2016:10 | Sida Decentralised Evaluation

Stein-Erik Kruse
Anamaria Golemac Powell

Evaluation of Sida Support to TWAS, OWSD and GIS

Final Report

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Authors: Stein-Erik Kruse and Anamaria Golemac Powell

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SWEDISH INTERNATIONAL DEVELOPMENT COOPERATION AGENCY

Address: SE-105 25 Stockholm, Sweden. Office: Valhallavägen 199, Stockholm
Telephone: +46 (0)8-698 50 00. Telefax: +46 (0)8-20 88 64
E-mail: info@sida.se. Homepage: http://www.sida.se

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Abbreviations and acronyms

ACTA	Africa Center for Technological Studies
COMSTECH	Ministerial Standing Committee on Scientific and Technological Cooperation of the OIC (Organisation of Islamic Cooperation)
GIS	Gender in science, innovation, technology and engineering
IAMP	Inter Academy Medical Panel
IAP	Inter Academy Council
ICTP	International Centre for Theoretical Physics
ISP	International Science Programme, Uppsala
LDC	Least Developed Country
LMIC	Low and middle-income countries
OIC	Organisation for Technical Studies
OWSD	Organisation for Women in Science for the Developing World
RCYS	Regional Conference for Young Scientists
RFP	Regional Focal Points
Sida	Swedish International Development Cooperation Agency
STI	Science, Technology and Innovation
STLC	Science and Technology Lagging Country
SITE	Science, innovation, technology and engineering
TWAS	Academy of Science for the Developing World
ToC	Theory of Change
UNESCO	United Nations Educational, Scientific and Cultural Organisation

Preface

This evaluation was contracted by Sida through the Framework Agreement for Evaluation Services and conducted by the consortium led by FCG SIPU International AB, with partners Itad Ltd and Sthlm Policy Group AB. SIPU led this assignment.

The evaluation team consisted of the Team Leader Stein-Erik Kruse and key expert Anamaria Golemac Powell. The report was quality assured by Paul Balogun and the project manager was Johanna Lindström in the Evaluation Unit at SIPU.

The findings of the report are entirely the responsibility of the team and cannot be taken as expression of official Sida policies or viewpoints.

The team would like to thank Prof. Romain Murenzi and his colleagues for constructive and useful cooperation throughout the evaluation process and also Claire Lyngå from Sida for providing necessary data, information and her own insights.

Executive Summary

INTRODUCTION

Background and purpose

Three organisations are subject to this evaluation: The World Academy of Science (TWAS), the Organisation for Women in Science for the Developing World (OWSD) and GenderInSITE (GIS). Sida started to support TWAS and OWSD in 1992 and 1997 respectively, and GIS in 2012. In the most recent Programme 2012-2016, Sida has supported TWAS, OWSD and GIS initiatives through separate budgets.
The primary purposes for this evaluation are:

- Provide an assessment of the results achieved so far by TWAS/OWSD/GIS.
- Provide Sida and TWAS/OWSD with recommendations to upcoming discussions concerning possible continued cooperation.
- Provide Sida and GIS with recommendations on future directions to be taken by GIS.

Methods

The second chapter presents the three organisations – their objectives, governance, programmes and achievements. The third chapter discusses the evaluation questions under six headings: Management and organisation, quality and relevance, effectiveness, cost efficiency, donor funding and relationships and gender. The fourth and final chapter offers conclusions and recommendations.

The evaluation is primarily based on a review of available documents, data from progress reports and financial records and interviews. Sida and the three organisations provided relevant reports. Management and staff were interviewed in Trieste. While in Trieste, GIS had its annual Steering Group meeting. Hence, representatives from UNESCO and other stakeholders were interviewed in situ or later by phone. TWAS had at the same time a conference for research grant beneficiaries from 24 countries. Limitations in methodology and findings are discussed in chapter 1.2.
The main findings from the evaluation are[1]:

[1] Detailed comments from TWAS/OWSD/GIS are included in Chapter 3.

Effectiveness and results

- All the organisations are increasingly recognised and respected and have been able to place science and gender for development as a priority on the agenda in priority countries and international fora.
- Funds are disbursed, activities are completed and outputs delivered according to plans, e.g. grants are awarded, utilised, equipment delivered, conferences organised. This is true for all the three organisations.
- Medium-term outcomes and impact have not been systematically recorded until recently when both OWSD and TWAS have collected data from surveys sent to alumnae from the fellowships and research grants programmes.
- Progress reports contained no or marginal Information on medium-term outcomes and impacts, including effects on individuals/organisations/policies, in order words, information on changes beyond the completion of activities and delivery of outputs.
- There are more results created by all three organisations than those included in reports to Sida. Both TWAS and OWSD have carried out surveys among beneficiaries and have data from applications and progress report, but they are not systematised and used in reporting.
- TWAS and OWSD awardees report that the grants have had a powerful effect on local research cultures, enhancing the visibility of their past work and creating new opportunities for the future.
- The broad objectives for the Science Diplomacy Programme and GIS are aspirational and not easily measurable. Furthermore, the full establishment of GIS was slightly lagging and therefore the majority of activities happened in 2014 and 2015.

Quality and relevance

- All researchers interviewed confirmed the relevance and usefulness of TWAS and OWSD grants. Equipment, literature and international exposure are necessary conditions for successful completion of research projects. However, it was emphasised that the inputs are not sufficient – neither to finish a research project nor ensure high quality and relevant research.
- It was beyond the scope of this evaluation to assess country relevance of individual research projects, but external reviewers in the committees for TWAS and OWSD had assessed and found them relevant.
- Among the TWAS supported countries, several countries are no longer developing economies and have progressed much further in development of Science and

Technology in the last 25 years. Hence, the classification of countries lagging in research may not sufficiently relevant.[2]

- In the case of OWSD, much of the support is geared towards supporting individual needs of women scientists pursuing advanced research who would otherwise not have access to such funding, and access to international research and networks.
- GIS´s role is unique, partly as it was born out of the need to have a particularly targeted campaign and partly because of its advocacy focus on promoting issues of gender equality in the framework of science, technology, innovation and development.

Governance and management

- The existing governance structures are too complex and fragmented for three relatively small organisations with potential overlaps and synergies.
- The three organisations are presented as different and independent with separate governing structures and decision-making lines. In reality, there is only one organisation - TWAS housing two sub-entities or programmes with relative autonomy.
- As for the links to regional and national offices/networks/focal points and their management, those are under a great deal of strain as there are no staff or dedicated funds for management of the membership and national chapters at the TWAS/OWSD Secretariat level.
- There have been so far no official links established with TWAS regional offices and GIS through the OWSD Vice Presidents or national chapters except in South Africa.
- Links between TWAS and UNESCO/ICTP are complex. ICTP is a UNESCO Category 1 institute while TWAS is an independent programme under UNESCO. UNESCO provides no financial support to TWAS, but is managing its personnel and finances. Some of the personnel and financial functions are delegated to and performed by ICTP.
- Each of the three “organisations” has their own planning and reporting systems and processes. Senior staff are in frequent informal contact, but meetings are irregular and usually informal.

[2] While most TWAS programmes are available for scientists in any developing country, in 2005, support via Sida funded TWAS was made available only to a restricted number of developing countries, those listed by TWAS as Science and Technology lagging countries. With regard to providing research grants, the previous and current Sida agreements focus on these 81 countries.

Funding and donors

- In the current programme period, Sweden and Italy provided around 75% of the funds and fifteen other small donors contributed between USD 5000 and USD 200 000. The funding from both the Italian and Swedish governments was reduced in 2015 due to the financial situation of the donor.
- Sida's funding for OWSD makes up for 97% of total funding and consequently 100% of GIS funding is by Sida.
- The funding base has been broadened. In 2012, the number of donors, other than Sida and Italy was 12 and 16 in 2015. In 2012 the total annual income provided by other donors was 13.7% while in 2015 it was 17.8%.
- There is some, but limited interaction with other Swedish supported research programmes.

Gender

- Gender equality is integrated in all programming segments, however, not with equal success.
- Whilst OWSD and GIS's work is geared to be more gender transformative, TWAS's work is still considered to be gender accommodating[3].
- OWSD work is in essence gender aware and gender transformative, however, the fellowship scheme is only touching the surface of the barriers and system insufficiencies with which young women and women scientists are faced.
- GIS's work on the other hand, conceptualised as one long campaign, is unique in its attempt to link gender equality with science, innovation, technology and engineering and poverty reduction and development at the same time.

Key conclusions

- The broad policy objectives – promoting excellence in scientific research responding to needs of young scientists and women in developing countries remain highly relevant in LMICs, even though there is a lack of data that allows one to track progress against these objectives.

[3] Accommodating Gender Programmes/Policies acknowledge, but work around gender differences and inequalities to achieve project objectives. Although this approach may result in short term benefits and realization of outcomes, it does not attempt to reduce gender inequality or address the gender systems that contribute to the differences and inequalities. Transformative Gender Programming includes policies and programs that seek to transform gender relations to promote equality and achieve program objectives. This approach attempts to promote gender equality by: 1) fostering critical examination of inequalities and gender roles, norms and dynamics, 2) recognizing and strengthening positive norms that support equality and an enabling environment, 3) promoting the relative position of women, girls and marginalized groups, and transforming the underlying social structures, policies and broadly held social norms that perpetuate gender inequalities.

- The three programmes are in line with Sida´s research strategy, which aims to go beyond simply transferring knowledge and equipment to help developing countries build their own research base.
- There is need for further work on mapping the potential cooperation/collaboration between other Sida funded activities both regionally and globally as well as being proactive in seeking matching funding from other development agencies.
- Promotion of South-to-South cooperation and collaboration and knowledge transfer has been prominent features of the programmes.
- Focus on gender equality and integration of a gender lens into science, technology and innovation, as a concept in developing countries is present, if not always transformative.
- Addressing the overall objectives is going to be a long-term commitment. GIS in its formative years has focused almost entirely on launching its programmes and operations. The other two programmes have managed to increase their funding base, and further efforts are on going. The endowment fund of TWAS also provide for a security and sustainability dimension.
- Management of all three initiatives has so far focused on grant processes and products.
- A management approach focusing on outcomes is required given the complexity of the policy environment within which the programmes operate, and the large number of other conditions beyond the control of the initiatives that need to be in place to achieve the policy objectives.

Overarching recommendations to Sida

- Sida should continue funding TWAS, OWSD and GIS, but based on a careful review of the new programme proposal. The following issues are of particular importance:
- The core capacity building components (TWAS and OWSD grants for research and PhDs) are relevant and well organised, but the broader policy and advocacy objectives are still not clear and translated into viable and effective programmes - such as for the Science Diplomacy Programme (TWAS) and the work of GIS. Hence, Sida could decide to fund only core activities, but we believe there is added value in the other activities if strengthened and improved.
- Sida should consider support for establishing a solid Monitoring&Evaluation (M&E) system capturing progress and achievements. It is urgent that TWAS and OWSD provide robust data on number of people graduated, research projects completed, number of articles in peer reviewed journals, patents, participation and presentation of papers in regional and international conferences, etc. and collect data on outcomes at university level (e.g. laboratories) and individual level (career development).
- There is a need for a systematic evaluation focusing on scientific relevance, use and effectiveness of training and research at regional and country level.
- The governance and management structures are not optimal. There is a need to bring the three organisations together with a new leader, a shared strategy, clear structures, more joint planning and reporting processes.

- The Swedish and Italian governments are still the two major donors. Efforts to find new donors and mobilise additional resources have been intensified the last couple of years addressing the governments of emerging and large economies, but so far not been successful. Sida should request a resource mobilisation and sustainability plan.[4]

Overarching recommendations to TWAS, OWSD and GIS

- Time has come to bring the organisations closer together – build a shared overall strategy, establish efficient governance and management structures and introduce shared planning, monitoring and evaluation systems.
- In terms of governance, there are in principle three different alternatives. They are presented as potential scenarios to inform and stimulate discussion among TWAS, OWSD and GIS.

Alternative A: Integrate OWSD and GIS in and under TWAS.

Alternative B: To differentiate and separate the three organisations offering more structural and functional autonomy to each of them.

Alternative C: Our preferred alternative is to bring the organisations together under a new name and with a new leader providing identity and credibility to all parts of the new organisation. Such an alternative will also have other cost-efficiency features:

  - **One unified plan for TWAS/OWSD/GIS**
  - **One budget and financial system**
  - **One M&E system**
  - **One organisation** with an Executive Director and three Programme Directors with delegated responsibilities and budgets. One Executive Board for all and advisory scientific boards/councils for each programme.
  - **Common regional offices and country focal points**

- A closer integration with the International Centre for Theoretical Physics (ICTP) would be advisable for all issues pertaining to financial and personnel management.
- A strategy and plan for resource mobilisation are required as a matter of urgency.
- A solid M&E system should be established supported by sufficient capacity and relevant expertise.
- An evaluation of the relevance, quality and effects of research and training for research should be carried out as part of a long-term evaluation plan. It could also

[4] See further comments in Chapter 3.

be done as part of mid-term evaluations, M&E exercises and would not mean the evaluation of all researches, but rather choosing the best sample methodologies etc. or even randomly – spot check reviews.

Specific recommendation to TWAS, OWSD and GIS

TWAS

- TWAS should revisit its theory of change and in particular assess the continued relevance and probability of linkages between interventions, outcomes and impact.
- Among the TWAS supported countries, several countries are no longer developing economies and have progressed much further in development of Science and Technology in the last 25 years. Hence, the classification of countries lagging in research may not be relevant.
- The grants are tied to a small number of items (equipment, literature, publishing and conferences). TWAS should consider a more flexible system where the applicants may propose a package of support most suitable to complete successfully his/her research project.
- The regional conferences for young scientists should be more clearly linked and be used for dissemination of information about the research grants.
- The Science Diplomacy programme should more clearly define and operationalise its objectives, target activities and define a set of achievable/realistic outcomes.

OWSD

- We have designed a ToC on the basis of available programme documentation. OWSD should also design its own theory of change and use the opportunity to reassess relevance and probability of linkages between interventions, outcomes and impact.
- A functional review of OWSD should be done to assess the best possible structure for the implementation of the programming activities. Leadership roles within the OWSD should be clearly defined, both vis-a-vis broader programming decisions and in terms of possible fundraising.
- Employing additional staff at the Secretariat level would allow the programme manager to take a more strategic role and allow for better utilisation of regional resources.
- Greater participation of regional and national OWSD and TWAS chapters in future programme design is required to ensure the relevance of the programme.
- More funding should be allocated for specific strategic and planning meetings at regional level.
- OWSD’s advocacy, visibility and communication strategy should be further developed, funded for and implemented.

GIS

- GIS needs to continue for at least 2-3 additional years to have any broader impact.
- A theory of change for GIS needs to be developed as soon as possible so that ongoing and future activities of both TWAS and OWSD can be fully utilised for advocacy and influencing with more realistic targets.
- An advocacy strategy should be defined with priority and targeted areas for each region and clear messages for global campaigns and lobbying. This requires mapping of strategic partnerships to enhance the effects of campaigns and ensure the buy in from wider stakeholder groups.

1 Introduction

1.1 PURPOSE AND BACKGROUND

TWAS was founded in 1983 by a distinguished group of scientists from the developing world, under the leadership of Abdus Salam, the Pakistani physicist and Nobel laureate. They shared a belief that developing nations, by building strength in science and engineering, could build the knowledge and skill to address such challenges as hunger, disease and poverty.

Universities and research were seen as engines of development – based on the notion that knowledge plays a central role in national development – in relation to improving health care and agricultural production, but also to innovations in the private sector, in areas such as information and communication technology, biotechnology and engineering. The university is the only institution in society that can provide an adequate foundation for the complexities of the emerging knowledge economy, when it comes to producing the relevant skills and competencies of employees in all major sectors, as well as to the production of user-oriented knowledge. Taking into account what we already know about persistent gender inequalities and gender bias impacting negatively on women's careers in research, universities also have a distinct responsibility to make sure that they attract female students and scholars into their communities and that they can offer choices and support that will help women remain in an academic research career.

Policy documents from research organisations and universities often take as a premise that science, technology and innovation play a decisive role in enhancing economic growth and contribute to national development. However, there is no direct causal link between STI and economic development. It only happens when certain preconditions are in place. Hence, evaluations of research and capacity building in research are important, because they help to establish what works and to explain why.

The primary purposes for this evaluation are[5]:

[5] Annex 1: Terms of Reference

- Provide a rigorous and independent assessment of the results achieved so far by TWAS/OWSD/GIS.
- Provide Sida and TWAS/OWSD with recommendations to upcoming discussions concerning possible continued cooperation (starting 2017).
- Provide Sida and GIS recommendations on future directions to be taken by GIS. Identify opportunities for GIS.

Three organisations are subject to this evaluation: The World Academy of Science (TWAS), the Organisation for Women in Science for the Developing World (OWSD) and GenderInSITE (GIS). Sida started to support TWAS and OWSD in 1989 and GIS in 2012. In the most recent Programme 2012-2016, Sida has supported TWAS, OWSD and GIS initiatives through separate budgets.

Sida's support to all three institutions for the current programme period amounts to 138.1 MSEK, out of which 66 MSEK for TWAS, 61.4 MSEK for OWSD and 10.7 MSEK for GIS (Figure 1). As per the signed agreements with Sida, all of the Contributions should have been used for activities in accordance with the applications dated 2011-08-08 (for OWSD and GIS) and 12 September 2011 (for TWAS).

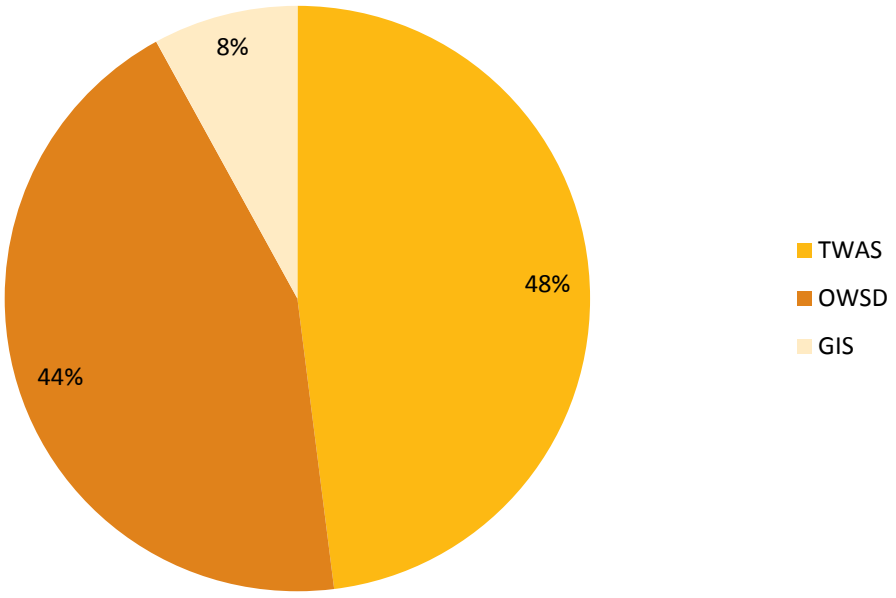

Figure 1: Sida's support to TWAS, OWSD and GIS

The organisations are different, but share common overall goals:

- Recognise, support and promote excellence in scientific research in the developing world.
- Respond to the needs of young scientists – in particular women in countries that are lagging in science and technology.
- Promote South-South and South-North cooperation in science, technology and innovation.

- Encourage scientific research and sharing of experiences in solving major problems facing developing countries.

The following text box provides a brief introduction to the three organisations and overview of Swedish support.

The World Academy of Science (TWAS)
TWAS is a global science academy based at the International Centre for Theoretical Physics (ICTP) in Trieste, Italy. The support given through Sida is to enable young researchers to conduct research, build networks and create research groups through TWAS's Research Grant Programme. This programme provides funding for research in basic sciences such as biology, chemistry, mathematics and physics of individual researchers, research groups and research consortia. The funding is directed towards scientists from 81 countries that have been identified as science and technology lagging countries (STLCs). OWSD and GIS are hosted by TWAS. Sida has supported TWAS since 1992, mainly through funding research grants for young scientists. Current agreement is 66 MSEK (2012-2016)

The Organisation for Women in Science for the Developing World (OWSD)
OWSD provides an international forum to unite women scientists from the developing and developed worlds with the objective of strengthening their role in the development process and promoting their representation in scientific and technological leadership.

Sida has funded OWSD fellowships since 1997. The fellowships can be awarded in mathematics, physics, chemistry and biology and in applied areas; allowing women to undertake Ph.D. studies at a host institute in the South. Since its start, OWSD has awarded 390 fellowships fully funded by Sida for women to undertake PhD studies. Current agreement is 61.4 MSEK (2012-2016).

GenderInSITE (GIS)
GenderInSITE is a project coordinated by OWSD and hosted by TWAS. It is an international initiative to raise awareness of the importance of the role of women in Science, Innovation, Technology and Engineering. The mission of GIS is to promote the awareness of decision makers at all levels that Science, Technology and Innovation (STI) for development policy and programmes will be more equitable, effective and sustainable when the gender lens is applied – that is, when the perspectives of both women and men are taken into account. GIS is a new initiative that was started in 2012 with the current agreement. Current agreement is 10.7 MSEK (2012-2016)

1.2 APPROACH AND METHODS

The evaluation covers mainly the current agreement period 2012-2016. The evaluation questions are analysed and discussed under six headings – in line with the Terms of Reference. The first five are the key dimensions in the evaluation and were used to structure the evaluation process and also the final report. Gender is both a cross cutting concern, but also an issue in its own right since OWSD and GIS have a particular focus on gender. The dimensions are:

- Management and organisation
- Quality and relevance
- Effectiveness
- Cost efficiency
- Donor funds and relationships
- Gender

The evaluation questions cover three levels:

a) **Individual level:** Training of researchers, production of scientific results and the quality and relevance of those results.
b) **Institutional level:** Management, organisation, cost efficiency and funding (donors).
c) **Wider system level:** Focusing on wider effects and impact beyond individual and organisational benefits such as added value, influence on policies and awareness among policy makers (e.g. to what extent the organisations broader objectives are achieved).

Our starting point for the evaluation was to describe and assess to what extent the capacity for research had been strengthened and scientific results achieved according to intended targets – and for other components – to what extent activities were completed successfully and expected outputs delivered.

Secondly, we studied to what extent the internal organisational structure and capacity was in place and had been effective. Thirdly, we searched for evidence of wider effects based on available information and feedback from beneficiaries.

Given the limited time available for this evaluation, the large number of questions in Terms of Reference posed a challenge. In consultations with Sida, we discussed what the priorities should be and what questions could be given less priority. Annex 6 lists all the evaluation questions, to what extent they have been discussed and where in the report.

The following provides brief comments on the three levels:

Individual level: Results, quality and relevance of research

When measuring results, there is an inherent focus in academic institutions towards tangible research outputs: number of Ph.D.s graduated, books and articles in peer

reviewed journals and career development. In parallel, there is an increasing (and to some extent externally imposed) pressure to be relevant to social and economic development and a subsequent emphasis on dissemination, utilisation and follow up of research.

The documentation of research outputs (people trained and research produced) globally (disaggregated by regions/countries/subjects and gender) is based on and limited by the availability of data from the three organisations. Data and information on dissemination, utilisation and follow up of research projects are not available in progress reports. The evaluation had to depend on case studies, selected interviews of beneficiaries and surveys already carried out by TWAS and OWSD.
The evaluation discusses quality and relevance and added value of the programmes offered by the three organisations, but not the individual research. In addition to reviewing the above-mentioned questions from a gender perspective, gender was addressed by examining to what extent the organisations policies and programmes reflect the need to involve women in creating the programmes and stimulate research opportunities.

Institutional level: Management, organisation, cost efficiency and funding

There is a list of questions relating to governance, management, funding and donor relationships. Most of those questions were discussed with management and staff in Trieste and selected stakeholders. Several questions required feedback from partner universities and individual beneficiaries, e.g. to what extent the programmes are consistent with the needs of universities in STLCs and LDCs. Some of those questions have not been answered.

The team addressed the issue of gender equality within the organisational structures and attempted to examine the extent to which the formation of a special body for gender equality has been effective in improving gender sensitivity of the programmes.

System level: Wider effects – added value, policy influence and changes in awareness among policy makers

All relevant progress and annual reports were reviewed searching for evidence on wider effects – intended and not intended, but data was limited. The evaluation had to depend on case studies, selected interviews of beneficiaries and surveys already carried out by TWAS and OWSD. The effects are often catalytic, indirect, and long-term with complex causal pathways between inputs, activities and results. The team utilised interviews and written documentation as an opportunity to address the contribu-

tion of increased gender sensitivity in these initiatives to more equitable, effective and sustainable policy and programmes.

Data collection and analysis methods

The evaluation was primarily based on review of documents and interviews[6]. Sida and the three organisations provided relevant reports. The interviews were semi-structured and questions were tailored to the various target groups[7].

Management and staff were interviewed in Trieste. While we were in Trieste, GIS had its annual Steering Group meeting and we observed the proceedings. We could also interview representatives from UNESCO and other stakeholders participating in the meeting. TWAS had at the same time also a conference for research grant beneficiaries from 24 countries. We were also able to interview a sample of grant beneficiaries. After the field visit to Trieste, telephone interviews were conducted with a selection of regional/country focal points and Council members.

The first level of analysis contained an assessment of to what extent the programmes had met their targets and short-term objectives (benchmarking against intended performance). Assessment of results was validated by utilising methodological triangulation. The team used multiple qualitative and quantitative methods, for example, results from surveys implemented by TWAS and OWSD were used to validate the results identified through document analysis. Additionally, interviews with fellows, recipients of awards and external stakeholders were utilised to see if the results presented in programme documentations were widely accepted as being achieved. Furthermore, observation during the GIS Steering Committee meeting as well as data and information from group interviews with the staff members of individual organisations was compared to see if similar results were found.

The intervention logic, or rather the conceptual frameworks for each of the organisations are presented in Chapter 2. The frameworks were drafted by the consultants in discussion with the TWAS, OWSD and GIS staff to capture the current implicit programme logic[8]. It is important to note that a theory of change was never developed for these initiatives and that as such no clear representation of how and why a complex change processes identified for each initiative could succeed under specific circumstances.

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[6] An online survey was suggested in the Inception Report, but was not carried out due to the short time frame and also because TWAS and OWSD already had completed such surveys and could present relevant data. Otherwise, the suggested approach was followed.

[7] The list of references is in Annex 3 while people met and interviewed in Annex 2.

[8] The ToCs were used to discuss and reflect on the programme logic, but not used as a basis for the evaluation – an exercise which would have required more time.

