



Outcome of station ring-around May 2020

Last changed: 06. July 2020

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ICOS OTC 2020

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In May 2020 all 21 ICOS-Oceans stations were contacted by the station ring around group which consists of the MSA chairs and members of the OTC. The station ring arounds are planned to happen every 6 months. The stations were asked to answer the questionnaire (see appendix) about technical and financial issues of their station. Each station was offered a chance talk about the questions during an online call. Nearly all stations (19 out of 21) participated in the station ring-around. This was the first time the station ring around took place. Thus, in the future only the technical details of the stations need to get updated. More importantly, we learned a lot about the questionnaire itself and it was updated for the next ring-around in fall 2020, in order to make it easier to answer and to evaluate the responses.

Here we present the outcome for labelling issues of the network, the PI's motivation to be a member of ICOS and the financial status of the network. All questionnaires can be found on the ICOS fileshare server under ...\\Ocean\OTC\stations and then in the individual station folders (<https://fileshare.icos-cp.eu/s/YcQAmA3mQe6BKox>).

What is preventing labelling?

In May 2020 6 out of 22 ICOS marine stations are labelled. A lot of stations are in the process of the step 2 labelling process. The following tables summarizes the most important reasons for a delay in labelling:

Reason	Strength of response
Lack of resources	
More validation is needed (samples, external data)	
Value of being labelled is questionable	
External technical problems	
Changing labelling criteria	
Lack of spare instruments	

What are your expectations by being involved in ICOS?

The following table tries to summarize the response of the station PI's. Below the table are some specific points that did not really fit into a category and are more like suggestions and remarks on the improving the relevance of the HO and OTC to the community.

Expectation	Strength of response
Training	
Data handling (raw and final)	
Distribute information (new developments, ...)	
Technical support	
access to equipment/analysis facility	
Assistance with funding	
validation/calibration help (with equipment and/or knowledge)	
network promotion (international projects, ...)	

- Data handling: Data ingestion in Carbon Portal is complicated
- OTC should develop SOP's
- Head Office is too remote

Financial status of the ICOS Oceans network

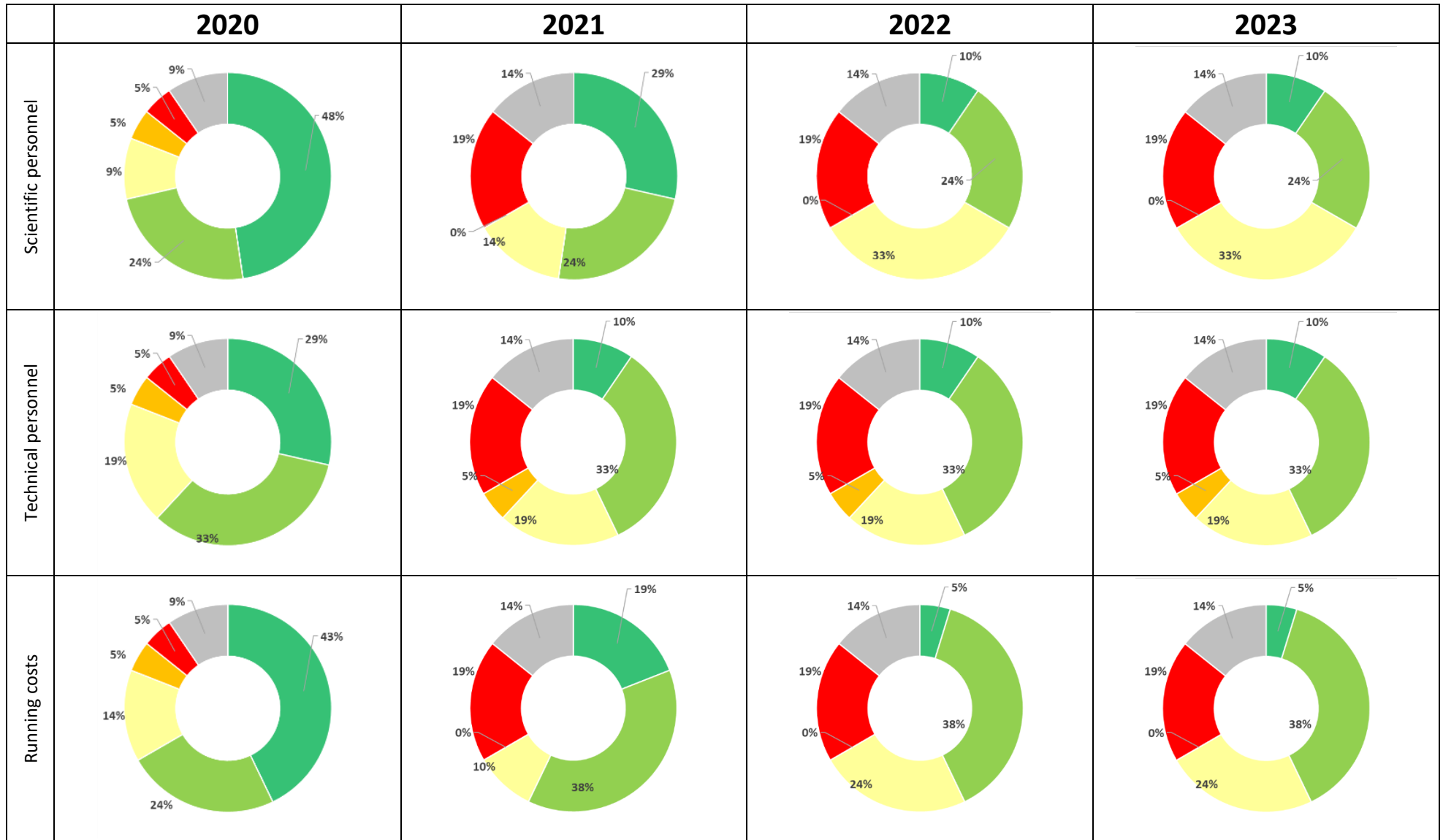
As stated above the questionnaire was not optimally designed to answer the question about the financial status of the network. For the future calls, this will be changed and PI's will be asked to judge their financial situation for the coming years in four categories (Scientific personnel, Technical personnel, running costs and investment) following a school grade system. For this station ring around we tried to translate the station PI's answers into this scheme. Please be aware that this might introduce some bias, but we are confident that the overall picture is correct.

