

Strategic Evaluation on Innovation and the Knowledge Based Economy in relation to the Structural and Cohesion Funds, for the programming period 2007-2013

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Executive Summary

Composed of two main islands, Malta is the smallest country of the European Union and suffers from specific territorial constraints – highly urbanised; high population density; narrowness of the internal market; waste, water and energy management constraints; accessibility and infrastructure issues – which impact on Maltese economic competitiveness and its innovation performance.

Strongly dependent on the tourism industry and foreign economies, the innovation performance of Malta is insufficient. The analysis reveals the low level of both public and private R&D expenditure and the weak position of Malta with regard to human resources indicators. Malta has a high rate of population without a higher level of education; it has a high rate of early school leavers and a low rate of participation in life long learning. There is a shortfall of high skilled technicians and engineers. In addition, the dualistic nature of the enterprise sector, clearly divided into a few number of large foreign owned export-oriented companies and a large sector of domestic, family owned, not innovation-oriented micro-enterprises, implies the low level of industry, business and research collaboration and technology transfer. The R&D base is not backed by the business sector. Finally, the lack of innovation culture among business, students and researchers, and until recently among policy-makers explains also some of the weaknesses.

However, Malta is at a turning point. Under both the international context (greater competition, oil crisis) and the EU accession pressure, Malta gives evidence since 2003-2004 that research and innovation is occupying a higher position on the national agenda. Concrete steps have recently been taken to ensure a better coordination of the innovation policy at government level by acknowledging a prominent role to the Malta Council for Science and Technology. The current policy mix which has been relying on the RTDI Strategy for 2004-2006 (MCST), the National ICT Strategy and a number of initiatives led by Malta Enterprise and the MCST is now changing. The 2006-2010 Pre-Budget Document of the Prime Minister and the new RTDI Strategy for 2006-2008 (still under preparation) reflect a clear shift in the policy rationale from investments in science and technology *per se* to investments in S&T as drivers for innovation and economic growth, thus to industry and innovation-driven research in niche market areas.

The Structural Funds innovation and knowledge based economy related interventions for 2004-2006 have been very limited (from 0.3% to 1.1% of the total Cohesion Policy, depending on the calculation methods). Clearly, the Maltese SPD was not innovation-oriented. The innovation support actions have been diluted within three measures of which the innovative profile was not explicit. Mostly funded by the ESF, the actions were mainly focused on basic training, re-skilling of workers of traditional sectors and craft industries (especially in the Island of Gozo), entrepreneurship training and innovation training. ERDF-funded support targeted SMEs through technical audits, product design, quality management and innovation management. Of a limited amount, the support has encountered some success in improving the innovation management skills within public entities and innovative technological capacities within businesses.

The recent and ongoing foresight studies (eForesee, RIS MARIS) and the most recent policy documents which provide the new Maltese RTDI policy framework of the coming years stress the challenges that Malta is facing and the innovation potential: i) developing high added value activities in maltese traditional economic sectors (tourism, financial services); ii) developing high-tech manufacturing and services in ICT and niche market areas (e.g. generic pharmaceutical manufacturing); iii) developing innovation management capacities within local enterprises; and iv) developing human skills for innovation and R&D.

Taking into account the results of the currently ending SF programming period 2004-2006, the clear shift in the policy rationale and the Maltese innovation potential, innovation related SF interventions for 2007-2013 should be focused on supporting :

- the technology up-grade of firms and training of business managers towards innovation
- a clustering process in ICT and niche market strategies based upon strong partnerships (academia-research-business linkages)
- the development of a dedicated technology transfer organisation and nurturing projects
- the supply of knowledge workers through the promotion of science and technology studies, training and mobility schemes targeting researchers
- the development of equity finance in the framework of JEREMIE

In line with the orientations stressed in the National Strategic Reference Framework Programme, these interventions should be completed by: i) some adaptations in the programme management system; and ii) a strategic thinking on the use of EU innovation programmes for optimising effectiveness of SFs interventions for innovation and knowledge and synergies between the EU innovation programmes (FP7, CIP, JEREMIE, Neighbourhood Policy, European Territorial Cooperation, etc.). As a matter of fact, Malta is a very small country with limited natural, human and financial resources. Participation in international – at least European – cooperation thus becomes crucial for diversifying the sources of funding, exchanging and transferring know-how and knowledge.

1 Introduction

In March 2000, the EU Heads of State and government launched an ambitious political initiative for the European Union to become “the most competitive, dynamic, knowledge-based economy by year 2010”. The agenda, which has become known as the ‘Lisbon Strategy’, has included a broad range of policies and regulatory measures to achieve this goal.

At the 2005 Spring Council of European Union, Heads of State and government concluded that all appropriate national and Community resources, including those of Cohesion Policy, should be mobilised in order to renew the basis of Europe’s competitiveness, increase its growth potential and its productivity and strengthen social cohesion, placing the main emphasis on knowledge, innovation and the optimisation of human capital. In short, the Council recognised that while some progress has been made since 2000 in moving towards the goals enshrined in the Lisbon Strategy there remains a need to create “a new partnership for growth and jobs”¹

In launching the discussion on the priorities for the new generation of cohesion policy programmes, the Commission published on 6 July 2005 draft Community Strategic Guidelines entitled “Cohesion Policy in Support of Growth and Jobs: Community Strategic Guidelines, 2007-2013”. One of the specific guideline is to improve the knowledge and innovation for growth. More specific areas of interventions, which are proposed by the Commission, include: improve and increase investment in RTD, facilitate innovation and promote entrepreneurship, promote the information society for all, and improve access to finance.²

Innovation is an important factor in releasing the potential of the Lisbon agenda. The knowledge captured in new technologies and processes can drive growth and competitiveness and create new jobs. But knowledge must be treated as part of a wider framework in which business grow and operate. Developing knowledge-based economy requires adequate levels of investment in R&D, education, and ICT as well as creating a favourable environment for innovation.

Less developed areas of the Union are also confronted with this new competitiveness challenge. Increasing cohesion leads to improvements in living standards and the reduction of economic and social disparities, which depend to an important extent on increases in productivity. Increasing competitiveness implies economic change through the introduction of new technologies and new methods of production as well as the development of new skills. Innovation is at the heart of this process. Technological and organisational change and new demands generated by rising income levels and factors which create new economic opportunities and therefore, contribute to the growth potential of these countries.

¹ Communication to the Spring European Council (2005) “Working together for growth and jobs: A new start for the Lisbon Strategy”, COM(2005) 141. Available at: http://www.europa.eu.int/growthandjobs/key/index_en.htm.

² Communication from the Commission (2005) “Cohesion Policy in Support of Growth and Jobs: Community Strategic Guidelines, 2007-2013”, COM(2005) 0299. Available at: http://www.europa.eu.int/comm/regional_policy/sources/docoffic/2007/osc/index_en.htm.

Structural Funds are the main Community instruments to promote economic and social cohesion. In the past and current programmes, they have contributed to enhance the research potential and innovation in businesses and to develop the information society, particularly in the less developed areas. Cohesion policy has also promoted the development of regional innovation strategies and other similar initiatives in the field of the information society.

The overall objective of the strategic evaluation study, as set out in the terms of reference, is that the study should provide conclusions and recommendations for the future of Structural Fund and Cohesion policy. In particular, the Strategic Evaluation will be used to prepare the negotiations with the Member States for 2007-13, to prepare the next operational programmes and to provide input into the 4th Economic and Social Cohesion Report.

In line with the tender specifications, this country report addresses the following issues:

- 1 An analysis of the current situation in the field of innovation and the knowledge-based economy at national and regional level. For the national level, performance is compared to the average performance for the EU25 Member States plus Romania and Bulgaria; and at regional level, where possible given available statistics, compared to a typology of EU regions;
- 2 Lessons from the past and current experience of implementing innovation and knowledge economy measures in the Structural Funds, both in terms of priorities and strategic approaches; as well as in terms of operational implementation;
- 3 Main needs and potential for innovation in the eligible regions drawing on available studies, strategy development and future and foresight studies; and
- 4 Recommendations on main investment priorities for Structural Funds over the programming period 2007-2013 and their implications for regional development.

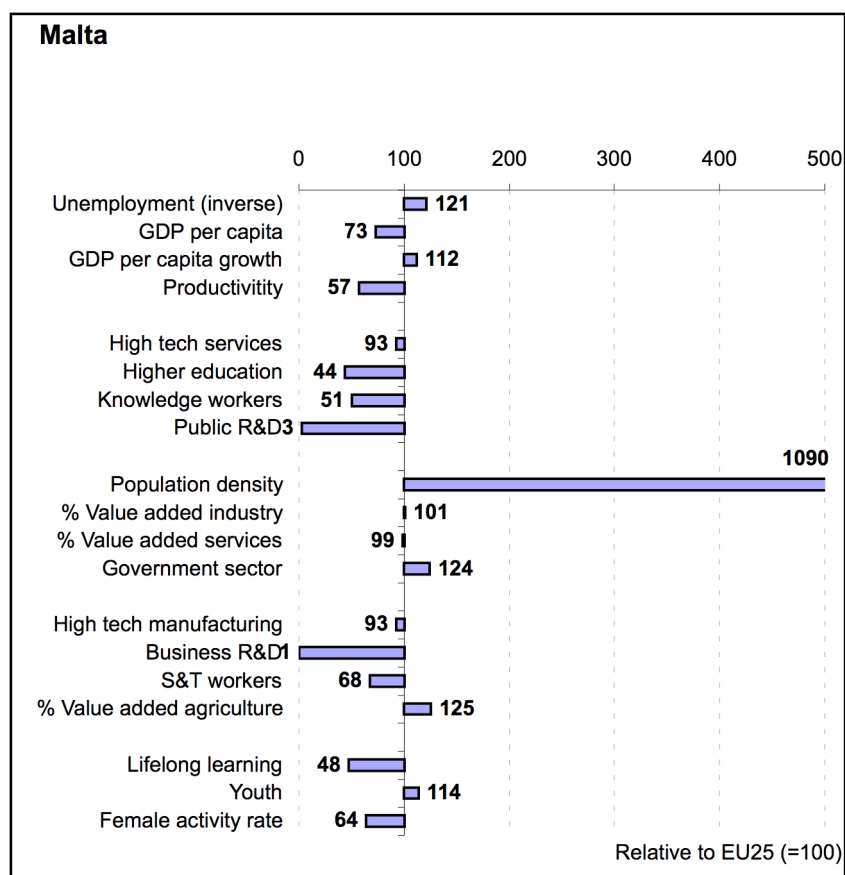
2 Investing in innovation and knowledge: a comparative overview of regional performance

This section provides a synthetic overview of the relative performance of the country, and where relevant main regions, with respect to the EU25 average for a number of selected key structural indicators of innovation and knowledge. The analysis aims to identify **main disparities and needs** at national, and wherever possible, regional level with a view to supporting the definition of priorities for future Structural Funds interventions (see sections 5 and 6 of this report).

2.1 Country overview: innovation and the knowledge economy

Exhibit 1 below provides a snapshot picture of the relative position of Malta compared to the EU-25 average for a series of key knowledge economy indicators.

Exhibit 1: Relative country performance for key knowledge economy indicators



Source: calculations of MERIT based on available Eurostat and national data from 2002-2003 depending on indicator. Detailed definitions and data for each indicator are provided in Appendix B.

Malta is the smallest Member State of the European Union³ composed of two main Islands, Malta and Gozo with a high population density rate and an open economy

³ 316 square kilometres, eight times smaller than Luxembourg

depending highly on the international context (oil crisis, middle-east context), on transactions with foreign economies and on manufacturing and tourism sectors⁴. In addition, Malta suffers from territorial constraints due to its smallness : narrowness of its internal market, waste and water management issues, accessibility and infrastructure issues and costly transportation.

After a short period of recession in 2003 due to the unfavourable global economic environment since 2001 which impinged significantly on domestic economic conditions,; the current economic indicators reflect an overall positive upturn in Malta's economic performance, with a nominal GDP growth of 2.41% in 2004⁵ and a per capital GDP growth of 5,33% from 1996 to 2002. Labour productivity registers the highest rate among new members. The GDP per capita is one of the highest among the new member States (73% of the EU average) whereas it fell below 75% of the EU25 average in 2004 (as compared to 78.5% in 2000). The unemployment rate is under the EU average and was expected to reach 5.7% in December 2005. In foreign direct investment, Malta, on a per capita basis, would be ranked in the 6th position amongst EU member states⁶. FDI intensity recorded a major improvement going from -5.3% in 2002 to 3.3% in 2003, through a number of firms in the financial services sector. This sector has played a supportive role as service provider to the economy with the market for banking and insurance services and accounts representing around 12 per cent of Malta's GDP.

According to the Global Competitiveness Report, after the initially high ranking of 19th out of 102 countries in 2003, Malta's ranking slipped down to the 32nd place out of 104 countries in 2004 and, currently ranks at the 35th place in 2005 out of 117 countries.

The main reason lies in the insufficient performance, both in terms of investments and of human capital, in innovation and research and development and the low level of industry/research collaborations. The figure for Malta's Research and Development intensity as a percentage of GDP currently stands at 0.3 per cent as compared to 1.9 per cent for the EU25. In 2003, Malta's R&D financed by the business sector stood at 18.6 per cent⁷. The relatively high score of the "High-tech and medium-tech manufacturing" indicator (6.1% compared to 6.6% of the EU25 average) is due to the presence of the multinational STMicroelectronics which, with more than 2,300 employees, is the largest private employer in Malta and a prominent actor of the Maltese economy⁸. It is also due to the growth of the pharmaceutical manufacturing sector which employs around 500 persons. However the large majority of manufacturing enterprises in Malta are engaged in low tech manufacturing primarily geared to the domestic market.

⁴ The tourism sector is the the key foreign currency earner. It would account for more than 40% of the total revenue of the economy. Source : interviews

⁵ In "National Reform Programme", page 3

⁶ according to the "2006 Budget Speech – Building on our strengths...for a better quality of life", The Hon. Dr. Lawrence Gonzi, Prime Minister and Minister of Finance, Malta

⁷ National Strategic Reference Framework – 2007-2013 ; Draft Document for Consultation, march 2006

⁸ Providing around 55% of the country's total domestic exports.

The human resource indicators (higher education, knowledge workers, S&T workers, lifelong learning) show the relative weak position of Malta, compared to the EU average. Malta has a high rate of persons without a higher education, a high rate of early school leavers⁹ and low rates of participation in life-long learning. Total tertiary graduates in S&T in the 20 to 29 age group is around 3% compared to approximately 11% in the EU25¹⁰. The Chalmers Report¹¹, of November 2004, identified the development of human resource capabilities in science and technology at all levels of education, from technician level to PhD as a key challenge for Malta's competitiveness. In particular, the report states the education system is too geared towards traditional professions.

By contrast, with regard to the ICT infrastructures and diffusion, which is not captured by the exhibit 1, Malta performs well due to a long term political commitment since the mid of 1990s. Malta ranks 28th on the WEF Networked Readiness Index Rankings 2004, scoring highly on Government success in ICT promotion (5) and Government prioritisation of ICT (11), Broadband DSL Internet subscribers (14), secure Internet servers and broadband cable modem (15) and Internet access in schools (17). E-Society development is clearly an area of success.

