

# Argo National Report – South Africa

Report to Argo Steering Team Meeting: March 2018

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The South African Argo Program presently is one of deployment opportunities and educational outreach as opposed to procuring of floats and seeding the global Argo array. However, we are striving to develop projects and funding opportunities in that direction. Given South Africa's unique position geographically of bordering three oceans – The Atlantic, Indian and Southern Oceans – we are able to provide numerous deployment opportunities for Argo floats to the global array. We are also working on dynamic research programs and experiments using Argo floats to a) study physical forcing dynamics and b) contribute to the development of biogeochemical floats particularly in the Southern Ocean. The research groups currently involved in the South African Argo program are: The South African Weather Services (SAWS) – who are the National Focal Point, University of Cape Town (UCT), the Department of Environmental Affairs (DEA), The Council for Scientific and Industrial Research (CSIR), The South African Environmental Observation Network (SAEON), and the Nansen-Tutu Centre for Marine Environmental Research.

## 1. Status of implementation (major achievements and problems in 2017):

### Floats deployed and their performance (on behalf of UK MetOffice and Euro-Argo)

#### Southern Ocean:

SANAE Cruise (RV SA *Agulhas II*) – December 2017-February 2018

13 floats deployed for Euro-Argo (in collaboration with the Italian team), 3 x ice-monitoring capable floats, and 10 x Argos floats

Katharsis II yacht – December 2017

3 x ice-monitoring capable floats facilitated to the yacht for deployment on behalf of Euro-Argo

#### Indian Ocean:

Winter Cruise (RV *Algoa*) – July 2017

6 x Iridium floats deployed across the Agulhas Current on behalf of Euro-Argo

IIOE-2 Cruise (RV SA *Agulhas II*) – July 2017

4 x floats deployed on behalf of UK MetOffice off Tanzania and within the Mozambique Channel

#### Atlantic Ocean:

SAMBA (RV *Algoa*) – April 2017

4 x floats deployed on behalf of UK MetOffice along the SAMBA transect (Fig. 1 below)

SEAmester along the SAMBA transect (RV *Algoa*) – July 2017

4 x floats deployed on behalf of UK MetOffice along the SAMBA transect (Fig. 1 below), in addition to 2 x floats on behalf of Euro-Argo

Gough Island supply cruise (RV SA *Agulhas II*) – September 2017

4 x floats deployed on behalf of Euro-Argo along the Gough Island supply cruise transect

**Technical issues encountered and solved:**

None at this stage.

**Status of contributions to Argo data management (including status of conversion to V3 file formats, pressure corrections, etc)**

None

**Status of delayed mode quality control processes:**

Not applicable

**2. Present level of (and future prospects for) national funding for Argo including summary of human resources devoted to Argo:**

Dedicated Argo funding to procure new floats to seed the global array is currently being investigated through the South African Environmental Observation Network (SAEON). Individuals from organisations (listed above) work on different projects involving Argo floats and have come together under the auspices of the South African Argo program to share knowledge, resources, cruise time where applicable and information regarding Argo. We are working towards taking this forward now.

We have one Argo representative for the South African Marine Science community who is also looking to drive the Argo float procurements and data management plans in future endeavours.

**3. Summary of deployment plans (level of commitment, areas of float deployment, low or high resolution profiles, extra sensors, Deep Argo) and other commitments to Argo (data management) for the upcoming year and beyond where possible:**

Southern Ocean:

Marion Island Cruise (RV SA *Agulhas II*) – April/May 2018.

This cruise follows the CrossRoads Transect on Figure 1.

*available for Argo float deployments*

Gough Island Cruise (RV SA *Agulhas II*) – September 2018.

This cruise follows the SAMBA Transect on Figure 1.

*available for Argo float deployments*

SANAE Cruise (RV SA *Agulhas II*) – December 2018 / January 2019.

This cruise follows the GoodHope Transect on Figure 1.

*available for Argo float deployments*

## Indian Ocean:

Agulhas System Climate Array (ASCA) mooring maintenance cruise – April 2018.

Refer to Figure 1 for positions.

9 x SOLO II floats will be deployed on behalf of US Argo team in to the Agulhas Current.

SEAmester Training Cruise (SA Agulhas II) – July 2018.

The cruise will undertake CTD stations along the ASCA transect. Refer to Figure 1 for positions.

