

Project Endorsement Form

1. PROJECT TITLE

Full title	Sustainable Oceans, Livelihoods and food Security Through Increased Capacity in Ecosystem research in the Western Indian Ocean
Acronym	SOLSTICE-WIO
Website	solstice-wio.org
Keywords (up to 10, describing the project research)	Capacity Development, Food Security, Sustainable Livelihoods, Climate Change Impacts
New initiative or continuing programme?	New Initiative

2. APPLICANTS

Lead applicant / Project Leader / key research contact person:

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Other key participants / research team leaders: (repeat as needed)

N.B.: Please note that all these names and contact details will be added to the IIOE-2 membership database.

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3. ABSTRACT– Brief description of the project: (1/4 page maximum)

This will be placed on the IIOE-2 Website after endorsement.

Over 100 million people in the Western Indian Ocean (WIO) region live within 100km of the coast, with over 1 million working in the fisheries sector. The WIO is highly dependent on the ocean for economic stability, food security, and social cohesion. In recent years, the region has seen dramatic and often poorly understood reductions in key fisheries, due to the combined effects of climate change, natural ecosystem variability, overfishing and degradation of key marine habitats. Understanding and managing WIO fisheries and the impacts of recent and future changes requires a mature capacity to implement an ecosystem approach to fisheries management (EAF) that is built on sound environmental and socio-economic information.

SOLSTICE-WIO is a four-year collaborative project funded by the UK Research and Innovation Global Challenges Research Fund (GCRF). Launched in October 2017, it brings together local knowledge and international research expertise to address challenges facing the Western Indian Ocean (WIO) region in a cost-effective way.

Key to SOLSTICE is an approach that sees human-natural systems as a whole, integrated entity. Using state-of-the-art marine technologies (i. marine robotics; ii. earth observation via satellites; iii. numerical modelling) and research methods, SOLSTICE will conduct collaborative environmental and socio-economic research to deliver decision support for policy development and resource management in the WIO.

Through hands-on training and mutual exchange of expertise and research skills, the project will increase the capacity of both the UK and WIO marine science communities to deliver research that can underpin regional efforts towards sustainable management of marine living resources. The project also aims to increase ocean literacy by working with local communities to build on their knowledge and understanding of the issues, and share scientific information resulting from SOLSTICE research. Ultimately, this will contribute to improved food security for marine-dependent coastal populations in the region.

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4. LINKS TO IIOE-2 SCIENCE PLAN: (1/2 page maximum)

How do you anticipate your project to contribute to the IIOE-2 strategy and science delivery, with reference to which (either one or more) of the six IIOE-2 Science Plan themes that your project responds. Please state the specific issues and questions addressed by your project in the context of the IIOE-2 Science Plan themes and key issues.

Note: this project is closely linked to WIOURI which is already an IIOE2 endorsed project.

Theme 1: Human Impacts

SOLSTICE has a strong research component into the measurement and implications of marine food security in the Western Indian Ocean in general and in particular of the coastal population of Pemba Channel (Tanzania), North Kenyan Banks (Kenya), Agulhas Bank (South Africa).

Theme 2: Boundary current dynamics, upwelling variability and ecosystem impacts

SOLSTICE has completed focused ship-based observational programs in South Africa, Tanzania and Kenya addressing impacts of the upwelling systems on the productivity of the marine ecosystems and fisheries. Remote sensing and modelling components are addressing variability and potential future changes of the key upwelling systems in the region.

Theme 3: Monsoon Variability and Ecosystem Response

SOLSTICE has a dedicate research activity addressing impacts of the monsoonal systems on the productivity and regime shifts of the East Africa.

Theme 4: Circulation, climate variability and change

SOLSTICE has a modelling program identifying key climatic stressors of marine ecosystems in the wider EACC region and the Agulhas Bank.

Theme 5: Extreme events and their impacts on ecosystems and human populations

SOLSTICE has a dedicated research theme modelling the future dynamics of the marine heatwaves and shifts of the upwelling systems leading to strong impacts on fisheries.

