INTERGOVERNMENTAL OCEANOGRAPHIC COMMISSION
(of UNESCO)

Twenty-seventh Session of the IOC Committee on International Oceanographic Data and Information Exchange (IODE-XXVII)

UNESCO Headquarters, Paris, 22-24 March 2023

Reporting Summary of IODE NODCs and ADUs

IODE NATIONAL REPORTS 2021-2022 SURVEY: DATA MANAGEMENT (NODC AND ADU)

1.1   ONLINE SURVEY RESPONSE

The online survey was opened on **26 August 2022** and closed on **15 October 2022**.

A total of **74 valid responses** was received. 9 responses from "I do not work in a data centre" were removed from the survey results. These were mostly from IODE national coordinators for data management for member states that have not established any data management facility.

There were 5 responses under "another national data centre":

(i)   Cameroon
(ii)   Portugal (Instituto Hidrografico)
(iii)   Poland (Institute of Oceanology, Sopot)
(iv)   Kuwait (Kuwait Institute for Scientific Research)
(v)   Finland (Finnish Meteorological Institute)

Their responses have been included in the analysis.

The full list of data centres indicating which responded and which did not is attached as Annex 1.

An online and searchable version of this document will be made available through https://surveys.iode.org/

Whereas previous reports showed only the results for the survey of the past 2 years, this report now also shows the results for 2021-2022 and the preceding 2019-2020 to allow comparisons. However the current report does not provided detailed information on each country. That information will be made available through the online version of the report.

1.2   QUESTIONS

The survey included the following 47 questions (click on the links to jump to the reporting on each question):

- Q1: Please provide some information on yourself so we can contact you again. (confidential information, not included in this report)

- Q2: Your position (job title)

- Q3: Have you entered your information in OceanExpert? (http://www.oceanexpert.net)?

- Q4: In what type of data centre do you work?

- Q5: Does your country formally have a centralized (single centre) data management system or a distributed (multiple centres) data management system?

- Q6: Does your country and/or data centre have a documented data management strategy?

- Q7: Has your country applied (in 2019 and/or 2020) the IOC Oceanographic Data Exchange Policy adopted as Resolution IOC-XXII-6 in 2003? (see http://www.iode.org/policy)?

- Q8: Does your data centre have its own data policy?

- Q9: Does your organization have a documented Quality Management System (QMS)?

- Q10: Does your organization hold ISO 9001 certification?

- Q11: If you are an NODC: do you plan to implement the IODE QMF accreditation process during the next inter-sessional period (2023-2024)?

- Q12: What type and how many staff (FTE - Full Time Equivalent) were working at your data centre in 2021/2022 (averaged)

- Q13: How has this number changed year by year since 2019-2021 (previous inter-sessional period)

- Q14: What was the approximate annual operational budget for your data centre (average for 2021 and 2022) (excluding staff cost) [converted into US Dollars]:

- Q15: How has this number changed year by year since 2019-2020 (previous inter-sessional period)

- Q16: In what IODE projects has your data centre participated in 2021 and/or 2022 (data management): (choose one per row)

- Q17: List any other (non-IODE) data or information activities/projects in which your centre is involved. PLEASE ADD THE URL IF AVAILABLE

- Q18: For measurements from vessels (research, ships of opportunity,etc) for which data types do you manage data

- Q19: For measurements from fixed stations/platforms for which data types do you manage data

- Q20: For measurements from moving platforms for which data types do you manage data

- Q21: Any other platforms, instruments, etc ?

- Q22: Did you handle (incoming) (delayed mode or real time)?

- Q23: Did your data centre have links with, and/or manage data from major science programmes (e.g., CLIVAR, IMBER, Argo, Future Earth, SOLAS, etc) in 2021 and/or 2022?

- Q24: Does your centre collect or manage GOOS Essential Ocean Variables (EOV)? Please tick all EOVs collected or managed during 2021-2022. Note that more info (including specifications) can be found on the web page http://www.goosocean.org/eov

- Q25: Does your centre maintain a data discovery portal for the data managed by your data centre in 2021 and/or 2022?

