



EXECUTIVE SUMMARY

SMART SPECIALIZATION STRATEGY for Cyprus

**Nicosia
May 2014**



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Preface

The Executive Summary of the final report of the **Smart Specialisation Strategy - S³Cy** has as its main objective to inform in a concise -yet precise- way about the main aspects of the study and its findings. The Executive Summary consists of three sections.

The first section provides an introduction to the idea and implementation framework of Smart Specialization in Europe, as well as the preparatory framework and governance of **S³Cy**, both in terms of methodology as well as participation.

The second section presents the main findings of the **Analysis** as these have resulted from desk research, the primary quantitative and qualitative research and the extended consultation process which took place in the form of meetings, thematic workshops, workshops, open public events and focus groups.

Section three, the “**Conceptual Approach and Methodology**”, includes a brief presentation of the **Vision** of S³Cy, the **Coherent Strategy Grid and Objectives** and the **Action Plan**. It also provides a description of the **Monitoring and Evaluation Mechanism**.

Due to the nature and scope of the Executive Summary, most of the information, data, processes, conclusions and suggestions had to be limited and presented in a very restrictive way. A precise, coherent and detailed presentation of the strategy is provided in the final **S³Cy** report.



1. INTRODUCTION

Smart Specialization in the Context of Cyprus

For many reasons, which are primarily related with the size of the country, the structure of the economy, the nature of businesses, the absence of a critical mass in the various factors of production and consumption of innovation, the performance of Cyprus cannot be high in all the sectors of economic activity.

The idea of smart specialization can have a substantial application to the developmental framework of Cyprus, taking into consideration the fact that the country is experiencing in an acute way the financial crisis while at the same time the invincible need for the rationalization of public spending is clearly perceived.

Importance

The importance for the design and development of a Smart Specialization strategy for Cyprus - **S³Cy** is specified by five main dimensions:

The first dimension relates to the direct linkage of **S³Cy** with the Strategic Framework for Europe 2020 and more specifically with its objectives for “smart, sustainable and without exclusions” development.

The second dimension is linked to the fact that the **S³Cy** is based on the principles of Participatory Planning which involves in an active manner all the aspects of the “guardable helix”. This, by itself, renders the strategy as one of the most integrated attempts to formulate a strategy for Research, Technological Development and Innovation (RTDI) that were ever initiated in Cyprus.

The third dimension is related to the difficult financial circumstances *which*, inevitably, create limitations to the availability of government funds as well as the increased and compelling

need for targeted programs and their interfacing with the real economy as a way for enhancing competitiveness and potential for development.

The fourth priority stems out from the fact that the design, development and implementation of the **S³Cy** consists an **ex-ante conditionality for the utilisation of resources from the structural funds** of the EU. The implementation of the **S³Cy** can definitely offer a way ahead while at the same time can also contribute significantly to the public funding of RTDI activities for the following years

Finally, the implementation of the Action Plan of **S³Cy** is one of the very few funding frameworks which can be utilized by researchers and businesses in Cyprus in their effort to effectuate their innovative and pioneering ideas for the benefit of the economy and society. If the economic scarcity of the last few years is considered, and the resulting inability to announce research calls and policy measures, this final dimension obtains much higher importance.

Challenges

The Challenges which someone has to face when a long-term developmental framework is being designed are multiple and multifaceted. With regards to **S³Cy**, the main challenges that the Research Team had to address were as follows:

The first challenge is related to the need for a synthesis of an **integrated Vision and the identification of Priorities**, taking into consideration the fact that until recently the national RTDI programmes had a purely horizontal nature and, as such, they were allowing the utilization of resources in any research direction. To address this issue, the Research Team has proceeded to the formulation of a framework of sectoral priorities

through the synthesis of multiple parameters, facts and data. At a next step a process of a detailed examination was initiated through a process of dialogue with all the relevant stakeholders.

The second challenge concerned the **rationalised choice between “contrasting” or/and “competitive” priorities, philosophies, expectations or desires** of various groups/sections of the research and business communities. This challenge was further complicated by the usual dilemmas which are surfaced during the design process (e.g. basic or applied research, research excellence or targeted innovations, few and large projects or smaller and more). The Research Team aspired to synthesize, to the extent that this served the basic principles and objectives that were set, in order to render the **S³Cy** a unified operational, efficient and effective mechanism for development and not an amalgamation of disjointed funding tools.

The third challenge is linked with the **optimal utilization of economic resources**. The special/peculiar circumstances which are currently experienced in Cyprus have posed significant limitations to the process of developing an Action Plan while at the same time have emphasized the compelling need for fewer and targeted options. In addition, the plan takes into consideration the need for immediate implementation of the strategy since the largest percentage of the budget will come from the Structural Funds of the EU.

The fourth challenge concerns the **identification of a proper balance in accordance to other national and European strategies and programs**. The main option which is suggested is that the proposed measures of the **S³Cy** Action Plan should have a primarily complimentary and supportive role in relation to the implementation of other EU wide policies (EU2020, H2020, Joint Programme Initiatives etc).



2. CONCEPTUAL APPROACH - METHODOLOGY

The Six steps of Smart Specialization

According to the guiding principles of the EU the methodology for the implementation of the Smart Specialization includes the following steps:

1. **Analysis** – of the national or regional context and potential, in relation to other nations and regions
2. **Governance** – set up an inclusive structure and incentives for securing broad stakeholder involvement
3. **Vision** – produce a shared vision among stakeholders
4. **Prioritization** – select a limited number of priorities for regional development
5. **Policy mix** – combines a mixture of policy measures and support them with road maps or action plans to secure implementation
6. **Evaluation and monitoring** – develop systems for continuous and evidence-based monitoring of the process and follow up on results and effects, in order to learn and revise the policy mix.

In the following sections a summary of the implementation steps are presented.

Step 1: Analysis of the regional context and potential for innovation

The first step in developing a Research and Innovation Strategy for Smart Specialisation (RIS3), according to the S3 Platform guidelines, is to make a sound analysis of the regional economy, society and innovation structure.

The analysis should include an assessment of regional assets, often based on a combination of SWOT analysis (strengths, weaknesses, opportunities and threats) and other tools, to

identify the regional potential for economic differentiation and exploitation of related variety. The main idea is to apply a broad definition of innovation and build competitive advantages by combining unique assets and competences in an innovative way, often in the interception between existing clusters, sectors or disciplines. However, it is also important to analyse regional potential in relation to other regions – nationally as well as globally – and to map linkages and flows of goods, services and knowledge across the world. Finally, “smart specialisation” requires a dynamic entrepreneurial environment, involving entrepreneurs of various kinds, e.g. individuals, firms and other organisations, in the strategy design process.

To this end, during the analysis phase an analytical and systematic recording and assessment of the existing evidence, data and information in relation to the “strengths” and “weaknesses”, the main obstacles and the main challenges that hinder the development of the broader RTDI system in Cyprus.

Furthermore, a series of parameters that influence significantly the design of RTDI strategy, such as the international orientation and position of Cyprus, the broader strategic goals for development, the influence from other European and international programs, the responsibilities/commitments in relation to the available economic resources, the regulatory and institutional framework.

