Meeting Minutes
Joint IORP/SIBER Plenary Session, IORP-20 Panel Meeting

Date: 2024/03/4-8 **Venue:** BRIN, Lombok, Indonesia

Part 1: Joint IORP/SIBER Plenary Session

Zoom link:
https://zoom.us/j/96614564397?pwd=bStKWHowVHlreGg0djkwMlNBenVjQT09

Time	Agenda Item
9:00-10:30 Dr. Kiki Syaputri Handayani (chair)	Plenary session (15 mins talk each + 30 mins discussion) ● Talk 1: SIBER related activities in the south-east Indian Ocean (Lynnath Beckley) ● Talk 2: Overview of the 2022 BLOOFINZ cruise in the Argo Basin region off NW Australia (Michael Landry) Pause and discussions ● Talk 3: Contribution of Aged Organic Carbon in the Western Equatorial Indian Ocean, (Sujin Kang) ● Talk 4: Update of SIBER program in Indonesia (Ocky Radjasa) **Discussion**

Words from IOCINDIO chair and Justin Ahanhanzo and invitation by Dr Mari-Alexandrine for IOCINDIO chair to join steering committee of IIOE2.

Talk 1: SIBER related activities in the south-east Indian Ocean (Lynnath Beckley)

Dr Beckley spoke about SIBER contributions from the south-eastern Indian Ocean, and the mentoring of ECRs through specific projects, followed by some highlights:

- Marine Optical Mooring (Curtin University); deployment site for the MarONet buoy is off Rottnest Island, Western Australia. Location for calibration and maintenance of the buoy will be in Hawaii.
- Minderoo-UWA Deep-Sea Research Centre (Prof Alan Jamieson); has DSSV pressure drop and submersible DSV Limiting Factor (5 deeps and Ring of Fire Expeditions 2019-2022). Two papers: Habitat and benthic fauna of Wallaby-Cuvier escarpment, water properties and bottom water patterns in hadal trench environment.
- Minderoo oceanomics, new SIBER member Dr Eric Raes - currently employed at Minderoo Oceanomics. Sampling expeditions, 14 research trips (ship-based & autonomous platforms) including testing eDNA as a tool for conservation. Showing various fishes and the corresponding abundance at different sites.
- Australian Marine Parks (MPAs) focus: can fishing pressure be correlated with eDNA data?; as well as Commonwealth and Western Australia MPAs (area of interest is south coast of WA); Bremer Canyon, where killer whales aggregate, describing isotopes and pelagic food web.
- some key papers relevant to SIBER including Peter Thomson's paper (J. Plankton Research) on "global observing for phytoplankton? A perspective"; and a western Australian kelp detritus export paper hypothesizing large carbon export off the shelf; Wernberg et al - an extreme climate event alters marine ecosystem structure in a global biodiversity hotspot.

She gave details about kelp and lobster work as well as Puerulus: major decline in puerulus settlement from 2006/07, prediction off the mark (Kolbucz J. et al. 2021, Front. Mar. Sci. 628912, 2022 Biogeosciences 192). She finished with a paper discussing sustained ecosystem research on western Australia's reef fishes. She finished up by saying you will assist with anyone lost in "SIBER space"!

Talk 2: Overview of the 2022 BLOOFINZ cruise in the Argo Basin region off NW Australia (Michael Landry)

Dr Landry spoke about the Bluefin Larvae in Oligotrophic Ocean Food Webs investigations of nutrients to zooplankton BLOOFINZ-IO, from a cruise which happened Jan-Mar 2022. The work included investigating regional and seasonal circulation, physics to ecosystem study, system-level investigation combining traditional fisheries methods with process-oriented experiment studies of biogeochemistry and lower-level food web structure and function, larval habitat quality, climate change vulnerability, nitrogen sources and budget, primary production control, plankton community. He highlighted similar work being done on primary production and zooplankton biomass higher in the Gulf of Mexico. The major science elements included mesoscale and regional variability with an emphasis on larval habitat. They looked at underway rates, physiology, trace elements as well as an historical SBT larvae study site where tuna larva collections were made using standard bongo tow nets. Some of

the results showed the abundance of fish. He described how the larval tuna are analysed including the head, otoliths, muscle and stomach. He finished by highlighting the many samples and experiments that were obtained from the cruise.