- Q26: If you answered yes to the previous question, then is the database openly available online?

- Q27: What kind of quality control procedures (if any) are used in your institution? (add bibliographic references, if possible)?

- Q28: What spectrum of services (e.g. data and products) were started/continued/ended by your centre in 2021 and/or 2022?

- Q29: List the most important products and services (up to 15) provided by your data centre in the period 2021-2022. These may be new (started in 2021/2022) or ongoing products/services. If they are online products/services then please also provide the URL.

- Q30: How were data made available (e.g. by request, on-line access, etc.) in 2021 and/or 2022? (you can tick multiple rows but only 1 per row)

- Q31: Indicate the average number of requests and services your centre provides in a year

- Q32: Who are your users?

- Q33: What is the geographic origin of your users?

- Q34: Do you participate in a national distributed data network?

- Q35: Do you provide data through the following international data networks?

- Q36: Did you provide data to World Data System (WDS) in 2019 and/or 2020?

- Q37: Did you send data to global specialized data centres (that are not ICSU WDSs) such as GDACs in 2019-2020?

- Q38: In how many IODE training courses did you participate in 2019 and/or 2020

- Q39: Did the IODE training assist you in your work after you returned home?

- Q40: In how many other training courses did you participate in 2019 and/or 2020 organized by national or other organizers?

- Q41: How many working days would you estimate the contribution of your data centre to IODE through participation in IODE activities (e.g. participation in IODE meetings for which your data centre or country funded your trip) during the period 2021-2022 (2021 and 2022 added together)?

- Q42: Will your country be providing direct financial support to IODE in 2023-2024 through the IOC (confirmed)?

- Q43: Would your country/data centre be able to provide a visiting expert/secondment to the IOC Project Office for IODE in 2023-2024 (either working at the IODE project office in Belgium, or working from his/her usual place of work) for a period of 3-12 months?

- Q44: Is the host institution of your data centre involved in activities related to the Sustainable Development Goals? (you will find more information on http://en.unesco.org/sdgs/ioc)

- Q45: If you answered "yes" to the previous question then please provide details:

- Q46: Is the host institution of your data centre planning activities for the UN decade of Ocean Science for Sustainable Development?

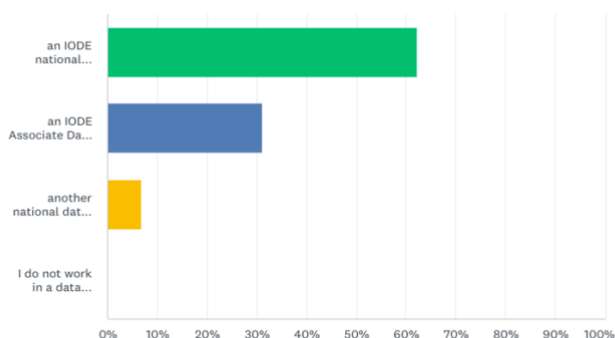- Q47: If you answered "yes "to the previous question then please provide details:

1.3   SURVEY ANALYSIS

**Q3: Have you entered your information in OceanExpert?
(http://www.oceanexpert.net)**

result: 98.65% have entered information in OceanExpert (100% in previous survey) (1 indicated not having registered)
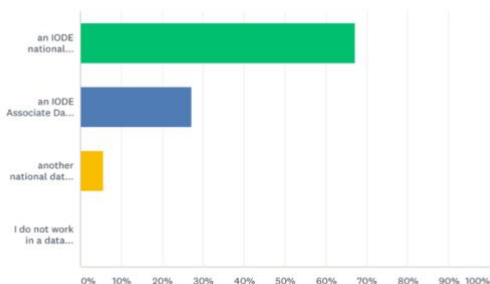
Q4: In what type of data centre do you work?