Though it was clear from the interviews and meetings that there is a shared agreement (buy-in) of all the partners about the end results - outcomes, without a theory of change as a roadmap of their outcomes, the partners did not have the same basis for an agreement as to what needs to happen to reach the expected results. A clear example of this was the discussion during the Steering Committee meeting of GIS. When discussing future strategic approaches there were several different opinions on the roadmap for reaching GIS programme's outcomes.

The same can be seen in case of TWAS and OWSD. These two programmes are operating in complex environments, academia and development work and could benefit from developing strong TOCs. Outcomes are currently identified, however, they are not modelled in casual pathways and interventions defined are not always clearly leading to the relevant outcome(s). The weak or in fact the missing part is the reflection on assumptions and rationales underpinning these interventions.

1.3 LIMITATIONS

An evaluation of research projects faces challenges in trying to judge to what extent the outcomes and impact can be attributed to specific research efforts and interventions (e.g. Sida funding), when a range of other external factors are likely to have made a difference. It should be emphasised that interventions supported (e.g. laboratory equipment, literature, international conferences) are necessary, useful tools for strengthening research capacity, but far from sufficient. There are several other determining factors. Other donors have also supported the changes and improvements in the production of research and improvement of capacity. Furthermore, the training and research are taking place in universities on three continents and the evaluators did not visit any of the universities. Evaluations of campaigns, information and advocacy work experience the same challenges, but the "products" are less tangible.

Terms of Reference emphasise that the primary focus of the evaluation should not be on outputs, but results at outcome and if possible at impact level. The organisations and programmes have all ambitious long-term objectives. However, there are no direct causal links between support to research and broader political, social and economic changes, so it is not possible to measure impact directly. The activities are also taking place in a broad range of countries and it would be difficult to summarise aggregate achievements. Progress reports also contained limited data at outcome and impact level.

Hence, there are limitations and potential bias in the validity of findings due to the complexity of the task, lack of sufficient data at outcome level, very short time framework for the evaluation and the focus on HQ level (Trieste) – not including any country visits.

We have not been able to do any benchmarking with other similar organisations partly due to lack of time. Although there are other fellowship programmes for science, none are implemented similar to TWAS and OWSD as far as we know.

2 The three organisations

2.1 THE WORLD ACADEMY OF SCIENCE (TWAS)

Background and organisation

Founded in 1983, TWAS was officially launched in Trieste, Italy, in 1985, by the Secretary - General of the United Nations. TWAS has nearly 1,000 elected members from some 90 countries, more than 70 of which are developing countries.

A Council of 13 members, elected every three years by TWAS members, is responsible for the Academy's policy and programmatic directions. It is assisted in the administration and coordination of programmes by a Secretariat. The Secretariat is headed by an Executive Director also responsible for IAP, the global network of science academies, the InterAcademy Medical Panel (IAMP) and the Organization for Women in Science for the Developing World (OWSD).

TWAS has 2.2 'professional' (P) level staff (under UNESCO definition) in charge of the Public Information Office, the TWAS Grant Programme and the Science Diplomacy Programme. [9]

In 1991, UNESCO assumed responsibility for administering TWAS funds and personnel on the basis of an agreement signed by TWAS and UNESCO. In 2004, the Italian Government passed a law that ensures a continuous financial contribution to the Academy's operation. Representatives of the Italian government and UNESCO are members of the TWAS Steering Committee, which meets annually.

Committees are established for all TWAS programmes, usually based on experts selected from the various scientific institutions of the Trieste area (ICTP, ICGEB, ICS-UNIDO, SISSA, Elettra, the University of Trieste, etc.[10]). In addition, the TWAS Research Grants programme maintains a database of external expert reviewers – including TWAS fellows and young affiliates – who provide their input on applications.

TWAS's core programmatic activities are:

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[9] Currently , Peter McGrath is 20% on science diplomacy. In addition there is a 20% G staff working on the programme.

[10] ICS-UNIDO used to provide experts until it closed down some years ago.

- Research grants to support developing world scientists in their home countries.
- Prizes to recognize and honour scientists living and working in the developing world.
- Various exchange programmes (mostly South-South) designed to foster networking and collaboration.
- Support for scientific meetings in the developing world.

In the case of research grants, the programme was established in 1986. Initially, grants were provided only in physics and mathematics but, as the programme evolved and expanded, biology was added in 1987 and chemistry in 1989. The programme has since operated with continued support from Sida.

In addition, in 2002, TWAS launched a programme to support Research Units in Least Developed Countries, providing up to US$30,000 per year for up to three years. This programme, initiated with core funding from TWAS, has since been expanded so that Research Units in the 80 S&TLCs are eligible.

Through the TWAS-COMSTECH Joint Research Grant programme, co-funded by TWAS and the Pakistan-based COMSTECH, TWAS has gained experience in managing research grants and is also passing on this experience to COMSTECH. Under this scheme, young scientists from Organization of Islamic Conference (OIC) member states can apply for funding in the areas of earth sciences, engineering sciences, information technology and computer sciences, materials science including nanotechnology, pharmaceutical sciences and renewable energy. These subject areas complement those supported by Sida funding, which are earmarked for research projects in the basic sciences, namely basic biology, chemistry, physics and mathematics.

Overview of Swedish support

Since TWAS works to advance science and engineering for sustainable prosperity in the developing world the objective of the support from Sida was to strengthen research in mathematics, physics, chemistry and biology in low income-countries and increase awareness among governments about the benefits of investing in science and technology. In addition to providing research grants (to individual young scientists, Research Units and Research Consortia), the support is also provided for Regional Conferences of Young Scientists (RCYS) to be hosted by the five TWAS Regional Offices[11] and for the establishment of Research Consortia to help build the research

[11] There are five regional offices, in Beijing (China) for the east and southeast Asia region; Bangalore (India) for south and central Asia; Pretoria (South Africa) for Sub Saharan Africa; Alexandria (Egypt) for the Arab region; and Rio de Janeiro (Brazil) for Latin America and the Caribbean.

capacity of participating institutions, provide training opportunities for young scientists and help overcome isolation through the development of networks.

The funding is directed towards scientists from 81 countries that have been identified as science and technology lagging countries (STLCs). With Sida funded programme support, TWAS intends to increase the production and use of high quality research of relevance to target countries, conducted by individual scientists, groups and consortia. Total of 150 individual grants, 80 research unit grants and 25 consortia grants are expected to be funded by this support in addition to provision of funding for young scientists for MSc training within Research Units and Consortia.

Furthermore, the funding is expected to support and increase the activities of the TWAS Regional Offices by providing networking links and opportunities for young scientists and others both within the region and beyond.

The objective for the Science Diplomacy programme is to establish an international programme in science diplomacy within TWAS and in partnership with the US-based AAAS. Both organisations "seek to raise the profile of science in society" and "enable science to serve as a key element in advancing social and economic well-being". [12]

The initiative would focus on three key areas:

- Creating a stronger presence for issues related to science diplomacy, largely among scientific organisations that collaborate with TWAS and AAAS;
- Increasing the capacity of ministries of finance, foreign affairs and health, etc., as well as international policy organisations, to forge partnerships in science, technology and innovation;
- Acting as a clearing-house for information exchange on critical development and poverty alleviation issues that require scientific input.

These goals would be met through the following activities:

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[12] Science diplomacy is the use of scientific collaborations among nations to address common problems and to build constructive international partnerships. In January 2010, the Royal Society and the American Association for the Advancement of Science noted that "science diplomacy" refers to three main types of activities:

- "Science in diplomacy": Science can provide advice to inform and support foreign policy objectives.
- "Diplomacy for science": Diplomacy can facilitate international scientific cooperation.
- "Science for diplomacy": Scientific cooperation can improve international relations.

- Overseeing a series of publications – consisting primarily of research reports, booklets, brochures and news and feature articles – that would explore the broad issues involved in science and diplomacy in the context of economic development and conflict resolution.
- Organising workshops, seminars and conferences devoted to the study and application of science and diplomacy, largely in the context of poverty alleviation and wealth creation.
- Building partnerships and pursuing joint activities with like-minded organizations interested in both the practice and policies of science and diplomacy.

Among the expected outcomes are increased links between the science and policy communities in a number of countries, especially developing countries; greater awareness among the policy community of the role science can play as an 'honest broker' in diplomatic and policy issues; and greater awareness among the scientific community regarding how to communicate more effectively with governments. Ideally, as an ultimate goal, governments will recognize the value of supporting indigenous science and technology research and translate this into more supportive (including financially) national policies.

To improve the outreach and impact, and hence the possibility of reaching the objectives of the TWAS, support is also allocated for a number of outreach and communication activities such as development and publishing of TWAS Plus digital bulletin, TWAS Newsletter, TWAS Annual Reports, bi-annual communication meetings with each TWAS Regional Office and updating of information on unified events and deadlines site onto the TWAS website.

There is no explicit theory of change (ToC)[13] for the Swedish support to TWAS, but based on programme documents we drafted an implicit theory of change or conceptual framework that was presented and discussed with programme staff (see explanation chapter 1.2.). [14]

[13] A Theory of Change (ToC) is essentially a description and illustration of how and why a desired change is expected to happen in a particular context. It is focused in particular on mapping out or "filling in" what has been described as the "missing middle" between what a programme or change initiative does (its activities or interventions) and how these lead to desired goals being achieved.

[14] This is not a complete and revised ToC. It is based on available information presented to evaluation team, and is only meant to visualise what TWAS and the other two organisations have already presented in their programme documents. In other words, there is a need to readdress and improve ToCs, both the format and substance – beyond the mandate of this evaluation.

Table 1: TWAS Theory of Change

Inputs	Outputs	Outcomes	Impact
Funds for lab equipment	Equipment delivered	No of publications Research completed No of citations No of patents Accelerated career Laboratories strengthened Increased networking	Increased production and use of high quality research of relevance to target countries.
Funds for literature	Access to books, databases		
Funds for travel	Scientific conferences attended		
Funds for open access publishing	Articles published		
Funds for regional conferences	Regional conferences organised		Enhanced links between young scientists and government representatives.
Funds for TWAS science diplomacy	Diplomacy fellows trained Studies completed Annual events Dedicated web portal	Raised awareness among scientific and political communities. Increased support for science. Increased use of scientific data	A sustainable TWAS science diplomacy programme

The Theory of Change is quite simple. It is based on the assumption that researchers in the respective countries need more and better laboratory equipment, better access to scientific literature and databases, international exposure and networking and opportunities for open access publishing. If this is provided, it will lead to increased production and use of high quality research of relevance to target countries.

A more detailed overview of the objectives, outputs, expected outcomes and actual outcomes can be found in Annex 4.

A summary of the quantitative achievements can be found below. The table was prepared by the evaluators and filled in by TWAS based on available data. Some of the findings from the table are:

- The number of applications for individual grants has fluctuated between 131 and 183. Given that this is a global programme, the numbers are low and they have not increased. We have not been able to find out the reasons for such low number of applications to what should be an attractive grant.
- On the other hand, the number of awarded grants is also quite low, so maybe it is considered as unrealistic to be awarded a grant.
- The number of applications from research units is between 65 and 90 and grants awarded between 14 and 20 every year.
- The Consortia programme started first in 2015 and has so far not been a success.
- Research publications are only reported for 2012 and 2013 (10 for individual grants in 2012, 9 for research units in 2012 and 2 in 2013.

- The number of presentations in international conferences is between 1 and 7 for individual grantees and 1 to 4 for research units. There might be more presentations not reported and recorded.
- Since the funds for MSc students were introduced in the Sida grant from 2012, the number of MSC students trained has been between 11 and 20 on an annual basis.
- There have every year been between 5 and 9 regional conferences for young scientists.
- The Science Diplomacy programme has attracted relatively large number of applications (max 391 in 2015). 82 Science Diplomacy fellows have been trained, 22 ambassadors recruited and 14 events organised.

Table 2: Overview of TWAS outputs 2012-2016

	Before 2012	2012	2013	2014	2015	2016	Total
1. Individual grants							
No of applications	N/A	131	183	183	159	Call currently open	
No of awardees	2164*	44	32	31	38	N/A	
No of successful completion reports	1	11	In progress	In progress	In progress	N/A	
No of research publications by awardees	0	10	In progress	2 - but still in progress	In progress	N/A	
No of presentations in conferences	0	7	4	3	1	N/A	
2. Research units							
No of applications	N/A	65	90	90	79	Call currently open	
No of awardees	2164*	20	17	14	19	N/A	
No of successful completion report	0	3	In progress	In progress	In progress	N/A	
No of research publications by awardees	0	9	2	In progress	In progress	N/A	
No of presentations in conferences	0	4	1	In progress	In progress	N/A	
**This is a total combined number of Individual and Research Units before 2012*							
3. Consortia **							
No of applications	N/A	N/A	N/A	N/A	7	Call currently open	
No of awardees	N/A	N/A	N/A	N/A	1	N/A	
No of successful completion reports	N/A	N/A	N/A	N/A	In progress	N/A	
No of research publications by awardees	N/A	N/A	N/A	N/A	In progress	N/A	
No of presentations in conferences	N/A	N/A	N/A	N/A	In progress	N/A	

	Before 2012	2012	2013	2014	2015	2016	Total
	N/A	N/A	N/A	N/A		N/A	
*** The consortia programme started in 2015*							
4. MSc training							
No of applications	N/A	20	14	11	11	Call currently open	
No of awardees	N/A	20	14	11	11	N/A	
No of successful completion reports	N/A	20	14	37	24 - but still in progress	N/A	
Expenditure (1+2+3+4)		1 290 599,43	11 487,30	2 612 398,01	1 002 111,34		
5. Regional networking							
No of Annual Action plans							
No of regional conferences	6	7	6	5	9	NA	**33**
6. Diplomacy programme							
No applications			45	223	391	235	**894**
No of Science diplomacy fellowships			14	30	38		**82**
No of Science diplomacy ambassadors programme			8	8	6		**22**
No of Science Diplomacy events		1	4	6	3		**14**
Expenditure		13 954,97	48 373,97	40 066,58	45 467,16		**147 862,68**

2.2 THE ORGANISATION FOR WOMEN IN SCIENCE FOR THE DEVELOPING WORLD (OWSD)

Background and organisation

The Organization for Women in Science for the Developing World (OWSD) was launched in 1993 as the first international forum to unite eminent women scientists from the developing and developed worlds with the objective of strengthening their role in the development process and promoting their representation in scientific and technological leadership. OWSD is based at the offices of TWAS, in Trieste, Italy.

OWSD is a membership organisation[15]. Full members have the right to elect the President and to vote regional representatives onto the executive board at the General Assembly, which takes place once every four to five years. The General Assembly (GA) of Members is the top-level decision-making body. An Executive Board[16] (EB) made up of a President and 8 regional members, and an international Secretariat based in Trieste, Italy, serves the GA. The chain of decision-making begins at the level of the GA, which approves OWSD activities and programmes[17]. The President and EB[18]

[15] OWSD membership is open to women and men with MScs or PhDs in science subjects and assigned to 5 different regions: Africa, Arab region, Asia and the Pacific, Latin America and the Caribbean and developed countries.

[16] The Executive Board is made up of:

- President
- 4 Vice presidents (one from each region)
- 4 Members (one from each region)
- Immediate Past President

[17] UNESCO is responsible for the administration of OWSD and TWAS (Academy of Sciences for the Developing World) finance and staff, based on an agreement between the TWAS and UNESCO and the Italian government, which provides TWAS with its core funding. OWSD operate under the administrative umbrella of TWAS.

[18] The Board's duties are to:

- Set the time and venue for the meetings of the General Assembly
- Prepare the agenda and the decisions of the General Assembly
- Implement the decisions taken by the General Assembly
- Screen Membership applications
- Develop a strategic action plan
- Secure funding for programmes and activities
- Approve programmes and activities, as well as their budgets.
- Ensure that actual spending is in accordance with these budgets.

implement the decisions agreed by the GA by developing Strategic and Annual Plans and supervising the work of the Secretariat in carrying out that plan.

At the next level, the Secretariat is run by the OWSD Programme Coordinator who according to the statute of the organisation is given the authority to make decisions and implement operations and programmes according to the direction set by the Strategic Plan and the decisions made at EB meetings. The Secretariat takes care of all administrative issues pertaining to the organisation as a whole and also acts as chief point of contact and liaison between regions, coordinates the national chapters, and administers the programmatic activities. OWSD members are further represented in the four regions through National Chapters. The Secretariat is in close contact with the OWSD President and executive board in order to assure that membership is centralised and that strategic decisions and programme activities are carried out.

The structure of the Secretariat currently consists of:

- One full time administrative staff responsible for membership, the executive board, meetings and conferences, prizes, reports, budget, this post (G5) has been with TWAS/OWSD for 25+ years but in October 2015 went on sick leave and leave has been extended indefinitely. This has meant that there has been no administrative or secretarial support outside fellowships for OWSD for a long time (this has coincided with the additional work required to co-organize the OWSD 5th General Assembly and international conference taking place in Kuwait in May 2016).
- A G3 post, who came on board in May 2014, was originally 50% admin and 50% fellowships. However as the fellowship load is very high, this post is 100% fellowship.
- In December 2015 another full time G3 joined OWSD Secretariat full time (G3) to do 50% fellowships and 50% admin.
- Finally, within the new Sida agreement (2012-2016) money was designated for a post described as coordinator/ director in the project proposal. In fact (P2) 'Programme Coordinator'.

OWSD programme’s two main components are scholarships and awards. The scholarship component, called 'OWSD Fellowships', funded by Sida, aimed at supporting women scientists from least developed countries to study for Postgraduate (MSc/PhD) degrees in another developing country whilst the awards, funded by Elsevier solely, is component that aims to recognise and celebrate early career women scientists who have made significant contributions to research and education in their scientific field. Furthermore, OWSD by its ethos and way of operating provides

women scientists with networking[19] and career development[20] support throughout their careers.

The OWSD fellowship eligibility criteria, which previously included an age limit of under 40, was recently re-assessed and in the past years the fellowship programme has been encouraging women scientist over 40 to apply hereby moving towards a more transformative approach in addressing persistent disparity gaps.

Overview of Swedish support

Sida's support in the period between 2012- 2016 was specifically focused on the OWSD programme on Participation, Leadership and Influence in Science & Technology, aimed at increasing women's participation and leadership in science and technology in Least Developed Countries (LDCs) and countries in Sub-Saharan Africa and strengthening women's role in the development process, promoting their representation in scientific and technological leadership. A key activity within this programme is the OWSD fellowship, funded by Sida ever since 1989. A substantial and continuous support from Sida funded some 395 PhD fellowships for women from the South to study in the South. Fellowship cover all costs related to travel to and from the host institute[21]; a monthly allowance to cover accommodation and meals while in the host country, study fees (including tuition and registration fees); visa expenses; a yearly medical insurance contribution and a lump sum allowance to attend international conferences during the period of the fellowship[22]. In addition, Sida has sup-

[19] OWSD has over 4,000 members. Over 90% of OWSD members are women living and working in developing countries who have Masters or Doctorates in science subjects. Each member has the potential to contribute significantly to the technological advancement and economic growth of their countries. OWSD members can network face to face through activities organised by OWSD National Chapters, or through regional and international conferences, as well as online through OWSD website.

[20] As women progress from undergraduate science through to PhD research, to postdoctoral studies and beyond, they can draw on OWSD members' experience and expertise to help them through to the next stage of their career. They can attend regional and international conferences and seminars in their research field, develop writing and presentation skills, sign up to get help from a mentor, learn leadership or negotiation skills.

[21] This is a South-South fellowship scheme, promoting scientific exchange among young researchers from developing countries. While applicants must come from a more restricted list of least developed countries, host institutes can be located in any developing country. Host institutes have to be proven centres of scientific excellence in the applicants' chosen field. Applicants should select up to three host institutes outside their home country that are centres of scientific excellence in the chosen study field.

[22] An applicant who has already registered or who wishes to register as a PhD student at her home institute can choose a sandwich option, whereby part of the research programme is undertaken at a host institute in another developing country. In this case the fellowship provides support (travel, accommodation and living expenses) only while at the host institution. The minimum period abroad is six months. The fellowship does not provide support while the applicant is at the home institute. Alternatively, an applicant can enrol as a full-time research student at an institution outside her country; in this case the fellowship will provide support (travel, accommodation and living expenses) for 4 years on average. The host institution will be expected to provide the necessary facilities such as tuition, training, supervision, laboratory supplies etc. Accompanying persons are not eligible for support.

ported further specific activities to warrant a real chance at competing successfully in the international scientific arena including financing for annual regional workshops in science communication skills and additional funding for each PhD fellow to travel to international workshops and conferences of relevance. The programme is open to women science graduates, generally under 40 years of age; the minimum qualification of applicants is an MSc degree (or equivalent), or an outstanding BSc honours degree, in a field of natural sciences. The OWSD fellowships are highly competitive, and selection is based on scientific competence and merit. Candidates' degrees, project proposals, publications, and reference letters are especially scrutinized. Applications are reviewed at an annual selection committee meeting in Trieste attended by a panel of 8-10 scientists from the scientific organizations and institutions of the Trieste Science System (e.g. ICTP, SISSA, ICGEB, University of Trieste).

The Theory of Change in OWSD' case is not as simple and linear as the TWAS' might appear. It is based on the assumption that providing grants, capacity building, opportunity for networking and professional exchange, encouraging young women researchers in the respective countries will lead to increased participation, representation and leadership in SITE in develop countries and globally, and will consequently strengthen women's role in development processes. In this theory of change each of the specific objectives feed directly into the overall objective, but also have significant consequence in terms of achievement of the consequent ones. This theory of change is highly dependable on external conditions and as such the individual specific objectives hardly impact on the final goal. A more realistic overall goal should be focused on fostering gender equal and healthy academic and social environment with aim of enabling women scientists to have a major impact on society and lay the foundations for their strengthened role in both science and technology and development processes.

A more detailed overview of the objectives, outputs, expected outcomes and actual outcomes can be found in Annex 4 and the brief theory of change can be seen in the figure below[23]:

[23] The objectives of the programme "Increasing Women's Participation, Leadership and Influence In S&T in the Developing World" are to:

- Increase participation and leadership of OWSD members in S&T in developing countries.
- Increase visibility / awareness of the contributions women make in S&T in developing countries and globally;
- Increase the representation and leadership of women scientists in TWAS structure and programmes
- Through the GenderInSITE campaign, increase the number of STI policies and programmes globally which take into account the "gender lens" by increasing awareness of decision makers in international agencies, donor institutions and science institutions of the importance of ensuring that STI for development policy and programmes reflect the vision, aims, concerns, perspective, knowledge and abilities of women and men.

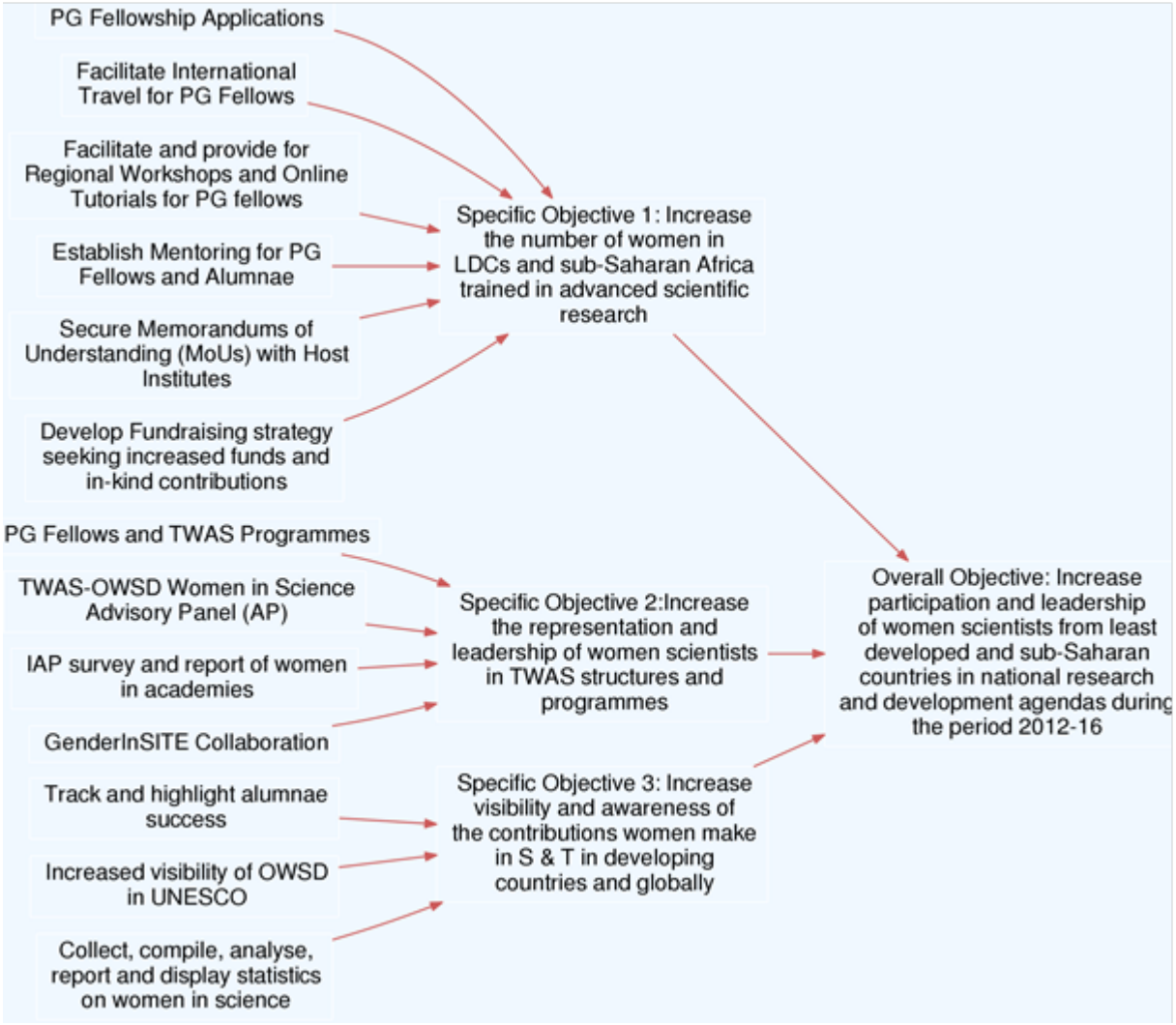

Figure 2: OWSD Theory of Change

A summary of the quantitative achievements can be found below. The table was prepared by the evaluators and filled in by OWSD based on available data. Some of the findings from the table below are:

- In the period under the evaluation OWSD, with the support and funding from Sida, has awarded 83 fellowships with a sandwich option, whereby part of the research programme is undertaken at a host institute in another developing country, and 91 full time fellowships.