Talk 3: Contribution of Aged Organic Carbon in the Western Equatorial Indian Ocean, (Sujin Kang)

Dr Sujin Kang - Contributions of the aged organic carbon in the western equatorial Indian Ocean. The research was carried out by the KIOST Indian Ocean Study (KIOS, EP51-IIOE2, 65°-67°E, 20°S-5°N, R/V ISABU). Looked at the carbon and nitrogen cycle, nutrient, oxygen, elements cycle, net community productivity and phytoplankton. She highlighted which isotopes were measured and the details of the carbon cycle study, which depends on the OC source, age and reactivity which has different impacts on the carbon cycle. She showed an informative video of the measurements taken on the cruise.

Talk 4: Update of SIBER program in Indonesia (Ocky Radjasa)

Prof Ocky - an update on Indonesia's SIBER program - he introduced BRIN - a non-university research agency, established in 2021, with 12 research divisions to address national research priority. He highlighted the work being done in earth and marine sciences. There are many local and international partners, in particular universities that BRIN are involved with. He highlighted some of the key work on deoxygenation, ocean acidification, nutrient and carbon enrichment. He also showed their cruise plans and some of their publications including work on variability of eastern Indian Ocean and its impact on climate and maritime continent, and work on microplastics (vertical distribution of microplastics along the main gate of Indonesian Throughflow). BRIN works on physical, chemical, and also biodiversity so he showed the work on Priestia flexa (collected from Java Trench 1000 m).

Nick D'adamo observed that in many forums the issue of plastics has been highlighted and this will be included as a feature in the science plan addendum.

Part 2. IORP Panel Business

Zoom link:
https://zoom.us/j/96614564397?pwd=bStKWHowVHlreGg0djkwMlNBenVjQT09

11:00 - 12:30, 13:30 - 15:00, 6 March 2024, BRIN, Lombok, Indonesia and hybrid.

CLIVAR participants:

Juliet Hermes, Marie-Alexandrine Sicre, SungHyun Nam, Dwi Susanto, Mike McPhaden, Lisan Yu, Roxy Koll, Dongxiao Wang, Agus Santoso (ICPO).

Apologies – Janet Sprintall, Birgit Gaye, Shikha Singh.

Virtual – Eluri Pattabhi, Tammy Morris, Shoichiro Kido, Fahad Al Senafi, Lei Zhou, Bernadino Sergio.

Time	Agenda Item
11:00 - 11:05 Juliet	Quick introduction to IORP Welcome new members and apologies from Janet The CLIVAR/IOC-GOOS Indian Ocean Region Panel provides scientific and technical oversight for implementation of the sustained ocean observing system for the Indian Ocean and coordinates research on the role of the Indian Ocean on the climate system.
OPEN SESSION 11:05-11:45 Lisan Yu (chair)	**Session 1:** Scientific talks (template) and IORP science priorities ● **Talk 1: Ocean observing systems by India** (Pattabhi, virtual 10 mins) Highlighted the ocean information and advisory services (coastal, fishing communities, tsunami warning, ocean climate services, working with academia); in-situ ocean observation systems – data assimilation to provide operational services, model validation, remote sensing, towards understanding oceanographic processes and air-sea interactions. - Impressive Argo deployment and glider deployment. Argo programme was impacted by the pandemic, but has resumed with 61 active Argo floats, transmitting data 13 of which are BGC floats. Drifting Buoy Programme: India deployed 430 drifting buoys since 1991 (40 drifters/year) - Deployment of directional wave spectra barometric drifters (DWSBD) with 30 DWSBD per year as part of Deep Ocean Mission. Tamaryn Morris - might be worth seeing if we can get some to deploy on a takeover cruise.