The relative low innovation performance is also due to a lack of innovation culture both among policy makers and entrepreneurs. With regard to the latter, Maltese enterprises are clearly divided into two groups. The typical exporter has a significant foreign participation in its ownership and/or management, faces international competition and has the ability to adapt and innovate in response to and in anticipation of market dynamics; this group is mainly active in the principal growth sectors – high-tech manufacturing, IT-oriented services and financial services. By contrast, the typical domestic market supplier is locally-owned, micro-enterprise, and either an importer or a producer sheltered to varying degrees from international competition with very little ability for innovation and for facing competitive pressures; their mentality is often geared towards serving protected market niches where the concept of innovation is often viewed as a threat rather than an opportunity¹².

The smallness of the country also hampers reaching a critical mass of research activities and innovation actors, combined with territorial and financial budgetary constraints which push to focus investments on basic infrastructures, environment and energy infrastructures, basic education and vocational training; making it difficult to implement the political commitments toward innovation capacities development.

Within this context and to the extent to which Malta's innovation policy is starting almost from scratch, it is rather normal that the public efforts committed for innovation remain modest. The National Reform Programme announced 3% target of

⁹ School leaver rate was 42,6% in 2005. One should note the difference in measuring school leaving age, which is 16 in Malta and 18 for Eurostat calculation purposes.

¹⁰ National Strategic Reference Framework, Draft Document for Consultation, March 2006

¹¹ Report of the State Higher Education Funding Working Group to the Minister of Education, Youth and Employment <http://www.education.gov.mt/ministry/doc/pdf/hef.pdf>

¹² See, ADE, "Innovation Policy in seven candidate countries : the challenges. Final Report. Innovation Policy Profile : Malta", Enterprise Directorate General, March 2003.

R&D expenditure is most probably not achievable by 2010¹³. However, the Malta Council for Science and Technology is currently planning 0.45% of public R&D expenditure for 2007 and 0.3% of business R&D expenditures, for a total of 0.75%.

2.2 Regional disparities and recent trends

In order to analyse and describe the knowledge economies at regional level in the EU, the approach adopted was to reduce and condense all relevant statistical information available for a majority of regions. The approach involved firstly reducing the information from a list of selected variables into a small number of factors by means of factor analysis. These factors are:

- Public Knowledge (F1): human resources in science and technology combined with public R&D expenditures and employment in knowledge intensive services is the most important or common variables in this factor. Regions with large universities will rank high on this factor.
- Urban Services (F2): The most important variables for this factor are value-added share of services, employment in government administrations and population density. A key observation is that academic centres do not necessary co-locate with administration centres.
- Private Technology (F3) This factor is most strongly influenced by business R&D, occupation in S&T activities, and employment in high- and medium-high-tech manufacturing industries.
- Learning Families (F4). The most important variable in this factor is the share of the population below the age of 10. The Learning Families factor could also be understood as an institutional factor indicating a child-, learning- and participation- friendly environment, or even a ‘knowledge-society-life-style’ based on behavioural norms and values that are beneficial to a knowledge economy.

In a second, the 200 plus EU27 regions were grouped into 11 types of regions (see Appendix A) displaying similar characteristics by means of a cluster analysis.

Malta belongs to the “**Low-tech Government**” regions cluster type, as most of the Southern Italy regions. Malta scores very low with regard to all indicators grouped under the heading “Public Knowledge” together with the “Business R&D”, “S&T workers” and “Lifelong learning” as well “female activity rate” indicators. However, on two points (which are not captured by data), Malta differs from Southern Italy regions. It suffers from its smallness as micro-state (as it is not backed by central State support, as for the Italian regions); and it has undertaken huge efforts in e-society and e-governement developments.

The position of Malta as a “Low Tech Government” region reflects the traditionally dominant role of government in the economy, in spite of a privatisation process during the 1990s, spanning from the size of its expenditure to a pervasive direct control which has engendered a culture of dependence on the State and stifled

¹³ “Taking into consideration Malta’s specific characteristics and current investment in R&D, it is envisaged that Malta would find difficult to reach the 3% target by 2010 set by the EU...the 3% target is not achievable by 2010”, National Reform Programme, October, 2005, page 7-8

competitiveness and innovation. It also reflects the predominant role of tourism and related services in the economy, together with a manufacturing industry dominated by traditional low cost manufacturing and the development of the financial services and ICT services sectors.

Malta is facing three main challenges with regard to its innovation performance, but has started to address them. Firstly, the innovation governance system has room for improvement through a better coordination between the various key actors and the policy instruments which should be combined with the diffusion of an innovation culture among the whole society and the development of a stand-alone innovation policy.

The shortcomings in human resources development are the second largest issue. Strong shortfalls exist in the growth and innovative sectors which are preventing direct foreign investments and the development of innovative firms. For the traditional domestic-market oriented SMEs, the lack of high skilled technicians and engineers is a major constraint.

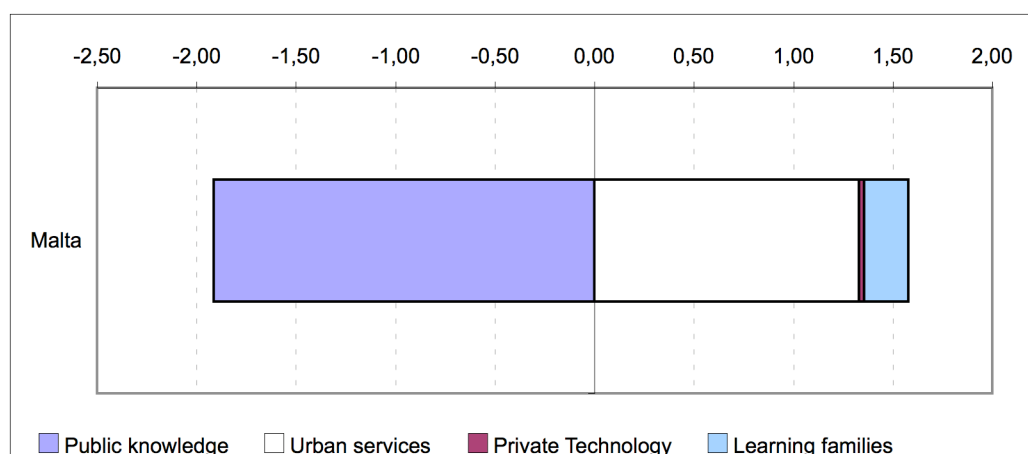
Finally, the smallness of the country and the clear division between firms (foreign-owned and export-oriented; domestic-market oriented) strongly impact on the low level of collaboration between the research base and the business sector, and business to business cooperation. On the research side (the University mainly), the lack of critical mass pushes the researchers to look for collaborations at the EU and international level with larger universities, research centres and companies. On the entrepreneur side, the export-oriented sector tends to import its innovation from abroad or to innovate in-house ; the domestic market oriented enterprises need, in general, more technical innovations than research-oriented innovations produced at the University and are still reluctant to cooperate.

With regard to Malta's performances, the Island of Gozo is facing additional difficulties due to specific handicaps which impact on Gozo's competitiveness: 'double' insularity, size of population and territory (a small island¹⁴ in a small country), access to infrastructure and environmental fragility. Agriculture, fishing, craft industry and tourism are the main sources of income. The public sector is the largest contributor to Gozo's GDP, providing jobs for about 45% of the gainfully occupied in Gozo¹⁵. The manufacturing industry sector is rather small and not technology-oriented including factory based industries (e.g. in the textile sector) and craft industries employing low-skilled people with low added value activities. Gozo suffers also from a mismatch of the education sector with the labour market. It lacks of middle management and people with strong technical background. Its potential for recruiting skilled people is limited, partly due to an ageing population and a brain-drain flow to Malta Island. In addition, Gozo faces environmental degradations and biodiversity decline (due to both the tourism industry and increasing building activity). But in terms of innovation and knowledge economy support, Gozo does not require a different support from Malta Island.

¹⁴ 67 square kilometres, around 50.000 inhabitants

¹⁵ Single Programming Document 2004-2006

Exhibit 2 : Regional factor scores



Source: MERIT. The bars are stapled factor-scores showing the deviation (1=standard deviation) per factor from the average of 215 EU regions (0.00). The longer the bar, the bigger is deviation.

Exhibit 3 : recent trends in key indicators

	Unemploy ment	Per capita GDP	Industry share	Agriculture share	Population density	Tertiary education	R&D intensity
	1996-2003	1996-2002	1996-2002	1996-2002	1996-2002	1999-2002	1996-2002
	%-pnt ch.	% growth	%-pnt ch.	%-pnt ch.	% growth	%-pnt ch.	%-pnt ch.
EU25	--	--	--	--	--	--	--
Malta	--	5,33	-0,56	-0,29	--	--	--

Source : MERIT based on Eurostat data for period indicated

2.3 Conclusions: innovation and knowledge performance

The Maltese economy has been over the past decades characterised by extensive government interventions. The liberalisation of the market has been achieved only recently; today, the Maltese enterprises are facing an increasing international competition. For these reasons, the political commitment and the priority implementation of a number of innovation related measures are still in their initial phase.

In addition, Malta is suffering from a “smallness paradox”. Its size and geographic location may give comparative advantage in specific areas such as the pharmaceutical manufacturing sector or the ICT sector for which exists a long and strong policy drive and for which the smallness of the island and the urban density could give opportunities to serve as a test base for application of new technologies and new services. This smallness may also facilitate contacts between the innovation key stakeholders, public and private actors. But, at the same time, the lack of critical mass in research and industrial capacities and the lack of interface organisations encourage both researchers and entrepreneurs to import or search for “knowledge” from abroad, instead of cooperating to create or transfer knowledge.

Exhibit 4: summary of key disparities and needs

Region / group of regions	Key factors explaining performance (weaknesses)	Key needs in terms of innovation and the knowledge economy
Malta	<ul style="list-style-type: none"> • Smallness of the country (lack of critical mass, territorial constraints) • Lack of innovation culture and governance • Insufficient human resources development for innovation, in particular relating to higher education and high skilled technicians and engineers (shortfalls and mismatch) • Low R&D public expenditure • R&D not backed by business sector combined with a very low level of innovation capacities within domestic enterprises • Acceleration of brain-drain (since EU membership) • Low level of lifelong learning • Low access to innovation financing (equity) 	<ul style="list-style-type: none"> • Support innovation culture among decision-makers and entrepreneurs • Improve innovation governance • Better adaptation of the human resources to the economic needs (better matchmaking) • Support human resources and skills development, especially in Gozo • Development of technology transfer and research / business and business to business (B2B) collaborations (clustering) and improving patenting capacities

3 Innovation and knowledge: institutional context and policy mix at national and regional levels

Structural Fund support for innovation and knowledge is contingent on and seeks to strengthen the existing national (and/or regional) innovation system¹⁶ in each Member State. In particular, institutional, legal and financial factors in the innovation system can limit the potential for certain types of intervention. Moreover, within the framework of the EU's "Lisbon objectives", Structural Fund interventions are expected to complement and provide added value to national (or regional) policy framework. In some Member States, Structural Fund interventions in favour of innovation and knowledge are marginal with respect to the national investment and policy effort, in others Structural Funds provide a main source of funding for such interventions. In both cases, there is a need to identify relevant national and EU policies which can have an impact on decisions on funding priorities.

3.1 Institutional and legal framework for innovation and the knowledge economy

This section of the report appraises two broad factors that condition the potential for coordinated intervention of EU and national (regional) policies in favour of innovation and knowledge:

- The first concerns the organisational structures of public and semi-public bodies responsible for the design, implementation and monitoring of innovation and knowledge economy policies. In particular, the analysis considers the responsibilities for funding or managing specific types of measures liable to be considered for support under the Structural Funds;
- The second concerns the institutional, legal and financial frameworks, which condition the linkage of national (regional) financing with EU financing.

In Malta, until recently, there was no real formal structure for innovation policy-making. But, over the last year, the Government has been undergoing a process of deep reflection and re-thinking of national policies relating to science and technology, research and innovation and technological development, of which one of the main visible change has been the new prominent role of the **Malta Council for Science and Technology (MCST)**.

Placed under the control of the Office of the Prime Minister since October 2005, the MCST has been assigned to ensure more coordinated and coherent policy approaches in research and innovation across Government Ministries and agencies to develop synergies and avoid duplication of efforts. It acts as a catalyst to define and facilitate the role of RTDI activities in support to Ministerial policies and sectoral strategies. Finally MCST is to prioritise and orient national RTDI investment, in particular through the management of the 2004 National RTDI Programme Strategy, to sectors

¹⁶ The network of organisations, individuals and institutions, located within or active within national or regional boundaries, that determine and shape the generation, diffusion and use of technology and other knowledge, which, in turn, explain the pattern, pace and rate of innovation and the economic success of innovation.

and niche areas with high business potential and relevance to meet pressing economic and social needs.

At ministerial level, the **Ministry for Investment, Industry and Information Technology (MIIT)** is responsible for ICT developments, including e-Government (the National ICT Strategy in 2004 and the National Broadband Strategy in March 2005) and drives the enterprise policy through the supervision of Malta Enterprise. The **Ministry of Education, Youth and Employment (MEYE)** is responsible for Education, (including higher & tertiary education, vocational training), Employment, Youth and Sports. Finally the **Ministry of Competitiveness and Communications (MCMP)** is responsible for the competition policy, the small businesses and trade services. It has coordinated across the Government, through the chairmanship of the Competitiveness Council (with MCST and MEYE) and the support of the Management Efficiency Unit (Office of the Prime Minister), the drafting of the NRP.

At the implementation level, the **MCST**, which manages the National RTDI programme, is the national coordinator of Malta's participation in FP6 and directly runs several FP5 and FP6 EU projects. **Malta Enterprise** is the government agency responsible for innovation, enterprise and entrepreneurship policies, in particular in the field of technology transfer, business incubation services and start-ups. It acts as an intermediary for the European Investment Fund which provides counter-guarantee facilities. It hosts the Euro Info Centre, the IRC and manages a Business Technology Network. It also operates the **Kordin Business Incubation Centre (KBIC)** which targets and supports specialised areas including ICT, mechanical and electrical engineering design of equipment systems, as well as product design, renewable energy resources and biotechnology. Finally Malta Enterprise is leading the Regional Innovation Strategy "MARIS" project.

On the research side, the **University of Malta** plays the major role and has been undergoing a process of development with the strengthening of existing faculties and the setting-up of specialised departments and research institutes active in different sectors of science and technology. The University is also involved in a number of collaborative projects with local business, mainly in engineering and bio-medical science fields. In addition there are several other research organisations directly funded by the Government as well as private sector and international R&D centres (e.g. the International Ocean Institute).

Due to the size of the country, the role of local authorities (local councils) is limited. The Island of Gozo is administered by the Ministry for Gozo which forms part of the Central Government and thus follows and implements national policies and priorities in Gozo. In 1992, the University of Malta established a centre on the island of Gozo. This centre offers diplomas, degrees, masters and short courses. The Ministry for Gozo is using the University of Malta Gozo Centre as the venue for short courses in Agricultural Studies, Business Studies, e-Commerce and IT and Environmental Planning & Management funded by the ESF.

With regard to the funding framework, the ministries provide funding to public research institutions under their supervision and to the University. The MCST is providing funding to enterprises and research institutions through the three sub-programmes of the 2004 National RDTI programme. Malta Enterprise provides

assistance and funding to enterprises, SMEs and start-ups, through direct grants and loan guarantees. The lack of equity culture should be noted . A Technology Venture Fund was set up a few years ago but was not successful because of the lack of proper business environment and financial engineering skills. It is currently being administered by MIMCOL as of March 2006.

