



Malta's participation in Europe's oldest research cooperation framework

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Abstract. COST (European Cooperation in Science and Technology) is the longest-running European research framework supporting networking and knowledge sharing amongst science and technology communities in Europe. It does not fund research as such but greatly facilitates the networking and the coordination between researchers working on nationally funded research across Europe. The wide range of networking activities supported by COST, such as meetings, workshops, short term scientific missions, publications and training schools and easy administration made it even very amenable to researchers based in Malta. Since 2011 Malta has participated in a constantly growing number of running COST Actions and this has resulted in better exposure opportunities for them. More importantly, early stage researchers have been given an invaluable opportunity to increase their contacts circles in their fields of interest. This has resulted in unique opportunities for participation and networking in research for researchers based in Malta on a European scale.

1 Introduction

This issue of *Xjenza* may seem somewhat eclectic, including many diverse and unrelated topics. Many may wonder what does research concerning supramolecular chemistry in water has to do with drug resistance in cancer stem cells, soil erosion and 3D video coding? Moreover, are studies on the symbiotics of history and social psychology, and research on accessibility as an indicator of transport equity considered as science?

The brief answer to these questions is **COST**. This special issue of *Xjenza* highlights just some of the research that has resulted from the nearly 200 COST actions, researchers based in Malta are or have particip-

ated in. You others may wonder what exactly COST is? How can I get involved? How will it benefit myself and the research landscape in Malta?

2 What is COST?

COST (European Cooperation in Science and Technology) (www.cost.eu) is in fact the longest-running European research framework supporting networking and knowledge sharing amongst science and technology communities in Europe (Halen, 2014). It does not fund research as such but greatly facilitates the networking and the coordination between researchers working on nationally funded research across Europe. Thus it contributes greatly to narrowing the gap between science, policy makers and society. **Co-operation in COST is inclusive and open, fosters new and excellent ideas through the sharing of knowledge** (see Figure 1).

Since its establishment in 1971, COST has been doing this through supporting networks (called **COST Actions**) co-ordinated by Management Committee members (MCs). A huge advantage of these MCs is that each COST country is allowed to nominate up to two MCs per action irrespective of size, thus ensuring inclusiveness and widening. This is a big advantage for Malta. As such, COST has always been the cornerstone of the European research funding landscape since it opens up huge networks to smaller and more peripheral COST countries, such as Malta. Every year an average of 30 000 researchers benefit from COST funding (Dietl, 2014).

Over the course of its 40 year history, COST has also been able to constantly adapt itself to the changing environment defining research policy in Europe. It has a unique bottom up approach, using open calls with

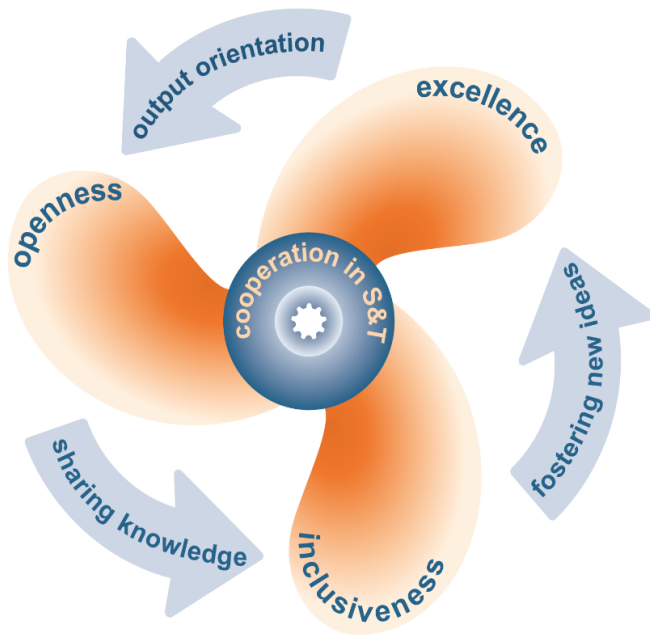


Figure 1: Co-operation in COST is inclusive and open, fostering new and excellent ideas through the sharing of knowledge.

no pre-defined priorities for research. It also promotes interdisciplinary approaches, knowledge sharing, talent development and assists research communities in finding their own ways to tackle important societal challenges.

Since its inception, COST has provided a unique approach that enables the sharing of concepts and scientific developments across 35 European countries and has even attracted the participation of many non EU countries.

There are three main features that make it a unique tool:

Capacity COST acts to connect high-quality scientific minds both across Europe and internationally and enables the creation of research communities in various fields.

Networking As a networking platform, it supports researchers to connect and build consortia that can lead to the submission of transnational project proposals for funding from the EU's Framework Programme. This networking is interdisciplinary, facilitating the participation from researchers outside the academic community, such as SMEs, public entities and NGOs.

Impact COST enables the formulation of publications and promotes the dissemination of information that increases impact on policy-makers and decision-making bodies (Armeni and Mifsud, 2015).