To attain this objective, the research team decided to proceed to the following:

- Review of the extant literature
- Collection and analysis of case studies on smart specialization
- Recording and evaluation of the current situation of the various sectors of economic activity

- Local and international reports for the economy and systems of innovation
- Evaluation of national programs for research, technology and innovation
- Recording and evaluation of statistical data
- Field survey to enterprises with structured questionnaires
- Qualitative study (interviews with opinion leaders, focus groups)

To enable an integrated and holistic analysis of all the available data and at the same time to ensure the construction of a clear and precise picture for the current situation the following analytical tools were used:

- SWOT analysis
- GAP analysis
- VRIO analysis
- Social Network Analysis

Step 2: Governance of S³Cy - Safeguard of participation

The logic of the vertical order of choices developed above is often associated with failures in carving out a policy and the making of decisions with top to bottom central procedures.

The selection of the priorities is difficult. Therefore, smart specialization was developed as a dynamic process of discovery of entrepreneurship that includes cooperative leadership schemes. Thus, the dilemma from top to bottom or reverse ceases to exist.

In this context, which is in line with the principles of participatory planning, attempts have been made to ensure consensus through a governance system of S³Cy with the involvement of all stakeholders, the market and also the civil society.

The study of S³Cy was implemented with the participation of four bodies/groups.

The Governing Board (GB) is composed by representatives of stakeholders and constitutes the final decision forum and formation of a mutually accepted strategy and vision. The Chairman of the Committee is the Secretary General of the Directorate General for European Programmes, Coordination and Development of the Republic of Cyprus (DG-EPCD) and President of the Research Promotion Foundation.



In addition, representatives of the quarter axis in highest level, participate in the GC: Ministry of Energy, Commerce Industry and Tourism, the Ministry of Education and Culture, Ministry of Agriculture, Natural Resources and Environment, the Research Promotion Foundation, The

University of Cyprus, The Cyprus University of Technology, The Open University of Cyprus, the Cyprus Scientific Council, the Rectors Committee, the Association of Research Organizations, the Cyprus Productive Center, the Human Resource Development Authority, Cyprus Employers & Industrialists Federation, the Cyprus Chamber of Commerce and Industry, the Association of Cyprus Banks, the Cyprus Consumers Association and the Technical Chamber of Cyprus.

The Monitoring Committee (MC) is a small flexible body that monitors the implementation of the study and takes “interim” decisions with regards to its evolution. The members involved are GDEPCD, the Ministry of Energy, Commerce Industry and Tourism as well as the Coordinator of S³Cy.

The preparation of S³Cy has been undertaken by the Research Promotion Foundation in collaboration with a Cyprus University of Technology research group. Thus, the members at the core of the Study Group were executives from the Research Promotion Foundation and the Cyprus University of Technology whereas, officers of the DG-EPCD, as well as a significant number of external auxiliary collaborators, contributed in various activities.

Finally, the Focus Groups, which were formed in the context of implementation of special and thematic laboratories, can be considered part of the S³Cy Governance.

Step 3 – Elaboration of an overall vision for the region

To have a clear vision, with the main goals of the regional development, which is shared by all the stakeholders, is important to secure stakeholder involvement. It is of great importance to communicate this vision, both during the RIS3 design process and during the implementation of the strategy. The vision becomes particularly important in guiding regional prioritization, in the next step of the RIS3 model.

Step 4 – Identification of priorities

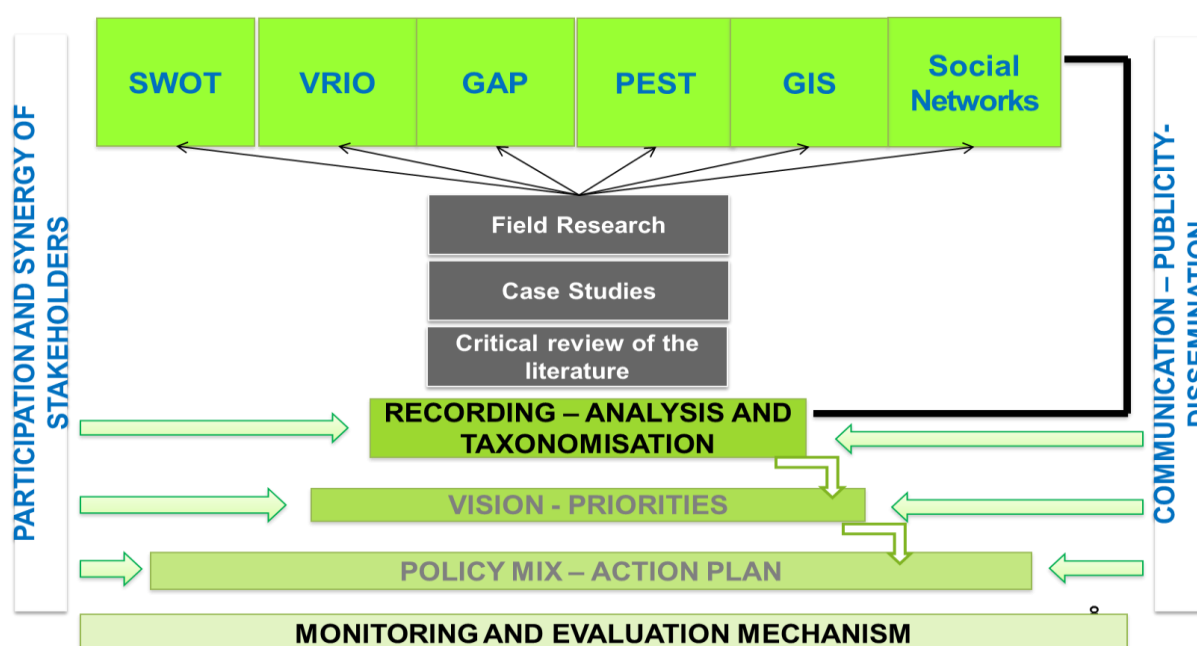
An important aspect of RIS3 prioritization is the efficient match between a top-down process of identification of broad objectives and a bottom-up process of broad participation and entrepreneurial dynamics in developing candidate niches for “smart specialization”.

The idea is to conduct a prioritization of a limited number of realistic innovation and research priorities. The main argument is to avoid traditional criticism of fragmentation, duplication and under-critical investments in too many competing cluster, sectors or initiatives, resulting in too much competition between regions.

Still, it is argued that prioritization does not have to focus on specific economic sectors, but could also involve horizontal-type priorities, such as the diffusion and application of key enabling technologies (KET) and social or organisational innovations.

Step 5 – Definition of a coherent policy mix, road maps and action plans

According to the RIS3 model, the strategy should be implemented through a road map, supported by an effective action plan, defining for example time frames, budgets and



responsibilities. To implement the strategy, a broad range of different policy delivery instruments or horizontal approaches may be applied. In the guidelines from the S3 Platform, some examples of general policy delivery instruments are clusters, innovation- friendly business environments for SMEs, research infrastructures, centres of competence and science parks, university–enterprise collaboration, internationalisation, financial instruments and public procurement. There are also examples of more sector specific or horizontal activities, related to the digital agenda, key enabling technologies (KET), cultural and creative industries, green growth and social innovation.

Step 6 – Integration of monitoring and evaluation mechanisms

The evaluation and monitoring mechanisms should be included from the very initial stage in the overall framework of the **S³Cy Strategy and elements which synthesize it**. The monitoring mechanism concerns the need for supervising/oversighting the implementation process and progress. The evaluation mechanism refers to the assessment whether and to what extent the strategic objectives have been achieved.

To allow the realization of the evaluation, it is necessary to identify in a clear and precise way the target of RIS3 for each implementation level in order to enable their measurement. A primary mission of the RIS3 design is to identify a simple and comprehensible, yet at the same time, integrated set of outputs and result indicators, specifying in this way the guiding lines for results indicators and indicative output measures at all levels.

