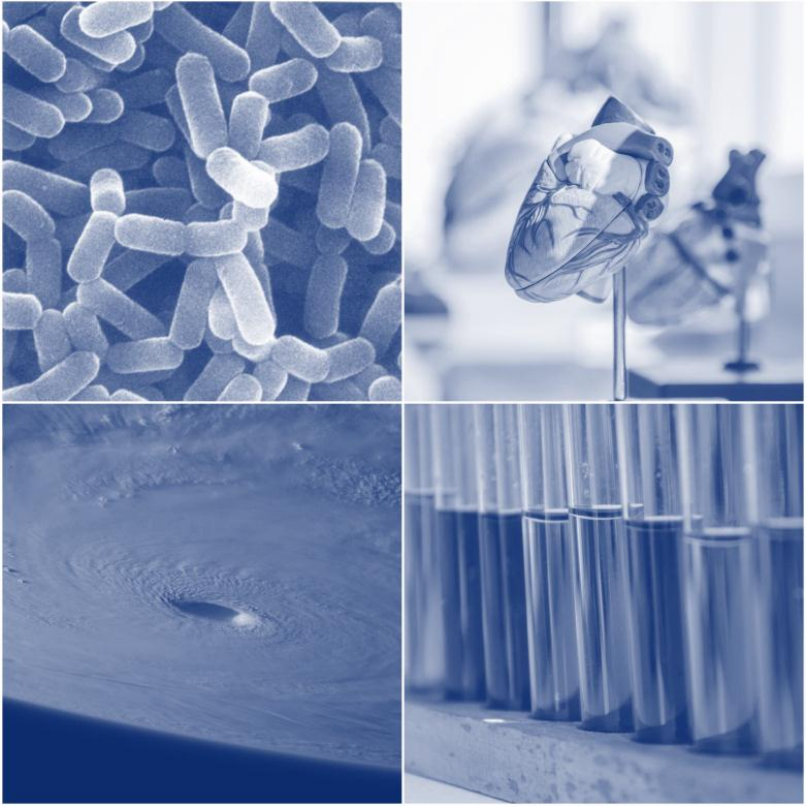

ESASTAP plus

Strengthening Technology, Research and Innovation Cooperation between Europe and South Africa

MONITORING REPORT

Insights into South Africa's Participation in the 7th Framework Programme for Research and Technological Development of the European Commission

Academy of Science of South Africa (ASSAf) and
the Department for Science and Technology (DST)

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The Academy of Science of South Africa (ASSAf) was inaugurated in May 1996. It was formed in response to the need for an Academy of Science consonant with the dawn of democracy in South Africa: activist in its mission of using science and scholarship for the benefit of society, with a mandate encompassing all scholarly disciplines that use an open-minded and evidence-based approach to build knowledge. ASSAf thus adopted in its name the term 'science' in the singular as reflecting a common way of enquiring rather than an aggregation of different disciplines. Its Members are elected on the basis of a combination of two principal criteria, academic excellence and significant contributions to society.

The Parliament of South Africa passed the Academy of Science of South Africa Act (*Act67 of 2001*), which came into force on 15 May 2002. This made ASSAf the only academy of science in South Africa officially recognised by government and representing the country in the international community of science academies and elsewhere.

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List of Acronyms

ASSAf	Academy of Science of South Africa
BRICS	Brazil, Russia, India, China, South Africa
CORDIS	Community Research and Development Information Service
CREST	Centre for Research on Evaluation, Science and Technology
CSIR	Council for Scientific and Industrial Research
DST	Department of Science and Technology
EC	European Commission
ESASTAP	Strengthening the European-South African Science and Technology Advancement Programme
EU	European Union
FP7	7th Framework Programme for Research and Technological Development
ICT	Information and communication technology
IOM	Impact-oriented monitoring
IP	Intellectual property
JRC	Joint Research Centre
KBBE	Knowledge-based bio-economy
NCP	National contact point
NEPAD	The New Partnership for Africa's Development
NMP	Nanosciences, nanotechnologies, materials, new production technologies
R&D	Research and development
SIS	Science in society
SMME	Small, micro and medium enterprise
SSH	Socio-economic sciences and humanities
STI	Science, technology and innovation
UK	United Kingdom

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Executive Summary

With a budget of over €50 billion over seven years, the 7th Framework Programme for Research and Technological Development (FP7) of the European Union (EU) was one of the largest sources of funding for scientific research in the world. South Africa was privileged to participate in FP7, as it did in the preceding programmes. This report provides insights into South Africa's participation in FP7. Three data sources were used: (1) information in the Community Research and Development Information Service (CORDIS) database for 122 FP7 projects that involved South African participation; (2) a focus group with officials from the South African Department of Science and Technology (DST) and (3) two web surveys – with the South African participants in FP7 projects and the international coordinators of FP7 projects with South African participation.

The focus group conducted with the DST highlighted the department's strategic intent in its engagement with the EU, as well as its preference for equally beneficial partnerships. The lack of participation by firms in FP7 remains a concern, although the reasons are now better understood and acted upon. Whereas the DST has control over the coordination and support of action projects in which it participates, the same cannot be said of the technical projects in FP7. South African researchers can submit their proposals directly to the European Commission (EC) via the project coordinator, without any endorsement from the DST. This has implications for the alignment of South African researchers' involvement in these projects with the national science, technology and innovation (STI) priorities.

The alignment between the national priorities and the 122 FP7 projects was explored through a density map of the subject categories of the projects, as derived from the CORDIS database. The map reveals strong foci on projects that involve either coordination or scientific research, and also medicine and health. Projects with a focus on health also seem to be connected to veterinary and animal sciences, and agricultural biotechnology. The latter concentration, apart from supporting the grand challenge of "farmer to pharma", also speaks to a number of technological missions that fall under the innovation pillar in the National Research and Development (R&D) Strategy, most notably biotechnology and technology for poverty reduction. Space science, energy security and information and communication technology (ICT) are all present in the density map.

An analysis of the records in the CORDIS database shows that South Africa's participation in FP7 can be interpreted as a result of a number of factors. First and foremost is South Africa's expertise in a particular area of interest. Second, established networks and collaborations create a situation whereby South African researchers are almost automatically drawn into the collaborative activities of the parties in their network. A third theme is that of South Africa and the rest of Africa being included in FP7 to strengthen the global character of a project. This takes different forms, such as the creation of outputs and tools that incorporate insights from different (and often contrasting) parts of the world, or the validation of a project's insights and findings in

diverse settings as a way of demonstrating global relevance. Africa as a region in need of intervention is probably the most salient theme in the CORDIS database, and provides a fourth reason for South Africa's (as well as the rest of the continent's) participation in FP7. Last, the geographic location of Africa also necessitated the inclusion of scientific experts from the region in FP7.

In terms of benefit and potential impact, the DST officials underscored the benefit of participating in FP7 for professional career development. A further consequence of South Africa's participation in FP7 is the country's integration in international networks. A network map of collaborating partners was created, in VOSViewer, using as input the list of participating countries in the 122 South African-EU projects. The visual map showed that South Africa, through FP7, is part of a dense network of collaborating countries. South Africa has also strengthened its collaborations with other African countries, as well as with the four other countries, Brazil, Russia, India, China, (BRICS) through participation in the FP7. Respectively, 15% and 11% of the 122 South African FP7 projects involved collaboration with Kenya and Egypt. The corresponding figures for China and Brazil, two of South Africa's BRICS partners, are 16% and 15%. That being said, South Africa's main collaborating partners in the FP7, as expected, are European countries, specifically the United Kingdom (UK) (65%), France (59%) and Germany (58%).

The DST officials also commented on the challenges of supporting South African researchers to ensure successful implementation of EU-funded projects at a national and continental level. A first recommendation is that the Strategic Partnerships directorate of the DST should receive capacity enhancement of its grant-making obligation in order to strengthen its support to South African researchers in the future.

A second recommendation is that attention be devoted to other project management challenges alluded to in this report, among which are measures to support the research project website beyond the lifespan of the research project; further dissemination of the research project outputs; and capacity support to researchers when implementing EU-funded projects to ensure compliance with the rather complex financial and administrative requirements of the European Commission.

A third recommendation relates to the observation that the alignment between FP7 projects and the country's national STI priorities appears to be best when DST co-funding is involved, not because of the additional funding but because of the project scrutiny that occurs as part of the process of approval. It should be explored to what extent the national contact points (NCPs) could assist with the alignment between national priorities and proposal content as they are key to supporting researchers involved in EU-funded projects. The feasibility of a process of national endorsement of projects also needs to be investigated.

The fourth recommendation is an attempt to address the single most important limitation of the current study: the fact that not all South African participants and international project coordinators could be reached in the survey. This recommendation calls for better data management of projects for the purpose of impact-oriented monitoring (IOM). It entails the following:

- A DST-managed relational database of South African projects in Horizon2020 needs to be created, updated at regular intervals until about three years after completion of a project. Such an MS Access database of all FP7 projects was compiled as part of this project, and formed a critical element in the desktop quantitative and qualitative analysis of South Africa's participation in FP7. The database has been shared with the DST, and a recommendation to create and update a similar database for H2020 forms part of the recommendations of this project;

- The DST, through internal consultation, should compile a clear and unambiguous list of the national priorities for STI in alignment with the focus funding priorities of the European Commission. The list should be put together in a manner for it to be easily transformed into a project checklist and should be easily accessible to SA researchers interested in undertaking EU-funded projects;

- The DST should invest in adapting the IOM approach, or elements thereof, for Horizon2020. IOM is a novel methodology for monitoring and assessing the impact of international collaborative projects of the European Commission (Guinea *et al*., 2015). Currently the methodology only applies to public health but its wider utility needs to be explored.

Finally, as of March 2015, contracts have been signed for 20 Horizon2020 projects, which involve 31 South African participations. The Council for Scientific and Industrial Research and Stellenbosch University currently lead in terms of the share of projects (four projects each), followed by MINTEK with three projects. The total investment by the European Commission for South African institutions in Horizon2020 amounts to 4.6 million Euros, with an average of 153 thousand Euros per participant.

1 Introduction

The 7th Framework Programme for Research and Technological Development (FP7) was the European Union's main instrument for funding research in Europe from 2007 to 2013. The European Commission budgeted €50.5 billion for the core programme and an additional €2.7 billion for the Euratom component of the programme. Overall, this budget represents a 41% increase from FP6 at 2004 prices. It is important to state that FP7 was a European programme that was set up to address European needs. In particular, the programme was designed to respond to Europe's employment needs and competitiveness. FP7 supported research in selected priority areas – the aim being to make, or maintain, the EU as a world leader in those sectors. The main blocks of FP7 activities are summarised in Table 1. Figure 1 provides an indicative breakdown of the original budget of the FP7.

Table 1: Main building blocks of FP7 activities

Cooperation – Collaborative research in the following priority research areas: • Health • Food, agriculture and biotechnology • Information and communication technologies • Nanosciences, nanotechnologies, materials and new production technologies • Energy • Environment (including climate change) • Transport (including aeronautics) • Socio-economic sciences and humanities • Security • Space	**People – Human potential, Marie Curie actions** • Initial training of researchers – Marie Curie networks • Life-long training and career development – Individual fellowships • Industry-academia pathways and partnerships • International dimension – Outgoing and incoming fellowships, international cooperation scheme, reintegration grants • Excellence awards
Ideas – European Research Council • Frontier research actions	**Capacities – Research capacities** • Research infrastructures • Research for the benefit of small and medium enterprises (SMMEs) • Regions of knowledge • Research potential • Science in society • Support to the coherent development of research policies
Nuclear research and training • Fusion energy • Nuclear fission and radiation protection	
Joint research centre (JRC) • Direct actions in Euratom • Non-nuclear actions	

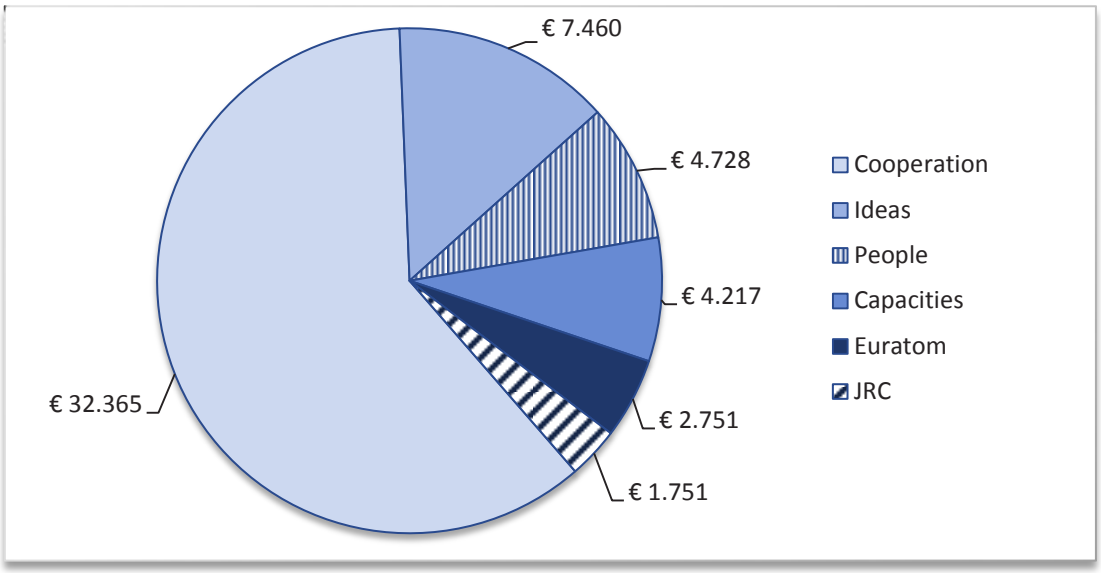


Figure 1: Indicative breakdown of the FP7 budget

As can be seen, the bulk of the funds were earmarked for the various research activities within the *Cooperation Programme*. Of the FP7 priority research areas, health, environment and Marie-Curie actions received the highest number of applications from South African institutions (see Table 2 that depicts the number of applications per research priority area, as well as the total funding applied for and the respective success rates). Socio-economic sciences and humanities constitute only 10.5% of the total number of applications. These figures are based on a country report that was downloaded from the CORDIS website of the European Commission on 18 October 2012 (http://europa.eu/rapid/press-release_MEMO-13-686). It covers the entire lifespan of the programme up to that point in time.

Table 2: South Africa's FP7 applications per research priority area together with success rates (based on data up to 2012)

FP7 priority areas	Number of applicants	Success rate (applicants)	Requested EC contribution (€m)	Success rate (requested EC contribution)
Health	157	25.5%	49.71	25.1%
Environment (incl. climate change)	156	20.5%	29.51	14.1%
Marie Curie actions	150	40.0%	n/a	n/a
Food, agriculture & fisheries, and biotechnology	144	22.9%	24.38	17.7%
ICT	98	17.4%	19.53	8.4%
Socio-economic sciences and humanities	83	14.5%	16.06	11.6%

The Marie Curie actions category is significantly the most successful area of activity, with 40% of all applicants successful. Health is the strongest area of research activity in terms of the success rate for the amount of EC contribution received *versus* the amount requested. Differently put, the EC contribution that was awarded to successful South African applicants comprised almost 25% of the total funding requested by all applicants in health.

Table 3 replicates the contents of Table 2 but uses type of organisation as grouping variable. It incorporates the five categories of organisations as demarcated by the EC.

Table 3: South Africa's FP7 applications per organisation type together with success rates (based on data for 2012)

Organisation type	Number of applicants	Success rate (applicants)	Success rate (requested EC contribution)
Higher education sector	530	25.1%	19.3%
Research organisations	226	26.5%	17.6%
Private for profit (excl. education)	112	32.1%	21.0%
Other	66	25.8%	15.6%
Public body (excl. research and education)	61	41.0%	36.2%

From the data in Table 3, it can be deduced that more than half of all applications for funding were received from the universities. The science councils ("research organisations" in Table 3) were the next biggest category, albeit contributing less than half of the applications from higher education. While the number of applicants from public institutions, other than research and education, is small, the success rates for this group of organisations are much higher than those of all the other categories. Specifically, 41% of all applicants in public institutions were successful, and the EC funding awarded to these successful applicants comprised 36% of the amount originally requested by all applicants from public institutions.

Although Table 3 shows public institutions as having the highest success rate in relation to applications sent, higher education received by far the most funds for research. Higher education institutions, in 2012, accounted for €14.82 million, which represented over 50% of all funding that flowed into South African institutions. The category of research organisations accounted for 28%.

South Africa's small, micro and medium enterprises (SMMEs) achieved an applicant success rate of 24.5% in FP7. This level of success is higher than the Third Countries SMME applicant success rate of 18.4%. South Africa's SMME EC financial contribution success rate of 17.8% is also higher than the corresponding Third Countries rate of 14.7%.