Exhibit 5: main organisations per policy area.

Policy objectives	Type of organisation	
	National (&/or regional) public authorities and agencies	Key private or non-profit organisations
Improving governance of innovation and knowledge policies	<ul style="list-style-type: none"> • Management Efficiency Unit (Office of the Prime Minister) • Malta Council for Science and Technology (eFORESEE project in 2002-2003) • Malta Enterprise (RIS MARIS) 	<ul style="list-style-type: none"> • Competitive Malta: Foundation for National Competitiveness
Innovation friendly environment	<ul style="list-style-type: none"> • Ministry for Investment, Industry and Information Technology (MIIT) • Ministry of Education, Youth and Employment (MEYE) • Ministry of Competitiveness and Communications (MCMP) – Parliament Secretary for Small Enterprises and Self-Employed • Employment and Training Corporation (ETC) (entrepreneurship training courses) 	<ul style="list-style-type: none"> • Fondazzjoni Temi Zammit (researchers mobility portal) • University of Malta – University Services Ltd (providing short term courses) • Competitive Malta Foundation
Knowledge transfer and technology diffusion to enterprises	<ul style="list-style-type: none"> • Malta Enterprise 	<ul style="list-style-type: none"> • Business Technology Network (BTN)
Innovation poles and clusters		
Support to creation and growth of innovative enterprises	<ul style="list-style-type: none"> • Malta Enterprise • Kordin Business Incubation Centre (KBIC) 	
Boosting applied research and product development	<ul style="list-style-type: none"> • Malta Council for Science and Technology • University of Malta • Several research centres under the supervision of the relevant ministries 	<ul style="list-style-type: none"> • International Ocean Institute • Institute of Water Technology

Source: study team based on national/regional policy documents, TrendChart reports, OECD reports, etc.. See appendix C for a detailed definition of the policy categories.

The Maltese innovation institutional framework is still characterised by a lack of coordination between the different actors at ministerial level and a separation between three main policy fields: education and employment, economy and industry, research and innovation. Within this latter, a clear division is also running between innovation (Malta Enterprise) and research (MCST) policies, combined with a weak structured dialogue on innovation. In fact, the innovation policy depends on a small group of individuals. However, concrete steps have recently been taken to address this issue

through the new role assigned to MCST, the involvement of Malta Enterprise in the drafting process of the National Research and Innovation Strategy for 2006-2008 and the establishment of the Inter-Governmental Committee on RTDI bringing together the heads of all the key institutions under the chairmanship of the MCST. In addition, the RIS MARIS exercise, launched in July 2005, will complement this attempt to build a stand-alone innovation policy by support to all innovation stakeholders.

There are no particular institutional, legal or financial frameworks which would condition or limit the linkage of national financing with Community funds. In addition the Government is committed to develop a legislative framework encouraging research and development in order to make the registration of patents more attractive, and a suitable intellectual property regime covering research by university staff that should foster collaboration between industry and the University¹⁷.

3.2 Policy mix assessment

This section provides a summary overview and analysis of the national and regional policy mix in favour of innovation and knowledge in which the Structural Fund interventions take place. The analysis is conducted with respect to six broad categories of objectives of innovation and knowledge policies (see appendix C for an explanation of each category).

Measures identified per category of the policy objectives are then further sub-divided in terms of the direct beneficiaries of funding (or legislative) action. To simplify, the report adopts three broad types of organisation as targets of policy intervention:




- Policies supporting academic and non-profit knowledge creating institutions;
- Policies supporting intermediary/bridging organisations involved in innovation support, technology transfer, innovation finance, etc.;
- Policies supporting directly innovation activities in private sector.

The matrix below summarises the current policy mix at the national level. The intensity of support (financial or political priority) for different policy areas and targets is indicated by a colour coding system.

¹⁷ Measures proposed in “A Better Quality of Life. 2006-2010 Pre Budget Document”, July 2005, page 63.

Exhibit 6: Policy mix for innovation and knowledge

Policy objectives	Target of policy action		
	Academic /non-profit knowledge institutions	Intermediaries/broding organisations	Private enterprises
Improving governance of innovation and knowledge policies	eForesee	RIS Maris	
Innovation friendly environment	National ICT Strategy E-Governance Youth Enterprise Programme	National ICT Strategy	Business Promotion Act National ICT Strategy Development of VC with public money
Knowledge transfer and technology diffusion to enterprises	EuroMedITI	Business Technology Network	
Innovation poles and clusters		Smart City@Malta	
Support to creation and growth of innovative enterprises		Kordin Business Incubation Centre	SME Loan guarantee Scheme START Programme Royal Agreement Scheme
Boosting applied research and product development	National RTDI Programme 2004-2006 + 2006-2008		National RTDI Programme 2004-2006 + 2006-2008

Legend	
Top policy priority	
Secondary priority	
Low priority	

Source: appreciation by study team based on national/regional policy documents, TrendChart reports, OECD reports, etc.

While the National Reform Programme is not particularly innovation oriented, there is evidence since the beginning of the 2000s that research and innovation are currently occupying a higher position on the national agenda under the influence and pressure of the EU accession and the Lisbon targets, but also of the global context. The present policy mix relies on the RTDI Strategy 2003 (from which the 2004 National RTDI programme results), the National ICT Strategy, a number of initiatives led by Malta Enterprise in the field of innovation support and access to finance, and the 2006-2010 Pre-Budget Document¹⁸. The MCST is also currently drafting the new RTDI strategy for 2006-2008.

Two new projects (EuroMedITI and Smart City@Malta) reflect a clear shift in the policy rationale from investments in science and technology *per se* to investments in S&T as drivers for innovation and economic growth. These include “*a philosophical orientation whereby state-financed RDIST should be directed towards value added research in niche economic areas within which success can be attained*”¹⁹. Priorities that have gone up and are going up on the agenda have been: i) improving the innovation environment; ii) improving the innovation governance; and iii) establishing collaborative research programmes.

¹⁸ The coherence of the NSRF with the Pre-Budget Document and the planned RDTI Strategy for 2006-2010 is to be noted

¹⁹ “A Better Quality of Life”, 2006-2010 Pre-Budget Document, page 62.

- **Improving governance of innovation and knowledge policies**

Governance has been improved with the eFORESEE exercise which led to the formulation of the updated RTDI policy by providing a clear direction on where and how to target priority areas for action, e.g. the poor S&T culture and the low level of industry-academia links. The RIS MARIS exercise is expected also to mobilise key innovation stakeholders around a coherent innovation strategy. Since 2004, the Government (National Statistics Office) has developed a statistical base to track and monitor developments in research and innovation.

The Maltese National Reform Programme is in line with these latest developments : a review exercise of the enterprise policy, the setting up of a “Better Regulation Unit” for monitoring the bureaucratic procedures, the setting-up of a Higher Education Commission (to guarantee the quality of provision and inclusive participation in further and higher education) are announced.

- **Innovation friendly environment**

Major objectives have been from 2001: improving the financial, legal and tax framework for innovation; developing the entrepreneurship spirit through the Youth Enterprise Programme (an educational programme) and adapting the human resources and the education system to the needs of the economy. ICT are also a cross-cutting issue for enterprise policy, competitiveness policy and education policy. There has been a huge drive for using ICT, especially in the field of e-Governance (access to public services) and access to ICT within the education sector.

The main measures of the Business Promotion Act (2001) and the Budget Act for 2005 consist in tax incentives for developing e-commerce, for employing post-graduate people and for R&D expenditure and the setting-up of a Venture Capital Fund (2.25 MEUR over three years) with tax credits for VC providers. But it has so far not yet resulted in any significant innovation efforts among firms. The NRP confirms this commitment by earmarking ± 54 MEUR in tax credits and tax incentives. The University, together with the Vocational and Educational Training Council (MCAST), has also created an “ICT Academy”, in order to fill the shortage of skills in ICT, which delivers courses and certifications and allows trainees to benefit from fiscal incentives.

- **Knowledge transfer and technology diffusion to enterprises**

There are no specific measures on knowledge and technology transfer and no interface organisations entirely TT-oriented. Malta University Services Ltd., the university private-owned company, is focused on providing short term courses on business management, rather than on valorising research works. No specific support scheme is providing assistance to technology transfer projects. However, Malta Enterprise is attempting to develop technology transfer through the establishment of the Business Technology Network (BTN) which is a technologist-investor-entrepreneur network providing a local forum for technologists and investors to learn more about each other’s needs through events and on-line forums.

In addition, the MCST together with Malta Enterprise, the Fraunhofer Institutes (Germany) and the Public Research Centre - CRP Henri Tudor (Luxembourg) have

launched in March 2006 the project of the “Euro-Mediterranean Institute of Technology and Innovation (EuroMedITI) which aims to develop and empower Malta as an outstanding technology and innovation platform for business-driven services in training, applied R&D, incubation and dissemination in the Mediterranean Region. EuroMedITI is a business-driven initiative aiming at facilitating the development, adaptation, prototyping, testing and deployment of technologies (renewable energies, water and environmental energies, ICT, pharmaceuticals) that address the specific demands of the region.

- **Innovation poles and clusters**

There is no clear policy on clustering and creation of innovation poles while several studies and policy documents have stressed the lack of clusters and well defined niche markets as a specific weakness of the Maltese economy²⁰. However the NRP and the 2006-2010 Pre-Budget Document announced a turning point by intending to review the enterprise policy and building it upon sectors of opportunities. Entrusted by the Prime Minister, the MCST new RDTI strategy for 2006-2008, still under preparation, is also developing a more sector-focused approach.

In keeping with this new orientation, the project Smart City@Malta²¹, signed the 31st of March (2006) and operated by the Maltese Government and Tecom Investments of Dubai (a service telecommunications network operator and service provider which plans to invest US\$300 over the next 8 years) should lead to the creation of an IT and Media Park to serve as an attractive base for top IT companies. It could serve as spill-over effect for clustering development.

- **Support to creation and growth of innovative enterprises**

Since 2004, strong efforts have been made to encourage the creation and the development of businesses, especially technology-based ventures and innovative start-ups. Innovative spin-offs from university and research centres are not targeted.

Three inter-related batches of measures, managed by Malta Enterprise with the support of the Business Technology Network, providing facilities, training and access to finance for start-ups and innovative start-ups, have been initiated: the Kordin Business Incubation Centre (facilities and counselling), the SME Loan Guarantee Scheme (loan guarantee)²² and the START programme (training and mentoring). Start-ups can benefit from the three inter-related measures. The Incubation Centre has been ‘labelled’ as EU Business Innovation Centre and looks successful, hosting 25 companies and planning an extension in 2007²³. In addition, Malta Enterprise plans to launch a “Royalty Agreement Scheme” to support proof of concept and prepare entrepreneurs to access venture capital in later stages.

²⁰ In particular, National Strategic Reference Framework – SWOT Analysis Meeting, September 26th, 2005

²¹ Press Commentaries from the Department of Information, <http://www.doi.gov.mt/EN/commentaries/2006/04/bus06.asp> ; see also The Malta Business Weekly, 30 March-5 April, 2006. This project is in starting phase (agreement signed last March). It is developed on the model of “Internet City Dubai” managed by Tecom in Dubai (http://www.dubaiinternetcity.com/html/news_41.htm)

²² The SME Loan Guarantee Scheme is supported by the European Investment Fund

²³ The Sunday Times, February 19th, 2006, www.timesofmalta.com

- **Boosting applied research and product development**

The instrument for this policy area has been completely renewed with the objective of increasing public investment in R&D and developing a more demand-oriented research. The three 2004-2006 National RTDI sub-programmes²⁴ are providing financial support for scientific research, ranging from basic and applied research to near-market innovation, through the funding of infrastructures, facilities and collaborative research projects on a call for proposals basis. If it is too early to evaluate its results, however the high level and high quality of responses²⁵ from the public and private sectors is a positive point. No measures and incentives exist on IP protection and exploitation.

The new RDTI Strategy for 2006-2008, still under preparation, should promote a more open culture of decision, a clear target to invest more in R&D and innovation, a more business-oriented research focused on four sectors (ICT/electronics, biotech/pharmaceuticals, energy and environmental technologies, and manufacturing technologies), and an improvement of RTDI capacities of firms, including domestic companies.

Overall assessment:

The expected increase in public research expenditure and the new demand-oriented approach of the RTDI should address some of the needs identified in chapter 2. The measures taken to support innovation governance, to enhance an innovation friendly environment and to boost applied research and collaborative research are highly relevant.

The measures targeted to support innovative start-ups are in line with the aim of supporting FDI in high-tech services and manufacturing by providing incentives for the creation of technology-based venture firms, but the measures need to better target domestic companies and encourage more collaborations and partnerships between foreign and domestic firms, even if some experiences of spin-offs from foreign owned companies are recorded.

The current policy mix still lacks strong support to clustering, particularly in the field of academia-research-businesses linkages in relevant economic and technological sectors and in the field of technology and knowledge transfers to develop more high added value activities within local firms.

Current policy measures targeted to the improvement of human resources for innovation are focused on higher education support and mobility of researchers, but within a limited context. The promotion of a science, technology and innovation culture among the whole population, particularly among students, needs to be further supported. This is essential in view of the low share of the population with a tertiary degree and the insufficient take-up of science-based studies at the University. Lifelong learning also needs special incentives.

²⁴ Total amount EURO 750.000, in 2005. Extract from national budget estimates 2005.

²⁵ Opinion of the international panel of expert assisting the MCST in the selection process of the projects funded, see Trend Chart Report Malta, 2005.

Recent developments on the policy agenda should better addresses these challenges. The new MCST's RTDI Strategy for 2006-2008, and its planned six priorities and sub-programmes which are still under examination: - a) business RTDI; b) University RTDI; c) training and mobility; d) development of centres of competence; e) science 'popularisation'; and f) support to innovation governance – should be relevant as they target wider research-industry collaborations in a market perspective. In addition, the two new projects (EuroMedITI and Smart City@Malta) open new opportunities for developing technology transfer cooperation and starting a clustering process in the ICT sector. However, for what regards this sector, the remaining great challenge is “*whether the Maltese labour force is competent enough to meet the demands of this [Smart City@Malta] project...and the provision and availability of fresh new workers with specific IT capabilities...*”²⁶.

3.3 Conclusions: the national innovation system and policy mix

In conclusion, two recent positive trends have to be noted. Firstly, according to EIS data for 2004, there are indications that Malta is catching up on the human resources indicators, with an increase in the S&T graduates and the percentage of the population with tertiary education²⁷.

Second, it seems that the accession of Malta to the EU, and also the international context (increasing competitiveness, oil crisis) corresponded to awareness-raising among policy-makers and decision-makers of the importance of innovation and R&D. The most recent policy debates on the NRP and the current discussion on the future National Strategic Reference Framework (NSRF) for the Objective 1 programme have provided the opportunity to involve the innovation stakeholders and to raise awareness among the key players. These topics have been given a high priority on the national policy agenda. The National RTDI programme 2004-2006 of the Malta Council for Science and Technology (MCST), the new RTDI strategy for 2006-2008 still under development within the MCST, the NSRF draft document for consultation and the National Reform Programme 2005-2008, combined with the Structural Funds operational programme and the launching of a RIS exercise in 2005, stress the political commitment to encourage investments in R&D and innovation and to build an innovation strategy.