*available for Argo float deployments*

## International Indian Ocean Expedition (IIOE-2) Expeditions

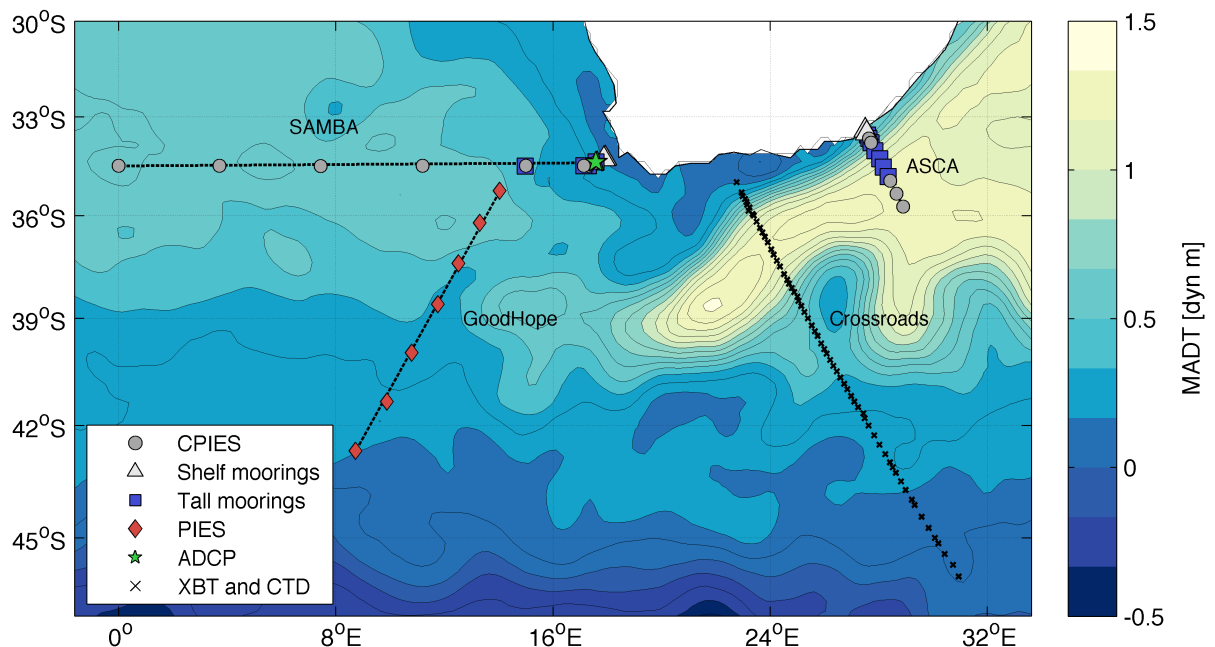
Cruises are being developed for both the eastern and western Indian Ocean and these can be communicated for interested countries wanting to deploy Argo floats into the Indian Ocean. 2 APEX floats from the UK Met Office are available for a cruise in to the Mozambique Channel, most likely to take place in June / July 2018, however **additional deployment opportunities are available.**

## Atlantic Ocean:

SAMBA Mooring Array (RV *Algoa*) – September / October 2018.

Refer to Figure 1 for positions.

*available for Argo float deployments*



**Figure 1: Large mooring array and CrossRoads transects around South Africa where floats could be deployed if available (Morris et al 2017).**

- 4. Summary of national research and operational uses of Argo data as well as contributions to Argo Regional Centers. Please also include any links to national program Argo web pages to update links on the AST and AIC websites:**

Projects and initiatives reported on in the AST report for South Africa from 2017 are ongoing. These will be reported on in more detail for the 2019 AST report, along with updated publications.

- 5. Issues that your country wishes to be considered and resolved by the Argo Steering Team regarding the international operation of Argo. These might include tasks performed by the AIC, the coordination of activities at an international level and the performance of the Argo data system. If you have specific comments, please include them in your national report.**

None at this stage.

- 6. To continue improving the quality and quantity of CTD cruise data being added to the reference database by Argo PIs, it is requested that you include any CTD station data that was taken at the time of float deployments this year. Additionally, please list CTD data (calibrated with bottle data) taken by your country in the past year that may be added to the reference database. These cruises could be ones designated for Argo calibration purposes only or could be cruises that are open to the public. To help CCHDO track down this data, please list the dates of the cruise and the PI to contact about the data.**

No data was loaded this year, but new data is available from the east coast of South Africa and will be loaded shortly.

- 7. Keeping the Argo bibliography ( <http://www.argo.ucsd.edu/Bibliography.html> ) up to date and accurate is an important part of the Argo website. This document helps demonstrate the value of Argo and can possibly help countries when applying for continued Argo funding. We reached more than 2000 papers published using Argo data! To help me with this effort, please include a list of all papers published by scientists within your country in the past year using Argo data, including non-English publications. I've added a thesis citation list too ([http://www.argo.ucsd.edu/argo\\_thesis.html](http://www.argo.ucsd.edu/argo_thesis.html)). If you know of any doctorate theses published in your country that are missing from the list, please let me know**

None at this stage.