- There are currently 96 fellows onsite, 19 full and 33 sandwich fellows already completed or are awaiting graduation, 8 of 2014 and 60 of 2015 awardees yet to travel.
- The number of the dropouts is unknown. There is also a number of fellowships where the final student's status in unknown, whether the student has achieved a PhD or not. Improved M&E could help address the current difficulties with tracing exactly which grantees have graduated or not.
- Main focus of the full fellowship scientific field of study was Agricultural Sciences, almost 45%, whilst some 33% of the fellows in sandwich option focused on Biological systems and organisms field of study.
- In terms of representation and leadership within TWAS fellowships and its organisational structure, the programme has had limited impact on increasing the number of women TWAS fellows to 11% in 2015, as well as percentage of women in TWAS councils to 24% and committees to 11%.
- In addition to coordinating the visibility work closely with the GIS, OWSD has implemented several gender and STI assessments in different regions and has utilised personal experiences of prize awardees to increase awareness of the academic communities as well as development forums on the need for better integration of women in SITE and development processes.

Table 3: Overview of OWSD outputs 1998-2106: Awardees and women's representation and leadership within TWAS fellowships and its organisational structure

OWSD	1998 - 2012	2012	2013	2014	2015	2016	Total
1. PhD programme							
No of applications	2486	225	243	282	150	13	3399
No of awardees	220	40	37	38	60	0	395
No completed (graduated)	107	21	9	18	14	3	172
No of conferences attended (conference funds disbursed)	n/a			31	12	4	
No of papers presented	n/a						
No of papers published	n/a						
No of regional workshops	n/a	n/a	0	1	0	(3)	
No of research collaborations	n/a						
No of OWSD chapters	13	13	13	13	13 + 3 pending		
2. Representation and leadership							
No of women TWAS Fellows elected				New: 10 (22%) Total: 10%	New: 10 (22.7%) Total: 11%		
% Women on TWAS committees and council			Council: 30% Com'tees 13%	Council: 30% Com'tees 13%	Council: 24% Com'tees 15%		
3. Increase visibility and awareness							
No of prizes	12	12	5	5	5	(5)	
No of national Assessments of Gender and STI		7 pilot studies: 6 countries, 1 region			4 countries	report due	
No of collaborative activities w/donors and UN	n/a						
Breakdown of the total number of awardees (395)	Onsite / ongoing	Completed OWSD fellowship - waiting graduation	2014 awardees yet to travel	2015 awardees yet to travel	Dropouts	Other	Total
	96	**19 full 33 sandwich**	**8**	**60**	**2**	**5**	**395**

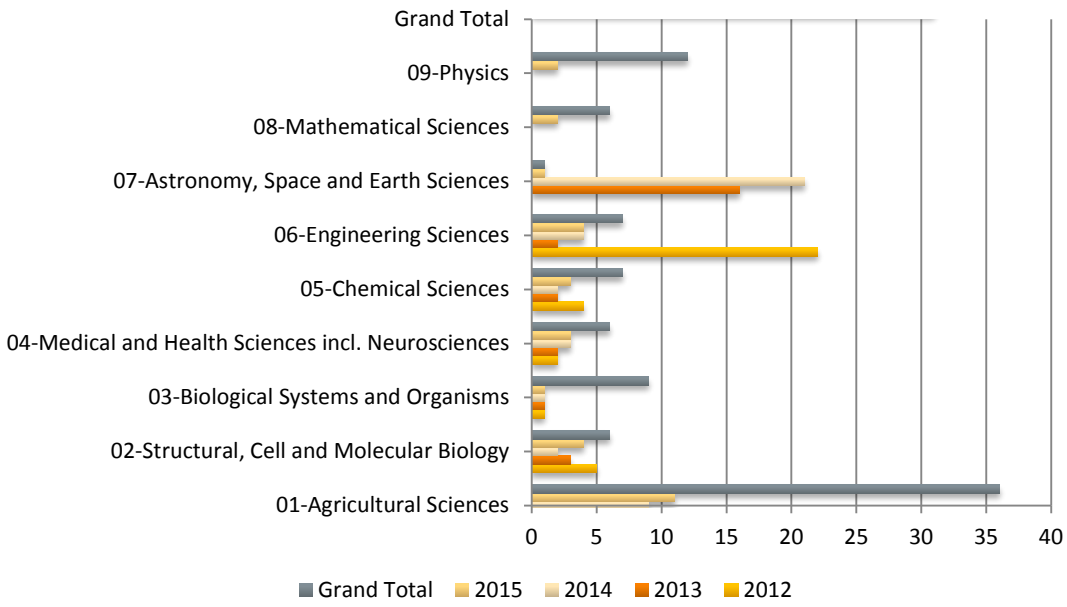

Figure 4: OWSD fellowship awards, graduated 2012-2015 (full time)

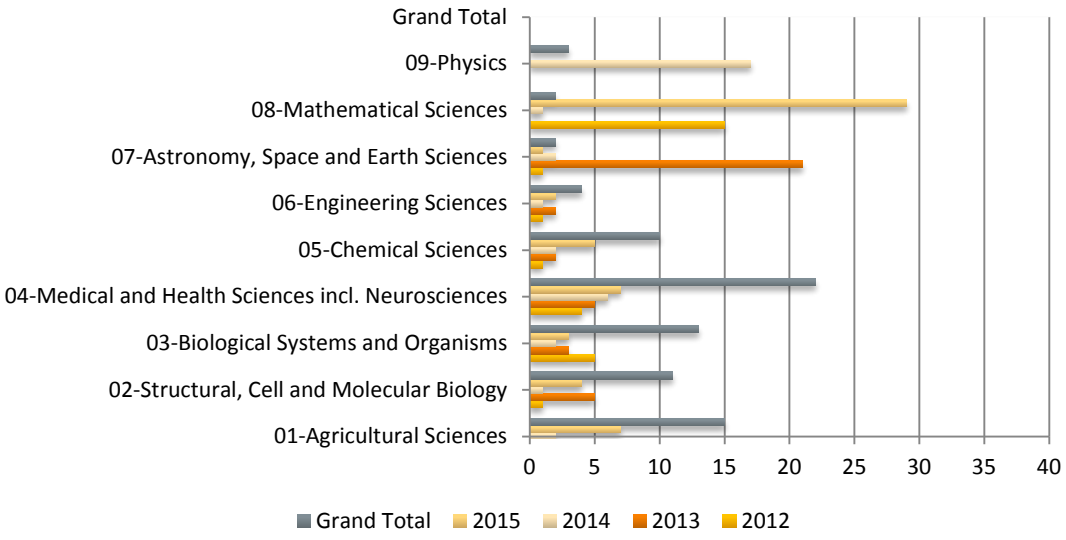

Figure 3: OWSD fellowship, graduated 2012-2015 (sandwich option)

Sida has also provided funds to develop the OWSD website, which now with a new design and interactive functions and member inputs aim to streamline and make efficient much of the OWSD procedures for fellowship applications, membership and networking.

2.3 GENDERINSITE (GIS)

Background and organisation

Gender in science, innovation, technology and engineering (GenderInSITE/GIS) is a project that is supported by Sida under the OWSD contribution and it is coordinated by OWSD and hosted by TWAS. Unlike the support to the other two institutions, the support to GIS is a new initiative that was started in 2012. GenderInSITE is a global, multi-sectoral, multi-stakeholder initiative organised by OWSD, the Gender Advisory Board – UN Commission on Science and Technology for Development (GAB-CSTD), and TWAS and established to promote the role of women in science, technology and innovation; and to address how science, technology and innovation can be for women– how it can serve women and men at the grassroots.

The campaign was developed as a result of studies conducted over the past two decades, which have demonstrated a strong gender dimension to the application of science and technology for development. A review commissioned in 2010, with funds from Sida, found that while there are several global campaigns promoting gender-related issues – e.g. the "Because I'm a Girl" campaign; the Nike Foundation "It takes a Girl" campaign – there is none that addressed the GenderInSITE issues. After the series of regional studies were undertaken and following the GenderInSITE planning meetings, funded by Sida and hosted by UNESCO in 2010 and 2011, the purpose, vision and messages of the GenderInSITE was developed as well as an organizational structure and action plan to carry GenderInSITE forward.

The mission of GenderInSITE is to promote the awareness of decision makers at all levels that STI for development policy and programs will be more effective, equitable and sustainable when the gender lens is applied – that is, when they reflect the vision, aims, concerns, perspective, knowledge and abilities of both women and men. The targets are female scientists, women and men in the developing world who can benefit from the use of improved technologies for development, and primarily decision makers in governments, agencies, NGOs and the media in making them aware of the gender dimensions of science, technology and innovation (STI) for development.

GIS is coordinated by a Steering Committee, with the administrative support of the Organization for Women in Science for the Developing World (OWSD) and The World Academy of Sciences (TWAS), particularly with regards to financial management. The organizational structure consists of the Steering Committee, the Secretariat, and the Regional Offices or Regional Focal Points. This structure is established to encourage a range of organizations at the international and regional levels to take on ownership of the initiative.

The Steering Committee gathers representatives nominated by the full members, and is now composed of seven members, who are representatives of the following organizations: the Gender Advisory Board of the UN Commission of Science and Technology for Development (GAB/UNCSTD), the Organization for Women in Science for the Developing World (OWSD), The World Academy of Sciences (TWAS), the Chi-

nese Academy of Science (CAS), the International Council for Science (ICSU), the International Social Science Council (ISSC), and Portia Ltd. (the organizing body of the Gender Summits). They meet once a year and decide on major policy issues and strategy for GIS and approve the activities and financial report. The term of membership for the Steering Committee is a maximum of two three-year terms. In addition, Ad hoc committees may be formed on an as-needed basis for varying terms.

The Steering Committee appoints two co-chairs, one living and working in a developing country and one living and working in a developed country, currently Shirley Malcom from the GAB/UNCSTD and AAAS, and Prof. Fang Xin, President of OWSD and member of the Chinese Academy of Sciences. GIS also has as active partners international agencies, NGOs, and other stakeholders, including UNESCO, SciDev.Net, The African Center for Technology Studies (ACTS), Elsevier Foundation, WISAT Women in Global Science and Technology, The InterAcademy Partnership (IAP), and other partners at the regional level. A Director, appointed by the Steering Committee, is charged with the administration of GenderInSITE, working closely with the co-Chairs, the Steering Committee and the Regional Focal Points, to implement GenderInSITE policies and strategies.

The GenderInSITE Secretariat has a staff of two, a full time Communications/Administrative Assistant and the Director of the programme, elected in March 2015. Whilst the Communications assistant is based in Trieste the GIS director operates from Brazil. Administrative and day-to-day management support is provided by OWSD Programme Coordinator, and by extension by TWAS financial management. Currently GenderInSITE has regional offices or regional focal points in Argentina, Zimbabwe and South Africa and the plan is to expand regional offices to include Asia and the Arab States.

An overview of the objectives, outputs, outcomes and expected outcomes can be found in Annex 2 and the brief theory of change can be seen in the figure below:

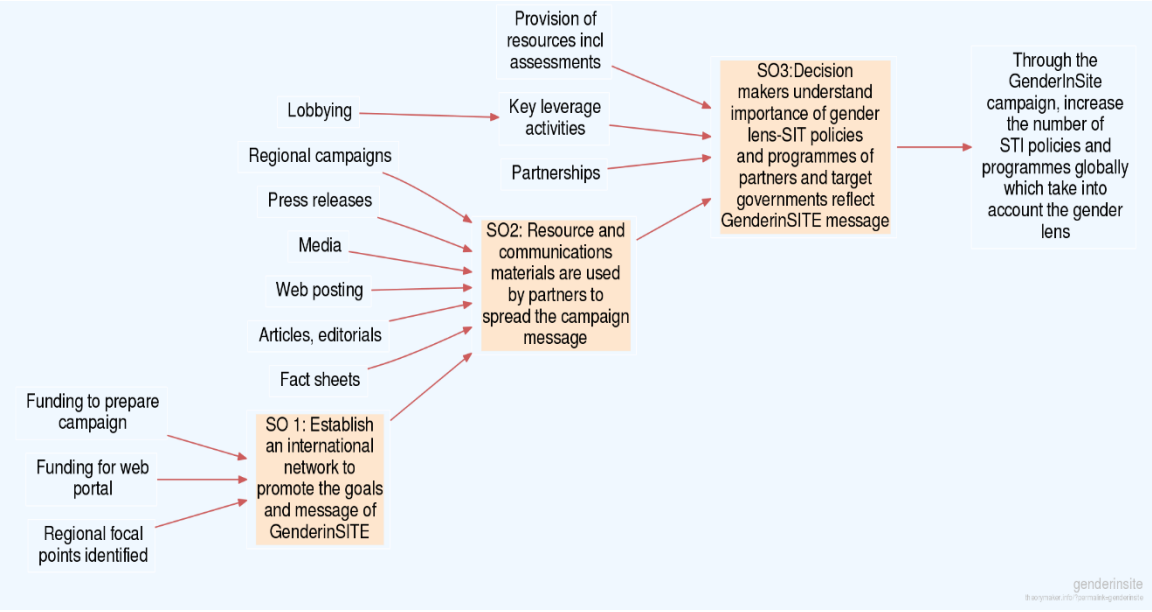

Figure 5: Theory of change of GenderInSITE

An overall objective of the 'GenderlnSITE' project is to increase the number of policies and programs in science, technology and innovation globally, taking account of gender issues. The purpose of GenderInSITE is to contribute to global discussions and mobilise a range of stakeholders at all levels to[24]:

- Raise the awareness of policy and decision makers about the gender dimension of science, technology and innovation for sustainable development.
- Demonstrate with a limited number of issues and sectors how gender analysis of science technology can lead to a new and fairer type of development.
- Highlight women's role in development and how it can be supported using science and technology;
- Promote the contributions to and advancement of women in STI.

Overview of Swedish support

To inspire transformative actions and more effective development by understanding the impacts of SITE on women and men and how women and men can contribute to SITE Sida supports GIS in two main areas: 1) Support to lobbying for gender equality in participation and advancement in SITE for a sustainable future and 2) Advocating for and developing STI based development solutions with women and men. Activities and resources of the campaign comprised of:

- Presentations and exhibits at conferences and events.
- Promotion of the topic in key international forums.
- Outreach to decision makers in government and agencies through conferences, panels, and direct interaction.
- Development of speaking notes related to the issue.
- Policy briefs and fact sheets.
- Videos and TV spots.
- Regular communiqués and press releases.
- Web portal.

Sida’s supported activities focused on building partnerships among GIS members, in particular to identify, understand, and develop strategies to apply the gender lens to SITE in six key areas: agriculture and food security; water and sanitation; energy; transportation; climate change and disaster & risk reduction; and science education & the workforce.

[24] See http://genderinsite.net/ for more info.

3 Findings and analysis

This chapter is organised around six dimensions and provides findings and analyses relating to the evaluation questions set out in the Terms of Reference.

3.1 EFFECTIVENESS AND ACHIEVEMENTS

The main results and achievements are summarised based on presentations of the three organisations in chapter 2 and Annex 4. It is supplemented by data and information from interviews and reports. The main findings are:

- All the organisations have been able to place science and gender for development as a priority on the agenda in selected countries and international fora – according to people interviewed. The organisations are increasingly recognised and respected – TWAS since it is the oldest and largest, followed by OWSD and GIS as an initiative in the process of establishing itself. In a TWAS survey, the response was as follows (sample of 37 beneficiaries):

> In your opinion what is the image of TWAS in your country?
> - Not well known: 16,2 %
> - Quite well known: 37,8 %
> - Widely known: 13,5 %
> - Highly regarded: 21,5%
> - Other:

- Funds are disbursed and targets are to a large extent met. Activities are completed and outputs delivered according to plans and intentions, e.g. grants are awarded, utilised, equipment delivered, conferences organised – outputs delivered. This is true for all the three organisations. They demonstrate a high ability to deliver and produce short-term results. A detailed presentation and analyses of the TWAS and OWSD grantees can be found in Annex 4.

- However, medium-term outcomes and impact are not measured and documented – effects on individuals/organisations/policies – changes and outcomes beyond the completion of activities and delivery of outputs. The progress reports provide sufficient and relevant activity and output data, but no or marginal information on short-and medium term outcomes.

- This is partly due to the fact that M&E systems did not exist until recently and a more systematic approach to creating harmonised databases has only recently been initiated. Although some outcome indicators are included in log-frames,

they are not reported on e.g. number of reports in journals, number of patents, number of presentation in conferences, career development etc.

- Results at outcome level are underreported in progress reports. There are more results created by the three organisations than included in the reports. We found that both TWAS and OWSD had carried out surveys among beneficiaries and had relevant data from applications and progress reports not systematised and used in reporting to Sida. Databases are so far not harmonised within and between programmes and underutilised.

- The long-term capacity building objectives (for TWAS and OWSD grants) are possible to measure (partly through proxy indicators such as number of articles in peer reviewed journals, research projects and PhD training successfully completed, tracer studies etc.), but such data are incomplete or missing. It is also possible to obtain feedback from previous and on-going beneficiaries through e-mail surveys. The following text box provides a summary of data collected by TWAS from a sample of beneficiaries (37).

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Given that TWAS Research Grants programmes is meant to reduce exodus of scientific talents from the South, to what extent do you think the programme has been effective in achieving this objective? (37 responses)

- A lot: 18,9 %
- A little: 32,4 %
- Neutral: 18,9 %
- Not much: 16,2 %
- Not at all: 1 %
- Other: 10,6 %

Given that the TWAS Research Grants is meant to build and sustain units of scientific excellence in STLCs over a longer period to help them achieve a critical mass of highly qualified and innovative scientists capable of addressing real life problems facing their countries, to what extent do you think the programme has been effective achieving this objective?

- A lot: 36,1 %
- A little: 35,1 %
- Neutral: 13,6 %
- Not much: 4.4 %
- Not at all: -
- Other: 10,8 %

Given that the TWAS research grants are meant to reinforce and promote scientific research in basic sciences in developing countries, to what extent do you think the programme has been effective in achieving this objective?

- A lot: 59,5 %
- A little: 27 %
- Neutral: -
- Not much: 2.9 %
- Not at all: -
- Other: 10,6%

Given that TWAS research grants are meant to strengthen endogenous capacity in science, to what extent do you think the programme has been effective in achieving this objective?

- A lot: 48,6 %
- A little: 8,1 %
- Neutral: 15,2 %
- Not much: 20 %
- Not at all: 8,1 %
- Other: -

How has the grant award had an impact on your career?

- Helped establish my lab: 62,2 %
- Consolidate the research laboratory (equipment): 75,7 %
- Improved the reputation of my institution: 70,3 %
- Improved national recognition: 27 %
- Increased invitation to intern. conferences: 29,7 %

- Similarly, the survey data collected by OWSD last year shows a significant impact of the OWSD support. 63 respondents reported 557 publications in total, 329 international and 118 regional publications. Additionally, 273 conference participations and 130 network papers presented in different international forums. Collected data on professional memberships, mentorship scheme and impact on career of the respondents shows slow, but continuous upward mobility of the fellowship awardees.

Network_conferences_number	Network_papers_number	Network_posters_number
273	130	76

Publications total no	International Pubs number	Regional Pub number
557	329	118

- Additionally, the TWAS and OWSD awards have had an effect on local research cultures. Previous winners say the awards have had a powerful effect, enhancing the visibility of their past work and creating new opportunities for the future. The awardees are also role models for young women who are contemplating whether to remain in an environment that is often hostile to their needs and experience.

- There are very few fellowships like OWSD. Those that exist, like the Schlumberger Foundation and UNESCO-L'Oreal Fellowships for Women in Science, are often partnerships between corporate and non-profit entities which sometimes allows them to be more sophisticated in the package they offer, childcare, including research equipment support etc. In order for OWSD to keep up with current needs of the women scientists, they will have to plan more strategically how to utilise the limited financing they have received.

- OWSD has worked hard and grown to become the first international forum to unite women scientists from both developing and developed countries with the objective of strengthening their role in the development process and promoting their representation in scientific and technological leadership.

- The broad objectives for the Science Diplomacy Programme and GIS are to a large extent aspirational (e.g. effects on global, regional and national policies and priorities) and not easily measurable. Furthermore, GIS's full establishment was slightly lagging and therefore the majority of activities happened in 2014 and 2015. Given this short time implementation period and given the nature of many of the objectives, the evidence as to the results is mostly anecdotal. Certainly, there is a fair amount of examples in Annual Reports, nevertheless it is difficult to understand how changes have happened and be convinced that the organisations have contributed to national, regional or global changes.

- The challenges with the Science Diplomacy Programme and GIS are the relationship between a small programme and extremely broad and ambitious objectives

such as influencing ministries of finance and foreign affairs, international policy organisations or more broadly: "raising the profile of science in society". There is a gap between activities and expected outcomes. Outcomes are broadly described and in practice not possible to measure. An alternative could have been a more modest, targeted initiative with realistic objectives. Setting a prefixed and grandiose goal is often irrational because there is no reason to assume that the goal is attainable at a reasonable cost with the available means. "As you cannot do what you want, want what you can do". The solution may be to have fewer objectives for which there is evidence of a workable solution.

- Aside from kick starting the website in 2015, which has already received over 15,500 views, with posted tailor made videos on the key areas listed above, which alone receive over 10,850 views, GIS has been actively involved at promoting its work both at the Secretariat and Regional levels with over 18 and 49 advocacy activities/events respectively. The appointment of 5 GIS members to influential committees/advisory bodies is significant success, given such a short time period, and could be a good sign of work that could potentially lead to even greater outreach to decision makers and governments at both the local and the regional levels.

Table 4: Overview of GIS outputs 2012-2016

GIS	Before 2012	2012	2013	2014	2015	2016	Total
No of members participating in Steering committee	3	3	3	4	7	7	7
No of partner organisations collaborating/supporting GIS	16	7	N/A	9	6 global /12 in regions	9 global	9 current
No. of activities promoting GIS (by Secretariat)	1	1	5	2	6	3 scheduled td	18
No of activities promoting GIC (by RFP)	0	0	0	9	~25	~15 scheduled td	~49
No of thematic area committees established	0	0	0	0	1	2 planned	3
No of policy workshops	0	0	0	1	1	0	2
Additional indicators provided by GIS staff:							
Website views	0	0	0	0	12000	3500 td	15500
Video views	0	0	0	0	2500	8350	10850
Appearances of GIS message in media	0	0	1	7	10	0	18
Appointments of GIS members to influential committees/ advisory bodies	0	0	0	0	5	5	5

- In case of GIS, most of the long-term changes are supposed to happen as a result of research and studies, advocacy and conferences. At the moment though, without the more refined theory concepts, analysing and prototyping with similar case studies, the knowledge and outcome capturing both at the global and regional levels (South and Eastern African and Latin American RFP) for further utilisation is almost impossible.

- Even small contributions may have larger catalytic effects, but they might as well be relevant in theory, but of marginal value in practice. Seminars, workshops and conferences have an immediate positive effect for the individual participants and people interviewed were very positive about improved networking and potential long-term effects. However, such type of self-reporting - although it generates interesting information, does not provide sufficient evidence in order to continue funding such activities in the future.

- Working through the network of the respective partners each of the regional focal points of GIS has implemented numerous activities with the aim to bring the gender lens to these organisations, which are themselves influent advocates for science in their countries and the regions. However, these initiatives are still viewed to a large extent as a stand-alone events and activities – and not part of a broader, multi-faceted and long-term plan. This is understandable due to lack of funds, however it would be necessary to conceptualise activities in this broader and more strategic way. Without a cohesive strategy, partnership mapping and targeted advocacy and influencing effectiveness of these achievements will be restricted and fall short of reaching the identified objectives, in particular given the limited funding for these activities.

- Overall, in terms of achieving gender equality all three organisations have made progress in putting the issue of women, science, technology, innovation and development on the global agenda. Momentum has been reached in gathering noteworthy partners around the table to discuss these issues, example of this is GISs presence in Gender Summits, ministerial conferences and meetings and individual advocacy of OWSD fellowship awardees in policy arenas.

- However, to approach gender equality question holistically within the framework of SITE and within the work done by these three organisations, further efforts should be made in defining specific gender equality targets for each programme and organisation. This would help narrow the focus of work of the individual organisation, but would enable complementarity between the work and allow for the results to feed into each other and achieve greater impact.

3.2 QUALITY AND RELEVANCE

This section looks at aspects of quality and relevance of the programmes and not the research carried out by individual researchers.

- All researchers interviewed confirmed the relevance and usefulness of TWAS and OWSD contributions. Equipment, literature and international exposure are necessary conditions for successful completion of research projects. However, it was emphasized that the inputs are not sufficient – neither to finish a research project nor ensure high quality and relevant research.

- Among the TWAS supported countries, several countries are no longer developing economies and have progressed much further in development of Science and Technology in the last 25 years and in several ways are self–sufficient such as China, India and Brazil. This is to some extent a success of TWAS programmes. Hence, competition with these countries within the TWAS community may be unfair. They could in the future play a leadership role in development research activities within the science and technology lagging countries. The classification of countries lagging in research should be reassessed. The classification of countries lagging in research may not be relevant any longer and should be reassessed.

- TWAS has a set formula for what to provide in all countries and for all applicants. The interventions are briefly explained and justified in the proposal to Sida, but we have not seen any systematic assessment of needs – on which the interventions are based. It is not clear why TWAS provides exactly what they do. Country contexts and needs are different so a more flexible and differentiated approach could have been an alternative.

- People interviewed (TWAS grantees) mentioned that the grants at times were insufficient to complete the training or research project, high quality journals were missing, field work and data collection were not possible to fund, internal constraints existed at universities, laboratories were "overcrowded", and researchers had not sufficient time to be researchers due to high teaching load, etc. [25]

- Sida has provided support to RBM training. As a result, the results frameworks have improved, but there is less evidence that they have been used (e.g. data are not collected for several indicators in for instance the TWAS log frame). Log frames may be useful tools for structuring plans – making them clearer and more systematic, but they less useful for reflecting on and rethinking the assumptions on what interventions are effective. Theories of change as they are presented in chapter 2 may be better tools for revisiting and changing programme assumptions and direction.

[25] A TWAS workshop was organised with a sample of beneficiaries when we were in Trieste. This was a useful initiative to obtain feedback on what works and what doesn´t with the grants.

- All programmes are useful and relevant, but how relevant to countries and in line with Sida policies? It is beyond the scope of this evaluation to assess country relevance of individual research projects. However, TWAS claims to give priority to basic sciences, but also to basic research as opposed to applied research. It is not clear how basic and applied researches are defined[26]. The review of proposals requires that external experts assess country relevance – in other words to consider application and utility of research (not required in basic research). On the other hand, the virtues of basic research are promoted by TWAS.