²⁶ The Malta Independent, March 31st, 2006 – extract from an article written by Tony Abela, Parliament Secretary in the Office of the Prime Minister.
<http://www.independent.com.mt/news.asp?newsitemid=30547>

²⁷ Trend Chart Malta Report, 2005, page 22

Exhibit 7: Key opportunities and constraints for investment by the Structural Funds

Policy objectives	Opportunities for Community funding (national priorities)	Constraints or bottlenecks (factors limiting Community funding)
Improving governance of innovation and knowledge policies	<ul style="list-style-type: none"> • Favour a coherent and stand-alone regional innovation strategy • Favour linkage with FP7 (Capacities) 	<ul style="list-style-type: none"> • Innovation governance practices and culture still to be strengthened • Management capacity
Innovation friendly environment	<ul style="list-style-type: none"> • Human resources: diffusion of a science and innovation culture among students, researchers, and domestic firms; mobility of researchers to industry; life-long learning • Favour linkage to FP7 (People) • Financial engineering : development of a VC sector – favour linkage with CIP 	<ul style="list-style-type: none"> • Smallness of the country • Brain-drain effect due to EU accession • Lack of equity culture and of proper management skills • Reluctance to innovation among local firms (“Island Mentality”)
Knowledge transfer and technology diffusion to enterprises	<ul style="list-style-type: none"> • Develop business support structures for encouraging TT (university liaison office, technology park, interface organisations, EuroMedITI) • Favour public-private partnerships and networking on a project basis • Favour the embedding of FDI in local economy through technology transfer 	<ul style="list-style-type: none"> • Management capacity and skilled innovation and TT managers • Lack of trust among local entrepreneurs towards innovation • Weak relations between foreign-owned companies and local entrepreneurs
Innovation poles and clusters	<ul style="list-style-type: none"> • Favour a clustering process (e.g. Smart City@Malta) and identification of niche markets • Favour the development of higher added value activities in the manufacturing sector and services sector 	<ul style="list-style-type: none"> • Identification of niche markets still under process (with the exception of the ICT sector) • Availability of trained people in some sectors (e.g. in the ICT sector)
Support to creation and growth of innovative enterprises	<ul style="list-style-type: none"> • Development of innovative start-ups, in particular new technology-based ventures firms (FDI) • Development of academic spin-offs • Early-stage equity financing – favour linkage to CIP 	<ul style="list-style-type: none"> • Weak relations between foreign-owned companies and local entrepreneurs • Weak entrepreneurship culture among students, academics and researchers • Lack of equity culture and of proper management skills
Boosting applied research and product development	<ul style="list-style-type: none"> • Create linkages between businesses and research centres • Favour funding on a project basis • Favour linkage to FP7 (Cooperation, People, Capacities/SMEs) • Initiate use of EIB 	<ul style="list-style-type: none"> • Low level of public R&D expenditure • Lack of private co-financing

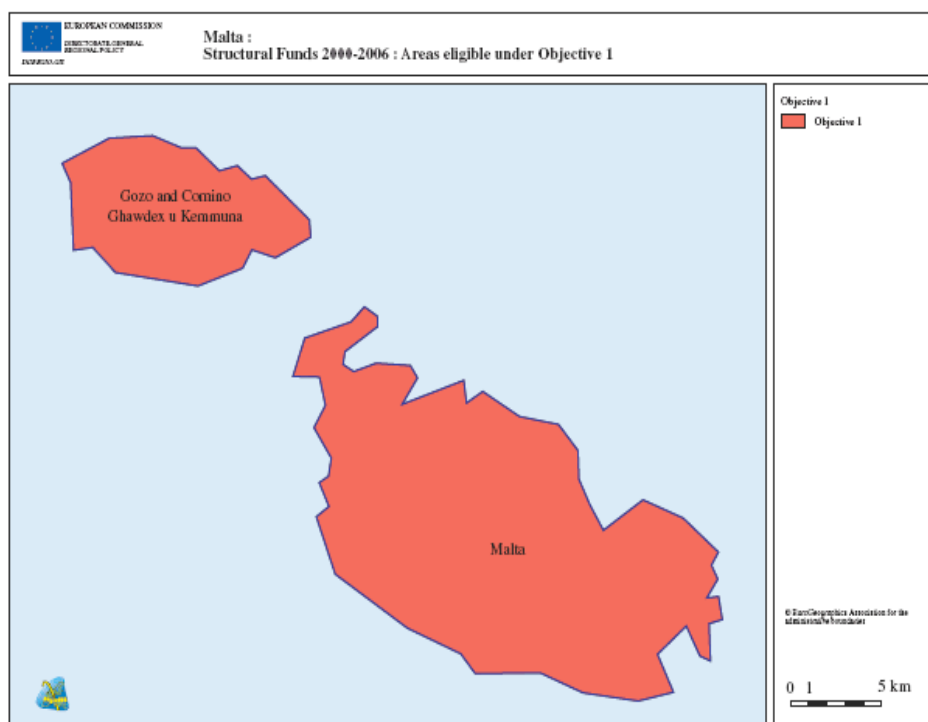
4. Structural Funds interventions to boost innovation and create a knowledge economy: 2000-2006

This section of the reports provides an analysis the patterns of Structural Fund expenditures in the fields of innovation and knowledge-based economy during the current programming period (2000-2006 for EU-15 or 2004-2006 for the new Member States). It examines the patterns from both a strategic point of view (the policy mix pursued by the Structural Funds programmes) and at an operational level (consumption of funds, management of innovation measures, indications of relative effectiveness of measures, case studies of ‘good’ practice).

4.1 Strategic framework for Structural Fund support to innovation and knowledge

4.1.1 Strategic approach to innovation & knowledge in Structural Fund programmes

The Single Programming Document Objective 1 Malta 2004-2006 covers the entire Country, with a specific axis dedicated to the Island of Gozo. It covers an area with a total of 402,700 inhabitants (2005), of which around 50,000 in Gozo. Whilst Malta and Gozo as an entire country are classified as one unit at the levels of NUTS1 and 2, Malta and Gozo are also considered as separate regions at NUTS3 level (even though Gozo has a smaller population – around 30,000 inhabitants – than a typical NUTS3 region), allowing for specific arrangements for Gozo to be negotiated in the framework of the Structural Funds.



Source – European Commission, DG REGIO

The overall strategic objectives of the SPD are: i) to promote environmental sustainability and to assist Malta in the implementation of EU environmental directives and regulations; ii) to promote an open and competitive economy and to optimise the use of the country's resources; and iii) finally to ensure that growth is spread equitably across the Maltese Islands, both socially and geographically. It is divided into four priorities: "1. Strategic investments and strengthening competitiveness" (ERDF), "2. Developing People" (ESF), "3. Rural Development and Fisheries" (EAGGF/FIFG) and "4. Regional Distinctiveness - Gozo Special Needs" (ERDF and ESF)

Concretely, the SPD is mainly financing infrastructures²⁸ and is focused on the following topics: environment, roads, tourism and enterprise, human resources, agriculture and fisheries and Gozo Island (basic infrastructure and human resources). The two first measures of priority 1 ("Strategic investments and strengthening competitiveness") "Improving the environment situation" and "Infrastructures" (in transport, education and social, services for industry fields), and the corresponding measure for Gozo (measure 4.1 on Basic infrastructure and tourism development) concentrate 63.78 % of the total eligible cost²⁹.

The Maltese SPD is not innovation-oriented. Support to innovation and the knowledge economy is diluted within three main measures, the innovative profile of which is not explicit. No measure is entirely focused on technology, innovation and research and development, and innovation support infrastructures (e.g. the Kordin Business Incubator Centres) are not funded.

The calculations presented in the exhibit below are based on the allocation of Structural Funds budgets based on the intervention code classification. For practical purposes, the calculation of financial resources allocated to innovation and knowledge has been limited to the RTDI codes:

- 181 Research projects based in universities and research institutes
- 182 Innovation and technology transfers, establishment of networks and partnerships between businesses and/or research institutes
- 183 RTDI Infrastructure
- 184 Training for researchers

Additional calculations based on broader definitions of innovation are presented in Appendix D.

²⁸ 14,6 % of SFs are allocated to finance human resources development projects – Source : interviews

²⁹ Calculation based on the financial tables included in the Programming Complement, May 2005, page 77

Exhibit 8: Overall allocation of resources at an objective 1 and 2 level (planned figures in Euro)

Objective	Total cost	SF			NF	
		Total	ERDF	ESF	Public	Private
RTDI INTERVENTIONS						
Objective 1	259 000,00	194 250,00	0,00	194 250,00	64 750,00	0,00
TOTAL COHESION POLICY						
Objective 1	86 521 137,00	63 192 639,00	46 697 639,00	9 457 500,00	23 328 498,00	0,00

Source: programming documents and financial data provided by DG REGIO

The financial weight of SF-funded RTDI interventions during the 2004-2006 period is rather limited amounting to 0.3 % of the Cohesion Policy in Malta, roughly the same as the percentage of public R&D expenditure in the GDP. With regard to the wider calculation method (see Appendix D) which includes ICT diffusion and development and support services to SMEs, the percentage of “innovation and knowledge economy” related interventions would amount to 1.1%.

The European Social Fund is the unique contributor to the RTDI coded interventions, both in Malta Island and in Gozo, which is reflecting the concentration on these interventions on human resources development for innovation through training schemes for re-skilling workers of traditional sectors (textile, shipyards, etc.). ERDF has not been used for strengthening RDTI capacities through financing of equipments, facilities and research infrastructures.

Whatever the calculation method, it clearly appears that the Structural Funds 2004-2006 have not really contributed to the national RTDI efforts. The current changes in the national policy mix are too recent to have been integrated in the current programming period. In addition, with the RIS MARIS exercise having started in June 2005, its impact on the mainstream Structural Funds interventions is of course rather limited. However, the RIS should allow to raise awareness about innovation and the knowledge based economy among the key Maltese stakeholders; Malta Enterprise, the managing body for the RIS, expects to integrate its first results into the operational programme 2007-2013.

4.1.2 Specific measures in favour of innovation and knowledge.

Only two measures include, in a very limited way, supports to RTDI (according to the “pure” RTDI codes): a) measure 2.3. “Lifelong learning and Social inclusion” which covers Malta Island and b) measure 4.2. “Human Resources” which is its counterpart for the Gozo Island, both funded by the ESF³⁰. The measures aim at enhancing the employability of the local work force through the provision of appropriate training schemes and at enabling access to new job opportunities and maintaining jobs. Among its eligible actions, the Programming Complement provides research and mobility scholarship grants for graduates and entrepreneurial courses and training schemes for business start-ups, especially in the field of ICT.

³⁰ Respectively, 6% of the total programmed budget amount of the measure 2.3. (code 181 & 182) and 1% of the measure 4.2. (code 181) – See : Programming Complement, page 82

An additional measure funded by ESF (measure 2.1. “Employability and adaptability”), not captured by the RTDI code, also funds training courses aimed at providing people with skills required by the “new” developing industries (ICT, electronics, biotechnology) and training courses aimed at promoting entrepreneurship and business start-ups.

Measure 1.3. “Support to Enterprise”, while not captured by the RTDI code, also touches on innovation and the knowledge economy. Co-funded by the ERDF, it aims at strengthening the competitive basis of domestic manufacturing and service industries, in particular in the tourism sector, by providing grants to businesses to improve their market access, for technological up-grade, ICT use and diffusion, and for environmental initiatives. The measure is implemented through a call for proposals to which businesses looking for technological equipments, adaptation, modernisation and standardisation answer.

Exhibit 9: Key innovation & knowledge measures

Policy area	Number of identified measures	Approximate share of total funding for innovation & knowledge measures	Types of measures funded (possibly indicating importance)
Improving governance of innovation and knowledge policies	0	0 %	
Innovation friendly environment	3	80%	<ul style="list-style-type: none"> ▪ Lifelong learning through training schemes (in ICT) and the provision of research and mobility bursary grants for graduates, placements for graduates, training in technology skills, training in new developing industries ▪ Training for promoting entrepreneurship and support business start-ups, training for SMEs
Knowledge transfer and technology diffusion to enterprises	0	0%	
Innovation poles and clusters	0	0%	
Support to creation and growth of innovative enterprises	0	20%	<ul style="list-style-type: none"> ▪ Support to SMEs through technical audits, upgrades, product design, quality management and innovation management and research support
Boosting applied research and product development	0	0%	

Nb: this table is a summary of the exhibit 14 in appendix D. The total of the percentage share per policy area may sum to more than 100 since certain measures fall into several categories.

The key features of the SF funded RTDI interventions are a strong focus on the improvement of the innovation environment, together with a low level of financing for innovation.

Both this focus and the “intensity” of the innovation support of the identified measures are too weak to correctly address the needs in terms of innovation and the knowledge economy, especially the so called “smallness paradox”.

In regards to supporting the creation and growth of innovative enterprises, the interventions were focused to a limited extent on technology up-upgrades of firms. No support has been provided to the business incubator or to innovative firms, start-up and spin-off companies through grants. In this field, the interventions, which were demand-oriented, have targeted beneficiaries (enterprises) which did not display an innovation and open culture.

Neither the development of partnerships between businesses and research centres, and between domestic businesses and foreign-owned companies, nor the development and the strengthening of technology brokers or technology interface organisations (e.g. technology transfer centres, technology platform) have been supported. Support to collective actions is lacking.

4.2 Learning from experience: the Structural Funds and innovation since 2000

4.2.1 Management and coordination of innovation & knowledge measures

This section reviews the overall management of Structural Fund interventions in favour of innovation and knowledge during the current period. It examines the coherence and the role of key organisations or partnerships in implementing Structural Funds (SF) measures for innovation and knowledge, the linkages between Structural Fund interventions and other Community policies (e.g. the RTD Framework Programme) and the financial absorption and additionality of the funds allocated to innovation and knowledge.

The management of the innovation-related SF interventions has not led to the creation of specific organisations. The main SF management organisation is the **Planning and Priorities Co-ordination Division (PPCD)** (formerly known as Regional Policy Directorate), which has a high political profile as a part of the Office of the Prime Minister (OPM). It has been set up in March 2001 as part of the administrative infrastructure required to manage the pre- and post-accession funds made available to Malta by the European Union. At present, the PPCD includes the EU Affairs Directorate, which is responsible for coordinating EU matters relating to other line departments within the OPM. It is also the **Managing Authority (MA)** responsible for the programming of EU Structural Funds and for monitoring and reporting on progress in relation to projects approved for funding.

It advises and assists ministries and departments, which require EU assistance, and it co-ordinates Malta's participation in other EU programmes (INTERREG, Twinning projects) as well as the technical assistance provided to Malta on a country-to-country basis by other EU Member States.

However, the PPCD did not take specific initiatives to combine or link funding and support from other Community programmes with Structural Funds interventions. This search for synergies has been bottom-up driven by strategies of specific organisations: (i) the MCST which leads a number of projects within the Framework Programme for Research and Development (4th, 5th and 6th) and already plans to complete FP7 funding for R&D projects by using Structural Funds 2007-2013 for improving research capacities (equipments and facilities); and (ii) Malta Enterprise which coupled the business support schemes with its SME Loan Guarantee Scheme supported by the European Investment Fund through the Multi-annual Programme for Enterprises. Malta Enterprise has also managed the Innovation Management Techniques project (European Commission, DGXIII/D-4), which finances diagnosis on the capability of SMEs to absorb new technologies and new innovative management practices.