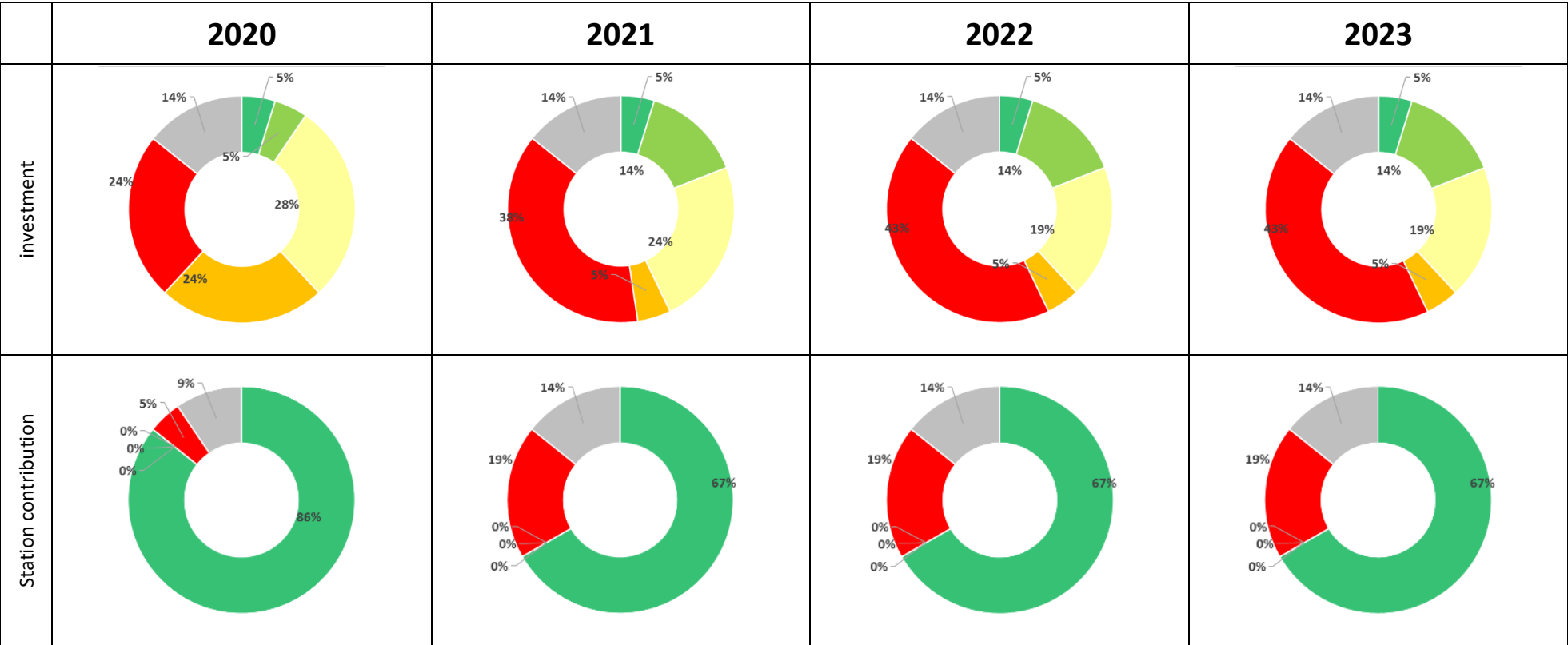
5	4	3	2	1	
No funding	Funding questionable	Basic/not sustainable funding	Sufficient funding available	Secured/sustainable funding	No response

