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DST / NETWORK OF SCIENCE

EVALUATION OF THE PROGRAMMATIC SUPPORT GRANT INTERVENTION FOR EXISTING SCIENCE CENTRES

REPORT COMMISSIONED BY THE DEPARTMENT OF SCIENCE AND TECHNOLOGY

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REPORT PREPARED

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ACRONYMS AND ABBREVIATIONS

DST	Department of Science and Technology
FRLS	Fixed-Rate Learner Subsidy
NCS	National Curriculum Statement
PSGI	Programmatic Support Grant Intervention
SAASTEC	Southern African Association of Science and Technology Centres
STEM	Science, Technology, Engineering and Mathematics
YiSS	Youth into Science Strategy

EXECUTIVE SUMMARY

INTRODUCTION

The crisis of skills shortage in South Africa, which is attributed to a decline in the numbers of learners pursuing mathematics and science subjects, especially in the previously disadvantaged communities, has necessitated some government departments, including the Department of Science and Technology (DST), undertaking drastic measures to resolve the situation. The DST recently launched the Youth into Science Strategy to: (1) enhance science and technology literacy among the youth, and (2) nurture youth talent and the potential for science, engineering and technology-based careers. The Youth into Science Strategy comprises several intervention programmes, one of which is the establishment of a Network of Science Centres. The Network of Science Centres was identified as a critical infrastructure for the delivery of the Youth into Science Strategy.

Based on the Proposed National Norms and Standards for a Network of Science Centres in South Africa (2004), a network of Science Centres refers to a group of Science Centres that are interconnected, aligned to and supported by the DST. The goal for establishing the Network of Science Centres was to create an environment enabling Science Centres in the Network to operate optimally and assist in promoting science literacy among the youth and the population in general. The DST believes that increased enrolment of learners in science-based degrees is a key factor in addressing the shortage, and relies on a strong school science education system which provides a pipeline into science-based degrees (DST, 2006). Facilitation of a Network of Science Centres across South Africa is one of the many initiatives being undertaken by the DST that are aimed at addressing the shortage of skilled professionals in the areas of science, technology and engineering. To support the Network of Science Centres initiative, the DST has set aside funds in the form of a grant known as the Programmatic Support Grant Intervention (PSGI) that Science Centres can apply for so that they can pursue various projects. The Programmatic Support Grant was an interim measure while the DST was still engaged in a process of developing the Policy Framework for the Network of Science Centres. The PSGI will be phased out to give way to the fixed-rate learner subsidy under the National Roll-Out Plan for the Establishment of the Network of Science Centres in South Africa, and hence the reason for this evaluation of the Programmatic Support Grant Intervention.

The purpose of this evaluation is to provide guidance to the DST in the process of integrating the Programmatic Support Grant Intervention into the *operations support* for the Network of Science Centres. As a component of *operations support* the Programmatic Support Grant will take the form of a *fixed-rate learner subsidy*. The HSRC has been commissioned to conduct the evaluation of the Programmatic Support Grant Intervention for the existing Science Centres.

To facilitate the evaluation, the following key questions were asked:

- Who are the beneficiaries of the Programmatic Support Grant Intervention (PSGI)?
- How does the Programmatic Support Grant Intervention operate?
- What are the shortcomings experienced in the implementation of the PSGI and the strategies used to combat the envisaged shortcomings?
- What strategies work best for the PSGI and how could the intervention best be structured?
- How should the DST structure the funding for the Science Centres in future? (i.e. fixed-rate learner subsidy, programmatic support grants)?

RESEARCH METHODOLOGY

Sampling

The evaluation of the Programmatic Support Grant Intervention focused on the thirteen Science Centres currently benefiting from DST funding. A list of these Science Centres was requested and received from the DST. About 70% of the Science Centres, purposely selected from six provinces, were visited to make on-site observations. During these visits interviews were also conducted with the Directors/Managers/Coordinators about the operation and implementation of the PSGI in their Science Centres.

Instruments

Various data instruments intended to help answer the key research questions were developed and other data sources were consulted as well. The instruments developed by HSRC included:

- The SAASTEC questionnaire

- The Science Coordinators/Managers questionnaire
- Interview protocols for the Science Centres' Directors/Coordinators/Managers
- Interview protocols for the DST.

The consulted sources for review were:

- The National Roll-Out Plan to establish the Network of Science Centres in South Africa
- Proposed Norms and Standards for Science Centres in South Africa
- A literature review (studies on international science centres).

An additional data source was the field notes from the on-site observations of some Science Centres.

Data analysis

A trend analysis was done of all the data sets from the interviews with the Science Centre Directors/Managers/Coordinators, and the interviews with the DST, field notes from the on-site observations and the interview questions e-mailed to all the Centres were analysed. The issues that emerged from these various data sets were also identified.

KEY FINDINGS

The following findings were noted as key in this evaluation report.

- The beneficiaries of the Programmatic Support Grant Intervention are the various Science Centres operating in South Africa. Currently (2007) there are thirteen Centres which are members of the Network of Science Centres and are benefiting from the Programmatic Support Grant Intervention. These were the Centres that applied for and were granted funding.
- All the Centres currently benefiting from the PSGI use the grant to facilitate school-based mathematics and science programmes. These school-based programmes mainly target previously disadvantaged schools, which are predominately in black communities. Most of the programmes are intended for school curriculum activities that primarily focus on Grade 10 through Grade 12 learners.

- To advertise the PSGI, the DST sends the grant invitation through SAASTEC (Southern African Association of Science and Technology Centres), with which most Science Centres are affiliated.
- According to the DST, the projects that they eventually funds are informed by their policy framework. These projects should prove to be contributing to the four goals of the network of the Science Centre. Centres which apply for the grant are guaranteed to receive it as long as they comply with the policy framework.
- Regarding the implementation strategy, most Science Centres hardly had a strategy except to wait until the funds were deposited in their accounts, due to the financial constraints that they were experiencing.
- The Science Centres viewed the PSGI as a valuable source that was contributing towards the attainment of the goals of the Network of Science Centres. It helped to increase the existing scope of promoting scientific literacy among previously disadvantaged communities. Learners from disadvantaged communities had an opportunity to visit the Centre and could observe some experiments for which their schools did not have apparatus to conduct.
- Challenges concerning the PSGI include the delay in the deposit of the funds in the Centres' accounts, which affected their starting time.
- The PSGI was viewed as having limited or insufficient scope by some Centres, a judgment which was based on their various needs.
- Regarding the future approach to funding, some Centres did not think that the fixed-rate learner subsidy on its own was ideal for them.
- These Centres recommended modifications to the existing funding approach, the PSGI. They suggested that the PSGI should become the "operation support grant". Additionally, they suggested that corrective measures be factored into the equation so that Full Service Centres are not favoured at the expense of the Limited Service Centres.
- To structure funding for Science Centres, managers from both full and limited Centres believed that the DST funding should underwrite basic running costs through a standard fixed-rate learner subsidy.
- The Centres believed that the DST should provide more funding to the small, emerging, and struggling Science Centres for a number of years until they are able to survive on their own.

- The Science Centres believed that the move towards a fixed-rate learner subsidy will provide them with more opportunities to bring learners to their Centres. They believed that this approach would be most useful and would assist them in achieving both the goals of the Network of Science Centres and their own goals.

RECOMMENDATIONS

Based on the findings of this report, the HSRC has made the following recommendations:

- The Department of Science and Technology should decide whether it wants to fund both types of centres, or members of the Network of Science Centres, or ensure that the Resource Centres are upgraded to Science Centre level as proposed by the National Roll-Out Plan to establish the Network of Science Centres in South Africa (2007/8).
- The **fixed-rate learner subsidy proposed by the Department of Science and Technology should be considered and introduced parallel with another funding approach, namely "Baseline Operation Funding."** The introduction of a fixed-rate learner subsidy with Baseline Operation Funding is intended to address some of the challenges that Science Centres from previously disadvantaged communities are currently experiencing.
- The **Baseline Operation Funding should incorporate the running costs** of the Science Centres, which threaten the existence of some of the Centres.
- It is recommended that Science Centres should receive a **fixed-rate learner subsidy amount of R15 for each learner.** This amount will cover the following items:
    - 33% (R5) for the **learning materials** that each learner receives from the Science Centre (pamphlets, booklets, etc.)
    - 20% (R3) to **replenish consumable materials** (science shows, interactive exhibits)
    - 20% (R3) for **transport costs** for each learner
    - 13% (R2) **direct costs** (facilitators, volunteers)
    - 13% (R2) for **catering for learners.**
- **The FRLS amount should be awarded to Science Centres on the basis of having met the following criteria**:
    - learners participate through the full designed programme

- proof of attendance with the full names and addresses of the learners, educators and schools
- an attendance register signed by two of the teachers responsible for learners who visited the Science Centre
- The Centre has conducted a financial grant audit.

- It is recommended that **the grant should be issued twice a year** with the first payment at the end of the year. This will assist Centres to start their programmes at the beginning of the year. The second payment should be made in June-July pending receipt of the financial audit report for the first payment.
- The DST should **determine the maximum amount or the number of learners to be subsidised per annum** in each Centre. This will help to avoid enriching a few Science Centres that have an advantage over others of bringing more learners to their Centres.
- The proposed Baseline Operational Funding is intended to ensure that the Science Centre remains in operation as it will cover the **running costs** (e.g. rent, electricity, telephones, and Internet fee, advertisements communication); **maintenance repair and equipment** (e.g. computer services, broken furniture, etc.); **infrastructure maintenance** (e.g. broken windows, painting of the building, etc.); **transport** and **staff or volunteers' salaries**.
- Each **Science Centre should be given 50% of their total operational costs** during the first year, and **40% and 30% in the second and third years**. This approach is intended to bring various Centres on a par with each other. This will also give the Centres the responsibility to obtain the remaining funds from cooperate sponsors.
- It is recommended that the **funding should be provided for the first three years,** so as to allow the supported Centres to establish themselves and also give them sufficient time to solicit funding from other donors and build good relationships with them.