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	- Wave rider buoy network: comprise of 16 buoys, 15 along Indian coast and 1 at Seychelles, real-time evaluation of operational wave forecast, validation of wave model output - Coastal water quality monitoring buoys for long-term changes in coastal water quality, coastal hypoxia, eutrophication, ocean acidification and species shift. - OMNI Buoy Network: 12 OMNI buoys, 3 coastal buoys, 1 CAL-VAL buoys, 3 Tsunami Buoys, 1 Arctic Buoy - Sea Level Observations: Indian Tide Gauge Network, Indian Tsunami Buoy Network - Eddy variance flux system on indian vessels and AWS on research vessels. - Oceansat-3 launched by india - Ocean observing network – subsurface oceanographic and near surface meteorological-ocean parameters to support operational ocean information and advisory services. - Ocean Data Services – innovative web applications to manage and visualise multi-disciplinary ocean data; Data is being shared through Moes-NOAA OMNI-RAMA joint data portal; Data from EEZ is not publicly accessible but majority of data is (moored buoys, tsunami buoys, argo etc). ● **Talk 2: Shoichiro Kido introduction** (virtual, 10 mins) New IORP member, researcher at JAMSTEC, research focuses on the impact of salinity on the Indian Ocean Dipole and development of semi-global eddy-resolving ocean nowcasting/forecasting systems. Current work looks into synergistic observing networks for ocean prediction as part of SynObs, to extract maximum benefits from the combination among various observation platforms. Engagement in IORP: to contribute to optimize ocean observational network for accurate nowcasting and forecasting of Indian Ocean physical-biogeochemical fields, as an expert of numerical ocean model as well as data assimilation, to expand international research network through communications, provide opinions from young researchers to insure inclusivity and sustainability. *Shoichiro is excited to join the task team that Lei will present on, and will also chat with Shikha to work with her on SDA2.*

Time	Agenda Item
	• **Talk 3: SungHyun Nam introduction** (10 mins) Introduced the KUDOS/KIOST program. He highlighted his first IO work which looked at nonlinear internal waves in the Indonesian seas from geostationary orbit, highlighting usefulness of geostationary satellites. He also discussed how marine heatwaves (MHW) in the Asian marginal seas are connected to the IO through boreal summer intraseasonal oscillations (BSISO; Dasgupta et al. 2024, JGR Oceans, doi.org/10.1029/2023JC020602). BSISO phases 5, 6, 7 are linked to MHW in northern East China Sea and southern Yellow Sea, where mixed layer shoaling is more important than enhanced shortwave for MHW genesis. He spoke about the regional perspective of observations and the SCTR. To engage with IORP - KUDOS workshop (held annually since 2017, except 2020 and 2021), KIOS cruises since 2017 targeting western Indian Ocean, RAMA surface and ADCP moorings over decades, Station-K (RAMA-K) subsurface mooring and bottom-mount since 2019 in the centre of SCTR. They now have a 5 year long time series and will be supporting the deployment of further 'super moorings'. Data will be published via OceanSITES. Also involvement in ECRs (e.g., students and ECRs joined KIOS R?V Isabu every year since 2017). Comments - it would be great to be able to open up berth spaces on the cruises Agus: Are/will you be working with biogeochemical communities, e.g., ocean colour could be contributing to MHW genesis by containing solar radiation in the mixed layer? Yes, have current collaboration for the WIO. Fahad's presentation for viewing in own time ***Discussion*** (new direction for scientific research).
11:45 - 13:00 Sunghyun (chair)	**Session 2a:** Business matters and affiliated programs, more discussion than formal presentations. • IRF update (Nick d'Adamo) Nick gave an update and announced that he is stepping down and there will be discussions around this at the IRF meeting tomorrow. The initiation of IRF went back to 2010, the brainchild of the late Gary Meyers, to create a forum of people who are leaders of operational divisions from institutions, to facilitate provision of resources. E.g., if IORP, SIBER, requires financial, technical, or strategic support this can be raised to higher intergovernmental organisations, e.g., IOC.