The process of RIS3 design is not completed when the strategy enters its implementation stage. A Smart Specialization strategy should continuously evolve and adapted to the changes of the economic conditions, to the findings and which come up during its

implementation phase, and through the evaluation and monitoring of its activities.

A particularly important source of information and indications as to how RIS3 can be re-evaluated is the peer review (by experts-DELPHI approach), which implies and concerns an integrated evaluation of the RIS3 - carried out by scholars/experts in each particular area/aspect of implementation. The participation in such exercises/processes allows the extraction of lessons/examples from regions that have experienced problems of a similar nature, which, potentially the region under evaluation may have to deal with. At the same time it allows the establishment of networks, synergy and collaboration with potential partners for future collaboration and cooperation.

The formulation of a monitoring and evaluation framework for the implementation of **S³Cy** consists the final phase of the design process. At the same time it can also be considered the initial stage for the feedback generation process of the whole system with the final objective of obtaining a better knowledge of the efficiency of interventions and - where possible - the taking of corrective measures.

An important challenge is posed by the difficulty to correlate/match the scientific authorities with technological and production sectors given that many authorities as well as technologies are of general character and nature and as such can be applied in various and diverse sectors. The sectoral taxonomisation/classification is also a significant limitation since it is based on outdated definitions of products which are not matching to the current product mix. It is evidently more interesting to proceed to a comparative longitudinal comparison of the indicators, something which ultimately will pinpoint the specialization trends. The identification of these trends will enable the specification of the prospects for the evolvement of the specialization of a region to R&D.

3. ANALYSIS AND CONCLUSIONS

Theoretical Background

The literature review on smart specialization included the review of international papers and publications on the European and regional smart specialization policy framework and the concept of “economic transformation”.

The main aim of the research team was to: identify the concept of smart specialization, understand its formation, display all of its aspects and finally highlight and describe the basic methods that have been used for its design and implementation in various regions all over Europe.

Finally, the literature review contributed to the development of the governance system and the evaluation framework, and provided scientific foundation to the project’s content.

Case Studies

The examination of “case studies” -derived from fifteen European regions that have already completed the procedure or are in an advanced level of smart specialization strategy implementation- has been very supportive in the effort to understand the broader context of smart specialization, but also in shaping research team’s recommendations.

The case studies were, in fact, a very effective methodological tool. Through the recording of the choices made for the implementation of smart specialization, the importance of regional distinctive characteristics and assets has been highlighted. It was also important to study how stakeholders in other European regions cope with specific problems in the design and implementation of smart specialization.

The case studies served as logical models and supported the work of the research team in the procedures of data collection, analysis, processing and interpretation in order to

respond safely to corresponding questions raised in the **S³Cy** context.

The examination covered three sections:

- The first includes six cases with a focus on **sectoral choice** made for the implementation of smart specialization: Energy in the Basque Country region, Tourism in the region of Scotland, Agricultural Sector in Ljubljana region (Poland), Creative Industries in the region of Estonia and Innovation Clusters in the Piedmont region (Italy)
- The second refers to four regions with **characteristics similar to those of Cyprus**: Crete, Malta, Sardinia and Sicily
- The third records **“best practices”** and overall experience of using the EU SFs to support cooperation between universities in the field of RTDI in five regions: Graz - Austria, Aarhus-Denmark, Segken-Luxemburg, Toulouse-France and Michnou-Portugal.

Moreover, the Research Team proceeded to a data analysis (concerning 253 regions) that came from the Eye@RIS web base. As it revealed the main priorities selected by the **S³Cy** are largely in line with the prevailing European trends.

Economic Environment

From 1960 until 1974, the Cypriot economy was characterized by the export of raw materials and agricultural products. The territory occupied in 1974 contributed 75 % of the GDP; therefore the production model has been adapted to the limited part of the island. In the late 1970s the island's economy became mainly manufacturing by exporting garments and footwear. In the late 1980s, the tertiary sector was strongly

reinforced, spearheaded by the financial services and tourism.

After joining the Eurozone in 2008, the labor costs increased dramatically, worsening the economic competitiveness. The benefits of Cyprus participation in the Eurozone, the long term increase in consumption and fixed investment created a positive climate which was accompanied by an equally positive investments psychology.

However, the “Cypriot Economic Miracle” has been affected by the global economic crisis and for the first time after 30 years of continuous development, the Cypriot economy presented recession, while the financial, banking & construction sectors and real estate services experienced the major damage.

In order to overcome this unfavorable situation, the Republic of Cyprus appealed to the European Stability Mechanism, opening a new chapter in the island’s economic history.

In 2012, the Cypriot economy recorded a GDP contraction (-2.4 %), while in the first quarter of 2013, the decrease was -4.3 %.

With respect to the market, the unemployment rate was 14.2% in March 2013, while the unemployment rate among people under 25 was 32.3%.

According to a report published by the Ministry of Finance for the year 2012, the budget deficit in Cyprus reached €1.127 billion, i.e. 6.3% of the GDP. The public debt rose significantly from 71.1% in 2011 to 85.8%.

The Cypriot economy is characterized by the existence of many micro, small & medium enterprises which make up 99.8% of the entrepreneurship.

Concerning the structure of the industry sectors -according to the National Statistical Service- trade (12%), construction (6%), hospitality and catering (7%), real estate services (12%), transport (7%), education (7%) and

manufacturing (6%) are the sectors with the largest contribution to GDP.

In terms of number of companies, according to the NACE classification, trade (27%), construction (15%), manufacturing (9%), hospitality/catering (8%) and advisory services (8 %) are the major categories. In terms of number of employees: trade (20%), hospitality/catering (10%), manufacturing (10%), construction (10%) and financial services (6%) are the dominant sectors. Public administration (utilities and army) cover a total of 17% of employees. The dominance of trade in terms of employment, number of enterprises and participation to GDP, clearly indicates the structure of the economy whose main component is self-employment.

The main exporting activity comes from the primary sector (potatoes, halloumi cheese, fruit, meat and fish), while the sectors of pharmaceuticals, technology (semiconductors, etc.) and wastewater management are very dynamic. The pharmaceutical sector has the most important export activity.

RTDI Environment

Research activities were in an early level until the mid-90s, when the University of Cyprus was established. Shortly later the Research Promotion Foundation (RPF) was founded in order to promote scientific and technological research in Cyprus and in 1998 the first national program for funding research projects was launched.

The Regional Innovation Strategy in Cyprus - RISC was launched in 2004. It was the first attempt to determine a strategy for innovation.

The Framework Programme for Research, Technological Development and Innovation was launched by the RPF in 2008. This is the first time that a complex and multidimensional framework program with a budget of 120 million

Euros utilized resources from the EU Structural Funds.

In 2014, a Commission appointed by the Government filed recommendations for the revision of the RTDI system.

RTDI Statistics

The total R&D expenditures in 2011 were estimated at €86.2 million, corresponding to 0.48 % of GDP¹. Despite the upward trend of the last decade, this figure is extremely low compared to the EU average, which is 2%.

Fields Distribution: material sciences absorb the bulk of expenditure (€34,7 million - 39 %), engineering absorbs €19,5 million (20 %), social sciences €15 million, rural sciences €9,3 million, humanitarian sciences €6,7 million and the medical sciences €3,7 million.

Activity per sector:

the higher education research expenditure reaches 53.4% of the total, the public sector 16.6%, private, non-profit organizations 15.6 % and businesses only 14,4% (€12,8 million).