CONCLUSIONS

We conclude that all the Centres which are members of the Network of Science Centres currently benefiting from the Programmatic Support Grant Intervention have successfully implemented the grant. The activities that they have undertaken have ensured that the four goals of the network of Science Centres are being achieved.

We conclude that the fixed-rate learner subsidy on its own is not sufficient to address and meet the challenges of all Science Centres. It will perpetuate the challenges experienced, including further disadvantaging the already disadvantaged Science Centres. The fixed-rate learner subsidy should be introduced concurrently with the baseline operational funding. The baseline operational funding, targeting the struggling Centres, is intended to address some of the challenges that Centres from previously disadvantaged communities are currently experiencing and will also help bring the various Centres on a par.

MAIN REPORT

CHAPTER 1

OVERVIEW OF THE STUDY

1 INTRODUCTION

The issue of skills shortage in South Africa has raised major concerns for government, particularly for the Department of Science and Technology and the Department of Education, and for business stakeholders and the public in general. Its direct impact on the country's economic growth has sparked concerns in terms of meeting the United Nations' 2015 Millennium Development Goals. Several research reports indicate that the major reason for this challenge has been the decline in interest and the reduction in the number of learners who pursue mathematics and science education at high school level, especially at a higher grade level. Reports show that most of these learners are from previously disadvantaged backgrounds. Lack of understanding and awareness about careers that learners can later pursue at tertiary level as a result of taking mathematics and science is also cited as a cause of this state of affairs.

As part of the many efforts of the Department of Science and Technology (DST) to resolve the challenges, the Youth into Science Strategy (YiSS) was developed. The two main objectives of the DST's Youth into Science Strategy are: (1) to enhance science and technology literacy amongst youth, and (2) to nurture youth talent and the potential for science, engineering and technology-based careers. The YiSS comprises several intervention programmes, one of which is the establishment of a Network of Science Centres intended to address the issue of skills shortage in the country. Thus, the Network of Science Centres was identified as a critical infrastructure for the delivery of the Youth into Science Strategy.

2 NETWORK OF SCIENCE CENTRES

2.1 Programme Description

According to the Proposed National Norms and Standards for a Network of Science Centres in South Africa (DST, 2004), the Network of Science Centres refers to a group of Science Centres that are interconnected, aligned to and supported by the DST. Science Centres in South Africa have been operating for a while and were started as an initiative by either the private sector, individuals or universities. Based on the Proposed National Norms and Standards for a Network of Science Centres in South Africa (DST, 2004) a study commissioned by the former Department of Arts, Culture, Science and Technology found that these Science Centres were unevenly distributed and lacked capacity to fulfil their role. Their main purpose was to support schools and develop human resources. However, they still faced challenges that included being understaffed and heavily dependent on volunteer staff. There were many other challenges that hampered the optimal functioning of Science Centres (DST, 2004).

The facilitation of a Network of Science Centres across South Africa by the DST is one of the Department's many initiatives aimed at addressing the shortage of skilled professionals in the areas of science, technology and engineering. The goal of establishing the Network of Science Centres was to create an environment enabling Science Centres in the Network to operate optimally. Furthermore, the aim is to promote science literacy among the youth and the population in general. Increased enrolment of learners in science-based degrees is a key factor in addressing this shortage, and relies on a strong school science education system which provides a pipeline into science-based degrees (DST, 2006). The DST recognises the challenges of attracting youth to the sciences, retaining them, and then enrolling them in science-based degrees (DST, 2007/2008).

Science Centres provide an environment which enables individuals to engage with science at a hands-on level through exhibits, and therefore provide valuable opportunities to extend classroom learning. Science Centres also have the potential to impact on the attitudes and career direction of learners (DST, 2007). To support the network of Science Centres, the DST has set aside funds that Science Centres can apply for to pursue certain projects. Thus the DST

felt it necessary to support the Science Centres by providing them with a small budget that that is to be used for undertaking a certain programme. This grant is known as the Programmatic Support Grant and was an interim measure while the DST was engaged in a process of developing the Policy Framework for the Network of Science Centres. The implementation of the Programmatic Support Grant Intervention entailed invitations to the Science Centres to make project funding proposals to the DST once a year. The PSGI will be phased out and a fixed-rate learner subsidy will be introduced under the National Roll-out Plan for the establishment of the Network for Science Centres in South Africa, hence this evaluation of the Programmatic Support Grant Intervention.

2.2 Aims of the Network of Science Centres

The Department of Science and Technology has implemented a National Roll-out Plan which aims to establish a Network of Science Centres that are interconnected. The aims of the Network of Science Centres are:

- the promotion of science and technology literacy among the youth and the population in general
- enhancing learner participation and performance in science, technology, engineering and mathematics
- identifying and nurturing youth talent and potential in science, technology, engineering and mathematics.
- the provision of career education in science, technology, engineering and mathematics.

The National Roll-out Plan seeks to create an environment enabling Science Centres in the network to perform their core function, define and achieve the goals of the network, as well as broaden access to Science Centres' services by the target audience. Twenty-four Science Centres are currently in operation and are receiving the Programmatic Support Grant Intervention (see Table 1). Some of these Science Centres provide a limited service while others provide a full service. According to the National Roll-Out Plan for the establishment of a Network of Science Centres in South Africa (2007/2008), a Limited Service Science Centre is in the size range of 600 square metres in floor area, and is expected to accommodate

between 25 000 and 50 000 visitors per annum. Full Service Science Centres will be in the size range of 18 000 square metres and above in floor area. Full Service Science Centres are expected to accommodate 50 000 and above visitors per annum.

3 PURPOSE OF THE EVALUATION

The key research question guiding this evaluation is: How does the Programmatic Support Grant operate, and how should the DST support the Science Centres in future? The purpose of this evaluation is to provide guidance to the DST in the process of integrating Programmatic Support Grant Intervention into the *operations support* for Network of Science Centres. As a component of *operations support*, the Programmatic Support Grant will take the form of a *fixed-rate learner subsidy*. The HSRC was commissioned to conduct an evaluation of the Programmatic Support Grant Intervention for existing Science Centres.

The DST wants to evaluate the PSGI to see whether the initiative promotes the progress of Science Centres and to determine whether a different funding mechanism, i.e. a fixed-rate learner subsidy is necessary. It is considering ways of structuring the support to the Science Centres. In the past this was done by the Science Centres applying for programmatic grants. The DST wants to move towards providing a fixed-rate learner subsidy. This study will then inform the DST of the merits of the fixed-rate learner subsidy and how to calculate and implement it.

3.1 Objectives of the Evaluation Study

- To establish how the Programmatic Support Grant Intervention operates and document the procedures and/or activities undertaken in its implementation.
- To identify shortcomings experienced in the implementation of the Programmatic Support Grant Intervention and strategies for dealing with such shortcomings.
- To generate information on what strategies work best, and how the intervention could best be structured.
- To develop guidelines on how to structure the envisaged fixed-rate learner subsidy.

3.2 Key Research Questions

The key research questions for the evaluation are:

- Who are the beneficiaries of the Programmatic Support Grant Intervention (PSGI)?
- How does the Programmatic Support Grant Intervention operate?
- What are the shortcomings experienced in the implementation of the PSGI and what are the strategies used to combat the envisaged shortcomings?
- What strategies work best for the PSGI and how could the intervention best be structured?
- How should the DST structure the funding for the Science Centres in future? (i.e. fixed-rate learner subsidy, programmatic support grant?)

3.3 Focus of the Evaluation

To answer the above questions, the evaluation focussed on the following aspects:

3.3.1 Who are the beneficiaries of the Programmatic Support Grant Intervention?

- Who receives the support grant from the DST?
- What is the nature of the proposed projects?

3.3.2 How does the Programmatic Support Grant Intervention operate?

- How does the DST advertise and market the PSGI?
- What are the criteria for recciving the PSGI?
- What are the activities undertaken in the implementation of the PSGI?
- How is the PSGI implemented and what strategies are used?
- What are the views of the Science Centres on the PSGI operation or function?
- What is the value of the PSGI's goals to the development and establishment of a Network of Science Centres?

3.3.3 What are the shortcomings experienced in the implementation of the PSGI and what strategies are used to combat the envisaged shortcomings?

- What are the challenges and complexities encountered to date in the implementation of the PSGI?
- What strategies have Science Centres used to combat the shortcomings in the implementation of PSGI?

3.3.4 What strategies work best for the PSGI and how could the intervention best be structured?

- How is the Programmatic Support Grant Intervention structured?
- What are the strengths and weaknesses of the intervention programme?
- How could the PSGI be best structured?

3.3.5 How should the DST structure the funding for the Science Centres in future?

- What are the budget and income streams of the Science Centres?
- What is the nature of the activities that each learner benefits from in the Science Centres?
- To what extent have the received resources been utilised economically by the Science Centres in the delivery of the proposed projects?
- What project management factors are important for the implementation of the intervention in the Science Centres?
- What recommendations have been made by Science Centre managers/coordinators about a viable formula of the fixed-rate learner subsidy or a viable approach to funding the various Science Centres?
- What approach will be viable in the conversion of the PSGI to a fixed-rate learner subsidy?
- What are the recommendations concerning the project management factors important for the implementation of the intervention by the DST?

4 EVALUATION APPROACH AND ACTIVITIES

The evaluation approach to the Programmatic Support Grant Intervention was guided by the research questions.