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	Roxy: What is proposed in terms of moving forward, how do we take the leadership on? Nick - the IOGOS chair will look for an IRF chair. The opportunity is there for everyone to find a chair who has currency and friends in high places so that resources can be found. The BCG sensors were one example of a success story. ● IOGOOS update (Srinivas Kumar/Nagajara Kumar) Mentioned collaboration platform (COMSAT?), IOGOOS participation at Hyderabad meeting regarding IIOE-2 future plans; 2 projects (other than IORP and SIBER) on modelling for ocean forecasting and process studies, and Indian Ocean remote sensing project (more detail at tomorrow's IOGOOS panel meeting) - harmful algal bloom, water quality forecast system. 2nd project on modelling and ocean forecasting: towards the UN Ocean Decade, providing real-time ocean services to various countries (e.g., Seychelles, Maldives, Sri Lanka, Mozambique), ocean waves prediction with a website to give access to various member countries. Indian Ocean DCC and have been collecting information from regional themes and stakeholders. Capacity building - several remote sensing and data analysis and visualisation courses held at INCOIS (machine learning tools, modelling, ocean color remote sensing, coastal observations). IOGOOS and ocean decade - INCOIS have established the IORDCC allowing close collaboration with IOGOOS, involve in OceanPredict, CoastPredict, and in Barcelona Ocean Decade conference (GOOS alliance forum). Also develop ocean literacy programs which have been taken to the national level (e.g., 5 workshops to raise awareness on ocean water and safety). Supporting IOC INDIO elevation process from regional office to subcommission. ● Update on SOLAS conference (Lisan Yu) Lisan gave an overview of what SOLAS is, an international interdisciplinary program on biogeochemical-physical air-sea interactions (inc. greenhouse gases, atmospheric chemistry, marine ecosystems, also integrated topics on polar oceans, upwelling systems, Indian Ocean, climate intervention, science and society). Summary 2022-2023: ECS committee launched in Jan 2023, new panels to promote ocean-atmosphere coupled research at regional scale, workshop, summer school, endorsed

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	projects, IO biogeochemistry group. She highlighted the 9th SOLAS Open Science conference 10-14 Nov 2024 in Goa celebrating 20th anniversary (Shikha has been invited as a keynote speaker!!) She also highlighted her product - OAFlux2 - 0.25 analysis of global ocean-surface heat flux, moisture and momentum fluxes, resolves coastal upwelling. Dongxiao highlighted the great work and emphasized the need to make it accessible to scientists. ● Early Career Researchers (Roxy, on behalf of Shikha) Shikha guiding ECR activities, just gave birth. IORP has been active in integrating ECR activities, proposed to CLIVAR an Indian Ocean Ambassador Program (do not to be a member of IORP to engage with IORP activities). IORP is an exemplary panel as it is working with high activity and regional diversity, as well as career diversity. The panel is also interacting with other panels well. Highlighted SDA2 framework and the success in its implementation at summer school. ● CLIVAR brief introduction to, Agus Santoso Ocean Decade involvement (all)
13:00-13:30	**Lunch**
13:30-14:00 Juliet (chair)	**Session 2b:** Updates on IndOOS-2 and key activities ● RAMA update and BAMS paper (Mike McPhaden, 10 mins) JAMSTEC involvement in RAMA has been decreasing because of internal budgetary pressures. KUDOS partnership maintaining SCTR. Most of the sites have not been serviced since the beginning of the pandemic. We are hanging on thanks to KUDOS and KIOST. Line shifted from 61E to 65E and station K will move from 61E, 8S to 65E, 8S. This helps keep all moorings on the same meridian Very positive partnership with Korea. The partnership with India has faltered due to COVID. The US paid a visit to India in January 2024 to discuss new India import duty for scientific equipment used in RAMA used for enhanced forecasting of the monsoons. The expectation is that India will soon waive import duties for scientific equipment which will benefit the country.

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	NOAA and MOES have an MoU that specifies 75 ship days a year for RAMA but this hasn't happened due to COVID. Ravi is assisting with getting 2 RAMA cruises for 2024. BMKG/NOAA partnership specifies a cruise per year for RAMA, but no cruises since 2019. BMKG remains interested in working with NOAA and aiming for a Sept 2024 cruise but there are ongoing discussions with many hurdles, and time running short for September 2024. 2024 will be an interesting year as we are coming out of a big El Niño and there is a forecast for La Niña in the second half of the year. La Niña normally forces a -ve IOD. NOAA CFSv2 forecast for DMI initiated in March 2024, predicting a significant negative IOD. In the SCTR this means a shallower thermocline. Which will make for interesting cruise results with new moored turbulence sensors being deployed on the 65E, 8S RAMA mooring on the May-June KUDOS cruise on the Korean RV Isabu. BAMS article (Sprintall et al. 2024) - https://journals.ametsoc.org/view/journals/bams/aop/BAMS-D-22-0270.1/BAMS-D-22-0270.1.xml Proposed cover photo from the last KUDOS cruise. Going through the table on the status of IndOOS components pre-and during/post pandemic. RAMA shows 87% data return from all of the sites in Dec 2019, but by Dec 22, 2% data return, a total collapse of the observing system.RAMA is IO component of global tropical moored buoy array. The Pacific and Atlantic arrays fared much better. The article addresses the critical gaps not just in the RAMA array, but also Argo, SVP drifters and high-resolution XBT transects. Highlighted his paper in Nature Communications Earth & Environment (Jarugula and McPhaden 2023) paper on the impact of IOD on eastern tropical Atlantic salinity through Congo basin. It has implications for the predictability of floods and droughts in the Congo River basin and salinity variations in the coastal zone of the eastern tropical Atlantic that affect ecosystems, fisheries and coastal weather. Pieces of this sequence were known but this is the first study that brings it all together. Could similar impacts affect East Asia and the marginal seas?