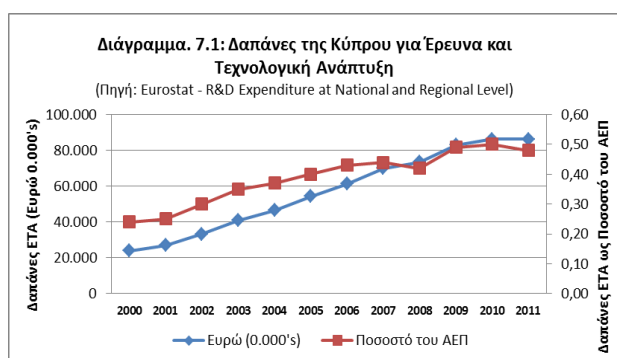
Private Sector: Businesses spend only 16.7% of the total RTD funds (EU average: 63%), and present a structural inability to engage in related activities. The most dynamic businesses are pharmaceuticals (€4,2 million) and computer programming (€4,0 million).

Human Resources: Researchers in 2010 were 0.46% of the total workforce (EU average: 1.07%), while 37.2% of the researchers held a doctoral degree.

Scientific Publications: Cyprus has shown a rapid upward trend during the period 1980-

2009. As a result the rate of increase grew 3.55 times faster than the corresponding global index.

According to EUROSTAT², the percentage of enterprises in Cyprus involved in innovation activities in 2010 was 46.19% (56.1% in 2008). The percentage of innovative enterprises is lower than the EU average, while the implementation of innovations increases in accordance to the size of the enterprises. In total, 8.2% of them were active only in technological innovation, 10% in non-technological innovation, and 27.9% in both types of innovation.



According to the **Innovation Union Scoreboard 2013**, Cyprus ranked 13th compared to the 27 Member States and continues to be classified in the category of “Innovation Followers”. However, the overall

growth performance of Cyprus for the period 2008-2012 shows negative growth (-0.7 %).

The advantages of Cyprus, compared to the EU average are identified in category “Linkages & Entrepreneurship”, while the weaknesses are identified in the category “Finance and Support”.

The **Global Innovation Index** (2012) classifies Cyprus at the 28th place internationally in the field of innovation. Cyprus strengths relate to the mobility of Cypriots studying abroad, the number of new firms compared to the population and the potentiality of obtaining loans from the private sector. The weaknesses of Cyprus lie, inter alia, on imports of ICT products and services and the ability to adopt technologies in the context of e-Government.

¹ Cyprus Statistical Service, Research Activity in Cyprus, 2011.

²http://epp.eurostat.ec.europa.eu/portal/page/portal/science_technology_innovation/data/database

According to the *European Patent Office*, 148.494 European patent applications were submitted in 2012 and 48 came from inventors based in Cyprus. Respectively, of the 65,667 patents granted in 2012, 12 were related to requests by inventors based in Cyprus.

National RTDI Programs

The RPF's framework Programme for Research, Technological Development and Innovation is a multilevel framework of programs with common objectives, processes and general rules for participation.

The strategic objectives of the framework are:

- To expand the Cypriot research system capability to produce high-level results
- To increase the critical mass of researchers and the cultivation of a "research culture"
- To extend the participation of Cypriot enterprises in research and innovation activities and increase the contribution of private sector investments in RTDI
- To develop technology and research infrastructure
- To broaden Cypriot research organizations and enterprises capability for international networking and collaboration.

Participation in the framework 2008-2011 was massive and surpassed all expectations. A total of 2.257 proposals were filed and 636 projects - with a €90 million budget- were selected and funded.

"Strengthening Entrepreneurial Innovation" Programme is the latest initiative of the Ministry of Energy, Trade, Industry and Tourism aiming to boost entrepreneurial innovation. The project aims to support and strengthen SMEs in order to develop competitive innovative products and services.

Particular emphasis is given on developing products and services that supported by patents or industrial designs.

International Programs

Cyprus participation in FP7 was very successful, taking into account major limiting factors which include: the limited size of the country and its research potential, the number of academic institutions, the limited industrial activity and the traditional business structure.

More specific, during the period 2007-2013 a total of 301 Contracts financed by Cypriot institutions were signed (€71,3 million).

The average success rate of the total participation of Cyprus in FP7 is 15.87%. Success rates have gradually risen during FP7, since the corresponding success rate in 2009 was only 11%.

However, there is considerable room for improvement, particularly regarding the participation of Cypriot organizations into more competitive ventures, and their broader participation as coordinators.

The data referred to SME participation in European Projects are encouraging. The participation of SMEs were 103 (1050 proposals), while the total amount of funding was €23,3 million (36.47% of the total amount)

1894 were the eligible proposals with Cypriot participation. 60% of them were submitted in the "Cooperation" programme, 21% in the "Capabilities" programme, 14% in the "People" programme and 5% in the "Ideas" programme.

EU financing in Cypriot institutions under the **1st Competitiveness and Innovation Framework Programme (CIP)** for 2007-2012 ("Intelligent Energy Europe" is not included) amounted to €5,481,084 (€2,197,754 from the «ICT PSP» programme and €3,283,330 from the "EIP" programme).

Finally, it is mentioned that Cyprus participates in the "Horizon 2020" EU programme for Research and Technological Development which is the EU framework programme for Research and Innovation (2014-2020).

Joint Programming Initiatives

Cyprus participates in the following Joint Programming Initiatives (JPI), Initiatives under Article 185 of the EU Treaty and in the ERANET networks:

JPI “Water Challenges for a Changing World” which aims at addressing the problem of reduced available water resources giving emphasis on both quality and quantity of water resources.

JPI “URBAN EUROPE-Global Challenges-Local Solutions” aims to discuss and evaluate global problems and challenges of the urban environment and propose 'local solutions'.

JPI “Cultural Heritage and Global Change: A New Challenge for Europe” aims to investigate the correlation between cultural heritage and climate change, the correlation between the protection of cultural heritage and its importance to society and issues of safety and protection of the cultural heritage.

JPI “Agriculture, Food Security and Climate Change” has as main objective to address the environmental and socio - economic challenges that the European agriculture faces in an effort to produce sufficient quantity and quality of food and achieve sustainable and full coverage of the population needs.

“Ambient Assisted Living – AAL” (Article 185 of the EU Treaty) aims to improve the quality of life of seniors through the use of information technologies and the introduction of innovative technologies and services in the European market.

“EUROSTARS” programme (Article 185) intends to fund innovative enterprises (SMEs) operating in the field of industrial research and development.

ERA-NET

- ERACOBUILD/Strategic Networking of RDI Programmes in Construction and Operation of Buildings

- SOLAR-ERA.NET/Solar Electricity for the Implementation of the Solar Europe Industry Initiative
- M-ERA.NET/Materials Science and Engineering
- ERASysAPP/Systems Biology Applications

RTDI Support Services

The **European Business Support Centre of Cyprus** (EEN member) offers services (mediation in business agreements, participation in joint research projects, technology innovation and knowledge transfer, dissemination and exploitation of research results, support for national and European legislation and programs etc.) in favor of growth and competitiveness of the Cypriot enterprises.

“EURAXESS-Researchers in Motion” for Cyprus is a member of the homonymous European network offering information and advice to mobile researchers, both foreign researchers who wish to work in Cyprus and Cypriot researchers who wish to work abroad .