COST has also always been a frontrunner in bridging

the gap between policy, research and end users, by promoting connections between COST Actions and other European S&T policy concepts with relevant stakeholder communities. It has provided the basis for increased societal impact of research and S&T innovation in Europe and beyond.

3 Malta in COST

Malta first joined COST in 1996 before it became a full EU member in 2004. The Malta Council for Science and Technology, as the managing authority for COST in Malta, then recognised the key role COST participation could have in facilitating the entry of researchers based in Malta to wider European Research networks and funds such as in the Framework Programmes. Moreover the wide range of networking activities (tools) supported by COST, such as meetings, workshops, short term scientific missions, publications, and training schools, made it even more amenable to researchers based in Malta.

Since 2011 Malta has participated in a constantly growing number of running COST Actions. In 2014, the Maltese research community not only participated in the Management Committee (MC) of 149 Actions (Table 1) but had access to all their networking activities (Halen, 2015).

The number of Maltese participations to networking activities (meetings, workshops, STSM, Training Schools) has also been growing since 2011 (Table 1). In 2014, Maltese researchers participated in 200 COST Action activities.

COST also promotes the participation of Early Career Investigators - ECI (less than PhD + 8 years) in all of its networking activities (meetings, workshops, STSM, Training Schools). In 2014, almost half of the Maltese participations in networking activities (as shown in the previous Table 1) were from Early Career Investigators-ECI (Table 1).

The Maltese research and innovation system benefits more and more from COST Actions' budget. In fact in 2014, around EUR 188,000 benefited Maltese researchers (Table 1). This includes participations in meetings, workshops, STSM, Training Schools, Local Organiser Support, but also Maltese Grant Holder institutions' administrative support – FSAC.

In 2014, Maltese researchers participated in 15 Short Term Scientific Missions (STSMs). Thirteen Maltese trainees and one Maltese trainer were also involved in training schools (Table 1).

Maltese institutions also gained increasing visibility thanks to meetings, Training Schools and STSMs being hosted in their premises. In 2014, 4 COST meetings, 1 Training School and 5 STSMs were held in Malta helping to strengthen the existing networks and foster col-

Year	2011	2012	2013	2014
COST actions with participation from Malta	47	70	116	149
Maltese participation in COST networking activities	46	75	161	200
Maltese early career investigators participation in COST networking activities	18	25	60	82
COST networking budget transferred to Malta (in euros)	42 233	72 674	141 883	188 015
COST Short Term Scientific Missions (STSM) and training school participation from Malta				
STSM participants	4	3	4	15
Trainees in Training Schools		3	13	13
Trainers in Training Schools		1	1	1
COST meetings, training schools, STSMs and Annual Progress Conference (APCs) organised in Malta				
Meetings	1	1	3	4
Training Schools	–	1	2	1
STSM	2	1	7	5
APC	–	–	1	4

Table 1: COST action statistics (Halen, 2015).

laboration links between researchers, institutions and ultimately countries. They also helped to increase the visibility of hosting institutions. Maltese institutions seem to be particularly attractive to researchers coming on STSMs (Table 1). In addition, Malta also had the honour to host five Annual Progress Conferences (APCs) from five of the ten COST domains in 2013 and 2014.

4 COST impact in Malta

In 2014, MCST carried out a survey among Malta-based COST MC members in order to gauge the success, failure and impact of COST since its initiation in Malta, aiming to identify the resulting impact of this participation in COST on the local research arena and innovation initiatives (Armeni & Mifsud, 2014).

5 Who is the Maltese COST researcher?

The survey was carried out by means of an online questionnaire using Survey Monkey®. There were a total number of 100 responses, from 193 potential respondents that were participating in COST actions across Malta and Gozo at the time the survey was taken. As also confirmed by the data provided in Table 1, the majority of respondents, 37.10%, were between 30 and 39 years of age, followed by 25.81% between 40 and 49 years of age, 16.94% between 50 and 59 years of age and 13.71% between 21 and 29 years of age. Only 3.23% noted that they were 60 years of age or older (Table 1). In this

respect COST has reached out to and involved comparatively high numbers of young researchers below the age of 40 in the majority of its domains. Such capacity building and opportunities for early stage researchers, who are key human resources, will thus contribute to a continued growth of innovation, product development and commercialisation in Malta.

In terms of career status, most respondents noted that they hold the position of senior lecturers (27.42%), whereas 19.35% noted that they are lecturers, 9.68% noted that they are associate professors and 3.23% noted that they are professors. There was a positive uptake from PhD students (13.71%) and post-doctorate researchers (7.26%) indicating an increasing interest by the younger population of researchers across the domains and the involvement and integration of a more juvenile cohort of academics and scientists in the various research agendas of the different COST actions.