The data that were used for the pie charts can be found under >>ICOScloud\ICOS RI groupdisk\Ocean\OTC\stations\questionnaire\2020-05\2020-05_budget.xlsx (<https://fileshare.icos-cp.eu/s/CdXTCRzzTzsRm7F>).

Here some more specific comments resulting from the financial part:

- Usually ICOS funds are coming from NATIONAL funding agencies or bodies
- Non-ICOS funds can be from any source:
 - In kind contribution from station host institute
 - Participation of stations in other RI's (ERIC or NOT)
 - Research projects (soft money)
 - Any other
- **Needs to be clear to everyone: ICOS ERIC (i.e. HO) doesn't/can't support individual station in any domain**
- In some countries it's the station that pays the ERIC





Summary

The outcome of this station ring-around will form the basis for the OTC'S work plan for the coming months. The slow progress in labelling is directly connected to the financial issues, that are discussed further below. The OTC will investigate how the stations can get assistance with spare instruments to avoid data gaps.

The majority of stations mentioned training as an expectation even before data handling. During the MSA in June 2020 a new training scheme was agreed on. This will become part of the evaluation through the following station ring arounds. For the future it will be important to design appropriate training work shops based on the MSA's input. Another important point that was mentioned more than once is that for some PI's it's questionable what the benefit is of being a labelled ICOS station.

The financial situation can be summarized as follows:

Station contribution: More than half of the stations report a good situation regarding the station contributions. This means that most countries step up and fulfill their basic commitment. However, there is still a significant number of stations that need to find money or take it from their research funds to pay the stations contributions. This can be a significant financial burden for the station and the way this is formulated it's not a sustainable way to operate a station.

Investment: The table above shows very clearly that the marine network is fundamentally underfunded when it comes to instrumentation. We guess that all stations were more or less well outfitted during the starting phase of ICOS but now they are left alone with their instrumentation. We are missing a long-term plan to sustain the networks infrastructure.

Running costs and scientific personnel: The two categories are mirroring themselves showing that most of the funding for scientists and running costs come from 3rd party funding. The near future looks generally good (though not great) and questionable into the future. This also implies that ICOS scientists are spending significant time applying for funding to run their stations. Again, this is an enormous burden and is far away from being sustainable.

Technical personnel: Here it looks a little bit better than for the scientific personnel, but still less than half of the stations report a good situation for the coming years.