4.1. Who are the beneficiaries of the Programmatic Support Grant Intervention?

To answer this question, a questionnaire was used to collect baseline information about the Science Centres that are receiving the PSGI. Copies of PSGI proposals for each of the funded Science Centres were requested for review in order to find out who was receiving the grants. The DST was interviewed to learn about the beneficiaries of the PSGI, using an HSRC-developed interview protocol.

4.2 How does the Programmatic Support Grant Intervention operate?

The DST was interviewed about how the PSGI is advertised and the criteria for selecting Science Centres to be funded. Science Centre managers/coordinators were also interviewed about the operation of the PSGI, what strategies they used to implement the PSGI, their views on the PSGI's function and the current funding approach. HSRC researchers also carried out on-site observations of the sampled Science Centres to learn more about how the PSGI operates and what activities are undertaken to implement the PSGI as well as the value of the PSGI to the development and attainment of the goals of the Network of Science Centres. A document analysis of the Science Centres reflecting how the PSGI functions was also done. Other documents (national roll-out plan, national norms and standards for a Network of Science Centres in SA) were also analysed to learn how the PSGI should operate, and a comparison was made of the current realities in the Science Centres.

4.3 What are the shortcomings experienced in the implementation of the PSGI and the strategies for combating the shortcomings?

This was determined by interviewing Science Centre directors/managers/coordinators. The interviews focused on gathering information on the shortcomings experienced in the implementation of the PSGI as well as the strategies used to combating the shortcomings.

Science Centre documents (financial or audit reports, internal evaluation reports, etc.) were also reviewed to gain insight into some of the shortcomings of the implementation of the PSGI.

4.4 What strategies work best for the PSGI and how could the intervention best be structured?

An analysis was made of the existing PSGI strategies by looking at the trends of beneficiaries' responses in the HSRC-developed questionnaire. Trend analysis of data from on-site observation, interviews and document review was also done and recommendation made as to what strategies work best and how the intervention could be best structured.

4.5 How should the DST structure the funding for the Science Centres in future? (i.e. fixed-rate learner subsidy, Programmatic Support Grant)

A trend analysis was done of the suggestions and recommendations received from the Science Centre directors/coordinators/managers about the guidelines to be employed for approaching and structuring funding for the Science Centres. The data analysis was intended to also help inform the development of a fixed-rate learner subsidy or other viable approaches.

CHAPTER 2

LITERATURE REVIEW

1 INTRODUCTION

The need for scientifically literate citizens and societies has been emphasised by many countries (North Carolina Science, Mathematics, and Technology Education Center, 2008; Department of Arts, Culture, Science and Technology, 1996; www.britishcouncil.org/talkingscience-centres-science-centres.htm). These countries recognise and believe that science and technology are increasingly becoming the drivers of every country's economic growth. Based on this belief, various countries have sought ways to ensure the success of their scientific literacy promotion. Among the identified ways of ensuring and promoting scientifically literate citizens has been the development and promotion of science centres. These science centres are intended to be platforms for raising awareness of science and technology among various community members irrespective of age, gender, race, ethnicity, educational qualifications or socio-economic status (www.aspacnet.org/apec/about/index.ht).

Science Centres are viewed as a valuable asset in helping to promote science education and in symbolising countries as pro-science and pro-enterprise (Scottish Science Centres Network: 2005-2009, 2005; DST, 2008). Nonetheless, it has also been discovered that when Science Centres perform as individuals, their impact is less than when they work collaboratively (DST, 2007/2008). This observation has resulted in the development of the network of Science Centres in South Africa. This collaboration of Science Centres is viewed as adding value to particular projects and enhancing their impact. The networks of Science Centres have been in operation in the West for some decades now and have been regarded as playing a significant role in promoting and fostering the love of science and technology (Association of Science and Technology Centres: www.astc.org/about/index.htm).

2 ROLE OF SCIENCE CENTRES: INTERNATIONAL FOCUS

Science Centres have been viewed as platforms for inspiring children and giving them the ambition to pursue science at school and beyond (Scottish Science Centres Network: 2005-2009, 2005). Based on the Scottish Science Centres Network 2005-2009 (2005), the role of Science Centres is to foster a culture of science in the country. These centres play a pivotal role in improving access to, promotion of and better engagement with the science agenda, and present the opportunity to inspire the scientists of tomorrow. It is argued that Science Centres play their roles across the boundaries of age, culture and gender, and that the development of this broad audience demonstrates the success of their strategy. In Scotland, the network of Science Centres is tasked as follows:

- They are innovative education resources that promote science education to children, adult learners and the public. They should also support teachers and science teaching.
- Science Centres are places where the public can be engaged in topical science issues.
- They are fun and entertaining places to visit, and at the same time they help to boost local economies.
- They are cultural sites which explain the contribution of scientists and innovators to the country's heritage.
- They are agents of local economic regeneration, helping to promote the profile of previously run-down areas.
- They are stylish meeting venues for high-profile events.
- They are highly visible icons of Scotland's status as a nation in which science is a priority.
- They are professional in their approach to science.
- They are consistent in the quality of the education they provide.
- They enable Scotland-wide engagement.
- They are flexible in meeting emerging needs.

As mentioned above, the development of a network of Science Centres is very common in the West. In the USA, the Michigan Mathematics and Science Centre network is viewed as a primary infrastructure supporting the improvement of mathematics, science and technology

education (Michigan Mathematics and Science Centers Network, 2005-2006). A network of Science Centres serves as a catalyst and resource for improvement in the teaching and learning of mathematics and science. It provides professional development opportunities that enable and sustain effective teaching of science by ensuring that teachers remain up to date with the field and are able to develop positive learning environments for all the learners (Michigan Mathematics and Science Centers Network, 2005-2006). These endeavours contribute towards the Science Centres' major goal, which is to support schools in meeting the strategic goals of the state board of education. In the UK, the Science Centres' intention of supporting the country's economic growth through working with schools and the public in general has also been noted by the British Council. Science Centres in the UK bring science to life by creating a space for learning and dialogue and allowing people to interact with science in a way that is both fun and engaging (www.britishcouncil.org/talkingscience-centres-science-centres.htm). Science Centres in general promote and facilitate the discovery and understanding of the world around us alongside contemporary science issues.

3 SCIENCE CENTRES IN SOUTH AFRICA

Science Centres in South Africa have been in existence prior to 1994, which marked the first democratic elections in the country. However, those Science Centres existed and operated as separate entities (DST, 2004). With the identification of the skills shortages in the science, technology and engineering areas, the new government saw an opportunity to use the existing Science Centres as platforms for raising public awareness about science and technology and as a viable instrument to facilitate science learning by various societal groups. The Department of Science and Technology has identified a network of Science Centres as an important infrastructure through which the Youth into Science Strategy can be implemented so as to achieve the science and technology goals identified by the White Paper on Science and Technology (1996) and the National Research and Development Strategy (2002). This idea led to efforts to create a network of Science Centres in South Africa. The main goals and mandate of this network of Science Centres are to:

- Promote science and technology literacy among the youth and the population in general.

- Enhance learner participation and performance in science, technology, engineering and mathematics.
- Identify and nurture youth talent and potential in science, technology, engineering and mathematics.
- Provide career education in science, technology, engineering and mathematics.

To ensure that the Network of Science Centres achieves its goals, the DST felt the need to create an environment that would enable Science Centres in the Network to function optimally by adopting a National Roll-out Plan for the Establishment of a Network of Science Centres in South Africa. The National Roll-out Plan intends to achieve this by, among other things, providing operational support.

Prior to the adoption of the National Roll-out Plan, which was preceded by the development and adoption of the Policy Framework, the DST introduced in 2004 a Programmatic Support Grant Intervention for existing Science Centres. This was an interim funding arrangement to offer existing science centres relief while the DST finalised the Policy Framework and the National Roll-out Plan. The intention of the National Roll-out Plan for the Establishment of the Network for Science Centres in South Africa is to replace the PSGI with a fixed-rate learner subsidy.

4 SCIENCE CENTRES AND FUNDING

The literature that shows how exactly international science centres are funded is very limited. Common in the literature is the presentation of amounts awarded to science centres or networks of science centres. What is mainly missing in the literature are some of the formulas or models that are used or preferred in determining the grants or funds allocated to science centres by government. Nonetheless, it is clear from the literature that various governments support and fund the networks of science centres with the intention of using them to influence the economic growth.

CHAPTER 3
RESEARCH METHODOLOGY

1 INTRODUCTION

The purpose of this evaluation was to ascertain how the Programmatic Support Grant Intervention operates, and how the Department of Science and Technology should financially support the Science Centres in the future. The evaluation approach to the Programmatic Support Grant Intervention was guided by the following key research questions:

1. Who are the beneficiaries of the Programmatic Support Grant Intervention (PSGI)?
2. How does the PSGI operate?
3. What are the shortcomings experienced in the implementation of the PSGI, and what strategies are used to combat the envisaged shortcomings?
4. What strategies work best for the PSGI and how could the intervention best be structured?
5. How should the DST structure the funding for the Science Centres in future? (i.e. fixed-rate learner subsidy, programmatic support grants)

2 SAMPLING

The evaluation of the Programmatic Support Grant Intervention focused on the thirteen Science Centres currently benefiting from DST funding. A list of these Science Centres was requested and received from the DST. About 70% of these Science Centres, purposively selected from six provinces, were visited for on-site observations. During these visits interviews were also conducted with the Directors/Managers/Coordinators about the operation and implementation of the PSGI in their Science Centres. The Centres visited were:

1. Sci-Bono in Newtown, Gauteng Province
2. Sci-Enza in Pretoria, Gauteng Province
3. Forte Science Centre, Eastern Cape Province

4. MTN-Science Centre, Canal Walk in Cape Town, Western Cape Province
5. Uni-Zul Science Centre, Richards Bay, KwaZulu-Natal Province
6. Old Mutual-MTN Science Centre, Gateway in Umhlanga Rocks, KwaZulu-Natal Province
7. Bokamuso Science Centre in the Bochum area, Limpopo Province
8. Vuwani Science Centre, Limpopo Province
9. Osizweni Education and Development Centre in Secunda, Mpumalanga Province

3 INSTRUMENTS

Data instruments intended to answer the key research questions were developed and some data sources were also consulted. The instruments developed by the HSRC included:

- SAASTEC questionnaire (see Appendix A)
- Science Coordinators/Managers questionnaire (see Appendix B)
- Interview protocols for the Science Centres' Directors/Coordinators/Managers (see Appendix C)
- Interview protocols for the DST (See Appendix D).

