REPUBLIC OF SOUTH AFRICA

OPERATION PHAKISA
planning | implementation | growth

Offshore Oil and Gas Environmental Research Collaboration Project

Kick-start workshop **23-24 July 2015**

Old Mutual Centre, Cape Town

Report DRAFT v10

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

NRF
National Research Foundation

NRF
National Research Foundation
SAEON
South African Environmental Observation Network

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1. Introduction

Offshore oil and gas exploration has the potential to provide a unique opportunity to gather important research information that would normally be difficult to obtain due to the expense of dedicated research voyages. Industry vessels and fixed platforms frequently put to sea and hence have the capacity to obtain and share such data. In turn, the marine research community has the knowledge and willingness to work with industry in order to get maximum potential from the data they are collecting.

The Offshore Oil and Gas Environmental Research Collaboration Project is a project to implement Operation Phakisa's Offshore Oil and Gas Exploration Initiative B3: Exploiting the broader research opportunities presented by offshore oil and gas exploration.

The overall objective of the project is to support the inclusive process of development of the **South African Marine Research and Exploration Forum (SAMREF)**. SAMREF will be a multi-sector forum, inclusive of public and private sectors that would:

- Identify and take advantage of opportunities provided by oil and gas exploration activities and platforms, to gather important marine ecosystem data which would otherwise be difficult and expensive to obtain.
- Facilitate new collaborative offshore studies that would increase South Africa's state of knowledge of the offshore marine environment, related to renewable energy potential, marine biodiversity and ecology, climate change and ecosystem functioning.

A Working Group consisting of various government departments and the private sector has been constituted with the overall responsibility of overseeing the implementation of the Project. It is operationally supported by the Project Management Team that consists of the DST staff, the Working Group Secretariat and the scientific service provider that drives, coordinates and collates input for the development of SAMREF. The NRF-SAEON (National Research Foundation-South African Environmental Observation Network) through its Egagasini Node for Marine-Offshore Systems, has been contracted by the Department of Science and Technology as the scientific service provider. The Knowledge Fields Development (KFD) directorate of the NRF acts as the Secretariat for the project and Working Group.

Project objectives are the following:

Objective A – Effective management and stakeholder engagement

Project management structures are fully operational and all key stakeholders are actively participating in the project. *A kick-start workshop will be held to introduce the project to stakeholders and get early feedback.*

Objective B – Informed decision-making

Research Opportunity Exploitation (ROE) Reports are publicly available in respect of, but not limited to, ocean-related climate change, marine environment, biological resources and renewable energy research focus areas. These reports are informed by desktop study and engagement with stakeholders in all sectors.

Objective C – Stakeholder agreement and project launch

Data gathering and data management structures and systems agreements will be agreed, and SAMREF launched at a high profile event.

Objective D – On-going opportunity exploitation

Throughout the project duration, all opportunities to exploit the broader research opportunities presented by offshore oil and gas exploration will be efficiently and effectively exploited in order to contribute to the overall project objective and to provide practical input into the other project immediate objectives.

The kick-start workshop for the project was held on 23 and 24 July 2015 at the Old Mutual Centre, Kirstenbosch, Cape Town, and is the subject of this report.

Participation in the kick-start workshop was open to all parties (private sector / public sector / academic) who have an interest in offshore marine research and industry in South Africa, including those currently involved in offshore oil and gas exploration and ocean-related climate change, biodiversity, natural resource management, renewable energy or related activities.

The kick-start workshop was a multi-stakeholder (research through to industry) workshop with the following objectives; that all participants:

- share a common understanding of the Offshore Oil and Gas Environmental Research Collaboration Project and its objectives, limitations and opportunities,
- have a common general understanding of offshore research and exploration activities taking place in South Africa's EEZ,
- share a common understanding of government's broader Marine and Antarctic research programme and vision, and how Phakisa Project B3 fits into this vision,
- contribute to the design and establishment of the proposed South African Marine Research and Exploration Forum (SAMREF),
- have a chance to actively contribute to the stakeholder database and the general project approach, and
- clearly articulated their interest, desires, needs, concerns, commitment, role and/or responsibilities within the project context.

Notification about the project, and about the kick-start workshop, was sent out via the SANCOR mailing list, via the Project Working Group, via the Project Management Team and also via the Ocean Energy Network mailing list.

The project team contacted key stakeholders in advance of the meeting, and also set up:

- A stakeholder database
- An online RSVP system, specifically for the kick-start workshop
- A brief stakeholder questionnaire to collect information about the organisations in the stakeholder database, and to get some preliminary views from stakeholders on strengths, opportunities, weaknesses and threats facing the forum (see Annex 8).

The meeting was attended by 86 participants from government, the private sector, NGOs, universities and research institutions.

The original agenda may be found as Annex 1, the list of participants as Annex 2, the list of Presentations as Annex 3 (with links to download PDFs), the list of Stakeholders as Annex 4 and a list of acronyms in Annex 5.

The group photograph may be downloaded from this link:

2. Proceedings

23 July 2015

9.00-9.30	**Registration**
9.30-10.00	**Session 1: Welcome, Orientation and Introduction**

Dr Auf der Heyde (chairman) opened the meeting and welcomed participants to the workshop.

He described the origin and purpose of Operation Phakisa. The initiative was formulated in response to the challenge and opportunity to unlock the economic potential of South Africa's Oceans and improve intergovernmental coordination. The initiative is based on the methodology which was used in Malaysia to produce 'big fast results" through the enhancement of inter-sectoral engagement. The high-level and intensive 6-week planning process was held in Durban in July/August 2014. It involved the analysis of key challenges, identification of solutions, interventions, processes and implementation timelines in order to maximise the value of South Africa's geographic advantage. In this meeting 4 new growth areas were identified:

- Offshore oil and gas exploration (Project B3 is one of the initiatives that will be rolled out)
- Marine transport and manufacturing
- Aquaculture
- Other marine and maritime sectors

Government recognizes the challenge and complexity of inter-institutional coordination. Several initiatives will be rolled out and although it is too early to judge success, political will has been displayed by the presidency. There is an intense commitment and a determined attempt to break the deadlocks that have developed over time. The aim of Operation Phakisa is not the distribution of R15 billion, but the enhancement of stakeholder relationships and efficiencies. The question for this project (B3) is: what can be done jointly by the public and private sector to improve efficient access to the oceans to conduct critical long-term observations?

The objective of this kick-start workshop was to present the project and to seek inputs and support going forward with the ultimate aim of establishing the South African Marine Research and Exploration Forum (SAMREF). A working group is preparing to appoint an interim steering committee next month, which will be based on the original Working Group, but with additional key partners. The intention is to initiate the process at the kick-start workshop. Dr Auf der Heyde said that he looked forward to the contributions from participants.

Dr Auf der Heyde introduced the format of the workshop, outlining the sessions and structure of the programme. He introduced Juliet Hermes, Lucy Scott and Carmen Visser as part of the project team responsible for the management and running of the Kick Start workshop.

10.00-11.00	**Session 2: Government's Antarctic and Ocean Research Programmes**

Presentation: Overview of the DST vision for the sector (Yonah Seleti, DST) – click to view

Dr Seleti gave a high-level overview of the Marine and Antarctic Research Strategy (MARS). It is currently in draft format and will be presented to cabinet. He outlined the vision, mission, roadmap for the research plan and framework for the strategy. The document was developed through a bottom up approach that involved the South African marine, southern oceans and Antarctic research community and finalised top-down. The strategy is linked to the National Development Plan. Due to South Africa's strategic geographic positioning and proximity to three oceans, it will be essential to develop scientific leadership excellence in this field.

Discussion:

- Prof Doug Butterworth (UCT): In terms of economic growth, marine renewable resources are fully developed. There are economic opportunities in the Antarctic eg. The exploitation of krill. The emphasis should be on understanding feedback processes. He expressed concern about contact with stakeholders and about potential conflicts with the Marine Living Resources Act (MLRA).
    - Dr Auf der Heyde: Trawling in the Antarctic is not the only big opportunity. This is what emerged from the process. The draft will go through the government gazette and public comment will be invited. Recommends further discussion with the NRF at that time.
    - Dr Kaniki said that the draft is presented here as contextual background.

- Dr Jan Glazewski (Marine Environmental Law, UCT): In view of the challenge of coordination, should this project not be driven by office of the presidency and not DST?
    - Dr Auf der Heyde: It is - Operation Phakisa reports to the presidency and ownership of the project resides with the presidency and the minister of the Department of Environmental Affairs (DEA). There is a high level of oversight and the objectives are captured in performance management plans and monitored by the auditor general and the Department of Monitoring and Evaluation.

- Mr Nigel Rossouw (Shell South Africa Exploration B.V.): Why is a new institution required (SAMREF) if existing institutions exist?

    - Dr Auf der Heyde: There are already existing institutions (eg SANCOR) for research collaboration. This project is intended to enhance *additional* collaboration and is narrowly defined, to specifically address opportunities for greater access to (private funded / industry) research platforms by public funded scientists.

Ocean Observations for Environmental Management: Opportunities and Challenges (Mthuthuzeli Gulekana, DEA) – click to view

Mr Gulekana gave an overview of the applied research conducted by DEA. The department receives its mandate from the constitution and various acts. He highlighted the research activities to monitor and observe climate variability and global change, weather for advisory purposes; ocean acidification and effects on habitats. Research platforms used are the *SA Agulhas II*, the *Algoa* and rubber ducks. The State of the Oceans Report is produced annually. Potential future collaborations include areas such as monitoring ecosystem health and marine spatial biodiversity. Potential challenges may arise from economic growth versus environmental protection.

- Question: There was concern expressed about the emphasis on monitoring activities. In reality this exercise does not produce results.
    - Monitoring activities do support fisheries and mining sectors.

Operation Phakisa's Initiative B3 (Gilbert Siko, DST) – click to view

Dr Siko presented on the B3 initiative of Operation Phakisa. The project aims to derive economic benefit from the ocean. The word *phakisa* means "hurry up" in Sotho. A 3feet plan was formulated to elucidate agreed solutions, execution plans, timelines, clear targets and end products. The advantage of this engagement would be:

- Facilitating the availability of oil and gas vessels, including oil rigs as research platforms.
- Cost reduction - the *SA Agulhas II* has enormous operating costs, even when docked.

- The sharing of data, which could potentially make an input into the SA Marine Renewable Energy Resource Atlas.

