλευμάτων Ανωνυμη Εταιρεια, Πετρος Καλουδης, Κληροδοτήμα Αφεντακη, Επιχειρήσεις Αγγειοπλαστών (Περίπου 30), Ελιες Ξενοδοχειακές Και Τουριστικές Επιχειρήσεις Α.Ε., Petali Village Hotel, Podotas Group, Ιχθυοκαλλιέργειες Σερίφου (Ομίλος Global Finance?), Κρinas Ανωνυμη,Τεχνική,Τουριστική Και Ξενοδοχειακή Εταιρεια, Σωματείο Λεμβουχών Θηρας, Ένωση Συνεταιρισμών Γεωργικών Προϊόντων Σαντορινής "Santo Wines", Κτήμα Σιγαλα Αε, Γεωργιος Κουτσογιαννοπουλος, Κτήμα Ι. Και Μ. Αργυρος, Πετρος Οικονομου, Αγροκτήμα Ιωαννη Νομικου, Ευαγγελος Καραμολεγκος, Χαρηδημος Χατζηδακης, Αρτεμις Καραμολεγκος, Γεωργιος Γαβαλας, Καναβα Ρουσσος,Ι Μπουταρης Και Υιος Οινοποιητική, Γαία Οινοποιητική, Ανδρεας Κοντονικολης, Ιωαννης Σιδερης, Θεόδωρος Παπαδόπουλος, Γεωργιος Μαναλης, Δ Δαμιγίου Και Σια Εε, Δημητριος Κουτσογιαννοπουλος, Blue Line Αε, Χρυσανθος Μανου Καραβιας Αε, Πελικαν Α.Ε., Άννα Ιωαννου Δακουτρου, Κοινοπραξία Ε/Γ/Τ/Ρ Πλοίων Θηρας, Μαρια Λιζαρδου, Καμαρι Τουρς Αε, Liliu Calderas Αε, Majestic Htl, Περιβολας Αε, Volcano's View Villas Αε, Μαρκος Δακτυλιδης Επε, Ευδακης Νικολαος Και Σταματης Ο.Ε., Νικμαρ Α.Ε., Διακοφτης Α.Ε., Σοφία Ιωαννιδου Α.Ε., Ι. Και Φ. Κονταρατος Α.Ε. Και Σια Ε.Ε., Μοσχος Σταυρος Και Σια Ε.Ε., Λητω Ε.Π.Ε., Ειρήνη Κυριακου Καλαμαρα Α.Ε., Εας (Ένωση Αγροτικών Συνεταιρισμών) Ναξου, Υιοι Α. Κουτελιερη Οε, Γεωργιος Β. Κουτελιερης Και Σια Ο.Ε., Μαρinos Συριανος Και Σια Ο.Ε., Σμυριδορυχεια Ναξου, Lagos Mare, Naxos Resort, Zas

Travel, Λατομεία (Naxos Marble / Υιοί Γεωργακοπούλοι - Α. Σοφικίτης Ο.Ε, Παντελίας Α. Ανώνυμη Βιομηχανική Και Εμπορική Εταιρεία, Κτηνοτροφικές Μονάδες, Αδελφοί Ρήγα Αεβ, Σπυρος Μπαλιός Μονεπέ, Ε.Θ.Μωραίτης Αε, Γεωργίος Θεοδώρου Μωραίτης, Ένωση Αγροτικών Συνεταιρισμών Παρού, Ένωση Ξυλουργών Παρού Αε, Στυλιανός Αναστασίου Γκίκας, Σοφία Μιχαήλ Ηλιάδου, Μαρία Λητώ Λαμπαδαρίου Και Σία Εε, Παναγιώτης Αθανασίου Χαμηλοθώρης, Λατομεία Λουκή Αε, Δαβερωνάσ Ματθαίος Και Σία Οε, Κτήμα Λαζανάκη Μονεπέ, Ανώνυμη Εμπορική Εισαγωγική Βιοτεχνική Βιομηχανική Ξενοδοχειακή Και Ναυτιλιακή Εταιρεία Γεωργίος Νικολάου Ζουμής Αε, Α.Δ.Αλιπραντής Αε, Σκανδάλης Αε, Θεοδώρα Ευαγγελού Παπαγιακούμου, Χρήστος Παντελίας Και Σία Οε, Κοντογιωργής Αε, Δημοτική Μονομετοχική Αε - Παρκο Παρού Δημοτική Αε, Παντελής Ανουσάκης, Ναυτικός Όμιλος Παρού, Γεωργίος Γεωργουδάκης Και Αλέξιος Τέτσης Οε, Ελενη Ευαγγελού Γεωργουδάκη, Γ.Προυντζός Και Σία Οε, Μαργαρίτα Κωνσταντίνου Φυρογενή, Ιωάννης Μανής Αε, Porto Paros, Astir Of Paros, Yria, Holiday Sun, Ποσειδών, Μίνωις Village, Lefkes Village, Νικόλαος Ζουμής Και Σία Οε.