Answered: 74   Skipped: 0

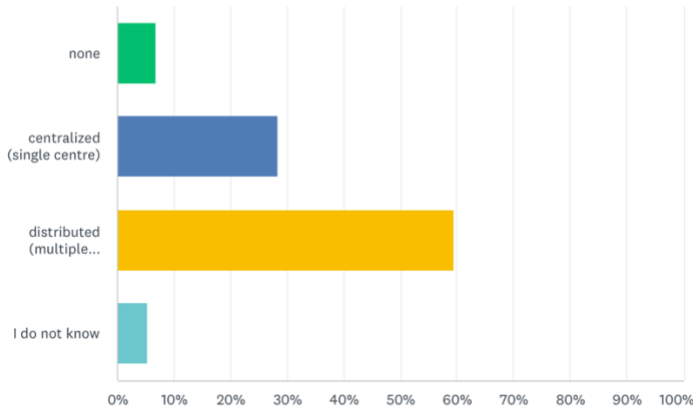| ANSWER CHOICES	RESPONSES	
an IODE national oceanographic data centre (NODC)	62.16%	46
an IODE Associate Data Unit (ADU)	31.08%	23
another national data centre	6.76%	5
I do not work in a data centre	0.00%	0
TOTAL		74

Previous survey:

Answered: 70   Skipped: 0

ANSWER CHOICES	RESPONSES	
an IODE national oceanographic data centre (NODC)	67.14%	47
an IODE Associate Data Unit (ADU)	27.14%	19
another national data centre	5.71%	4
I do not work in a data centre	0.00%	0
TOTAL		70

It is noted that the number of ADUs has increased by 8 since April 2021 (IODE-XXVI). See list of ADUs on https://iode.org/index.php?option=com_content&view=article&id=373&Itemid=100089. One new NODC was established in 2021 (Panama).

Q5: Does your country formally have a centralized (single centre) data management system or a distributed (multiple centres) data management system?
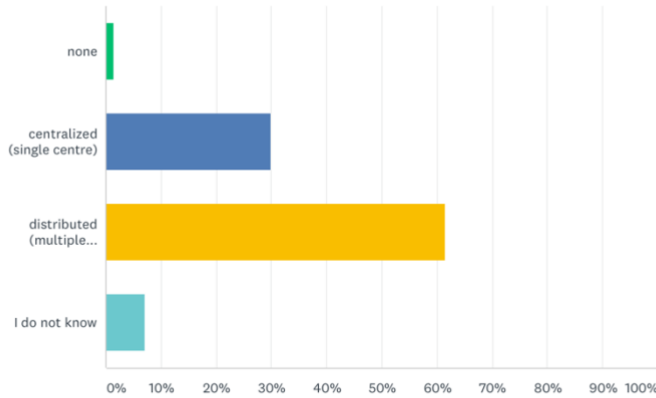
Answered: 74   Skipped: 0

ANSWER CHOICES	RESPONSES	
none	6.76%	5
centralized (single centre)	28.38%	21
distributed (multiple centres)	59.46%	44
I do not know	5.41%	4
TOTAL		**74**

Previous survey:

Answered: 70   Skipped: 0

ANSWER CHOICES	RESPONSES	
none	1.43%	1
centralized (single centre)	30.00%	21
distributed (multiple centres)	61.43%	43
I do not know	7.14%	5
TOTAL		**70**

Results for 2021-2022 are not significantly different from 2019-2020.

Q6: Does your country and/or data centre have a documented data management strategy?