Finally, more recent data from the DST (for 2014) show that the EC contributed close to 70% of the total funding requested by successful South African applicants in FP7 (Table 4). With the exception of the Marie Curie actions where there is no funding shortfall, the

shortfall for the other priority areas ranges between 98% (in the case of nuclear fission and radiation protection) and 16% (science in society).

Table 4: Contribution by the EC to the total cost of South African participants in FP7, by priority area (based on data for 2014)

Sub-programme description	Priority areas	Participant total cost in Euros [A]	Participant EC contribution in Euros [B]	[B]/[A]
SP1-Cooperation	Energy	794 640	501 988	63%
	Environment (including climate change)	6 192 488	4 781 198	77%
	Food, agriculture and fisheries, and biotechnology	6 440 567	4 701 514	73%
	Health	14 987 284	11 568 430	77%
	Information and communication technologies	3 576 525	1 453 017	41%
	Nanosciences, nanotechnologies, materials and new production technologies	914 201	495 851	54%
	Security	102 767	54 947	53%
	Socio-economic sciences and humanities	2 642 125	2 026 849	77%
	Space	1 644 017	1 355 609	82%
	Transport (including aeronautics)	2 245 804	1 525 093	68%
SP3-People	Marie Curie actions	1 429 872	1 429 872	100%
SP4-Capacities	Activities of international cooperation	3 835 779	2 772 543	72%
	Research for the benefit of SMEs	174 272	137 704	79%
	Research infrastructures	1 899 826	767 914	40%
	Science in society	716 711	601 829	84%
SP5-Euratom	Nuclear fission and radiation protection	2 317 320	40 574	2%
Total		**49 914 197**	**34 214 931**	**69%**

The aim of the remainder of this report is to provide further insights into South Africa's participation in the FP7 of the EU. Three data sources were used: (1) information contained in the CORDIS database, which is the primary public repository and portal to disseminate information on all EU-funded research projects and their results; (2) a focus group with officials from the South African DST and (3) two web surveys – respectively with the South African participants in FP7 projects and the international coordinators of FP7 projects with South African participation.

FP7's term ran from 2007 to 2013. During the period of FP7, the South African scientific community, together with their European counterparts and other international partners, successfully responded to various calls under the funding scheme. As at November 2014, CORDIS recorded a total of 179 projects that involved South African participation. Of

these, 122 were either completed or due for completion by December 2014. These 122 projects comprise the study pool for this report.
Table 5 disaggregates the 122 FP7 projects in terms of the relevant FP7 programme and sub-programme. Ninety-five are classified as *Cooperation* projects, of which the majority are in the fields of environment (22 projects) and the knowledge-based bio-economy (KBBE) (19 projects).

Table 5: Breakdown of 122 FP7 projects (completed by 2014) in terms of programme and sub-programme classifications

FP7 programmes	Sub-programmes				Total
	SP1-Cooperation	SP3-People	SP4-Capacities	SP5-Euratom	
FP7-Energy	2	0	0	0	2
FP7-Environment	22	0	0	0	22
FP7-Euratom-Fission	0	0	0	3	3
FP7-Health	15	0	0	0	15
FP7-ICT	12	0	0	0	12
FP7-Inco	0	0	8	0	8
FP7-Infrastructures	0	0	8	0	8
FP7-KBBE	19	0	0	0	19
FP7-NMP	2	0	0	0	2
FP7-People	0	3	0	0	3
FP7-Security	2	0	0	0	2
FP7-SIS	0	0	2	0	2
FP7-SME	0	0	3	0	3
FP7-Space	9	0	0	0	9
FP7-SSH	5	0	0	0	5
FP7-Transport	7	0	0	0	7
Total	**95**	**3**	**21**	**3**	**122**

The projects translate into 153 South African institutional participations, with 54 from the university sector and 42 from the science council sector (Table 6).

Table 6: Cross-tabulation of the institutional categories and the sub-programmes for the 153 South African participating institutions

Institutional category	SP1-Cooperation	SP3-People	SP4-Capacities	SP5-Euratom	Total
Business/private company	14	1	3	0	18
Government agency/public entity/-state-owned company	10	0	2	3	15
Government department	3	0	12	0	15
Non-profit/charity/trust/member organisation	8	0	1	0	9
Science council	40	0	2	0	42
University	47	2	4	1	54
Total	**122**	**3**	**24**	**4**	**153**

In terms of individual participating institutions, the top five are the Council for Scientific and Industrial Research (CSIR) (which participated in 30 projects), DST (14 projects), University of Cape Town (12 projects), University of KwaZulu-Natal (10 projects) and Stellenbosch University (eight projects). Of the 14 projects by DST, 11 are in the *Capacities* sub-programme and three in the *Cooperation* programme.

2 Methodology

2.1 CORDIS database

The advanced search procedure in the online CORDIS repository was used to search across all FP7 programmes, specifically for projects that list a South African institution as either a participating or co-ordinating institution. As stated, the search delivered a total of 179 projects which was subsequently reduced to 122, the latter which depict those projects that had been completed by 2014. A significant number of fields containing relevant project details were manually copied and pasted from CORDIS into Excel worksheets, where these were appropriately "treated", i.e. cleaned and transposed before exportation to MS Access.

Relevant information was also taken from Excel files that were received from the DST, and merged with the CORDIS repository data in MS Access. The resultant Access database is composed of three data tables that are linked via a unique identifier, namely the project number.

- The main table is called "*EU FP7 ZA Project Details*" and captures, in 24 fields, the key information for each of the 179 FP7 projects. The table thus consists of 122 records (rows) and 24 fields.
- The second data table is called "*EU FP7 ZA Project Participants*" and contains 15 fields. This table includes altogether 1 776 records where each record (row) represents an institutional participation – a figure that reduces to 153 records when filtering only for South African institutions. The "*EU FP7 ZA Project Details*" table links to the "*EU FP7 ZA Project Participants*" table in a one-to-many way, given that any project could involve more than one institutional participation.
- The third table in the database, "*EU FP7 ZA Project Subjects*", contains the subject classification of the projects in the CORDIS repository. CORDIS assigns any project to at least one subject category. There are altogether 46 categories for the South African FP7 projects (aerospace technology; environmental protection; regional development; scientific research; telecommunications, etc.).

2.2 Web surveys of South African participants in FP7 projects and international coordinators of FP7 projects with South African participation

A number of papers and instruments and indicator/analytical frameworks were consulted for ideas in drafting the survey questionnaires. Some of these sources were more useful than others, but in the end, two considerations guided the instrument development and what to include:

- First, the purpose of developing the instruments, namely to obtain additional insights into South Africa's participation in the FP7 with the view of strengthening future SA-EU interactions.

- Second, the reality of data collection, which basically means that researchers rely on the goodwill of respondents to participate and share their experiences and opinions, despite various other time demands. Hence not everything could be asked in the online survey and a trade-off had to be made between, on the one hand, what was considered essential to include and, on the other hand, the desire to achieve the least resistance and good response rates.

The two questionnaires are attached as Appendix 1 and Appendix 2, respectively.

Of the 1 776 institutional participations in the database, 153 are South African institutions and 119 are international coordinating institutions. CORDIS recorded the email addresses of 97% of the participating individuals at these institutions. However, since some participating individuals were involved in more than one FP7 project, the email addresses first had to be screened for duplicates. This produced a list of 121 unique email addresses for South African participants and 110 unique emails addresses for the international coordinators.

An email, accompanied by a cover letter (See Appendix 3 and Appendix 4), was subsequently sent to each of these individuals to request their participation in the survey. The cover letter explained the background and context of the study, and the email included a hyperlink to access the online survey that was designed in *SurveyMonkey*. Distribution of emails occurred in March 2015. However, 56 of the 231 emails distributed came back as "undelivered". It also appeared from one query received that, in some cases, CORDIS listed a university administrator (e.g. a university financial officer) and not an actual project staff member as the project participant. Hence the response to the survey was low. Only three South African participants and six international coordinators had completed the survey by April 2015.

In order to improve the survey response rate (i.e. to reduce the number of undeliverable emails and ensure that the correct project staff were targeted) a search was conducted for the website of each of the 122 FP7 projects. For 32 projects no website could be located. In the case of the 90 projects with a website, the website was inspected for the names and emails of the South African participants as well as those of the international coordinators. Where available, these were added to the database. This resulted in 33 new emails. Therefore, in May 2015, the survey was again sent out by using the modified email list. Despite doing so, the response rate did not significantly improve. At the closure of the survey, only 18 responses had been received – nine in each of the two surveys. Hence, the survey results presented in this report are limited, but the findings are significantly augmented by the desktop quantitative and qualitative analysis. The first draft report was produced in December 2013, followed by an improved discussion document in January 2015. Both of these documents and the MS Access database significantly enriched the key findings and recommendations included in this report.

2.3 Focus group with DST officials

A focus group with staff of the Strategic Partnerships Directorate at DST was conducted in May 2015. The discussion lasted more than an hour and a half and was digitally recorded and transcribed. The interview schedule is attached as Appendix 5.

3 Reflections on South Africa's Participation in FP7

3.1 The DST agenda

In section 1 it was stated that the DST participated in 14 projects of the 122 projects in the study (11 in the *Capacities* sub-programme and three in the *Cooperation* programme). DST's direct participation is thus not in projects that involve technical research but in high-level cross-cutting projects (coordination and support actions), with the aim of facilitating and strengthening participation by the South African STI community in current and future SA-EU collaborative activities. A senior DST official explained it as follows:

> *"Some people are asking why a national government department can participate in FP... It is an instrument that we are eligible for, an instrument that we've seen a lot of opportunities to help us achieve what we want as the DST in the South African system of innovation.*

> *Our participation obviously is not in the technical projects. …the FP7 has a research component and it has what we call, it was called coordination and support then… DST strategically decided to use these coordination and support opportunities from the EU, opportunities in a sense then that we are able to put a proposal to mobilise our researchers to participate in this EU programme, or in general, to mobilise and facilitate SA-EU collaboration."*

The main reason for the DST's participation in collaborative EU projects is not only to access international funding, but also to expand the country's partnerships at the national policy level, in order for the DST to achieve its mandate. That being said, the DST's interest has shifted from participation in EU partnerships for the sake of engaging in such partnerships towards establishing and co-creating equal partnerships.

> *"There is this pot of money in the European Union through FP7 but not only the money but an opportunity to collaborate with Europe and to expand on our partnership at the national policy kind of level… So from us, the DST, we thought FP7 is a good platform to pursue these thematic areas we are interested in, expand on our partnership….*

> *So the main thing for us is not just the money from the Commission, but the partnerships, and not just a partnership but equal partnership where we can together decide on the priority areas to launch the call, to decide on which programme is going to be funded."*

A clear example of the DST approach towards co-creating equal partnership scenarios is the ERA-NET (or ERAfrica) project. The latter launches joint calls, based on STI priorities that are mutually agreed upon by the EU member states, other STI funding agencies, ministries from the rest of Africa, and the DST. The project's actions involve co-operation between research programmes, funding and implementation of joint activities.

> *"As DST and most of the other African partners, we have seen that it has been for a long time a one-way route where we are tapping into the European opportunities. And we start to, we want to start seeing reciprocity on what we are doing, we don't want to be beneficiaries only, we want to start being partners.*

> *The difference between ERA-NET and all these other projects that were doing is with the others we submitted proposal with the European partners, if it gets approved you get money to implement the activities. But with ERA-NET we submitted the proposals with the African and European partners. If the proposal gets approved you get money only for the meetings. But the main aim of the ERA-NET project is to launch joint calls, all the partners. …the Africans that are in this ERA-NET and the Europeans will agree on a specific priority area and topic. We jointly launch calls. Then each one of us funds their own researchers in the proposal that is submitted."*

For any partnership to be equal, though, each party should invest financial resources that match its share of activities in the partnership. The DST fully endorses this resource-based principle of equality:

> *"But the key message is to be equal. We need to also, as Africans, be willing to invest financial resources which others on board are doing."*

Apart from ERA-NET there are also other instances in FP7 where the DST invested its own resources, thereby again demonstrating the DST's commitment to its partnership with the EU. An example is the system of NCPs that was set up by the DST to provide assistance to and guide South African institutions wishing to participate in FP7. Although managed by the DST under the ESASTAPPlus project, it is wholly funded by the DST.

> *"[My colleague] mentioned about DST managing the national contact points. We are not only managing them we are also fully funding them. …ESASTAP does not fund national contact points. This is again showing how DST is dedicated to this partnership with the EU, such that we invest so much money in our own system to make sure that we are organised, we can be able to mobilise our researchers."*

South Africa, as the EU's largest international partner in sub-Saharan Africa (measured in terms of the number of FP7 projects), could be seen by some EU parties as a gateway to the rest of Africa. The DST therefore needs to assess any request for participation in EU partnership projects first in terms of its own national STI priorities, as well as those of the broader African region. The latter especially applies if the EU request is to involve other African countries as well.

> *"Obviously when we get a request from the Europeans wanting to involve other Africans, we weigh it… We present it to our counterparts and say… there is a genuine value for Africa in this …and then we move with it."*

The DST relies on existing platforms and structures to inform its African counterparts about mutually beneficially EU opportunities. The discussions that surround the DST bilateral agreements with sister ministries in the rest of the continent provide such a platform. As is evident from the quote below, these bilateral engagements allowed the DST to share with other African countries insights concerning certain aspects of their participation in

the FP7, such as how to manage a funding shortfall. Under FP7, the EU did not provide 100% of the funding requested, which resulted in funding shortfalls.

> *"There is a South Africa-EU partnership that I mentioned at the national level... there is also an Africa-EU platform…South Africa's role in the framework programme is we normally would use our bilateral agreements, for example SA-Ghana agreement. So that when we have those meetings we share with them what these opportunities are and we try to mobilise and link South Africans with the rest of the continent's researchers or Europeans directly. But as South Africa we are playing … role of raising this awareness of the opportunities amongst our colleagues in other African countries through our own DST bilateral agreements. … we also share with them how we manage the additional funding that is not covered by the EU. We would share with them the best practices from the South African experience of co-funding the EU projects."*

As far as participation by industry in the FP7 is concerned, the general lack of interest by firms is a main concern although it appears to be less so in the ERAfrica (ERA-NET) project. Three reasons are provided for the lack of interest expressed by firms: the "top-down" approach where firms are instructed what to do rather than being given the freedom to set their own agenda; the misconception that intellectual property generated under FP7 would automatically be channelled to the EU; and a stronger focus of FP7 on basic research, often at the expense of commercialisation that is situated at the other end of the innovation chain. It is part of the DST agenda to increase the number of participations by the South African industry in Horizon2020.

3.2 Alignment of South Africa's participation in FP7 with the country's STI priorities

In the focus group with the DST it was stressed that the South African STI priorities should guide engagements with the EU from a strategy perspective, and that the quest to seek solutions to challenges faced by South Africa need to be incorporated in the action plans decided upon. Although the DST successfully implemented this advice in terms of its own projects (coordination and support actions), it had not always been the case for the technical projects. In FP7, South African researchers could submit their proposals directly to the European Commission via the project coordinator, without any endorsement from the DST. Only research proposals with a funding shortfall that required additional investment from the DST would eventually come to the attention of the DST for funding considerations. The co-investment instrument – which will be redundant under Horizon2020 as the EC plans to cover the full project costs – thus acted as a mechanism for the DST to exercise some influence over the technical projects:

> *"Some of the South Africans couldn't go for FP projects without the co-investment. You know, they don't get 100 per cent of what they need. There are institutions that will have a shortfall of maybe 30 per cent, the commission gives them 70, and they have 30 that they can cover themselves. But there are still a lot of institutions that cannot cover it all; the shortfall. So our co-investment instrument is very important. It helped many people to still pursue their project. Some … actually go as far before they send the proposal, to say would DST fund this proposal should it go on. Then we say, yes, if it is aligned with the national priorities. So if it gets approved by the commission, definitely we will give you a co-investment."*

A strategy followed by the DST to inform the South African STI community about the value and pitfalls of EU partnerships, also FP7, is that of road shows. The key message at these road shows is the importance of ensuring that the project aligns to the priorities of both the participating institution and the country. However, it is not always the case of the STI community knowing what the national STI priorities are.