The consulted data sources were:

- The National Roll-Out Plan to Establish a Network of Science Centres in South Africa
- Proposed Norms and Standards for Science Centres in South Africa
- Literature review.

The additional source of data was the field notes from the on-site observations of the visited Science Centres. Below we focus on the key research questions as well as the instruments that were used to answer the questions or sources consulted.

4 EVALUATION APPROACH AND ACTIVITIES

4.1 Who are the beneficiaries of the Programmatic Support Grant Intervention?

To answer this question:

- The HSRC developed a questionnaire that was used to collect baseline information about the Science Centres in general.
- The questionnaire was sent through the DST to all SAASTEC members during their annual conference in November 2007 held in Port Elizabeth.
- Copies of Programmatic Support Grant Intervention proposals for each of the funded Science Centres in 2006/7 were requested from the DST for review in order to find out who the grants were given to.
- Using an HSRC-developed interview protocol, the DST was interviewed to learn about the beneficiaries of the PSGI.

4.2 How does the Programmatic Support Grant Intervention operate?

- The DST and 70% of the Science Centres currently benefiting from the PSGI were interviewed about how the PSGI is advertised and the criteria for selecting Science Centres to be funded.
- Science Centre Directors/Managers/Coordinators were *interviewed* about the operations of the PSGI, the strategies used in implementing it, their views on the PSGI's function and the current funding approach.
- The HSRC also made on-site observations of some sampled Science Centres to learn about how the PSGI operates and the activities undertaken to implement it, as well as its value in developing and attaining the goals of a Network of Science Centres.
- Documents from some Science Centres reflecting how the PSGI functions were reviewed and analysed.
- *Other documents* (National Roll-Out Plan to Establish a Network of Science Centres in South Africa; Proposed Norms and Standards for Science Centres in South Africa) were also reviewed to learn how the PSGI should operate, and a comparison was made with the current realities in the Science Centres.

4.3 What are the shortcomings experienced in the implementation of the PSGI and what strategies are used to combat the envisaged shortcomings?

This was achieved by:

- Interviewing Science Centre Directors/Managers/Coordinators.
- Reviewing Science Centre *Documents* (financial or audit reports, internal evaluation reports etc.) to learn about the shortcomings in the implementation of the PSGI.

4.4 What strategies work best for the PSGI and how could the intervention best be structured?

An analysis of the existing PSGI strategies was conducted:

- By looking at the beneficiaries' response trends from the HSRC-developed questionnaire.
- By a trend analysis of data from on-site observations, interviews and document review.

4.5 How should the DST structure the funding for the Science Centres in future? (i.e. fixed-rate learner subsidy, PSGI)

- A trend analysis was done of the suggestions and recommendations received from the Science Centre Directors/Coordinators/Manager about guidelines that should be employed in the approach to and structure of funding for the Science Centres.
- The data analysis was used to inform the development of a fixed-rate learner subsidy or other viable approaches.

5 DATA ANALYSIS

A trend analysis was conducted on the data sets (interviews with the Science Centre Directors/Managers/Coordinators and the DST; field notes from on-site observations, and the interview questions e-mailed to all the Centres). This process allowed for the identification of the issues that are discussed in the following chapter.

CHAPTER 4

KEY FINDINGS

1 INTRODUCTION

This chapter presents findings of the evaluation of the Programmatic Support Grant Intervention. The findings emanate from data sets collected through the use of the various instruments discussed in the previous chapter. The findings are presented according to the key research questions of this study.

2 BENEFICIARIES OF THE PROGRAMMATIC SUPPORT GRANT INTERVENTION (PSGI)

The PSGI proposals which were submitted by the Science Centres to the DST were analysed and the results are presented in Table 1 below. The analysis of the interviews with Science Centre personnel and the DST and field visits form the basis of the discussion that follows.

There are more than 24 Science Centres currently operating in South Africa. Thirteen Centres, which are members of the Network of Science Centres, applied for funds from the PSGI. According to the DST, they all received the funding on meeting the stipulated requirements.

These Science Centres are located in eight provinces. Some Centres are located in rural areas and others in cities and urban areas. The Science Centres are classified as either Full or Limited Service Science Centres, and this is according to their space size. Currently (2008), the PSGI funds six Limited Service Centres and seven Full Service Centres.

These Full and Limited Service Science Centres can further be categorised into five major groups based on their ownership or alliance as well as their geographic location. They are:

(a) Government-based Science Centres
(b) University-based Science Centres
(c) Community-based Science Centres

(d) Corporate Sector-based Science Centres

(e) Privately-owned Science Centres.

Table 1: Categorisation of Centres which receive the PSGI

No	Centre Name	Location	Classification	Full/Limited Service
1.	Sci-Enza	University of Pretoria	University-based Science Centre	Full
2.	Potchefstroom Science C.	Potchefstroom	University-based Science Centre	Limited
3.	Sci-Bono Discovery C.	Newtown JHB	Government-based Science Centre	Full
4.	Uni. Limpopo Science C.	Sovenga	University-based Science Centre	Full
5.	UniZul Science Centre	Richards Bay KZN	University-based Science Centre	Full
6.	Bokamuso Science Centre	Bochum Limpopo	Community-based Science Centre	Limited
7.	MTN ScienCentre	Canal Walk, Cape Town	Corporate-based Science Centre	Full
8.	Old Mutual-MTN Sci. C	Umhlanga, KZN	Corporate-based Science Centre	Full
9.	Forte School of Science & Technology	Uni. Fort Hare, Alice	University-based Science Centre	Limited
10.	Science & Tech Educ C.	Uni. of KZN	University-based Science Centre	Limited
11.	Giyani Sci. C.	Giyani, Limpopo	Government-based Science Centre	Limited
12.	Vuwani Sci. C	Limpopo	University-based Resource Centre	Limited
13.	Boitjhorisong Resource Centre.	Sasolburg	Corporate-based Resource Centre	Full

Our analysis revealed that the Science Centres are not on a par with each other. For example, MTN ScienCentre in the Western Cape and Old Mutual-MTN Science Centre in KwaZulu-Natal, both classified as Full Service Centres, differ as to the number of exhibits each Science

Centre owns, the space, the number of programmes undertaken by each Centre, etc. Another difference is the operational hours of the Science Centres: some operate five days a week, eight hours a day (UniZul Science Centre and Vuwani Science Centre), while some are open seven days a week (MTN ScienCentre in Cape Town and Sci-Bono in Newtown). Science Centres that are open every day are usually those that are located in urban areas while the rural Centres were usually in operation five days a week.

According to the DST and the Science Centres, the PSGI is used to facilitate school-based mathematics and science education programmes, mainly at the grades 10 to 12 level. This is one of the many programmes Science Centres are providing. These school-based programmes mainly target previously disadvantaged schools (schools in black communities). The ultimate goal of these programmes is to contribute to a bigger pool of matriculants with good passes in mathematics and science education, as well as attracting them to careers in science.

Table 2 provides a summary description, rand value of the grant and period during which the grant was operational.

Table 2: Summary of the Programmatic Support Grant Proposals

No.	Science Centre	Brief Description of the Proposed Projects for 2006/2007	Amount (R) Requested	Amount (R) Received	Period
1.	Old Mutual-MTN Science Centre	Activities for Grades 10, 11 & 12 learners and their educators	R349 227	200 000	From date of amount received to end of twelve months
2.	Boitjhorisong Resource Centre	Support for teaching and learning in science, mathematics and technology at secondary school level. Target: learners and educators	R221 000	222 000	Grant not claimed
3.	Sci-Enza Science Centre	Amalulwane (Bat Science Camp). Unemployed adults, teachers, primary school learners, general public	R76 000	77 000	From date of amount received to end of twelve

No.	Science Centre	Brief Description of the Proposed Projects for 2006/2007	Amount (R) Requested	Received	Period
					months
4.	UniZul Science Centre	Support for secondary school physical science educators and learners	R599 340	199 000	From date of amount received to end of twelve months
5.	Forte school of science and technology	Learners, educators, general public, government officials and industries	R523 427	198 000	From date of amount received to end of twelve months
6.	Gateway Discovery Centre	Equip teachers, inspire learners, sustain their interest, act a driver for the development of basic science in marginalised communities	R83.044	85 000	From date of amount received to end of twelve months
7.	Giyani Science Centre	Target: learners, educators and members of the public	R697 600	275 100	From date of amount received to end of twelve months
8.	Potchefstroom Science Centre - NW University	Development of interactive science exhibits targeting learners of different categories & designs to be shared by other Science Centres in the country	R199 900	199 900	From date of amount received to end of twelve months
9.	University of Limpopo Science Centre	Support 90 teachers in 3 learning areas reached within rural school. Target 5 400 learners in the rural schools of Bochum, and also female teachers and learners through S&T education.	R355 800	198 000	From date of amount received to end of twelve months
10.	MTN ScienCentre - Interactive Science Foundation	Facilitating access of rural youth to science centre services by providing transport and entrance fees.	R260 000	260 000	From date of amount received to end of twelve months
11.	Vuwani Science Centre - University of Venda	Promote participation of rural learners in science expos and science and mathematics olympiads. Provide supplementary tuition in Sci. & Maths	R150 000	150 000	From date of amount received to end of twelve months

No.	Science Centre	Brief Description of the Proposed Projects for 2006/2007	Amount (R) Requested	Received	Period
12.	Boyden Science Centre - University of the Free State	Secondary school science learners and teachers	R227 000	271 000	From date of amount received to end of twelve months
13.	Bokamuso Science Centre	Provision of science and mathematics tutorials or supplementary tuition to learners in the Further Education and Training (FET) band	263 000	263 000	From date of amount received to end of twelve months

Analysis of PSGI proposals shows that the activities that the grant was used for included:

- Providing learners with interactive and hands-on learning experiences.
- Transporting learners to their Centres (UniZul Science Centre, Vuwani Science Centre, etc).
- Facilitating the teaching and learning of certain science topics (requested by the school or determined by the Science Centre) for high school learners, especially Grades 11 and 12 learners.
- Using the grant to facilitate programmes aimed at primary school learners (e.g. Sci-Enza Science Centre). Only in a few Centres was the focus on primary school learners.