The Managing Authority is assisted by the Monitoring Committee composed of Government representatives, the socio-economic partners, civil society organisations, representatives of the productive sectors, the representative of the Gozo Regional Project Committee, the European Commission and the European Investment Bank.

Summary of the governance background in the OP including relevant RTDI interventions

Main bodies responsible for innovation measures	Main relevant missions and targets
Planning and Priorities Co-ordination Division (PPCD)	Managing Authority, Coordination of SF implementation
Ministry for Investment, Industry and Information Technology	Malta Enterprise is the implementing body for the Support Schemes for Enterprise (ERDF/3), under the measure 1.3. "Support to Enterprise" heading, i.e. aids to enterprises and measures in favour of innovation friendly environment; and for a training project under the measure 2.3. (ESF/10)
Malta Council for Science and Technology	Implementation body for one single project (FOR-LINK) on research and mobility (ESF/2) under the measure 2.3. "Life long learning and social inclusion" heading,
Ministry for Gozo	Implementation body for the priority regarding Gozo Islands with the support of the University of Malta Gozo Centre (ESF/29), schemes for graduates, scheme to foster entrepreneurial skills, and support to small businesses to identify training needs in the field of ICT (ESF/27).
Ministry of Education, Youth and Employment	Training of teachers in ICT (including programming) and the setting up of computer labs under measure 2.3 (ESF/3), training for the electronics industry (ESF/13) and technology skills for women (ESF/14) under measure 2.1.
Malta Tourism Authority	Study for lifelong learning for the tourism sector and training support for SMEs under measure 2.3 (ESF/7).
General Workers Union	Provision of IT equipment and delivery of IT courses under measures 1.2.2 and 2.1 respectively (ERDF/30)

The Managing Authority and the Monitoring Committee have been established in time and have provided strong leadership for the programme. The necessary horizontal structures to support the programme have also been put in place including the intermediate bodies, a paying authority and EU funds units in the relevant ministries, using contractual procedures complying with EU best practice guidance.

Beyond this positive picture of the management system, the management capacity weaknesses only partly explain the low rate of absorption capacity of information and knowledge measures (Exhibit 10). The Evaluation of the Efficiency of Implementation of Malta's Single Programming Document 2004-2006, started in November 2005, has provided a review of the implementation structures and recommendations for improving the programme's execution³¹. The Evaluation points that major problems arose from: i) the introduction of new and relatively complex contracting procedures processes; ii) staff shortages in key areas; and iii) evidence of high turnover of staff which would require the enhancing of middle management within the Managing Authority and a training programme. In addition, during the first year, there was a low level of spending due to some bottlenecks in the verification and payments of invoices; the Managing Authority had committed most of the SPD in the first calls resulting in a piling-up of payments.

Another point highlighted is the delay in the implementation of the communication strategy for the programme. This latter have had an impact to the extent to which some measures (e.g. the Support Schemes for Enterprises managed by Malta Enterprise) were implemented through calls for proposals which require a high degree of mobilisation of the potential beneficiaries and then a large communication campaign from the Managing Authority and the implementation bodies, particularly for what regards support schemes targeting local SMEs which have not an innovation culture.

The low absorption rate is also due to the fact that a lot of ERDF projects were focused on the introduction of new technologies in specific sectors (environment, energy, water, etc.), which required specific expertise and skills from the SFs managers to draft terms of references and specifications of the calls and from the beneficiaries, especially SMEs.

Exhibit 10: absorption capacity of innovation & knowledge measures

OBJECTIVES	ALLOCATED	DISBURSED TOTAL SF	EXPENDITURE CAPACITY
Objective 1	194 250,00	2 866,25	1,5%

Source: ISMERI.

³¹ The Evaluation Report has been presented to the Monitoring Committee on February 16, 2006. see PPCD website

Exhibit 10a : absorption capacity of innovation and knowledge and measures by « pure » RTDI codes (18).

CODES	ALLOCATED	DISBURSED	EXPENDITURE CAPACITY
OBJECTIVE 1			
181 - Research projects based in universities and research institutes	136 875,00	2 866,25	2,1%
182 - Innovation and technology transfers, establishment of networks and partnerships between businesses and/or research institutes	57 375,00	0,00	0,0%
TOTAL OBJ. 1	194 250,00	2 866,25	1,5%

4.2.2 Effects and added value of Structural Fund support for innovation and knowledge

This section of the report analyses the effects and added value of the Structural Fund interventions in favour of innovation and knowledge during the current programming period. The analysis is based on two main sources, namely: a) available evaluation reports or studies concerning Structural Fund interventions; b) interviews and additional research carried out for this study. Accordingly, this section does not pretend to provide an exhaustive overview of the effects or added value³² of Structural Fund interventions but rather is based on the examination of a limited number of cases of good practice. These good practice cases may concern the influence of the Structural Funds on innovation and knowledge economy policies (introduction of new approaches, influence on policy development, etc.), integration of Structural Funds with national policy priorities, promoting innovative approaches to delivery (partnerships), or measures which have had a particularly important impact in terms of boosting innovation potential, jobs and growth.

The Malta's Operational Programme started in 2004. It is too early to assess exactly the effects and added value of the structural interventions.

However, it should be noted that progress has been made in various areas including the partial achievement of objectives on training, life-long learning and improvement of the employability of the unemployed, the continued implementation of Malta's waste management strategy in the areas of infrastructure, on-going developments with regard to infrastructural projects in the transport, tourism and environmental sectors, as well as in the creation and upgrading of the physical business infrastructure.

In the field of innovation and the knowledge based economy, the mid-term update report on the Maltese SPD implementation, being entirely focused on the evaluation

³² A good definition is "The economic and non-economic benefit derived from conducting interventions at the Community level rather than at the regional and/or national level". See Evaluation of the Added Value and Costs of the European Structural Funds in the UK. December 2003. (Available at : www.dti.gov.uk/europe/structural.html)

of the efficiency of the implementation structures, does not provide any quantitative and qualitative results and on the added value of the Structural Funds.

However, with regard to the Support Scheme for Enterprises funded under measure 1.3. "Support to Enterprises" of the SPD (see Appendix E), the high level of applications received by Malta Enterprise to the two rounds of the call for proposals (one in October 2004, the second in January 2005) gives evidence of the strong interest of firms and of the leverage effect of the Structural Funds which co-finance 35% of the grants. Private investment has also been stimulated by the interventions (1.14 MEUR of direct private investment). The measure contributes to improve the internationalisation and the innovative and technological capacity of local enterprises by supporting them to integrate new processes, up grade technological capacities and quality certification. The scheme already inspired new initiatives more focused on horizontal topics such as start-ups, R&D and innovation (more technological innovation). The main added value of such a scheme in Malta has been to sensitize and to make aware the local SMEs to innovation (technological and non technological ones) and the need to adapt new technologies and processes

In addition, with regard to the FOR-LINK project (see Appendix E) on research and mobility under the priority 2 of the SPD (Developing People), the Malta Council for Science and Technology uses the SPD and the Structural Funds for complementing and strengthening the launching of its National RTDI Programme, and its three sub-programmes, by adding to it a human resources component. Mainly focused on improving RTDI capacity-building in public entities, the project looks have been successful in bringing together the players at the policy and programme design level and thus in overcoming sectoral divides and improving synergies.

4.3 Conclusions: Structural Funds interventions in favour of innovation and knowledge

The analysis of the Maltese SPD shows that the limited innovation and knowledge economy measures may fill some gaps in the innovation system. However, drafted during the years 2002-2003, before the starting of a more coherent policy-thinking about innovation and R&D, the Maltese SPD does not reflect a political will to support an innovation strategy and has embedded in a very limited way the recent policy changes on the agenda, such as the National RTDI Programme. While many EU funds, coming from FP5, FP6, DG Enterprise, European Investment Fund, finance a number of innovation-related projects, the Structural Funds 2004-2006 do not appear as a main channel of funding in the field of innovation.

Exhibit 11: main outcomes of innovation and knowledge measures

Programme or measure	(Potential) Capability	(Potential) Added value
Human resources development	Improving the innovation management skills within both public entities and businesses Low absorption	Complementarities with the National RTDI Programme
Support to businesses up-grade	Improving innovative and technological capacity of businesses	Leverage effect of SFs by filling a gap

Effectiveness → significant results achieved; good absorption and management performance, etc.

Added value of measures → reinforcement of national priorities, innovative approaches and solutions, institution building, etc.

5 Regional potential for innovation: a prospective analysis

This section of the report seeks to summarise and draw conclusions from the analysis of the preceding sections, available studies and interviews and focus groups carried out for this study in order to provide an analysis of the regional innovation potential. In doing so, the aim is to provide a framework for orientations in terms of future Structural Fund investments in innovation and knowledge.

5.1 Factors influencing regional innovation potential

The major foresight study had been carried out in 2002-2003 through the collaborative trans-national eFORESEE project funded by the European Union's Fifth Framework (FP5) STRATA programme³³. eFORESEE aimed at the exchange of foresight experiences among three small candidate countries, Cyprus, Estonia and Malta in their drive to improve the effectiveness of their RTDI policies in support of the national pre-accession strategy. Backed by the MCST, the foresight project led to the following outcomes:

- Increasing the awareness of key weaknesses and needs in the national system of innovation, e.g. the poor science and technological culture, the low level of industry-academia links, the weak IP protection system, the need for a better adaptation of the human skills to economic needs
- Identification of scenarios for the development of market niches in the field of ICT, Marine and Biotechnology sectors for which a potential of growth was identified. eFORESEE identifies Malta as an ideal test-bed in these areas
- Involvement of a large range of innovation key actors to help creating a working partnership between academia, businesses and the public sector to tap emerging market niches
- Formulation of the updated RTDI policy which was approved by the Government and translated into the 2004 National RTDI Programme.

The most recent policy documents– the NSRF Draft Document for Consultation, the Pre-Budget Document and the NRP - and the interviews with the stakeholders but also the information obtained on the new MCST's RTDI strategy for 2006-2008 confirm these first orientations by developing new approaches: i) development of higher value added activities in some manufacturing and services sectors ; ii) continuing the support to FDI investments; iii) developing high added value niche markets; iv) re-focusing RTDI on relevant business sectors and identified niche markets ; v) fostering academia-research-business linkages; and vi) continuing the support to an innovation friendly environment.

In addition, the Malta Regional Innovation Strategy (MARIS) project is expected to carry out: a) an extensive analysis of SMEs' needs to determine which actions would be most helpful in stimulating innovation; and b) a separate analysis of support services among educational establishments and research institutions. The results of the analysis phase will be used to draft the innovation strategy and action plan, while a few pilot projects will test possible actions designed to address some of the identified needs. As the RIS exercise started in June 2005, with the end planned by January 2008, it is too early to evaluate its impact and to draw lessons from

³³ <http://www.eforesee.info/malta/?s=3E22FAF6-7D6222100411-604B>

the analysis. However, it seems that there are already some points of convergence between the MCST new strategy 2006-2008 and the first works of RIS MARIS, especially with regard to sectoral approach in three sectors of interest: ICT; biotechnology/pharmaceuticals ; environment technologies.

As already stated in the previous chapters of the report, the rationale of these orientations is based on the potential in specific economic sectors or niche markets. Tourism is obviously a priority sector, as the main pillar of the Malta's economy for which the diversification of tourism products and the modernisation of both tourism infrastructures and enterprises (through the development of e-tourism services) should continue to be encouraged. So is also the financial services sector, which is identified by the NSRF as a major growth sector.

In the past years, the attraction of a number of multinational companies in the ICT and service-providing industries combined with the long term development of an e-Society has also provided the basis for the expansion of back-office operations and ICT services and for developing higher added value activities by attracting new foreign-owned companies. The new Smart [City@Malta](#) project may certainly serve as a booster for this sector and for developing a clustering approach.

The growth of the generic pharmaceutical manufacturing sector in the recent years is also worth mentioning³⁴. Like Iceland, Malta falls outside the patent jurisdiction of a number of pharmaceutical products. Generic pharmaceutical manufacturers may therefore develop and produce in Malta a large number of medicines for launch on EU and other markets upon expiry of the patent protecting the innovative drug elsewhere. In particular, the European Union entry has served to further consolidate Malta's position by enabling generic manufacturers operating in the island to easily promote their medicines on North African markets. The skills of the workforce and the fluency in English are also important location factors for these manufacturers.

In addition, even though the eForesee and the EuroMedITI projects identified it as a niche market area the marine sector has not yet been exploited. eForesee project highlights three specific potential issues: (i) developing operational oceanography (for observing the ocean worldwide) which has many applications such as in tourism, fisheries, conservation of marine bio-diversity and coastal zone management ; (ii) due to the limited size of its resources Malta is not able to develop its own capacity in marine research infrastructures, but has the opportunity to exploit the common research infrastructure and to undertake marine research activities within the EU framework ; (iii) Malta's small size makes it a good and clean location (eco-marine tourism) for a demonstration site that would promote marine-related tourism services. The setting-up of EuroMedITI should address this potential. In this area, Malta has the opportunity to play as a broker between Europe and Southern Mediterranean Countries.

Interviews and several projects (RIS MARIS, EuroMedITI) also stress the potential of Malta in the field of environment technologies (renewable energies, water management) for acting as test base for new applied technologies, due to its smallness , its environment (sea, sun, wind) and its urbanisation.

³⁴ A number of companies are expanding their activities : Actavis Ltd (part of the Icelandic Actavis Group) ; Siegfried Holdings (Swiss pharmaceutical company) ; Arrow Pharmaceuticals Group, etc.

Exhibit 12: factors influencing innovation potential

Region / type of region	Main factors influencing future innovation potential
Malta “Low tech Government” region	<ul style="list-style-type: none"> • On-going diversification of tourism industry towards niche market and Maltese attractiveness (e.g. marine related tourism services) • Higher added value activities and investments development in the ICT sector • Emergence of some fields with a technological and/or a manufacturing base for developing new technologies and niche markets (marine sector, environment, pharmaceutical) • Awareness raising and starting phase of technology transfer collaborations (EuroMedITI) • Proximity to Southern Mediterranean Countries enabling Malta to act as a broker • Experiences in EU research projects collaboration and inter-regional cooperations

5.2 A prospective SWOT appraisal of regional innovation potential

The capacity to take advantage of the growth economic areas identified in the section above depends strongly on the ability to initiate a cultural change (more innovation-oriented) among the businesses and public sector in order to raise their innovation management and technology development capacities.

The ability to encourage public-private partnerships between businesses and researchers for fostering technology transfer activities and to build bridges between foreign companies and domestic firms is also a main factor. Malta’s small size should foster the closeness and make easier to bridge the actors.

Finally the capacity of the Malta’s education system to provide a high skilled workforce corresponding to the needs of the market, is a major stake.