- Sida is also said to prioritise basic research (TWAS and OWSD). In a review from 2008 (Byravan 2008, p. 34), it is stated that Sida has made the decision to support basic, but not applied research with regard to TWAS. Maybe Sweden had such priorities in the past, but the most recent research strategy (2015-2021) focuses on research of high quality and "relevance to poverty reduction and sustainable development". There is no clear line between basic and applied research with applied research sometimes synonymous with short-term problem solving and basic research with applied elements. It should be discussed whether the balance between basic/applied research is a semantic or substantive issue. [27]

Do TWAS programmes fit in well with the needs and priorities of your university/research institution?

- Strongly disagree:
- Disagree:
- Neutral:
- Agree: 32,4 %
- Strongly agree: 58,6%
- Other: 10,6%

- We have not visited any country - only interviewed a sample of TWAS beneficiaries – so we are not able to say much about local relevance for universities and research institutes. However, TWAS has collected responses on such questions.

[26] Basic research is as driven by a scientist´s curiosity, the main motivation for which is to expand human frontiers while applied research is expected to lead to something that has a market value or solve some specific problem.

[27] In the interview with Sida, they referred to "basic sciences" (e.g. mathematics, chemistry, biology and physics), but not to "basic research". Sida also commented that the recent research strategy has a strong focus on capacity building. The support to basic sciences is seen as capacity building, as these are the foundations for the applied sciences. A strong capacity in the basic sciences is necessary for the more applied sciences (engineering, agriculture, health etc.).The support to TWAS is in the basic sciences. However, the support to OWSD is wider. This support is more generally in science and technology, with the main focus of course being to support women.

The responses are included in the text box below indicating a high level of relevance or fit with institutional priorities.

- In case of OWSD, much of the support is geared towards supporting individual needs of women scientists pursuing advanced research who would otherwise not have access to such funding, access to international research and networks. Country contexts, like in the case of TWAS fellowships, and needs of women scientists are different. A more in-depth review would be required to design more flexible and even more responsive approach.

- Furthermore, although the eligibility age for the OWSD fellowship is extended to include those women over 40 years old[28], the programme still makes it harder for such women to join this fellowship scheme as it does not cover any support for dependents and has in a way adverse effects on professional work -life balance[29].

- Although there is only a small number of organisations providing fellowship grants in the form that OWSD does, the focus on addressing specific needs of women scientists, mainly taking in consideration the professional development-life balance, might further improve utilisation of these funds, and could add value to the role that OWSD currently holds in promoting women's representation and participation in scientific and technological leadership and development processes.

- GISs role is quite unique, partly as it was born out of the need to have a particularly targeted campaign and partly because of its advocacy focus on promoting issues of gender equality in the framework of science, technology, innovation and development. Although, there are numerous organisations dealing with gender and development and fewer dealing with gender and science and technology, none of them are addressing these issues in an interconnected way like GIS is currently doing.

- The team has not been able to visit any of the GIS regional offices, however, the interviews with the GIS regional focal points and information provided in the Annual Reports for 2014 and 2015 points to initial achievements in GISs ability to advocate and influence number of policies and programmes in science, technolo-

[28] OWSD fellowship form still asks the applicant over 40 years old to explain the reason for postponing education, which is not the case for other schemes that share similar mission, such as Deutscher Akademischer Austausch Dienst Postgraduate programmes In-Country/In-Region Scholarship in Eastern Africa and Women Scientist Scheme in India.

[29] Schlumberger Foundation fellowship allows for family accompaniment and child care support during the fellowship duration.

gy and innovation that take account of gender issues in particularly in South Africa and Latin America. However, as indicators for specific objectives are vague (without defining what particular policies and programmes are priorities within the different contexts), and due to overall weakness of the existing M&E we are not able to quantify the number of the programmes and policies impacted so far.

3.3 GOVERNANCE AND MANAGEMENT

This section discusses to what extent the governance and management structures are suitable and effective for achieving the objectives for the three organisations. There are two levels in the assessment of governance: Firstly, the internal relationships between TWAS, OWSD and GIS and secondly, the external relationship with ICTP and UNESCO. The existing structures and systems were presented and explained in the previous chapter. They are not optimal and should be improved for the following reasons: [30]

- The existing governance structures are not clear. The structures are also too complex and fragmented for three relatively small organisations with potential overlaps and synergies.

- The underlying question is to what extent there are three separate organisations or three organisations in one. Most organisations have a need to maintain a clear and distinct identity with the ability to independently take their own decisions and control resources. The three organisations are perceived and also presented as different and independent with separate governing structures and decision-making lines as explained in the previous chapter. In the agreement between TWAS and OWSD (2005), there is a reference to two separate governing bodies. GIS has also its own governance structure.

- In reality, there is only one organisation - TWAS housing two sub-entities or programmes with relative autonomy[31]. Both OWSD and GIS have their own governing bodies, but the ultimate decision-making power lies with the Executive Director of TWAS. Terms of Reference for this evaluation (Annex 1) refer to OWSD

[30] Responding to the draft, TWAS made the point that programme decisions are made by the respective programme governance structures and not by the Executive Director of TWAS. The Executive Director of TWAS is only involved in the management and administration of the activities of OWSD and GIS. However, a cultural evolution may be possible within the TWAS/OWSD/GIS organisation that permits to work in closer and more constructive partnership, and to more systematically seek opportunities for coordinated or collaborative efforts. This might entail formation of a management committee with the P staff of all the organizations meeting regularly with the Executive Director

[31] In the ToR OWSD is called ”an independent non-governmental body” while GIS ”a project”.

as “an independent, non-profit and non-governmental organisation”. This is not correct- at least not today.[32] At one point (in 2013), it was discussed to convert OWSD into an NGO. UNESCO would then be able to sign an agreement with the NGO. However, the preferred option was to employ personnel of OWSD as UNESCO staff (see letter from the President of OWSD to the TWAS Director). The same is true for IAP.

- Though there are clear organisational structures within OWSD and GIS, the decision-making roles and management lines are less clear vis-a-vis the overall structure of TWAS, OWSD and GIS. The leading role in terms of administrative and financial management rests in TWAS. However, it is not clear how strategic positioning and even certain programming choices are made or if any significant changes can be made based on discussions and decisions agreed upon by their governing body members.

- As for the links to regional and national offices/networks/focal points and their management, those are under a great deal of strain at the moment as there is no staff or dedicated funds for management of the membership and national chapters at the OWSD Secretariat level. The new proposal should include funding for this, as there is great potential for regional and local level work. There is great potential that work can also be leveraged through the national chapters. Funds can be raised through the membership subscription, which at present are collected on an ad hoc basis by national chapters. They sometimes set their own rates and get income from conference registration fees[33]. National chapters with many members like Nigeria actually generate quite a lot of funds, which they use for running workshops and conferences.

- There are four OWSD regional Vice Presidents (VPs) and as per their mandate each of these is responsible for coordinating the national chapters in their region. Subsequently, each national chapter has its own 'executive committee' with a president, treasurer and secretary and minimum 20 members. Once a year, in principle, the national chapters should communicate their activities and membership to the Regional VP who then presents a 'regional report’ at the OWSD executive board meeting.

[32] OWSD may have been an NGO previously because it is also mentioned in a report from 2008 (Huyer 2008). The report also explains the separate decision making bodies – the Board and the General Assembly.

[33] The official subscription amount is 'a voluntary contribution of USD20 per annum' - but that is very costly to administer and in practice OWSD do not receive contributions at the Secretariat because of this. With the promised 'donate button' now approved by UNESCO for the OWSD website things might improve.

- Some of the regional offices are doing extensive work mobilising women scientists and actively recruiting members to national chapters. The OWSD Africa and South Africa national chapters work well. The South African chapter, for example, is strategically positioned within the ASSAf. Roseanne Diab, a TWAS fellow and Executive Officer of ASSAf, is an executive member of the OWSD national Chapter ASSAf and co-Chair of the TWAS Gender Advisory Panel. She is also on the Steering Committee of GenderInSITE thus ensuring and establishing strong links between the OWSD national chapter, the GIS regional focal point, the TWAS regional office and ASSAF as a host[34]. Because there are so many OWSD fellows who study in South Africa, the national chapter there has focused on the fellows and also have a selection process for membership - which is not in place anywhere else.

- There have been so far no official links established with TWAS regional offices and GIS through the OWSD Vice Presidents or national chapters except in South Africa (which hosts both TWAS RO and OWSD NC - and GIS FP) and these should be defined in the new programming cycle as to be able to utilise all the opportunities both resource and expertise wise.

- At its core, the steering committees are meant to be a governing device used to organise key programme stakeholders and empower them to steer a programme to successful conclusion and not as a management tool. At the moment, it seems that OWSD, GIS and TWAS governing members are all focusing largely on management issues and less on defining, monitoring and maintaining the *purpose and vision* of respective programmes. Better utilisation of steering committee meetings can be ensured by employing strong mediators to enhance the work of these steering bodies and by focusing on supporting them to fulfil the role of the programme steering committee.

- The Steering Committees of OWSD and GIS meet once or twice a year with limited opportunities to influence decision-making. The current OWSD board is neither complete nor fully functional. Given the internal structuring under TWAS, the governing boards of OWSD and GIS have had predominantly symbolic importance from a governance point of view. In practice, they may have an important function and influence programmatic direction.

- The power of the TWAS Steering Committee is also restricted. A major role for Boards is to recruit and supervise the Executive Director and terminate his/her contract if required. In TWAS, the Director and also other senior staff are recruit-

[34] Prof Diab is a TWAS Fellow and member of the TWAS-OWSD Gender Advisory Panel as well.

ed by UNESCO and can only be released by UNESCO. So when TWAS soon will recruit a new Director, the TWAS Steering Committee may not have any role in the selection process. On the other hand, the Agreement between UNESCO and the Italian Government states, ”On the basis of a list of candidates submitted by the Steering Committee, the Executive Director of TWAS shall be appointed by the Director General of UNESCO…”

- Sida and ICTP have observer status in the TWAS Steering Committee while the Italian Government is a member. The rationale for such difference is not clear since both Sida and the Italian Governments are external donors. [35]

- The links between TWAS and UNESCO/ICTP are complex. As mentioned, ICTP is a UNESCO Category 1 institute while TWAS is an independent programme under UNESCO. UNESCO provides no financial support to TWAS, but is managing its personnel and finances. All staff is UNESCO staff and benefit from UN privileges. Some of the personnel and financial functions are delegated to and performed by ICTP[36]. TWAS has also some internal financial and administrative capacity. In other words, in processes and decisions in financial and personnel management UNESCO, ICTP and TWAS are involved in different and sometimes conflicting roles.

- We are not in a position to assess in any detail the division of roles and responsibilities are clear, but such a multi-layered system it seems to us that it is not efficient and effective nor optimal for TWAS, OWSD and GIS as explained in more detail in the report.

- Each of the three “organisations” has their own planning and reporting systems and processes. Senior staff meets monthly, but mostly for sharing of information. As such, the organisations have separate and parallel structures with limited interaction and opportunities for creating synergies.

[35] In the response to the draft report, TWAS informed that Italy gives UNESCO core funding for TWAS in an annual contribution, whereas Sida's support is programmatic for some years at the time with TWAS re-applying each time. The Steering Committee was set up as a condition of the agreement between Italy and UNESCO. Sida emphasised in their comments that the agency strives to separate the role as funder and as owner/implementer of programmes. This is to respect the partners' ownership and to have clarity when it comes to legal responsibilities. For this reason Sida generally avoids being part of steering committees and prefers to have a role as an observer.

[36] There is common finance and administration for TWAS, OWSD, GIS and IAP. A part time administrative officer is shared with ICTP. UNESCO SAP system and DUO applications are used and procurement services of ICTP. TWAS financial reports are controlled and audited by UNESCO HQ and external auditor. All payments are through UNESCO or ICTP. UNESCO holds the bank account.

- Each of them has also different regional and country offices and focal points. In other words, there is scope for bringing all the parts closer together as long as differences and idiosyncrasies are respected.

- The relationship with UNESCO was formalised in the early 1990´s. For more than twenty years, the relationship was rather formal and distant. While UNESCO administered funds and personnel, it did not contribute funds nor exercised any programmatic control over TWAS. However, UNESCO has at times tried to make ICTP and TWAS adhere more closely to UNESCO guidelines. It is difficult to know to what extent TWAS/OWSD/GIS are important for UNESCO. Measured by their visibility on the UNESCO web site, their importance is small.

3.4 FUNDING AND DONORS

Looking at the financial report for 2014, the sources and pattern of funding were: (Annual report 2014):

Table 5: Overview of donor funding for TWAS for 2014

Donor	Funding
Ministry of Foreign Affairs, Italy	2,132,056
Swedish International Development Cooperation (Sida)	1,845,193
Government of Sultanate of Oman Through the Ministry of Higher Education, the Research Council and Sultan Qaboos University	200,000
COMSTECH, Pakistan	100,000
Lenovo Group Limited, China	100,000
AAAS, USA	78,500
Kuwait Foundation for the Advancement of Sciences (KFAS)	50,000
Elsevier Foundation, USA	50,000
Ministry of Research, Science and Technology, Iran I.R.	46,475
The French Foundation for Rare Diseases	20,408
African Union, Ethiopia	20,000
US NAS, USA	133,255
Academia Sinica, Taiwan, China	24,783
CNR Rao, India	5,000
Atta-Ur-Rahman, Pakistan	4,978
Academia Chilena de Ciencias, Chile	5,948
Other small contributions	8,100
Interest income	16,865
Exchange difference	-1,554
Transfer to TWAS Endowment Fund (Interest)	-314,232
TOTAL Budget for 2014	**6,274,722**

In that period, Sweden and Italy provided for around 75% of the funds and fifteen other small donors contributed between 5000 and 200 000 USD. Similar trends were visible in all subsequent years; TWAS has received core funding to the tune of USD 2 million each year from the Italian government. The funding continues, but has been cut with approx. 12%. As this funding was committed through a law enacted by the Italian parliament in 2004, it ensures long-term support of the TWAS secretariat in Trieste and a number of its core programmatic activities. The support from Sida is also long-term, but it was last year (2015) cut with 30%. The currency fluctuations reduced the actual amount received even further.

TWAS has obtained funding from a broad range of other donors, but all amounts are small. In addition, TWAS has instigated an endowment fund with a target value of USD25 million. Donations – amounting to some USD 13 million – have been received from several developing-country governments. Once the USD25 million target has been reached, the plan is to use the interest to finance the TWAS secretariat and a range of its activities and further ensure the long-term sustainability of all programmes.

TWAS has a high-level fundraising committee, but there has not been any concerted action by this committee so far.[37] There is also a staff fundraising committee – six to seven members of the TWAS staff, including administrative/secretarial support. This committee has met a number of times since the start of 2015, and it has helped to implement the annual TWAS outreach to members. There have been a number of contacts at high level with emerging and large economies addressing funding. The Executive Director of TWAS has mainly done the contacts. Together, the raised and pledged funds add up to significant amounts. TWAS has also worked with UNESCO in a major project proposal for Angola, a project that targets a USD 70 million funding for a five years period.

Both OWSD and GIS's fundraising activities are limited due to their current status. Whilst some small level fundraising is done at the regional levels for both GIS and OWSD, such funds should go through TWAS. Until the issue about the status of the three entities is fully clarified and their roles defined, the fundraising for OWSD and GIS will be problematic. How and which funding sources these two organisations can

[37] In their comments, TWAS emphasised that in the last couple of years, fund-raising activities have been significantly intensified, addressing the governments of several emerging and large economies. The additional funds raised in 2015 and 2016 are considered a success, and further gains are expected. TWAS has established a Fundraising Strategy (2013), it has an updated logical framework matrix for fundraising, addressing TWAS Members, Governments, Bilateral development agencies, Multilateral development agencies and the Private Sector.

approach depends on the future structure, financial and administrative clauses linked to the UNESCO institutional partner status.

Current fund raising opportunities, at least for GIS are limited to approaching donors to co-fund specific regional or country level or one of advocacy events. On the other hand, those activities not funded from Sida funds, but as in-kind contributions amounted to a large support for the GIS programme both globally and regionally.

One difficult issue to assert is the value of the hours of work dedicated to Gender-InSITE of the high number of very qualified experts that collaborate with the programme. The two co-Chairs are high-level scientists active in their fields. The many specialists that collaborate in the different activities do so without any honorarium.

In addition to the volunteer work from the dedicated staff, in 2015 FLACSO contributed an estimated USD 30,000 in in-kind contributions to activities undertaken as part of the GIS initiative[38]. Total in-kind contributions, for 2015 amounted to USD 30,500 and total leveraged contributions in 2015 to USD 33,050. The LAC regional office also leveraged USD 128,000 in contributions from CONICET Argentina and UNESCO Mexico in 2014. [39]

As for South Africa, in 2014, ASSAf leveraged a total of USD 135,708.29 in additional contributions for GIS activities, including USD 306,000 in Secretariat personnel time, USD 245,000 in office space and equipment, and USD 50,000 in funds for the Young Scientists Conference. In 2015, ASSAf leveraged a total of USD 645,500 in additional contributions, including USD 200,000 from ASSAf, the South African Department of Science & Technology (DST) and the Human Sciences Research Council (HSRC) for the World Social Science Forum event; USD 180,000 from DST, HSRC and the National Research Foundation for the Gender Summit – Africa exhibition; USD 120,000 from ASSAf, DST, the TWAS Regional Office for Sub-Saharan Africa, and the Royal Society of Chemistry for the Annual Young Scientists Conference, and USD 40,500 in Secretariat staff time and office space and equipment.

[38] In addition, it leveraged USD 16,500 from UNESCO headquarters, Google Argentina and the Organization of Ibero-American States; USD 3,700 from Monterrey Technological Institute and the Regional Center for Studies on the Development of the Information Society (CETIC); USD 5,850 from the Comisión Nacional Argentina de Cooperación con la UNESCO, Ministerio de Educación in Argentina; USD 2,000 from Unesco headquarters; USD 5,000 from Monterrey Technological Institute, the Elsevier Foundation and CLACSO; and USD 500 in-kind from the Open University of Catalonia.

[39] The financial data were received in a text format and we do not think it will do justice to individual contributions if the team attempted to transcribe and presented it in the tabular format. Such formatting would potentially leave a gap between the in-kind contributions and total leveraged.

The East Africa focal point leveraged a total of USD 86,900 in 2015, including USD 80,500 for the High Level Dialogue of African Ministers and Parliamentarians, USD 65,000 for the Strengthening Gender Responsive Policy Systems and Governance Strategies for Sustainable Africa Project, and USD 30,000 for its side meeting to present GIS at the Conference of Vice Chancellors and Deans of Science and Engineering Technology (COVIDSET).

Special account and funds-in-trust

TWAS is currently an extra-budgetary funded programme in UNESCO. Funds from Sida are through a "special account" as opposed to "funds in trust". Special accounts are created to receive funding for clearly defined objectives and within the overall strategy of extra-budgetary funding in UNESCO. All contributions come from different donors, meaning that the Special Account is a multi-donor account. All incoming payments to UNESCO should be made to HQ´s bank account. Funds are "pooled" and expenditure is not linked to any specific donation, and thus there are no individual donor reporting on contributions.

Funds-in-trust contributions are utilised by UNESCO for the programming, implementation and supervision of extra-budgetary projects or programmes selected by the donor in cooperation with UNESCO. Most funds-in-trust agreements are limited to a single donor and tied to a single project. The funds-in-trust are utilised to finance direct project costs and also contribute, at the rate of 13% of direct project costs, towards UNESCO´s costs in connection with the administrative and technical backstopping of the project.

From the definitions, the Sida funding of TWAS are closer to "funds-in-trust" than "special account". However, with the special account option 13% overhead charged by UNESCO HQ is avoided. This is in line with both Sida´s and TWAS´ interests. The Swedish contribution has to some extent been "ring fenced" within the pool. Individual narrative and financial reporting is provided to Sida despite the rule against separate reporting. All the other donors to the pool have accepted one consolidated financial report, but receive individual narrative reports.

Links to other Sida supported projects

What relationship have TWAS/OWSD had with other initiative supported by Sida such as the bilateral research capacity strengthening programme and global programmes such as ISP[40], INASP[41] and SciDevNet[42]?

[40] Uppsala University established the International Science Programme (ISP) in 1961. ISP has earned international recognition for effectively strengthening research and postgraduate education in low-

As far as we could find, there have been no connections between TWAS/OWSD and the Swedish funded bilateral research programme, but there could be informal links at country level. OWSD set up a Gender Working Party together with ISP. The idea was to work on joint funding applications, but it proved difficult to manage and to understand exactly how the programmes could complement each other. OWSD has also worked with INASP, through AuthorAid, and in 2015 they set up an online mentoring programme together for OWSD fellows and members. Both OWSD and GIS have worked with SciDevNet – running several workshops together. TWAS did not have the same links with ISP, INASP and SciDevNet as far as the current Programme Co-ordinator is aware.[43] There is a significant potential for further collaboration. Joint meetings could be organised for planning specific events and initiatives.

3.5 COSTS AND EFFICIENCY

TWAS donors are varied, including Sida and the Ministry of Foreign Affairs of Italy and other donors such as Lenovo Group, Comstech, Elsevier Foundation, Governments of Kuwait and Oman, AAS and Academies of Science of Chile and Chine. The joint MoFA and Sida funding made for 75% of the total funding and this trend is continuously visible throughout the duration of the period under the evaluation.

In 2014 the main funder is actually the MoFA of Italy averaging close to 44% with Sida funding coming to 38% of the total TWAS funding, but usually that ratio is close with both Sida and MoFA providing more or less the same amounts.

income countries in the basic sciences physics, chemistry, and mathematics.

[41] INASP is an international development charity working with a global network of partners to improve production, sharing and use of research information and knowledge, so that countries are equipped to solve their development challenges.

[42] SciDev.Net is a source of reliable and authoritative news, views and analysis on information about science and technology for global development based in UK. See more at: http://www.scidev.net/global/content/about-us.html#sthash.dRdxg2jT.dpuf

[43] Commenting on the report, TWAS informed that discussions were held with top editors at SciDev in 2015 on the possibility of working jointly in communications training or collaborating on a special publication. However, SciDev has its own training programmes; while there was some mutual interest in a special "yearbook of science in the developing world", TWAS and TWAS PIO lack the time and resources to initiate and seek funding for such a major new publication. However, the relationship is positive and both parties are open to further discussions.

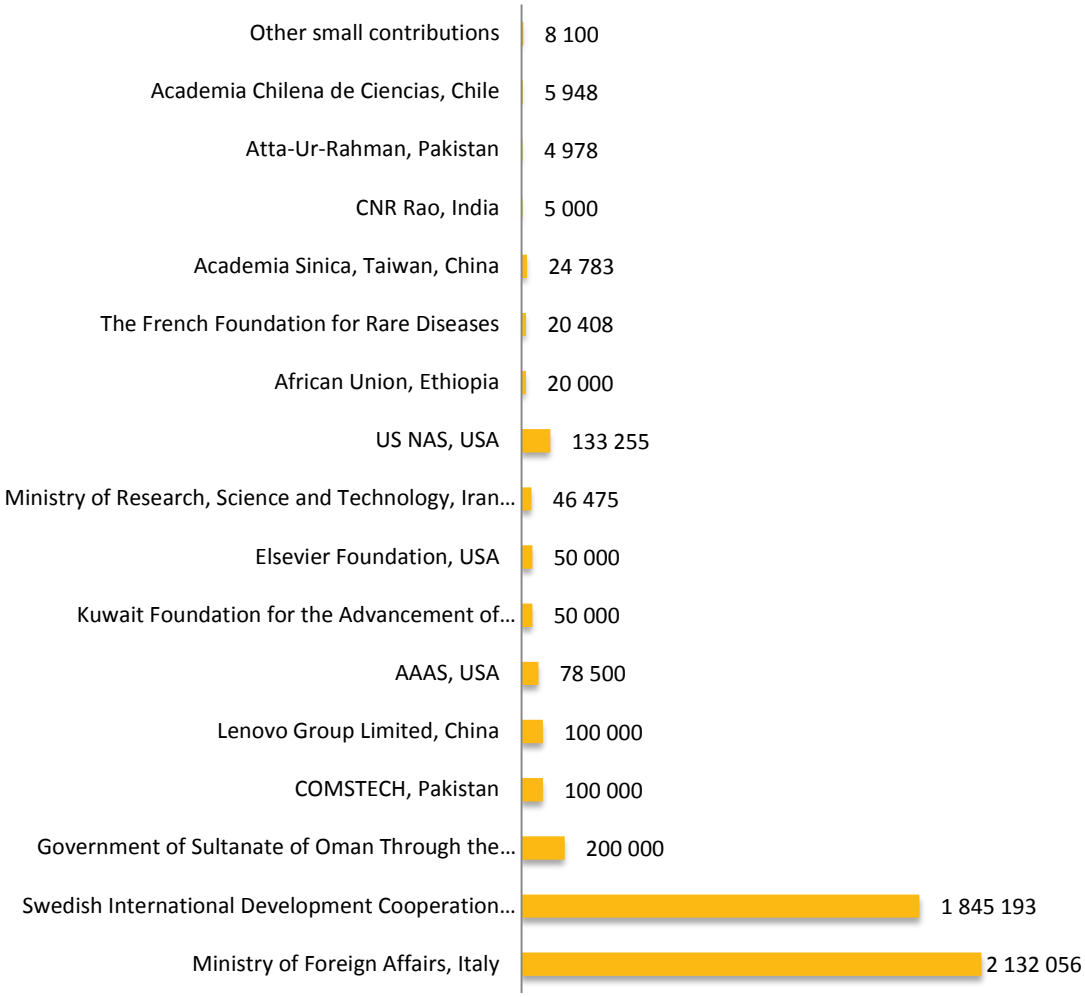

Figure 6: Overview of donor funding for TWAS in 2014

Figure 7 shows TWAs expenditure for 2014[44]. In general there is a tendency to spend more funding on the budget line for Council and General meetings, ordinarily around USD 40,000 more, but in 2014 almost over four times more (initially budgeted USD 50,000, but spent USD 196,169) and in some years on International Science Diplomacy Programme, whilst other budget lines are well within the spending limit[45].

[44] Although there is some double representation in this figure, this was done deliberately so as to present the funding per budget category and individual expenditures within that category.

[45] This overspending was due to a previous under spending and carry-forward to the year in question due to late arrival of the funds at TWAS.