> *"The one thing that I want to add is … that a lot of our researchers have limited knowledge …what the priorities of government are. Unless if they have like a research office at their institutions that is able to advise on that. … you find that where there are research offices there is more consultation that happens in terms of how to align whatever activities they put into the project, with the national priorities or institutional priorities."*

To this could be added that it is not impossible for researchers to sometimes get lost in the national priorities as these tend to be differently articulated in different policy documents. The National Research and Development (R&D) Strategy of 2002, for instance, makes reference to three 'pillars': (1) the innovation pillar with a number of associated technological missions (biotechnology, information technology, technology for manufacturing; technology for poverty reduction; and technology to leverage knowledge and technology from, and add value to, the country's natural resources sectors); (2) the human resources pillar, with its focus on increasing the number of women scientists and people from previously disadvantaged communities, together with the establishment of African S&T linkages and the achievement of excellence in global terms, among others, and (3) the creation of an effective S&T government system as a third pillar. On the other hand, the DST Ten-year Innovation Plan for 2008 - 2018 underscores five grand challenges: (1) the "farmer to pharma" value chain to strengthen the bio-economy; (2) space science and technology; (3) energy security; (4) global change science with a focus on climate change; and (5) human and social dynamics. For the 'ordinary' researcher the links between these different articulations of priority areas (although very much related) are not always that obvious. The more 'generic' National R&D Strategy seems to be the one that was mostly considered by the survey respondents in their FP7 projects (eight out of nine respondents; Table 7), followed by the bio-economy and ICT strategies (three respondents each).

Table 7: Consideration of whether the FP7 project took account of the initiatives/ recommendations of South African research, technology and innovation strategies, as rated by South African participants in FP7 projects (N=9)

Strategies	The FP7 project considered the initiatives/ recommendations	Strategy has no bearing on my FP7 project	Don't know
National R&D Strategy	7	1	1
Bio-economy Strategy	3	6	0
ICT RDI Strategy	3	6	0
National Biotechnology Strategy	2	7	0
National Space Strategy	2	7	0
National Nanotechnology Strategy	1	8	0
Palaeosciences Strategy	1	8	0
Advanced Manufacturing Technology Strategy	1	7	1
Youth into Science Strategy	1	7	1

The alignment between the DST national priorities and the FP7 projects can also be explored through a visual map of the subject categories of the 122 FP7 projects, as derived from the CORDIS database. CORDIS assigns a project to any of 46 categories, with some projects having more than one classification. A density map of the frequency and co-occurrence of the subject categories was produced in VOSViewer, and the result is displayed as Figure 2. The map reveals strong foci on projects that involve either coordination or scientific research, and also medicine and health. Projects with a focus on health also seem to be connected to veterinary and animal sciences and agricultural biotechnology. The latter concentration, apart from supporting the grand challenge of "farmer to pharma", also speaks to a number of technological missions that fall under the innovation pillar in the National R&D Strategy, most notably biotechnology and technology for poverty reduction. It also needs to be emphasised that space science, energy security and ICT are all present in the density map, although these seem to form isolated strands.

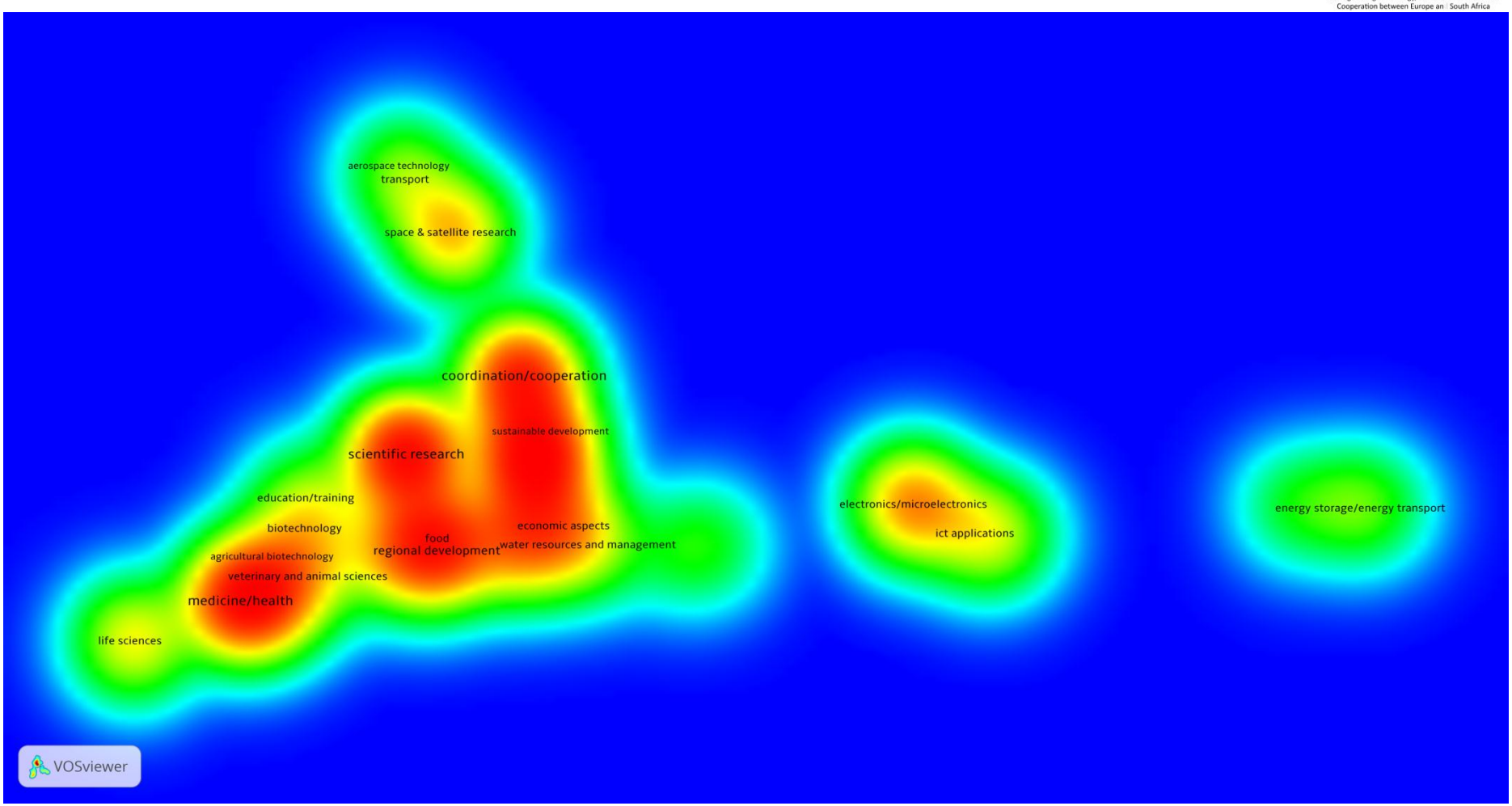


Figure 2: Density map of the subject classification of South African FP7 projects in the CORDIS database, as visualised in VOSViewer

3.3 Participation of South Africa (and the rest of Africa) in FP7: Reasons and roles

South Africa's participation in FP7, and more specifically in the technical projects, can be seen as a result of a number of factors. First and foremost is South *Africa's expertise in a particular area of interest,* as illustrated by the following extracts taken from four project summaries in the CORDIS database.

> *"FUTURE brings together European and international well-reputed centres of excellence in order to reach major scientific & technical objectives in striving towards flutter-free turbomachine blades. By advancing the state-of-the-art in flutter prediction capabilities and design rules, the FUTURE project will lead to benefits in terms of decreased development cost, reduced weight and fuel consumption, and increased ability to efficiently manage flutter problems occurring on engines at service."*
> (FUTURE; http://cordis.europa.eu/project/rcn/89404_en.html)

> *"To achieve these targets, the DEWFORA consortium brings together leading research institutes and universities; institutes that excel in application of state-of-the-art science in the operational domain; operational agencies responsible for meteorological forecasting, drought monitoring and famine warning; and established knowledge networks in Africa."*
> (DEWFORA; http://cordis.europa.eu/project/rcn/97835_en.html)

> *"Pooling complementary expertise and resources of six partners gives a project whose whole is greater than the sum of its parts."*
> (EU-UNAWE; http://cordis.europa.eu/project/rcn/97906_en.html)

> *"ALFA-BIRD gathers a multi-disciplinary consortium with key industrial partners from aeronautics (engine manufacturers, aircraft manufacturers) and fuel industry, and research organisation covering a large spectrum of expertise in the fields of aeronautics, biochemistry, combustion as well as industrial safety. Bringing together their knowledge, the consortium will develop the whole chain for clean alternative fuels for aviation."*
> (ALFA-BIRD; http://cordis.europa.eu/project/rcn/88864_en.html)

The inverse also applies, where South Africa's participation in an FP7 project is facilitated not only by the country's existing STI expertise but also by a desire of South Africans to access international expertise. Of the nine South African participants who completed the web survey, eight listed this as a reason for them joining the FP7 project (Table 8).

Table 8: Reasons given by South African participants as to why they joined the FP7 project (N=9)

Reasons	Count
Access to expertise (one or more collaborators had a special competence or skill)	8
Obtain prestige or visibility (one or more collaborators were well known in the field)	5
Pool knowledge for tackling large and complex problems	5
Improve access to funds (one or more collaborators had the funds or right profile/ connections to attract funds)	4
Being good friends with one or more of the collaborators	3
Having worked together before with one or more of the collaborators	3
Enhance productivity (publish more papers)	2
Access to equipment, data or resources (one or more collaborators had special data or equipment)	1
Positive experience with previous participation in an EU framework programme	1

Second, *established collaborations* often create a situation where a collaborating party is drawn into the collaborative activities of any of the parties in that network. This also applies to some of the South African participants in FP7, for instance in the EBONE project:

> *"The present consortium has a major advantage in that the framework is based on existing institutional collaboration which has been developed in the EU project ALTERNET. This framework will ensure continuity of recording and shows existing commitments of the institutes concerned to long term monitoring. It will also provide the necessary structure for integration of available data."*
> (EBONE; http://cordis.europa.eu/project/rcn/88098_en.html)

Future analyses should investigate the extent to which established collaborations facilitate South Africa's participation in EU-funded projects. Four of the nine survey respondents mentioned well-established relationships as a reason for their participation in FP7 (Table 9).

Table 9: Responses provided by the South African participants as to how they became part of the FP7 project (N=9)

Responses	Count
I already had a well-established work/personal relationship with one of the project collaborators	4
The collaboration was initiated/facilitated by a third party because I did not really know any of the project collaborators	3
One of the collaborators approached/invited me to join the project team although we did not really know each other	2
There was a partnership agreement between my own institution and that of one of the other project collaborators	1
The collaboration came about as a result of time that I spent at one of the participating institutions, or *vice versa*	1

Multiple selections were possible.

A third theme emerging from the project summaries in CORDIS is that of *Africa being included to strengthen the global character of a FP7 project*. This could take on different forms, such as the creation of outputs and tools that incorporate insights from different (and often contrasting) parts of the world, or the validation of a project's insights and findings in diverse settings as a way of demonstrating global relevance. The following extracts illustrate what is meant:

> *"The tools and concepts resulting from INCOFISH research will be tested in real-world scenarios in selected coastal systems worldwide. They will together form a package with the potential to impact on solving societal problems in the coastal zone in Europe and in developing countries."*
> (INCOFISH; http://cordis.europa.eu/project/rcn/79797_en.html)

> *"Our programme focuses on nine cities with contrasting economic and political conditions, with the main scientific objective of developing a model on participatory spatial knowledge management to direct urban governance to SD [sustainable development]."*
> (CHANCE2SUSTAIN; http://cordis.europa.eu/project/rcn/94549_en.html)

> *"Each of the African partner countries represent distinct challenges in terms of equitable access to health care in contexts where a large proportion of the population has been displaced (Sudan); where the population is highly dispersed (Namibia); where chronic poverty and high disease burden compete for meagre resources (Malawi); and where, despite relative wealth, universal and equitable access to health care is yet to be attained (South Africa)."*
> (EQUITABLE; http://cordis.europa.eu/project/rcn/90104_en.html)

> *"A pilot plant incorporating these photocatalytic membranes will be designed, and field tested in the Middle East and in Africa."*
> (NATIOMEM; http://cordis.europa.eu/project/rcn/96170_en.html)

"This group is enlarged by the inclusion of a number of institutes from outside the EU (Israel, Canada, South Africa and China) that will bring in further expertise on specific security issues in addition to important regional perceptions, necessary to avoiding a narrow Euro-centric approach and enabling a more comprehensive understanding of the role of the EU on the global stage."
(GRASP; http://cordis.europa.eu/project/rcn/90152_en.html)

Although the last quote makes reference to moving away from a "narrow Eurocentric approach", more in-depth studies of selected projects are required to determine to what extent that is indeed the case. That being said, a Eurocentric approach at the core of a FP7 project is not necessarily undesirable as it could generate spin-off for South Africa and the rest of the continent. The following two extracts bring this message across:

"AFTER aims to revisit traditional African products, knowledge and know-how in the light of new technologies for the benefit of consumers, producers and processors in Africa and Europe. By applying European science and technology to African traditional food products, AFTER seeks to turn research into quantifiable and innovative technologies and products that are commercially viable in both European and African markets. The 10 selected products representing three families of foods, (fermented cereal-based, fermented salted fish and meat, and vegetable and fruit-based functional foods), fit into a matrix of technologies and processes shared between Europe and Africa that will be jointly developed within the framework of AFTER."
(AFTER; http://cordis.europa.eu/project/rcn/95715_en.html)

"The project will establish the technological building blocks needed for the evolution of today's diverse G2P databases into a future seamless G2P biomedical knowledge environment. The project will then utilise these elements to construct an operational first version of that knowledge environment, by the projects end. This will consist of a European-centred but globally-networked hierarchy of bioinformatics GRID-linked databases, tools and standards, all tied into the Ensembl genome browser."
(GEN2PHEN; http://cordis.europa.eu/project/rcn/87832_en.html)

Africa as a region in need of intervention is probably the most salient theme in the CORDIS project summaries, and provides a fourth reason for South Africa's (and the rest of the continent's) participation in FP7.

"The social and economic impact of natural disasters in emerging economies and developing countries is growing. Many African countries have fragile economies unable to absorb the shocks caused by natural disasters enhanced by the increasing vulnerability of rapidly expanding urban areas. Climate change is likely to rapidly exacerbate this situation. The overall objective of CLUVA is to develop methods and knowledge to be applied to African cities to manage climate risks, to reduce vulnerabilities and to improve coping capacity and resilience towards climate changes."
(CLUVA; http://cordis.europa.eu/project/rcn/96934_en.html)

"Malnutrition, and especially deficiencies of micronutrients like iron, zinc and vitamin A, undermine the progress towards most of the Millennium Development Goals. In view of the serious coverage, compliance and safety concerns of supplementation, this project aims to identify novel staple food-based approaches to improve micronutrient malnutrition for better health and development of women and children in sub-Saharan Africa. It will focus on the improvement of millet, sorghum, maize, and cassava-based (complementary) foods."
(INSTAPA; http://cordis.europa.eu/project/rcn/87952_en.html)

"There is widespread agreement that ICT services have the potential to play a major role in furthering social development in developing economies such as those in Africa. However, while there is a great deal of potential and opportunity, the amount and scope of actual mobile ICT services currently in existence in African countries is very limited. The Mobile Web for Social Development Roadmap, recently published as a result of the FP7 Digital World Forum project, makes it clear that realising the potential of mobile ICT services requires addressing two major types of challenges: 1 The leveraging of content that is locally relevant; and 2 The removal of a range of access barriers, notably limitations related to access channels, literacy, and languages. VOICES intends to take a major step forward in realising the potential of mobile ICT services particularly in the African context and resolve key challenges outlined in the Mobile Web for Social Development Roadmap."
(VOICES; http://cordis.europa.eu/project/rcn/99185_en.html)

"Most of African countries are struggling towards development and improving their living conditions… The situation in many countries is that the obvious lack of a functional waste management system brings perennial garbage problems such as inefficient garbage collection, poor public compliance to waste segregation, uncontrolled open burning, and tolerated presence of open dumpsites. Furthermore valuable resources are lost due to inefficient or non-existing recycling systems. The establishment of an efficient waste management and recycling system contributes to enhancing the resource efficiency of these countries and thus supports a sustainable development in the long term."
(IWWA; http://cordis.europa.eu/project/rcn/94661_en.html)

"Malnutrition rates remain high, particularly in sub-Saharan Africa where only nine out of 46 countries are on track to achieve the first Millennium Development Goal target of a 50% reduction in underweight prevalence among children under five years. Despite the huge cost of malnutrition, investment in the nutrition sector has been insufficient. There has been a renewed interest in nutrition recently, however, and it is a potentially opportune moment for investing in nutrition research. The SUNRAY (Sustainable Nutrition Research for Africa in the Years to come) project will produce a new, sustainable nutrition research agenda for sub-Saharan Africa based on five concepts."
(SUNRAY; http://cordis.europa.eu/project/rcn/97296_en.html)

Fifth, it could be argued that the *geographic location of Africa* necessitated the inclusion of scientific experts from the region in FP7. Examples are studies of the marine biodiversity of the Atlantic and Southern Ocean, and studies into the sensitivity of the Agulhas Current.