Universities **Liaison Offices** (LO) act as information intermediaries aiming to strengthen university-industry cooperation, emphasizing on students and young scientists employment in the Cypriot industry. There are many possibilities for expansion of the role and scope of the LOs emphasizing on the utilization of research results.

Growing RTDI Culture

In addition to the competitions organized by the RPF under the Framework Programme that were involving pupils, students and researchers, many stakeholders are developing initiatives for cultivating research and innovation culture, such as the Cyprus Innovation Award, Research and Innovation Week/Night, the FameLab Contest, the Science Cafe - Café Scientifique: and Events for Bioethics in Research.

Field Research

Research aim was the collection of data related to the organization's strategic directions and procedures, regarding the research, development and innovative activity of enterprises in Cyprus. Questionnaires were adjusted to specific characteristics of business and manufacturing sectors and included six sections:

- Questions regarding the general characteristics of the enterprise.
- Questions regarding manufactured products and services.
- Questions regarding human resources.
- Questions regarding an existing network of collaborations.
- Questions on new technologies, research and development.
- Questions regarding participation in financial-development programs.

The survey was conducted among 800 companies from all over Cyprus. The survey population was all the Cypriot firms (35,262) and the sample was selected at random with multistage classification codes parameters of economic NACE, the contribution to GDP, and the province/area of cooperation.

Main Findings

The companies showed that the adequacy of the **general infrastructure** is in a good shape and are satisfied with them. With regard to the operating environment and development, companies believe that:

- the process for start-up business is complicated,
- there is need for adjustment of employment and insurance issues
- cooperation with the public is usually problematic,
- the fiscal framework should be adapted to the benefit of research and innovation, and

- there is low satisfaction of working with banking institutions

In addition, they state that the phenomena of corruption, bribery and informal economy should be reduced and eliminated.

In regards to Human Resources the business sector of Cyprus showed that there is a high human capital and also the need for greater use of outsourcing.

The synergies between them have high intensity, but satisfaction levels are lower than expected and it was pointed out that they have created extensive cross-sectorial synergies. As for synergies with Universities or participation in RTDI activities it appears:

- Insufficient information on the potential for growth that exists in domestic universities.
- Failure in achieving interconnection universities and research centers to enterprises.
- Recognition of the ability of universities to effectively help businesses.
- Significant difficulty in developing synergies
- Extremely low levels of participation in funding programs for RDTI.

Regarding the question: "Apart from your own sector, which economic sector you believe that Cyprus should invest in the near future?", the respondents pointed out energy and tourism as key growth areas in the near and distant future.

Qualitative Research

In the context of qualitative research two main activities were carried out.

Through this methodology of research is accomplished the junction of primary and secondary data, the perceptions of respondents with an integrated view and experiences in relation to the theme that attempts to examine the study. An additional goal was also the shaping of the multifaceted image of the current situation of Cyprus in relation to the specified needs and challenges.

Interviews with Opinion Leaders

The procedure was based on the Delphi methodology, distinguished by certain features that referred to techniques and procedures followed on the approach object of the research. Through this methodology selected individuals -due to either position or profession- usually show high knowledge and experience in regional policy, development, competitiveness and innovation.

The collection of the qualitative data was conducted via semi-directed interviews with keys-respondents and was held through 50 personal interviews with representatives of stakeholders from the public and private sector.

Through the personal opinions of the participants it was revealed:

Tax system: It was conducive for business but not for innovation. It could be more favorable for those businesses that invest in innovation the exemption of the amount that goes into innovation encouraging businesses to engage with it (Employer's Federation/industry).

System Funding: The financial system does not support the innovation and development. For the accuracy 'the banking system until now was not much in favor of innovation'.

Infrastructure in Research and Technology: In the recent years the region of Cyprus have started erecting and have gowned immensely as research infrastructures and technology was supported from the Research Promotion Foundation. Also for the operation of universities to enable them to a good research level. There are areas where the lack of infrastructure does not allow advanced research such as in neuroscience.

Human Capital: there are adequate human resources for the development of innovative actions for both businesses and academic institutions. The issue that arises is that we have not fully exploited them.

Connectivity of universities and enterprises:

There is no connectivity between research institutions, universities and enterprises to the extent needed. It is proposed to create university organizations/companies that can cooperate with business. It must also seek targeted cooperation with specialized centers and not generally with universities.

Clusters: there is lack of culture in Cyprus for creating clusters although they could contribute, if they provide an extrovert character.

Competitiveness: utilization of assets such as climatic and environmental conditions of Cyprus and especially the sun.

Sector Development: the fields that qualify are energy, tourism-conference/medical tourism, the production of selected agricultural/dairy/food, the processing clinical research –research in local diseases rather than research in epidemiological studies, nanotechnology and wider issues in green growth.

Focus Groups-Workshops

At a secondary level, data was collected by the method of focus groups with representative groups of stakeholders from the private and public sectors. The aim was to collect data as a result of the opinions, suggestions and perceptions of the respondents.

Workshops had a fully "interactive" character involving the participation of young people and business with a research and innovation dynamic, a research and development infrastructure and an international cooperation. In the first panel it was presented a discussion of the four individual aspects of the Strategy.

Results:

The conclusions were fully important and accordingly useful for the final preparation of the study by the researchers. The most important, were:

- The development not individual sectors, but sectors with significant network activities with the existing business network in Cyprus.
- A careful "step by step" monitoring of the results of the implementation of the strategy in order to avoid distortions and inefficiencies. It was emphasized that there should be continuous feedback and control of legally regulated entities.
- The development of strategic plans that will establish the future growth and will add a sustainability character and viability.
- The possibility of withdrawal, flexibility or even the change of the development axes if implementation is problematic or if the conditions in the economy/society of Cyprus change.
- The need for business networking in a vertical and horizontal format.
- The need for continued support of entrepreneurship and innovation from new technologies.
- The need for demarcation of development in a framework of a well-defined environmental policy
- The needs for a common accept of a dominant development model of the whole economy.
- The necessity for retaining research potential while strengthening the researchers-academic prestige and opportunities.
- Investing in the future by growing islands of excellence through specialized research that will enhance the diversification and competitiveness of products-services of the Cypriot economy.

Application Analysis Tools

GAP Analysis

The gap analysis refers to a comparison between the existing (found) and the target site (which we are) and the definition of each other

"distance". The mission of the region and the economy is to close the gap between the two positions and "bridge" the gap, as well as the actions and activities to be undertaken.

Gap Analysis - under **S³Cy** - applies in the competitiveness of the economy in relation to the average of EU sectorial breakdown that determine the competitiveness among the institutional framework of competitiveness, existing infrastructure, health and primary education, higher education and training, goods market efficiency, labor market and the size and functioning of the market, technological readiness and capacity for innovation.

VRIO Analysis

VRIO analysis (Value, Rarity Imitability and Organization) is a tool for "internal analysis" of regions and economies. This method is based on the analysis of the productive resources of an economic unit, which determines what resources and what capabilities result in which strengths and what weaknesses. The aim of the analysis is the design and implementation of strategies in order to contribute to the creation and utilization of capabilities and respectively to treat or eliminate and minimize the weaknesses.

In the context of **S³Cy**, analysis VRIO was applied on the basis of the conclusions reached by the quantitative and qualitative analysis in relation to the regional characteristics of Cyprus.

SWOT Analysis

SWOT analysis is used to describe the Strengths, Weaknesses, Opportunities and Threats of an economic unit.

In the context of **S³Cy** SWOT Analysis was used to synthesize the results and conclusions of all the methodological tools that were used in this survey.