On the whole, research grants (around 30%) and Operational expenses (14% of total expenditure budget) present the largest costs for budget in all years. Joint project expenditure makes on average 9% of expenditure, and Fellowships, Associateships and Professorships 7% and TWAS regional offices cost around 3-5%.

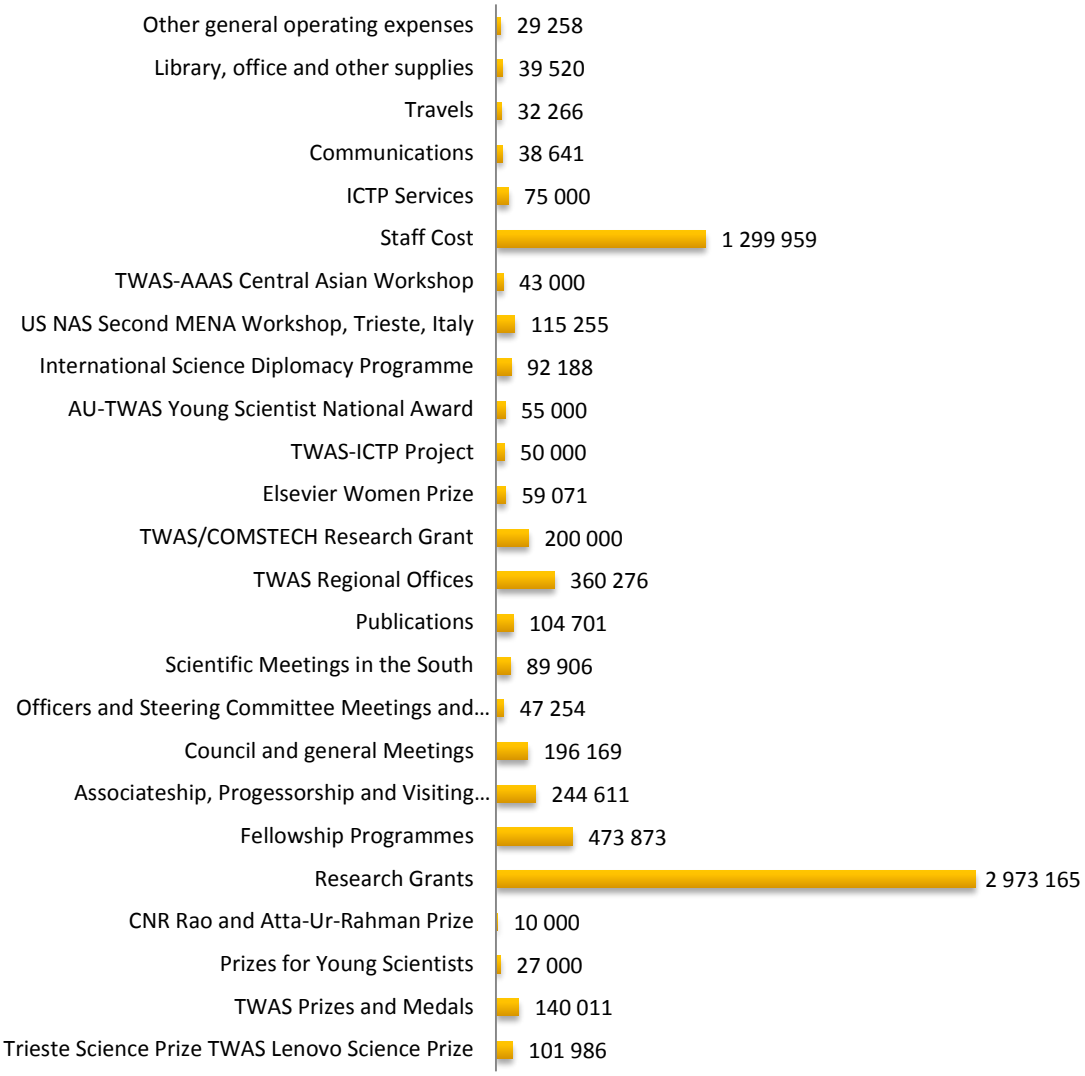

Figure 7: Overview of TWAS expenditure for 2014

OWSD activities are predominantly funded by Sida[46]. Funding for the Elsevier award - USD60, 000 has since 2015 been included under the OWSD budget.

[46] Contributions from members are negligible owing to the high administrative costs for small amounts

The OWSD expenditure can be assessed as quite efficient. Fellowship expenditure makes up about 55% of the total spent budget, travel funds for grantees make about 20% and only about 10-13% is spent on administrative/operational costs on yearly bases.

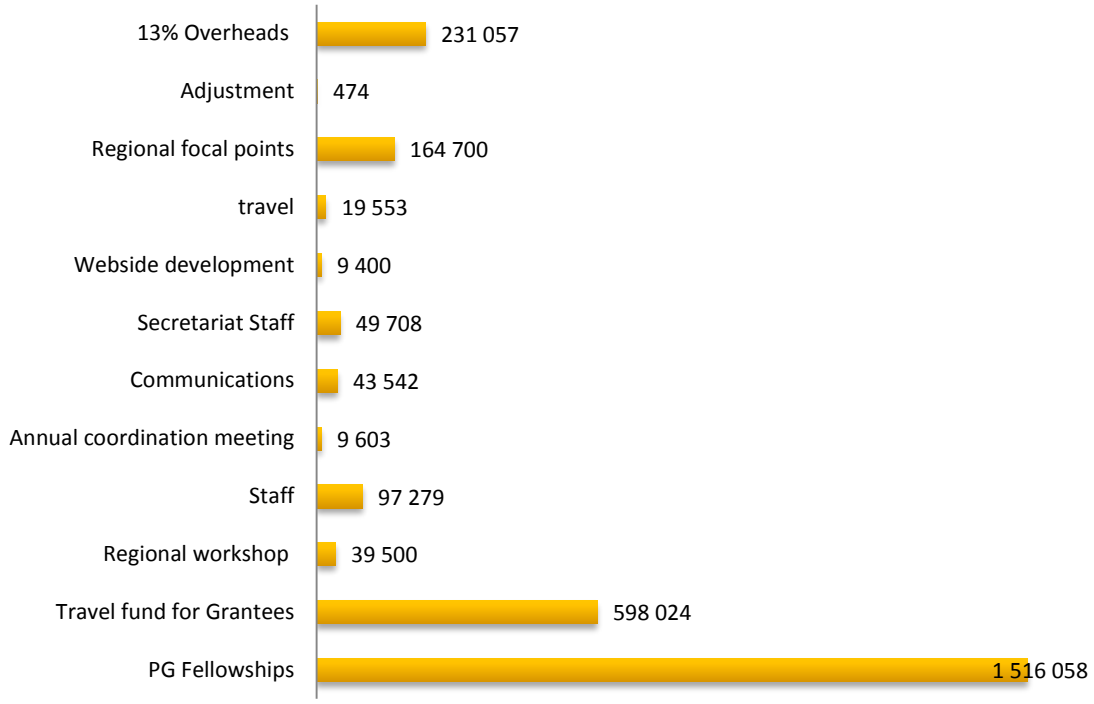

Figure 8: Overview of OWSD spending allocations 2012-2015

OWSD has had very limited funds for communications for over two years. With more funds allocated OWSD's visibility should consequently increase. Partly because of the GIS component, which is nested within the OWSD programming and which is solely focused on visibility, communication and advocacy, the donors might have assumed that funding OWSD's communications strategy and activities might duplicate the efforts. This is not the case, there is no duplication in these efforts as the target groups and audience but also advocacy messages of OWSD differ from those of GIS. OWSD needs strong visibility of its work to ensure the impact of its activities is utilised for lobbying, influencing and fundraising purposes. Therefore stronger focus

(USD20).

on OWSD's visibility and relevant funding allocations for it should be made in the future programming phases.

OWSD budget includes the GIS budget, around 10-12% of the total OWSD budget, rarely over USD 790000. In the last two years, GIS has not been able to spend the budget fully and has carried over about a half of its budget in 2014 and 2015 into the next budget year. The GIS's work was delayed so this issue of overflow of the budget reflects those delays. The biggest expenditures are on Communications Materials and Production, but even that expenditure is far less than budgeted for. Secretarial staff budget expenditure also accounts for a big percentage of the overall budget, but expenditure is far less than budgeted showing that there is room for doing more with the money available. However, some of it should be utilised for employment of either another half time programme/administration staff or even short-term consultants on needs-to bases.

Table 6: GIS budget for 2015

Activity	Budget	Expenditure
1) Annual Coordination Meeting	155,000	72,308
2) Communications Materials and Production	137,000	92,725
3) Secretariat Staff	149,000	89,501
4) Website Development and Maintenance	12,000	153
5) Travel	40,000	22,601
6) Regional Focal Points	197,000	105,527
7) Administration	31,000	2,580

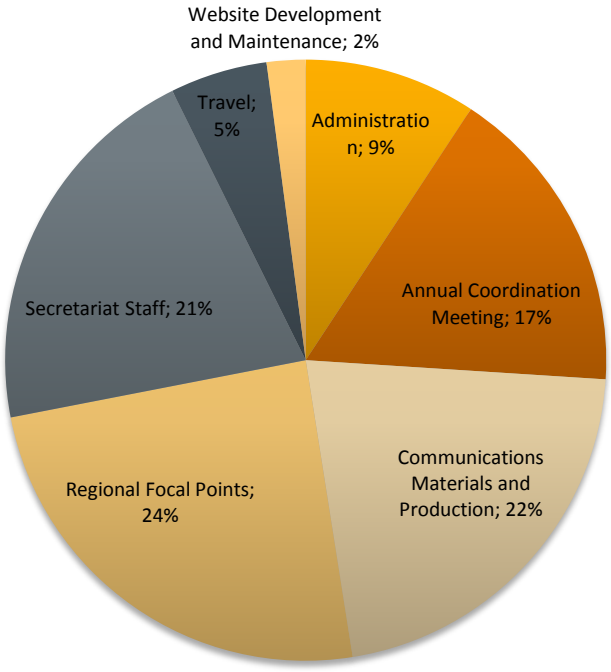

Figure 9: Overview of GIS expenditure 2015

3.6 GENDER

As mentioned in the previous sections, TWAS has made some progress in integrating gender into their programming, however, its structures have only slightly changed to accommodate and take into an account the principle of gender equality. First and foremost, TWAS should ensure that its Gender Advisory Panel is given the importance it deserves and that membership of the advisory panel is gender balanced (equal number of male members). At the moment, there is one man on the committee all the rest are women which makes it appear as a committee that is dealing with specific women's issues and not addressing a wider problem of gender diversity in science.

In terms of integration of gender equality in programming, all three organisations are currently doing so in a gender accommodating way. Although this approach is definitely resulting in short term benefits and realisation of outcomes, it does not attempt to reduce gender inequality or address the gender systems that contribute to the differences and inequalities.

In order to make them more transformative, which GIS is to some extent attempting to do, the strategies, policies and programs of TWAS and OWSD should aim to promote equality and achieve programme objectives by: 1) fostering critical examination of inequalities and gender roles, norms and dynamics, 2) recognizing and strengthening positive norms that support equality and an enabling environment, 3) promoting the relative position of women, girls and marginalized groups, and transforming the

underlying social structures, policies and broadly held social norms that perpetuate gender inequalities.

OWSD work is in essence gender aware and certainly gender transformative, however, the fellowship scheme is, given the nature of the problem of absence of women in scientific fields, only touching the surface of the barriers and system insufficiencies with which young women and women scientists are faced. Hence, in order to address the issue in a strategic manner, it is important that OWSD creates stronger strategic partnerships with other gender equality organisations working in Science, Technology, Engineering and Mathematics (STEM) field who are advocating for increased competitiveness by reducing barriers that deter women from pursuing academic and career goals in these fields. Strong links in terms of linking the science and development and gender equality can be made by stronger cooperation with for example UN Women and UNFPA. Furthermore, both OWSD and GIS could enhance their profiles by engaging in high level economic forums where the principle of their work will be presented and where there is ample of opportunity to lobby and influence governments to move to more equitable and equal distribution of funding in education and research for women. Likewise, further co-funding opportunities should be examined in terms of possible cooperation with similar organisations supporting, for example, early career women scientists in LMICs (International Development Research Centre and CIDA).

GIS's work on the other hand is conceptualised as a long term initiative, unique in its attempt to link gender equality, SITE and poverty reduction and development. At the moment, its gender equality advocacy covers a wide scope of issues such as number of young girls exposed to SITE, participation and representation of women in scientific and science relevant policy making and lobbying for improved labour market environment for women scientists. Whilst all of these are real needs that have to be addressed, GIS could benefit from more targeted advocacy.

Ultimately, one of the most important issues is promotion of gender equality within the structures of TWAS, OWSD and GIS, not only in terms of head count (number of women fellows, number of women in organisational and governing structures), but also in terms of policy and decision making positions within the organisations themselves. Being the example and the champion of gender equality in SITE would indeed further the niche that these organisations currently hold and made them unique in this field of work.

4 Conclusions and recommendations

4.1 KEY CONCLUSIONS

1. The broad policy objectives – promoting excellence in scientific research responding to needs of young scientists and women in developing countries remain highly relevant in LMICs, even though there is a lack of data that allows one to track progress against these objectives.

2. The three programmes are in line with Sida´s research strategy which aims to go beyond simply transferring knowledge and equipment to help developing countries build their own research base.

3. Among the TWAS supported countries, several countries are no longer developing economies and have progressed much further in development of Science and Technology in the last 25 years. This is to some extent a success of TWAS programmes. Hence, competition with these countries within the TWAS community may be unfair. The classification of countries lagging in research may not be sufficiently relevant.[47]

4. There is a need for further work on mapping the potential collaboration between other Sida funded activities both regionally and globally as well as being proactive in seeking matching funding from other development agencies to strengthen the impact of all the three programmes.

5. Each organisation addresses limitations for scientists and researchers in developing countries, such as limited materials, poor physical and communication infrastructures and inadequate collaboration with regional scientific communities. The grant programmes have made a clear distinction between support provided for lower middle-income countries such as India, Bangladesh versus low-income sub Saharan African countries. Most of the funding and support captured under this evaluation has been done in low-income developing countries.

[47] In response to the draft report, TWAS emphasised that while most TWAS programmes are available for scientists in any developing country, in 2005, support via Sida-funded TWAS was made available only to a restricted number of developing countries, those listed by TWAS as Science and Technology Lagging Countries. With regard to providing research grants, the previous and current Sida agreements focus on these 81 countries.

6. OWSD and TWAS programmes have also guided and supported their fellows and partners in navigating the complex area of scientific collaboration, publication in peer-reviewed journals and in attempts to increase the visibility and acceptability of research in developing countries.

7. Overall success of OWSD and GIS programmes, which aim to increase the importance of gender equality in science and development, of innovation and new technologies, is highly dependent of numerous external factors and as such it is essential that lobbying and advocacy is done in tight coordination and collaboration with other global and regional like-minded actors.

8. More specific conclusions are:
   - Good results in implementing fellowship schemes, continuous success in obtaining the required number of fellowship beneficiaries in required scientific areas, but not always with equal geographic coverage.
   - Fair success in provision of financial and material support.
   - Success in introducing Open access publishing and improving visibility of South research.
   - Promotion of South-to-South cooperation and collaboration and knowledge transfer.
   - Present, if not always transformative, focus on gender equality and integration of gender lens into science, technology and innovation as concept in SITE in developing countries.
   - Limited, but visible success in keeping the women in SITE agenda in policy discourse.
   - Data and information on outcomes and impact are missing, but case studies and survey data collected by TWAS and OWSD indicate that research in developing countries has been strengthened, that recognised researchers and researches increasingly come from low-income countries. This is happening partly because of continuous support from TWAS and OWSD.

9. Addressing the overall objectives is going to be a long-term commitment. This raises the issue of whether the three initiatives need to be managed so that that they are sustainable in the medium to long term and how this might be achieved. At present, the approach is not managed for sustainability and is dependent on mainly the funding from two major donors - Sida and Government of Italy, and funding from both declined in the past four year programme.

10. Management of TWAS and OWSD initiatives has so far focused on grant processes and products. Given the complexity of the policy environment within which they operate, and the large number of other conditions beyond the control of the initiatives, that need to be in place to achieve the policy objectives, a management approach focused on outcomes is required. This will require a Theory of Change making a clearer distinction between completed activities (reviewing applications and providing grants) and achieved outcomes at individual and organisational levels.

11. There are two significant impediments for moving to such an approach. First, the lack of data at the outcome level. Second, the steering committees and senior management do not play a sufficiently active role in strategic leadership and managing for outcomes.

4.2 OVERARCHING RECOMMENDATIONS TO SIDA

1. Sida has helped TWAS, OWSD and GIS to place scientific research and gender in the developing world on the international agenda. This is a work in process and should be continued and strengthened in the future.

2. Sida should continue funding TWAS, OWSD and GIS, but based on a careful review of the new programme proposal ensuring that required changes have been included. The following issues are of particular importance:

   (a) The core capacity building components (TWAS and OWSD grants for research and PhDs) are relevant and well organised, but the broader policy and advocacy objectives are still not clear and translated into viable and effective programmes - such as for the Science Diplomacy Programme (TWAS) and the work of GIS. As such it could be argued that Sida should focus on and only fund the core activities, but we believe there is potential added value in the other activities as well. However, the Science Diplomacy Programme and GIS need to be improved and strengthened through improved targeting, fewer strategic messages and selection of a few indicators that could be measured and monitored. Additionally, the broader network of TWAS and OWSD network of alumni should be utilised more, making sure that large number of them also present at the key strategic forums, both scientific ones and development forums. Promotion of high quality researches at international conferences would enhance the profile of scientists and help their carrier development but also raise the understanding of the linkage between the science and development issues in the south and globally.

   (b) All organisations provide sufficient, reliable and satisfactory data and information on activities completed and outputs delivered. All report on how many grants are awarded, to whom, for what and where. The number, types and participation in meetings, workshops and conferences are also adequately explained. However, there is no information in reports to Sida on outcomes and impact – on what changes at individual, organisational and policy levels the programmes have contributed to.

   (c) Sida may consider support for establishing a solid M&E system for capturing progress and achievements. It is critical that TWAS and OWSD provide robust data on number of people graduated, research projects completed, number of articles in peer reviewed journals, patents, participation and presenta-

tion of papers in regional and international conferences, etc. and collect data on effects at university level (e.g. laboratories) and individual level (career development).

(d) There is also a need for a systematic evaluation focusing on relevance, use and effectiveness of scientific training and research at regional and country level. The country evaluation should focus on the effects at university/institute level and the quality and relevance of research. It could also be done as part of mid term evaluations, M&E exercises and would not mean the evaluation of all researches, but rather choosing the best sample methodologies etc. or even randomly – spot check reviews.

(e) The governance and management structures are not optimal. There is a need to bring the three organisations together with a new leader, a shared strategy, clear structures, more joint planning and reporting processes. Differences and individual characteristics should be recognised and respected. The options and preferred alternative are explained later.

(f) The Swedish and Italian governments are still the two major donors. The programmes are as such vulnerable to changes in two countries. Efforts to find new donors and mobilise additional resources have so far not been successful. Sida should request for a resource mobilisation and sustainability plan.

(g) Sida should assist TWAS in negotiations with UNESCO to secure future financial and managerial autonomy. There is a fear that UNESCO may compromise TWAS's autonomy and introduce stricter bureaucratic requirements. TWAS and ICTP should engage with UNESCO in a dialogue and negotiation on how to build a constructive, creative high-impact collaboration.

4.3 OVERARCHING RECOMMENDATIONS TO TWAS, OWSD AND GIS

1. TWAS, OWSD and GIS - by focusing on scientific research and gender in developing countries operate in a niche and play important complementary roles. The programmatic foundation has been built through an organic process in which new initiatives have been added. Time has come to bring the organisations closer together – build a shared overall strategy, establish efficient governance and management structures and introduce shared planning, monitoring and evaluation systems.

2. In terms of governance, there are in principle three different alternatives. They are presented as potential scenarios to inform and stimulate discussion among TWAS, OWSD and GIS on future directions. [48]

Alternative A: Integrate OWSD and GIS in and under TWAS - which is more or less a continuation and consolidation of the existing structure. This is a simple solution, but does not address the problems and challenges explained in chapter 3.2. Gender identity and ownerships are important. There is a fear that TWAS management may not sufficiently understand and respect gender issues and concerns.

Alternative B: To differentiate and separate the three organisations offering more structural and functional autonomy to each of them. This is feasible (in principle), but both OWSD and even more GIS are small, highly dependent on TWAS administrative services and Sida funding. Such a solution will undermine future opportunities for more and better synergies between three initiatives.

Alternative C: The final and from our perspective a preferred alternative is to bring the organisations together under a new name and with a new leader providing identity and credibility to all parts of the new organisation. Such an alternative will also have other cost-efficiency features[49]:

- **One unified plan for TWAS/OWSD/GIS:** Bring all programmes under one strategic plan with an overall purpose and separate supporting objectives.
- **One budget and financial system**: Covering costs for all programmes.

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[48] In responding to the draft report, it was emphasised that TWAS, OWSD and GIS are fundamentally separate programmes in the sense that each has its own separate governance structure and mission. For the most part, only administration is overseen by the TWAS Executive Director, though the ED does offer direction and advice about programme implementation. For this reason, comprehensive structural reform would be a long-term process that would require close review by three different governance bodies, plus the government of Italy and UNESCO.
Further, we see significant questions attached to alternative structures that would wholly change or eliminate organisational names (and individual identities). However, this evaluation gives us good opportunity to consider how we work together and how we might improve coordination between the three groups to achieve greater synergy and greater success in accomplishing our missions.
There are elements (in practice and/or in spirit) of both Alternative A and Alternative B that can inform how we evolve and work together in years ahead. A key goal would be to assure that OWSD, GIS and TWAS are partners with equal status within the relationship, while their individual goals and needs are recognised and respected.
Alternative C initially presents the most dramatic and difficult departure from current organisational structure. However, there are key ideas among the bullets that could be quite useful. For example, a management committee of professional staff from each organisation meeting and coordinating regularly and systematically under the Executive Director, a unified M&E system to assess outcomes and impact, and the creation of a common Public Information Office to coordinate communication for TWAS/OWSD/GIS.

[49] Much more work will need to be invested in discussing pros and cons for each option. None of them will be perfect, but one may be better than the others. Our aim is to stimulate and inform the discussion.

- **One M&E system** supported by an M&E officer.
- **One organisation** with an Executive Director (representing all voices/units) and two/three Programme Directors with delegated responsibilities and budgets. Have one Executive Board for all and advisory scientific boards/councils for each programme.
- **Common regional offices and country focal points**.

3. As part of the governance discussion, the formal and practical linkages to ICTP and UNESCO should be clarified. There are in principle three options:
    (a) Establish TWAS/OWSD/GIS as separate/independent organisations or one organisation.
    (b) Integrate TWAS/OWSD/GIS more closely into ICTP.
    (c) Continue as a UNESCO programme as now.

A comprehensive discussion with more informed recommendations would have required comprehensive consultations with UNESCO, ICTP and the Italian Government. The following are preliminary observations:

- Breaking away from UNESCO and establish an independent organisation(s) is in principle possible. UNESCO provides no financial support, but the significant funds from the Italian government are regulated by an agreement between UNESCO, TWAS and Italy and could be at risk if such an option was pursued. The potential legitimacy and international network through UNESCO would be lost as well as UN privileges for all staff. There would also be a major challenge to find a viable alternative to UNESCO and the present location in Trieste.

- A closer integration with ICTP should be supported – at least for all issues pertaining to financial and personnel management. TWAS would then operate under the same rules and regulations as ICTP – all administrative and financial matters will be delegated to and handled by the Chief of Administration in ICTP. TWAS would receive funds with the same delegated authority as ICTP (as a UNESCO Category 1 Institute). We were informed that such a process is underway. It is difficult to see the advantages with an organisational integration (bringing TWAS under ICTP governance) due to major differences in objectives and activities.

- Continued formal links with UNESCO could take different forms:
    (a) A physical move to Paris (not discussed as far as we are aware).

(b) Upgrading to an autonomous Category 1 UNESCO Institute (discussed, but rejected as an option before)[50].
(c) Continue as an extra-budgetary funded programme, an integrated part of UNESCO and adhering to UNESCO rules and regulations, but with agreed managerial and financial autonomy and control.

4. A strategy and plan for resource mobilisation and sustainability are required as a matter of urgency.

5. There is also a need to build a solid M&E system supported by sufficient capacity and relevant expertise. The following issues and concerns are of particular importance:

   (a) All databases should be harmonised and updated. Several parallel and overlapping systems are currently in place. It is also a problem that they are not updated. There is a lot of data available in the systems that are not utilised. With the new online application systems for grants, it should be possible to build a comprehensive database for all grants.

   (b) Sufficient data are available on applications and who are awarded grants (numbers, gender, geography, thematic areas etc.), but it is critical that thorough basic data are collected on variables such as:
      - No of students graduated (MSc&PhD)
      - Research projects completed
      - No of articles (and in peer reviewed journals)
      - No of presentations in regional/international conferences
      - No of patents (if applicable)

Such data should be collected directly from the beneficiaries and stored in the database.

   (c) With an updated database, it should be possible to collect online feedback from beneficiaries (after the training/research is completed) with questions about individual effects and benefits (on career, utilisation of research, networking etc.). In other words, carry out individual tracer studies.

   (d) It will be more difficult to measure and assess organisational effects – benefits for universities and research institutes and in particular laboratories. A simple

[50] UNESCO legal office considered TWAS as too small to be considered a Category 1 institution.

solution would be to use on-line surveys targeted at beneficiaries and management (self-reporting), but a sample of universities/institutes should also be selected, visited and reviewed as part of an overall supervision/evaluation plan.

(e) The most challenging would be to evaluate the relevance, quality and effects of the research. Case studies are already used, but a more systematic approach to such studies is required including science experts who can assess the quality and effects of the research.

4.4 SPECIFIC RECOMMENDATION TO TWAS, OWSD AND GIS

TWAS

1. TWAS should revisit its implicit theory of change and in particular assess the continued relevance and probability of linkages between interventions, outcomes and impact. The "package of interventions" has remained the same for an extended period of time and may need to be revised.

2. Among the TWAS supported countries, several countries are no longer developing economies and have progressed much further in development of Science and Technology in the last 25 years. Hence, the classification of countries lagging in research may not be relevant any longer and should be reassessed. As mentioned, while most TWAS programmes are available for scientists in any developing country, in 2005, support via Sida-funded TWAS was made available only to a restricted number of developing countries, those listed by TWAS as Science and Technology Lagging Countries. With regard to providing research grants, the previous and current Sida agreements focus on these 81 countries.