> *"GreenSeas shall advance the quantitative knowledge of how planktonic marine ecosystems, including phytoplankton, bacterioplankton and zooplankton, will respond to environmental and climate changes… The focus will be on capturing the latitudinal gradients, biogeographical distributions and provinces in the planktonic ecosystem from the Arctic, through the Atlantic and into the Southern Ocean."*
> (GREENSEAS; http://cordis.europa.eu/project/rcn/97177_en.html)

> *"GATEWAYS will test the sensitivity of the Agulhas Current to changing climates of the past; the Current's influence on southern Africa climates; buoyancy transfer to the Atlantic by 'Agulhas leakage' around southern Africa; and modulation of the Atlantic circulation by the leakage."*
> (GATEWAYS; http://cordis.europa.eu/project/rcn/92711_en.html)

Whatever the reason for South Africa's (and the rest of Africa's) participation in FP7, complementary roles of participants need to be defined in order for a project to achieve its objectives. An example of such role division, with the complementarity also outlined, is the following:

> *"The project includes 11 participants, of which four are industrial SMEPs, which will produce, develop and distribute the DeammRecirc system post project, one is a large enterprise end user, one participant is from South Africa who plans to transfer the technological development to the aquaculture industry to their continent and four are RTD participants, which will be responsible for the RTD work."*
> (DEAMMRECIRC; http://cordis.europa.eu/project/rcn/97519_en.html)

It is unfortunate that issues such as role complementarity and alignment of work packages in FP7 could not be explored in more detail in the current study but none of the nine South African participants in the web survey felt that the different project activities were poorly aligned – in fact, six said that it was very well aligned (Table 10).

Table 10: Perception of the South African participants in FP7 projects as to how well the different activities and work packages of the project were aligned

Ratings	Count
Very well aligned	6
Some alignment but not optimal	3
Total	9

Table 11 lists a variety of roles that the South African participants could assume in the FP7 projects, ranging from providing conceptual inputs, to fieldwork and administration and logistics, and postgraduate supervision. The four major roles, based on the limited survey response, involve *conceptual contributions to the overall project* (eight out of nine respondents) and *the frameworks and models of the project* (seven respondents), as

well as *data analysis* and *the interpretation of the results* (six respondents each).

Table 11: Role of South African participants in FP7 projects (N=9)

Roles	Count
We participated in the conceptualisation of the overall project	8
We contributed to the conceptual framework/model/theoretical argument	7
We participated in the data analysis	7
We contributed to the interpretation of the results	7
We provided the 'research setting' (e.g. access to organisations, subjects, diseases, samples, specimen, natural phenomena, artifacts)	6
We provided relevant scientific/research resources (e.g. facilities, equipment, instruments)	6
We contributed to the research/experimental design	6
We communicated the findings to decision-makers with the view of influencing policy	6
We participated in the literature review/synthesis of existing studies	5
We participated in the fieldwork/data collection/measurements	5
We wrote journal articles or parts of journal articles	4
We participated in the overall project management and administration	2
We helped to bring together ('linking up') the different project collaborators	2
We participated in securing funding for the project	1
We supervised students/postdocs on the project	1
Our students/postdocs participated in the project	1

3.4 The project website as a mode of communicating the project results and insights

It is a requirement of the European Commission that each project should have a dedicated project website. It therefore comes as no surprise that all nine South African participants in the web survey regarded the project website as the main mode for communicating the project results and insights, apart from relying on workshops and conferences (Table 12).

Table 12: Modes of communicating the results/insights/contributions of the project, as reported by the South African participants in FP7 projects (N=9)

Modes	Count
Through a dedicated project website	9
Training through workshops	7
Conference presentations to predominantly academic audiences	6
Articles in peer-reviewed academic journals	5
Conference presentations to predominantly non-academic audiences	5
Contract reports	5
Informal meetings with potential users	5

Published conference proceedings	5
Consultations/assistance to potential users	4
Presentations to expert committees/panels	4
Articles in popular or trade journals/magazines	2
Technical manuals	2
Through participation in consortia (other than the FP7 consortium)	2
Books/monographs	1
Chapters in books	1
Personnel exchanges/secondments	1
Presentations at fairs/festivals/ public exhibitions/road shows	1
Through technology transfer offices	1
Through the mass media (radio, television, media briefing, press release)	1
Written input to official policy documents	1
Through licensing	0
Through patenting	0
Through science parks	0
Through spin-off companies	0
Through technology incubators	0

The value of the project website as a communication tool should never be underestimated, as voiced by DST:

> *"It is a requirement by the Commission that there must be a website for each project… Whether it is a DST project or researcher project, it can actually be a powerful tool to sell ourselves, what the project is doing, to disseminate the information that we as DST are trying to do on their behalf"*
> *(DST Official 1).*

The irony, however, is that the project website – in many cases – only exists for the duration of a project. A number of factors account for this state of affairs. These include project coordinators that "move on" once a project is completed, thereby also leaving behind the project website and its contents or, more importantly, the lack of funding for the project participants to carry on with the website after closure of a project. Measures therefore need to be put in place to ensure the continuation of the project website beyond the duration of the project, especially for purposes of further dissemination of the project outputs.

4 Benefit and Potential Impact of South Africa's Participation in FP7

The DST officials who are responsible for managing and implementing the FP7 projects at the national policy level (coordination and support actions), highlighted the benefit of participating in FP7 for their professional career. Through FP7, skills were acquired that spilled over into other areas of the officials' work activity at the DST. These include enhanced knowledge on different policy perspectives, and an in-depth understanding of administration and funding mechanisms.

> *"When you work with this project there are really good skills that you acquire as you implement the project. So it is a very strong element of capacity building, from policy to technical. … that's what FP7 does for you also … What I meant was the positive thing of it is … you can use FP7 to not only do FP7 but to pursue others, for diplomacy, for other policy things. It's not only about FP7 actually, it's got multiple purposes: capacity, infrastructure, resources, general increasing of strengthening the relations. It's a multi-purpose kind of thing. It's not only about FP7 projects to me."*

Participation in SA-EU projects at the DST also provided opportunities for institutional learning, resulting each time in a better programme offering with the potential to even better serve the South African STI community and address the national STI priorities. Two examples from ESASTAP Plus bring this point across:

> *"You'll see that for ESASTAP, which is the umbrella project for us for our collaboration in the EU, there are member states involved. Maybe just to give a background…, in the first two phases of ESASTAP the one that was funded in FP6, and what we called ESASTAP2, before the Plus, the first two versions were only South Africa. But we learned from those versions that you … cannot pursue South Africa-EU relations if you are only South Africa in the project, which is why in the ESASTAP Plus, we have also European partners.*

> *Now what we're doing is from the lesson learnt, from DST and the European Commission during our policy dialogue, we've said there are so many good projects in South Africa but they are finished. So we are now starting to identify, which is also going to be part of the ESASTAP2020, we're going to identify this good project that first has an advantage, it can go for commercialisation so that we move them and not stop them. We are going to look for projects that could have policy… maybe done something, made recommendations for policy implementation in South Africa."*

The learning experiences at the DST as far as the EU-FPs are concerned, are embedded in a small group of individuals who sit in the Strategic Partnership Directorate. It is this group for which the scientific community has high praise, as is implied by the next quotation:

"So they really like the efficiency, the effectiveness of DST through ESASTAP, in what we do and hence they rely on us to help them in everything that they hear about probably in the EU fraternity."

Apart from the benefit of participating in FP7 for the DST officials directly involved in the programme's implementation, and the value of their improved learning and performance for the STI community, a further consequence of participation in FP7 is the country's integration in international networks. Such integration has important implications for global excellence in STI (although a citation analysis of South African authored publications under FP7 would need to be conducted to provide evidence in that regard). For the purpose of this report a network map of collaborations was performed, in VOSViewer, using as input the list of participating countries in the 122 South African-EU projects. Figure 3 shows that South Africa is closely linked with the UK and France, its main collaborating partners in FP7, but through them and a number of other collaborators, also with countries in Asia (e.g. Vietnam) and East Europe (e.g. Romania). The message to be taken from Figure 3 is that South Africa, in FP7, is part of a dense network of collaborating countries.

Figure 4 presents the result of Figure 3 differently, as it converts the network map to a density map. The strongest concentration of countries appears in red. The advantage of the density map is that South Africa's links with countries such as Germany, Spain, Switzerland, Portugal and Belgium are now also visible, as these have been masked in Figure 3. The mentioned countries are either part of the core collaborating group (in red) or border that group.

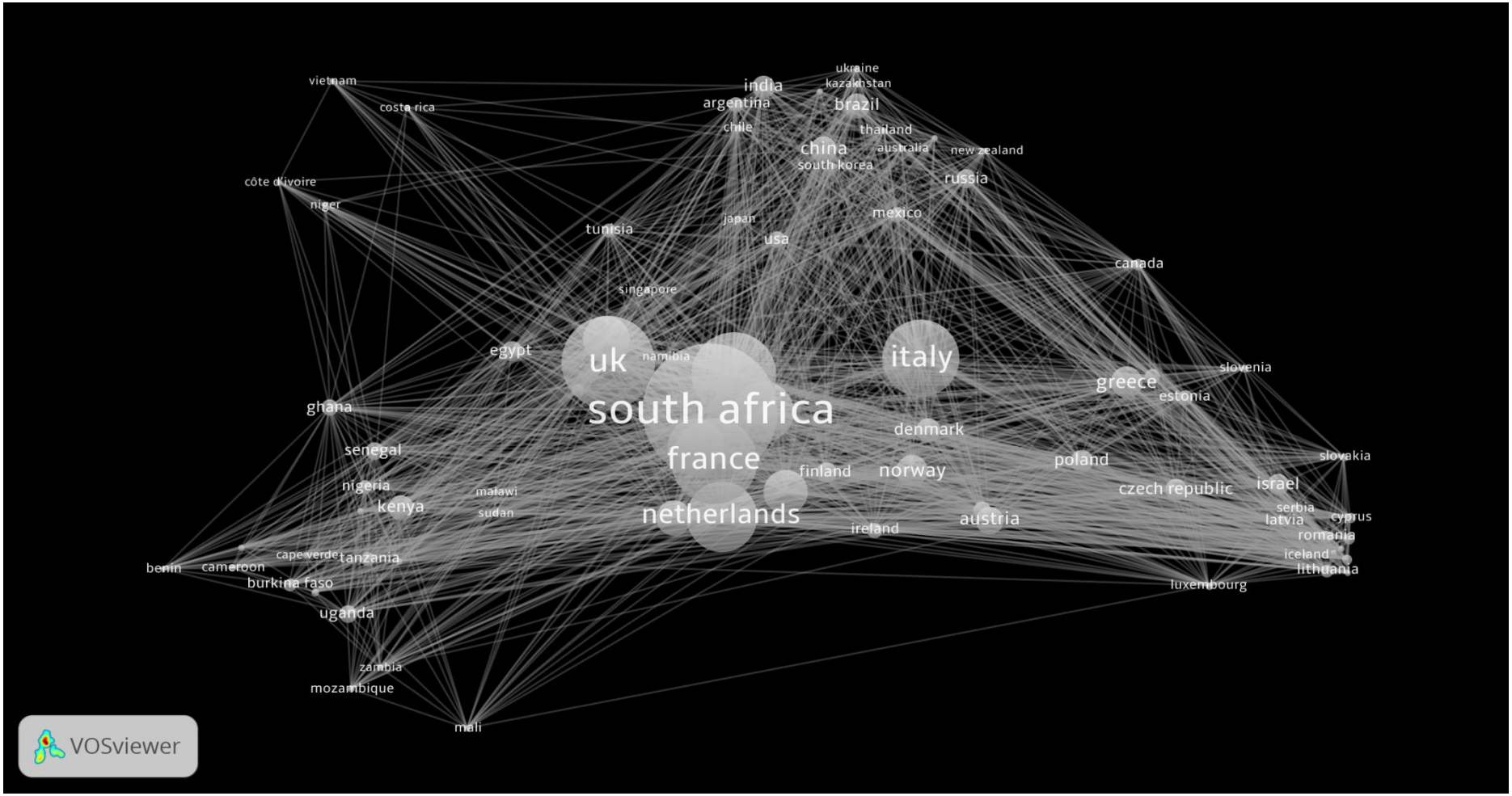


Figure 3: Map of the network of countries participating in South African FP7 projects, as visualised in VOSViewer

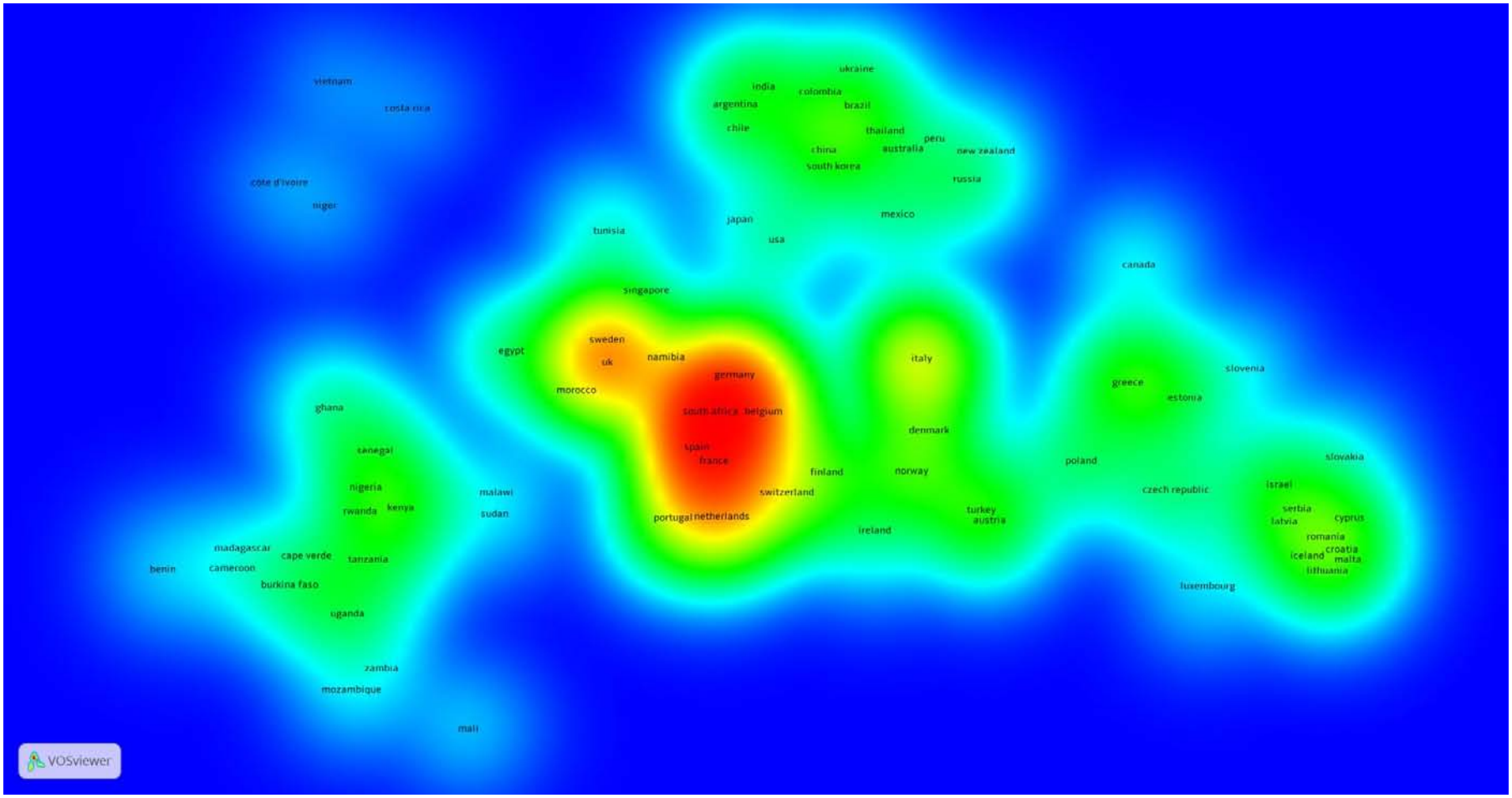


Figure 4: Density map of the network of countries participating in South African FP7 projects, as visualised in VOSViewer

Figure 5 furthermore shows that South Africa has strengthened its collaboration with other African countries as well as with the four BRICS countries through its participation in the FP7. For instance, respectively 15% and 11% of the 122 South African FP7 projects involved collaboration with Kenya and Egypt. The corresponding figures for China and Brazil, two of South Africa's BRICS partners, are 16% and 15%. That being said, South Africa's main collaborating partners in the FP7 are European countries, specifically the UK (65%), France (59%) and Germany (58%).