The project will be implemented by KFD and SAEON. The purpose of today's meeting will be to gain broad stakeholder agreement on data collected during oil and gas exploration voyages and to determine how those data will be collected, managed and used. The forum will be launched in January 2016.

Questions:

- Dr Japp (CapFish) –Has any cost benefit analysis been done? Have these platforms (vessels and oil rigs) and research benefits been investigated, and have fishing vessels been considered?
    - Dr Siko: the analysis was done in that DEA has explained the costs of dedicated research vessels, and we have an idea of the existing investments of the O&G sector.
    - Dr Auf der Heyde: this initiative is specifically for the oil and gas industry as the project was developed by the oil and gas lab. The fisheries industry is not currently represented. The establishment of this forum is to a) give effect to public and private sector in-principle agreement and b) to optimise access to opportunities the research community would otherwise not have. The oil and gas industry will be taking these trips and can accommodate the private sector. Other platforms might be good or better, but we are starting with the O&G sector. Peter Lukey confirmed this.

- Prof Doug Butterworth: Two fishing companies have, in the past, offered the use of their vessels and were disappointed that they had not been approached.

    - Dr Auf der Heyde: a secretariat will be established to explore private sector opportunities for public sector research. Opportunities, gaps and questions would be discussed in the forum and brokered by the secretariat.

11.00-11.30	Tea
11.30-12.30	**Session 3: Setting the Scene – South African Offshore Research and Exploration**

SANCOR: an anchor in the marine and coastal environment (Anusha Rajkaran, SANCOR) – click to view

Dr Rajkaran outlined the role of SANCOR in the marine science community, including the long term goals, structure, SEA Change Programme, and SANCOR Forum.

Overview of coastal long-term ecological research programmes and platforms (Tommy Bornman, SAEON) – click to view

Dr Bornman gave an overview of inshore coastal observation systems and programmes in South Africa. He gave an overview of activities in the Algoa Bay sentinel site, currently the best monitored site in Africa. He gave an overview of current and future monitoring activities and concluded that the coastal environment cannot be studied in isolation (inshore-offshore links) and collaborations are necessary. He also added that the data collected should be useable by all, free and open.

Offshore observational oceanography in South Africa. An overview of research activities; exciting developments and opportunities (Pedro Monteiro, CSIR) – click to view

Dr Monteiro discussed the value and importance of coordinated long-term observations. It is important to understand what is changing where and at what rate. For example, analysis and interpretation of the global CO_2 dataset can ultimately lead to a change in behaviour. Coordination across platforms will be essential. He explained why scientists use ocean models and the need to develop modelling capability. He highlighted South Africa's participation in large scale ocean-climate programmes. Ocean robotics will transform the way science is done; costs will fall dramatically if data are shared. Standardisation and quality control are important.

Questions:

- Mrs Thokozani Mkhize (EKZNW): Will the use of robotic platforms cause stress and disruption to marine life?
    - Dr Monteiro: Yes, there may be an impact of technology on the ecosystem and the interaction is real and has been observed. On the other hand, many sensors take passive measurements, and where impacts do exist they are very localised. The overall benefits of our increased understanding of systems are likely far greater than these localised impacts.

Current Status of Ocean Energy in South Africa (Imke Meyer, Centre for Renewable and Sustainable Energy Studies) – click to view

Ms Meyer presented South Africa's ocean energy research within the global context. Most research conducted on wave energy is conducted in the UK. Local ocean energy research is focussed on the Agulhas current. She highlighted the constraints of ocean energy – the cost of conversion technology is high, land-based renewables outcompete marine renewables on cost, and research funding is limited. South Africa has a strong wave and current resource and an established marine engineering industry.

Questions

- Prof Butterworth: In comparison, what is the potential for wind, wave vs solar energy?
    - Miss Meyer: Solar energy is time dependent and mostly available during 9am and 4pm. This proves a problem when energy supply and demand are not matched. Ocean energy is available over a longer window of time, but is affected by environmental variability. Energy storage is expensive.

Dr Auf der Heyde announced that the lunch break would be extended slightly to allow the organisers to optimise the agenda for the afternoon, based on the discussions from the morning.

12.45-14.00	Lunch
14.00-15.00	**Session 3: Setting the Scene – South African Offshore Research and Exploration (continued)**

Dr Kaniki (chair) (NRF) welcomed the resumption of the meeting, announced some changes to the agenda and introduced the speakers.

Offshore oil and gas exploration and production activity in South Africa: an overview of current and planned activities (Phumla Ngesi, PASA) – click to view

Ms Ngesi gave an outline of current and planned activities of PASA, presenting its mandate and role as a regulatory body. The agency promotes exploration for onshore and offshore oil and gas resources and their optimal development on behalf of government. PASA regulates exploration and production activities, and acts as the custodian of the national petroleum exploration and production database. The agency makes recommendations to DMR whether to grant permits or rights. Geological data is submitted to them.

Ms Ngesi showed an exploration and production map indicating areas of permit allocations and applications. The activity on the west coast in 2013 was mainly desktop-based.

She highlighted the following challenges:

- low oil price
- SA is not a proven oil province
- Uncertainty of legislation

Questions:

- Dr Butterworth: The oil and gas sector in the pacific determine marine mammal distribution over time before conducting seismic surveys. Are you doing that?
    - Ms Ngesi: EIAs are conducted by the client before seismic surveys are conducted. It is a requirement that marine mammal observers (MMO) are on board to monitor the interaction. Passive acoustics are employed during operations. MMO reports are submitted to agencies.
- Could PASA elaborate on the upstream training trust?
    - Ms Ngesi: Operators make contributions to the trust which is managed and governed by the holders. Bursaries for students are offered and the focus is on petro geology, but is not limited to this subject.

The Offshore Petroleum Association of South Africa (Eduard Groenewald, OPASA) – click to view

Mr Groenewald showed the OPASA structure including three subcommittees. He gave an overview of the oil and gas industry, showing typical activities and offshore equipment. He said that there is a need to further develop the offshore industry in South Africa, which is currently very limited in extent / activity. He added that one discovery does not create an industry. The biggest opportunity (for collaboration) is with the use of drilling vessels and platforms.

- It was noted that the industry funds Ken Findlay's annual survey through OPASA.

SANEDI, Energy and the Ocean (Karen Surridge-Talbot, SANEDI) – click to view

SANEDI was established by an act of parliament and reports to the Department of Energy (it is the research and development arm of the department of energy). Dr Surridge-Talbot outlined the structure, current programmes and collaborations. WASA is the wind atlas for South Africa. These concepts should be translated for the ocean. The Solar resource map drives investment in the sector. There is a need for ocean energy resources maps, with data in the public domain. She outlined the Ocean Energy Association of South Africa and explained the ongoing need for continued collaboration in this area.

15.00-15.15	**Session 4: The proposed South African Marine Research and Exploration Forum (SAMREF)**

Towards the establishment of SAMREF (Dr Thomas Auf der Heyde) – click to view

Operation Phakisa includes an array of projects and this is just one of them. DST has reviewed and revised the 3feet workplan for this project and there is a limit to the extent to which it can be modified. The Working Group will recommend the most feasible way forward. Ms Scott will present a detailed list of committed outputs that have to be delivered. A brokerage service is needed to take advantage of the opportunities that have been and will be identified. The Working group will be expanded to form the interim Steering Committee (including members from the oil and gas sector) within the next month and a half. The audience was requested to comment on the ToR for the interim Steering Committee. This forum (SAMREF) is not for setting research priorities, nor for funding research, but for coordinating and matching opportunities that may exist between the public and private sectors.

Questions:

- Dr Glazewski: Is the interim Steering Committee for B3 only?
    - Yes. Coordination is through elaborate reporting structures. Each lab has multiple levels and layers of Steering Committees.
- Mrs Jessica Courtoreille (PetroSA): How is this brokerage service different from SANCOR?
    - Dr Kaniki: SANCOR has an important role in this process, but it is specifically for marine research coordination, while SAMREF aims to broker partnerships between public sector research and industry.
    - Dr Hermes: SANCOR (the secretariat: Carmen Visser) is actually a part of the Project team.
- Dr Monteiro: There are two aspects to this; research and data collection. Partnerships may be more opportunistically suited for research, but less so for data collection.
- Dr Lukey: We have likely already missed a lot of valuable opportunities, but at least now we can put plans in place to take advantage of future opportunities.

15.15-15.30	**Session 5: Way forward for the project** (Lucy Scott) Project timeline to launch, including the work plan

Way forward for the project: Project timeline to launch, including the work plan (Lucy Scott) – click to view

Ms Scott showed the required outputs against the work plan for 2015 and 2016, described the research sector workshop and referred to the launch on 29 January 2016. She asked stakeholders to register on the database and to fill in the questionnaire.

Kick-start workshop report	**Output A.7**	**Brief workshop report including agenda, key points of discussion, issues and concerns. Next steps and process.**	**28-Jul**
Research Sector Workshops	**Output B.2** **Output B.3**	**Research sector (renewable energy, marine biology, ecology and climate change) workshop held and facilitated**	**17th September**
Research sector Workshop report	**Output B.2** **Output B.3**	**Brief workshop report including agenda, key points of discussion, issues and concerns. Next steps and process. Circulate to sector for comment.**	**28th September**
Research Catalogue and Gap Analysis (RC&GA) Report Draft		**Research Catalogue and Gap Analysis (RC&GA) Report Drafted and circulated for 10-day comment period**	**25-Sep**
Research Catalogue and Gap Analysis (RC&GA) Report Final	**Output B.1**	**Report finalised with comments addressed.**	**14-Oct**
Data gathering agreements	**Output C.1**	**Norms and standards compiled with data gathering partners.** **Agreements drafted to exploit opportunities detailed in ROE report.**	**12 November (draft for comment)**
Data management structures	**Output C.2**	**Norms and standards compiled with data users and custodians.** **Agreements drafted to exploit opportunities detailed in ROE report.**	**12 November (draft for comment)**
The Research Opportunity Exploitation (ROE) Report Draft		**The ROE report Drafted and circulated for 10-day comment period**	**24-Nov**
The Research Opportunity Exploitation (ROE) Report Final	**Output B.4**	**Report finalised with comments addressed.**	**11-Dec**
Pre-launch opportunities	**Output D.1**	**Pre-launch opportunities exploited that conform to the spirit of the project.**	**If possible**
Data gathering agreements and data management	**Output C.1**	**Data gathering agreements and data management structures finalised**	**08-Jan**

structures	**Output C.2**		
SAMREF Project launch	**Output C.3**	**SAMREF Project launch held**	**29-Jan-16**
SAMREF Project launch report		**Brief launch report including agenda.**	**19-Feb-16**
SAMREF Coordinator's Report		**Brief overview of the SAMREF project from commencement to launch, noting deliverables and next steps**	**31-Mar-16**
Post-launch agreements monitored	**Output D.2**	**Post-launch agreements monitored**	**Ongoing**

Questions

- Dr Simon Elwen (Sea Search): At what point do researchers sit with captains to discuss what is actually possible?
    - Ms Scott: These operational details will be clarified at the research sector workshop. Input will be solicited from those who are unable to attend the workshop.