STRENGTHS	WEAKNESSES
<ul style="list-style-type: none"> ■ Political Stability ■ Citizens Trust in the institutions of democracy ■ Protection of property rights ■ Independence of justice ■ Effective dispute settlement ■ Geographical position ■ Protection of minority rights ■ Investment protection ■ Quality of the total infrastructure ■ Health infrastructure ■ Basic Education ■ Primary and Secondary Education ■ Road network Quality ■ Telecommunications infrastructure ■ New technologies absorption by enterprises ■ Availability of latest Technologies ■ Internet Infrastructure ■ Intention for innovation ■ Unexploited land for developing primary sector activities 	<ul style="list-style-type: none"> ■ Cyprus Market size, ■ Macroeconomic environment ■ Waste of public money, favoritism in decisions of government officials ■ Lack of sectoral strategic planning ■ Incomplete interconnection between research centers/ universities and the industry/market ■ Lack of conflict resolution framework between productive activities ■ Inefficiency of the public sector, bureaucracy ■ Unstable tax environment, inadequate tax incentives for research and development ■ New technology materials tariffication ■ Disproportion between wage and productivity ■ Complicated procedures for staff recruitment ■ Financial sector: Inability to finance the business sector through the domestic stock market ■ Unable to lend ■ Non-availability of venture and risk capital ■ Inadequate infrastructure in existing ports ■ Unsatisfactory lifelong education / training ■ Lack of flexibility in staff duties ■ poor interface with the international trade, high dependence on imports ■ Insufficient quality of local suppliers
OPPORTUNITIES	THREATS
<ul style="list-style-type: none"> ■ Creation of an appropriate institutional environment in order to handle various problems ■ Institutional framework for sectoral strategic studies - Creation of sectoral observatories ■ Development of a fiscal framework for research motivation. ■ Strengthening the role of the state as the founder of the broader research framework. Cultivation of a research 'culture' through the development of basic research infrastructure and conditions ■ Intensification of high quality research from universities and research centers. Strengthen their role, develop a well-functioning institutional framework and interconnection between universities and the market/ industry ■ Opportunity to develop an enlarged framework for alternative energy production ■ Improvement of the research infrastructure, implementation of an 'aggressive' policy regarding the employment of capable research staff ■ Promotion of cultural heritage (creative industries) ■ Utilization of all cultural, environmental and social resources τοζαρπδσ alternative forms of tourism. ■ Strengthening industry clusters. ■ Farmlands offered for organic farming because of the purity of pesticides ■ New forms of crops (e.g. superfoods) suitable for the composition and morphology of the Cypriot soil ■ Creation of a food and beverage supply and production chain ■ Institutionalization of an extended think tank ale to shape strategic directions per sector. 	<ul style="list-style-type: none"> ■ Misinterpretation of smart specialization strategy. The strategy should not result to the selection of some activities excluding others, but to the best utilization and (re) adaptation of existing production structures, aiming to highlight: comparative advantages, intersectoral synergy between stakeholders / companies, excellence achievement, innovation and competitiveness. ■ Research funding will not bring the expected results without structural changes in the economy and without ■ strengthening the research infrastructure (appropriate human resources, investments in cutting-edge equipment) ■ Major macroeconomic threats to the implementation of smart specialization strategy: <ul style="list-style-type: none"> ■ over-taxation of natural and legal persons, ■ depreciation of consumers purchasing power ■ implementation of a policy aiming to increase state revenue, against development ■ The current economic recession may further reduce state and private expenditures on research ■ Similar reduction of costs for the purchase of equipment and expertise ■ Brain drain because of the lack of sufficient research staff and infrastructure ■ Inability to interconnect the productive sectors. ■ Further economic dependence on imports (consumer goods and raw materials) ■ Inability to develop the primary sector ■ Inability to interconnect the processing sector and the primary sector

Main Conclusions

The main criteria for identifying areas in which to apply the strategy of smart specialization are two:

- Proper identification and optimal utilization of the country's comparative advantages.
- The widest possible participation of the productive sector in the development and innovation in order to maximize the multiplier effects of the economy, income, employment and investments.

It should be made clear that the smart specialization strategy is not restricted to high technology applications in genetics or the emergence of innovative new innovative products.

The aim of smart specialization is that the strengths of the economy should be identified, assessed and then function as sources of regional economic development, strengthening the real economy, productivity, diversification and innovation.

On this basis, the first step of Cyprus' strategy was implemented with a "bottom -up" approach, investigating how the production base receives development and which means will be used in order to foster development.

The conducted survey revealed significant findings, particularly useful for the design of development.

Table of conclusions (see below) summarizes the research findings, as they were extracted during the multimethod process and approach adopted.

More specifically, the conclusions that were derived on the basis of different processes/methods/tools in the research process (literature, case studies,

questionnaires, focus groups, interviews with opinion leaders, SWOT, VRIO, GAP), are grouped in categories (human factor, research, technology and development, internal environment and culture, the wider framework, institutional framework, macroeconomic environment , priority sectors) are presented below.

Moreover, the sectors which can support the development perspective of Cyprus are rated according to whether their emergence was supported by the various methods, processes and tools of analysis.

Both qualitative (focus groups and interviews with opinion leaders) and quantitative research identified as country's continual advantage the

geo-strategic location, political stability and public trust in institutions.

Apart from these, a number of other issues were derived from research, relating to lack of strategic planning, bureaucracy, corruption and favoritism. Extremely important are the research findings related to the need

for a restructure of the taxation framework, the fight against the informal economy and the reforming of legislative framework regulating labor relations. As far as the general infrastructure (electric power grid, water supply, sewerage and telecommunications) is concerned, it is considered satisfactory.

The data processing also identified the major problem of limited openness and interconnection between enterprises, both within the same productive sector and across sectors. The creation of strong clusters is an important priority and challenge of the modern economy, while the notion that companies of Cyprus should not compete with each other, but create a united front against foreign competition is gaining support. Global economy and the role

***the environment concerns almost the entire production base and country's opinion leaders...
sustainable development is a constant objective and it is noted that any economic activity should be framed within the carrying capacity...***

of internet in people's daily life have created a global scale market, to which enterprises in Cyprus will have to respond collectively.

Another clear conclusion of the research is that new technologies are essential means for the preservation and improvement of the comparative advantages of the country, while there is a dire need for the adoption of achievements aiming to achieve innovation in the field. Similarly, the environment and sustainable development concerns almost the entire production base and country's opinion leaders. The research shows clearly that sustainable development is a constant objective and it is noted that any economic activity should be framed within the carrying capacity, in order to protect the environmental and social resources of Cyprus. A number of respondents were in favor of creating mechanisms for the valuation and control of production activity.

Regarding the research for innovation there is a clear differentiation of research centers and

basis, unlike entrepreneurs that despite their true intention to invest, they seek for a time-limited and significantly rewarding investment. At the same time, all the production sectors are considered to have well trained and qualified staff, however there is a clear need for open and lifelong education, which aims at the constant improvement of staff skills and their adaptation to new technologies and changes introduced in the production process. Finally, as far as the staff is concerned, the research revealed the need for the provision of incentives for maintaining intellectual capital (research scientists) in the country, reducing in this way the risk of "brain drain".

In terms of internet infrastructure, broadband and new technologies Cyprus presents a positive image of both infrastructure and adaptation to new technologies, but is not yet able to produce new technologies. This is mainly due to the limited enterprises'



universities with the production base. The first see innovation as a result of an ongoing research process that develops into a long term

cooperation with universities and research centers. In the context of industry-universities liaison, there is an extensive gap which can be

covered if both sides make moves to approach each other. This has already started in several universities.