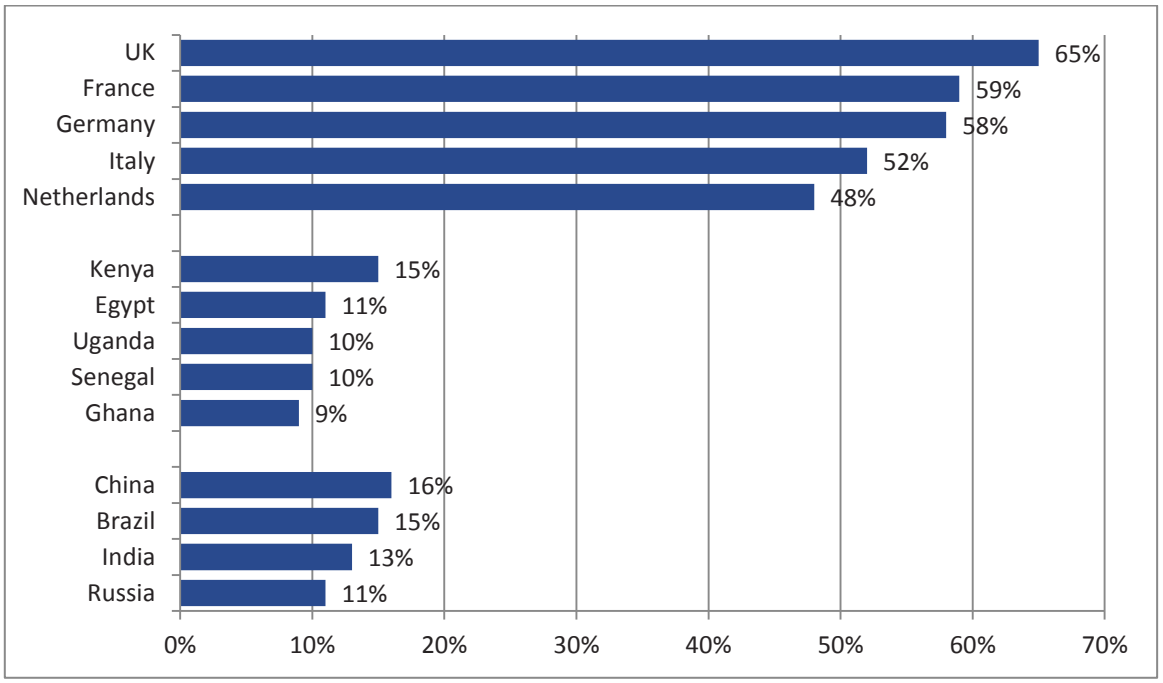


Figure 5: Collaboration of EU countries (top 5), African countries (top 5) and four BRICS countries in South Africa's FP7 projects (N=122)

Tables 13 to 15 compare the South African participants in FP7 and the international coordinators with regard to their view as to what constitutes a project outcome, and the extent to which an outcome was achieved. These comparative tables are useful for gaining insights into the impacts of the FP7.

Below is a list of outcomes that at least five of the nine respondents in each of the two surveys regarded as being successfully accomplished. Although there are nine respondents in each survey the responses pertain to two different sets of projects. The five items in italic are the ones that the two sets of projects have in common.

Survey of South African participants in FP7 projects

- *Facilitate international networks/partnerships/ collaboration (9)*
- *Develop the skills and competencies of specific people/ groups/organisations in South Africa (7)*
- *Generate new knowledge through research (6)*
- Develop repositories/ platforms/portals for international information dissemination or sharing (6)
- Coordinate international programmes and activities (6)
- *Develop new or improved technologies (e.g. a diagnostic tool, GIS system, forecasting system) (5)*

- Produce a proof of concept (5)
- *Develop the skills and competencies of specific people/groups/organisations in the EU (5)*

Survey of international coordinators of FP7 projects

- Facilitate international networks/ partnerships/collaboration (8)
- Generate new knowledge through research (8)
- Train EU students or postdocs (7)
- Train South African students or postdocs (6)
- Develop the skills and competencies of specific people/groups/organisations in South Africa (6)
- Develop new or improved technologies (e.g. a diagnostic tool, GIS system, forecasting system) (5)
- Solve/address socio-economic or health challenges in other parts of the world (5)
- Develop the skills and competencies of specific people/groups/organisations in the EU (5)
- Develop the skills and competencies of specific people/groups/organisations in other parts of the world (5)

Table 13: Expected values/ objectives of FP7 project and extent to which these were successfully achieved, as rated by the South African participants in FP7 projects and the international coordinators of FP7 projects respectively

Expected values/objectives	South African participants in FP7 projects				International coordinators of FP7 projects			
	An expected value/outcome of the FP7 project that was successfully achieved	An expected value/outcome of the FP7 project that was not successfully achieved	An expected value/outcome of the FP7 project but I don't know whether it was successfully achieved	Not an expected value/outcome of the FP7 project	An expected value/outcome of the FP7 project that was successfully achieved	An expected value/outcome of the FP7 project that was not successfully achieved	An expected value/outcome of the FP7 project but I don't know whether it was successfully achieved	Not an expected value/outcome of the FP7 project
Generate new knowledge through research	6	0	0	3	8	0	0	1
Develop new or improved technologies (e.g. a diagnostic tool, GIS system, forecasting system)	5	1	1	2	5	0	0	3
Produce a proof of concept	5	0	0	3	4	0	0	4
Develop repositories/platforms/ portals for international information dissemination or sharing	6	0	1	1	4	0	0	4
Facilitate international networks/ partnerships/collaboration	9	0	0	0	8	0	0	1
Coordinate international programmes and activities	6	0	2	1	4	0	1	3
File one or more patent applications	0	0	2	6	1	0	0	7
Provide appropriate research infrastructure for the EU	2	0	1	6	2	0	0	6

Provide appropriate research infrastructure for South Africa	4	0	1	4	2	0	0	6
Provide appropriate research infrastructure for other parts of the world	3	0	0	6	3	1	0	4

Table 14: Expected values/objectives of FP7 project and extent to which these were successfully achieved, as rated by the South African participants in FP7 projects and the international coordinators of FP7 projects respectively

Expected values/objectives	South African participants in FP7 projects				International coordinators of FP7 projects			
	An expected value/outcome of the FP7 project that was successfully achieved	An expected value/outcome of the FP7 project that was not successfully achieved	An expected value/outcome of the FP7 project but I don't know whether it was successfully achieved	Not an expected value/outcome of the FP7 project	An expected value/outcome of the FP7 project that was successfully achieved	An expected value/outcome of the FP7 project that was not successfully achieved	An expected value/outcome of the FP7 project but I don't know whether it was successfully achieved	Not an expected value/outcome of the FP7 project
Solve/address environmental challenges in the EU	3	0	0	6	1	1	0	6
Solve/address environmental challenges in South Africa	4	0	0	4	1	1	1	5
Solve/address environmental challenges in other parts of the world	2	0	0	6	2	0	0	6
Solve/address socio-economic or health challenges in the EU	2	0	1	5	3	0	0	5
Solve/address socio-economic or health challenges in South Africa	2	0	0	6	4	0	1	3
Solve/address socio-economic or health challenges in other parts of the world	2	0	0	6	5	0	0	3
Solve/address technical challenges in the EU	3	0	0	4	4	0	1	4
Solve/address technical challenges in South Africa	4	1	0	4	4	0	1	4

Solve/address technical challenges in other parts of the world	2	1	0	6	2	0	2	3
Train EU students or postdocs	3	0	0	6	7	0	0	1
Train South African students or postdocs	2	0	0	7	6	0	0	2
Train students or postdocs from other parts of the world	2	0	0	6	4	0	0	2

Table 15: Expected values/objectives of FP7 project and extent to which these were successfully achieved, as rated by the South African participants in FP7 projects and the international coordinators of FP7 projects respectively

Expected values/objectives	South African participants in FP7 projects				International coordinators of FP7 projects			
	An expected value/outcome of the FP7 project that was successfully achieved	An expected value/outcome of the FP7 project that was not successfully achieved	An expected value/outcome of the FP7 project but I don't know whether it was successfully achieved	Not an expected value/outcome of the FP7 project	An expected value/ outcome of the FP7 project that was successfully achieved	An expected value/outcome of the FP7 project that was not successfully achieved	An expected value outcome of the FP7 project but I don't know whether it was successfully achieved	Not an expected value/outcome of the FP7 project
Develop the skills and competencies of specific people/groups/organisations in the EU	5	0	0	3	5	0	0	2
Develop the skills and competencies of specific people/groups/organisations in South Africa	7	0	0	2	6	0	1	0
Develop the skills and competencies of specific people/groups/organisations in other parts of the world	2	0	0	6	5	0	0	2
Change the behaviour/attitude/values of specific people/groups in the EU	0	0	2	6	3	0	2	2
Change the behaviour/attitude/ values of specific people/groups in South Africa	2	0	0	6	2	1	2	2
Change the behaviour/attitude/values of specific people/groups in other parts of the world	1	0	0	7	2	0	2	3
Influence policy/decision-making in the EU	2	0	2	4	1	0	4	2
Influence policy/decision-making in	3	0	3	2	1	0	3	3

South Africa								
Influence policy/decision-making in other parts of the world	2	0	1	5	1	0	3	3
Influence practice in the EU	2	0	2	4	2	0	2	2
Influence practice in South Africa	4	0	2	3	3	0	1	2
Influence practice in other parts of the world	2	0	0	6	3	0	0	4
Enter new EU markets	1	0	0	7	2	0	1	4
Enter new South African markets	2	0	0	6	1	0	2	4
Enter new markets in other parts of the world	1	0	0	7	1	0	1	5

Last, seven of the international coordinators answered the question as to the value that the South African participants added to the project. The responses appear in Table 16.

Table 16: Value that the South African participants added to the FP7 project, as reported by the international coordinators of FP7 projects

Responses
Access to advice from highly ranked public health and pharmacy colleagues
Added dimensions not already available in the project; increased the geographical range
Expertise in blue tongue virus (BTV) and access to facilities for undertaking challenge studies
High quality research, technical management (work package leader), experience working with a range of companies
Participation in remote sensing, formulate essential diodiversity variables
Provided a role model to follow
Scientific excellence, enthusiasm

5 Conclusions and Recommendations for Horizon 2020

Before drawing conclusions with recommendations for Horizon2020, a brief overview will first be given of the initial response to Horizon2020. Three of the nine respondents in the web survey of South African FP7 participants stated that they would not consider participating in Horizon2020 (Table 17). The reasons were that they had since changed their work (two respondents) and the lack of alignment with the commercial objectives of the company where the third respondent is employed.

Table 17: Views of South African participants in FP7 projects on whether they would consider submitting a proposal under Horizon2020

Response	Count
Yes, I am busy doing so/already did so	2
Yes, I am thinking of doing so	2
No	3
Don't know	2
Total	9

As of March 2015, contracts have been signed for 20 Horizon2020 projects, which involve 31 South African participations (Table 18). The larger share of projects (nine) is classified in the "Excellent Science Department" category of the European Commission, of which eight projects are Marie Sklodowska-Curie Research and Innovation Staff Exchanges.

Table 18: Horizon2020 projects involving South African participation, by EC classification of projects

EC project classification		Number of SA projects	Number of SA participants
EC hierarchy	**EC topic**		
Climate action and resource efficiency – Eco-innovation	Global waste dimension (WASTE-4b-2014)	1	4
	Stepping up EU research and innovation cooperation in the water area (WATER-3-2014)	1	1
Climate action and resource efficiency – Strategy	Consolidating global knowledge on the green economy in support of sustainable development objectives in Europe and internationally (SC5-14-2014)	1	1
Excellent science department – Marie Sklodowska-Curie COFUND, Researchers' Night and Individual Fellowships Global	Marie Skłodowska-Curie Individual Fellowships (IF-GF) (MSCA-IF-2014-GF)	1	1
Excellent science department – Marie Sklodowska-Curie Research and Innovation Staff Exchanges	Marie Skłodowska-Curie Research and Innovation Staff Exchange (RISE) (MSCA-RISE-2014)	8	12
H2020 environment & resources	Developing in-situ Atlantic Ocean Observations for a better management and sustainable exploitation of the maritime resources (BG-08-2014)	1	1
	Mining of small and complex deposits and alternative mining (SC5-11a-2014)	1	2
	Strategic international dialogues and cooperation on raw materials with technologically advanced countries (SC5-13b-2014)	1	2
Health – fighting infectious diseases and global epidemics	Vaccine development for poverty-related and neglected infectious diseases: tuberculosis (PHC-	1	3

	08-2014)		
Health – medical research and the challenge of ageing	Global Alliance for Chronic Diseases: prevention and treatment of type 2 diabetes (HCO-05-2014)	1	1
Industrial leadership and societal challenges department – Space research	Outreach through education (COMPET-10-2014)	1	1
Industrial leadership and societal challenges department – Sustainable resources for food security and growth	Native and alien pests in agriculture and forestry (SFS-03a-2014)	1	1
International Cooperation – European neighbourhood, Africa and the Gulf	Encouraging the research and innovation cooperation between the Union and selected regional partners – proposals targeting Black Sea, Middle East, Africa (INT-02-2014)	1	1
	Total	**20**	**31**

Note: Contracts signed between November 2014 and March 2015

The 31 participating institutions cover different sectors of South African society (government, university, private and non-profit). The CSIR and Stellenbosch University currently lead in terms of the share of projects (four projects each), followed by MINTEK with three projects (Table 19).

Table 19: South African participants in Horizon2020 projects

Organisation	Count	Sector
Council for Scientific and Industrial Research	4	Government agency/state-owned entity
Stellenbosch University	4	University
MINTEK	3	Government agency/state-owned entity
University of Cape Town	2	University
University of Pretoria	2	University
Department of Science and Technology	1	Government department
Armaments Corporation of South Africa	1	Government agency/state-owned entity
National Research Foundation	1	Government agency/state-owned entity
Pikitup Johannesburg (Pty) Ltd	1	Government agency/state-owned entity
Water Research Commission	1	Government agency/state-owned entity
Agri Protein Technologies (Pty) Ltd	1	Industry
Esteq Engineering (Pty) Ltd	1	Industry
Divers Alert Network Southern Africa	1	Non-profit/charity/trust/ society
E-Waste Association of South Africa	1	Non-profit/charity/trust/ society
The Geological Society of South Africa	1	Non-profit/charity/trust/ society
The South African SAN Institute Trust	1	Non-profit/charity/trust/ society
KwaZulu-Natal Research Institute for TB-HIV (K-RITH) NPC	1	Private research institute
Cape Peninsula University of Technology	1	University
North West University	1	University
University of KwaZulu-Natal	1	University
University of the Western Cape	1	University
Total	**31**	

Note: Contracts signed between November 2014 and March 2015

The total investment by the EC for South African institutions in Horizon2020 amounts to 4.6 million Euros, with an average of 153 thousand Euros per participant. The amounts, however, vary per category of funding, as shown in Table 20.

Table 20: Descriptive statistics for EC contribution to Horizon2020 projects involving South African participation, by EC classification of projects

Project EC hierarchy	SA participants	EC contribution (in Euros)				
		Total amount	Mean amount per SA participant	Smallest amount requested by a SA participant	Largest amount requested by a SA participant	Standard deviation
Climate action and resource efficiency	6	523316.00	87219.33	27500.00	180500.00	59607.35
Excellent science department	12	1339973.00	111664.42	13500.00	445500.00	117201.53
H2020 environment & resources	4	327913.75	81978.44	8750.00	184250.00	75839.38
Health	4	1636689.20	409172.30	167227.20	829562.00	290811.38
Industrial leadership and societal challenges department	2	116250.00	58125.00	53750.00	62500.00	6187.18
International cooperation	1	672052.50	336026.25	224017.50	448035.00	158404.29
Total	**29**	**4616194.45**	**153873.15**	**8750.00**	**829562.00**	**174106.43**

The respondents in the two web surveys highlighted a number of challenges with regard to the South African experience in FP7 (Tables 21 to 23). These challenges also apply to Horizon2020. Particularly relevant are knowledge of and compliance with the financial and administrative requirements of EU-funded projects; project management issues; and the geographic distance between South Africa and Europe. In addition, one of the mentioned needs ("a funding strategy that allows the outcome of EU projects to be followed up") will be addressed under ESASTAP2020.