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	o *There was a mention of who can take over the IndOOS Task Team from Motoki.* ● RAMA and OSSE's TT (Zhou Lei, virtual 10 mins) Lei – highlighted the motivation and goal of the TT: to evaluate the negative and long-term impacts of COVID-19 disruptions and their consequences. Summarised the ToRs: data collection – RAMA, Argo, drifters (2019-2022), evaluate the impacts on IOD, surface fluxes, monsoon, etc., optimization for IO observation system, collaboration with other CLIVAR panels (monsoon, TBI RF) and international collaboration proposals. Provided brief report on meeting Feb 16, 2024 (presentations by Youmin Tang and Xiaojing Li on OSSE application). Discussed how the existing RAMA observations improve the current climate forecast (e.g., monsoon, IOD, ENSO) and which sites are the most critical ones. Two methods: - *Targeted observation analysis:* Seeking optimal sites of observations that can lead to the largest decrease in initial uncertainties and best improve prediction skills. Work is based on idealised numerical experiments (no real obs data). - *OSSE* is a modelling experiment used to evaluate the impact of new observing systems on operational forecasts when actual observational data is not available. Important to note with TT that we can invite in other experts outside of IORP. Presented a future plan: Impact on IOD, heat fluxes, Monsoon, extend to Pacific (ENSO, extratropics), polar climate, etc. For our TT moving forward, it will be important that we not just consider SST but also think about the value of the subsurface measurements of

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	RAMA (and other platforms like Argo?) as well as any surface fluxes. We will have to think about what metrics are useful here to evaluate. Link with what Synobs has done already. What cross-panel members we might entrain to join this TT. Reach out to the panel chairs of GSOP and monsoons for example, for them to solicit from their panel a person who might be interested? Or look through their membership available on the CLIVAR web site. Also note, that SynObs group has also identified Hasibur Rahman, INCOIS, India to investigate their output for the Indian Ocean (so we could ask them to join?). Hopefully Shoichiro can assist *There is a consideration for the task team to be proposed as a SCOR WG*. Discussion
14:00-14:30 Juliet (chair)	**Session 3:** Updates from other programs ● GOOS co design (Tammy Morris, virtual 10 mins) GOOS has launched 3 integrated programmes: Ocean Observing Co-design, Observing Together, and CoastPredict. Tammy's presentation focused on Ocean Observing Co-design - develop a more user-focused co-design process to evolve a truly integrated, responsive ocean observing system. Observations-forecasting-end users. E.g., if we deploy a mooring in a specific location, will that address the societal need/benefit as possible. There are 6 exemplar programs: Ocean carbon cycle, tropical cyclones, storm surge, marine life, boundary currents, and marine heatwaves. Highlighted on the boundary current exemplar which Tammy is involved in, and spoke on the Greater Agulhas Current pilot region, looking at low-cost technologies, how the Agulhas Current impact on shelf and coast (doing survey using a small boat, 3-4 months from Algoa Bay, proof of concept). ● ReMoTURB (Bernadino Malawene, virtual 10 mins)