Most schools visited the Science Centres with their learners through a booking schedule, while some schools visited Science Centres as part of their outreach programmes.

The PSGI was also used to assist educators gain the necessary subject knowledge in mathematics and science education, as well as the necessary pedagogic approaches (such as interactive approaches to the teaching and learning of science). With the introduction of the National Curriculum Statement (NCS), the focus in educator workshops has been on helping educators to understand the National Curriculum Statement as well as how to teach certain topics in their subject areas. This Educator Assistance programme is mainly delivered through workshops, usually taking place on weekends or during school holidays. Some workshops

focused on supporting teachers to develop educational materials and resources for their classes. They also provided information to maximise the teachers' use of resources in their communities.

About one-fifth of Science Centres used part of their PSGI to facilitate programmes with the surrounding communities. These programmes target unemployed community members. They conduct workshops on developing instruments and artefacts that can later be sold. For example, there were workshops to teach unemployed community members how to remove bats from buildings, and to build bat houses which they can sell. The DST believes that such an outreach community-based programme was not an unexpected spill-over effect of the PSGI.

Some Centres used the PSGI to develop their own interactive and permanent exhibits. Other Science Centres used part of the PSGI to upgrade and maintain their exhibits and models. These Centres believe that it is important for a Science Centre to keep up with the latest developments, hence the upgrade of equipment. They also have to replenish some of the materials that get used up during the shows and experiments with learners.

3 HOW THE PROGRAMMATIC SUPPORT GRANT INTERVENTION OPERATES

According to Centre Managers, Science Centres got to know about the support grant through the Southern African Association of Science and Technology Centres (SAASTEC): an announcement made on behalf of the DST. Most of the Science Centres are affiliated to and are members of SAASTEC. However, some Centre Directors/Managers/Coordinators were approached by the DST who informed them that they should submit a Programmatic Support Grant proposal. These Science Centres believe that the use of such approach was due to their reputation or the track record of their Centres. They also noted that the DST also gave them an indication of the maximum amount they could apply for. The proposal analysis shows that these amounts varied from one Science Centre to another.

The DST reported that they pride themselves on their relationship with SAASTEC members. To advertise the PSGI, the DST sends out an invitation to all the Centres asking them to submit their grant proposals. For the years 2006 and 2007 calls for proposal, they provided Science Centres with a template that served as guideline for applying for the PSGI. In 2007 the Science Centres had to follow the stipulated guidelines (see Appendix E), which the DST believed ensured uniformity of the proposals. On receipt of the proposals, the DST subjects the proposals to their review process and then informs the Science Centres about the outcomes of the review. These outcomes sometimes require the Science Centres to revise their budget or adjust the number of proposed projects.

According to the Centres, they submit their proposals for the following financial year in August or during the last quarter of the year. They then wait to hear from the DST about the final outcomes of their proposals. Usually this is a long wait (sometimes six months) before they are informed anything about their proposals. After being informed, the DST and the Science Centre sign a contract to conclude the agreement. The DST then deposits the granted amount in their accounts, usually around March or April. For the current 2008 year, during our visits to the Science Centres in March, we found that none of the Centres had yet been told anything about their proposals. The DST confirmed the claim and noted that grants would be made in the new financial year beginning in April. In addition, government had adopted a scheduled cash-flow approach, on which timing for payments made is based. Nonetheless, some Science Centres expressed their unhappiness about this long wait since they proposed to start their programmes as early as February or March of this year. They were uncertain whether they would receive the grant or not. This was especially so for Science Centres that mainly dependent on the Programmatic Support Grant for their scheduled programme. However, some Science Centres were understanding about the delay and noted that the DST's financial year ended in March or April, so the long wait for them was justified.

On receiving the grant in their accounts, the Science Centres proceed and implement the proposed programmes. Some Centres start their programmes immediately after they receive confirmation that they had received the grant. These are Centres that are able to use some of their funds knowing that when the DST deposits the Programmatic Support Grant funds in

their accounts they will be able to reimburse the funds. All the Science Centres use the PSGI specifically for the proposed programmes in their Centres.

Most Science Centres did not know exactly what criteria were used by the DST to allocate the Programmatic Support Grant. They believed that if the proposal was good and had followed the guidelines as stipulated by the DST, it would be funded. According to the DST, the projects that they funded were informed by their Policy Framework. Moreover, the projects should prove to contribute to the four goals of the Network of Science Centres (refer to Chapter 1 for the goals). They indicated that all the Science Centres that apply for the Grant are guaranteed to receive it if they comply with the Policy Framework. However, there were certain legal requirements which they also have to consider. For example, the Science Centre must be a legally registered organisation. Preferably, it must be a non-profit making organisation. So far they have not dealt with a Science Centre that is a profit organisation. All the Science Centres were registered as not-for-profit organisations. Some were registered independently as section 21 companies while others were part of bigger organisations such as the higher education institutions.

Various activities are undertaken by Science Centres to implement the PSGI. Most of these activities focus mainly on learners as well as their educators. With regard to learners, the main focus was on their school curriculum-based activities. These activities varied according to what each Science Centre decided to focus on or what the surrounding schools requested the Centres to prepare for their learners' visits.

To implement the PSGI, some of the Science Centres (UniZul Science Centre, SciBono, MTN ScienCentre, Osizweni, etc.) use their mobile labs to visit distant schools that cannot afford to visit their premises. These are usually schools in the deep rural areas, with communities that have a high poverty rate. Some Science Centres allocate part of their PSGI funds to transport the learners to their Centres. Nonetheless, two or more Centres (Bokamuso Science Centre and Old Mutual-MTN Science Centre) were currently not providing schools with transport nor were they visiting them. Schools that are interested in visiting the Centre are required to make an appointment and then organise their own transport for the learners. This approach was due

to financial constraints that the Centres were currently experiencing. Other activities undertaken by most Science Centres to implement the PSGI included the purchase of materials and consumables, etc.

From interviews with most of the Science Centres it was evident that there was hardly a strategy for implementing the programmatic support grant before it was received in their activities. Rather, they sought more funds from other partners or funders, and that ensured that they always had funds that they could use while waiting for the PSGI to be deposited in their accounts. However, this worked better for big Science Centres and not the smaller Centres with very limited budgets.

5 STRATEGIES THAT WORK BEST FOR THE PSGI AND HOW THE INTERVENTION COULD BEST BE STRUCTURED

The current Programmatic Support Grant Intervention is structured in such a way that it supports or funds a specific programme within a Science Centre. The programmes that it supports are currently school-based programmes that focus on youth in science and technology areas of study and their educators. The Science Centres are required to submit a programme proposal to the DST, and if they are successful they receive a lump sum grant that gets deposited into their accounts.

Strengths of the PSGI:

- The PSGI adds value and contributes towards the development and attainment of the goals of the Network of Science Centres.

- PSGI has played a critical role in increasing science literacy and reducing the matriculation examination failure rate mostly of learners from previously disadvantaged communities. This claim was made by Science Centres which had been working with the same schools since the launch of the PSGI. However, this claim was not verified with the schools they were servicing.
- The PSGI has given learners from disadvantaged communities an opportunity to visit Science Centres and observe experiments that their schools could not do as they do not possess the apparatus or equipment.
- Learners have the opportunity to interact with facilitators, other than their school teachers, who are experts in science and who discuss with them some of the difficult topics.
- Most of the learners from previously disadvantaged communities were said to have never visited a Science Centre before for various reasons such as lack of money for entrance fees at the Centre, transport fees, lack of necessary knowledge about Science Centres, etc. With the availability of the PSGI, schools were now able to take these learners to Science Centres for the first time to learn first hand about what Science Centres do and their activities. Through this process, the Science Centres believed that some learners became inspired about science.

Weaknesses of the PSGI:

- Science Centre managers believed that one of the weaknesses of the PSGI was its limited focus, which was directed towards the proposed programme and lacked flexibility. By flexibility they meant that they could not use the PSGI for other projects except the proposed project.
- Also, the PSGI was not taking performance into account. For example, they believed that Science Centres would receive the same amount despite the differences in visitor numbers.