Exhibit 13: Innovation and Knowledge SWOT

Strengths	Weaknesses
<ul style="list-style-type: none"> Well established tourism sector and financial services sector Manufacturing base with FDI in ICT and Pharmaceuticals Well developed e-Governance sector Strategic location in Mediterranean combined with an english speaking population Malta's small size for bridging the innovation stakeholders 	<ul style="list-style-type: none"> Low level of public and private R&D funding Skills mismatches and insufficient take-up of science-based studies Low innovation governance and collaboration culture (between innovation stakeholders : academic, business, public organisations) Lack of adequate support structures for micro-enterprises and SME Embedding foreign owned companies into local economy

Opportunities	Threats
<ul style="list-style-type: none"> Potential diversification in technology and niche market areas (marine, environment and pharmaceuticals) Potential for developing technology transfer project in some technological fields (EuroMedITI) Potential for acting as test-bed in ICT sector for application of new technologies and new services through developing a clustering approach and business support infrastructures (Smart City@Malta) Potential for expanding EU cooperations programmes in the field of RTDI 	<ul style="list-style-type: none"> Competition from Eastern Europe and North Africa for attracting FDI in high-tech manufacturing and services Low potential for creating a number of new technology-based enterprises due to Malta's small size Lack of critical mass

5.3 Conclusions: regional innovation potential

Policy headline 1: Potential for developing higher added value activities in ICT and niche market areas

- Malta could act as a test base for application of new ICT technologies and services. It would require continuous efforts on ICT use and diffusion, e-business services development (e.g. in the tourism sector and financial services) and business support infrastructures (Smart [City@Malta](#)). Significant efforts for developing partnerships between local enterprises, local researchers and foreign-owned companies (e.g. pharmaceutical sector) should be also supported. The main challenge is to provide a permanent flow of high skilled people in the ICT sector and niche market areas, by supporting awareness-raising and training programmes, but also mobility grants (included by attracting foreign students).

Policy headline 2: Potential for developing innovation management capacities within local enterprises

- Innovation capacities of firms are still weak, but the Support Scheme for Enterprises (see chapter 4) has shown the growing interest of local Maltese firms for improving their technological and management capacity. The challenge is to link the local firms with the research base in the new growth areas (ICT, marine, energy, pharmaceuticals) and with the foreign-owned companies. The challenge is also to foster non-technological innovation activities within firms in traditional sectors, such as tourism, for diversifying tourism-related services and products.

Policy headline 3: Potential for creating high value added in the tourism sector

- Tourism is an important activity for Malta, the main source of foreign currency and the main driver for economic growth. Its location and its natural resources give opportunities for diversifying the tourism sector toward higher added value activities. The challenge is to foster the diffusion of ICT services within tourism-related businesses (e-tourism related services) and to develop tourism niche market areas (e.g. marine).

Policy headline 4 : Potential for acting as a knowledge broker between Europe and Southern Mediterranean Countries

- The Smart [City@Malta](#) and EuroMedITI projects (the latter is involving Luxembourg and German partners) could foster the role of Malta as a knowledge and technology broker in the Southern Mediterranean region. Malta could serve as a base (especially for foreign-owned companies) for expanding ICT technologies and services in this area.

6. Future priorities for Structural Fund support for innovation and knowledge: options for intervention

The current changes in the institutional policy framework and in the policy mix offers new opportunities for action in Malta. The National Strategic Reference Framework Draft Consultation Document highlights four objectives, addressed by two operational programmes (the first ERDF-funded, the second ESF-funded): 1) Sustaining a growing and knowledge based, competitive economy ; 2) Improving the Quality of life through environment protection and urban regeneration ; 3) Investing in human capital ; 4) Addressing Gozo's regional distinctiveness.

Regarding the innovation and knowledge based economy area, emphasis is put on increasing the added value of Maltese firms and mobilising investment in RTDI. Actions envisaged are focused on support to the identification of new high value niche sectors (through both local and foreign owned companies support), even though the NSRF has not yet defined the targeted niches (except for tourism and financial services) ; strengthening the climate for innovation (especially through stimulating private initiative, collaboration and supply of skilled human resource) ; instilling a culture of innovation ; attracting knowledge-intensive activities to Malta ; improving enterprise and education infrastructures.

The following strategic orientations and operational guidelines are based on document analysis and interviews with key innovation stakeholders in Malta (see Appendix F)

6.1 Strategic orientations for Structural Fund investments in innovation and knowledge

Key Conclusion 1 : The added value of activity and innovation capacities of firms are rather low

Maltese businesses are not innovation oriented. The National Strategic Reference Framework states that in 2003, Malta's R&D financed by the business sector stood at 18.6% (compared to the EU average of 54.3%). As already stated in this report, the business sector is composed mostly of SMEs and micro-enterprises working in the tourism, building and low-tech manufacturing sectors. Often family-owned, businesses are not open to change and innovation.

Recommendation 1 : Continuing the support to the technology upgrade of firms and training of business managers

Interventions should continue to promote business support schemes encouraging SMEs to upgrade their technologies and processes (e.g. the Market and Entry Operation Scheme), especially through innovation training schemes targeting business managers. Such support should also target the tourism industry (e-tourism, new tourism products).

It could be combined with aid to recruitment schemes (such as implemented in the French operational programmes and managed by the national innovation agency – OSEO-ANVAR):

recruitment of technicians, engineers and researchers allowing the firms to integrate and strengthen ‘ownership’ of the new technologies and/or processes in their daily life³⁵.

Key Conclusion 2 : There is a necessity to build stronger public-private partnerships and business to business partnerships

The linkages between academia, research and business are rather weak. Local businesses, mainly SMEs and micro-enterprises, do not have the capacity to work with researchers and academics and are reluctant to work in partnership. In addition, the foreign-owned companies have weak links with the domestic firms (even if some experiences of partnership are recorded) and with the local scientific and technology base. Their R&D structures are based in their home country. However, as the most recent policy documents stress, there is room for opportunities to build academia-research-businesses and local/foreign companies linkages in specific sectors and niche markets

Recommendation 2 : Support a clustering process in ICT and niche market strategies based upon strong partnerships and attractiveness

The ICT sector looks like an interesting test-base for starting a clustering process in the field of ICT services and new applications. Malta has experienced successful programmes in ICT diffusion among businesses, e-Governance programme, training programmes (e.g. ICT Academy) and has succeeded in attracting FDI in this field.

The development of business support infrastructures (Smart City@Malta project) should be combined with “soft” interventions : (i) support to the setting-up of a cluster organisation encouraging the structuring of a clustering strategy in the ICT sector by associating academic and training organisations (University, MCST), local businesses, foreign-owned companies and public administrations; (ii) support to collective actions in the field of training, research (through the support to the MCST’s RTDI programmes), transfer of knowledge and technology on a project basis; (iii) support to the marketing and internationalisation strategy of the cluster . Encouraging the use of FP7 instruments by the local actors could adequately complement the SFs interventions. In other niche markets (pharmaceuticals manufacturing, marine, environment), support should be focused on transfer of knowledge and technology activities involving the private sector on a project basis through support to the EuroMedITI project.

Key Conclusion 3 : There is a lack of technology transfer practices

Resulting partly from the third key conclusion, there is a weak track record in technology transfer experiences. Local businesses, foreign-owned companies and researchers are working alone without links; the two latter seeking for technologies and knowledge from outside, in their home country or at EU level. The University liaison office does not play a major role by providing training courses. The Business Technology Network acts as a forum of discussion through the organisation of events and on-line forums, but neither provides consultancy services nor act as interface organisations.

³⁵ see. TrendChart, France, “Support for the recruitment of post-doctorate in SMEs” ; “Support to the recruitment of PhD candidates on an applied research project within an enterprise - CIFRE convention” ; Support for the recruitment of technicians on innovative projects (CORTECHS); http://trendchart.cordis.lu/tc_datasheet.cfm?id=8106

Recommendation 3 : Support the development of a dedicated technology transfer organisation and nurturing projects

Structural Funds interventions should encourage the development of a dedicated technology transfer centre (e.g. Centre of Expertise in Finland³⁶) acting especially in the main growth areas and technology fields (ICT, pharmaceutical; energy and environment, etc.). It is clear that the project of the Euro-Mediterranean Institute of Technology and Innovation (EuroMedITI) should be the base for such a support which would complement the new MCST's business-oriented RTDI strategy for 2006-2008.

As stated by Malta Enterprise, the SF support to the infrastructures and the management organisation should be combined with the use of FP7 instruments (for R&D and TT projects, but also for researchers mobility, in so far as the project is associating Fraunhofer Institutes and CPR Henri Tudor); the European Neighbourhood Policy (cooperation with North Africa and the Middle East) ; the European Investment Bank programmes, but also with the support of private investment.

Key conclusion 4 : Higher education and research organisations are not well adapted to the needs of the economy and not open to business cooperation

The present study has pointed out some in the higher education system which hampers the availability of qualified human resources in areas of growth. Malta is in particular lacking of high skilled technicians and engineers. Only 3.1 per cent of annual graduates are in science and engineering studies, Ph.D graduates are mainly in the field of human sciences and business administration. As the NSRF stated, "*the education systems needs to ensure that appropriate investments are made to encourage more students into scientific, technical and engineering disciplines*". In addition, the new project Smart City@Malta sharply points to the need for being able in a short term to provide an increasing number of high skilled people in ICT. Investments in educational infrastructures are not the single way for addressing this issue.

Recommendation 4 : Support the supply of knowledge workers and higher education infrastructures

Support to the supply of knowledge workers requires the strengthening of the education infrastructure at the secondary and tertiary level, in particular with respect to the requirements of science and engineering based studies (such as equipment and laboratories). Interventions should also target both students, especially at secondary and tertiary level, and researchers. Support should be provided for the promotion of science and technology studies at the secondary and tertiary level and the diffusion of an innovation culture among students. It should be combined at the tertiary level with support to entrepreneurship training programmes and training programmes in identified niche market areas in close link with the private sector. Interventions could also focus on attracting foreign students by developing mobility programmes, in particular targeted to North African students.

Regarding researchers, support should encourage the mobility of researchers to industry, e.g. through grant schemes allowing Ph.D students to do their thesis within enterprises, and mobility grants for Ph.D students with using FP7 mobility instruments. A programme, on the

³⁶ See Trend Chart, Finland, http://trendchart.cordis.lu/tc_datasheet.cfm?id=7840

model of the French “Chairs of Excellence” programme attracting foreign junior and senior researchers could also be developed.

Key conclusion 5 : Lack of equity culture

The equity finance culture does not exist in Malta. In the field of VC funds, the experiences led so far have failed, due to the reluctance of both firms and investors and to the lack of proper management skills in financial engineering. The Maltese Business Angels Network is too young. Nevertheless, access to finance by SMEs, especially for micro-enterprises, is a well identified need by the National Strategic Reference Framework. Besides the SMEs Loan Guarantee Scheme managed by Malta Enterprise and supported by the EIB Group, the Government is launching two initiatives: the “Royalty Agreement Scheme” (support to proof of concept) and a new public VC fund which would invest in start-ups and technology companies at later stages.

Recommendation 5 : Support the development of equity finance

Structural funds intervention should support the promotion of an equity finance culture through training schemes targeting the business communities and programme managers. The JEREMIE (‘Joint European Resources for Micro to Medium Enterprises’) initiative, associating at EU institutional level DG REGIO, DG ENTR, DG ECFIN, and EIB/EIF, should be used; it will provide the framework for channelling EU funding to financial vehicles and instruments in the field of equity, guarantee (counter-guarantee), and innovative finance.

6.2 Operational guidelines to maximising effectiveness of Structural Fund interventions for innovation and knowledge

Guideline 1 : Building a common strategy on the use of EU innovation programmes for optimising synergies

Malta is a very small country with both limited natural, human and financial resources which can not reach a sufficient critical mass. “*Participation in international innovation programmes thus becomes crucial*”³⁷. In the past, MCST and Malta Enterprise succeeded in attracting EU funding – FP4 to FP6, MAP 2001-2005 instruments, RIS exercise, Innovation Programme, etc – but without a real concerted strategy. The Commission should encourage a strategic thinking on the optimal use of the EU instruments for innovation: FP7 (including programmes such as Regions of Knowledge, and Marie Curie actions) ; Competitiveness and Innovation Programme and its financial instruments ; JEREMIE; but also the Objective 3 European Territorial Cooperation and the Neighbourhood Policy.

³⁷ NSRF Draft Document for Consultation

Guideline 2 : Improving the operational programmes management

In line with the “Evaluation of the Efficiency of Implementation of Malta’s Single Programming Document 2004-2006”, which suggests to retain the existing structure of a single managing authority, paying authority, Department of Contracts and Treasury, room for improvement remains in the managing system.

Beside the necessity to increase the human resources of the management bodies, Malta should introduce a more comprehensive project management framework and a project office support function helping project holders at each stage of the programming and supporting a stronger coordination between the department lines. In addition, strong efforts should be made in the mobilisation of potential beneficiaries by anticipating and planning the implementation of the communication strategy of the programmes.

Finally, further training should be provided at the middle management level, especially for what regards innovation and the knowledge base economy related measures management. SFs could assist the authorities (namely PPCD) in planning their interventions and in training on innovation and R&D policy. In doing so, more participatory and forward thinking methods (e.g. Foresight) for planning should be supported.

Exhibit 14: Summary of recommendations on investment priorities

Region or group of regions	Strategic focus	Priority measures	Indicative financial resources ³⁸
Malta	<ul style="list-style-type: none"> Increasing RTDI investments and diversifying the resources Developing higher added value activities and innovation capacities within firms Creating linkages and networking between academia, research and businesses Attracting FDI and embedding foreign owned companies into the local economy Increasing human resources with tertiary education and developing high skilled human resources Facilitating access to finance, especially for SMEs and micro-enterprises 	<ul style="list-style-type: none"> Supporting a strategic thinking on EU innovation programmes Supporting technology up-grade of firms including the tourism sector Supporting technology transfer projects and organisation (EuroMedITI) Starting a clustering process in ICT (Smart City@Malta) and building partnerships in niche market Promoting science and technological studies Entrepreneurship training schemes Encouraging the mobility of researchers to industry Developing an equity market 	<ul style="list-style-type: none"> 1-2% of innovation-related SFs funding 25-30% of innovation-related SFs funding 30-35% of innovation-related SFs funding 30-35% of innovation-related SFs funding 5-7% of innovation-related SFs funding

³⁸ For SF indicative financial resources, we have used the total amount of Structural Funds indicated by the PPCD as a basis : 496 MEUR for 2007-2013, in average 70,8 MEUR per year (Times of Malta on June 1st 2006, Interview with Marlene Bonnici, Head of the PCCD). We have indicated a percentage and an amount that take into account the percentage of SF-funded RTDI interventions (largest calculation method – see Appendix D) during the programming period 2004-2006 (1.1 per cent - 475.000 EUR per year) and the absorption capacity (1.5 per cent). Obviously, with regard to the low level of RTDI expenditure for 2004-2006 and the low absorption capacity, the Aho report target (20%) is not achievable and realistic in Malta. However, considering the main conclusions and recommendations of this report, which calls for supporting a mix of infrastructures projects and soft interventions, the target of maximum 5% in average of RTDI expenditures for 2007-2013 looks reasonable : 24,8 MEUR (3,5 MEUR per year). This target of 5% could be achieved progressively. : starting from 1% or 2% the two first years of the programming period and increasing step by step the next years.

Appendix A Methodological annex

A.1 Quantitative analysis of key knowledge economy indicators

A1.1 Factor analysis

In order to analyse and describe the knowledge economies at regional level in the EU, the approach adopted was to reduce and condense all relevant statistical information available for a majority of regions. The approach involved firstly reducing the information from a list of selected variables (Table 1) into a small number of factors by means of factor analysis.