Table 21: Single most important challenge experienced by the South African participants in FP7 projects

Challenges
1. Geographic remoteness compared to other participants (all other participants were within 2 hours flight of main partner). 2. Availability of students with interest/competency in participating
Access to data
Administrative, project and financial management overhead
Collaboration with and participation of South African stakeholders
Cumbersome paperwork and reporting system
Geographical distance to attend meetings and workshops
The administration was undertaken by EU partners - would have been a deterrent if had to do self
To produce internationally accepted data
Understanding and following the EU FP rules and practices

Table 22: Challenges of South African participants in FP7 projects, as reported by the international coordinators of FP7 projects

Challenges
Access to synthetic genes - these had to be provided via the EU rather than directly to the SA team
At times slow administration, South African PI left academia before completing project tasks. Position not replaced quickly enough to be of value to the project
Cooperate as a small team within an extensive European network
Delay compliance!
Complications of the EU financing system and loss of funding because of currency movements

Table 23: Suggestions for strengthening future participation by South African participants in EU projects, as reported by the international coordinators of FP7 projects

Suggestions
A cell in the SA research council to advise on financial and administrative requirements of EU-funded projects
Better approach in large project management
Developing a funding strategy that allows the outcome of EU projects to be followed up
Improve the EU awareness of South African environmental science and improve exchange. This actually did start during the project, not in advance
Need more commitment to projects in which they are involved

During the focus group discussion with the DST, the participants raised a number of issues that could impact on their work and hence also on the management and success of Horizon2020. These relate to finding a balance between implementing EU-funded projects at national level, which is a large task in itself, and their additional work

responsibilities as government officials. The necessary skills and knowledge to manage and implement cross-cutting EU-funded projects at a national level are embedded within a small but core group of individuals in the Strategic Partnership directorate but also spread across the department in some instances, depending on the type of expertise required. A key aspect of the challenges is also that under FP7, the Strategic Partnerships directorate had to manage the grant-making processes, and this will continue to be expected with other EU projects during the H2020 period.

Recommendations

A first recommendation is that the Strategic Partnership division of the DST should receive capacity enhancement support in terms of grant management to ensure improved efficiency and effectiveness in implementing this function.

A second recommendation is that attention should be devoted to a number of other issues alluded to in this report, among which are measures to support the project website beyond the lifespan of the project, further dissemination of the project outputs, and ways to support South African participants in meeting the complex financial and administrative requirements of the EC.

A third recommendation relates to the observation that the alignment between FP7 projects and the country's national STI priorities appears to be best when DST co-funding is involved, not because of the additional funding but because of the project approval process that occurs as part of the process of national endorsement. It should be explored to what extent the NCPs could assist with the alignment between national priorities and proposal content. The feasibility of a process of national endorsement of project proposals also needs to be investigated.

The fourth recommendation is an attempt to address the single most important limitation of the current study: the fact that not all South African participants and international project coordinators could be reached in the survey. In a certain sense, the lack of response is understandable, as 56 of the 122 study FP7 projects had already been completed by 2012 (resulting in out-dated contact information). The targeted individuals also had neither any obligation nor incentive to participate. The forth recommendation is thus a plea for better data management of projects for the purpose of impact-oriented monitoring (IOM). This recommendation comprises three facets:

- A relational database of South African projects in Horizon2020 needs to be created, which should be updated at regular intervals until about three years after a project has come to an end. The database can be similar to the Microsoft Access database that was created for the purpose of this study. A first version could already be created by combining the information and documentation in the online CORDIS repository with any additional project information currently in possession of the DST. It is essential to ensure that the contact details of the South African project participants and international coordinators are up to date and also that the database implements a classification system for projects that indicates their alignment with the national STI priorities.
- The second facet is that the DST, through internal consultation, compiles such a clear and unambiguous list of the national priorities for STI. The list should be

compiled in a manner for it to be easily accessible and converted into a project checklist and incorporated into the IOM approach.

- The third facet of the recommendation is that the DST should invest in adapting the IOM approach, or elements thereof, for Horizon2020. IOM is a novel methodology for monitoring and assessing the impact of international collaborative projects of the European Commission (Guinea *et al*., 2015)[1]. It was developed by a consortium under FP7 (EVAL-HEALTH) that included participation by the Planning and Coordinating Agency of the New Partnership for Africa's Development (NEPAD). Currently the methodology only applies to public health but its wider utility needs to be investigated. According to the developers of the approach,

> *"The IOM methodology is based on the hypothesis that proper recording of appropriate indicators during and after the project life can provide sufficient data to identify and assess immediate and short-term impacts, as well as some evidence of future long-term impacts. The methodology incorporates different tools to facilitate both the capturing and further assessment of data" (Guinea et al., 2015:4).*

The four tools are attached as Appendices 6 to 9. A summary of the tools, taken from Guinea *et al*. (2015) is as follows:

[1] Guinea, J., Sela, E., Gómez-Núñez, A.J., Mangwende, T., Ambali, A., Ngum, N., Jaramillo, H., Gallego, J.M., Patiño, A., Latorre, C., Srivanichakorn, S. & Thepthien, B. 2015. Impact oriented monitoring: A new methodology for monitoring and evaluation of international public health research projects. *Research Evaluation*, 24(2), 131-145.

Tool	Purpose	Format	Timing
Project results framework (Appendix 6)	To help to structure the expected project results and impacts To help to assess specific short-term project impacts	Online	* Prepared by the coordinator during Grant Agreement, completed at mid-term and final reporting of the project
Coordinators' survey (Appendix 7)	Main data collection tool for capturing project results and evidence of research impacts	Web-based questionnaire	* Middle of the project (only for projects lasting 4 or more years) * End of the project * 3 years after the project
End users' opinion survey (Appendix 8)	Data collection tool to gather end users' opinions on the non-academic impact of projects	Web-based questionnaire	* End of the project
Assessment tool (scoring matrix) (Appendix 9)	To facilitate a quick estimate of the level of impact of individual projects on fixed domains (knowledge production, capacity building and research targeting, policy and population health and health system)	Spreadsheet	* End of the project * 3 years after the project

The IOM approach was developed to support the management and evaluation activities of the Director-General for Research and Innovation at the European Commission. Elements of the approach could therefore also be tailored to support the project management and evaluation requirements of the Strategic Partnership directorate at the DST, specifically as far as the participation of South African researchers in Horizon2020 is concerned.

APPENDIX 1: Questionnaire for South African Participants in FP7 Projects

Consent

I hereby agree to participate in the survey of *South African participants in FP7 projects*.

I understand that I am participating freely and without being forced in any way to do so.

I also understand that I can stop completing the questionnaire at any time and withdraw as a participant in the research, without affecting me negatively in any way whatsoever.

I have received the details of a person to contact should I require information about any issues which may arise from this survey.

I understand that my answers will remain entirely confidential.

I understand that the report to be produced from this survey will be a public document and that my responses will be combined with those of other participants without identifying me in any way.

1. If you agree with all of the above, please tick "Yes" and proceed,

Yes, I agree – take me to the survey	
No, I do not agree – take me out of here	

The start of the FP7 project

"FP7 project" in this survey refers to the FP7 project that you participated in. If you participated in more than one FP7 project, please select the one project with the largest funding allocation and complete the survey with that project in mind.

2. Under what FP7 programme does the project fall?

FP7-ENERGY	1
FP7-ENVIRONMENT	2
FP7-EURATOM-FISSION	3
FP7-HEALTH	4
FP7-ICT	5
FP7-INCO	6
FP7-INFRASTRUCTURES	7
FP7-KBBE (Knowledge-based bio-economy)	8
FP7-NMP (Nanosciences, nanotechnologies - materials - new production technologies)	9
FP7-PEOPLE	10
FP7-SECURITY	11
FP7-SIS (Science in society)	12
FP7-SME	13
FP7-SPACE	14
FP7-SSH (Socio-economic sciences and humanities)	15
FP7-TRANSPORT	16
Don't know / cannot remember	17
Other, specify: ……	18

3. In what year did the FP7 project start? ……..

4. In what year did (will) the FP7 project end? ……..

5. How did you become part of the FP7 project? (*Select all that apply*.)

I already had a well-established work/ personal relationship with one of the project collaborators	1
There was a partnership agreement between my own institution and that of one of the other project collaborators	2
I met one of the project collaborators at a conference/ workshop/ seminar and we decided to work together	3
The collaboration came about as a result of time that I spent at one of the participating institutions, or vice versa	4
Me and one of the project collaborators previously had a student-supervisor relationship	5
One of the collaborators approached/ invited me to join the project team although we did not really know each other	6
The collaboration was initiated/ facilitated by a third party because I did not really know any of the project collaborators	7

The collaboration/ initiative was my idea (or that of my institution) and I took the lead in bringing everyone together	8
Other, specify: ……	9

6. What were your reasons for joining the FP7 project? (*Select all that apply*.)

Enhance productivity (publish more papers)	1
Obtain prestige or visibility (one or more collaborators were well known in the field)	2
Access to expertise (one or more collaborators had a special competence or skill)	3
Access to equipment, data or resources (one or more collaborators had special data or equipment)	4
Improve access to funds (one or more collaborators had the funds or right profile/ connections to attract funds)	5
Pool knowledge for tackling large and complex problems	6
Being good friends with one or more of the collaborators	7
Having worked together before with one or more of the collaborators	8
Positive experience with previous participation in an EU framework programme	9
Other, specify: ……	10

7. Did you participate in any other EU FP project other than this FP7 project?

Yes	1
No	2
Don't know	3

More about the FP7 project activities

8. What was/is the division of labour in the FP7 project? (*Select all that apply*.)

I/my institution was responsible for a specific activity	1
I/my institution shared an activity with another institution/researcher based within South Africa	2
I/my institution shared an activity with another institution/researcher based outside South Africa	3
Other, specify: ……	4

9. How well aligned were the different project activities?

Very well aligned	1
Some alignment but not optimal	2
Poorly aligned	3

10. Did the FP7 project involve a research and experimental development (R&D) component, where R&D refers to any of the following three descriptions?

R&D descriptions	Yes, this formed part of the project	No, this did not form part of the project	Don't know
Basic research (i.e. experimental or theoretical work undertaken primarily to acquire new knowledge of the underlying foundation of phenomena and observable facts, without any particular application or use in view)	1	2	3
Applied research (i.e. original investigation undertaken in order to acquire new knowledge and which is directed primarily towards a specific practical aim or objective)	1	2	3
Experimental development (i.e. systematic work, drawing on existing knowledge gained from research or practical experience, which is directed toward new materials, products, devices, processes and systems, or substantially improving existing ones)	1	2	3

11. What was your team's role in the FP7 project? (*Select all that apply*.) (*"Your team" means either you or any of your co-workers at your participating organisation*.)

We participated in the conceptualisation of the overall project	1
We participated in securing funding for the project	2
We participated in the overall project management and administration	3
We helped to bring together ("linking up") the different project collaborators	4
We provided the "research setting" (e.g. access to organisations, subjects, diseases, samples, specimen, natural phenomena, artifacts)	5
We provided relevant scientific/research resources (e.g. facilities, equipment, instruments)	6
We participated in the literature review/synthesis of existing studies	7
We contributed to the conceptual framework model/theoretical argument	8
We contributed to the research/experimental design	9
We participated in the fieldwork/data collection/measurements	10
We participated in the data analysis	11
We contributed to the interpretation of the results	12
We supervised students/postdocs on the project	13
Our students/postdocs participated in the project	14
We wrote journal articles or parts of journal articles	15
We communicated the findings to decision-makers with the view of influencing policy	16
Other, specify: ……	17

12. How were the results/insights/contributions of the project communicated/ transferred? (*Select all that apply*.)

Articles in peer-reviewed academic journals	1
Articles in popular or trade journals magazines	2
Contract reports	3
Books/monographs	4
Chapters in books	5
Published conference proceedings	6
Written input to official policy documents	7
Technical manuals	8
Conference presentations to predominantly academic audiences	9
Conference presentations to predominantly non-academic audiences	10
Presentations to expert committees/panels	11
Presentations at fairs/festivals/public exhibitions/road shows	12
Through the mass media (radio, television, media briefing, press release)	13
Through a dedicated project website	14
Through patenting	15
Through licensing	16
Training through workshops	17
Consultations/assistance to potential users	18
Personnel exchanges/secondments	19
Informal meetings with potential users	20
Through participation in consortia (other than the FP7 consortium)	21
Through technology transfer offices	22
Through spin-off companies	23
Through technology incubators	24
Through science parks	25
Other, specify: ……	26

Expected project values/outcomes

13. Please indicate for each of the following whether it was an expected value/ objective of the FP7 project. Also indicate whether the expected value/ objective was successfully achieved.

Expected values/objectives	It was not an expected value/objective of the FP7 project	It was an expected value/objective of the FP7 project that was successfully achieved	It was an expected value/objective of the FP7 project but was not successfully achieved	It was an expected value/objective of the FP7 project but I don't know whether it was successfully achieved
Generate new knowledge through research	1	2	3	4
Develop new or improved technologies (e.g. a diagnostic tool, GIS system, forecasting system)	1	2	3	4
Produce a proof of concept	1	2	3	4
Develop repositories/platforms/portals for international information dissemination or sharing	1	2	3	4
Facilitate international networks/partnerships/collaboration	1	2	3	4
Coordinate international programmes and activities	1	2	3	4
File one or more patent applications	1	2	3	4

14. Please indicate for each of the following whether it was an expected value/ objective of the FP7 project. Also indicate whether the expected value/ objective was successfully achieved.

Expected values/objectives	It was not an expected value/objective of the FP7 project	It was an expected value/objective of the FP7 project that was successfully achieved	It was an expected value/objective of the FP7 project but was not successfully achieved	It was an expected value/objective of the FP7 project but I don't know whether it was successfully achieved
Provide appropriate research infrastructure for the EU	1	2	3	4
Provide appropriate research infrastructure for South Africa	1	2	3	4
Provide appropriate research infrastructure for other parts of the world	1	2	3	4
Solve/address environmental challenges in the EU	1	2	3	4
Solve/address environmental challenges in South Africa	1	2	3	4
Solve/address environmental challenges in other parts of the world	1	2	3	4
Solve/address socio-economic or health challenges in the EU	1	2	3	4
Solve/address socio-economic or health challenges in South Africa	1	2	3	4
Solve/address socio-economic or health challenges in other parts of the world	1	2	3	4
Solve/address technical challenges in the EU	1	2	3	4
Solve/address technical challenges in South Africa	1	2	3	4
Solve/address technical challenges in other parts of the world	1	2	3	4

15. Please indicate for each of the following whether it was an expected value/objective of the FP7 project. Also indicate whether the expected value/ objective was successfully achieved.

Expected values/objectives	It was not an expected value/objective of the FP7 project	It was an expected value/objective of the FP7 project that was successfully achieved	It was an expected value/objective of the FP7 project but was not successfully achieved	It was an expected value/objective of the FP7 project but I don't know whether it was successfully achieved
Train EU students or postdocs	1	2	3	4
Train South African students or postdocs	1	2	3	4
Train students or postdocs from other parts of the world	1	2	3	4
Develop the skills and competencies of specific people/ groups/organisations in the EU	1	2	3	4
Develop the skills and competencies of specific people/ groups/organisations in South Africa	1	2	3	4
Develop the skills and competencies of specific people/ groups/organisations in other parts of the world	1	2	3	4
Change the behaviour/attitude/ alues of specific people/ groups in the EU	1	2	3	4
Change the behaviour/attitude/values of specific people/ groups in South Africa	1	2	3	4
Change the behaviour/attitude/values of specific people/ groups in other parts of the world	1	2	3	4
Influence policy/decision-making in the EU	1	2	3	4
Influence policy/decision-making in South Africa	1	2	3	4
Influence policy/ decision-making in other parts of the world	1	2	3	4
Influence practice in the EU	1	2	3	4
Influence practice in South Africa	1	2	3	4
Influence practice in other parts of the world	1	2	3	4

Expected values/objectives	It was not an expected value/objective of the FP7 project	It was an expected value/objective of the FP7 project that was successfully achieved	It was an expected value/objective of the FP7 project but was not successfully achieved	It was an expected value/objective of the FP7 project but I don't know whether it was successfully achieved
Enter new EU markets	1	2	3	4
Enter new South African markets	1	2	3	4
Enter new markets in other parts of the world	1	2	3	4

Other considerations

16. Below are a number of South African research, technology and innovation strategies. Please indicate whether the FP7 project in any way considered the initiatives/ recommendations of the strategy.

Strategy	Strategy has no bearing on my FP7 project	The FP7 project considered the initiatives/ recommendations of the strategy	Don't know
National R&D Strategy	1	2	3
Advanced Manufacturing Technology Strategy	1	2	3
Bio-economy Strategy	1	2	3
ICT RDI Strategy	1	2	3
National Biotechnology Strategy	1	2	3
National Nano-Technology strategy	1	2	3
National Space Strategy	1	2	3
Palaeosciences Strategy	1	2	3
Youth into Science Strategy	1	2	3
Other (Specify: ……..)			

17. What was the single most important challenge that you experienced in the project? This could relate to any aspect of your participation.

……
……
……
……

18. Would you consider submitting a proposal under the EU's Horizon 2020?

Yes, I am busy doing so/already did so	1
Yes, I am thinking of doing so	2
No	3
Don't know	4

19. If No: Please explain your answer.

……
……
……
……

20. Is there any other aspect regarding your participation in the FP7 that you would like to comment on? Please do so in the space below.