5.1 How the PSGI could be best structured

Small Science Centres (Forte School of Science and Technology, Bokamuso Science Centre, etc.) did not believe that the fixed-rate learner subsidy proposed by the DST was the ideal funding approach for South African Science Centres. Rather, these Centres expressed their support for the modification of the existing funding approach, PSGI. They suggested that the current PSGI should become an "Operation Support Grant". In addition, they suggested that corrective measures be factored into the equation so that Full Service Centres were not favoured at the expense of the Limited Service Centres. Furthermore, the grant should also consider the development stages of Science Centres. They recommended that a basic annual grant amount (discussed later) should be determined for Science Centres, with allocations for items such as functional costs, capital costs, subscription costs, staff development costs, etc. Then annual targets should be set for each item, taking into account the geographic location of the Science Centre.

6 HOW THE DST SHOULD STRUCTURE THE FUNDING FOR SCIENCE CENTRES IN FUTURE

Science Centre Managers believed that DST funding should underwrite basic running costs through a standard fixed rate learner subsidy. In addition to this there should be a fund available to support special projects that support the DST's strategic priorities.

The Science Centres believed that the DST should fund Science Centres in such a way that certain operational costs as well as entry fees for learners are covered. In this way Science Centres will be able to update their equipment, programmes and exhibitions as well as allow as many learners as possible the opportunity to visit and participate in the Science Centre experience.

Reflecting on their current circumstances, some Centres believed that the DST should provide more funding to the small, emerging and struggling Science Centres for a number of years

until they are able to survive on their own. With this approach, Science Centres will have no excuse for failing to raise funds, and would become now established.

On the contrary, some of the Full Service Science Centres (UniZul Science Centre) believed that the use of a fixed rate learner subsidy would be the ideal funding approach for Science Centres in South Africa. These were mostly Centres that believed that they were attracting a lot of visitors and learners. They viewed the FRLS approach as rewarding hard work, which would work in their situation. Also, the FRLS was viewed as presenting more opportunities for learners to visit their Centres. Another aspect of the approach was that it did not just focus on a particular programme but was more open to all programmes.

6.1 Budget and income streams of the Science Centres

The annual budgets of the various Science Centres varied significantly, ranging from R200 000 to R17 million per annum. These annual budgets were influenced by the size of the centre, number of exhibits, number of programmes, geographic location, number of sponsors, etc. Also, the type of a Science Centre (university-based, community-based, etc.) played a role in the size of their annual budget. For example, most of the university-based Science Centres had their operational costs (rental, electricity, water, telephone, etc.) covered by their university, as well as some staff salaries. In such cases, the Programmatic Support Grant was an ideal grant for the proposed programme. Similarly, most of the corporate-funded Science Centres such as MTN ScienCentre, Old Mutual-MTN Science Centre, Osizweni Science Centre, etc. had their operational costs paid by their core sponsors.

As part of their income streams, some Science Centres charged an entry fee ranging from R5 to R25. These Science Centres believed that the amounts charged were very reasonable. They (those charging between R5 and R10) argue that the amount was intended to make the visitors responsible. Furthermore, they believe that if visitors are made to pay an entry fee at the Centre, they ensure that they learn something or get their money's worth. On the other hand, those charging R10 and above mentioned that the cost of running their Centres should be off-set by the amounts that the visitors were charged. These Centres also complained about the

difficulty to secure funds for their operational costs, which they believed was not easy to solicit from private sponsors who are only interested in funding certain programmes.

Science Centres differed on the issue of charging entry fee and hence some were not currently charging their visitors any gate or entry fees. These Science Centres believed that you cannot sell awareness to people, more especially to people who are struggling to understand why they should visit the Science Centre in the first place. They viewed part of their role as raising public awareness of science. They argued that with the unemployment rate and the current low socio-economic status of the communities they are servicing, previously disadvantaged communities could not be expected to pay an entry fee. They argue that these people have to pay for transport to the Centres, pay for their lunch or food, and would then also be expected to pay to enter the Centre. They believed that charging their communities an entry fee would be unfair and might be a deterrent. For that matter, most of their communities do not even see the value of Science Centres and even the role they play in their lives. This lack of understanding was attributed to the difficulty of attracting visitors other than school learners to their Centres. These Centres argued that they still needed to develop scientific literacy before they could charge an entry fee.

Currently all the Science Centres had two or more sponsors. These sponsors fund various programmes depending on their focus or the nature of their company. The noted challenge faced by small Science Centres has been to attract companies that would fund their operational costs. Science Centres argue that most companies are interested in aligning themselves with certain programmes in the Centres and not just paying their telephone, water or cleaning bills. To generate more funds, most Centres charged an entry fee which was a small part of the budget. The centres with large spaces also rent out part of their space to corporate business to display their equipment with the intention of recruiting some of the Grade 12 learners their field.

6.2 Extent to which the resources received have been utilised economically by the Science Centres in the delivery of the proposed projects

Based on the on-site visits, data from the questionnaire and interviews with the Science Centres, it was apparent that the PSGI has been economically utilised by most Centres. All the Science Centres were using the PSGI for the proposed purpose. Some Centre managers (such as from the UniZul Science Centre) claimed that their Centres were seeing the most visitors for the least cost of any Centre in the country. Additionally, they were raising other revenue themselves to make the PSGI go further.

6.3 Project management factors important for the implementation of the intervention in the Science Centres

The Science Centres believed that placing the decision-making power in their hands will be very crucial for the implementation of the intervention. They argue that they are the ones who are on the ground and know best what to do. Also, there should be minimal administration and red tape. Some noted that funds should be deposited in their Centres' account to be completely managed by the Centre for efficiency. This idea was based on the challenges that some university-based Centres (Vuwani Science Centre) were experiencing when they needed money, since the PSGI was deposited in the university pool. They viewed the process of claiming money for Centre activities as wearisome, hence their university policies. They also suggested that the grant should include capital expenditure for the development and growth of the Centre.

6.4 Views about the fixed-rate learner subsidy as a future funding approach for South African Science Centres

Most Centres believed that the move towards a fixed–rate learner subsidy would provide them with more opportunities to attract learners to their Science Centre. They believed that this approach would be useful and would assist them in achieving both the goals of the Network of Science Centres and their own Science Centres. They believed that they would be able to

attract more visitors other than learners to their Centres and thus be able to contribute towards creating a more educated society. They would also be able to effectively make science and technology more readily available to learners and educators alike. They viewed the fixed-rate learner subsidy not just as a programme-oriented support mechanism, but rather as a more open kind of support.

However, small Science Centres did not believe that the move towards the fixed-rate learner subsidy was the ideal approach for funding all the various Science Centres in the South Africa. Their argument was based on the prevailing diverse nature of Centres, such as Centres in rural as opposed to urban areas, and those conducting more outreach programmes than Centre visits. In this case their financial needs would vary as much as their ability to attract visitors to their Centres. These Centres expressed concern about the idea of a fixed-rate learner subsidy; hence they conducted mostly outreach projects. They believed that whatever approach is eventually adopted, it should consider the existing variables. They also believed that since some of the Science Centres were still struggling, they would require more financial support from government (the DST) in order to move in the direction envisaged by the DST.

What was also evident was the variation in the level of the Science Centres' understanding of the concept of the fixed-rate learner subsidy. Some stated that based on their understanding, the fixed-rate learner subsidy would narrow the focus of the Science Centres, hence the term 'learner' and exclude community service, which was considered inappropriate. Furthermore, they argued that even if the definition could include everybody visiting the Science Centre, it may still exclude other activities such as research and capital investment. In that case, they felt that funding based on a 'learner subsidy' would somehow prove to be problematic.

Some Centres even queried the use of term 'visitors' since they viewed the beneficiaries in their Centres as no longer 'visitors' but rather as 'family members'. This was partly due to their frequency of visits to their Centres. They argued that most of their visitors stayed for a longer period of time, thus not qualifying them as visitors but as family members. This also had implications for counting how many visitors visited the Science Centres.

The other concern that emerged about the fixed-rate learner subsidy was that Centres that are operating within universities use a door counter. Some Science Centres believed that such Centres would receive a greater fixed-rate learner subsidy, firstly because of the university students who 'hang out' at the Science Centre, and secondly it was also possible that one student would come in and go out two or three times, perhaps because their cellphone rang, and would be counted more than once as another visitor.

6.5 Recommendations of the Science Centres on the fixed-rate learner subsidy and other viable funding approaches

Some Science Centre Managers (UniZul Science Centre) suggested that the DST should build in a performance criterion; the easiest way to this they believed was to link the funding to the number of real visitors, for instance, visitors who have gone through the full service programme in the Centre and not just those who passed through the door. They believed that there should be two rates - a higher rate for Full Service Centres and a lower rate for Limited Service Centres. They also believed that there should be a maximum possible grant per Centre per year. This would help to stop large Centres receiving more money than the other Centres. Centres should be paid twice per year based on the actual audited visitor numbers. To achieve this, an attendance register should be kept and later a random check made.

CHAPTER 5

RECOMMENDATIONS AND CONCLUSIONS

Introduction

The recommendations and conclusions presented in this chapter result from the evaluation findings of the Programmatic Support Grant Intervention, knowledge of the status quo of the Science Centres in South Africa, and the literature review which focused on the various funding models or approaches used internationally.

What makes a Science Centre a Centre, and how it is different from a Resource Centre? This question emerged from visits where it was observed that some Centres act predominantly as school-based Resource Centres rather than Science Centres. Instead of complementing the formal learning of science at school, some Centres become the major drivers of school science learning. This should not be the role of Science Centres. Two studies (DST, 2004) undertaken prior this evaluation also raised the question of the definition of a Science Centre. The Proposed Norms and Standards for Science Centres in South Africa define a Science Centre as "a permanently established education facility that provides an interactive educational experience through the use of interactive science, technology, engineering and mathematics exhibits, displays and programmes." Thus the current beneficiaries of the PSGI are both Science Centres and Resource Centres.