3. The grants are tied to a small number of items (equipment, literature, publishing and conferences). TWAS should consider a more flexible system where the applicants should propose a package of support most suitable to complete successfully his/her research project.

4. TWAS should provide a list of open access journals of sufficient quality and standard.

5. The regional conferences for young scientists should be more clearly linked and used for dissemination of information about the research grants.

6. The Science Diplomacy programme should more clearly define its objectives, target its activities and define a set of achievable/realistic outcomes (given the size of the budget). What is required is a strategy and plan for policy advocacy.

OWSD

1. OWSD should also revisit its theory of change and particularly assess the relevance and probability of linkages between interventions, outcomes and impact. Assumptions as to what elements need to be in place as well as risk and mitigating strategies should be further defined as well.

2. A full functional review of OWSD should assess the best possible structure for the implementation of the programming activities. Leadership role within the OWSD should be clearly defined both vis-a-vis broader programming decisions and in terms of possible fundraising.

3. At the moment the OWSD is understaffed and given the workload linked to the processing of numerous fellowships held at diverse host institutes in many countries, accommodation and travel, OWSD cannot fully focus on establishing links with regional and national OWSD and TWAS chapters. Employing additional staff at the Secretariat level would allow the programme manager to take a more strategic role and allow for better utilisation of regional achievements.

4. Greater participation of regional and national OWSD and TWAS chapters in future programme design is required to ensure the relevance of programme both in terms of capacity building and development effects.

5. More funding should be allocated for specific strategic and planning meetings at regional level.

6. OWSD's advocacy, visibility and communication strategy should be further developed, funded for and implemented.

GIS

1. Although it is too early to assess the impact of the advocacy and lobbying activities on global and regional policies, the team found examples of strong strategic partnerships that might lead to positive changes both in promoting women in scientific fields and integration of gender lens in SITE. GIS needs to continue for at least 2-3 additional years to have any broader impact.

2. A theory of change for GIS needs to be developed as soon as possible so that ongoing and future activities of both TWAS and OWSD can be fully utilised for advocacy and influencing with more realistic targets.

3. An advocacy strategy should be defined with priority and targeted areas for each region and clear messages for global campaigns and lobbying. This requires mapping of strategic partnerships to enhance the effects of campaigns and ensure the buy in from wider stakeholder groups.

Annex 1: Terms of Reference

1. Background

Three organisations are subject to the current evaluation: The World Academy of Science (TWAS), the Organisation for Women in Science for the Developing World (OWSD) and GenderInSITE (GIS). GIS is a project that is supported under the OWSD contribution and is coordinated by OWSD. For the purpose of this evaluation GIS is discussed separately from OWSD as the two organisations have different approaches and different objectives.

The World Academy of Science (TWAS)
TWAS is a global science academy based at the International Centre for Theoretical Physics (ICTP) in Trieste, Italy, working to advance science and engineering for sustainable prosperity in the developing world. The objective of the support from Sida is to strengthen research in mathematics, physics, chemistry and biology in low income-countries. TWAS also works to increase awareness among governments about the benefits of investing in science and technology.

The support given through Sida to TWAS is to enable young researchers to conduct research, build networks and create research groups through TWAS's Research Grant Programme. This programme provides funding for research in biology, chemistry, mathematics and physics of individual researchers, research groups and research consortia. The funding is directed towards scientists from 81 countries that have been identified as science and technology lagging countries (STLCs). TWAS is an organisation that is able to capitalise on their large network and international reputation. They have conducted strategies for improved gender balance. OWSD and GIS are hosted by TWAS. Sida has supported TWAS since 1992, mainly through funding research grants for young scientists.

Current agreement: 66 MSEK (2012-2016)

OWSD
The Organization for Women in Science for the Developing World (OWSD) is an independent, non-profit and non-governmental body hosted by TWAS in Trieste. OWSD is an international forum to unite women scientists from the developing and developed worlds with the objective of strengthening their role in the development process and promoting their representation in scientific and technological leadership. The support aims to increase women's participation and leadership in science and technology in Least Developed Countries (LDCs) and countries in Sub-Saharan Africa.

A key programme is the OWSD fellowships, which have been funded by Sida since 1989. The fellowships can be awarded in mathematics, physics, chemistry and biology and in applied areas; allowing women to undertake PhD studies at a host institute in the South. Often the sandwich model is applied, where the students spends part of the year at the host institute and part of the year at the home institute. Since its start OWSD has awarded 390 fellowships fully funded by Sida for women to undertake PhD studies. The scholarships cover living expenses and costs related to research activities in the host country. By applying the sandwich model and having the host institute located in the South, OWSD manages in a cost-effective way to support women to start a career in science. Current agreement: 61.4 MSEK (2012-2016) This does not include the contribution to GIS.

GenderInSITE (GIS)
GenderInSITE is a project that is supported under the OWSD contribution. It is coordinated by OWSD and hosted by TWAS. It is an international initiative to raise awareness of the importance of the role of women in Science, Innovation, Technology and Engineering. The mission of GIS is to promote the awareness of decision makers at all levels that Science, Technology and Innovation (STI) for development policy and programmes will be more equitable, effective and sustainable when the gender lens is applied – that is, when the perspectives of both women and men are taken into account. Overall an increased representation and leadership of women scientists as well as an increased visibility of women's contributions in low-income countries is intended. GIS is a new initiative that was started in 2012 with the current agreement.

Current agreement: 10.7 MSEK (2012-2016)

Sida considers it a good idea that the three organisations be evaluated together as they are closely linked and there are many synergies that can be drawn on. The report of the present programme evaluation will inform the programme assessment in 2016 when TWAS and OWSD submit their funding proposal for continued support for 2017 – 2021.

2. Evaluation Purpose

The primary objective of the evaluation is to provide a rigorous and independent assessment of TWAS/OWSD/GIS performance for lessons learning purpose. The evaluation will serve as a basis for Sida in deciding on continued cooperation after the end of the current agreement. It shall also provide recommendations to both Sida and TWAS/OWSD/GIS on the focus and direction of continued cooperation.

The primary purposes for this evaluation are:

1. Provide a rigorous and independent assessment of the results achieved so far by TWAS/OWSD/GIS.
2. Provide Sida and TWAS/OWSD with recommendations to upcoming discussions concerning possible continued cooperation (starting 2017).

3. Provide Sida and GIS recommendations on future directions to be taken by GIS. Identify opportunities for GIS.

3. Evaluation Questions

Suitability of management and organisation:

- Does TWAS/OWSD/GIS have management and governance structures that are soundly managed and effective in delivering the stated objectives? Are there any areas for improvement? Are the decision-making roles and management lines clear in each organisation?
- At the moment TWAS is a programme unit of UNESCO and the extra budgetary funding for TWAS (including OWSD and GIS) from Sida is through a 'special account' (as opposed to 'funds-in-trust'). What are the advantages and disadvantages of this set-up? Are there other feasible options? Are there any future developments that might affect this arrangement?
- Can the regional links be managed better (TWAS regional offices on one hand, and OWSD national chapters, and GIS regional focal points on the other)?
- What organisational arrangements would best serve the overall objective of GIS? Is the organisation better suited to be free-standing, under another organisation or to remain as now? Would further integration of GIS into OWSD be an effective option?

Quality and relevance of TWAS/OWSD programmes:

- Are the programmes consistent with the needs and priorities of universities and research institutes in STLCs and LDCs? Analyse the role of TWAS / OWSD within research in STLC / LDCs. How are TWAS/OWSD and their programmes perceived within these countries?

Effectiveness of the programmes:

- To what extent have the TWAS/OWSD/GIS programmes been effective in reaching the planned objectives of the intervention? What are the reasons for the achievement or non-achievement of objectives?
- What can be done to make the interventions more effective?
- Does TWAS have a unique role in providing research grants in the form that they do, or are there other organisations or networks fulfilling similar functions? What is seen as TWAS's added value in relation to other organisations which provide research grants?
- The funding from Sida has a seed money purpose: Which additional funds and in-kind contributions have TWAS, OWSD and GIS been able to raise? How can in-kind contributions be measured or estimated in a reliable manner?
- Does OWSD have a unique role in providing fellowships in the form that they do, or are there other organisations or networks fulfilling similar functions? What is seen as OWSD's added value in relation to other PhD programmes?
- What can be done to raise OWSD's profile and visibility?
- Does GIS have a unique role in increasing the number of policies and programmes in science, technology and innovation that take account of gender is-

sues, or are there other organisations or networks fulfilling similar functions? If there are other organisations, what is seen as GIS's added value in relation to these organisations?

Cost efficiency:

- Has the evaluated intervention been managed with reasonable regard for efficiency? Can the cost of the TWAS/OWSD/GIS programmes be justified by the results?
- Can the intervention be implemented with fewer resources without reducing the quality and quantity of the results?
- Can an altogether different type of intervention solve the same development problem but at a lower cost?
- For OWSD: How can the choice of host country improve the cost efficiency? Should the sandwich model (more cost-efficient) be applied to a larger extent?

Increased donor funds / donor relationships:

- Is the current funding situation sustainable? What can OWSD/TWAS do to gain funding from other sources?
- What relationship do TWAS and OWSD have with other initiatives supported by Sida, including the bilateral research capacity strengthening programmes or global programmes such as ISP, INASP, SciDevNet? Is there potential for further collaboration?
- What future funding possibilities should GIS focus on? What is the best set-up to ensure that the capacity of GIS is increased?
- Communication and dissemination are important for fund-raising, donor relationships, attracting quality applicants and for increased impact: Do the communication and dissemination activities done by TWAS, OWSD and GIS reach the target groups? Is there room for improvement?

Gender:

- How well has gender equality been taken into account within the TWAS structure? What can be done to increase the number of successful female applicants for research grants? What would be an effective way to increase the number of women in the TWAS structure?
- How effective is the Gender Advisory Panel and what can be done to increase its effectiveness? Is there an alternative mechanism for helping TWAS to incorporate women and gender dimensions more effectively?
- Is an age-limit for applicants appropriate for OWSD fellowships?

Future paths:

- Within the activities funded by Sida, should TWAS and OWSD focus on their core activities – research grants and PhD fellowships?
- Apart from the research grants TWAS also provides support for regional conferences and science diplomacy. Limited to the activities funded by Sida, is there a risk that too many activities are undertaken, or is it an opportunity? Can OWSD better use their network of alumni? If so, how?

- Should OWSD invest more in the membership programme (currently 4773 members)?
- Can impact and funding be increased by better collaboration between TWAS, OWSD, GIS and other Sida funded programmes?
- Which new activities or elements, if included in future collaboration with Sida, would increase the programmes potential outcome and impact?

4. Delimitations

The scope of the evaluation covers the current agreement period (2012-2016). However, in order to have a broader view, and if relevant, the evaluators shall assess earlier years.

The primary focus shall not be on the output level; instead the evaluation will assess the results at the outcome level, and to the extent possible, the impact level.
The analysis should be put into a larger context in relation to Sweden's strategy on research cooperation, TWAS/OWSD/GIS strategic direction, as well as the broader context of global and regional trends in research and research training.

5. Approach and Method

A brief section on suggested methods shall be part of the consultant's response to the call. The methods employed for this evaluation should be relevant to the questions outlined above and make optimal use of existing data. The evaluation process is expected to be a learning opportunity for TWAS/OWSD/GIS and therefore the proposed approach should serve this purpose as well.

Interviews shall be made with management and staff at TWAS/OWSD/GIS, with selected members of the Steering Committee/Executive Board and other relevant stakeholders (GIS regional focal points, TWAS regional offices, OWSD national chapters, beneficiaries). It is expected that the evaluators will visit Trieste, however, it is anticipated that many interviews will be conducted at a distance.

Relevant documents will be provided to the evaluators by Sida and TWAS/OWSD/GIS, or will be available online. The evaluators are also expected to independently look for documents, when it is deemed necessary.

Documents to be supplied to the evaluators include the following:

Applications TWAS, OWSD and GIS 2012-2016 for Sida funding

- Agreements with Sida
- Logframes – initial and updated
- Minutes from steering committee meetings
- Minutes from annual review meetings
- Annual Narrative and Financial reports
- TWAS Annual Reports

- The Swedish ‘Strategy for research cooperation and research in development cooperation 2015 – 2021’ 5

Staff from TWAS/OWSD/GIS should have an opportunity to comment and provide feedback on the draft evaluation report.

6. Time Schedule, Reporting and Communication

The assignment shall be completed no later than 2016-07-01.

A face-to-face meeting with Sida in Stockholm is anticipated to further discuss in detail the objective and methods of the evaluation. It is preferred that the field visit to Trieste takes place during the period 18-22 April as many of the key people and stakeholders will be present then. A draft of the final report shall be submitted to Sida no later than 20 May. Comments from stakeholders (including Sida) shall be received by 27 May and the final report submitted to Sida by 10 June.

The final report shall conform to OECD/DAC’s Quality Standards for Development Evaluation and the evaluators shall use the OECD/DAC Glossary of Key Terms in Evaluation. The report shall be written in English. The final report shall be presented in a way that enables publication without further editing. A presentation of the evaluation at Sida in Stockholm is desirable.

The evaluators shall, upon approval of the final report, insert the report into the Sida template for decentralised evaluations and submit it to Sida’s consultant responsible for Sida’s graphic profile (currently Sitrus), for publication and release in the Sida publication data base”.

Annex 2: People met

GIS and GIS Steering Committee Members

Alice Abreu, GIS Director
Erin Johnson, GIS Secretariat
Anathea Brooks, UNESCO
Nick Ishmael Perkins, SCIDEV.NET, Director
Geoff Oldham, GAB
Gloria Bonder, Director FLACSO Argentina (GIS RFP for LA and UNESCO regional chair)
Juan Casasbuenas, training coordinator at SciDev.Net.
Shirley Malcom, GIS co-chair (currently serves as the Head of Education and Human Resources Programs at the American Association for the Advancement of Science)
Saniye Gülser Corat, Director Division for Gender Equality

Council Members, Regional Focal Points and National Chapters

Roseanne Diab, Executive Officer, Academy of Science of South Africa (ASSAf) Pretoria, South Africa
Prof. Chunli Bai, TWAS Council President
Kai Feng, Bureau of International Cooperation, Chinese Academy of Sciences
Rabia Hussain, Regional Vice President TWAS

TWAS

Romain Murenzi, TWAS Executive Director
Antonino Coppola, TWAS Administration Office
Dag J. Johannessen, TWAS Administrative Officer
Edward Lempinen, TWAS Public Information Officer
Massimo Paoli, TWAS Programme Coordinator
Paola Vespa, TWAS Finance Officer
Patrician Presiren, TWAS Finance Officer
Payal Patel, TWAS Research Grants
Peter McGrath, TWAS Science Diplomacy Coordinator
Sabina Caris, TWAS Regional Officer
Sara Dalafi, TWAS Science Diplomacy Secretariat
Nicole Leghissa, TWAS –freelance documentary maker- outreach and communication

TWAS Awardees

Fabian Saenz, Ecuador
Luna Kamau, Centre for Biotechnology Research and Development

Sushila Mahajan, Research Institute for Bioscience and Biotechnology

OWSD

Tanja Bole, OWSD Fellowship Programme
Tonya Blowers, OWSD Programme Coordinator
Marina Juricev, OWSD Fellowship Programme

Donors

Ylann Schemm, Program Director of the Elsevier Foundation-Senior Corporate Responsibility Manager and Program Director
Claire Lyngå, Sida

Annex 3: References

TWAS

13th General Conference and 26th General Meeting 2015
7th Steering Group Meeting 2013
9th Steering Committee Meeting 2015
Agreed Minutes: Sida – TWAS Meeting 20 July 2014
Agreed Minutes: Sida – TWAS Meeting 29-30 August 2013
Agreement between UNESCO and the Government of the Italian republic 2004
Agreement TWAS and IAMP
Agreement TWAS and OWSD 2005
Annual progress report to Sida 2012
Annual progress report to Sida 2013
Annual progress report to Sida 2014
Annual report 2014

- Arab Regional Office

Byravan, S. (2008). TWAS Research Grants. Evaluation and Recommendations.
Huyer, S. (2008). The TWOWS Postgraduate Training Fellowship: Trends, results and Opportunities for the Future.
Newsletter: The Next 30 years
Newsletter: The Power of Science Diplomacy 2014
Proposal to Sida 2012-2016
RBM logframe for the Sida funded TWAS project for the period 2015-2016
Regional conferences for young scientists 2012, 2013, 2014 and 2015

- Regional office for Central and South Asia
- Regional Office for Latin America and the Caribbean
- Regional office for Sub Sahara Africa

Report on Sida funded activities 2015

- ROCASA Regional Conference

Wandiga,S.&Eva S. Lindgren (2002). Assessment of Sida´s support to Basic Sciences in a National Context.

OWSD

Agreement OWSD
OWSD agreement on research cooperation between Sida and Organisation for Women in Science for Development
OWSD Agreement Annex 1
OWSD Agreement Annex 2
Annual Narrative and Financial Reports OWSD
2012 OWSD Annual Report, Increasing women's participation, leadership and influence in science and technology

2012 OWSD Annual Report Appendix 10-Overview by country
2012 OWSD Appendix 2-Graduates
2012 OWSD Appendix 3-Publications and financial report
2013 OWSD Narrative report Part 1 to Sida
2013 OWSD Narrative report Part 2 to Sida
2013 TWAS and OWSD Updated Financial Report
2014 OWSD Sida Annual Narrative and Financial Report
2015 OWSD Sida Annual Narrative and Financial Report
Minutes Annual Review Meetings OWSD
2012 OWSD Annual Review and Planning meeting
2013 OWSD Annual Review and Planning Meeting
2014 TWAS Minutes Annual Review Meeting TWAS and OWSD
Revised OWSD Log frame Nov 2015
Article from the 'TWAS Newsletter' (Vol. 22 No. 4) about the 4th General Assembly- http://owsd.net/sites/default/files/TWAS%20Newsletter%2022_4.pdf

GIS

Project proposal
Application GIS 2012-2016 OWSD
Logframe appendix application
Revised logframe GenderInSITE agreed Nov 2015
Budgets
Budget 2012 2013 2014
Budget 2012 2013 GenderInSITE
Budget 2012 2017 GenderInSITE _RFPs Breakdown (Sept 2015)
Budget 2015 and Estimated 2016 prepared for Steering Committee (Dec 2015)
Action Plans
GenderInSITE Action Plan Aug 2013 Dec 2014
GenderInSITE 2015 Action Plan final with budget
GenderInSITE Revised Action Plan 2016 2017_final (Feb 2016) with budget
GenderInSITE New Revised Action Plan 2016 2017_(April 2016) with budget
Narrative reports from Secretariat
2012 2013 Annual Report (presented to Sida on Nov 2013)
2014 Annual Narrative and Financial Report GenderInSITE (includes LAC+ASSAF)
2015 GIS Annual Activities and Financial Report
Narrative reports from RFPs
RFP AS 2014 Revised Annual Report
RFP LAC 2015 Annual Report
RFP SA 2015 Annual Report
RFP EA 2015 Annual Report
Acts/reports from Steering Committee Meetings
2014 GIS 2nd Steering Committee Meeting Report
Annual Review Meetings Reports
2013 Agreed Minutes GenderInSITE Annual Review and Planning Meeting
2014 Sida Annual Review Meeting Minutes _June 2015_ Draft3

Sida

Agreement on research cooperation between Sida and TWAS 2012-2016
Assessment memo: Fortsat stød til basvetenskaperna genom TWAS 2012
Policy for Research in Swedish Development Cooperation 2010-2014
Strategy for research cooperation and research in development cooperation 2015-2021

Others

UNESCO Administrative Manual: 5.2. Special Accounts
5.4. Funds-in Trust Cooperation
Science and Diplomacy, A quarterly publication from the AAS Center for Science Diplomacy

Annex 4: Overview outputs, outcomes, indicators and achievements 2012-2015

TWAS

Outputs/Actions	Outcomes/Expected results	Performance Indicator(s)/Baseline	Achieved
Specific Objective 1: To increase, within the next 5 years, the production and use of high quality research of relevance to target countries, conducted by individual scientists, groups and consortia			
Individual scientists			
1.1 Call for applications announced in the website and through social media. **1.2** Quality review of applications carried out according to the confirmed review procedure with external referees and/or expert committees in place. **1.3** Award of grants to applications selected. **1.4** Procurement of needed equipment.	Increased scientific capacity built in S&TLC countries through young individual scientists (under the age of 45) having been given access to new scientific equipment, supplies and literature as well as to publishing in open access journals and to international conferences. Improved research facilities in 100+ laboratories in S&TLCs. Increased number of publications. Increased mentoring of young scientists who are graduating with MSc and PhD degrees The young scientists (maximum age 45) even if applying as individuals some usually have a number of MSc and PhD students under their supervision. This is reflected in the final report where it is requested to indicate the number of students graduated under the grantee's supervision.	20+ grants provided per year, each of up to $20,000. Number of publications, 1 per grant. Number of applications received from MSc graduates and from PhD graduates combined total of 150 applications. No. of awardees spending awarded money, completing project and submitting report, within 18-month time-scale.	2012 In 2012, TWAS received 225 applications from 26 countries that were reviewed. As a result, 48 candidates (27 full-time and 21 sandwich) were proposed for award. Following on from the previous Sida-funded project (2007 2011) - many of the awardees of which are still to graduate - 17 young women scientists graduated in 2012. 2013 32 grants awarded to individuals. 2014 450 applications received from individual scientists (of which 79 were young women scientists). 63 grants were awarded for a total of US$796,900. 17 were awarded to women (27%) – not exceeding USD 15000. In addition, a lump sum of US1$129,800 for participating in scientific conferences and US$51,460 for publishing in open access was granted. So far a total of 104 laboratories have benefitted from the grant. Reports received by scientists who were granted in 2013 show an increased number of publications, personal awards and career development. 2015 A total of 159 applications were received and 38

			were granted. 11 were awarded to women.
Research Units			
1.1 Call for applications announced in the website and through social media **1.2** Quality review of applications carried out according to the confirmed review procedure with external referees and/or expert committees in place **1.3** Award of grants to applications selected **1.4** Procurement of needed equipment	Increased scientific capacity built in S&TLC countries through research groups led by scientists with a proven track record) having been given access to new scientific equipment, supplies and literature as well as to publishing in open access journals and to international conferences. Improved research facilities in 75+ laboratories in S&TLCs. Increased number of publications. Increased mentoring of young scientists who are graduating with MSc and PhD degrees	15+ grants provided per year, each of up to $40,000. Number of publications, 1 per grant. Number of applications received from PhD graduates a combined total of 80 applications.	2013 17 groups were awarded. 2014 TWAS received in 2014-169 applications (of which 23 were from women unit leaders). 31 grants awarded in 2014 not exceeding $30,000 each plus a fixed amount for open access publications, attendance of conferences, MSc students. A total of 50 laboratories have benefitted from the grant. Reports received by scientists who were granted in 2013 show an increased number of publications, personal awards and career development. There are also more students at both level MSc and PhD. 2015 A total of 79 applications were received and 19 research units were awarded a grant – 3 of which were lead by women scientists.
Consortia			
1.1 Call for applications announced in the website and through social media **1.2** Quality review of applications carried out according to the confirmed review procedure with external referees and/or expert committees in place **1.3** Award of grants to applications selected **1.4** Procurement of needed equipment	Increased scientific capacity built in S&TLC countries through collaborating research institutions in the South having been given access to new scientific equipment, supplies and literature as well as to publishing in open access journals and to international conferences. Improved research facilities in 50+ laboratories (minimum of 2 per consortium) in S&TLCs. Increased number of publications. Increased mentoring of young scientists who are graduating with MSc and PhD degrees	5+ grants provided per year, each of up to $30,000. Number of publications, at least 1 per grant. Number of applications received from PhD graduates.	The new Research Consortia programme was announced in 2014 and no applications were received by the 2014 deadline. 2015 12 applications were received, but only 1 was awarded (but later cancelled). .
MSc training			
1.1 Call for applications announced in the website and through social media	Young scientists provided with the opportunity for MSc training within Research Units and Con-	Number of MSc graduates produced by Research Units and Consortia, at least one per	2014 US$771,400 for supporting MSc students of the

1.2 Quality review of applications carried out according to the confirmed review procedure with external referees and/or expert committees in place **1.3** Award of grants to applications selected	sortia. Increased number of graduates with MSc degrees. Increased number of graduates eligible for PhD programmes. Improved sustainability of laboratories.	project. Number of MSc graduates applying for TWAS PhD and fellowship programmes.	team was granted. 2015 24 MSc students were approved.
End of period conference			
1.1 Organize conference for earlier grantees. Call for applications announced in the website and through social media **1.2** Quality review of applications carried out according to the confirmed review procedure with external referees and/or expert committees in place **1.3** Organization at the conference of focused assessment discussions of the programme components **1.4** Self assessment report by TWAS to Sida	TWAS and Sida have obtained feedback from an assessment by recipients of grants regarding the programme components. Improved awareness by TWAS of effects of different aspects of the programme and identification of possible improvements to future editions of the programme.	Conference organized, with 50 recipients of grants attending .	In 2014, 16 groups and 31 individuals were awarded a grant for attending a scientific conference amounting to US$2,000 each and 12 groups and 30 individuals an amount of US$2,260 each. 2014 16 groups and 27 individuals were awarded a grant for publishing in open access publications amounting to US$900 each and 12 groups and 28 individuals an amount of US$970 each. 2016. Conference organised in Trieste. [51]
Specific Objective 2: To support and increase, within the next 5 years, the activities of the TWAS Regional Offices by providing networking links and opportunities for young scientists and others both within the region and beyond.			
Regional Offices			
2.1 Creation of annual action plan for each Regional Office. Identification of activities to be carried out, all inserted	TWAS Regional Offices established, as functional regional networks of awardees and other young scientists, for exchange of information and men-	Annual Conference for young scientists, at least one per year per office.	The Academy has five Regional Offices located in five regions.