……
……
……
……

Follow up

21. As indicated, completion of this survey is anonymous. However, we would like to follow up on some of the interesting responses. Please provide your contact details in the spaces below should you be prepared to talk in more depth about your experience in the FP7 project. [*IMPORTANT: Provision of these details is voluntary and not compulsory. Leave the spaces blank if you prefer not to be contacted again about the FP7 project*.]

Title, name and surname: ……

Email: ……

Telephone: ……

Skype address: ……

END OF QUESTIONNAIRE
THANK YOU

APPENDIX 2: Questionnaire for the International Coordinators of FP7 Projects with South African Participation

Consent

I hereby agree to participate in the survey of the *international coordinators of FP7 projects with South African participation*.

I understand that I am participating freely and without being forced in any way to do so.

I also understand that I can stop completing the questionnaire at any time and withdraw as a participant in the research, without affecting me negatively in any way whatsoever.

I have received the details of a person to contact should I require information about any issues which may arise from this survey.

I understand that my answers will remain entirely confidential.

I understand that the report to be produced from this survey will be a public document and that my responses will be combined with those of other participants without identifying me in any way.

1. If you agree with all of the above, please tick "Yes" and proceed,

Yes, I agree – take me to the survey	
No, I do not agree – take me out of here	

The start of the FP7 project

"FP7 project" in this survey refers to the FP7 project that you coordinated and which involved South African participation. If you coordinated more than one such FP7 project, please select the one project with the largest funding allocation and complete the survey with that project in mind.

2. Under what specific FP7 programme does the project fall?

FP7-ENERGY	1
FP7-ENVIRONMENT	2
FP7-EURATOM-FISSION	3
FP7-HEALTH	4
FP7-ICT	5
FP7-INCO	6
FP7-INFRASTRUCTURES	7
FP7-KBBE (Knowledge-based bio-economy)	8
FP7-NMP (Nanosciences, nanotechnologies - materials - new production technologies)	9
FP7-PEOPLE	10
FP7-SECURITY	11
FP7-SIS (Science in society)	12
FP7-SME	13
FP7-SPACE	14
FP7-SSH (Socio-economic sciences and humanities)	15
FP7-TRANSPORT	16
Don't know / cannot remember	17
Other, specify: ……	18

3. In what year did the FP7 project start? ……..

4. In what year did (will) the FP7 project end? ……..

5. How did the South African team(s) become part of the FP7 project?

……
……
……
……

Expected project values/ outcomes

6. Please indicate for each of the following whether it was an expected value/ objective of the FP7 project. Also indicate whether the expected value/ objective was successfully achieved.

Expected values/objectives	It was not an expected value/objective of the FP7 project	It was an expected value/objective of the FP7 project that was successfully achieved	It was an expected value/objective of the FP7 project but was not successfully achieved	It was an expected value/objective of the FP7 project but I don't know whether it was successfully achieved
Generate new knowledge through research	1	2	3	4
Develop new or improved technologies (e.g. a diagnostic tool, GIS system, forecasting system)	1	2	3	4
Produce a proof of concept	1	2	3	4
Develop repositories/platforms/portals for international information dissemination or sharing	1	2	3	4
Facilitate international networks/partnerships/collaboration	1	2	3	4
Coordinate international programmes and activities	1	2	3	4
File one or more patent applications	1	2	3	4

7. Please indicate for each of the following whether it was an expected value/objective of the FP7 project. Also indicate whether the expected value/objective was successfully achieved.

Expected values/objectives	It was not an expected value/objective of the FP7 project	It was an expected value/objective of the FP7 project that was successfully achieved	It was an expected value/objective of the FP7 project but was not successfully achieved	It was an expected value/objective of the FP7 project but I don't know whether it was successfully achieved
Provide appropriate research infrastructure for the EU	1	2	3	4
Provide appropriate research infrastructure for South Africa	1	2	3	4
Provide appropriate research infrastructure for other parts of the world	1	2	3	4
Solve/address environmental challenges in the EU	1	2	3	4
Solve/address environmental challenges in South Africa	1	2	3	4
Solve/address environmental challenges in other parts of the world	1	2	3	4
Solve/address socio-economic or health challenges in the EU	1	2	3	4
Solve/address socio-economic or health challenges in South Africa	1	2	3	4
Solve/address socio-economic or health challenges in other parts of the world	1	2	3	4
Solve/address technical challenges in the EU	1	2	3	4
Solve/address technical challenges in South Africa	1	2	3	4
Solve/address technical challenges in other parts of the world	1	2	3	4

8. Please indicate for each of the following whether it was an expected value/ objective of the FP7 project. Also indicate whether the expected value/ objective was successfully achieved.

Expected values/objectives	It was not an expected value/objective of the FP7 project	It was an expected value/objective of the FP7 project that was successfully achieved	It was an expected value/objective of the FP7 project but was not successfully achieved	It was an expected value/objective of the FP7 project but I don't know whether it was successfully achieved
Train EU students or postdocs	1	2	3	4
Train South African students or postdocs	1	2	3	4
Train students or postdocs from other parts of the world	1	2	3	4
Develop the skills and competencies of specific people/ groups/organisations in the EU	1	2	3	4
Develop the skills and competencies of specific people/ groups/organisations in South Africa	1	2	3	4
Develop the skills and competencies of specific people/ groups/organisations in other parts of the world	1	2	3	4
Change the behaviour/ attitude/values of specific people/ groups in the EU	1	2	3	4
Change the behaviour/attitude/values of specific people/ groups in South Africa	1	2	3	4
Change the behaviour/attitude/values of specific people/ groups in other parts of the world	1	2	3	4
Influence policy/decision-making in the EU	1	2	3	4
Influence policy/decision-making in South Africa	1	2	3	4
Influence policy/decision-making in other parts of the world	1	2	3	4
Influence practice in the EU	1	2	3	4
Influence practice in South Africa	1	2	3	4
Influence practice in other parts of the world	1	2	3	4

Expected values/objectives	It was not an expected value/objective of the FP7 project	It was an expected value/objective of the FP7 project that was successfully achieved	It was an expected value/objective of the FP7 project but was not successfully achieved	It was an expected value/objective of the FP7 project but I don't know whether it was successfully achieved
Enter new EU markets	1	2	3	4
Enter new South African markets	1	2	3	4
Enter new markets in other parts of the world	1	2	3	4

SA participation

9. What value did the South African team(s) add to the FP7 project?

……
……
……
……

10. What challenges did the South African team(s) face in the FP7 project?

……
……
……
……

11. Do you have any suggestions for strengthening future participation by South African team(s) in EU projects?

……
……
……
……

END OF QUESTIONNAIRE
THANK YOU

APPENDIX 3: Cover Letter for South African Participants in FP7 Projects

20 March 2015

To: South African Participants, EU FP7 Projects

ESASTAP Plus Survey on South Africa's Participation in Framework Programme 7

I am writing to request you to participate in a survey that seeks to collect information on South Africa's participation in the European Union Framework Programme 7. The survey forms part of a comprehensive quantitative and qualitative review of South Africa's FP7 participation being conducted by the Academy of Science of South Africa (ASSAf). The review focuses on the evolution of South Africa's participation in collaborative research projects and support actions, but also seeks to solicit inputs from EU coordinators and partners as appropriate. It will also evaluate participation in collaborative research projects, and analyse the potential for mutually beneficial cooperation. You have been selected because of your previous participation in one or more of the FP7 projects.

The European Union and South Africa have long been committed to strategic cooperation in science and technology, dating back to their 1996 Cooperation Agreement, which facilitated cooperation under the Framework Programmes. ESASTAP PLUS supports the deepening of scientific and technological cooperation with a special focus on innovation. ESASTAP Plus is coordinated by FORTH/PRAXI Network and funded by the European Commission's Directorate-General for Research and Innovation, under the 7th Framework Programme. ESASTAP Plus (Grant agreement no.: FP7-INCO-2012-2-1-312016) targets four key objectives in order to enhance South African – EU cooperation in science, technology and innovation, namely to: enrich the science, technology and innovation policy dialogue; promote strategic cooperation under the main instruments, chiefly Horizon 2020; better coordinate and exploit synergy between EU and national programmes; and expand cooperation to specifically address innovation partnerships.

The survey will take 10-20 minutes to complete and your participation in the survey is voluntary. The survey, which will remain open until 30 April 2015, can be accessed by clicking on the following link: https://www.surveymonkey.com/s/FP7-SA. This will open your web browser and take you directly to the questionnaire, which can then be completed and submitted online. Alternatively you can also copy the above link and paste it in your web browser.

If you have any questions regarding the survey, please email Dorothy Ngila, Senior Liaison Officer, Academy of Science of South Africa (ASSAf), at dorothy@assaf.org.za.

Thank you for your support in the completion of this project.

Yours sincerely

Professor Roseanne Diab
Executive Officer
Academy of Science of South Africa

APPENDIX 4: Cover Letter for the International Coordinators of FP7 Projects with South African Participation

20 March 2015

To: Coordinators of FP7 Projects with South African Participation

ESASTAP Plus Survey on South Africa's Participation in Framework Programme 7

I am writing to request you to participate in a survey that seeks to collect information on South Africa's participation in the European Union Framework Programme 7. The survey forms part of a comprehensive quantitative and qualitative review of South Africa's FP7 participation being conducted by the Academy of Science of South Africa (ASSAf). The review focuses on the evolution of South Africa's participation in collaborative research projects and support actions, but also seeks to solicit inputs from EU coordinators and partners as appropriate. It will also evaluate participation in collaborative research projects, and analyse the potential for mutually beneficial cooperation. You have been selected because you were a co-ordinator of one or more of the FP7 projects that involved South African participation.

The European Union and South Africa have long been committed to strategic cooperation in science and technology, dating back to their 1996 Cooperation Agreement, which facilitated cooperation under the Framework Programmes. ESASTAP PLUS supports the deepening of scientific and technological cooperation with a special focus on innovation. ESASTAP Plus is coordinated by FORTH/PRAXI Network and funded by the European Commission's Directorate-General for Research and Innovation, under the 7th Framework Programme. ESASTAP Plus (Grant agreement no.: FP7-INCO-2012-2-1-312015) targets four key objectives in order to enhance South African - EU cooperation in science, technology and innovation, namely to: enrich the science, technology and innovation policy dialogue; promote strategic cooperation under the main instruments, chiefly Horizon 2020; better coordinate and exploit synergy between EU and national programmes; and expand cooperation to specifically address innovation partnerships.

The results of the survey will be delivered to the European Commission's Directorate-General for Research and Innovation and the Department of Science and Technology, South Africa.

The survey will take 10-20 minutes to complete and your participation in the survey is voluntary. The survey, which will remain open until 30 April 2015, can be accessed by clicking on the following link: https://www.surveymonkey.com/s/FP7-International. This will open your web browser and take you directly to the questionnaire, which can then be completed and submitted online. Alternatively you can also copy the above link and paste it in your web browser.

If you have any questions regarding the survey, please email Dorothy Ngila, Senior Liaison Officer, Academy of Science of South Africa (ASSAf), at dorothy@assaf.org.za.

Thank you for your support in the completion of this project.

Yours sincerely

Professor Roseanne Diab
Executive Officer
Academy of Science of South Africa

APPENDIX 5: Interview Guide for Focus Group with DST Officials

- Everyone here today is related to the FP7 in one way or the other. Could each please briefly describe their involvement in the FP7? How did you become involve? If you have multiple roles also highlight these.
- What are the objectives/anticipated outcomes of your FP7 activities?
- What stakeholders did/do you typically engage with as part of your FP7 activities?
- What is the nature of your interaction with these stakeholders?
  (Probe about the frequency of interaction and the types of interaction: direct interactions [meetings etc.], indirect interactions [production of reports, guidelines etc.] or financial interactions?)
- What actors/entities/agencies have been the most important in determining the uptake/impact of your FP7 activities?
- What type of influence do these actors/entities/agencies have?
- Are there differences in the ways in which these actors/entities/agencies determined the uptake/impact of your activities?
- Would you say that the anticipated outcomes of your FP7 activities have been achieved? Explain. What are the main achievements of your FP7 activities?
- In retrospect, what would you do differently, and why?
- What aspects of your FP7 activities would you say really worked, and why?
- How did you experience the operational/administrative aspects of your participation, e.g. the application procedure, the reporting structure and timing of reports, the release of funds?
- Have you applied the knowledge or skills that you gained through your FP7 activities in any other context? Explain.
- Any suggestions as to how future SA participations in EU programmes can be improved?

APPENDIX 6: Impact-oriented Monitoring by Guinea *et al*. (2015) – Project Results Framework for the IOM Methodology

PROJECT RESULTS FRAMEWORK		
PROJECT ACRONYM		
PROJECT MAIN GOALS		
EXPECTED MEDIUM/LONG TERM IMPACT (*taken from the topic in the work programme of the call*)		
EXPECTED OUTCOMES/SHORT TERM IMPACTS *What will be the contribution/effect/benefit of project results and activities to different categories of outcomes/short term impact?*		
	BRIEF DESCRIPTION OF OUTCOMES	**INDICATOR OF SUCCESS** (*list of indicators that the coordinator thinks will best serve to measure success in their project*)
KNOWLEDGE PRODUCTION		
RESEARCH CAPACITY BUILDING		
INFORMING HEALTH POLICY AND PRACTICE		
SPECIFIC OBJECTIVES		
ACTIVITIES *Main activities planned to meet each of the objectives of the project (can be complete WPs or individual tasks)*	**DIRECT PROJECT OUTPUTS** *Expected results from these activities, including deliverables. They can be final outputs or intermediate outputs that feed into other activities*	**CONTRIBUTION TO IMPACT** *How do expect these results and activities can contribute to meet the long term impact of the project).*

APPENDIX 7: Impact-oriented Monitoring by Guinea *et al*. (2015) – Coordinators' Survey

PROJECT ACRONYM/PROJECT TITLE	

PROJECT ABSTRACT, STATING MAIN PROJECT GOALS, PARTNERS AND ACTIVITIES. (Max 250 words)

For each of the following areas, please rate (high, medium, low), to which extent you feel that your project goals were focused towards:

INCREASE SCIENTIFIC KNOWELDGE IN SOME SCPECIFIC FIELD.	**HIGH**	**MEDIUM**	**LOW**
APPLIED RESEARCH AND/OR PROOF OF CONCEPT	**HIGH**	**MEDIUM**	**LOW**
TRAINING AND CAPACITY BUILDING IN THIRD COUNTRIES	**HIGH**	**MEDIUM**	**LOW**
PRODUCING EVIDENCE TO SHAPE PUBLIC POLICIES.	**HIGH**	**MEDIUM**	**LOW**
RESEARCH NETWORKING	**HIGH**	**MEDIUM**	**LOW**
OTHER; please briefly describe	**HIGH**	**MEDIUM**	**LOW**

1) ADVANCING KNOWLEDGE

ADVANCING KNOWLEDGE: Advancing knowledge is the contribution that project results are making to the general pool of scientific knowledge.

1.1 PUBLICATIONS

Only include publications that are wholly or partially attributable to research funded through the EC grant.

These three criteria should be considered for paper attribution.

- The paper acknowledges the EC grant.
- There are common authorships between the members of the consortium and the paper.
- There is common content between the project proposal and the paper.

Table 1.1.1: Scientific Indexed peer-review publications

Please list the peer-reviewed publications related to the funded project scope and being published in impact journals, consequently, indexed in WoS or Scopus databases. Generally, various members of project consortium should appear as authors of publications. It is a mandatory requisite that publications include the funding source of the project in order to be considered as a real result of it. Also, the Quartile (Q) of source journals, referring to its classification through an impact ranking based on citations received within their category, should be indicated. To do so, please, use the free access tool *SJR* [http://www.scimagojr.com/journalsearch.php] and make a search for concrete journals. Then, select the corresponding Quartile for each, where Q1 covers the highest impact journals and Q4 the lowest ones in the ranking. If journals are multi-assigned, i.e. ascribed to more than one subject category, please, select only the Quartile for the category fitting to the topic of the project publication, namely, Public Health and allied fields.

PLEASE EITHER PROVIDE THE PUBMED Nº (PMID) OR THE REFERENCE(S) OF THE ARTICLE(S), STARTING WITH THE MOST IMPORTANT ONES				
Nº	**PUBMED Nº** (PMID)	If not	**Article Reference**	**Journal Quartile**
1				
2				
-				
20				

Table 1.1.2: Non-indexed peer-review publications

Please, list the peer-reviewed publications related to the funded project scope but not indexed in WoS or Scopus databases (non-impact journals). Generally, several authors should be member of the project consortium and also publications must include the funding source of the project in order to be considered as a real result of the project.