16.00-17.00	**Session 6: Break-away Discussion groups, Tea provided to groups**
	• **Strengths** • **Weaknesses** • **Opportunities** • **Threats** • **Additional suggestions / mitigations** • **Ideas for fast-track implementation**

Ms Scott described the breakaway discussion groups: The audience was divided into 3 groups representing: Offshore, inshore and renewable energy, with oil and gas industry representatives required in each group.

Annex 6: The breakaway group instructions sheet
Annex 7: The breakaway results for each group (detailed, disaggregated)

Results from the SWOT analysis in the breakaway groups are presented below, under the proceedings for Day 2.

24 July 2015

9.30-10.30	**Session 7: Detailed report back from group sessions and further discussion.** Additions to the SWOT from the floor. (Lucy Scott and Juliet Hermes)

Strengths

Access to opportunities for data collection and research

- Useful for validation of models
- In situ data useful for remote sensing calibration/validation
- Model development
- Access to more platforms, ocean/time, access to distribution of data. New areas
- Enhanced research outcomes
- Possible standardisation, synchronization of data acquisition

Historical data

- Data back to the 70's can be used.
- Possibility of getting data from contractors who conducted EIAs

Partnerships

- partnerships between oil and gas industry and research sectors mutually beneficial
- Collaboration facilitated (multi disciplinary, multi institutional)
- No losers – reputation enhancement
- Industry subsidising student funding

High level of engineering and technical capacity

Goodwill.

- There is will from the O&G sector to work with renewables on mutually reinforcing objectives.
- Government 'will' is there to support collaboration
- Goodwill from oil and gas sector to support the forum (O&G lab)
- Industry supportive of environmental health and safety initiatives

Opportunity cost is low.

- The cost is very low compared to the cost of putting dedicated research vessels to sea.
- Little extra cost to scientists

Renewable sector: SA has a high energy coastline, suitable for renewable energy.

Weaknesses

Limited opportunity

- Sensitivity to oil and gas markets
- Our offshore O&G resources are currently not being exploited.
- Rigid / inflexible ideas of what types of data could be collected
- Continuity / sporadic data collection
- Seismic vessels need to keep moving. No time to stop and collect data

Not enough mutual benefit

- Misaligned interests. Opportunities are based on interest and commitment from parties who may see project activities as a hassle.
- Difficult to change business-as-usual mindset

Coordination is not sufficient, should be wider than oil & gas

Intellectual property

- Could be an obstacle
- IP issues in the commercial sphere

Costs

- Overall cost of additional sensors. Lack of funding for R&D
- Time constraints
- Space on vessels is limited
- Restrictive to oil & gas activities
- Costs to researchers and industry of being on board (eg health and safety training)
- More equipment on vessels could add to 'noise' of the cruise

Risks

- Relies on goodwill / no incentive / interest
- Conflict between researchers

- Unrealistic expectations
- Too narrowly defined to oil & gas; should be expanded to all ships

Opportunities

Cost benefit

- Cost of collection of ocean data is hugely reduced for public sector scientists (research, data collection, servicing of existing arrays)
- Funding from first world countries / foreign partners
- Possible funding of research from industry

Research benefit

- To date there has been no forum / space to identify mutual areas of collaboration.
- Opportunities for increased research (applied, industry driven and innovation) and career path for students + upstream work force + technical jobs, streamlining and focusing capacity development
- Fostering international research collaboration. International technology transferable to SA. Major oil and gas finds off Mozambique and Tanzania.
- Marine observer platforms and training (training mammal scientists to do turtle/seabird/pollution obs could increase the amount of data collected without increasing berths needed. Marine mammal and seabird obs already shared with researchers
- Align research opportunities with monitoring

Platforms, observations and sampling

- Sampling in remote areas + intermittently sampled areas, underway sampling (eg on seismic vessels)
- Opportunities when multiple wells are drilled at a time
- Caps on wells could serve as potential platforms
- Exploration phase has no fixed platforms, drilling intermediate platform 1-4 months
- ROVs are all outsourced. Could be used for research when not used by company.
- Rig supply vessels could present an opportunity to replicate observations (fixed, repeated track lines)
- Physical / chemical parameters including LTM
- Marine mammals and birds (obs)
- Pollution studies
- Buoys and robots, gliders (deployments/retrievable)
- Geological mapping

Data

- Access to historical (previously inaccessible) data
- Access to expertise (QC). Best practice.
- Opportunity for marine energy atlas
- A number of different contractors are used by companies to ensure quality of data
- EIA baselines
- LTER to be built in
- 4-5 SBMs in next 5 years

- Opportunities for the renewables sector for strengthening the energy mix (time of day and supply) assuming technology matures
- Innovation and localisation of innovation (due to lack of technological maturity)

Threats

Costs

- Added costs of research borne by whom? Insufficient funding
- Other sources of RE are well established; difficult for the marine sector to compete. Coal is cheap.
- Low oil prices inhibit exploration
- Cost of researchers going to sea
- Red tape reduces opportunities. Regulatory uncertainty increases risk to companies. Health and safety restrictions on what could be done, Strict legislation sometimes causes missed window of opportunity
- Unintended policy consequences from misalignment
- Conflicts of interest. Commercial competition. Lack of coordination and cooperation each sector promoting its own agenda.
- Harsh ocean environment
- Opportunities are not exploited 'not our business'
- Conflict with other legitimate ocean uses (recreation, cables, fisheries)

Data and research

- Data could be perceived as 'tainted'
- Data restrictions / confidentiality
- Lack of data standards
- Private sector data could be protected (intellectual property)
- Data transfer systems, data capturing & management capability
- Security issues re data and key points
- Research agendas driven by industry
- Research approvals.

General

- Lack of stakeholder buy in / cooperation
- Lack of co-ordination
- No industry as yet, too few opportunities
- Lack of messaging around mutual benefits
- Lack of capacity building
- Oil and gas do not own vessels/consultants involvement with data
- Industry might claim no space (or no opportunity) to avoid hassle
- Reliance on oil and gas for impetus
- Mandatory collaborations may be prohibitive to exploration (mandatory vs voluntary collaboration)
- Availability of researchers
- Negative results from monitoring could lead to conflict with industry. General research monitoring vs compliance monitoring.
- Sampling plans changing at short notice

Industry fears

Being forced to do things that add cost
Spending money on exploration is high risk with no guarantee of profit.
Suggestion: Look at what opportunities are currently available, not necessarily linked to the exploration phase.

Researcher fears

Getting approval to get on a ship/platform may be time consuming
Data constraints should not be an issue
Expectations vs reality

FAST-TRACK IDEAS

- Can start looking at historical data now, need to make it available now
- Research interns can capture data
- Assessing & mining of existing data
- Look at research opportunities on existing ocean platforms (oil rigs)
- Already Ships of opportunity programs, XBT program etc
- Nominating contacts for industry / researchers
- Lists detailing what data are available and what data researchers want to collect
- How to make data available
- What infrastructure already exists & what exploration is happening (database)
- Audit opportunities (cruises, rigs, SBMs, supply routes)

Questions

- Dr Augustyn (SADSTIA): All sectors have not been covered. Marine mining should be part of this as mining of phosphates is a major new initiative. Exploration areas have been allocated. There is a level of mistrust from fishing industry of the motives of the oil and gas industry. There are no (fishing industry) users represented. The fishing industry is a sustainable activity while oil and gas extraction is non-renewable. With the exception of aquaculture, the fishing industry has been sidelined in this fast-tracking (Phakisa) process.
- Dr Japp: Seismic survey vessels are not easy to join, the health and safety requirements are stringent and training is time and cost-intensive (eg. Helicopter evacuation). Liability insurance is very expensive. Perceived opportunities might be different to the reality. It might be more pragmatic to make use of supply vessels, rather than seismic survey vessels.
- Dr Glazewski made reference to Chapter 6 of the terrestrial mining act (petroleum resources). He said that it could be taken out and instead, have a dedicated offshore oil and gas act. He was interested in what feedback this stakeholder group might have for that proposal?
- Mrs Thokozani Mkhize commented that the workshop is losing focus from the original purpose (of Operation Phakisa) of unlocking economic potential of the ocean.
- Dr Hermes said that this initiative is about generating new knowledge; since this does feed into the renewable energy sector, there could potentially be generation of renewable energy.
- Dr Siko added that the ultimate goal is to grow economic potential. Knowledge generation leads to overall growth of the economy.

Dr Butterworth raised the following issues:

- He identified with Dr Augustyn's concern around conflicts between the O&G, mining and fishing sector and said that those conflicts of interest could be better addressed at a different forum, but they must be addressed somewhere. He added that if an appropriate forum is not available, SAMREF will run the risk of having to keep addressing these issues.
    - Mr Lukey: There will be a forum for marine spatial planning to address the optimal use of oceans and conflicts of interest. Trust needs to be built.
- International independent expertise could be valuable.
- The SAMREF name itself (South African Marine Research and Exploration Forum) doesn't suggest that it is limited to the oil and gas industry.
- Mr Mills (Shell): The oil and gas industry is offering an opportunity here and suspicion is therefore misplaced. The industry wants to collaborate with the science sector, so it should be recognised that there is willingness from the industry side. The oil industry is not possessive about this forum, and the involvement of other marine industries would be welcomed.
- Peter Lukey: Operation Phakisa B3 is very focussed on leveraging opportunity from the oil and gas sector, but this should be a holistic marine forum, and to make it work, the scope needs to be increased to include other industry sectors. The platforms themselves are neutral (comparisons made to the development of satellite technology), and should be used for maximum benefit.