[51] This was listed by TWAS as an end of period conference, but may have served other purposes.

into an annual contract. **2.2** Review of performance of Regional Offices, mid-term and end of term. **2.3** Organization of Annual Conference for young scientists from S&T lagging countries. **2.4** Prepare survey/ questionnaires for the participants to the conferences. **2.5** Solicit leveraging efforts by the Regional Offices	toring of younger scientists. Discussions of scientific issues affecting the developing world are held in these networks through at least one regional conference per year. Increased participation and quality applications from under-represented countries and women. The activities of TWAS Research Grants programme are supported and enhanced through the Regional Offices. The Regional Offices are able to leverage support and collaboration with other sponsors.	Number of applications for the annual conferences increased 5% per year. Number of participants and participants from S&T lagging countries as well as female participants as a target be 25%.	2013 7 regional conferences for young scientists. 2014 Five regional conferences. Two collaborative conferences have been organized in collaboration with five institutions/academies. 2015 9 regional conferences organised.
Specific Objective 3: To build, within 5 years, a sustainable TWAS Science Diplomacy programme, supported by a series of partners from both the North and the South and with an annual programme of activities aimed at enhancing the links between scientists and government representatives.			
3.1 Organization of Science Diplomacy workshops: Establish and expand science diplomacy networks. Prepare and publish reports on issues at the interface of science and diplomacy.	Through the organization of Science Diplomacy workshops, the awareness is raised among both scientific and political communities across the developing (and developed) world of the importance of 'science for diplomacy' and 'diplomacy for science'. Science diplomacy network established for ongoing discussions and dissemination of information. Feedback from course participants used to further develop workshop practices (both logistical and training methods). Participants engage in post-workshop science diplomacy activities. TWAS established as a leading player in the international science diplomacy arena with credibility for is niche area of South-South and South-North relations.	No. of workshops held each year: 2. No. of partners/sponsors collaborating on these workshops and amount of co-funding leveraged. No. of 'science diplomacy fellowships': 10 and 'science diplomacy ambassadors': 2 attending each year. No. and quality of applications to attend workshops. No. of invitations to TWAS to engage in science diplomacy events organized by other parties.	2013 20 young diplomacy fellows awarded. Two workshops organised. Science diplomacy roundtable. 2014 Two workshops were organized in 2014 with Sida funding. Each science diplomacy workshop organized with Sida funds has included a number of science diplomacy ambassadors. 223 applications were received from scientists and policymakers from developing countries to attend the first AAAS-TWAS summer course on science diplomacy. 131 were young scientists - of whom 23 were selected - and 31 were ambassadors – of whom 8 were selected. Science diplomacy fellowships were provided to 23 young scientists for the AAAS-TWAS Science Diplomacy workshop. The first workshop was held on 8-13 June 2014 in Trieste and a total of 55 people. In the case of the second workshop on sustainable fisheries (Mexico), all the young scientists came from the Latin

			America region. 2015 Workshop organised in Trieste.
3.2 Organization of 'Paolo Budinich Science Diplomacy Lectures' each year with invited high-level speakers. Video of lecture and reports made available online.	Increased awareness of and interest in science diplomacy among scientists, students and politicians in the wider Trieste area. Increased awareness of and interest in science diplomacy and the TWAS programme via website and especially the videos of the lectures. High-level speakers are interested in presenting Paolo Budinich Science Diplomacy Lectures.	No. of lectures per year: 2. No. of people attending lectures. Quality of speakers, including those who have communicated their interest to present a future lecture. No. of views of videos loaded on Youtube. Amount of press/media coverage of events.	2014 Two lectures held. 2015 One lecture held. Second diplomacy course.
3.3 The establishment (in year 1) of a dedicated 'TWAS science diplomacy' web portal. Collate and upload workshop reports, videos of lectures and workshops, papers produced by workshop participants, etc.	The science diplomacy portal is a vibrant one with an active community of visitors and is serving as a repository of science diplomacy information, including with a focus on South-South relations. Raised awareness among both scientific and political communities across the developing (and developed) world of the importance of 'science for diplomacy' and 'diplomacy for science'. Increased input of scientific data into governmental decision-making processes, such as reports on issues at the interface of science and diplomacy.	No. of hits to the dedicated pages (unique visitors and return visitors). No. of pages visited, videos watched and articles downloaded.	TWAS launched its re-designed website in February 2014. The site includes a special section on science policy http://twas.org/science-policy) and science diplomacy (http://twas.org/science-diplomacy.
Specific Objective 4: Outreach and Communication: To improve the outreach and impact and hence the possibility of reaching the objectives of the TWAS programmes.			
4 General communication			
4.1 Develop and publish bimonthly TWAS Plus digital bulletin. -Redesign TWAS Newsletter -Redesign TWAS Annual Report -Add a unified events and deadlines site onto the TWAS website.	Increased overall exposure of the Academy' following synergy effects between the TWAS communication and media activities. TWAS seen as an informed, objective voice of science in the South and as such having an impact on the global scene.	-Baseline subscribers to TWAS Plus: 2015 - 0 -Number of subscribers to TWAS Plus electronic bulletin - 15.000 by 2016. -TWAS homepage total visits and unique visits - 25% increase from 2015 to 2016. -Readership of TWAS Newsletter (online) - up 25% from 2015 to 2016.	2014 Rapid evolution began in which TWAS emphasized digital media and use those in synergy with the Newsletter to communicate with the TWAS community and a much wider global audience. TWAS reconfigured the web presentation of research grants and other programmes.
4.2 Use targeted posts in Facebook and	The outreach of TWAS increased through the use	-The TWAS Facebook communities and	TWAS implemented a separate portal for science

Twitter focused on the 48 LDCs.	of social media like Facebook and Twitter,	TWAS Twitter followers in the 48 LDCs increased by 20% from 2015 to 2016.	diplomacy. 2015 TWAS Plus – a new digital bulletin introduced. Four issues of TWAS newsletter published. Annual report redesigned.
4.3 Post all application and deadline announcements of the Research Grant Programme on the social media channels of TWAS. -Include brief summary on the programme in the TWAS Annual Report.	The Research Grant Programme is assisted by disseminating the calls and other awareness raising, as well as making known success stories.	TWAS Research Grants webpage visits, total visits and unique visitors	
4.4 Hold twice-yearly communication meetings with each TWAS Regional Office. -Develop "TWAS Style Guide" to help govern basics of design and graphics in printed and online communication.	TWAS Regional Offices develop a "TWAS family identity" in appearance and communications. -Regular communication cooperation established between the Regional Offices themselves and with TWAS.	Websites of the Regional Offices updated. - 2014 - 0, 2015 - 2, 2016 - 3.	
4.5 Employ the TWAS communication system to increase awareness of the Science Diplomacy programme. -Post application and deadline announcements on the social media and in the digital bulletin. -Plan for and update presentation material and film about the programme.	-TWAS Science Diplomacy events obtaining good and wide media coverage. -Outcomes of the events being communicated effectively to policy makers and the TWAS network. -TWAS has at its disposal updated and professional presentation material – possibly including a film – about the Science Diplomacy Programme so as to advance recognition of and support for science diplomacy in the developing world.	Total visits and unique visitors to the TWAS Science Diplomacy webpage.	According to Google Analytics, for the period 11 February 2015 to 11 March 2015, compared to the same period in 2014: * The number of sessions (visits) increased by 96%; * The number of individual users increased by 81%; and * The number of total page views increased by 48%.
4.6 Design and launch online application system for all TWAS programmes and events. -Harmonize and standardize all TWAS application forms. -Communication strategic plan for publicizing online forms. -Develop the system to be able to keep CVs of the awardees, for future self-updating.	Application and selection procedures have become standardized, secure, simplified and quicker through introduction of easy-to-use on-line application system, also reducing the administrative workload in TWAS. -TWAS achieves a tool to facilitate the tracking of ex-awardees and their careers in the years after the fellowship.	Programs with online application forms: 2014 - 0, end of 2016: all.	Completed.

OWSD

Overall Objective: ***To increase the participation and leadership of women scientists from least developed and sub-Saharan countries in national research and development agendas during the period 2012-16.***			
Specific Objective 1: Increase the number of women in LDCs and sub-Saharan Africa trained in advanced scientific research			
Outputs/ Actions	**Outcomes/ Expected Results**	**Performance Indicators & baseline**	**Achievement- as per AR Dec 2014**
PG Fellowship Applications			
Increase number and quality of applications: 1.1. Highlight successful PG fellows on website 1.2. Source appropriate resources, prepare guidelines and FAQ sheet on how to write a good application and make available on the website **Target LDCs**: 1.3. Contact ministers, UNESCO officers and research councils from LDCs with request to disseminate information 1.4. Follow up previously unsuccessful applicants from LDCs, provide website resources and encourage to re-apply **Target Basic Sciences** 1.5. Collaborate with appropriate unions and associations specialising in these subjects, e.g. IMU, ICTP and IOP **Target Sandwich option** 1.6. Highlight sandwich fellowship option on website and in communications materials	Increased number of quality applications received from women from LDCs Increased number of quality awards given to women from LDCs Increased number of young women scientists from LDCs obtain PhDs, enabling them to gain positions of influence in academia and society and to train other scientists. Increased number of women represented in advanced research in physics, maths and chemistry Increased number of sandwich fellowships awarded allowing for higher number of awards	**Baseline 2012**: 225 applications received 48 selected for award 47 taken up awards to date **2015:** # applications received # selected for award # taken up awards 2015 - 2016 **Baseline 2012:** -- applications received from LDCs -- quality applications received LDCs 26 awards to LDCs (54% of total) -- taken up awards to date **2015:** # applications received from LDCs # quality applications received LDCs # awards to LDCs (and as % of total) # taken up awards to date **Target 2016:**	In 2014, 282 postgraduate fellowship applications were received and of these 52 (or 18%) were outstanding (AA or A). A further 19 were very high quality (rated A-), making a total of 71 (or 25%) quality applications. Available funds would have covered awards for only 34 of these applicants. By making an additional request to Sida to release funds for 2015, which was accepted, OWSD was able to award 52 fellowships. In 2013, 243 applications were received and of these 46 (or 19%) were outstanding (rated AA or A). All 46 were awarded. A further 20 (rated A-) were placed on the backup list. A total of 66 (or 27 %) quality applications were received. After a series of administrative changes and increased communication with host institutes In-kind contributions also increased in 2014 (see attached report). The fellowship awards have increased by 6 so the outcome has been achieved. In 2012, 37 of the 46 awards have been taken up. (A total of 9 not taken up). In 2013, 40 out of 46 awards have been taken up. (A total of 6 not taken up). In 2014, 52 awards were made and procedures for confirming host institutes, supervisors and financial arrangements began. The number of awards taken up will be available in 2015. This outcome has been partially achieved - there has been a marked decrease (from 9 to 6) but the number of fellowships not taken up is more than 5. In 2014 several application procedures were revised, a

Review, improve and undertake selection and assignation procedures: 1.7. Convene expert selection committee to carry out quality review of applications 1.8. Notify awardees and host institute, confirm final terms and start date 1.9. Follow appropriate financial and administrative procedures and liaise with TWAS staff to ensure travel and visa arrangements made		Increase number of LDC awards to 30 Increase % of LDC awards to 60% **Baseline 2012:** # applications received in 'Basic Sciences' e.g. Maths, Physics, Chemistry # quality applications received # applications awarded # taken up **2015:** # applications received in 'Basic Sciences' e.g. Maths, Physics, Chemistry # quality applications received # applications awarded # taken up **Baseline 2012:** # sandwich fellowships awarded % sandwich fellowships awarded **2015:** # sandwich fellowships awarded % sandwich fellowships awarded	new fellowships assistant was employed, and MoUs developed (see narrative report) which should all ensure a continuing decrease in fellowships not taken up from 2015. In 2014, 111 out of a total of 282 (or 39%) applications were received from Least Developed Countries. Of these 28 (or 25%) were of AA or A quality. Fellowships were subsequently offered to all these high quality applications. In 2013, 117 out of a total 243 (or 48%) of applications were received from LDCs and of these 21 (or 18%) were of AA or A quality. Fellowships were offered to all these applicants. The number of successful applications received from LDCs in 2014 has therefore increased by 7%. This outcome is therefore partially achieved. We expect the percentage to be higher next year as we roll out several initiatives that have been put in place in 2014, including a prize scheme targeted at undergraduates from LDCs; a comprehensive contacts list for dissemination; success stories from LDCs featured on the new website and Facebook pages; and online tutorial and mentoring with Facebook. In 2014 we have created new forms for tracking the progress of all fellowship holders, capturing data on grants and awards. This will also retroactively give us baseline figures for 2013 and 2012. Figures are not yet available at this time since there is a huge amount of data to key in and analyse. This outcome is therefore not yet measurable. From 2015 we will be able to monitor any perceived increases in the number of grants obtained.
International Travel for PG Fellows			
1.10. Issue travel grants for each awardee to awardee's host institute with first stipend 1.11. Provide awardees with information and opportunities about relevant confer-	Young women scientists from developing countries establish international contacts and further their research and communication skills.	Baseline: (procedures began in 2013) # OWSD awardees graduated	Sida has provided special funds for OWSD postgraduate fellows to travel to international conferences. This led to 51 disbursements (out of 61 requests) to utilize this special networking and career development

ences 1.12. Make agreements with workshop and conference organizers to invite a significant number of OWSD PG fellows 1.13. Encourage Fellows to extend conference visits to include research supervision/ collaboration 1.14. Invite all onsite PG fellows to OWSD 5th General Assembly and International conference in 2016 1.15. Provide each awardee with revised conference report forms and keep records for follow up	The research of an increased number of women scientists from developing countries is available to an international audience.	# travel reports submitted 2015: # OWSD awardees graduated # travel reports submitted 2016: # OWSD fellows attending 5th GA Target: All OWSD fellows attend at least one international conference. Therefore # awardees graduated and # travel reports should be equal	opportunity in 2014. In 2013, 2 disbursements were made. The outcome has therefore been fully achieved if based on attendance at conferences supported by OWSD. However, in order to calculate an increase in general contact and access to international networks, more baseline figures are needed. To this end, comprehensive conference report forms have been developed, distributed and returned in 2014. Details in the narrative report for 2014. In addition, OWSD alumnae who have already completed their PhDs with OWSD 20 have been invited to attend TWAS Science Diplomacy Courses. In 2014, six OWSD alumnae were selected to attend the first of these courses in Trieste from 8-13 June. The alumnae were from Bangladesh, Madagascar, Nigeria, South Africa, Sudan and Yemen. Four fellowship alumnae from Cameroon, Nigeria (2) and Uganda were selected by the Global Virus Network (GVN) to take part in a one-week intensive course on basic, translational, and clinical aspects of viruses of great importance to human health. Short course took place from 13-19 July, 2014, in Baltimore, USA.
Regional Workshops and Online Tutorials for PG fellows			
1.16. Provide one regional workshop per year for up to 15 onsite PG fellows to attend. Training to include science communication skills, career development and networking possibilities. 1.17. Partner with AuthorAid to provide online mentoring and writing courses	Each OWSD fellow attends at least one career development workshop during their fellowship. One regional workshop organised by OWSD takes place each year. OWSD fellows have increased knowledge and skills in scientific writing and relevant career opportunities. OWSD fellows have increased number of publications in international journals	**Baseline:** One regional workshop organised in South Africa in August 2014 **2015:** # Regional workshops organised by OWSD. # OWSD fellows who sign on to Author Aid site # OWSD graduates who have attended career development workshop # publications in international journals by OWSD fellows	

		Target: each OWSD fellow publishes in one international journal by graduation	
Mentoring for PG Fellows and Alumnae			
1.18. Establish an online mentoring system for OWSD fellows and alumnae 1.19. Contact OWSD fellows and offer mentoring possibilities	OWSD fellows and alumnae are supported in accessing career development and science communication skills. OWSD fellows develop in their careers and take on positions of influence and leadership.	**2015:** # OWSD fellows and alumnae signed up to OWSD-organised mentoring programmes # OWSD fellows' statements that mentoring programme has furthered their career	In 2014 OWSD registered 190 new members, of whom: 48% from Africa; 17% from Asia and the Pacific; 11% from Arab States; 7% from LAC and 2% from the North. OWSD membership now stands at a total of 4513: of whom 43% from Africa; 26% from Asia and the Pacific; 15% from LAC 14% from the Arab States and 3% from countries in the North. In 2014 subscription to OWSD Updates became automatic as part of the application and fellowship processes. OWSD Update emailing facility has 2458 subscribers to date. OWSD received ------new subscriptions during 2014. The new website, designed in 2014, includes member profiles, which members update themselves, and which are accessible to all registered members, including information on research topics, publications and professional affiliations. Published science papers, dissertations and theses can all be uploaded to member profiles and accessed by other members if designated. In addition the website has resources and career development sections. In 2014, a Facebook page was created for OWSD and a twitter account to be coordinated with the new website. Social media training for OWSD staff is planned for 2015 to prepare for the website launch. OWSD fellows based in South Africa were invited to the Regional Workshop. This outcome has been fully achieved Science writing workshop in Pretoria, (18-22 August 2014) hosted by The South African Academy of Science (ASSAf). 14 current postgraduate fellowship holders and their supervisors/ mentors based in South

			Africa attended. In feedback from the workshops 8 out of 8 respondents said that as a result of attending the workshop, the standard of their scientific writing had improved. A new survey form developed in 2014 and the new website will allow us to track all fellows' publications in future. In addition AuthorAid will provide guidance to 22 OWSD members on how to rank their publications. This outcome is not yet measurable but procedures are now in place to provide a baseline and calculation for 2015.
Memorandums of Understanding (MoUs) with Host Institutes			
1.20. Contact all host institutes where awardees are studying/ apply in order to establish MoUs	All awardees enrolled at institutes where the conditions for research and living are well defined through negotiated, signed MoU agreements	**Baseline 2012**: # signed MoUs % awardees at institutes with MoUs **2015** # signed MoUs % awardees at institutes with MoUs **Target:** At least 15 host institutes sign MoUs with OWSD by end 2016.	Prior to 2013 there were 6 agreements between OWSD and host and home Institutes. In 2013 this increased to 9. In 2014 a new MoU was signed with UCAS (the University of the Chinese Academy of Sciences) on 23/09/14 for up to 15 postgraduate awards per year. Procedures began for MoUs with 6 South African institutions (University of Cape Town, University of Western Cape, Witwatersrand, University of Pretoria, Johannesburg, Free State, KwaZulu Natal). This work built on the synergies between South Africa and OWSD explored during the Regional Workshop in Science Communication in Pretoria and the OWSD programme Coordinator's visits to host institutes in South Africa in August 2014 (details below). This outcome has been fully achieved.
Fundraising Strategy			
1.21. Develop fundraising strategy to seek increased funds and in-kind contributions	Funding and inkind contributions sufficient to allow all high quality applicants to be awarded fellowships	**Baseline 2012** # quality fellowships selected # quality fellowships awarded $ funds and in-kind contributions raised	

		2015 # quality fellowships selected # quality fellowships awarded #$ funds and in-kind contributions raised **Target:** at least 50 high quality fellowships awarded in 2015 and 2016	
Specific Objective 2: Increase the representation and leadership of women scientists in TWAS structures and programmes			
PG Fellows and TWAS Programmes			
2.1. Disseminate information on all TWAS programmes to OWSD fellows 2.2. Establish tracking of OWSD fellows in TWAS	OWSD fellows among those receiving TWAS programme awards	**2015:** # TWAS awards taken up by OWSD fellows.	Target- Increased leadership and representation of women in TWAS to 15% overall There have been no new elections for the TWAS Council so representation of women for the period 2013-15 remains the same as in 2013. There are 2 women Vice Presidents out of a total of 5 (or 40%) and 2 women Council Members out of a total of 5 (40%). (See narrative report for more detailed numbers). OWSD is a key strategic partner in a project funded in 2014 by the global network of science academies (IAP) to undertake a survey of the number of women in science academies and in leadership positions. Results will be published in 2015 and presented at the IAP conference in 2016. OWSD has ensured that Nature magazine is aware of this publication and they have confirmed interest. OWSD continues to put forward OWSD PG Fellows to TWAS programmes. 5 women were again selected for the Science Diplomacy course in 2014. Outcome ongoing: OWSD must increase interventions (such as activities of the TWAS-OWSD Advisory Panel for Women in Science) and have a realistic annual target, e.g. 5% increase per year.

TWAS-OWSD Women in Science Advisory Panel (AP)			
2.3. Lobby to increase number of female scientists in TWAS through TWAS-OWSD Advisory Panel (AP) 2.4. Facilitate AP requesting/contributing to TWAS reports showing numbers of women in TWAS 2.5. Facilitate AP solicitation of nominations of women in TWAS	Greater representation of women in the TWAS community and in positions of influence.	**2015:** # AP recommendations accepted and implemented Steadily increasing percentage of NEW female TWAS Fellows per year. Steadily Increasing percentage of females opted on to TWAS committees. Baseline: 2014: % NEW female TWAS fellows % new female committee members Target: 30% representation as fellows and committee members	Target - Increased involvement of young women scientists in TWAS regional meetings, programmes and awards by 20% Provision has been made in 2014 for announcements of all regional office programmes and awards to be highlighted on the OWSD website and a fixed item on the resources page. In 2013, one woman was selected for a TWAS regional prize (out of 5); and in 2014, no women were selected. In 2015 OWSD will provide the TWAS-OWSD Advisory Panel with deadline dates for nominations and request names from OWSD executive board members and host institutes. Outcome ongoing: OWSD must increase interaction with the regional offices (and annual target should be realistic, e.g. 5% increase per year).
IAP survey and report of women in academies			
2.6. Lobby to increase number of female scientists in IAP and IAMP through project partnered with ASSAf to survey number of women in academies	Greater representation and influence of women in all IAP and IAMP programmes and membership.	**2016:** # project recommendations implemented by IAP. Steadily increasing percentage of female IAP and IAMP members per year. Steadily Increasing percentage of females represented in IAP/IAMP committees and activities. Baseline: Figures provided by survey.	
GenderInSITE Collaboration			
2.7. Collaborate with GenderInSITE (GIS); Coordinate OWSD and GIS activities and Secretariat staff	Increased impact and outreach of OWSD activities through international links with GIS Increased impact and outreach of GIS activities through take up by OWSD members.	**2015:** # GIS activities, programmes and communications publicised on the OWSD website # OWSD fellows and staff invited to participate in GIS events	

		#GIS staff and steering committee members invited to participate in OWSD events Baseline: from 2015 # joint strategy meetings with OWSD and GIS staff	
Specific Objective 3: increase visibility and awareness of the contributions women make in S & T in developing countries and globally			
Track and highlight alumnae success			
3.1. Contact OWSD fellows, members and alumnae to update their profiles and achievements on the OWSD website 3.2. Highlight OWSD members' success on the web site 3.3. Send surveys to fellows and alumnae for feedback and tracking of achievements and careers	Increased visibility and awareness of women's achievements in science	**2015:** # success stories published on website # 'hits' of success stories	
Increased visibility of OWSD in UNESCO			
3.4. Provide information, material and reports to UNESCO on the activities and achievements of OWSD, together with GIS and TWAS. 3.5. Link with UNESCO and the ICTP gender focal points.	Increased visibility and awareness in and through UNESCO of OWSD activities: OWSD activities, programmes and statistics appear in UNESCO dissemination and reporting.	**2015:** # communications, reports shared with UNESCO # activities/ collaborations with ICTP	
Collect, compile, analyse, report and display statistics on women in science			
3.6. Prepare and disseminate an annual report on OWSD activities and achievements. 3.7. Commission and evaluate National Assessment reports for 4 African countries 3.8. Improve presentation of National Assessments data through data visualizations. 3.9. Commission data analysis and assessment	Policy makers are better informed about contributions from women in developing countries for the advancement of scientific research. National Assessments data are used by partners and potential participants to promote the messages of the campaign.	**2015:** Annual report published # views/downloads on National Assessments visualizations #National Assessment reports published.	

GIS

Outputs	Outcomes	Performance Indicator	As of 2015
Overall Objective: Through the GenderInSITE campaign, increase the number of STI policies and programmes globally which take into account the "gender lens"			
Specific Objective 1: Establish an international network to promote the goals and message of GenderInSITE			
• Promotion of the GenderInSITE campaign among potential partners and targets • Development and publication of a Declaration for participants • Development of a logo and brand for the campaign • Establishment of a GIS web portal	1.1 A multistakeholder network is established of organizations promoting these issues, with 7 coordinating organizations and 10 active partners by 2013 and 10 coordinating members and 30 active partners by 2016.	# of visits to the GenderInSITE website # of partner organizations # of signers-on to the Declaration # of members on Coordinating Group Baseline (4 official members and 2 co chairs) Diversity of steering board (UN, GAB, 1 national academy of Science, one network of international science academies and One international organization for the benefit of women in science) Organisations collaborating with or supporting GIC-9 (SciDec, SPRU, ACTS, ASSAF, FLACSO, Elsevier, ICSU, IAP WISAT)- TARGET 15 by 2016	ACHIEVED : GIS networks -7 steering Comm. Members +2 co-chairs, 3 new members ISSC, ICSY and Protia/Gender Summit (0;s GAB-UNCSTD, Chinese AS, TWAS, OWSD; PARTIALLY ACHIEVED: Identif. Of new and exist. Partnership (see pg.11 GIS Activities report Jan- Dec 2015) Organisations collaborating with or supporting GIC-9 (SciDec, SPRU, ACTS, ASSAF, FLACSO, Elsevier, ICSU
• Regional focal point organizations are identified and take approached leadership roles in Latin America, Africa and Asia • Sectoral leaders are approached and confirmed in 5 sectors (e.g. agriculture, education, environmental management) • Annual meeting of coordinating group and key partners	1.2 Partners agree to take on leadership roles in Latin America, Africa and Asia 1.3.UN and civil society agree to take on leadership roles in 5 sectors (e.g. agriculture, education, environmental management)	# of regional focal points # number of regional campaign activities and initiatives # of sectoral leaders RFP in LAC, Southern and East Africa, Asia RFP? At least 5 regional activities per year(baseline 28 regional activities in 2014) Target Committees – 1 in 2015, 2 in 2016	PARTIALY ACHIEVED- In 2014-2015 they had 2 RFP, Asian RFP had been delayed. Performance strong in SA and LAC. 9 activities per each totaling in more than 30 in the regions) PARTIALLY – One thematic committee formed in sector Gender and Water, meeting during GIS workshop"applying gender and Science Lense to Water issues in Trieste 2015.