1 RECOMMENDATIONS

Beneficiaries of the DST grant

We recommend that the Department of Science and Technology should decide whether they want to fund both types of Centre (Science Centres and Resource Centres), or ensure that the Resource Centres are upgraded to Science Centre level as proposed by the National Roll-Out Plan to Establish a Network of Science Centres in South Africa (DST, 2007/8).

Upgrading of Resource Centres will ensure that visitors benefit more than they currently do. The upgrading should ensure that the focus of the Centres is broadened, since at present they focus on the learners and the educators.

How the Programmatic Support Grant Intervention operates

The PSGI funding approach presents both opportunities and loopholes which have been discussed in this report. These loopholes could be closed either by modification of the Programmatic Support Grant Intervention or the introduction of a supplementary funding approach. Regardless of the model or funding approach that is developed, it should consider the current and future challenges facing Science Centres in South Africa. Following we propose some viable models or approaches that will drive future Science Centres funding in South Africa.

Fixed-rate learner subsidy as the DST-proposed funding approach

The DST would like to introduce a fixed-rate learner subsidy (FRLS), a funding approach which is believed will ensure that Science Centres are responsible, hard-working, and self-sustainable. Nevertheless, will this funding approach achieve the four goals of the Network of Science Centres? How will it address the myriad of challenges currently faced by the various Centres? Will the introduction of the fixed-rate learner subsidy have more benefits or will it just be a gesture for change? Does the current structure of the DST-proposed FRLS take into consideration the existing variables of these Science Centres? The variables are:

- The nature of the Centres, i.e. Full or Limited Service Centres.
- Geographical location, i.e. rural or city.
- The nature of the visitors (intellectuals, literate, illiterate, young or old, South Africans or foreign visitors, etc.).
- Current resources in the Centre against its vision for the future and its goals.

These are critical issues that require full consideration in order to promote the goals of the Network of Science Centres as well as raise the standards of all the Centres that serve previously disadvantaged communities.

We consider the fixed-rate learner subsidy on its own as not being adequate to address most of the Science Centre challenges. It will perpetuate the existing challenges, including disadvantaging the already disadvantaged Science Centres. The use of this approach on its own implies that "one size fits all." Thus it would be naïve to think this way, especially in the South African context which currently has many inequalities literally in every fibre of society. The FRLS on its own will favour Centres currently experiencing fewer funding challenges. These are Centres that are enjoying the reputation and support of some of the big companies in the country. They are established and have various income streams. Emerging and struggling Centres, which are mostly based in rural communities, will continue to be disadvantaged despite the introduction of a new funding model. These Centres struggle to attract enough sponsors because their geographic locations do not put their activities in the spotlight. Indisputably, funding for rural projects is still a challenge in South Africa. Therefore, how should future funding for Science Centres be structured?

We recommend that the **proposed fixed-rate learner subsidy of the Department of Science and Technology be considered and introduced parallel with another funding approach, namely 'Baseline Operational Funding'.**

The introduction of a fixed-rate learner subsidy with Baseline Operational Funding will address some challenges that Centres serving previously disadvantaged communities are currently experiencing. The Baseline Operational Funding will support and subsidise the running costs of the Centres, which pose challenges to their existence.

The structure of the DST-proposed FRLS must take into account struggling Science Centres serving previously disadvantaged communities; communities that hardly comprehend the role that science and technology plays in improving human lives; communities that can hardly afford travel to the Science Centres to learn about the latest scientific developments for the benefit of their children, and which will otherwise continue to be disadvantaged. The Baseline Operational Funding is intended to complement and strengthen the FRLS. The FRLS will encourage competitiveness of each Science Centre in recruiting, and will ensure that South Africans masses learn about and are benefiting from science.

Breakdown analysis and the funding process

We recommend that Science Centres should receive a fixed-rate learner subsidy amount of R15 for each learner (*a maximum amount that DST proposed to subsidize for each learner*). This amount will roughly cover the following items:

- 33% (R5) for the learning materials that each learner receives from the Science Centre (printed matter such as pamphlets, booklets etc.)
- 20% (R3) to replenish consumables (science shows, interactive exhibits)
- 20% (R3) for transport fees for each learner
- 13% (R2) direct costs (facilitators, volunteers)
- 13% (R2) for catering for learners

The FRLS amount should be granted to a Science Centre on the basis of meeting the following criteria:

- That learners have participated in the whole programme.
- There is proof of attendance with full names and addresses of the learners, educators, and schools.
- That the attendance register has been signed by two teachers accompanying the learners to the Science Centre.
- That the Centre has conducted a grant audit. This can be done twice a year and the DST should be given the full report.

To verify authenticity of the information, **we recommend that the DST should conduct a random telephone survey of learners and educators who claimed to have visited the Centre.**

We recommend that payment to the Centres be made twice a year, in December and June. The second payment should be made in June-July pending the receipt of the audit report.

The FRLS should subsidise a maximum number of learners in order to avoid enriching a few Science Centres who have the advantage over others of attracting more learners. **We recommend that the DST should decide on the maximum amount, depending on the budget, that they can pay to Centres, based on the stated number of learners who visited the Centre.** For example, say that the DST pays for the first 50 000 learners who visit a Full Service Science Centre and for 25 000 learners who visit a Limited Science Centre. The Full Service Centre stands a chance of making R750 000 and the Limited Service Centre could make R375 000. The learners will be those who visited the Centres for a certain curriculum programme, such as experiments on electricity and light. These will also be learners who were reached through an outreach school programme or learners who attended a special function or lecture at the Science Centre.

Baseline Operational Funding

As previously noted, Centres that are SAASTEC members vary in many ways. Some rely on the PSGI for their school programmes, with one or two sponsors supporting certain small programmes. These are usually rural-based Centres, servicing previously disadvantaged communities. The role that these Centres play cannot be underestimated. Some Centres have various big corporate sponsors who are specifically interested in funding certain programmes rather than the Science Centre's running costs. This causes the Centres to struggle to meet their operational costs, which plays a critical role in ensuring the implementation of programmes.

The recommended Baseline Operational Funding will ensure the daily operation of each Science Centre. This funding will roughly cover the following running costs:

- Running costs, e.g. rent, electricity, telephone, cellphone and Internet bills, advertisements, communications, etc.
- Maintenance and repair of equipment, e.g. computer services, broken furniture, etc.
- Infrastructure maintenance, e.g. broken windows, painting of the building, etc.
- Transport (for learners to the Centre).
- Direct costs (salaries).

We are cognisant that the DST cannot afford to do everything for all the Science Centres. **Therefore we recommend that the DST identify the struggling Centres and request submission of their annual operational budget, since they differ depending on space and other variables. We recommend that each Science Centre be given 50% of their total operational costs during their first year, and 40% and 30% in the second and third years.** The 50%, 40% and 30% amounts will motivate Centres to look for additional funds from corporate sponsors. **We recommend that funding be granted for the first three years, so as to allow the supported Centres to establish themselves well and also have sufficient time to solicit funding from donors and build good relationships with them.** This support will also allow most of the Centres to stand a good chance to receive funds from corporate or industry sponsors since they will see that the government is also involved.

Criteria for allocating the Baseline Operation Funding

- The Science Centre must prove a need for running costs, maintenance, etc. This can be done through declaring their annual budget and their income streams.
- The DST should consider the clientele that each Centre services. For example, rural Centres may need more financial support that will be used as incentives to attract schools and struggling communities so that they can be made to understand the significant role of Science Centres.

We recommend that the Baseline Operational Funding be granted to the identified Centres twice a year in December and June. Before allocation of funds, the DST should ensure that each Centre has submitted a financial audit of their Centre. If a Centre fails to meet this condition, it will automatically forfeit the grant.

2 CONCLUSIONS

Based on the findings of this evaluation, we conclude that all the Centres currently benefiting from the Programmatic Support Grant Intervention has so far implemented the grant successfully. The activities undertaken have ensured that the four goals of the Network of Science Centres are met. However, the funding had some loopholes that posed challenges to some Centres.

We conclude that the fixed-rate learner subsidy on its own is not sufficient to address and solve most of the Science Centres' challenges. It will perpetuate the current challenges, including disadvantaging the already disadvantaged Science Centres. The introduction of a fixed-rate learner subsidy with Baseline Operational Funding will address some of the challenges that Centres serving previously disadvantaged communities are currently experiencing. The Baseline Operational Funding will finance the running costs of the Centres, which pose challenges to their existence.

The use of these funding approaches will stimulate the Science Centres' creativity and innovation. They will serve as a motivation towards self-sustainably and independence of government support. They will help the Centres to deliver to their best ability and also offer opportunities for them to be funded by corporate and industry sponsors.

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APPENDIX A: SAASTEC baseline questionnaire

HSRC
Human Sciences
Research Council

science and technology
Department:
Science and Technology
REPUBLIC OF SOUTH AFRICA

DST / NETWORK OF SCIENCE CENTRES

SCIENCE CENTRE COORDINATOR SHORT QUESTIONNAIRE

Dear Science Centre Coordinator,

The Human Sciences Research Council (HSRC) has been commissioned by the Department of Science and Technology (DST) to conduct Monitoring and Tracking of the Network of Science Centres. In order to finalise our instruments, we would like to have the following information pertaining to your Science Centre. We appreciate your cooperation as well as your time in answering these questions. On completion, please hand this short questionnaire back to Mr Isaac Ramovha before you leave the conference.

A. PERSONAL DETAILS:

1. Name of your Science Centre: _____

2. Location: _____

3. Full or Limited Service Centre: _____

4. Science Centre Coordinator/Contact: _____

5. Title (Mr/Ms/Mrs./Dr) _____

6. Contact Details:

Postal Address: _____

Telephone Number: _____

Cellphone Number: _____

Fax Number: _____

E-mail Address: _____

7. Have you applied for Science Centre Accreditation? YES ☐ NO ☐

B. PLEASE RESPOND TO THE FOLLOWING QUESTIONS BY MAKING A CROSS IN THE APPROPRIATE BOX

- Do you keep an attendance register of individual learners that visit the Science Centre?