- Prof Butterworth: With regard to terminology and a reference to Marine Protected Areas. What we are really discussing here is Marine Spatial Planning (MSP), so rather avoid the use of the term MPA which tends to carry baggage.

10.30-11.00	**Session 8: Presentation of Steering Committee and Terms of Reference**

Presentation of Steering Committee and Terms of Reference (Yonah Seleti) – see Annex 9 below.

A Working Group has been stewarding this project until now. An interim Steering Committee will be appointed which will become the Steering Committee of the forum. Participants were encouraged to send written comments to the secretariat. Dr Seleti presented the draft terms of reference for the Steering Committee. He invited participants to make suggestions as nothing is cast in stone. If needed, the stakeholder membership could be broader, so that the forum is capable of delivering outcomes.

Dr Seleti referred to the document distributed the previous day (23 July). He described the context, objective, roles and responsibility of the forum.

Questions

- Dr Augustyn: In reference to the slide on context – the fisheries sector is a major sector which can contribute to sustainable job creation and other activities. Government departments not represented here are DAFF and DMR. In addition, the private sector runs fishing vessels which could also be used as a research platform. The fishing industry is able to make a meaningful input.
    - Dr Seleti: Fisheries are addressed in the Aquaculture initiative.
    - Dr Hermes: DAFF was invited to the kick-start workshop.
- Dr Butterworth: Only oceanography examples were addressed. Other sectors that should be included are fisheries, mining and NGOs. The Working Group should not be too far away from practitioners. Feedback is needed from scientists on the ground to tailor activities. The structure at high level not fed in adequately and fast enough to the lower levels.
- Dr Sparks (CPUT): Recommends the inclusion of FET colleges, to develop technology and engineering. Could train individuals to meet needs.
    - Dr Seleti: This does not fall easily into the mandate of this project as DST uses postgraduate outputs as deliverables. This matter can be referred to the delivery committee in the Department of Higher Education.
- Dr Sink (SANBI): has been involved in the Offshore Environmental Forum since 2009 which was launched to promote collaborative research. The forum that Prof Butterworth is referring to is the MSP forum which will be held on 29 July. DEA DAFF DST and PASA are represented on the forum. So there are channels to take these issues forward.
- Dr Surridge-Talbot: There is an opportunity for data to be shared. Companies who conduct EIAs should also be represented. Permission can be obtained from block owners.
    - Mrs Klarenbeek (NRF): The workplan for SAMREF includes workshops for researchers. This event will host a more focused discussion.
- Ms Fredericks (Sunbird Energy): There is a current opportunity to obtain data from seabed surveys of pipeline routes, if proper permissions were obtained. It could be possible to get permission from block owners to release data.
- Mrs Courtoreille: KPIs (Key performance indicators) need to be appropriate. What publications are considered KPI's and how are they counted?
- Dr Seleti: DST emphasises higher end training, not really technical training. Operation Phakisa has a skills committee and this issue should be taken up by that committee.

Dr Seleti summarised the issues raised:

- Wordsmithing of issues; scope
- Representation to include other sectors that have not been named.
- Nature of indicators for measuring success. This will be confirmed at the DST/NRF – high end level.

11.00-11.30	**Session 9 Chair's summary of the proceedings and proposed way forward.** • Including, but not limited to critical success factors and next steps for SAMREF

Dr Auf der Heyde asked for inputs relating to the ToRs to be submitted in writing within the next week or two. There is a possibility of extending the Working Group and Steering Committee. The next formal engagement will be with the project team and later the stakeholders for the research sector meeting on 17-18 September for those who have to operationalise the activities. Relevant sectors will translate operational platforms and infrastructure. Reports will be generated by the secretariat. The work of the forum begins after the launch on 29 January 2016.

Concluding Remarks

This project B3 initiative is a small part of Operation Phakisa in terms of scope and scale. For example, Transnet have released several billions for port infrastructure development under another activity of Operation Phakisa. The presentations on outcomes were helpful in highlighting operational implications. He reflected on the observations, recommendations and concerns raised. There were different interpretations and some misconceptions of the projected goal, so it was very useful that these had been aired and resolved. The partnership is voluntary and not mandatory and he was glad that these issues surfaced. There is potential for strategic partnerships to leverage and improve efficiencies for research support without making major capital investments. He was encouraged by the great degree of enthusiasm articulated. Dr Auf der Heyde commended the wonderful discipline and focus in engagement which will aid in defining the process ahead. He asked the audience to be mindful of the constraints of the forum, and recommended that it is better to start with a narrow focus to develop strong relationships and to demonstrate projects that work.

Dr Auf der Heyde thanked Dr Hermes, Ms Scott and Mrs Visser for coordinating the workshop. He expressed his commitment to keeping stakeholders informed and to being transparent. He invited the participants to the launch. He wished the stakeholders success in their various endeavours and good health. The meeting was closed at 11h30.

3. Summary of decisions/ actions

The kick-start workshop report will be used in the lead up to the SAMREF launch, to guide further interviews with stakeholders. It will be used as one of the resources for the identification of opportunities for public-private cooperation, and also to recognise threats and weaknesses that need to be mitigated going forward. We envisage that the report will also be used as an information resource.

1. Kick-start workshop report to be drafted (secretariat)
2. Kick-start workshop report to be endorsed by WG (11 August)
3. Kick-start workshop report to be circulated (12 August)
4. Comments to be sent to Dr Seleti (and samref@saeon.ac.za) on the ToR for the Interim Steering Committee (all, by 7 August)
5. Interim SC to be broadened to include fishing and mining sectors (WG), DAFF and DMR. DST to issue formal invitations to the extended SC.
6. DST/NRF to revise and confirm high level indicators for the success of SAMREF.
7. Participants to confirm their interest in attending the Research Sector meeting on 17-18 September 2015 by filling in the Stakeholder Questionnaire (link)

Additional actions to be addressed by other components of Operation Phakisa; to be tabled at the next meeting of the B3 Working Group.

1. A space is needed to ensure that conflicts of interest between industries (for example, between the fishing, mining and oil & gas sectors) are addressed, discussed and resolved. It was agreed that SAMREF is not the appropriate forum, and that the Marine Spatial Planning forum probably was, however it was agreed that the B3 working group would:

a) Ensure that the appropriate forum is identified.
b) Elaborate the process whereby interested parties can engage with that forum.
c) Contact details and dates of meetings to be supplied, please.

2. Operation Phakisa has a skills committee. The question of how to link in with FET colleges was raised but should be referred to the skills committee. How can the involvement of technical training / skills development be furthered, in association with SAMREF?

Annex 1: Original Agenda

Day 1: 23 July	
9.00-9.30	**Registration**
9.30-10.00	**Session 1: Welcome, Orientation and Introduction**
	Welcome by the chair (DST) including a brief overview of the workshop objectives and programme.
10.00-11.00	**Session 2: Government's Antarctic and Ocean Research Programmes**(15 mins each, followed by 15 minutes for questions)
	Overview of the DST vision for the sector (Yonah Seleti, DST)
	Ocean Observations for Environmental Management : Opportunities and Challenges (Mthuthuzeli Gulekana and Chris Duncombe Rae, DEA)
	Operation Phakisa's Initiative B3 (Gilbert Siko, DST)
11.00-11.30	Tea
11.30-12.30	**Session 3: Setting the Scene – South African Offshore Research and Exploration**
	SANCOR Overview and forum (Anusha Rajkaran, SANCOR)
	Overview of current and planned research programmes and activities in the inshore marine environment (Tommy Bornman, SAEON)
	Offshore observational oceanography in South Africa. An overview of research activities; exciting developments and opportunities (Pedro Monteiro, CSIR)
	Current Status of Ocean Energy in South Africa (Imke Meyer, Centre for Renewable and Sustainable Energy Studies)
12.30-13.30	Lunch
13.30-14.30	**Session 3 continued**
	Overview of current and planned oil and gas exploration programmes and activities, gaps and constraints (Phumla Ngesi, PASA)
	The Offshore Petroleum Association of South Africa (Eduard Groenewald, OPASA)
	SANEDI, Energy and the Ocean (Karen Surridge-Talbot, SANEDI)
14.30-15.30	**Session 4: The proposed South African Marine Research and Exploration Forum (SAMREF)** Contextualise in discussion of research opportunities (Dr Thomas Auf der Heyde)
	Introduction to SAMREF; aspects of the project (essential ocean variables, data agreements, workshops, reports) – 30 mins
	Discussion session for questions about the project – 30 mins
15.30-16.30	**Session 5: Break-away Discussion groups, Tea provided to groups**
	• **Strengths** • **Weaknesses** • **Opportunities** • **Threats** • **Additional suggestions / mitigations** • **Ideas for fast-track implementation**
16.30	**Plenary and close for the day**

Day 2: 24 July	
9.30-10.30	**Session 6: Detailed report back from group sessions and further discussion.** Additions to the SWOT from the floor. (Lucy Scott and Juliet Hermes)
10.30-11.00	**Session 7: Presentation of Steering Committee and Terms of Reference** (Yonah Seleti)
11.00-11.30	Tea
11.30-12.00	**Session 8: Way forward for the project** (Lucy Scott) Project timeline to launch, including the work plan
	• Research and renewable energy sector workshops 17-18 September. • Request more expressions of interest for stakeholder database. • Stakeholder questionnaires
12.00-12.30	**Session 9: Chair's summary of the proceedings and proposed way forward.** • Including, but not limited to critical success factors and next steps for SAMREF

Annex 2: List of participants

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Annex 3: List of Presentations (click title to view)

1. Overview of the DST vision for the sector (Yonah Seleti, DST)
2. Ocean Observations for Environmental Management : Opportunities and Challenges (Mthuthuzeli Gulekana, DEA)
3. Operation Phakisa's Initiative B3 (Gilbert Siko, DST)
4. SANCOR: an anchor in the marine and coastal environment (Anusha Rajkaran, SANCOR)
5. Overview of coastal long-term ecological research programmes and platforms (Tommy Bornman, SAEON)
6. Offshore observational oceanography in South Africa. An overview of research activities; exciting developments and opportunities (Pedro Monteiro, CSIR)
7. Current Status of Ocean Energy in South Africa (Imke Meyer, Centre for Renewable and Sustainable Energy Studies)
8. Offshore oil and gas exploration and production activity in South Africa: an overview of current and planned activities (Phumla Ngesi, PASA)
9. The Offshore Petroleum Association of South Africa (Eduard Groenewald, OPASA)
10. SANEDI, Energy and the Ocean (Karen Surridge-Talbot, SANEDI)
11. Towards the establishment of SAMREF (Dr Thomas Auf der Heyde)
12. Way forward for the project: Project timeline to launch, including the work plan (Lucy Scott)