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	Strengthening fishery and food security in Mozambique. Local community relies on fishing. Fishing catch is declining (graph from 1990). Bazaruto sub-project: oceanography (UTR network, Lagoon UTR, CTD, weather station, autonomous research vessel, moored array), coral, seagrass. Showed field campaigns (March, September, November 2023). Dino also leads one of the CoLaB sites. ● IORP Annual Report to SSG, SSG feedback and update on IORP-19 tasks *(Juliet)* *Calling for next year's membership (inc. those from Indonesia)* *THANKS TO ALL MEMBERS WHO HAVE BEEN SO ACTIVE WITH THEIR TASK TEAMS* *Many of the actions have been completed and reported on KUDOS Cruise opportunities are shared.* *Mike will communicate with SungHyun Nam offline via email for sharing the data from KIOS, starting from the delayed mode data* *Action 10: To bring the science-to-policy idea to CLIVAR SSG and promote it as a cross-panel activity.*
14:30-14:55 Marie- Alexandrine (chair)	**Session 4:** Discussion session Some suggestions to include: ● *Discussion around potential new TT eg Science to policy TT* *Cross CLIVAR?* ● *Relationship with IOGOOS and IOCINDIO.* ● *Potential policy influence.* ● *SCOR update.*
14:55-15:00	**Wrap up.** Consolidate action items (5 mins) ● Next meeting. *To be determined. Quarterly telecons and in person once per year. Potential to meet with other IO panels and IIOE-2 in 2025 .*

Dwi presented his work in the ITF, TRIUMPH program, showing the best place to observe the ITF, tidal mixing in Indonesian Seas – remote sensing approach (Susanto et al. 2024). Largest mixing along ITF exit passages, stronger in SE Monsoon than NW monsoon, stronger in El Nino than La Nina. He also highlighted extreme events (cooling) and the local impact.

Temperature drop in Alor Strait (12°C within an hour) with salinity increased from 30 PSU to 34-36 PSU. He went on to show groundwater level in the Indonesian maritime could be a precursor to the El Nino Easterly anomaly - upwelling- cool SST - dry air. He finished up discussing the Fujiwara effect (impact on temperature and chlorophyll).

Agus CLIVAR

Introduced himself, research background in Indian Ocean and Pacific, most recent IO papers on "Indonesian throughflow variability and linkage to ENSO and IOD in an Ensemble of CMIP5 models", "Understanding biases in Indian Ocean seasonal SST in CMIP6 models". Highlighted the 2 Ocean Decade events. CLIVAR is a WCRP project with a number of panels which are permanent and research foci which are 3-5 years time frame. Gave a summary of research highlights, soon to be a call for research foci, there are webinars and the CLIVAR summer school on biogeochemical processes, and CLIVAR Exchanges.

The call for new panel members will be open in July.

Juliet raised: why does GOOS only co-sponsor IORP and not the other?

- Answer from the floor: Historical issue, at the beginning there was no observing system and in 2002 as IOGOOS formed there was a big meeting in Mauritius. Initially CLIVAR said the monsoon panel was focusing on the IO though in fact they weren't doing anything about the IO. But by this time the originators (Gary Meyers, Mike McPhaden and others) had begun speaking to IOGOOS and they were interested in co-sponsoring with CLIVAR or sponsoring alone if necessary.

Are there other ECR networks for the other basins?

- Not as formal/structured as done by the IORP which are leading the way with ECR.

Emily Smith

Normally US Argo program manager but on loan to UNESCO, biological background. Gave an overview of GOOS, showed the GOOS vision and mission. She spoke about how to engage with GOOS via projects: TPOS, DOOS, AtlantOS, IMDOS, SmartCables, Ocean Best Practices. GOOS has 4 sponsors (WMO, UNESCO IOC, ISC and UNEP), then there is the management team. 16 GOOS Regional Alliances (GRAs), 76 National Focal Points (NFPs), 3 specialist panels, OOPC, BGC and BioEco. Then the observing coordination through OCG, GOOS networks, GRAs and national focal point. On top of this is the modelling and data which consists of oceanobs and ETOOFS. Overarching all of these are the UN Decade projects. 3 are GOOS led and 91 projects that mark ocean observing as a key theme, also dialogues with industry, research community and WCRP. Ultimately GOOS answers to member states, users and beneficiaries.

There are outside partners (eg. GCOS, IODE, POGO, GOA-ON and GEO). Now initiating SOFF (Systematic Observations Financing Facility) – financing mechanism that supports countries to close the basic weather and climate observations data gap. Behind all of this is the GOOS Steering committee. There are other cross cutting activities - data and data portals, as well as co-design and capacity development.