Answered: 74   Skipped: 0
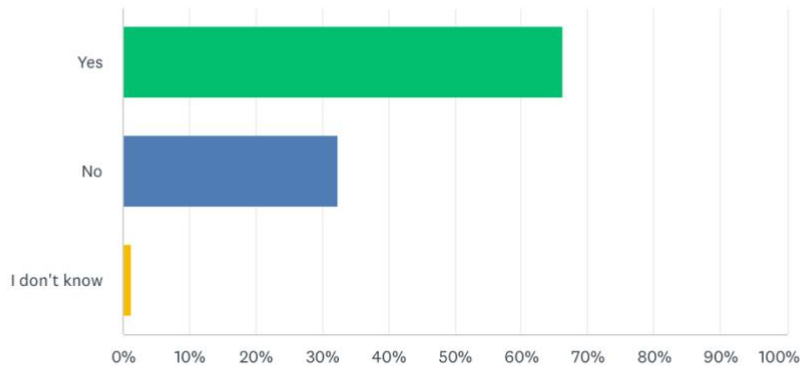
ANSWER CHOICES	RESPONSES	
Yes	66.22%	49
No	32.43%	24
I don't know	1.35%	1
TOTAL		**74**

Previous survey:

Answered: 70   Skipped: 0
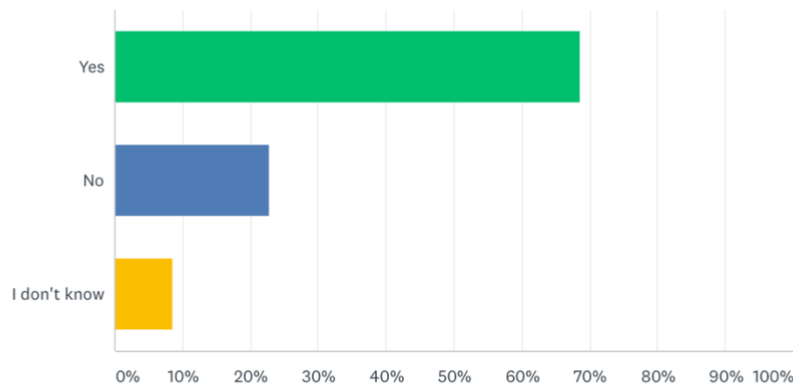
ANSWER CHOICES	RESPONSES	
Yes	68.57%	48
No	22.86%	16
I don't know	8.57%	6
TOTAL		**70**

The number of respondents that reported they have a data management strategy did not change. The number of respondents that reported that "they don't know" decreased substantially.

Q7: Does your organization apply the IOC Oceanographic Data Exchange Policy adopted as Resolution IOC-XXII-6 in 2003? (see http://www.iode.org/policy)

Answered: 74   Skipped: 0
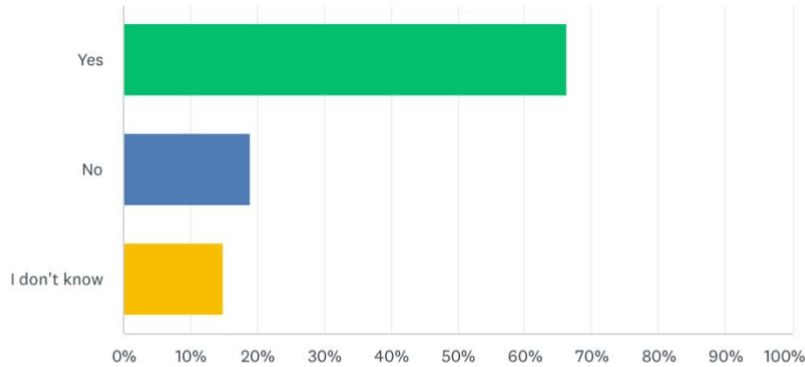
ANSWER CHOICES	RESPONSES	
Yes	66.22%	49
No	18.92%	14
I don't know	14.86%	11
TOTAL		74

Previous survey:

Answered: 70   Skipped: 0
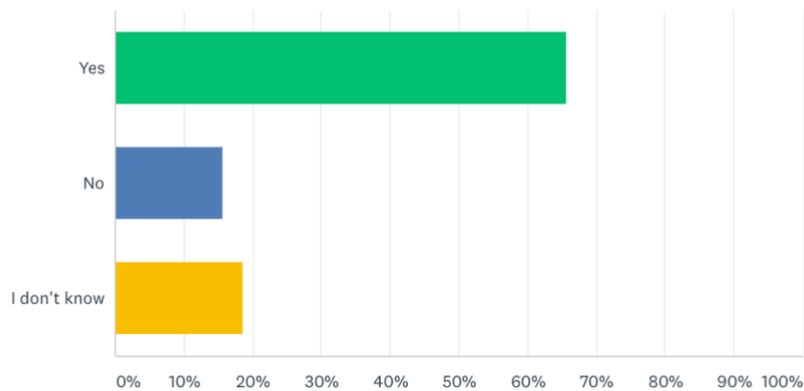
ANSWER CHOICES	RESPONSES	
Yes	65.71%	46
No	15.71%	11
I don't know	18.57%	13
TOTAL		70

There are no significant differences in responses between 2019-2020 and 2021-2022.

Q8: Does your data centre have its own data policy

Does your organization have its own data policy

Answered: 72   Skipped: 2
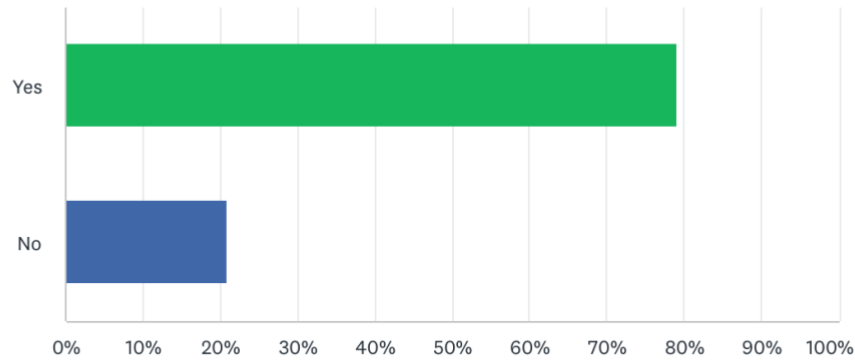
ANSWER CHOICES	RESPONSES	
▼ Yes	79.17%	57
▼ No	20.83%	15
TOTAL		72

Previous survey:

Answered: 67   Skipped: 3
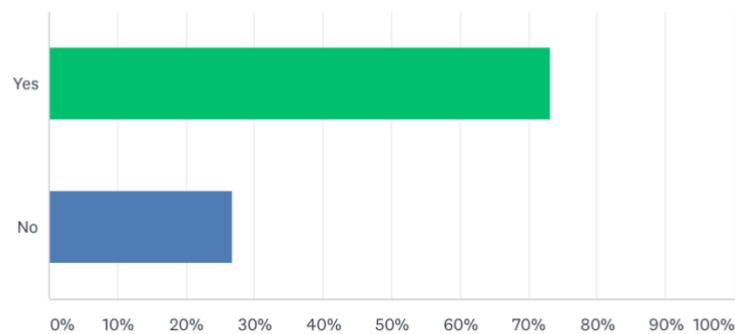
ANSWER CHOICES	RESPONSES	
▼ Yes	73.13%	49
▼ No	26.87%	18
TOTAL		67

There seem to be a slightly higher number of data centres that have their own data policy since the previous survey.

Q9: Does your organization have a documented Quality Management System (QMS)?