Theme 6: Unique geological, physical, biogeochemical, and ecological features of the Indian Ocean

SOLSTICE future projection analysis is focusing on the impacts of climate change on the key currents and associated upwelling with a focus on the unique monsoonal variability of the region

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5. INTERNATIONAL COLLABORATION(S):

Is the project part of a related multi-national activity? **YES**

If No, would you welcome international collaboration in your project? **YES**

6. REGION(S) OF STUDY

Provide a description of 'where' the research is to be conducted (for field based activities) and/or the region or regions to which the research pertains (you are encouraged to consider providing either the coordinates of the area of studies or the coordinates of the planned cruise tracks, as well as a figure as an addendum to your proposal).

SOLSTICE work is focused on the three case studies in Kenya, Tanzania and South Africa. These have been selected by SOLSTICE partners in each of the three countries. For more information on each, follow the links on the left menu bar.

- Kenya: new frontiers for food security and economic growth
- Tanzania: living marine resources and impacts of climate change
- South Africa: ecosystem shifts and stability of fisheries

In addition, a number of SOLSTICE research activities are focused on the wider WIO region

6. TIMETABLE OF THE PROJECT

Start date: 01 October 2017	End date: 31 December 2021
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7. LINKAGES WITH OTHER PROJECTS / PROGRAMMES / INITIATIVES

Is the project part of a related national or multi-national activity?

If yes, provide the related activity title and website for reference, if available:

SOLSTICE is best described as a stand alone project funded by the Global Challenges Research Fund. However it was designed to be closely aligned with the objectives of the IIOE2.

Is your project part of, or affiliated to, another SCOR, IOC or IOGOOS activity or project?

If "yes", please indicate which activity or project:

Not formally

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8. DATA MANAGEMENT AND SHARING

1. Will new data be collected as part of this project (yes or no?)

Yes

2. Contact information if any, of the person in charge of the data management from whom the metadata can be accessed by interested IIOE-2 stakeholders.

Please note that for all IIOE-2-endorsed projects, IIOE-2 will have developed its own metadata portal. Once the project is endorsed, the project leader will be asked to provide the metadata information of the project.

BODC

<https://www.bodc.ac.uk/>

3. Recognizing the need for an initial period of exclusive data use, would you be willing to provide timely access to all data generated under this project and associated metadata in accordance with relevant national and funding agency data sharing policies? **YES**

9. FUNDING

Please note that IIOE-2 strongly encourages funded/resourced projects. However, IIOE-2 may endorse projects yet to receive funding/resourcing if IIOE-2 endorsement can be clearly shown to significantly aid in prospects for funding/resourcing.

Has funding and resources to successfully achieve and undertake the project been obtained? Indicate the sources of funding and resources that have been approached and/or secured.

Yes

Funder: Global Challenges Research Fund

Funding amount: £8M

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10. BENEFITS FROM IIOE-2 ENDORSEMENT (1/4 page maximum)

Specify why you are seeking endorsement and how the activity would benefit from endorsement, and how the IIOE-2 SC could assist in the implementation of your project.

SOLSTICE is now a mature project with a completed fieldwork and majority of field data collected, archived and submitted for publications. The project is now in a position to contribute to the wider collaboration, networking and contribution to IIOE2 science objective, synthesis activities and capacity development. In particular:

- Capacity Development is one of the key objectives of SOLTICE. We have developed a wide range of WIO-focused material and online courses of interest to the IIOE2 partners.
- Research excellence is one of the key requirements of the project. SOLSTICE is beginning to produce research publications which span geographical areas outside of the immediate locations of its case studies (Agulhas Bank, Pemba channel and North Kenyan Banks) and are of interest for the IIOE2 partners
- Developing scientific networks is one of our key deliverables and our contribution to the wider IIOE2 objectives
- SOLSTICE is working in the most under-sampled and under-reported areas which suffered from the maritime security issues such as Somali Current LME.

11. OPTIONAL: OTHER COMMENTS/INFORMATION/MATERIAL (length and detail may be at the discretion of and as deemed necessary by the applicant)

Please feel free to provide any other comments, information or materials that you feel relevant to your proposal for the IIOE-2 Steering Committee's information and benefit. You may provide this as general information or provide the additional comments/information/materials as relevant to any of the specific Sections above.

(Signature of the PI)

Dr Ekaterina Popova



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