Specific Objective 2: Resource and communications materials are used by partners to spread the campaign message			
• Fact sheets on the main topic areas of the campaign are developed • A range of communications materials such as speakers' notes • Website developed to highlight and promote the campaign as well as provide a forum for accessing and exchanging resource and information materials	2.1 A set of resources and informational materials on 8 key topics are actively used by partners and potential participants in various fora to promote the messages of the campaign by 2013.	# of downloads from the GIS website # of fact sheets downloaded # of speakers' notes downloaded and used by partners	ACHIEVED GIS WEBSITE built and launched in April 2015. Frequently uploaded news, background info on thematic areas and database of practical tools. Web has 12.0000 from 6.251 visitors, RFPs for LAC and SA maintain website for GIC, LAC page in Spanish. Fact sheets for thematic areas produces and uploaded. Exact number of downloads unknown pages received 1, 264 collective views. GID Produced 12 video interviews, thematic area od water video produced including Spanish language video. 2500 views of GIS produced videos.
• Regular press releases and media information are produced • Website profiles new activities and collaborations • Models for action and success stories are highlighted	2.2 Partner organizations spread information and awareness of the importance of applying the gender lens to STI policy and programmes 2.3 New partners join the network as a result of outreach through campaign activities and products	# number of regional campaign activities and initiatives # of regionally-developed communications, messages, media (e.g. TV and radio shows)	Achieved GenderInSITE messages appeared in 10 media publications and radio/TV broadcasts, an editorial in TWAS newsletter (see page 15 of GIS Activities report Jan- Dec 2015) etc. 77 240 tweets
• Planning and announcement/networking listservs for organizers and participants • Web-based posting and exchange of announcements and resources	2.4 Campaign participants exchange information and collaborate on gender and STI activities on a regular basis.	# of collaborative initiatives among partner organizations # of listserv interactions # and representation of organizing groups and key partners	PARTLY ACHIEVED GenderInSITE listserv set up in Dec 2015 for launch in 2016. Sign ups for the listserv collected at Gender Summit Berlin Nov 2015.
• Submitting lobbying for articles/ Editorials in major science journals • Lobbying for / submitting Editorials in major online and mainstream publications • Speakers notes and fact sheets are made available in the key campaign focus areas	2.5 Campaign messages are carried in a number of media platforms: Highlighted in 3 articles or editorials each year in the international science and mainstream media and linked to the GenderInSITE campaign. Influencing the development of audio-visual, print, ICT-based media /messaging highlighting one or more campaign areas of focus	# of editorial and articles in science-related publications # of editorials and articles in mainstream publications # of downloads of speakers notes # of presentations and events at conferences # of sets of speakers' notes available on campaign topics # of audio-visual programmes or media instal-	Videos produced and uploaded to the website. 4 article series in the conversation- Africa organized by ASSAf An interview of EA FRP for Zimbabwe ZBC GenderInSITE organized 11 influential conferences, panel on institutional policies etc(See page 16 GIS Activities report Jan- Dec 2015-LFA)

	Editorials in major science journals Editorials/articles in major online and mainstream publications Examples and case studies of women's contributions to STI are used by other organizations and media	ments highlight campaign messages # of articles on GenderInSITE message areas in media by organizational contacts / targets	
• Campaign launch in sub-Saharan Africa (potential South Africa) hosted by governmental department with key players and donors	2.6 Campaign messages and activities gain high profile 2.7. Campaign messages are highlighted / presented at 5 conferences and relevant events in 2012, 10 in 2013 and 2014. 2.8. At least one government demonstrates public commitment of support by 2013	# of high-profile conferences and events where message is presented	See pg 15-17 of the above report- GenderInSITE message was presented at an additional 18 conferences, workshops and events, banners, flyers and gender lens gadget were designed and produced- given away at the gender summit 7 Europe Berlin. East Africa meeting of 40 policy makers.
Specific Objective 3: Decision makers understand importance of gender lens – STI policies and programmes of partners and targets reflect GenderInSITE messages			18 events in which GenderInSITE and RFPs participated.
• Key leverage activities are identified in each sector of focus • Models and success factors for action are highlighted and promoted through campaign materials and communications • Assessment of implications for national STI policy of gender • Provision of resources on gender and STI policy, including assessments of existing policy and models for moving forward • Provide inputs and advice on gender mainstreaming of STI policy	3.1 Key partners and targets in 5 national and international institutions initiate new gender –oriented actions by 2014	# of gender-oriented activities which can be attributed to GIS information # of partner-initiated programmes, messages, activities	Digital course in mainstreaming gender SciDEV.in science journalism includes GIS;w/ UNESCO, SAGA programme, IADC and African initiative impacting the conception and measurement on new sex disaggregated indicators for SITE.
	3.2 Establish partnerships with 3 national policy makers (i.e ministries of gender or S&T) countries to implement campaign activities	# of partnerships with national policy makers # of national level / governmental events on gender and STI # of STI-relevant policies which incorporate gender # of government-led programmes initiated in partnership with GenderInSITE	Gender Summits, UNESCO meetings, UN SG-SDGs LAC – Appointed to the Advisory committee of the UNESCO STEM and Gender Advancement project Advisory Board of the Broadband Commission for sustainable Development w/OAS carried out activities in the framework of the action plan approved at the 4th mth of Ministries and High Authorities of the science and technology, Inclusive innovation-Guatemala 2015 Southern Africa- ASSAf Executive Officer and RGL for SA elected co-chairs of the TWAS Gender Advisory Panel.

			Stakeholder scanning and mapping done- NO REPORT INCLUDED!!! Eastern Africa- in partnership with STEPRI Ghana, ANSTI and UNESCO female policy makers were sponsored to the High Level Dialogue of African Ministers and Parliamentarians in Ghana (pg 34. GIS Activities report Jan- Dec 2015-LFA) Zimbabwe MoHTE, STD, National commission for UNESCO, University VC, Water Management and Man and Biosphere Reserve Experts were introduced to GIS (more info available from GIS Southern Africa progress report june 2014- March 2015 and LAC progress report June- Dec 2014- especially on institutional relations and media campaigns)
• Lobby, partner with policy makers / ministries to promote the Gender-InSITE message • Provide inputs and advice on gender mainstreaming of STI policy • Key leverage activities and policies are identified in each sector of focus	3.3 Establish partnerships with 3 national policy makers to refine their own policy and planning to reflect the gender lens in STI.		

Annex 5: TWAS and OWSD Awardees

TWAS

Below is the overview of TWAS awardees (both individual and group) for each year from 2012-2015.[52] There is indeed much larger number of awards for Biology and Chemistry throughout this period and very few in Maths and Physics.

Table 7: Overview of TWAS awardees 2015-2015 per scientific area

Scientific area	2012	2013	2014	2015
BIO	33	16	21	28
CHE	21	21	14	18
MATHS	1	4	2	3
PHYS	9	8	8	9
Grand Total	**64**	**49**	**45**	**58**

Although number of awardees per scientific area fluctuated through years it was noted that the overall trend did not change too much.

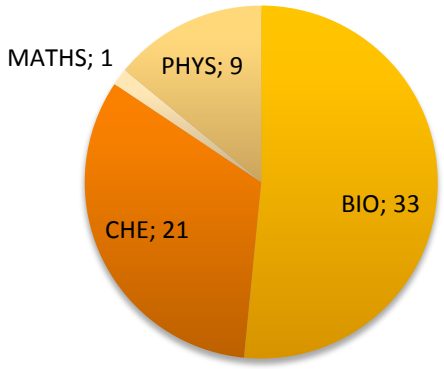

Figure 10: Number of TWAS Awardees per Scientific area for 2012 (S, I and G)

[52] TWAS Excel data – author´s calculations.

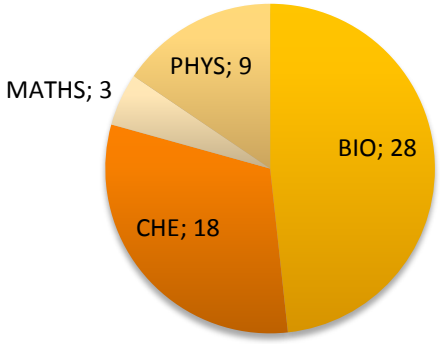

Figure 11: Number of TWAS Awardees per Scientific area for 2015 (S, I and G)

OWSD

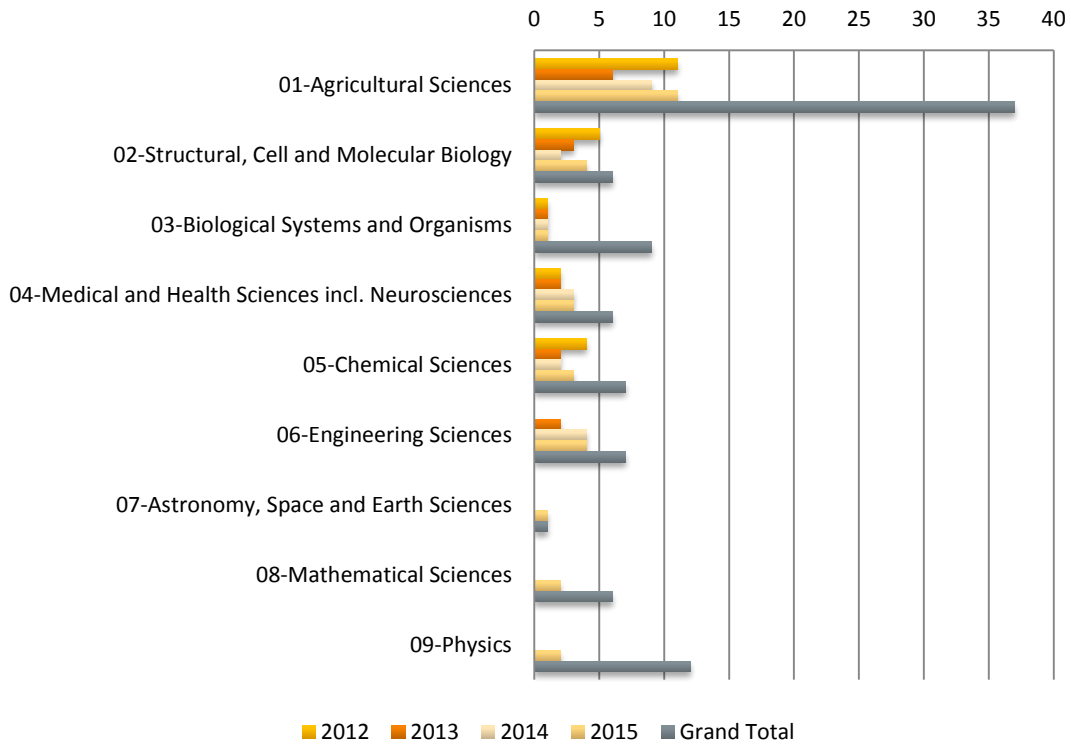

Figure 12: Overview of OWSD awardees 2012-2015, per scientific area

Large number of awardees in Agricultural Science is noted throughout the duration of this programme. Smaller but noticeable numbers are visible in scientific area of Physics, Biological Systems and Organisms, Chemical Science as well as Engineering. Indeed there are more awardees in Mathematical Sciences for OWSD awardees than it is the case with TWAS awardees.[53]

Table 8: Overview of OWSD awardees 2012-2015 per scientific area (full-time awardees)

Scientific Area	2012	2013	2014	2015	Grand Total
01-Agricultural Sciences	11	6	9	11	37
02-Structural, Cell and Molecular Biology			2	4	6
03-Biological Systems and Organisms	5	3		1	9
04-Medical and Health Sciences incl. Neurosciences	1	1	1	3	6
05-Chemical Sciences	2	2		3	7
06-Engineering Sciences			3	4	7
07-Astronomy, Space and Earth Sciences				1	1
08-Mathematical Sciences		2	2	2	6
09-Physics	4	2	4	2	12
Grand Total	**23**	**16**	**21**	**31**	**91**

Same trend is noted for full time awardees per country. Large number of awardees are from Bangladesh, leading with the number of fellows in Agricultural sciences (followed with Myanmar and Zimbabwe; Nigeria in Biological Systems and Organisms and Chemical science full time fellowship awards and Zimbabwe in Engineering Science fellowship awards).

Table 9: OWSD full-time awardees 2012-2015, per country

Scientific Area per Country	Total
Bangladesh	10
Benin	1
Bhutan	1
Botswana	2
Cameroon	4
Congo, Dem. Rep. (formerly Zaire)	1
Ethiopia	6
Ghana	5
Kenya	7
Malawi	2
Mozambique	1
Myanmar	5
Nigeria	9

[53] OWSD Excel data – author´s calculations.

Rwanda	7
Senegal	1
Sudan	9
Tanzania	3
Togo	1
Uganda	3
Zambia	2
Zimbabwe	11
Grand Total	**91**

Table 10: OWSD full-time awardees 2012-2015, scientific area per country: detailed overview

Scientific Area per Country	Total
Bangladesh	**10**
01-Agricultural Sciences	9
05-Chemical Sciences	1
Benin	**1**
01-Agricultural Sciences	1
Bhutan	**1**
07-Astronomy, Space and Earth Sciences	1
Botswana	**2**
01-Agricultural Sciences	1
04-Medical and Health Sciences incl. Neurosciences	1
Cameroon	**4**
02-Structural, Cell and Molecular Biology	1
03-Biological Systems and Organisms	1
04-Medical and Health Sciences incl. Neurosciences	1
09-Physics	1
Congo, Dem. Rep. (formerly Zaire)	**1**
03-Biological Systems and Organisms	1
Ethiopia	**6**
01-Agricultural Sciences	4
06-Engineering Sciences	1
09-Physics	1
Ghana	**5**
01-Agricultural Sciences	2
04-Medical and Health Sciences incl. Neurosciences	1
06-Engineering Sciences	1
09-Physics	1
Kenya	**7**
01-Agricultural Sciences	2
02-Structural, Cell and Molecular Biology	1
04-Medical and Health Sciences incl. Neurosciences	1
08-Mathematical Sciences	2
09-Physics	1
Malawi	**2**
01-Agricultural Sciences	2
Mozambique	**1**
05-Chemical Sciences	1
Myanmar	**5**
01-Agricultural Sciences	5
Nigeria	**9**
01-Agricultural Sciences	3
02-Structural, Cell and Molecular Biology	1
03-Biological Systems and Organisms	3
05-Chemical Sciences	2

Rwanda	**7**
04-Medical and Health Sciences incl. Neurosciences	1
05-Chemical Sciences	1
06-Engineering Sciences	1
09-Physics	4
Senegal	**1**
09-Physics	1
Sudan	**9**
01-Agricultural Sciences	1
02-Structural, Cell and Molecular Biology	2
03-Biological Systems and Organisms	1
04-Medical and Health Sciences incl. Neurosciences	1
05-Chemical Sciences	2
08-Mathematical Sciences	1
09-Physics	1
Tanzania	**3**
01-Agricultural Sciences	2
08-Mathematical Sciences	1
Togo	**1**
09-Physics	1
Uganda	**3**
01-Agricultural Sciences	1
03-Biological Systems and Organisms	1
06-Engineering Sciences	1
Zambia	**2**
02-Structural, Cell and Molecular Biology	1
09-Physics	1
Zimbabwe	**11**
01-Agricultural Sciences	4
03-Biological Systems and Organisms	2
06-Engineering Sciences	3
08-Mathematical Sciences	2
Grand Total	**91**

Table 11: OWSD 2012-2015 awardees: sandwich options per country

Country	Total
Bangladesh	2
Benin	4
Cameroon	14
Congo, Dem. Rep. (formerly Zaire)	1
Congo, Rep.	1
Ethiopia	6
Ghana	5
Kenya	4
Mauritania	1
Mozambique	2
Nigeria	24
Senegal	2
South Africa	1
Sudan	12
Tanzania	1
Togo	1
Zambia	1
Zimbabwe	1
Grand Total	**83**

Table 12: OWSD Sandwich option awardees 2012-2015: scientific area per country

Scientific area per Country	Total
Bangladesh	**2**
01-Agricultural Sciences	2
Benin	**4**
01-Agricultural Sciences	3
03-Biological Systems and Organisms	1
Cameroon	**14**
01-Agricultural Sciences	3
03-Biological Systems and Organisms	1
04-Medical and Health Sciences incl. Neurosciences	4
05-Chemical Sciences	4
07-Astronomy, Space and Earth Sciences	1
09-Physics	1
Congo, Dem. Rep. (formerly Zaire)	**1**
01-Agricultural Sciences	1
Congo, Rep.	**1**
04-Medical and Health Sciences incl. Neurosciences	1
Ethiopia	**6**
01-Agricultural Sciences	2
03-Biological Systems and Organisms	1
06-Engineering Sciences	2
08-Mathematical Sciences	1
Ghana	**5**
04-Medical and Health Sciences incl. Neurosciences	3
05-Chemical Sciences	1
07-Astronomy, Space and Earth Sciences	1
Kenya	**4**
01-Agricultural Sciences	1
04-Medical and Health Sciences incl. Neurosciences	1
05-Chemical Sciences	1
09-Physics	1
Mauritania	**1**
03-Biological Systems and Organisms	1
Mozambique	**2**
03-Biological Systems and Organisms	1
04-Medical and Health Sciences incl. Neurosciences	1
Nigeria	**24**
01-Agricultural Sciences	2
02-Structural, Cell and Molecular Biology	8
03-Biological Systems and Organisms	6
04-Medical and Health Sciences incl. Neurosciences	4
05-Chemical Sciences	3
06-Engineering Sciences	1
Senegal	**2**
01-Agricultural Sciences	1
08-Mathematical Sciences	1
South Africa	**1**
02-Structural, Cell and Molecular Biology	1
Sudan	**12**
02-Structural, Cell and Molecular Biology	1
03-Biological Systems and Organisms	2
04-Medical and Health Sciences incl. Neurosciences	6

05-Chemical Sciences	1
06-Engineering Sciences	1
09-Physics	1
Tanzania	**1**
01-Agricultural Sciences	1
Togo	**1**
04-Medical and Health Sciences incl. Neurosciences	1
Zambia	**1**
04-Medical and Health Sciences incl. Neurosciences	1
Zimbabwe	**1**
02-Structural, Cell and Molecular Biology	1
Grand Total	**83**

Table 13: OWSD Awardees: sandwich option per year 2012-2015

Scientific Area	2012	2013	2014	2015	Grand Total
01-Agricultural Sciences	3	4	2	7	16
02-Structural, Cell and Molecular Biology	1	5	1	4	11
03-Biological Systems and Organisms	5	3	2	3	13
04-Medical and Health Sciences incl. Neuroscienc-es	4	5	6	7	22
05-Chemical Sciences	1	2	2	5	10
06-Engineering Sciences		2		2	4
07-Astronomy, Space and Earth Sciences	1		1		2
08-Mathematical Sciences			2		2
09-Physics	1		1	1	3
Grand Total	**16**	**21**	**17**	**29**	**83**

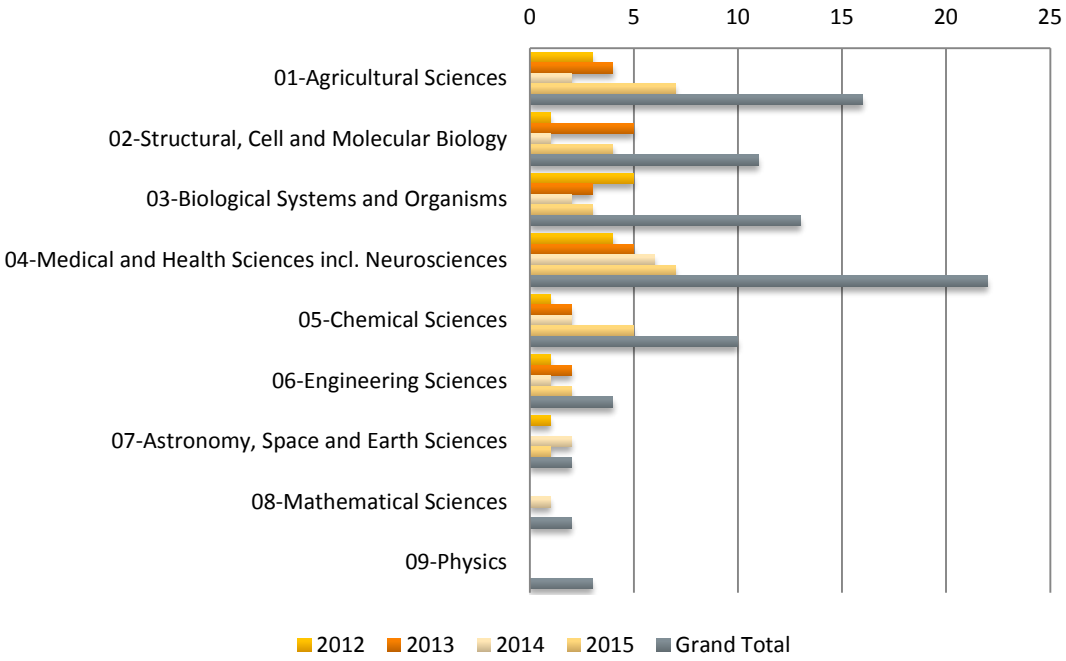

Figure 13: OWSD Awardees Sandwich option (2012-2015), per scientific area

Annex 6: Evaluation questions

The following provides an overview of the evaluation questions, to what extent they have been discussed in the report and where.

Questions	To what extent discussed	Where
Management and organisation		Chapters
Does TWAS/OWSD/GIS have management and governance structures that are soundly managed and effective in delivering the stated objectives? Are there any areas for improvement? Are the decision making roles and management lines clear in each organisation?	Fully discussed	2.1.. 2.2., 2.3 3.3. 4.3.
At the moment TWAS is a programme unit of UNESCO and the extra budgetary funding for TWAS (including OWSD and GIS) from Sida is through a 'special account' (as opposed to 'funds-in-trust'). What are the advantages and disadvantages of this set-up? Are there other feasible options? Are there any future developments that might affect this arrangement?	Fully discussed	3.4.
Can the regional links be managed better (TWAS regional offices on one hand, and OWSD national chapters, and GIS regional focal points on the other)?	Fully discussed	3.3. 4.3.
What organisational arrangements would best serve the overall objective of GIS? Is the organisation better suited to be free-standing, under another organisation or to remain as now? Would further integration of GIS into OWSD be an effective option?	Fully discussed	4.1. and 4.3.
Quality and relevance		
Are the programmes consistent with the needs and priorities of universities and research institutes in STLCs and LDCs? Analyse the role of TWAS / OWSD within research in STLC / LDCs. How are TWAS/OWSD and their programmes perceived within these countries?	Partly discussed	3.2.
Effectiveness		
To what extent have the TWAS/OWSD/GIS programmes been effective in reaching the planned objectives of the intervention? What are the reasons for the achievement or non-achievement of objectives?	Fully discussed	2 3.1. Annex 4 and 5
What can be done to make the interventions more effective?	Discussed	4.1, 4.3, 4.4.
Does TWAS have a unique role in providing research grants in the form that they do, or are there other organisations or	Discussed	4

networks fulfilling similar functions? What is seen as TWAS's added value in relation to other organisations which provide research grants?		
The funding from Sida has a seed money purpose: Which additional funds and in-kind contributions have TWAS, OWSD and GIS been able to raise? How can in-kind contributions be measured or estimated in a reliable manner?	Discussed	3.5.
Does OWSD have a unique role in providing fellowships in the form that they do, or are there other organisations or networks fulfilling similar functions? What is seen as OWSD's added value in relation to other PhD programmes?	Discussed partly	2.2, 4.4.
What can be done to raise OWSD's profile and visibility?	Discussed partly	4.4.
Does GIS have a unique role in increasing the number of policies and programmes in science, technology and innovation that take account of gender issues, or are there other organisations or networks fulfilling similar functions? If there are other organisations, what is seen as GIS's added value in relation to these organisations?	Fully discussed	2.3 and 4.4.
Cost efficiency		
Has the evaluated intervention been managed with reasonable regard for efficiency? Can the cost of the TWAS/OWSD/GIS programmes be justified by the results?	Discussed	3.5.
Can the intervention be implemented with fewer resources without reducing the quality and quantity of the results?	Partly discussed	3.5.
Can an altogether different type of intervention solve the same development problem but at a lower cost?	Not discussed	
For OWSD: How can the choice of host country improve the cost efficiency? Should the sandwich model (more cost-efficient) be applied to a larger extent?	Partly discussed	4.3.
Donors and relationships		
Is the current funding situation sustainable? What can OWSD/TWAS do to gain funding from other sources?	Fully discussed	3.4, 4.1.
What relationship do TWAS and OWSD have with other initiatives supported by Sida, including the bilateral research capacity strengthening programmes or global programmes such as ISP, INASP, SciDevNet? Is there potential for further collaboration?	Discussed	3.4.
What future funding possibilities should GIS focus on? What is the best set-up to ensure that the capacity of GIS is increased?	Discussed	4.3, 4.4.
Communication and dissemination are important for fund-raising, donor relationships, attracting quality applicants and for increased impact: Do the communication and dissemination activities done by TWAS, OWSD and GIS reach the target groups? Is there room for improvement?	Partly discussed	2

Gender		
How well has gender equality been taken into account within the TWAS structure? What can be done to increase the number of successful female applicants for research grants? What would be an effective way to increase the number of women in the TWAS structure?	Fully discussed	3.6.
How effective is the Gender Advisory Panel and what can be done to increase its effectiveness? Is there an alternative mechanism for helping TWAS to incorporate women and gender dimensions more effectively?	Fully discussed	2.2, 3.6.
Is an age-limit for applicants appropriate for OWSD fellowships?	Partially discussed	2.2.
Future paths		
Within the activities funded by Sida, should TWAS and OWSD focus on their core activities – research grants and PhD fellowships?	Partly discussed	4
Apart from the research grants TWAS also provides support for regional conferences and science diplomacy. Limited to the activities funded by Sida, is there a risk that too many activities are undertaken, or is it an opportunity? Can OWSD better use their network of alumni? If so, how?	Partly discussed	4
Apart from the research grants TWAS also provides support for regional conferences and science diplomacy. Limited to the activities funded by Sida, is there a risk that too many activities are undertaken, or is it an opportunity? Can OWSD better use their network of alumni? If so, how?	Partly discussed	4
Could OWSD invest more in the membership programme (currently 4773 members)?	Not discussed	
Can impact and funding be increased by better collaboration between TWAS, OWSD, GIS and other Sida funded programmes?	Partly discussed	4
Which new activities or elements, if included in future collaboration with Sida, would increase the programmes potential outcome and impact?	Partly discussed	4

Evaluation of Sida Support to TWAS, OWSD and GIS

This report presents the findings, conclusions and recommendations of an evaluation of Sida's support to the World Academy of Science (TWAS), the Organisation for Women in Science for the Developing World (OWSD) and GenderInSITE (GIS). The purpose of this evaluation was to i) provide an assessment of the results achieved so far by TWAS/OWSD/GIS; ii) provide Sida and TWAS/OWSD with recommendations to upcoming discussions concerning possible continued cooperation; and iii) provide Sida and GIS with recommendations on future directions to be taken by GIS.

SWEDISH INTERNATIONAL DEVELOPMENT COOPERATION AGENCY
Address: SE-105 25 Stockholm, Sweden. Office: Valhallavägen 199, Stockholm
Telephone: +46 (0)8-698 50 00. Telefax: +46 (0)8-20 88 64
E-mail: info@sida.se. Homepage: http://www.sida.se

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