Appendix - questionnaire

Date of station call:

ICOS station:	
Name:	
Please list all names and email addresses who should be on the ICOS Oceans MSA email list:	

Short station description: (how often do you visit the station, ...)	
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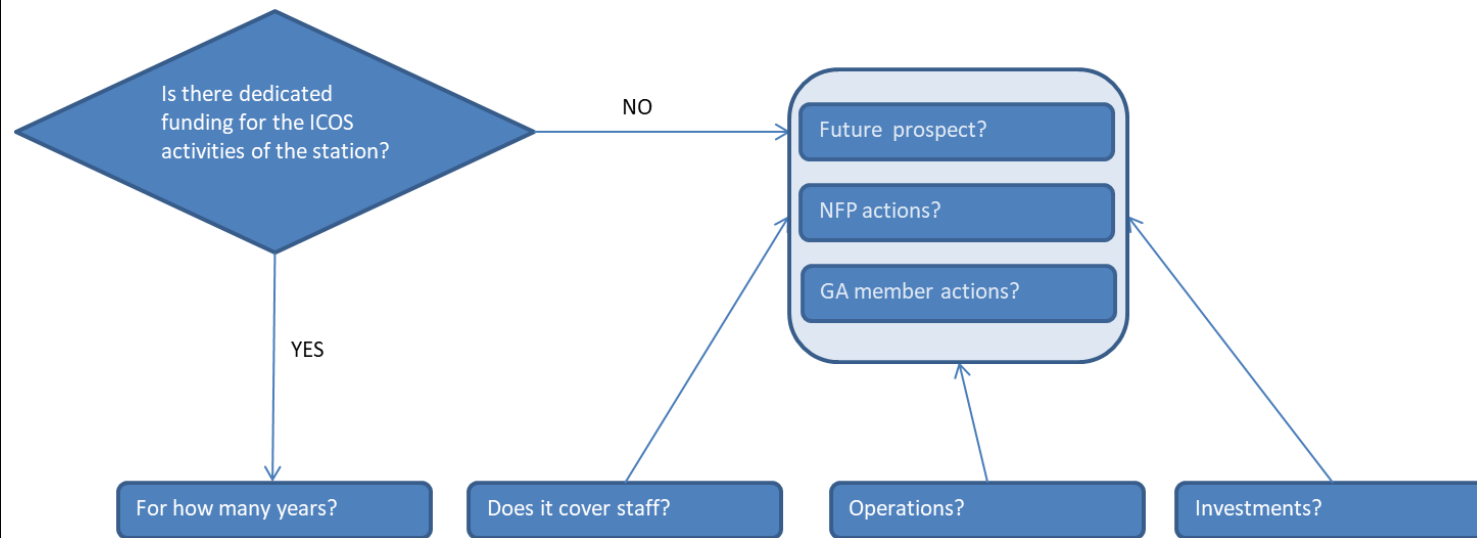
	Sensor	Serial#	Last calibration	Comments
What instrument do you use for measuring pCO ₂ ? (e.g. Contros HydroC, GO,...)				
If GO (or similar), what sensors do you use for measuring ...	Sensor	Serial#	Last calibration	Comments
... xCO ₂ ?				
...equilibrator pressure?				
... equilibrator temp?				

What instrument do you use for Sensor measuring...	Serial#	Last calibration	Comments
... atmospheric pressure?			
... SST?			
... SSS?			
... alkalinity?			
... oxygen?			

Any problems during the last 2 years? (please provide just rough information in bullet points)

Additional sensors/equipment in your lab that could be potentially used in the ICOS network?

Funding Situation



Is there dedicated funding for ICOS activities of the station?	
If NO is there any prospect in the near future (i.e. within this year)?	
If NO, how do you run the ICOS station?	
Any actions taken by the National Focal Point?	
If YES	
What is the funding source?	
How many years are covered?	
Is it adequate?	
Covers staff costs?	
Covers operational needs?	
Covers investments?	

Is the National GA member and body aware of funding issues?	
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What is preventing labelling?	
Technical issues	
Funding	
Personnel	
Equipment	

What are you expecting from your involvement in ICOS?	
Expectations from OTC	
Expectation from RI (Head Office, CP)	

Year	2019	2020	2021	2022	2023
Personnel					
(How many FTEs are funded via a dedicated ICOS budget. If none then highlight that all personnel working for ICOS is on "in-kind contribution" basis, but also in this case mention FTE nr.)					
PI					
Chemist					
Mechanics eng					
Electronics eng					
Post doc					
PhD					
Operational					
calibrations of equipment					
standards (gases, CRM, etc)					
lab reagents					
consumables					
spare parts					
travel					
ship time					
other (e.g. sea survival, medical tests, etc.)					
Investments					
new equipment					
new hardware					
Station fees					