PLEASE EITHER PROVIDE THE PUBMED Nº (PMID) OR THE REFERENCE(S) OF THE ARTICLE(S), STARTING WITH THE MOST IMPORTANT ONES		
Nº	**PUBMED Nº** (PMID)	**Article Reference**
1		
2		
-		
20		

Table 1.1.3: Rest of publications

Please list any other publication wholly or partially attributable to research funded through the EC grant.
Rest of publications include: Books, book chapters, thesis, policy briefs, manuals, and non-peer review publications.
For contributions to conferences, congress or symposiums (papers, posters or presentations), please, go to the following question.

LIST OF PUBLICATIONS, STARTING WITH THE MOST IMPORTANT ONES		
Nº	**Type of publication**	**Reference of the publication**
1		
2		
-		
20		

1.2. PRESENTATIONS

1.2.1 Did you or any other member of the consortium present the findings of the project at any scientific conference/symposium, etc.?		
YES		
NO		

If **YES,** Please try to complete as much as you can the TABLE 3, otherwise go to question 1.3

Table 3: Presentations

Introduce here the contributions to conferences, congress or symposiums: papers, posters and presentations.

PRESENTATIONS			
Nº	**Type of presentation** (*Oral presentation/ Poster)*	**Type of conference** (International/National)	**Presentation reference**: Event Name, location, year, title and presenter (Name and organisation)
1			
2			
-			
20			

1.3 Other Research Results

Please indicate, from the list below, any other research output that has resulted or are expected to result from the project.

RESEARCH OUTPUT	NUMBER	Briefly describe
Research method		
Tool, technique, instrument, design, test or procedure		
Software/database		
Health manual/protocols/guidelines		
Other document types covered by PubMed and not indexed by WoS or		

Scopus		
Patents		

2) Capacity Building and Research Targeting

Capacity Building is related to the development and enhancement of research skills in individuals, teams and institutions.

Research targeting is concerned with how the current project or research informs or leads to new areas of research and research activities.

2.1 Personnel (full or partial dedication)

2.1.1 Please list all the research staff involved in the project

TYPE OF POSITION	TOTAL NUMBER	If possible, how many from Cooperation partner Countries
SENIOR RESEARCHER		
JUNIOR RESEARCHER		
RESEARCH TECHNICIAN		
TRAINEES		
Postdoctoral fellows		
Post health professional degrees (MD, BScN,...)		
PhD students		
Masters students		
Fellows not pursuing a Masters or PhD		
Undergraduate student		

2.1.2.Has participation in the project led to any career advancement/formal qualification for any of the members of the team listed in the previous question? (i.e. from assistant professor to associate professor, fellows gaining a PhD, post docs or research staff gaining a MD, etc.)	
NO	
YES	
If YES, please quantify	

2.1.3 Was there any exchange of personnel (secondments) within project partners?	
NO	

YES	
If yes, please briefly describe	

2.1.4 Was there any capacity building/training outside the consortium?	
NO	
YES	
If YES, please briefly describe	

2.2. Research Targeting and New Funding

As far as you are aware

2.2.1) Have new research questions or areas, relevant for future research, being identified by the project?		
YES		
NO		

If YES, Please briefly explain

2.2.2) Has the participation in the project resulted in new scientific collaborations or partnerships between any of the projects participants?		
NO		
YES		
If YES, Please briefly explain		

2.2.3) As a result of participating in this project, has additional funding for new projects been attracted by any of the participating partners?		
YES		
NO		
If Yes, please briefly explain		

2.3. Infrastructures

2.3.1) Did he grant budget include/funding for research equipment /infrastructure?		
NO		
YES		
If yes, has this new infrastructure increased the research capacity of partners in developing countries?		

YES		
NO		

3) Informing Decision-making, Practice and Policy

In this part of the questionnaire, we ask you a set of questions that can help identifying how far the project reached decision makers and if any project results and findings have been used in health system policy and health practice. It will also provide valuable data on the type of decision makers approached during the project life, the level of decisions taken as results of the projects and the geographical influence of these decisions.

3.1) Has the project produced (or is expected to do so) any results or findings that can be used for policy/decision making/health practice at any level of the health system?		
YES		
NO		
If YES, proceed to 3.2, otherwise go to next section		

3.2) Have any of these results/findings been translated to any policy/decision maker or health practitioner? (please note that **translated** implies an active engagement and communication of the results to the appropriate audience)		
YES		
NO		
If YES, proceed to 3.3, otherwise go to 3.4		

3.3) What type of policy/decision maker/practitioner has the project engaged?		
TYPE	**Tick if engaged**	**Please provide name of Organisation and Country and how were they engaged**
Ministry of Health		
Other Ministries (Education, Science, etc.)		
Other Regional & Local health authorities		
International organisations (WHO, etc.)		
Health care providers (Hospitals, clinics, healthcare professionals)		
University/schools		
Professional organisations		

NGOs		
Other, (please specify)		

3.4) Has any member of project consortium being invited to participate in health-related policy/advisory committees?		
YES		
NO		
If YES, please provide some evidence		

3.5) Has any member of the project consortium participated in face to face meetings or workshops with any policy/decision maker and/or health practitioners relevant for up taking of the project results and findings?		
YES		
NO		
If YES, please provide some evidence		

3.6) Are you aware, as coordinator of the project, if any results/findings coming out of the project may have been up taken by any policy formulation or have had any influence on health policy and practice, especially in participating partner countries? (Examples: Citation in clinical reviews, clinical guidelines, systematic reviews or any other policy documents; Influence in education/training courses of care personnel, clinicians or researchers)		
YES		
NO		
NOT YET		
IF YES, please provide some evidence (max 25 words)		

4) Population Health, Health Sector Benefits

This part of the questionnaire tries to identify how the project may have an impact on the health of the target population and/or improvement in the health systems of developing countries. It is assumed that it is difficult to attribute these impacts only to your research project, so that is why we ask you about **contribution** of your project to these impacts. Another important thing to consider is the fact that most of these impacts will only be visible many years after the project funding has finished, so you may anticipate impacts you consider that that may be achieved even though you will not be able to give supporting evidence.

4.1) Do you feel that the project may contribute to improvements in the health systems/health service delivery of partner countries? Improvements can be achieved directly or through the application of research-informed policies.

Please tick case which best represents your project

0	1	2	3
Not at all	**May in the future**	**Yes, to some extent**	**Yes, to great extent**

If you have selected 1, 2 or 3, please go to 4.2, otherwise go to 5

4.2) Please select, from the following options, those that best represent the improvements your research project may have/ could contribute to.

(More than one option is possible)

NATURE OF BENEFITS	YES	NO	PLEASE INDICATE THE GEOGRAPHICAL AREA OF INFLUENCE 1:Africa 2: Asia 3: Latin America 4: Europe 5: Rest of the world
Cost reduction in the delivery of existing health services			
Qualitative improvements in the process of service delivery			
Increased effectiveness of services			
Equity, e.g. improved allocation of resources at a district/hospital level, better targeting and accessibility			
Better trained health workforce			
Better health practitioner or managerial behaviour			
Evidence-based clinical practice			

New or improved clinical treatments			
Other, please specify			

4.1) Do you feel that the project can contribute to achieve the programme's goal of optimising the delivery of health care in partner countries?** *Please tick case which best represents your project*		
YES, to great extend		
YES, to some extend		
I am not sure		
How do you feel your project may contribute:		
By Translating clinical research into clinical practice		
By Improving the quality, efficiency and solidarity of healthcare systems		
By Enhancing health promotion and disease prevention		

** (Mainly in low and middle-income countries, for international public health projects)

For any answer above, please briefly describe

5) Dissemination & Sustainability

5.1 Key End Users of Research Results and Findings

In this part of the questionnaire we will like to know who the expected key users of your project were, for whom do you think the research matters and/or is useful. End users are individuals, groups or organisations that could directly benefit from and use your research finding or product. End users should not be confused with individuals, organisations, and informal networks who might partner with you in translating and communicating your research findings or products to your end users.

5.1.1) Did the project interact and engage with the potential end users of the research results?		
YES		
NO		
IF YES, PLEASE GO TO 6.2		

5.1.2) Please tick the main end users of your research, when were they contacted and if you think the research results may have been relevant for them.		
TYPE OF END USER	**Geographical location(s) of the end**	**When were they contacted**

	user 1- Africa 2- Asia 3- Latin America 4- Europe 5- Rest of the world	At the proposal stage, During the project life, Once the project ended
European Commission		
National/Regional/Local governments		
International health organisations		
Primary care organisations		
Civil society organisations		
Researchers		
Health practitioners		
Health system/care managers		
Others (please specify)		

5.1.3) if possible, please provide us with the name of the most relevant organisations mentioned in question 6.2	
Name of organisation	
Name of organisation	
Name of organisation	

5.1.4) Did the project hold a final conference with stakeholder and key users?		
YES		
NO		
IF YES, where the results of the conference published as a report/article/press release?		
YES		
NO		

5.2 General Dissemination

5.2.1) Did the project prepare and implement a dissemination plan?		
YES		
NO		

5.2.2) has the project worked towards disseminating the results of the project to non-academic audiences and general public?		
YES		
NO		
If YES, please indicate, if possible, which of the channels indicated below were used by the project		
1	**Project website**	
2	**Presentations in non scientific events, open days, etc.**	
3	**TV, Radio, Magazines, newspapers**	
4	**Social Networks (twitter, linkedin, facebook, etc)**	
5	**Internet (posting project news and communications in websites)**	
6	**Other**	

5.3 Project Sustainability (*Only for survey 3 years after the project has finished*)

5.3.1 Is the project website still available	YES/NO
5.3.2 Have any members of the consortium from non EU countries continued the research work in their own countries?	YES/NO
5.5.3 Has a follow-up project being set up by two or more partners to continue the research work or further develop/implement any result in any of the participating partner countries?	YES/NO

APPENDIX 8: Impact-oriented Monitoring by Guinea *et al.* (2015) – Model of End-user Survey

1) Have you been contacted by the project (*acronym)*? YES/NO

2) Have you been engaged to actively participate in the project? YES/NO

If yes, please indicate how:

- I am a partner in the project
- I am a member of the advisory committee
- I have participated in project workshops/conferences
- I have participated in face to face meetings with members of the consortium
- Other:

3) In your personal opinion, are the project results and findings of interest for the organisation you are working with? YES/NO

4) In your personal opinion, can the results/findings be translated and used for:

- Professional development
- Clinical practice
- Direct contribution to policymaking
- Changes in knowledge, understanding and attitudes of policy makers

5) Are you aware if any of the project's results and findings have been used for any of the above mentioned items by your organisation? YES/NO

If YES, could you please briefly describe?

6) In your personal opinion, how would you rate the impact of the project, based on the results obtained and the way they have been translated to the interested stakeholders?

- High impact
- Low impact
- Do not know

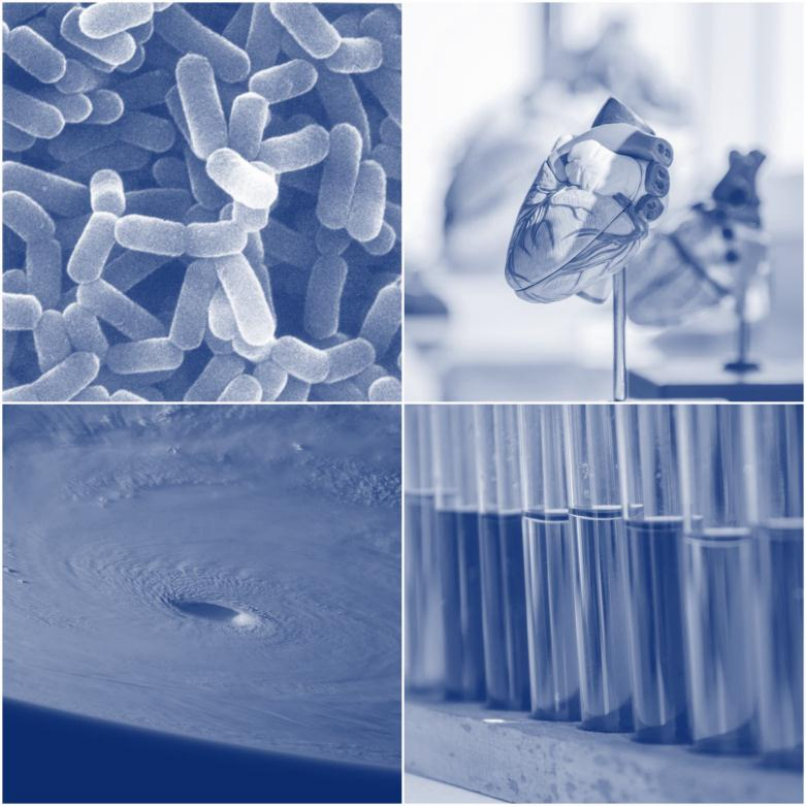
THANK YOU VERY MUCH FOR YOUR RESPONSE

APPENDIX 9: Impact-oriented Monitoring by Guinea *et al*. (2015) – Items of the Coordinators' Survey Selected for the Assessment of the Different Dimensions

		Scale Type			
Survey Matching Question	**Dimension 1: ADVANCING KNOWLEDGE**	**No**	**Yes**	**Number**	
		0	**1**	**Total**	
1.1.1.	1.1. Scientific indexed peer reviewed publications				
	Q1				
	Q2				
	Q3				
	Q4				
1.1.2.	1.2. Non-indexed peer review publications				
1.1.3.	1.3. Rest of Publications				
	Books				
	Thesis				
	Book chapters				
	Policy Briefs				
	Non-peer-review papers				
1.2.	1.4. Contributions to Conferences, Congress and Symposiums (papers, posters, presentations…)				
1.3.	1.5. Applications for patents				
1.3.	1.6. Other research results				
	Research method				
	Tool, technique, instrument, design, test or procedure				
	Software/database				
	Health manual/protocols/guidelines				
	Other document types covered by PubMed and not indexed by WoS or Scopus				
	Dimension Sum				
		Scale Type			
	Dimension 2a: CAPACITY BUILDING	**No**	**Yes**	**Number**	
		0	**1**	**Total**	
2.1.1.	2a.1.a. Research staff involved in the project				
2.1.1.	2a.1.b. Staff from cooperation partner countries?				

2.1.2.	2a.2. Career advancement/formal qualification for any of the members of the team (fellows gaining a PhD, research staff gaining a MD, etc.)				
2.1.3.	2a.3. Exchange of personnel within project partners				
2.1.4.	2a.4. Capacity building/training outside the consortium				
2.3.1.	2a.5. Funding for research equipment /infrastructure				
–	2a.6. Increased research capacity for developing countries = (2.1.b/2.1.a)				
	Dimension 2b: RESEARCH TARGETING	**No**	**Yes**		
		0	**1**		
2.2.1.	2b.7. New research questions or areas, relevant for future research				
2.2.2.	2b.8. New scientific collaborations or partnerships between any of the projects participants				
2.2.3.	2b.9. Additional funding attracted for new projects				
	Dimension Sum				
		Scale Type			
	Dimension 3: INFORMING DECISION-MAKING, PRACTICE AND POLICY	**No**	**Yes**		
		0	**1**		
3.1.	3.1. Results or findings used for policy/decision making/health practice				
3.2.	3.2. Translation/transfer of results/findings to any policy/decision maker or health practitioner				
3.4.	3.4. Participation of members of project consortium in health-related policy/advisory committees				
3.5.	3.5. Participation of members of project consortium in face to face meetings or workshops with any policy/decision maker and/or health practitioners				
3.6.	3.6. Being aware of results/findings from of the project uptaken by any policy formulation or having any influence on health policy and practice, especially in participating partner countries				
	Dimension Sum				
		Scale Type			

	Dimension 4: POPULATION HEALTH AND HEALTH SECTOR BENEFITS	Yes, to some extent	Yes, to great extent	May in the future	Not at all
		1	2	3	4
4.1.	4.1. Project contribution to improvements in the health systems/health service delivery of partner countries				
	Remark: If already contribute, please check if the information provided on this section of the questionnaire gives clear EVIDENCE to identify how the project contribute and it convinces you (for example statistical data)				
		Scale Type			
	Dimension 5: DISSEMINATION & KNOWLEDGE TRANSFER	No	Yes		
		0	1		
5.1.1.	5.1. interaction and engagement with potential end users of the research results				
5.1.4.	5.2. Final conference with stakeholder and key users				
5.2.1.	5.3. Design and implementation of a dissemination plan				
5.2.2.	5.4. Dissemination of project results to non-academic audiences and general public				
	QUESTIONS TO COMLETE ONLY 3 YEARS AFTER THE PROJECT (SUSTAINABILITY)				
5.3.1.	5.5. Project website still available				
5.3.2.	5.6. Members of the consortium from non EU countries continuing the research work in their own countries				
5.3.3.	5.7. Follow-up projects set up by two or more partners to continue the research work or further develop/implement of any result in some of the participating partner countries				
	Dimension Sum				
	Remark: Check the information regarding this section. There is enough information to rate the project				



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