With regards to the participation of enterprises in research and development projects the research findings are rather discouraging, as the majority of enterprises doesn't participate due to bureaucracy, while a highly significant proportion of enterprises were not aware of the main funding axes, and in many cases they were not even aware of the existence of funding and development programs and opportunities. It is positive, however, that there is a clear intention of the enterprises to participate in projects in the future, anticipating funding on equipment and acquisition of expertise.

Apart from these general data obtained and analyzed in the interim report, equally important conclusions are reached through statistical processing and analysis that is conducted. Especially the analysis of social networks and VRIO, SWOT, GAP analysis has identified as extremely important and dynamic sectors of productive activity tourism, energy, agriculture, transport and construction, and with horizontal linking new technologies and environment. The analysis of social networks in particular highlighted that tourism is a productive activity that has a direct or indirect link with a large proportion of the country's total productive activity. At this point it should be made clear that the linking of the tourism industry with the other productive sectors (e.g. agriculture, energy, and transport) requires a change in the prevailing tourism development model of the country.

Moreover, SWOT, VRIO and PEST analysis indicate that in the agriculture sector there are excellent opportunities of the development of

organic crops, due to the prolonged fallow period.

Regarding the energy sector, there should be a clear separation of hydrocarbon and alternative energy, sectors in which Cyprus exhibits excellent dynamics. The existing expertise and technological know-how in alternative forms of energy is particularly important and used extensively. Its usability and importance will be further enhanced if it is combined with tourism development and alternative forms of tourism (bioclimatic buildings, heating and cooling

there is a clear differentiation of academia with the production base. The first see innovation as a result of an ongoing research process that develops into a long term basis, unlike entrepreneurs seek for a time-limited and significantly rewarding investment...

forecasts accommodation etc.). Regarding the construction industry, which was a structural part of the economy of Cyprus, social network analysis, and the other analysis (VRIO, SWOT, PEST) show that both the extended enterprise cluster and expertise gained is a significant competitive advantage that cannot be

lost.

Finally, transport (road, air and shipping) is a branch that has a dual role. Firstly it serves as basic infrastructure in an island region with the differentiating characteristics it may present, and secondly it acts as the main pillar for the development of the tourism phenomenon.

In conclusion, the research, as explained in the interim report, aims to provide all necessary information to the governance committee in order to define the vision and choose the strategic plan development for the next decades in Cyprus. A large part of the analysis aimed at the most possible comprehensive depiction of reality in Cyprus, providing a full explanation of the development proposal that was prepared.

Table of Conclusions

		Desk research		Quantitative	Qualitative		Analysis Tools		GAP
		Bibliography	Case Studies		Focus Groups with Opinion Leaders	SWOT	VRIO		
Human Factor	There is a necessity for a continuous and lifelong learning of staff, in order to adapt more easily to the new technologies/ new productive processes	√	√	√	√	√	√	√	√
	Adequate expertise of well qualified staff			√		√	√		
	Avoidance of the "brain drain" phenomenon	√	√	√	√	√	√	√	√
	Education is a basic pillar of development and should be maintained at a high level, while remaining accessible and open to the entire population	√	√	√	√	√	√	√	√
Research, Technology & Development	The existing infrastructure is considered satisfactory	√		√	√		√	√	√
	There is a satisfactory absorption of new technologies by enterprises	√		√		√	√		
	New technologies should adequately support the form of strategic development that will be chosen.	√	√	√	√		√	√	
Internal environment and culture	Unsatisfactory cooperation intensity between enterprises in the same industry	√		√	√	√	√	√	
	Unsatisfactory intersectoral liaison of enterprises			√	√	√	√	√	√
	Restricted business openness			√	√	√	√	√	√
	There is an insufficient liaison of research centers and universities with enterprises	√		√		√	√		
	Adequate infrastructure for the use of internet			√		√	√		
Broader Framework	Through smart specialization strategy a unique opportunity is given for the healthy development of entrepreneurship and innovation	√	√	√	√	√	√	√	√
	Any form of development should be driven by the viability and sustainability of environmental and social resources	√	√	√	√	√		√	
Institutional framework	Public confidence in the functioning of institutions	√			√	√	√	√	√
	Distrust of citizens in the functioning of the state / bureaucracy / favoritism/ corruption.	√		√	√	√	√	√	√
	Lack of strategic planning for sectors of the economy				√	√	√	√	√
	The taxation framework is considered to be unsatisfactory, in need of renewing			√	√	√	√	√	√
	Deterioration in productive activity and tax revenue because of the informal economy	√		√	√	√	√		√
	Reform of the legal framework regulating labor relations			√		√	√		√
	Dysfunction of the banking system	√	√	√	√	√	√	√	√
Institutional framework (cont.)	Further simplification of the procedures for setting up and terminating an enterprise			√	√	√	√		√
	Unsatisfactory functioning of the public	√	√	√	√	√	√	√	√
	Limited participation in research and development projects because of bureaucratic dysfunctions			√	√	√			
	Limited participation in research and development projects due to enterprises' ignorance of calls	√		√	√	√	√	√	
Macroeconomic environment	Political stability	√		√	√	√	√	√	√
	Great potential for the exploitation of the agricultural sector	√		√		√	√		
	Shipping remains one of the major worldwide	√		√	√	√	√	√	√
	Tourism most significant pillar of the economy - a key role for economic recovery under the current conditions			√	√	√	√	√	
	Prospects of exploitation of hydrocarbons and renewable energy	√		√	√	√	√	√	
Τομείς στους οποίους να στηρίξει την αναπτυξιακή της προοπτική η Κύπρος									
	Tourism			4*	5*	4*	√		√
	Energy			4*	4*	4*	√		
	Agriculture			3*	2*	2*	√		
	Construction			1*	1*	2*	√		
	Transport			2*	2*	3*	√		
	Health			2*	3*	2*	√		

4. VISION, PRIORITIES and ACTION PLAN

Vision and Priorities

The vision of the Smart Specialization Strategy for Cyprus (S3Cy) concerns the emergence of Research, Technological Development and Innovation (RTDI) as a tool for the amplification and enhancement of the efforts initiated for overcoming the current economic crisis and as an important diachronic agent for the restructuring and post evolution of the Cyprus economy and society according to the principles set out by the strategic framework “Europe 2020”.

More specifically, it aims –within a medium to long term time horizon – a “smart”, “sustainable” and “inclusive” growth which will rely on knowledge and innovation, the rational use of the available resources and on high employment rates through the enhancement of economic and social development and cohesion.

Goals and objectives

The primary aim of S³Cy is the enhancement of the effectiveness of the RTDI system and its targeted interconnection with the production base in order to enhance the competitiveness of the economy and quality of life in Cyprus. To this end, it attempts to support the reformation of the priority sectors, their modernization, their technological diversification, the utilization of new forms of innovation and the penetration into new markets.

In addition S3Cy has set as primary objectives the:

- Promotion of holistic, integrated, complex and multi-parameter solutions that will

enhance the competitiveness of the priority sectors.