Significantly lower were percentages for participation from industry (1.61%) and NGO's (4.03%). In addition, there is very limited involvement reported from the public entities and the public sector suggesting that more efforts could be focused to generate awareness and interest there. Academia continues to enjoy a strong hold in the programme. The lack of participation from industry could imply that COST is not yet understood by Maltese industry as potentially being a significant contributor towards their participation in transnational consortia or in research arenas. Increased efforts, directed at this particular sector, could result in increased participation when relevant domains/actions arise.

6 What are the outcomes of participation in COST?

Most respondents stated that their COST action members intended to continue to co-operate once the COST action was completed (80%). Nonetheless, some commented that any speculation of potential future action, at present, would be premature (29%). An equal amount simply noted 'future collaborations', such as through access to infrastructures and joint research activities, as possible sources of action (29%). Others highlighted future research contributions or submissions under Horizon 2020 as a possible way forward.

7 What can be done to improve Malta COST participation?

Participation in COST actions has had its benefits and difficulties. The main benefits noted by the respondents were: networking, opportunities for cooperation and collaboration with European counterparts, increased exposure at a European level, opportunities for training and staff/student exchange and access to research infrastructures. Furthermore, the majority of respondents who claimed prior participation in, or organisation of, COST events, both locally and abroad, noted that the output and impact was well worth the return on investment, particularly in terms of time and effort.

The main obstacles were: financial and administrative burdens, lack of time and resources, bureaucracy, language barriers, travel requirements and other work. In this respect, it was noted that the provision of more frequent information sessions and assistance in sourcing and joining existing consortia, coupled with more hands on guidance in the compilation and submission of research proposals for Horizon 2020 would be beneficial. This, as well as, funding to conduct further research remains a key concern for most respondents. Notably, lack of financial support implies lack of advancements in research and analytics in each domain which could place Malta at a disadvantage when compared to other countries. For this purpose, some respondents suggested a potential allocation of some resources that may act as an incentive for local researchers to construe research groups in areas that are deemed relevant to work upon. The areas may not have direct relevance to Malta, but Malta can act as a cost effective base where research can be carried out, generating income and knowledge. In addition, continued efforts towards increasing opportunities for the mobility of researchers across Europe, to foster scientific excellence, is recommended together with an alignment of the selection of local participation in specific COST actions with the national scientific priorities' as outlined in the National Research and In-

novation Strategy 2020 (Malta Council for Science and Technology, 2014).

In addition, the majority cohort of academic senior lecturers as MC members and the lack of participation from industry, raises concerns, particularly, in view of the need to bridge the gap between research in academia and industry. Lack of easily accessible information, easier access to academics, lack of available time and resources and lack of tangible and/or immediate return on investment could be precluding players from industry from actively participating in COST. To this end, one-to-one meetings, networking events, information sessions and the CNC's or MCST staff participation in events organized by other bodies representing industry and young researchers, could be beneficial. In addition, in line with efforts to mediate gender equality and balance in scientific spheres, it is advised that more emphasis is made on mediating the current gender balance in COST actions

8 COST: the next steps

COST has been proud of its ability of renewal. The renewal started in 2010, in response to the COST FP7 Mid-Term Evaluation (Horvat et al., 2010) and through the COST Strategy (COST CSO, 2011) aims to achieve best performance, output orientation, better cooperation, and good governance. The new phase has been characterised by reviewing the institutional, operational and administrative levels of the COST Framework and the creation of a new independent legal entity, the '**COST Association**', tasked with becoming COST's implementing agent in 2014 (COST CSO, 2013).

Over the last few years, COST has also adapted and changed to respond to the requirements and challenges in Horizon 2020 ensuring that COST actions are focussed on Spreading excellence and widening participation as well as ensuring Europe in a changing world – inclusive, innovative and reflective societies (COST CSO, 2014). Adaptations have always been made keeping in mind the above principles that govern the COST Framework from both a strategic and operational point of view: **supporting excellence** and being **open and inclusive**. The driving forces (deriving from the principles described above) of **fostering new ideas, sharing knowledge and output orientation** have been enabling COST to make significant contributions to the competitiveness and overall development of the European research landscape and assisting European research communities in overcoming the many challenges they face and thereby contributing to Europe's Innovation Union goals.

Researchers based in Malta are now integrated in each part of the COST process, from participation in the high level policy Committee of Scientific Officers

(CSO), having a representative on the strategic Committee of Scientific Experts, a full cohort of eighteen Review Panel Experts and also close to 300 COST experts. Malta's success in COST has often been highlighted by the COST Association and Malta has even been invited to be Vice-Chair for the COST working group on Inclusiveness and Widening.

Malta's participation and investment in COST has resulted in better exposure opportunities for various parties. More importantly, the younger cohort of researchers have been given an invaluable opportunity to increase their contacts circles in their fields of interest. This, coupled with opportunities for participation in research on a European scale, opportunities for specialisation through joint collaborations and opportunities to showcase our local potential, continue to support and advocate Malta's necessity to participate in this programme and acts as an incentive for local participation to continue to be supported and encouraged.

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