Annex 4: Updated stakeholder analysis

Names and organisations of the entire stakeholder list (extracted 28-July-2015)

	First Name	Surname	Organisation
1	Nazmi	Adams	Thombo Thombo
2	Rob	Anderson	Department of Agriculture, Forestry and Fisheries
3	Marc	Andrioli	NECSA
4	Isabelle	Ansorge	UCT Oceanography
5	Shankar	Aswani	Western Solomons Conservation Program
6	Lara	Atkinson	South African Environmental Observation Network
7	Colin	Attwood	University of Cape Town
8	Thomas	Auf der Heyde	Department of Science and Technology
9	Johann	Augustyn	SADSTIA
10	Bjorn	Backeberg	Nansen-Tutu Centre for Marine Environmental Research, UCT
11	Brian	Balazs	UNX Energy
12	Jaco	Barendse	
13	Will	Barker	Sunbird Energy (Ibhubesi) (PTY) Ltd
14	Paul	Barrett	OK Energy
15	Mieke	Barry	Aurecon
16	Doug	Bells	Cheseapeake
17	Andrei	Belopolsky	Premier Oil
18	Selwyn	Bergman	Dept. Environmental Affairs
19	Russ	Berkoben	ExxonMobil
20	Anthony	Bernard	SAEON
21	Ric	Bernard	Rhodes University
22	Sidney	Bilski	Metocean Services International
23	Jane	Blomkamp	Bowman Gilfillan
24	Paul	Board	Robertson
25	Mpumzi	Bonga	The Department of Mineral Resources
26	Tommy	Bornman	South African Environmental Observation Network
27	MICHAEL	BOTHA	GSIG
28	Alan	Boyd	Department: Environmental Affairs
29	Sokari P.	Braide	UWC
30	Andrew	Brierley	University of St Andrews
31	Serge	Brun	Schlumberger
32	Geoff	Brundrit	
33	Jacques	Burgers	Seiche Measurements
34	Doug	Butterworth	University of Cape Town
35	Deirdre	Byrne	DEA
36	Matthew	Carr	UCT
37	Barry	Clark	Anchor Environmental Consultants
38	Linda	Clokie	private

39	Andy	Cockcroft	Department of Agriculture, Forestry and Fisheries
40	Janet	Coetzee	Department of Agriculture, Forestry and Fisheries
41	Rob	Coles	CNR
42	Kyle	Cooper	SAEON
43	Robert	Cooper	Department of Agriculture, Forestry and Fisheries
44	Melleney	Cope	Department of Agriculture, Forestry and Fisheries
45	Jessica	Courtoreille	PetroSA
46	Robert	Crossley	Robertson CGG
47	Jock	Currie	South African Environmental Observation Network
48	Charlene	da Silva	Department of Agriculture, Forestry and Fisheries
49	Hunter	Danque	Anadarko
50	Johannes	de Goede	Department of Agriculture, Forestry and Fisheries
51	Answa	de Lange	PetroSA
52	Stephanie	de Villiers	DEA: Oceans and Coasts Research
53	Henry	Delafon	TOTAL - Total E&P South Africa
54	Eric	Deliac	Halliburton/Landmark
55	Roseanne	Diab	Academy of Science of South Africa
56	Matt	Dicken	KZN Sharks Board
57	Firoze	Din	Corelab
58	Xolisa	Dlomo	SAEON
59	Mbulelo	Dopolo	South African National Parks
60	Chris	Drage	PGS
61	Nicole	du Plessis	SAEON
62	Derek	Du Preez	Coastal and Marine Research Institute, NMMU
63	John	Duncan	WWF-SA
64	Christopher	Duncombe Rae	DEA: Oceans and Coasts
65	Deon	Durholtz	Department of Agriculture, Forestry and Fisheries
66	Andrew	Dymond	Afren plc
67	Jan Willem	Eggink	Shell
68	Simon	Elwen	Sea Search
69	Tracey	Fairweather	Department of Agriculture, Forestry and Fisheries
70	Sean	Fennessy	Oceanographic Research Institute
71	John	Field	University of Cape Town
72	Zoleka	Filander	DEA
73	Ken	Findlay	Mammal Research Institute Whale Unit
74	Karin	Fivaz	GCS Water and Environment
75	Melissa	Fourie	Centre of Environmental Rights
76	Anschen	Friedrichs	Sunbird Energy (Ibhubesi) (PTY) Ltd
77	Alison	Futter	Offshore Petroleum Association of South Africa / PetroSA
78	Robert	Gair	Bayfield Energy
79	Granville	Gary Louw	Department of Agriculture, Forestry and Fisheries
80	Alessandro	Gelmetti	eni e&p

81	Mark	Gibbons	UWC
82	Jean	Githaiga-Mwicigi	Department of Agriculture, Forestry and Fisheries
83	David	Glassom	UKZN
84	Jean	Glazer	Department of Agriculture, Forestry and Fisheries
85	Jan	Glazewski	UCT
86	Wayne	Goshen	South African Environmental Observation Network
87	Tess	Gridley	Sea Search Africa
88	Eduard	Groenewald	Total E&P South Africa
89	Mthuthuzeli	Gulekana	DEA
90	Jim	Gulland	CGG Veritas
91	Christina	Hagen	BirdLife South Africa
92	John	Hall	Spectrum
93	Charles	Hammond	Chevron
94	Shannon	Hampton	IOI-SA
95	Jean	Harris	Ezemvelo KwaZulu-Natal Wildlife
96	Linda	Harris	Nelson Mandela Mtropolitan University
97	Chris	Heinecken	CapFish
98	David	Herbert	KwaZulu-Natal Museum
99	Juliet	Hermes	South African Environmental Observation Network
100	Elodie	Heyns	Student/ post doc
101	Robert	Higgins	Petrosa
102	Andre	Hoek	Sea Technology Services (Pty) Ltd
103	Greg	Hofmeyr	Port Elizabeth Museum at Bayworld
104	Catherine	Horsfield	Centre of Environmental Rights
105	Wim	Hugo	South African Environmental Observation Network
106	Kenneth	Hutchings	Marine Research Institute & Anchor Environmental
107	Larry	Hutchings	University of Cape Town
108	Steve	Ilett	Impact Oil & Gas Ltd
109	Daniel Seth	Jackofsky	ExxonMobil Exploration and Production South Africa Ltd.
110	Raoul	Jacquand	CGG Veritas
111	David	Japp	CapMarine/CapFish
112	C	Johnsen	Durban University of Technology
113	Ashley	Johnson	Department: Environmental Affairs
114	Sean	Johnson	Petroleum Agency South Africa
115	Tamryn	Johnson	Aurecon
116	Mohammed	Kajee	UCT
117	Abri	Kampfer	SA Navy
118	Andrew	Kaniki	National Research Foundation
119	Sven	Kerwath	Department of Agriculture, Forestry and Fisheries
120	Thabang	Kgomo	Sungu Sungu
121	Steve	Kirkman	Department: Environmental Affairs
122	Tracy	Klarenbeek	National Research Foundation

123	Nhlanhla	Kubheka	New Age, Geophysicist
124	Andrew	Lambert	Kinetiko
125	Piet	Lambregts	Shell
126	Tarron	Lamont	Department: Environmental Affairs
127	Susan	Lane	Sue Lane & Associates Environmental Services
128	Nigel	Langridge	Total
129	Richard	Layfield	Exxonmobil
130	Anton	le Roux	UCT
131	Solomon	Lephoto	Sungu Sungu Petroleum
132	Robin	Leslie	Department of Agriculture, Forestry and Fisheries
133	Marriott	Liesl	Sasol Petroleum International
134	Justin	Lime	Anadarko
135	Lee-Kong	Lin	Silverwave Energy PTE Ltd. / Brilliant Oil & Gas
136	Tamsyn	Livingstone	Ezemvelo KZN Wildlife
137	Hugh	Lloyd	Deepwater research
138	Mandy	Lombard	NMMU and UCT
139	Nicole	Lomberg	Impact Africa
140	Dave	Loran	New Age
141	Darren	Lucas	Kosmos Energy
142	Katrin	Ludynia	University of Cape Town
143	Peter	Lukey	Department: Environmental Affairs
144	Sean	Lunn	Offshore Petroleum Association of South Africa / Impact Oil and Gas
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146	Fiona	MacKay	Oceanographic Research Institute
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149	Fezile	Mahlati	Pan African Energy
150	Prideel	Majiedt	South African National Biodiversity Institute
151	Mapula Salome	Makwela	SAEON/SANBI
152	Jean	Malan	New Age, Geologist
153	Tsamaelo	Malebu	South African National Biodiversity Institute
154	Thembakazi	Mali	South African National Energy Development Institute
155	Roy	Manson-Brebner	Aberdeen Offshore Engineering
156	Bronwyn	Maree	BirdLife
157	Jeremy	Marillier	FishSA
158	Thomas C.	Mason	BHP Billiton Petroleum Limited
159	Leluma	Matooane	DST
160	Craig	Matthysen	Lwandle Technologies
161	Nxumalo	Mbalenhe	NRF
162	David J.	Mclean	Anadarko Petroleum Corporation
163	Kirsty	McQuaid	SRK Consulting (South Africa) Pty Ltd
164	Lindiwe	Mekwe	Petroleum Agency South Africa