Table 1. Reduction of the dataset (215 EU-25 regions) into four factors by means of factor analysis

	The 4 factors			
	F1 'Public Knowledge'	F2 'Urban Services'	F3 'Private Technology'	F4 'Learning Families'
Higher education (HRSTE), 2003	.839	.151	.190	.184
Knowledge workers (HRSTC, core), 2003	.831	.164	.267	.327
High-tech services employment, 2003	.575	.367	.428	.323
Public R&D expenditures (HERD+GOVERD), 2002	.543	.431	.275	-.195
Value-added share services, 2002	.323	.869	.002	.121
Value-added share industry, 2002	-.265	-.814	.386	-.061
Employment government administration, 2003	-.217	.745	.124	-.175
Population density, 2002	.380	.402	.043	.038
High and Medium/high-tech manufacturing employment, 2003	-.073	-.331	.873	-.089
Value-added share agriculture, 2002	-.222	-.350	-.672	-.198
Business R&D expenditures, 2002	.335	-.050	.664	.267
S&T workers (HRSTO, occupation), 2003	.560	.178	.589	.382
Population share under 10 years of age, 2001	-.237	.060	-.015	.868
Life-long learning, 2003	.472	-.009	.165	.703
Activity rate females, 2003	.418	-.227	.281	.620

Note: Principal Component Analysis. Rotation Method: Equamax with Kaiser Normalization, a Rotation converged in 9 iterations. Main factor loadings are highlighted in bold. Source: MERIT, based on Eurostat data, mostly referring to 2002 or 2003

Based on the variable with the highest factor loadings we can characterise and interpret the four factors and give them a short symbolic name:

5 Public Knowledge (F1)

Human resources in Science and Technology (education as well as core) combined with public R&D expenditures and employment in knowledge intensive services is the most important or common factor hidden in the dataset. The most important variables in Public Knowledge are the education and human resource variables (HR S&T education and core). Cities with large universities will rank high on this factor.

One interesting conclusion is that public and private knowledge are two different factors (F1 and F3 respectively), which for instance has implications for policy issues regarding Science-Industry linkages. Public R&D and higher education seems especially related to high-tech services, whereas Business R&D especially serves high- and medium-high-tech manufacturing.

6 Urban Services (F2)

This second factor contains information on the structure of the economy. It is well known that industrial economies are quite different from services based economies. It is not a matter of development per se, because in the European regions the variety of economic structure is very large and for a large part based on endowments and path dependent developments like the extent to which government administration is located in a region or not. This factor takes into account the differences between an industrial area and a service based area including the public administration services of the government. Another observation is that there are two different 'urban' factors, indicating that academic centres not necessary co-locate with administration centres. What may not be surprising is that the Urban Services factor is not associated with R&D, since R&D is more relevant for innovation in manufacturing than for service industries.

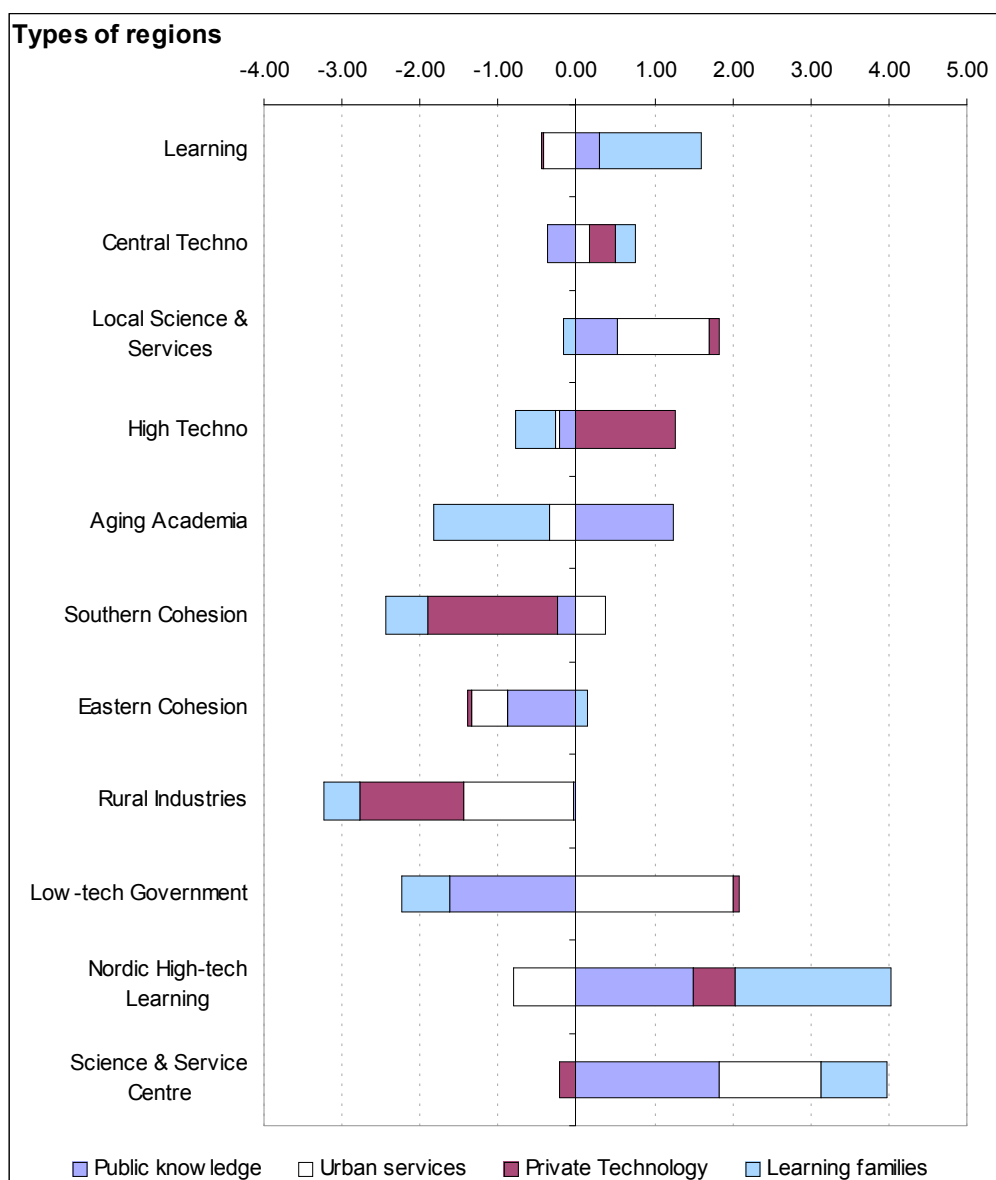
7 Private Technology (F3)

This factor contains business R&D, occupation in S&T activities, and employment in high- and medium-high-tech manufacturing industries. A countervailing power is the existence of agriculture in the region. One interpretation could be that agricultural land-use goes at the cost of possibilities of production sites. Another interpretation is that agriculture is not an R&D intensive sector.

8 Learning Families (F4)

The most important variable in this factor is the share of the population below the age of 10. Locations with relatively large shares of children are places that are attractive to start a family. Possibilities for Life Long Learning in a region seems associated with the lively labour participation of the mothers of these youngsters. The Learning Families factor could also be understood as an institutional factor indicating a child-, learning- and participation- friendly environment, or even a 'knowledge-society-life-style' based on behavioural norms and values that are beneficial to a knowledge economy.

A1.2 Description of the 11 types of EU regions



1 Learning

The Learning regions are first of all characterised by the high score on the factor 'Learning Families', and the three main components of this factor: life-long-learning, youth and female activity rate. On the other factors the regions are close to the regional average. Unemployment is on average the lowest compared to the other EU regions. Employment in the government sector is limited. GDP per capita is rather high. The regions are located in Austria, Ireland, the Netherlands, Sweden and the UK. There are many similarities with the Nordic High-tech Learning regions, but the business sector in the Nordic version invest more in R&D.

2 Central Techno

This is a rather large group of regions located mostly in Germany and France with close to average characteristic, but the share of High-tech manufacturing is rather

high. The factor-scores as well as GDP-per head is slightly above the regional average, except for the Public Knowledge factor which is slightly lower.

3 Local Science & Services

This group of regions with diverse nationality consist mainly of capital cities, such as Madrid, Warsaw, Lisbon, Budapest and Athens. These urban areas serve as national centres for business services, government administration, public research institutes and universities. Urban Services and Public knowledge are therefore the strongest factors for this type of region. GDP per capita is on average slightly below the EU25 average, but growing. The low score on life-long-learning is a weakness in most Local Science & Services regions, especially compared to the more wealthy and advanced Science & Service Centres.

4 High Techno

The High Techno regions host many high-tech manufacturing industries. They are mostly located in Germany (e.g. Bayern and Baden-Württemberg), some in Italy (e.g. Lombardia and Veneto) and two French regions. This type is very strong in Private Technology and has a high level of GDP per capita. The factors Public Knowledge and especially the Learning Family factor shows a relative weakness, e.g. in life-long-learning. Growth in terms of GDP per capita has been low and unemployment didn't improve much in the previous years.

5 Aging Academia

This group of regions is mostly located in east-Germany and Spain and also includes the capital regions of Bulgaria and Romania. The strength in the Public Knowledge factor is mostly based on the high share of people with tertiary education. The low score on the Learning Family factor is due to little life-long-learning and hosting relatively few children. The unemployment situation has improved, but is still very high.

6 Services Cohesion

Services cohesion regions are located in Southern Europe, consisting of many Greek, some Spanish and two Portuguese regions. The low score on the Private Technology factor is striking. There is hardly any high-tech manufacturing nor business R&D. Services is the most important sector, but also agriculture is still a rather large sector. The share of manufacturing industry in value added is very limited. Population density is low, but on average it has been increasing.

7 Manufacturing Cohesion

Manufacturing industries is the dominant sector, whereas services and agriculture are rather small sectors. This type of region is mostly located in Poland, Czech Republic, Hungary and Slovak Republic. Two Portuguese regions are also included. The Public Knowledge factor is the main weakness of this type of regions. However, the score on the Private Technology factor is close to average, which means that it is much stronger in this respect than the Services Cohesion regions. Unemployment is high, even compared to Rural Industries and Services Cohesion regions.

8 Rural Industries

Besides a low per capita GDP, Rural Industries regions have in common a low score on both the factors Urban Services and Private Technology. Population density is

very low. The service sector is often very small. Especially agriculture but also manufacturing industries are relatively large sectors. Besides regions in Bulgaria and Romania

9 Low-tech Government

This type of region, mostly located in southern Italy is characterised by a very low score on Public Knowledge combined with a high share of employment in the Government sector. Unemployment is severe, on average comparable to Manufacturing cohesion regions. GDP per capita is however close to the regional average.

10 Nordic High-tech Learning

The Nordic version of the learning regions are typically strong in the Learning Family factor, but this type also has by far the highest business R&D intensity. In contrast with the popular characterisation of Nordic societies, the size of the government administration is the lowest of all the types. The low score on Urban Services is also due to the low population density. A rather unique feature of this type of regional knowledge economy is the combined strength in both the Public Knowledge and the Private Technology factor.

11 Science & Service Centre

The main characteristics of this urban group of regions are the high scores on the Public Knowledge and Urban Services factors. Population density is very high. This type also has the highest GDP per capita and productivity. The variables that are captured by the factor Learning Families also show a score above the regional average, but disappointing is the relatively low presence of high and medium-high-tech manufacturing and the business R&D intensity.

A.2 Qualitative analysis and preparation of country reports

In summary, the country reports were prepared in the following stages:

A first country document was prepared by the core study team in the form of a **template country report**. It contained overall guidance to the country experts and included a number of pre-filled tables, graphs and analysis sections based on information available at EU level.

Next, the core team members and the national experts who were involved in the pilot phase of the project commented completed elements of the templates. Drafted elements and templates were completed and compiled into **first country briefings (draft pilot reports)** by the national experts involved in the pilot phase of the project. These pilot country reports were prepared by experts for Belgium, Greece, Italy, France, and Poland.

Once the five first country briefings were completed, a **final set of guidelines** was prepared by the core team. These guidelines were agreed with the Commission services responsible for this evaluation. Prior to this, all first country briefings were reviewed during the January 2006 and presented to a first meeting of the scientific committee.

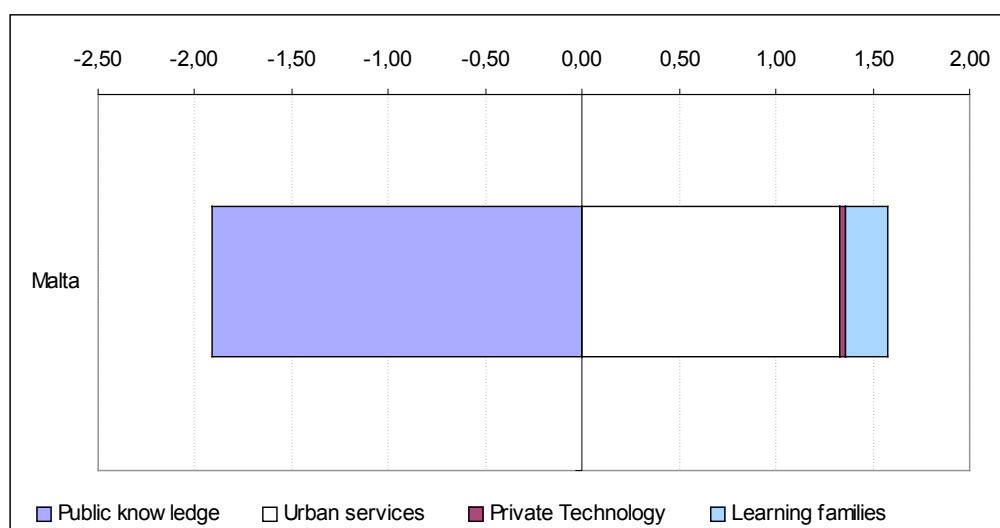
The work during the **country analysis phase** included:

- Undertaking a series of key interviews (KI) with policy decision makers;
- Organising a focus group (FG) with key national or regional RDTI stakeholders;
- Collecting additional information and finalising short case studies; and
- Preparing the synthesis notes of these various activities.

The above-mentioned work served as qualitative data and allowed the national experts to compile the draft **country reports**. All reports were subsequently reviewed, checked and finalised by the core team and the consortium members. Once this first check was completed, the core team organised a final peer reading of the document to verify its overall consistency and to ensure a final English language editing of the document. The core team then completed the final editing and layout of the document with a view to publication.

An overall synthesis report of all has been prepared and will be published by the European Commission providing an overview of the issues addressed in each of the 27 country reports produced by the evaluation team.

Appendix B Statistical tables and regional scorecards



Appendix C Categories used for policy-mix analysis

C.1 Classification of policy areas

Policy area	Short description
Improving governance capacities for innovation and knowledge policies	Technical assistance type funding used by public authorities, regional agencies and public-private partnerships in developing and improving policies and strategies in support of innovation and knowledge. This could include past ERDF innovative action programmes as well as support for instance for regional foresight, etc.
Innovation friendly environment;	This category covers a range of actions which seek to improve the overall environment in which enterprises innovate, and notably three sub groups: 9 innovation financing (in terms of establishing financial engineering schemes, etc.); 10 regulatory improvements and innovative approaches to public services and procurement (this category could notably capture certain e-government investments related to provision of services to enterprises) ; 11 Developing human capital for the knowledge economy. This category will be limited to projects in higher education aimed at developing industry orientated courses and post-graduate courses; training of researchers in enterprises or research centres ³⁹ ;
Knowledge transfer and technology diffusion to enterprises	Direct or indirect support for knowledge and technology transfer: 12 direct support: aid scheme for utilising technology-related services or for implementing technology transfer projects, notably environmentally friendly technologies and ITC;

³⁹ This is part of the wider area of in-house training, but in the present study only the interventions targeted to researchers or research functions will be analysed.