- Development of new and support further existing competitive infrastructures and centres of excellence
- Intensification of the participation of small and medium enterprises in RTDI-related activities and increase of the contribution of the private sector in RTDI investments.
- Expansion of the ability of the RTDI system to produce results of high standards and utilize them for the benefit of the competitiveness of the economy and social advancement/progress.
- Development of a critical mass of researchers and job opportunities contributing in this way towards the employment of new scientists.
- Development of substantial/valid links and synergies between the elements of the guardable helix, that is the research centers, the institutions of higher education, enterprises, policy makers and other stakeholders from the wider society
- Enhancement of extroversion of the Cyprus RTDI system in a way that will contribute in an active and efficient way towards the integration of the European Research Area, through the strengthening of the participation in European programmes and initiatives and also through the connection with the international chain of development and utilization of RTDI results.

Priority Sectors

Within the framework of the S3Cy the following sectors have been identified as the main priorities:

Tourism: sustainable tourism, alternative forms of tourism, digital tourism applications, management and promotion of tourism product

Energy: renewable forms of energy, solar energy, Solar-thermal technology Solar Photovoltaic, Technologies for Solar Heating and Cooling, energy storage and transfer.

Agriculture –Food Industry: Agricultural and livestock production, Agriculture, Food Security and Climate Change.

Construction industry: Sustainable Urban Development, Sustainable Construction, Existing Building Stock, Innovative and Intelligent Materials and Reuse of Building Materials, Cultural Heritage,.

Transportation: Marine, Shipping, Intelligent Transport Systems, road freight.

Health: e-health, prognosis - prevention and treatment of diseases, health pharmaceutical industry.

In addition, the Environment and the ICT were defined as important sectors of horizontal character.

Environment: Climate Change, pollution, Eco Systems, Eco – Innovation, Water Resources

ICT: ICT Application, Future Technologies,

Policy Mix

For the implementation of the above set aims and objectives a policy mix was adopted which includes three main pillars:

Pillar I: Smart Growth

“Smart Growth” concerns the implementation of the primary aim of S3Cy for the enhancement of the mechanisms responsible for facing modern development challenges and prospects in the priority sectors selected.

Within the framework of «Smart Growth», where most of the resources will be allocated, actions will be supported which are related/concern the following:

- Implementation of large/wide range transversal and interdisciplinary character projects from polymorphic consortia which will aim the implementation of an integrated RTDI strategic framework in the priority areas.
- Development, from young/promising researchers of high caliber – researchers with international recognition in their area, of new research infrastructure and RTDI units that will provide the capability to implement research projects of top level.
- Design, development and implementation of research projects in the areas of priority sectors, for the development of quality of life and competitiveness of the economy of Cyprus through the participation of Cyprus in pan-European initiatives of joint programming.
- Promotion of extroversion, collaboration and networking of research organisations and enterprises of Cyprus with similar entities and institutions from other countries.
- Development of new products/services/production methods of high added value that can be immediately

adopted and utilized by enterprises in Cyprus.

Pillar II: Sustainable R&I System

The second pillar “Sustainable R&I System” concerns the safeguarding of the development of a diachronic and dynamic RTDI system which will be capable contributing to the restructuring and postevolution of the Cyprus Economy as well towards the enhancements of the ability to face/tackle social challenges.

Within the framework of this pillar bottom up actions will be implemented which concern the:

- Promotion of research excellence through funding of research and innovative research ideas in cutting edge areas.
- Utilization, enhancement and mobility of human resources of high specialization and abilities and more specifically young and unemployed researchers and scientists.

Pillar III: Support R&I System

The third pillar “Support R&I System” relates to the enhancement of the framework, mechanisms and operational structures of the RTDI system in a way that will facilitate the efficient and effective development, utilization and promotion of its outputs and results.

Within the framework of this pillar actions of complimentary character to research, development and innovation activities, will be supported. These will concern the:

- Modernization of the institutional framework with new provisions/arrangements
- Upgrading of the mechanisms that support the RTDI system (e.g. technology system transfer, innovation vouchers)
- Enrichment of the RTDI funding mechanisms (e.g. venture capital, etc.)

- Development of research and innovation culture to young researchers and scientists, enterprises and the wider society.

Action Plan

The Action Plan can be considered as a medium for the detailed recording and organization of the regulations, principles and tools which are needed in order to achieved in a structured way the priority objectives that have been set.

The Action Plan should also provide complete and reliable information in relation to the strategic objectives, implementation timetables, and the identification of the funding resources and an indicative allocation of the budget.

All the proposed Measures have been designed solely based on the S3Cy study results and integrate in a smooth manner in the overall framework of the aims, objective and priorities of the strategy

The Action Plan measures which are proposed by the Research Team are allocated to the three Priority Pillars. It should be mentioned, however, that the list of the measures is not exhaustive and additional measures can be potentially included. It does not necessarily mean that additional measures

It should be also stated that the detailed texts of the Calls for Proposal for participation in each individual m as well as the documentation, legal documents, electronic tools, mechanisms etc., which are needed for the announcement of the calls and the implementation of all the relevant procedures (starting from the submission of the proposals to the point where the contracts will be signed for their implementation), will be the responsibility of the government bodies and institutions to whom the implementation of the programmes will be assigned.

Proposed Action Plan Measures per Pillar

Pillar I	Smart Growth
	Facing modern development challenges and prospects in the priority sectors selected.
	MEASURE I.1. Integrated Growth Projects .
	MEASURE I.2. New Strategic Research Units
	MEASURE I.3. Europaen Solutions – Local Growth
	MEASURE I.4. Targeted International Cooperation
	MEASURE I.5. Research and Innovation for Enterprises
	MEASURE I.6. Ενίσχυση Επιχειρηματικής Καινοτομίας

Pillar II	Sustainable R&I System
	Development of a diachronic and dynamic RTDI system.
	MEASURE II.1. Research Excellence
	MEASURE II.2. New Researchers – New Ideas – New opportunities
	MEASURE II.3. EUROSTARS Κύπρου

Pillar III	Support R&I System
	Enhancement of the framework, mechanisms and operational structures.
	MEASURE III.1. Modernization of the institutional framework
	MEASURE III.2. Upgrading of the mechanisms that support the RTDI system
	MEASURE III.3. Enrichment of the RTDI funding mechanisms
	MEASURE III.4. Development of research and innovation culture

5. EPILOGUE

Self-Assessment

The European S3 Platform has proceeded to the development of a support tool which enables in a visual manner to assess the progress that has been achieved by a specific region in the process of designing and implementing the RIS3.

The tool enables the inclusion of a large volume of information in a single diagram which depicts the six steps of smart specialization. At the same time the tool takes into account the three most critical factors for each step. The result is presented in a radial chart where the strong and weak factors are evaluated on a 0-5 scale

The Research Team has considered it prudent and methodologically correct to evaluate S3Cy taking into consideration all the available –up to this point– data, findings and results. In this way it becomes evident that the weaknesses of the design process are totally understood and comprehended by the Research Team while at the same time the need for continuous monitoring and evaluation of the whole process as a tool for improvement and progress is emphasized.

Acknowledgments

The Research Team cooperated with a large number of people, companies, bodies and institutions that have participated in the qualitative and quantitative field studies, the public dialogue events, the special thematic workshops and focus groups.

Indicatively, 800 businesses have participated in the questionnaire field survey, more than 50 opinion leaders were interviewed and around 300 people from universities, research and

other institutions and companies have participated in the thematic workshops and the open public dialogue events. Due to the large number of participants it is not possible to mention each and every one separately.

Their multilevel input and collaboration were instrumental for the success of the field survey and the public

dialogue/workshop events.

The research team acknowledges the input and support provided by all stakeholders, groups, associations and institutions and thanks them warmly.