165	Adri	Meyer	BirdLife South Africa
166	Imke	Meyer	Centre for Renewable and Sustainable Energy Studies, Stellenbosch University
167	Guy	Midgley	Stellenbosch University
168	Daniel	Mikes	Univ Stellenbosch
169	Jon M.	Miller	WesternGeco
170	Steve	Mills	Shell South Africa Exploration B.V.
171	Siyasanga	Miza	SANBI
172	Thokozani	Mkhize	EKZNW
173	Fiona	Moir	NT Energy Africa
174	Coleen	Moloney	University of Cape Town
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176	Caitlin	Moore	PetroSA
177	Luke	Moore	RHDHV
178	Tammy	Morris	South African Environmental Observation Network
179	Karabo	Motlana	Oceana Group
180	Samson	Mukaratirwa	University of Kwazulu-Natal
181	Stet	Mushwana	Petroleum Agency SA
182	Mduduzi	Mzimela	University of Zululand
183	Ashley	Naidoo	Department: Environmental Affairs
184	Bryaleen	Naidoo	University of KwaZulu-Natal
185	Derek	Needham	Sea Technology Services (Pty) Ltd
186	Herman	Neethling	Shell
187	Phumla	Ngesi	Petroleum Agency SA
188	Nosizwe	Nokwe	PetroSA
189	Margaux	Noyon	University of Cape Town
190	Nolubabalo	Ntunzi	AGEC EC
191	Raeesa	October	Western Cape Dept Economic Development and Tourism
192	LAWRENCE	OELLERMANN	ORI
193	Alexis	Olds	CapeNature
194	Ane	Oosthuizen	South African National Parks
195	Herman	Oosthuizen	Department: Environmental Affairs
196	Mimonitu	Opuwari	University of the Western Cape
197	Steve	O'Reardon	CNR International
198	Claude	Orgill	Western Cape Dept Economic Development and Tourism
199	Kelly	Ortega	Rhodes University
200	Ryan	Palmer	SAIAB
201	Angus	Paterson	South African Institute for Aquatic Biodiversity
202	Anurag	Pattnaik	Cairn India
203	Johan	Pauw	South African Environmental Observation Network
204	Laura	Peinke	Saldanha Bay Industrial Development Zone/ IDZ Licencing Company
205	Gwenith	Penry	Southern African Bryde's whale project
206	Joe	Phadima	Ezemvelo KwaZulu-Natal Wildlife

207	Kamleshan	Pillay	Aeon Nexus Consulting
208	Pierre	Pistorius	NMMU
209	Mark	Plummer	Premier Oil
210	Dirk	Pretorius	Aurecon RSA
211	Kim	Prochazka	Department of Agriculture, Forestry & Fisheries
212	Andrea	Pulfrich	Pisces Environmental Services
213	Jean	Purdon	University of Pretoria/CapFish
214	Johan	Rademan	Dept. Agriculture, Forestry and Fisheries
215	Anusha	Rajkaran	SANCOR
216	Marek	Ranoszek	Anadarko Petroleum Corporation
217	Tshikana	Rasehlomi	SAWS
218	Christo	Rautenbach	CSIR
219	Hannah	Raven	SAEON
220	Chris	Reason	UCT
221	Steve	Richards	Schlumberger
222	Trevor	Ridley	Thombo Petroleum Ltd
223	Mathieu	Roault	Nansen Tutu Center for Marine Environmental Research
224	Haydon	Robers	Fugro
225	Mike	Roberts	Department: Environmental Affairs
226	Tammy	Robinson	Stellenbosch University
227	Michelle	Roffe	GeoGuide Consultants
228	Nigel	Rossouw	Shell South Africa Exploration B.V.
229	Saul	Roux	African Centre for Cities
230	Andrew	Russell	Lwandle
231	Gwendal	Salmon	Halliburton/Landmark
232	Toufiek	Samaai	Department: Environmental Affairs
233	Stefano	Santoni	Bayfield Energy
234	Warwick	Sauer	Rhodes University
235	Lucy	Scott	SAEON
236	Josias	Seabi	NRF/NZG
237	Yonah	Seleti	Department of Science and Technology
238	David	Sengani	SANBI
239	Lerato	Senoko	Department of Science and Technology
240	Sulaiman	Shahid	Rhino Oil & Gas Exploration
241	Andre	Share	Department: Environmental Affairs
242	John	Sheehan	Petroleum Geo-Services (PGS)
243	Frank	Shillington	University of Cape Town
244	Vusumuzi	Sihwa	New Age, Financial Analyst
245	Gilbert	Siko	Department of Science and Technology
246	Larvika	SingH	Department of Agriculture, Forestry and Fisheries
247	Kerry	Sink	South African National Biodiversity Institute
248	Nico	Smit	North West University

249	Rebecca	Snyder	Seiche
250	Conrad	Sparks	Cape Peninsula University of Technology
251	Bruce	Spolander	Metocean Services International
252	Johan	Stander	South African Weather Service
253	VICKY	STEVENS	ERM
254	Viljoen	Storm	Petroleum Agency South Africa
255	Karen	Surridge-Talbot	SANEDI
256	Seb	Swart	CSIR - Southern Ocean Carbon & Climate Observatory
257	Erika	Syba	OK Energy Ltd.
258	Tembaletu	Tanci	Department of Agriculture, Forestry and Fisheries
259	Rob	Tarr	Department of Agriculture, Forestry and Fisheries
260	Marthán	Theart	Centre of Environmental Rights
261	Philip	Thompson	Fugro
262	Keith	Thornton	CNR International (South Africa) (Pty) Ltd
263		Toefy	Cape Peninsula University of Technology
264	Steve	Toothhill	CGG Veritas
265	Philip	Towle	Anadarko Petroleum Corporation
266	Karen	Tunley	UCT
267	Natalie	Turnbull	Sea Technology Services (Pty) Ltd
268	Mbongeni	Tyesi	Oceans and Coasts
269	Neville-nash	Uhongora	Cape Peninsula Uiversity of Technology
270	Roy	van Ballegooyen	WSP Coastal Africa
271	Carl	van der Lingen	Department of Agriculture, Forestry and Fisheries
272	Josef	van der Westhuizen	Department of Agriculture, Forestry and Fisheries
273	J.L.	van Niekerk	Stellenbosch University, Centre for Renewable and Sustainable Energy Studies
274	Anthony	Van Zyl	Schlumberger
275	Hans	Verheye	Department: Environmental Affairs
276	Els	Vermeulen	University of Pretoria/Sea Search
277	Estee	Vermeulen	University of Cape Town
278	Marcello	Vichi	University of Cape Town
279	Niall	Vine	Dept Zoology & Entomology, UFH
280	Carmen	Visser	NRF
281	Rainer	von Brandis	Private contractor
282	Charles	von der Meden	South African Environmental Observation Network
283	Carl	Wainman	Institute for Maritime Technology
284	Howard	Waldron	University of Cape Town
285		Walker	Cape Peninsula University of Technology
286	Ross	Wanless	BirdLife South Africa
287	Steven	Weerts	CSIR
288	Steve	Wells	PGS
289	Gert	Wessels	CSIR
290	Laura	Weston	Lwandle Technologies

291	Sarah	Wilkinson	CapMarine
292	Henning	Winker	South African National Biodiversity Institute
293	Sabine	Wintner	KZN Sharks Board
294	Somila	Xosa	Department of Science and Technology
295	Zakithi	Zama	ExxonMobil
296	Teboho	Zide	Department of Energy

Annex 5: List of acronyms

CPUT – Cape Peninsula University of Technology
CSIR – Council for Scientific and Industrial Research
DAFF – Department of Agriculture, Forestry and Fisheries
DEA – Department of Environmental Affairs
DMR – Department of Mineral Resources
DST – Department of Science and Technology
EEZ – Exclusive Economic Zone
EIAs – Environmental Impact Assessments
EKZNW – Ezemvelo KwaZulu-Natal Wildlife
FET – Further Education and Training
IOI-SA – International Ocean Institute- South Africa
IP – Intellectual Property
KFD – Knowledge Fields Development
KPIs – Key Performance Indicators
LTER – Long Term Ecological Research
LTM – Long Term Monitoring
MARS – Marine and Antarctic Research Strategy
MLRA- Marine Living Resources Act
MMO _ Marine Mammal Observers
MSP-marine spatial planning
NGOs – Non Governmental Organisations
NMMU – Nelson Mandela Metropolitan University
NRF – National Research Foundation
O&G – Oil and Gas
OPASA – Offshore Petroleum Association of South Africa
PASA – Petroleum Agency South Africa
PMT – Project Management Team
QC – Quality Control
R&D – Research and Development
RC&GA – Research Catalogue and Gap Analysis
RE – Renewable Energy
ROE – Research Opportunity Exploitation
ROVs – Remotely Operated Vehicles
SA – South Africa
SAEON - South African Environmental Observation Network
SAIAB – South African Institute of Aquatic Biodiversity
SAMREF – South African Marine Forum
SANBI - South African National Biodiversity Institute
SANCOR – South African Network for Coastal and Oceanic Research
SANEDI – South African National Energy Development Institute
SAWS – South African Weather Service
SBMs – Single Buoy Moorings
SC – Steering Committee
SWOT – Strengths, Weaknesses, Opportunities, Threats
ToR – Terms of Reference
UCT – University of Cape Town
UK – United Kingdom
UKZN – University of KwaZulu-Natal
WASA- Wind Atlas for South Africa
WG – Working Group

Annex 6: The breakaway group instructions sheet

There will be three breakaway groups, each to do a SWOT analysis.

1. **Offshore oceanography**
2. **Inshore oceanography and biodiversity**
3. **Renewable energy**

Any other sectors / industry please make sure you have representatives in all three groups.

Each person, please:

Take 4 sheets of paper, each of a different colour, representing:

- **Blue** - Strengths Eg. More research platforms in SA waters
- **Green** – Weaknesses Eg. Lack of objective alignment: oil & gas not operating where scientists want to sample, duration of time at sea not sufficient.
- **Yellow** – Opportunities Eg. Oil&gas achieving meaningful environmental responsibility and science/renewable energy sectors obtaining a vastly increased amount of physical and biological data / information
- **Pink** – Threats Eg. costs of additional equipment and time at sea, insufficient berths for scientists, lack of will to cooperate.

Each breakaway group, please:

1. Select a chair to moderate discussion. Your rapporteur will be assigned to you to take notes.
1. Take **10 minutes** to list strengths, weaknesses, opportunities and threats in silence on your own sheets of paper. They do not have to be relevant to only your group.
2. Chair to collect papers and go through them one colour at a time. Please aggregate results into logical groups on flip chart pages. 10 minutes per S/W/O/T.
3. Once the SWOT is finished, please have the group suggest any ideas for fast-track industry-research cooperation (current opportunities <6 months). 10 minutes.