	13 indirect support: delivered through funding of infrastructure and services of technology parks, innovation centres, university liaison and transfer offices, etc.
Innovation poles and clusters	Direct or indirect support for creation of poles (involving public and non-profit organisations as well as enterprises) and clusters of companies 14 direct support: funding for enterprise level cluster activities, etc. 15 indirect support through funding for regrouping R&D infrastructure in poles, infrastructure for clusters, etc.
Support to creation and growth of innovative enterprises	Direct or indirect support for creation and growth of innovative firms: 16 direct support: specific financial schemes for spin-offs and innovative start-ups, grants to SMEs related to improving innovation management, marketing, industrial design, etc.; 17 indirect support through funding of incubators, training related to entrepreneurship, etc.
Boosting applied research and product development	Funding of “Pre-competitive development” and “Industrial research” projects and related infrastructure. Policy instruments include: 18 aid schemes for single beneficiary or groups of beneficiaries (including IPR protection and exploitation); 19 research infrastructures for non-profit/public organisations and higher education sector directly related to universities.

C.2 Classification of Beneficiaries:

Beneficiaries	Short description
<i>Public sectors</i>	20 Universities 21 National research institutions and other national and local public bodies (innovation agencies, BIC, Chambers of Commerce, etc..) 22 Public companies
<i>Private sectors</i>	23 Enterprises 24 Private research centres
<i>Networks</i>	25 cooperation between research, universities and businesses 26 cooperation between businesses (<i>clusters of SMEs</i>) 27 other forms of cooperation among different actors

C.3 Classification of instruments:

Instruments	Short description
<i>Infrastructures and facilities</i>	Building and equipment for laboratories or facilities for university or research centres, Telecommunication infrastructures, Building and equipment for incubators and parks for innovative enterprises
<i>Aid schemes</i>	Grants and loans for RTDI projects Innovative finance (venture capital, equity finance, special bonds, etc.) for innovative enterprises
<i>Education and training</i>	Graduate and post-graduate University courses Training of researchers

Appendix D Financial and policy measure tables

D.1 Additional financial tables

To insert from ISMERI Excel file.

D1.1 RTDI plus business (innovation technology) support

Objective	Total cost	SF			NF	
		Total	ERDF	ESF	Public	Private
RTDI INTERVENTIONS						
Objective 1	683 971,35	454 050,00	206 250,00	247 800,00	229 921,35	0,00
TOTAL COHESION POLICY						
Objective 1	86 521 137,00	63 192 639,00	46 697 639,00	9 457 500,00	23 328 498,00	0,00

Categories 181 to 184 plus :

152 Environment-friendly technologies, clean and economical energy technologies

153 Business organisation advisory service (including internationalisation, exporting and environmental management, purchase of technology)

155 Financial engineering

162 Environment-friendly technologies, clean and economical energy technologies

163 Enterprise advisory service (information, business planning, consultancy services, marketing, management, design, internationalisation, exporting, environmental management, purchase of technology)

164 Shared business services (business estates, incubator units, stimulation, promotional services, networking, conferences, trade fairs)

165 Financial engineering

D1.2 Broad innovation and knowledge economy funding

Objective	Total cost	SF			NF	
		Total	ERDF	ESF	Public	Private
RTDI INTERVENTIONS						
Objective 1	958 228,45	627 600,00	379 800,00	247 800,00	330 628,45	0,00
TOTAL COHESION POLICY						
Objective 1	86 521 137,00	63 192 639,00	46 697 639,00	9 457 500,00	23 328 498,00	0,00

This third calculation adds RTDI plus business (innovation & technology) support plus information society. As D.1.1 plus:

322 Information and Communication Technology (including security and safe transmission measures)

324 Services and applications for SMEs (electronic commerce and transactions, education and training, networking)

D.2 Summary of key policy measures per programme

D.2.1: Main measures and projects in favour of innovation and knowledge

SPD Objective 1 Malta	Focus of intervention (policy areas classification)*	Main Instruments**	Main beneficiaries***
Identified RTDI measures and projects (along RTDI codes 181-184)			
Priority 2 “Developing People” Measure 2.3. “Lifelong learning and Social inclusion” - Project ESF/2 “Research and Mobility Action Plan for Developing in house Research Capacity” - Project ESF/3 “Information and Communications technology training programme” - Project ESF/10 “Enhancing the Competitiveness of SMEs and Micro Enterprises through Life Long Learning”	Innovation friendly environment	Education and training	Public sector and Private sectors
Priority 4 “Regional Distinctiveness (Gozo Special Needs) Priority 4.2. “Human Resources” - Project ESF/29 “University of Malta Gozo Centre Courses” ⁴⁰	Innovation friendly environment	Education and training	Public sector and private sectors
Identified innovation and knowledge economy related measures (RTDI codes +)			
Priority 1 Strategic Investments and Strengthening Competitiveness Measure 1.3. “Support to Enterprises” - Project ERDF/3 “Enhancing the competitiveness of SMEs and Micro-enterprises”	Innovation friendly environment	Aid schemes	Private sector
Priority 2 “Developing People” Measure 2.1. “Employability and adaptability”	Innovation friendly environment	Education and training	Private and public sectors

* Classification of RTDI interventions: Improving governance capacities for innovation and knowledge policies; Innovation friendly environment; Knowledge transfer and technology diffusion enterprises; Innovation poles and clusters; Support to creation and growth of innovative enterprises; Boosting applied research and product development (see appendix).

**Classification of instruments: Infrastructures and facilities; Aid schemes; Education and training.

***Classification of Beneficiaries: Public sectors; Private sectors; Networks

Sources : *Programming Complement, May 2005, and List of selected projects, on <http://www.ppcd.gov.mt/english/sf/main.htm> (Website of the Planning and Priorities Co-ordination Division, Office of the Prime Minister)*

⁴⁰ See, <http://www.gozo.gov.mt/pages.aspx?page=1033>

Appendix E Case studies

Market Entry and Operations Schemes (ERDF/3) “Enhancing the competitiveness of SMEs and Micro-enterprises”

Description :

The project aims at improving the export readiness of Malta’s SMEs and access to new markets (Market Entry Component) ; as well as to assist Maltese SMEs in technology audits and upgrades, improved product design and innovative actions (new product development, design, take up of ICT initiatives, environmental initiatives, technology capacities) (Operations Component)

Objective 1

Policy framework : Priority 1 Strategic investments and strengthening competitiveness, Measure 1.3 Support to Enterprises

Brief history and main features

Policy area: Innovation friendly environment

Instruments: Aid schemes

Beneficiaries: Businesses

Was the intervention inspired by a previous experience? Which one?

The Institute for the Promotion of Small Enterprises (IPSE) which was incorporated into Malta Enterprise when Malta Enterprise was set up on January 2004 was running a grant scheme for enterprises under the MEDA programme for companies requiring restructuring in view of the removal of protective tariffs. This grant scheme influenced the development of the current schemes by making them easier to apply for SMEs. A four page application form was compiled by SMEs in contract with the IPSE scheme which required a business plan to access the funds.

Which organisations have been involved? What was their role?

Malta Enterprise: project manager

What was the structure of the initiative (operational phases, length...)?

There are two aid schemes which enterprises can benefit from:

Aid Scheme 1 - Market Entry & Internationalisation

Aid Scheme 2 – Operations – Management and upgrade.

Implementation schedule:

One call for proposals, consisting of 7 application sequences (every two months) open for all applicant categories, from September 2004 to January 2006

All applicants received will be competitively appraised simultaneously within 1 month

Crucial milestones and criticalities?

Improve product development and/or preparation to enter new markets

Increase the registered sales or attempt to or succeed in targeting foreign markets

Increase activity in networking with foreign firms, market penetration and in securing strategic partnership deals

What is the degree of novelty of the initiative?

The “competitive” (call for proposals) procedure is a new way for funding business project. In addition, the measure concern both technological and non technological innovation The initiative had a number of novel activities eligible for funding such as:

- Registering IP;
- Increase in the innovative and technological capacity of SMEs;
- The establish partnerships, and
- The participation in RTD programmes

Main results

What are the main outcomes (financial and physical)?

A high number of enterprises applied (378 received, 204 approved) and received support.

What are the main evaluation results?

A good mobilisation of local SMEs (378 applications) with a high quality of response. At present, 132 enterprises receiving support

1.14 M. Euros of direct private investment stimulated by the intervention

40 new jobs created in supported enterprises

10% of the supported enterprises will be start-up companies

250 jobs safeguarded in supported enterprises

Maintain turnover level of all assisted SMEs at 2003 level

35 companies upgraded a new process, a quality certification and/or another innovation

Have all the objectives been fulfilled?

To date the main indicators that have been directly fulfilled are 204 companies being assisted (80 under the Market entry and 124 under the operations). But the take up of funds for the abovementioned initiatives (IP, innovative capacity, participation in RTD programmes, partnerships) was very limited.

What is the current state in terms of execution? What are the expected prospects?

Calls for project proposals consisted of two sequences closing on October 29th, 2004 and January 14th 2005. The action is still going (call for proposals every two months, until January 2006).

Reasons of success and conditions for repeatability

Why has the initiative been considered a best practice?

What are the main socio-economic and institutional conditions that contributed to the success? How?

The economic conditions of the European single market being more open to trade was one of the factors that contributed to the success of the two schemes particularly in tapping European and other new markets as new areas of business.

What were the main socio-economic and institutional obstacles?

The main obstacles envisaged are the cultural obstacles whereby a number of local SMEs are still on a learning curve on how to exploit the single market and invest in innovation, IP, partnerships and RTD programmes. Institutional obstacles are the large number of players involved in approving the payment process of such grant schemes is greatly delaying reimbursement of enterprises.

What are the main lessons?

This experience shows the strong interest of firms and of the leverage effect of the structural funds which cofinance 35% of the grants.

Did the case inspire new initiatives in either the same or different contexts?

The new initiatives inspired by these schemes include: grant schemes more focused on particular horizontal topics such as start ups, R&D and innovation. The priority is now to focus on impact by increasing the grant size and focusing on growth (investment in innovation and R&D) and jobs (grants tagged to the number of

employees employed over a specific time period).

What are the main aspects of the initiative which are susceptible to be transferred?

The competitive procedure and the activities supported (IR registration, technology up-grade, participation to RDT programme), but it requires a strong mobilisation and sensitization of the potential beneficiaries.

Are there constraints to transferability?

Diffusion of an innovation culture among businesses, especially among micro-enterprises

FOR-LINK project (ESF/2): “Research and Mobility Action Plan for Developing in-house Research Capacity”

Description :
 The project aims at developing research and innovation capacities in public and private entities, with a particular emphasis on SMEs.

Objective 1

Policy framework : Priority 2 Developing People, Measure 2.3 Lifelong learning and social inclusion

Brief history and main features

Policy area:
 - Innovation friendly environment
 Instruments: Education and training

Beneficiaries:
 Public and private agencies supporting SMEs

Was the intervention inspired by a previous experience? Which one?
 The urgent need for RTDI capacity-building was at the core of the National Strategy and Programme for RTDI (2003-2006) which is currently in implementation. The Action aims to complement the Programme.

Which organisations have been involved? What was their role?
 MCST: project manager
 Core entities network of public and private agencies supporting SMEs
 Core entities team managers

What was the structure of the initiative (operational phases, length...)?
 For-Link is a two-year project which was launched in March 2005.
 This project involves capacity-building at two levels: in public entities and at SMEs level. The first phase provides the opportunity for training visits abroad on RTDI policy and programme design for senior policy managers in public and private entities; the second phase for individuals and SMEs.

Crucial milestones and criticalities?
 Provide insights on what works and how best to design such programmes and for RTDI Programme
 Skills development at strategic level in both public and private sectors
 Policy inputs for SPD 2007-2013

What is the degree of novelty of the initiative?
 The project complements the National Strategy and Programme for RTDI (2003-2006) and its three sub-programmes, by adding to it a human resource component.

Main results

What are the main outcomes (financial and physical)?
 The project initiated a process of bringing together the players at the policy and

programme design level, thus overcoming sectoral divides and improving synergies.

What are the main evaluation results?

Have all the objectives been fulfilled?

What is the current state in terms of execution? What are the expected prospects?

The first level training is currently in planning phase.

Reasons of success and conditions for repeatability

Why has the initiative been considered a best practice?

The FOR-LINK project enabled to bring key actors of RTDI policy together.

What are the main socio-economic and institutional conditions that contributed to the success? How?

The MCST uses the SPD and the structural funds for completing and strengthening the launching of its National RTDI Programme, and its three sub-programmes, by adding to it a human resource component.

What were the main socio-economic and institutional obstacles?

Lack of innovation policy coordination between the key players in the system

Weak policy coherence in implementing measures to strengthen innovation capacity

Weak policy and programme management skills in the public and private sector

Weak research and innovation skills in SMEs

What are the main lessons?

The project brought together RTDI key actors, enabling to overcome sectoral divides and improving synergies.

Did the case inspire new initiatives in either the same or different contexts?

The MCST plans to manage a FOR-LINK II project during the next programming period

What are the main aspects of the initiative which are susceptible to be transferred?

Are there constraints to transferability?

Appendix F Further reading

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- Prime Minister, “2006 Budget Speech – Building on our strengths...for a better quality of life”, The Hon. Dr. Lawrence Gonzi, Prime Minister and Minister of Finance, Malta, 2005
- Report of the State Higher Education Funding Working Group to the Minister of Education, Youth and Employment <http://www.education.gov.mt/ministry/doc/pdf/hef.pdf>
- Single Programming Document Objective 1 Malta 2004-2006 and Programming Complement (version May 2005) <http://www.ppcd.gov.mt/english>

List of useful web sites

<http://www.gov.mt> (Maltese Government)

<http://www.maltaenterprise.com> (Malta Enterprise)
<http://www.mcst.org.mt> (Malta Council for Science and Technology)
<http://www.ppcd.gov.mt/english/main.htm> (Planning and Priorities Coordination Division,
Office of the Prime Minister)
<http://www.gozo.gov.mt> (Gozo authority home page)
<http://www.um.edu.mt> (The University of Malta)
<http://www.eracareers.org.mt/aboutthisproject.asp> (Researcher's Mobility Portal - Malta)

Appendix G Stakeholders consulted

Name	Position	Organisation
AQUILINA	Chief Executive Officer	Management Efficiency Unit (MEU - Office of the Prime Minister)
ATTARD Emanuel	Executive Director EU Projects	Ministry of Education, Youth and Employment (MEYE)
BONELLO Isabelle	Information Society Secretariat	Ministry for Investment, Industry and Information Technology & Investment
BONNICI Marlène	Head of the PCCD	Planning and Priorities Coordination Division (PCCD - Office of the Prime Minister)
CORDINA Gordon (written comments)	Senior lecturer at the Faculty of Economic, Management and Accountancy - Former Senior Economics at the Malta Central Bank	University of Malta
CUTAJAR Rita	Director for EU Affairs	Ministry for Gozo
HARPER Jennifer	Manager, Policy Development Unit	Malta Council for Science and Technology (MCST)
MEILAK Lucienne	Director for EU Affairs	Ministry for Investment, Industry and Information Technology & Investment
MUSCAT Ray	Chief Officer - Enterprise Support & Innovation	Malta Enterprise