Key Research Actors:

University of the Aegean

Financing:

Cooperative Bank of Dodecanese

Incubators, Industrial Areas/Zones/Parks

None

Principal Intermediaries:

Development Corporation of Local Authorities of Cyclades, Development Agency of Dodecanese, Association for the Development and Progress of the Dodecanese, Investor Reception Centres in Cyclades and Dodecanese, Center of Entrepreneurial and Technological Development of South Aegean, Chamber of Cyclades and Dodecanese, Hoteliers Association of Naxos, Santorini, Mykonos, Rhodos, Kalymnos, Kos, etc.

Appendix D Regional RTDI funding under the OP Competitiveness and Innovation

Allocation by region of GSRT grants for RTDI projects (State Aid) under the OP Competitiveness and Innovation

Region	Enterprises	Research organisations	Other entities	Grand Total	% share
Attiki	€ 78,383,203	€ 33,291,462	€ 480,411	€ 112,155,076	47.4%
Central Macedonia	€ 22,588,727	€ 13,566,039	€ 38,300	€ 36,193,066	15.2%
Western Greece	€ 22,841,816	€ 8,901,221	€ 7,000	€ 31,750,037	13.4%
Crete	€ 3,623,524	€ 13,728,214	€ -	€ 17,351,738	7.2%
Stereia Ellada	€ 9,388,903	€ 1,397,119	€ -	€ 10,786,022	4.6%
East Macedonia & Thrace	€ 5,886,928	€ 1,864,884	€ 25,090	€ 7,776,902	3.3%
Thessaly	€ 4,648,471	€ 2,134,643	€ 253,000	€ 7,036,114	3.0%
Epirus	€ 2,403,100	€ 1,887,252	€ -	€ 4,290,352	1.8%
Peloponnese	€ 3,382,986	€ 545,200	€ -	€ 3,928,186	1.7%
Βορείου Αργαίου	€ 1,813,280	€ 425,506	€ -	€ 2,238,786	0.9%
West Macedonia	€ 1,355,665	€ 524,695	€ -	€ 1,880,360	0.8%
Ionian Islands	€ 388,000	€ 120,000	€ -	€ 508,000	0.2%
Νοτίου Αργαίου	€ 476,000	€ -	€ 18,750	€ 494,750	0.2%
Grand Total	€ 157,180,603	€ 78,386,235	€ 822,551	€ 236,389,389	100%
	66.5%	33.2%	0.3%		

Source: data received from the GRST on 10 October 2012. Calculations authors.

Appendix E Total Gross value added at basic prices – South Aegean

% of Total Gross value added at basic prices	2005	2006	2007	2008	2009
A - Agriculture, forestry and fishing	2.87	2.76	2.57	2.15	2.27
B-E - Industry (except construction)	6.61	6.80	6.14	6.10	6.20
C - Manufacturing	2.52	2.84	2.70	2.57	2.68
F - Construction	6.91	8.26	6.79	5.90	6.60
G-I - Wholesale and retail trade, transport, accommodation and food service activities	51.74	51.14	53.11	54.44	49.69
J - Information and communication	1.41	1.44	1.47	1.16	1.34
K - Financial and insurance activities	2.31	2.25	2.06	1.92	1.99
L - Real estate activities	7.95	7.75	8.11	8.51	9.08
M_N - Professional, scientific and technical activities; administrative and support service activities	2.93	2.89	2.65	2.59	2.76
O-Q - Public administration, defence, education, human health and social work activities	14.53	13.69	13.95	14.64	16.86
R-U - Arts, entertainment and recreation; other service activities; activities of household & extra-territorial organisations and bodies	2.74	3.03	3.14	2.59	3.20
TOTAL - All NACE activities - in Millions of Euros	5,779.6	6,000	6,437.2	6,920.6	6,819.5

Source: Eurostat

Appendix F Relative regional specialisation in 20 industries – South Aegean

	Industry	Rank in Europe	Specialisation	Employment
1	Building completion	1	3.01	4 688
2	Other retail sale of new goods in specialized stores	1	2.33	10 285
3	Repair of personal and household goods	1	8.56	1 281
4	Activities of travel agencies and tour operators; tourist assistance activities n.e.c.	1	6.88	2 329
5	Fishing, fish farming and related service activities	2	28.16	2 621
6	Quarrying of stone	2	11.37	793
7	Hotels	2	7.72	9 422
8	Restaurants	2	2.52	6 317
9	Library, archives, museums and other cultural activities	4	3.28	738
10	Manufacture of cement, lime and plaster	5	10.18	515
11	Sea and coastal water transport	9	7.37	882
12	Building and repairing of ships and boats	12	5.08	1 062
13	Retail sale of food, beverages and tobacco in specialized stores	12	2.23	2 628
14	Other supporting transport activities	16	2.40	1 082
15	Bars	17	2.54	2 953
16	Retail sale in non-specialized stores	22	1.64	5 963
17	Adult and other education	23	1.95	1 533
18	Maintenance and repair of motor vehicles	25	1.63	1 753
19	Growing of crops; market gardening; horticulture	33	1.87	3 414
20	Administration of the State and the economic and social policy of the community	36	1.54	6 425

Source: Smart specialisation in Europe: European specialisation data by region Centre for Strategy and Competitiveness, Stockholm School of Economics, April 2011