Annex 7: The breakaway results for each group

(detailed, disaggregated)

GROUP 1

STRENGTHS

Collaboration facilitated (multi disciplinary, multi institutional)
Access to more platforms, ocean/time, access to distribution of data. New areas
No losers – reputation enhancement
Flexibility
Government 'will' is there
Enhanced research outcomes
Possible standardisation, synchronization of data acquisition
No extra cost to scientists

OPPORTUNITIES

Sampling
- physical / chemical parameters including LTM
- marine mammals and birds (obs)
- pollution studies
- buoys and robots, gliders (deployments)

Added value research opportunities and coordination
Access to historical (previously inaccessible) data
Access to expertise (QC). Best practice.
Career path for students + upstream work force + technical jobs
Applied research and innovation
Sampling in remote areas + intermittently sampled areas
Marine observer platforms and training (training mammal scienitists to do turtle/seabird/pollution obs could increase the amount of data collected without increasing berths needed.
Align research opportunities with monitoring
Collaboration reduces costs (research, data collection, servicing of existing arrays)
Possible funding of research from industry
Industry driven research
Relatively low cost
Seismic vessels with limited working days could carry underway sensors

WEAKNESSES

Time constraints
Space on vessels
Type of data restrictive
Can't dictate data
Missed opportunities
Rigid / inflexible ideas of what can be collected
Only focused on long term monitoring
Lack of innovation / imagination regarding once-off opportunities
Relies on goodwill / no incentive / interest
No mechanism for prioiritisation of data collection
Quality of observers on seismic / poor training
Continuity / sporadic data collection
Funding / activities influenced by oil price
Conflict between researchers
Coordination is not sufficient, should be wider than oil & gas
Strengthen what we have / bureaucratic
Unrealistic expectations
Early days for oil and gas
Restrictive to oil & gas activities

Too narrowly defined to oil & gas; should be expanded to all ships

THREATS
Reliance on oil and gas for impetus
Data 'tainted'
Health and safety resrictions on what could be done
Costs borne by whom? Insufficient funding
Data restrictions / confidentiality
Research agendas driven by industry
Lack of stakeholder buy in / cooperation
Lack of coordintation
Too few opportunities
Lack of messaging around mutual benefits
Lack of data standards
Lack of capacity building
Oil and gas do not own vessels
Eskom data is protected
Industry might claim no space to avoid hassle

GROUP 2

OPPORTUNITIES
Historical data
Strengthening contract research opportunities
Exploration phase has no fixed platforms, drilling intermediate platform 1-4 months
Opportunities when multiple wells are drilled at a time
Cape on wells could serve as potential platforms
ROVs are all outsourced. Could be used for research when not used by company.
Marine mammal and seabird obs already shared with researchers
Rig supply vessels could present an opportunity to replicate observations
A number of different contractors are used by companies to ensure quality of data
Potential for geological mapping
Ground truthing of RS data
EIA baselines
LTER to be built in
Rig supply vessel opportunities (fixed, repeated track lines)
4-5 SBMs in next 5 years

WEAKNESSES
Cruises
- seismic vessels need to keep moving. No time to stop and collect data
- more equipment on vessels could add to 'noise' of the cruise
- Berth capacity
- Change overs of crew
- Human resources (finding people to go on the cruise
- No cruise track replication
- Costs to researchers and company of having researchers on board (eg health and saety training)

Costs of adding data capturing devices eg fluorescence is prohibitive (vessel outsourced)
Seismic data collection has high costs
Geological and environmental data is inexpensive to collect.
Competition for data is high
Lack of state support
Research cost and limited money

THREATS

No industry as yet
Low oil prices inhibit exploration
Strict legislation sometimes causes missed window of opportunity
Mandatory collaborations may be prohibitive to exploration (mandatory vs voluntary collaboration)
Availability of researchers
Data capturing & management capability
Negative results from monitoring could lead to conflict with industry. General research monitoring vs compliance monitoring.
Research approvavls.
Data transfer systems
Security issues re data and key points
Sampling plans changing at short notice.

STRENGTHS
Historical data – possibility of getting data from contractors who conducted EIAs
State support
Industry providing student funding
Industry supportive of environamnetal health and safety initiatives
CSI
Streamlining and focusing capacity dev

INDUSTRY FEARS
Being forced to do things that add cost
Spending money on exploration is high risk with no guarantee of profit.
Look at what opportunities are currently available
What opportunities are there that are not linked to the exploration phase.

RESEARCHER FEARS
Getting approval to get on a ship/platform may be time consuming
Data contraints should not be an issue
Expectations vs reality

FAST-TRACK
Nominating contacts for industry / researchers
Lists detailing what data are available and what data researchers want to collect
How to make data available
What infrastructure already exists & what exploration is happening (database)
Making historical data available ASAP
Audit opportunities (cruises, rigs, SBMs, supply routes)

GROUP 3

STRENGTHS
Wealth of data. Some data back to the 70's can be used. Useful for validation of models. Offshore data force nearshore models. In situ data useful for remote sensing calibration.
Validation of remote sensing
Potential partnerships between oil and gas industry
Mutually beneficial relationships
High level of engineering and technical capacity
SA well positioned to tap ocean energy. SA has a high energy coastline, suitable for renewable energy.
There is a high level of engineering and technical skill.
Currently there is political will. There is will from the O&G sector to work with renewables on mutually reinforcing objectives.
Opportunity cost is low. The cost is very low compared to the cost of putting research vessels to sea.

WEAKNESSES
Sensitivity to oil and gas markets
Unaligned interests. Opportunities are based on interest and commitment from parties who may see project activities as a hassle.
IP issues in the commercial sphere
Overall cost of implementing technology. Lack of funding for R&D
Small research community for renewables.
Difficult to change business-as-usual mindset
Difficult to harness renewable energy resources (power lines, grid strength and connection)
Our offshore O&G resources are currently not being exploited.
Conflicts with other marine spatial uses (tourism, MPAs etc)

OPPORTUNITIES
Cost of collection of ocean data is hugely reduced for public sector scientists.
Validation of models
Opportunities for increased research (students)
Funding from first world countries / foreign partners
Fostering international research collaboration. International technology transferable to SA. Major oil and gas finds off Mozambique and Tanzania.
Localising innovation
Opportunity for marine energy atlas
To date there has been no forum / space to identify mutual areas of collaboration.
Innovation (due to lack of technological maturity)
Opportunities for the renewables sector for strengthening the energy mix (time of day and supply) assuming technology matures.

THREATS
Red tape reduces opportunities. Regulatory uncertainty increases risk to companies.
Unintended policy consequenses from misalignment
Conflicts of interest. Commercial competition. Lack of coordination and cooperation each sector promoting its own agenda.
Harsh ocean environment
Opportunities are not expoited ‘not our business’
Added costs of research
Other sources of RE are well established; difficult for the marine sector to compete. Coal is cheap.
Conflict with other legitimate ocean uses (recreation, cables, fisheries)

FAST-TRACK
No more voyages, but available data
Research interns can capture data
Assessing & mining of data
Look at research opportunities on existing ocean platforms (oil rigs)
Rather produce energy on land

Annex 8: Stakeholder questionnaire

1. Full name:

2. Date:

3. Organisation:

4. Summary of the key mandate/role of your organisation:
If you have a standard project brief or document, please feel free to send this instead

5. Mandate/role of your sector / project:
If different or more specific than (4) above

6. Does your organisation/project fit into any of these categories:
Mark yes to any applicable

Industry	
Regulatory	
Academic	
Government	
Parastatal	
Other (Please specify)	

7. Does your organisation/project:
Mark yes to any applicable

Conduct research of any kind	
If yes, please describe/send references:	
Store or manage offshore marine data	
If yes, please describe:	
Process or analyse offshore marine data	
If yes, please describe:	

8. Will you be attending the SAMREF kick-start meeting (23-24 July 2015)?
Yes/no

9. The overall objective of the South African Marine Research and Exploration Forum (SAMREF) is to be a multi-sector forum, inclusive of public and private sectors that would:

- Identify and take advantage of opportunities provided by oil and gas exploration activities and platforms, to gather important marine ecosystem data (e.g. wave, wind, ocean current, temperature and salinity) which would otherwise be difficult and expensive to obtain.

- Facilitate new collaborative offshore studies that would increase South Africa's state of knowledge of the offshore marine environment, related to renewable energy potential, marine biodiversity and ecology, climate change and ecosystem functioning.

In your opinion, what would be the Strengths, Weaknesses, Opportunities and Threats facing this forum?

Strengths Eg. More research platforms in SA waters	
Weaknesses Eg. Lack of objective alignment: oil & gas not operating where scientists want to sample, duration of time at sea not sufficient.	
Opportunities Eg. Oil&gas achieving meaningful environmental responsibility and science/renewable energy sectors obtaining a vastly increased amount of physical and biological data / information	
Threats Eg. costs of additional equipment and time at sea, insufficient berths for scientists, lack of will to cooperate.	

10. Would you be interested in attending a two-day research-sector meeting?

This meeting would be attended by key stakeholders and potential project partners, specifically, the key oil and gas exploration actors and the ocean-related climate change, marine environment and biological resources and renewable energy research community.

The outcome would feed into a report that would be used as a reference for various agreements to be signed under the project and will include, but not be limited to:

(i) a full and detailed description of the various research opportunities that will be exploited by the project including details on required inputs (human, financial and technical resources) and expected outcomes;
(ii) how these opportunities will be exploited in practise including detail on the type of agreements, protocols, norms, standards and/or standard operating procedures that may be required; and
(iii) details on key role players and their roles.

Yes/no

11. The provisional dates for this meeting are 17-18 September. If you answered yes above; do these dates suit you?
Yes/no

12. Which research sector/s are of interest to you, if any?
Mark yes to any applicable

Biodiversity	
Offshore physical oceanography	
Renewable energy	
Weather / climate	

Annex 9: Draft Terms of Reference for the Interim Steering Committee

1 BACKGROUND AND INTRODUCTION

Government's Operation Phakisa Oceans Economy Lab took place from 8 July 2014 to 15 August 2014 in Durban comprising labs for Marine Infrastructure, Offshore oil and gas exploration, Aquaculture and Marine Protection Services and Ocean Governance.

The products of the 6 week Operation Phakisa Offshore Oil and Gas Exploration Lab are contained in a report dated 14 August 2014. One of these products was Initiative B3 – Exploiting the broader research opportunities presented by offshore oil and gas exploration.