  YES ☐ NO ☐

- If you answered YES, do you have:
  - Names YES ☐ NO ☐
  - Age YES ☐ NO ☐
  - Gender YES ☐ NO ☐
  - Grade level YES ☐ NO ☐
  - Name of school YES ☐ NO ☐

- Do you have the names/lists of all schools that visited your Science Centre from January 2007 to December 2007?

  YES ☐ NO ☐

- Do you have a record of the numbers of learners that visited your Science Centre from January 2007 to December 2007? YES ☐ NO ☐

- Do you keep biographical data of the other visitors to the Science Centre?

  - Educators ☐ Parents ☐ Politicians ☐ Others(specify) ☐
  - Names YES ☐ NO ☐
  - Gender YES ☐ NO ☐
  - Age YES ☐ NO ☐
  - Qualifications YES ☐ NO ☐

- Do you keep any demographic profile/information of all the visitors to your Science Centre?

  YES ☐ NO ☐

  - Location YES ☐ NO ☐
  - Addresses YES ☐ NO ☐

- Do you have a list of parents that visit your Centre? YES ☐ NO ☐
- Do have a list of exhibits in yours Centre? YES ☐ NO ☐

- Do you have a list of all projects that operate in your Centre? YES ☐ NO ☐

- Can we contact you for further assistance in administering our tracking tool in your Science Centre?

YES ☐ NO ☐

THANK YOU FOR YOUR TIME

For more information please contact:
Human Sciences Research Council
Dr Bongani Bantwini
Dr Vijay Reddy
(012) 302 2323

APPENDIX B: Interview protocol for Science Centres

HSRC
Human Sciences
Research Council

science and technology
Department:
Science and Technology
REPUBLIC OF SOUTH AFRICA

DST / EVALUATION OF THE PROGRAMMATIC SUPPORT GRANT

EVALUATION OF THE PROGRAMMATIC SUPPORT GRANT INTERVENTION – QUESTIONS

SCIENCE CENTRE NAME: .....

How did you know about the DST Programmatic Support Grant?

_____

_____

_____

What do you think are the criteria for receiving the DST funding?

_____

_____

_____

What activities are undertaken to implement the PSG in your centre?

_____

_____

_____

How is the PSG being spent in your centre? (*Breakdown analysis of how PSG is being spent in your science centre*)

_____

_____

_____

What are your current operational costs or annual budget and all the other income streams of the science centre? *(If possible please attach a copy of your annual budget plan)*

Do you take a gate entry fee and how much? Can you give me the breakdown analysis of this fee? (*Learners visiting the centre*)

Talk about the nature of activities that each learner/member of the public benefits from the Science Centres.

To what extent have the received resources been utilised economically by your Science Centre in the delivery of the proposed projects?

Please talk about the value of the PSG to the development and attainment of the Science Centre's goals.

What are some of the shortcomings, challenges and complexities encountered to date in the implementation of the PSG?

What strategies do you employ to combat the envisaged shortcoming in the implementation of the PSG?

Any factors important for the implementation of the intervention?

What are your thoughts about the programmatic support grant you receive from the DST?

How should the DST structure future funding for the science centres in South Africa?

What are your thoughts about a fixed-rate learner subsidy as being the future funding approach/model for South African science centres?

What approach do you think will be viable in the conversion of the PSGI to a fixed-rate learner subsidy?

APPENDIX C: Interview protocol for Science Centre managers

Draft Interview Protocol for the PSGI

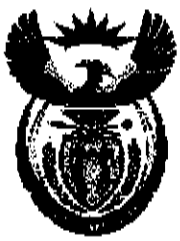
1. How did you know about the DST Programmatic Support Grant?
2. What do you think is the criteria for receiving the DST funding?
3. What activities are undertaken to implement the PSG in your centre?
4. How is the PSG being spent in your centre? (*breakdown analysis of how PSG is being spent in their science centre*)
5. What are your current operational costs or annual budget and all the other income streams of the science centre? *(request their budget plan)*
6. Do you take a gate entry fee and how much? Can you give me the breakdown analysis of this fee? (*learners visiting the centre*)
7. Talk about the nature of activities that each learner/member of the public benefits from the Science Centres.
8. To what extent have the received resources been utilised economically by your Science Centre in the delivery of the proposed projects?
9. Let's talk about the value of the PSG to the development and attainment of the Science Centre's goals.
10. What are some of the shortcomings, challenges and complexities encountered to date in the implementation of the PSG?
11. What strategies do you employ to combat the envisaged shortcomings in the implementation of PSG?
12. Any factors important for the implementation of the intervention?
13. What are your thoughts about the programmatic support grant you receive from the DST?
14. How should the DST structure future funding for Science Centres in South Africa?
15. What are your thoughts about a fixed-rate learner subsidy as being the future funding approach/model for South African Science Centres?
16. What approach do you think will be viable in the conversion of the PSGI to a fixed-rate learner subsidy?

APPENDIX D: Interview protocol for the DST

Interview Protocol for the PSGI (Isaac)

1. What is your definition of a "Science Centre"? *(working definition)*
2. How many science centres are you currently supporting through the Programmatic Support Grant?
3. Who receives the programmatic support grant? *(this question will also answer the issue of Education Resource Centres)*
4. How do you advertise and market the PSG to the Science Centres?
5. When do you send out the advertisement for PSG and when are Science Centres told about the final results of their proposal?
6. What are the criteria for receiving the PSG? *(How does the DST decide who and how much they must receive? Does the issue of private sponsorships play any role in deciding which centre may be funded through the PSG?)*
7. For the successful proposals, when do you deposit the money into the Science Centres' accounts so that they can start implementing the proposed projects? (*This will help clear allegations that money is deposited very late*)
8. What is the maximum amount that the Science Centres can apply for? *(Are the various Science Centres receiving the same amount? Why?)*
9. What kind of activities should be undertaken by the Science Centres to implement the Programmatic Support Grant? *(We will later compare DST expectations versus what is going on in the Science Centres)*
10. Why wish to discontinue the current funding approach (*Programmatic Support Grant*)? Any envisaged challenges or complexities with the PSG?
11. What are the strengths and weaknesses of the current funding approach?

APPENDIX E: DST Programmatic Support Grant Proposal Template



science and technology

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Science and Technology
REPUBLIC OF SOUTH AFRICA

CHAPTER 6: PROGRAMMATIC SUPPORT FOR EXISITNG SCIENCE CENTRES

Chapter 7: Proposal Document Template

*Instructions: Guidelines have been provided under heading and/or sub-heading. Delete information written in parenthesis and replace with relevant information. Try to be brief in completing this template, but without leaving out key information. Original formats of this document should be maintained. Please submit by **15 September 2006**. This format will be used to monitor and evaluate performance of projects implemented under this support programme.*

Financial Year: 2006/7

1. INFORMATION ON APPLICANT INSTITUTION

Name of Institution

(Write the name of your science centre)

Province

(Name of Province where your science centre is located)

Physical Address

(Provide full physical address to be used for the funding agreement)

Contact Details

(Provide your postal address, telephone, fax & cell numbers, e-mails address)

Contact Person and Capacity

(Provide name of person of project manager)

Legal Status of the Institution

(If registered as foundation or NPO, provide the Act under which you have been registered as per your registration certificate)

Registration Number (if applicable)

(Write you registration number as per your registration certificate)

Banking Details

(Provide your bank name, branch name, branch number, account name and account number)

2. DESRIPTION OF PROJECT

Project Overview

(Briefly summarize your project in a way able to give the reader a quick grasp of it. Include in this description its historical background: e.g. if it has been in operation over a

number of years, include year in which it commenced, funding (e.g. by DST and others), available reports (be they annual or evaluation reports), etc.)

Project Linkage to the Goals of the Network of Science Centres in South Africa

(Describe how your project is linked to/complements the goals of the Network as per National Norms and Standards for the Network of Science Centres in South Africa - 2005)

Project Objectives

(Outline objectives you intend achieving with your project)

Duration of the Project

(Indicate the period for which your project will be run. If it is a continuing project indicate the stage at which you are and when it is due for completion)

Outline of Target Audience

(Who are your target audience – list them here)

Expected Outcomes of the Project

(Provide an outline)

Integration with Other Projects

(How do you intend integrating your project with other ongoing projects, particularly projects initiated by the Department of Science and Technology such as the National Science Week. How are you going to make sure that part of your project coincides with/is included in the programme of the National Science Week 2007)

3. PROJECT IMPLEMENTATION STRATEGY

(Give an account of how you intend delivering the proposed project)

4. PROJECT GOVERNANCE MODEL

(Give an account of who your stakeholders and role players are in the implementation and management of your project, roles, responsibilities and interactions among them. You can even provide an organizational structure diagram as an annexure at the end of this document)

5. PROJECT FINANCING AND BUDGET

Estimated Expenditure

(Give a detailed budget break down)

Amount Requested from DST

(How much are you asking from the DST towards your project)

Other Contributors to the Project

(Indicate your other sponsors for this project and amount of money each will contribute, including your own institution)

6. MONITORING AND EVALUATION

(Complete the matrix below to assist the monitoring and evaluation exercise)

Project Monitoring and Evaluation Matrix

Project Objectives	Progress Indicator	Means of Verification	Target Date	Assumptions (if any)

Project Objectives	Progress Indicator	Means of Verification	Target Date	Assumptions (if any)

(Append your institutions logo here)