How to engage with GOOS?

- Through the GOOS projects (eg. TPOS, Atlantos); GOOS Regional alliances, national focal points.
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Nick - what is the criteria to portion funding among GOOS constituents?

- This year UNESCO gave the IOC a 1% increase and a portion of this is for GOOS, they are told what this will go towards (by IOC). IOGOOS was listed as a line item for $70,000. There was also money for ocean forecasting but not over what region so there is some flexibility.

Mike - in terms of the human scale, how many people are involved in GOOS? From all over the world.

- Not sure, perhaps an interesting study?

Marie-Alexandrine - there was a 1% increase that became effective in January but there hasn't been a financial meeting yet. So what is the situation?

- With the US rejoining there may be extra money and we don't know where that is going.
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Questions as to why there is no Indian Ocean project within GOOS

- Was IIOE2 a GOOS project? The IOC through the GOOS project would allocate $10,000 for IOGOOS and then IIOE2 would be supported.

Would the Indian Ocean community consider putting a project?

- Currently reviewing the process of what it means to become a project

Not much in the way of coastal projects?

- CoastPredict is a GOOS Ocean Decade project. Difficulties with taking observations in EEZs and if they empower people then sharing data becomes an issue.

Future of SIBER after 2025 - SIBER/IORP merger is not a viable solution at this point due to lack of funding.

Nick suggests that the Cochairs of groups (IORP, SIBER, IOGOOS, IOCINDIO…) create a well crafted letter to the executive director of the IOC to get financial support across those groups. Referring to the leverage of bringing 12 people to a meeting rather than 5 or 6 allows for leverage from the host institution.

IMBER comes to an end at the same time as this phase of IIOE2 hence we are looking to find a new home for SIBER and potentially viability in their own right. SIBER total budget (meeting expenses) is $7500 per year.

Marie-Alexandrine – it has to go through the member states. Or it has to go through the national focal points.

Emily - if GOOS had letters from organisations to say these are our needs.

Marie Alexandrine - IOCINDIO was formed at the beginning of this year as a sub-comission, needing 9 letters from member states. We can check which country has sent a letter of interest to be part of the sub-comission, currently 10 letters but originally there were 19 member states. If you want to help, you should go to your own country and check with focal points and convince your country to send a letter of interest to be a member of IOC.

IRF meeting
Action item - Write up the IORP needs. Write the work up as an IORP IRF resource need and the work done and what impact the gaps are having. In this years resources needs statement, we may make a specific point about the cash that IOC used to give a large amount of leverage. Include reference to IOCINDIO in this letter.
Also suggest that we contact our own focal points.
Srinivasa – what are the coastal processes that are important? Does IORP have some ideas of the coastal processes that need to be measured.
Ocean decade – important for us to put these activities out as ocean decade calls.

Actions:

- Shoichiro Kido- to join the TT that Lei presented on. Also to chat with Shikha to work with her on SDA2.
- SungHyun Nam - berth space on KUDOS cruises.
- Would really like Lisan/Shikha to maintain the link of SOLAS with IORP on our behalf.
- Member to take on IndOOS2 tracking TT (Janet to follow up with Sunghyun) .
- SCOR WG for Lei's TT??

- To bring the science-to-policy idea to CLIVAR SSG and promote it as a cross-panel activity.
- Someone to step forward and assist with the ECR Ambassadors (Janet to ask Fahad).
- Suggest submitting IIOE2/IndOOS to GOOS as a project. (TPOS and ATLANTOS are GOOS projects).
- IRF Action item (on hold until we have an update about chair) - Write up the IORP needs. Write the work up as an IORP IRF resource need and the work done and what impact the gaps are having. In this year, resources needs statement, we may make a specific point about the cash that IOC used to give that enabled a large amount of leverage. Include reference to IOCINDIO in this letter.
- Does IORP have some ideas of the coastal processes that are important to be measured?
- Ocean decade – important for us to put these activities out as ocean decade calls, can we make a list of Ocean Decade projects related to the Indian Ocean and that panel members are involved in.
- Set the next IORP meeting any time after 20th May timezones - 8:15 (west coast US, can do early)=17:15 = 01:15 Sydney and Japan.