The overall objective for Initiative B3 is framed as a desired outcome as follows –

> *By 2024, South Africa's knowledge of its marine living natural resources, marine environment and ocean-related renewable energy resources is greatly enhanced through collaborative research with oil and gas exploration activities.*

In order to measure progress in realising this overall objective the following Key Performance Indicator will be used –

Overall Key Performance Indicator	Baseline	Target				
		2014/15	2015/16	2016/17	2017/18	2018/19
Marine Knowledge Dissemination Indicator - The % increase of published scientific ocean-related research	0%	0%	0%	5%	25%	40%

The Offshore Oil and Gas Environmental Research Collaboration Project (OOGERCP) is a project to implement Operation Phakisa's Offshore Oil and Gas Exploration Initiative B3: Exploiting the broader research opportunities presented by offshore oil and gas exploration.

The overall objective of the project is to support the inclusive process of development of the South African Marine Research and Exploration Forum (SAMREF). SAMREF will be a multi-sector forum, inclusive of public and private sectors that would:

- Identify and take advantage of opportunities provided by oil and gas exploration activities and platforms, to gather important marine ecosystem data (e.g. wave, wind, ocean current, temperature and salinity gradients) which would otherwise be difficult and expensive to obtain;
- Facilitate new collaborative offshore studies that would increase South Africa's state of knowledge of the offshore marine environment, related to renewable energy potential, marine biodiversity and ecology, climate change and ecosystem functioning;
- Go some way towards mitigating the policy conflict between developing the oil and gas sector and the development of a low-carbon economy.

With the objective of ensuring a high level of multi-stakeholder buy-in as a result of participatory project development, implementation, management and co-ownership it was agreed that a multi-stakeholder interim Steering Committee (SC) was to be established and maintained to inform the development and implementation of Initiative B3 OOGERCP. This interim Steering Committee will replace the current B3 Working Group.

This document provides the Terms of Reference for the multi-stakeholder interim Steering Committee, that will oversee and advise the project management team to be known as the Phakisa B3 Project Management Team in its execution of its tasks.

2 THE PHAKISA B3 STEERING COMMITTEE (B3 SC) OBJECTIVE

Based on the project design detailed in the 14 August 2014 Operation Phakisa Offshore Oil and Gas Exploration Lab Report, the B3 SC will have the following objective –

> *The efficient and effective guidance of Initiative B3 through, in part, multi-stakeholder, cooperation, coordination, collaboration, leadership and commitment, and in effect oversee and advise the Phakisa B3 Project Management Team.*

3 B3 SC ROLES AND RESPONSIBILITIES

In order to meet the above objective, the B3 SC will be responsible for the following –

3.1 Guiding the work of the B3 Service Provider

A service provider will be appointed to assist the Initiative B3 stakeholders in meeting the project objective. In this regard, the B3 SC is responsible for guiding the work of the B3 Service Provider and for assisting the Project Director in the management of the Service Provider.

3.2 Providing technical input

The B3 SC is responsible for ensuring that Initiative B3 is properly informed with the latest relevant scientific, technology, research and exploration information available.

3.3 Providing sectoral access

The B3 SC is responsible for ensuring that Initiative B3 has easy access to all significant interested and affected parties through its members.

3.4 Providing sectoral feedback

The B3 SC is responsible for ensuring that Initiative B3 is made fully aware of all sector positions, concerns, suggestions, proposals, aspirations, expectations, etc. as well as any changes in this regard.

3.5 Monitoring and Reporting Progress

The B3 SC is responsible for providing input to- and approving- all project progress reports and presentations including any high-level briefings to the President, Cabinet Ministers and/or Directors-General.

4 METHOD OF WORK

In order to meet the above objective, the B3 SC will be guided by the following method of work.

4.1 Fostering friendly relations

B3 SC meeting agenda will allow sufficient time within meetings for informal interactions between members to allow for the building of peer networks and friendships.

4.2 Assisting and supporting one another

B3 SC meeting agenda will provide space for members to raise issues of concern or challenges with a view to agreeing proactive means of assistance and support in dealing with the concerns or challenges.

4.3 Informing one another of, and consulting one another on, matters of common interest

B3 SC meeting agenda will provide space for members to inform one another of, and consult one another on, matters of common interest.

4.4 Coordinating actions with one another

All significant planned activities that may have relevance to Initiative B3, especially those that may have an impact on- or be of specific interest to- one or more other B3 SC members or their constituencies, must be noted for possible discussion within B3 SC meetings.

4.5 Adhering to agreed procedures

The work of the B3 SC will be conducted in accordance with the procedures set out in these terms of reference.

4.6 Avoiding shortfalls and pitfalls

Based on past experience with structures of this nature, the B3 SC Chairperson and members must actively guard against the following shortfalls and/or pitfalls:

(i) The use of B3 SC meetings as the sole means of stakeholder engagement;

(ii) The use of B3 SC meetings as a platform for members' initiatives only, i.e. excluding important B3-relevant initiatives undertaken by stakeholders that are not B3 SC members;

(iii) The filling of the B3 SC meeting agenda with items of only passing or peripheral interest;

(iv) Allowing meetings to become purely administrative exercises with little, if any, chance for real discussion, joint problem-solving, debate and/or information sharing and awareness-raising.

5 B3 SC MEETINGS

In order to efficiently and effectively deliver on its objective, B3 SC meetings will be held at specific B3 implementation milestones as agreed by the members or at least 4 times in each calendar year. The specific times of the meetings will be discussed and tentatively agreed at the first B3 SC meeting.

Special and/or extraordinary B3 SC meetings may be called by the Chairperson if the Chairperson has gained approval for such meetings from at least 50% of the B3 SC members.

Meetings should have duration of no more than 4 hours.

B3 SC meetings will be hosted by the B3 SC members at suitable venues that facilitate the maximum participation by members.

6 B3 SC MEMBERSHIP

Members of the SC will be nominated by their organisations.

B3 SC membership and alternates will be discussed and confirmed at all B3 SC meetings.

In the interest of efficiency, effectiveness and maximum active participation, B3 SC membership is limited to 25-30 members.

Membership will comprise of individuals nominated to represent the following key stakeholders –

(i) ***National Government*** (+/- 5 members) – The key national government departments of Science and Technology (DST), Environmental Affairs (DEA), Energy (DoE), Agriculture, Forests and Fisheries (DAFF) and Mineral Resources (DMR);

(ii) ***State-Owned Enterprises*** (SOE) (+/- 3 members) – The key SOEs including the South African National Energy Development Institute (SANEDI), the South African National Biodiversity Institute (SANBI), Petroleum Agency South Africa (PASA), the National Research Foundation (NRF);

(iii) ***Research Institutions*** (+/- 4 members) – The key interested or affected research bodies possibly including, but not limited to, the Council for Scientific and Industrial Research (CSIR), the South African Environmental Observation Network (SAEON), South African universities, etc.;

(iv) ***Oil and Gas Companies*** (+/- 3 members) – The key oil and gas companies involved in offshore exploration activities possibly including, but not limited to, the Offshore Petroleum Association of South Africa (OPASA), Total, Shell, Exxonmobil, PetroSA, etc.; and

(v) ***Oil and Gas Exploration Contractors*** (+/- 2 members) – The key companies used by the oil and gas industry to undertake offshore exploration activities.

It must be noted that the onus is on members and alternates to provide the B3 SC secretary with up to date contact information for members and alternates as the secretary will only circulate B3 SC related announcements and documentation to recognised members and alternates.

7 QUORUM

A simple majority of members/alternates (50% of members/alternates + 1) or the presence of at least two members/alternates from stakeholder groups (i) to (iv) listed above will constitute a quorum.

8 DECISIONS

Formal B3 SC decisions may only be made if the meeting is quorate (see 7). The B3 SC will make every reasonable attempt to reach consensus. Should meetings fail to reach consensus, a decision may be made based on the endorsement of the decision by 2/3rd of the members or their alternates present at a quorate meeting. Alternatively, or in the case of a deadlock, a decision may be referred to the Forum of South African Directors-General (FOSAD) for a decision.

9 TENURE

The B3 SC will be most active from its establishment to the formal launch of Initiative B3 (January 2016) and for, at least one year thereafter. At the end of this period (December 2016), the B3 SC will review its role and make a decision on its need to continue or otherwise.

10 ROLES AND RESPONSIBILITIES OF KEY PLAYERS

10.1 The South African Marine Research and Exploration Forum

In terms of the Operation Phakisa's Offshore Oil and Gas Exploration Report dated 14 August 2014, the person who "owns" this initiative and who is, therefore, ultimately accountable for its success, is DST's DDG: Research Development and Support. Thus, DST's DDG, or his or her designated alternate, will be the Chairperson of the B3 SC. The Chair person will appoint a service provider to manage the establishment of the South African Marine and Exploration Forum (SAMREF), as laid out in section 1

10.2 The B3 SC Secretariat and Project Development

The B3 SAMREF Project Management Team (PMT) will consist of the NRF Knowledge Fields Development (KFD) who will provide the secretariat services and SAEON who will manage the establishment of the SAMREF project through the workshops, stakeholders consultations and various reports. The PMT will also include members from DEA and DMR. The PMT will have delegates serving in the B3 SC and will provide report backs at each SC meeting.

The B3 SC Secretariat will carry out all the work required to facilitate the efficient and effective performance of the SC, including:: (i) Making and/or confirming logistical arrangements for SC meetings; (ii) Identifying convenient meeting dates with members; (iii) Timeously extending meeting invitations; (iv) Compiling and timeously circulation of meeting agenda and any relevant meeting documentation; (v) Compiling meeting minutes and timeously circulating these to members; (vi) Timeously following up on all meeting decisions with affected members; (vii) Providing any necessary advice and support to the SC Chair and members; and (viii) Monitoring, verifying and reporting progress in respect of meeting decisions.

10.3 Forum members (and alternates)

Apart from actively contributing in any way reasonably possible to the success of Initiative B3, all B3 SC participants are required to:

- Provide the B3 SC Secretariat with up to date contact details;
- Provide the B3 SC Secretary with up to date contact details for all known key stakeholders to be included in the Initiative B3 stakeholder database;
- Continuously engage with the stakeholders they represent in order to fulfil the role and responsibility of the B3 SC with respect to, among others, guiding the work of the SAMREF PMT, providing technical input, providing sectoral access, providing sectoral feedback, and monitoring and reporting progress;
- Identify and submit for discussion any issue that falls within the focus of the B3 SC;
- Identify and submit for possible discussion all significant planned activities that may have relevance to Initiative B3, especially those that may have an impact on- or be of specific interest to- one or more other B3 SC members or their constituencies;
- Read all documentation circulated with the meeting agenda; and
- Gain any necessary mandates for positions in respect of documentation circulated with the meeting agenda.