Answered: 74   Skipped: 0
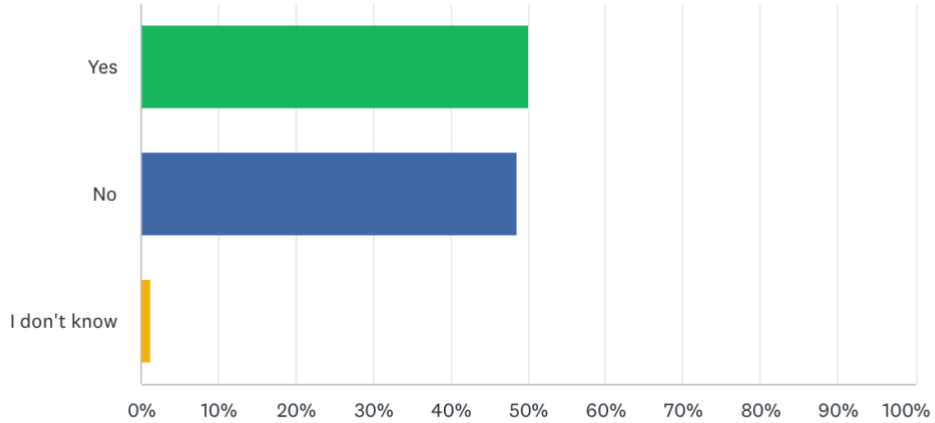
ANSWER CHOICES ▾	RESPONSES ▾	
▾ Yes	50.00%	37
▾ No	48.65%	36
▾ I don't know	1.35%	1
TOTAL		**74**

Previous survey:

Answered: 70   Skipped: 0
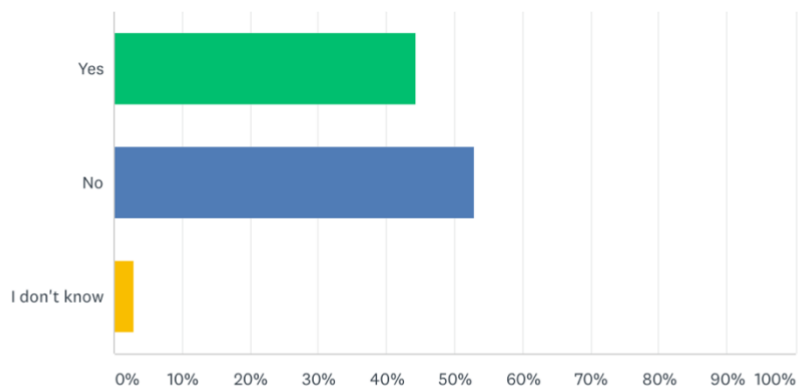
ANSWER CHOICES ▾	RESPONSES ▾	
▾ Yes	44.29%	31
▾ No	52.86%	37
▾ I don't know	2.86%	2
TOTAL		**70**

Approximately 6% more organizations now have a QMS in place since the previous survey.

Q10: Does your organization hold ISO 9001 certification?

Answered: 72   Skipped: 2
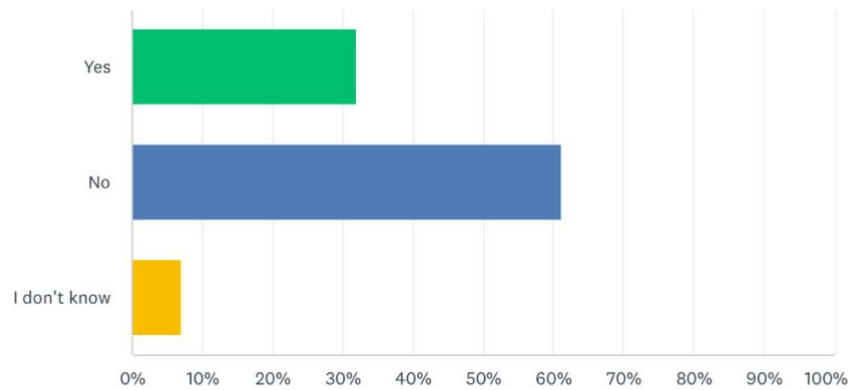
ANSWER CHOICES	RESPONSES	
▼ Yes	31.94%	23
▼ No	61.11%	44
▼ I don't know	6.94%	5
TOTAL		72

Previous survey:

Answered: 68   Skipped: 3
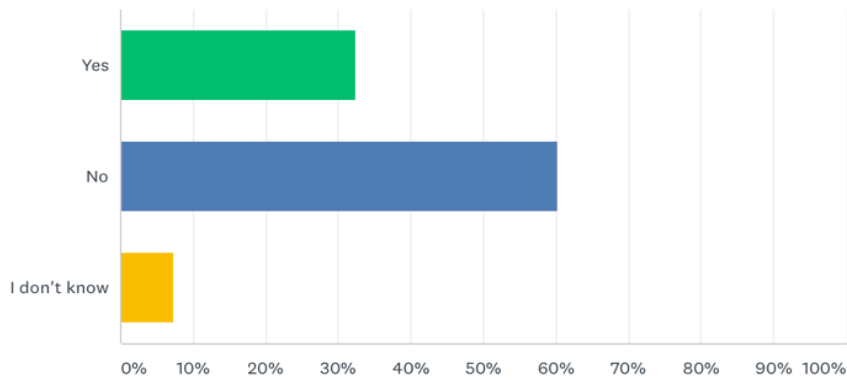
ANSWER CHOICES	RESPONSES	
▼ Yes	32.35%	22
▼ No	60.29%	41
▼ I don't know	7.35%	5
TOTAL		68

No significant difference with the previous survey

Q11: If you are an NODC or ADU: do you plan to implement the IODE QMF accreditation process during the next inter-sessional period (2023-2024)?

Answered: 70   Skipped: 4
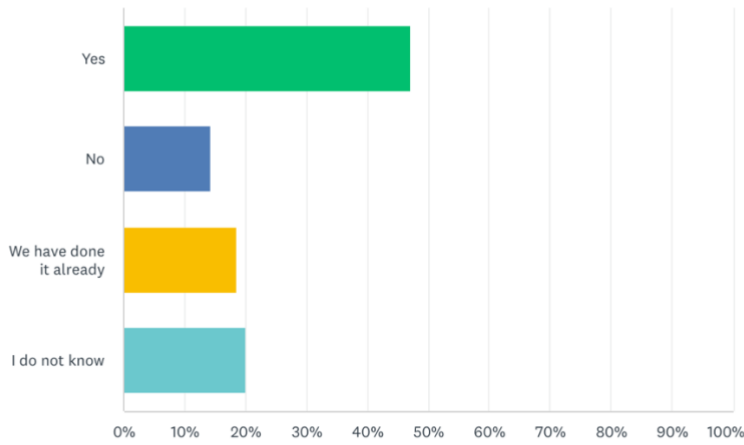
ANSWER CHOICES	RESPONSES	
Yes	47.14%	33
No	14.29%	10
We have done it already	18.57%	13
I do not know	20.00%	14
TOTAL		70

Previous survey

Answered: 57   Skipped: 14
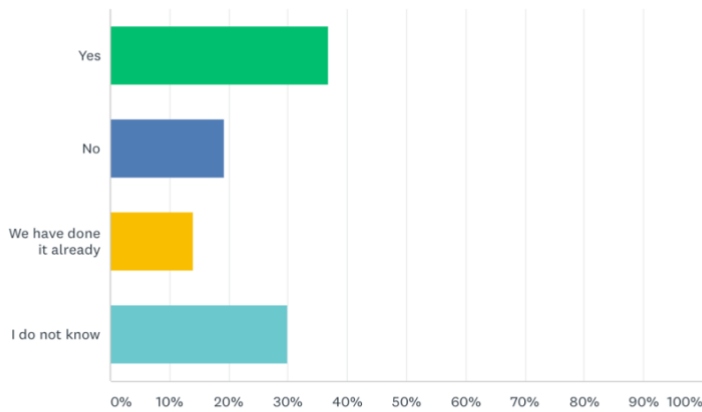
ANSWER CHOICES	RESPONSES	
Yes	36.84%	21
No	19.30%	11
We have done it already	14.04%	8
I do not know	29.82%	17
TOTAL		57

We see an increase of approx. 10% intention to apply the IODE QMF and 4.5% who have applied the QMF already.

Q12: What type and how many staff (FTE - Full Time Equivalent) were working at your data centre in 2021/2022 (averaged):[use integers. no decimals]

Answered: 68   Skipped: 6
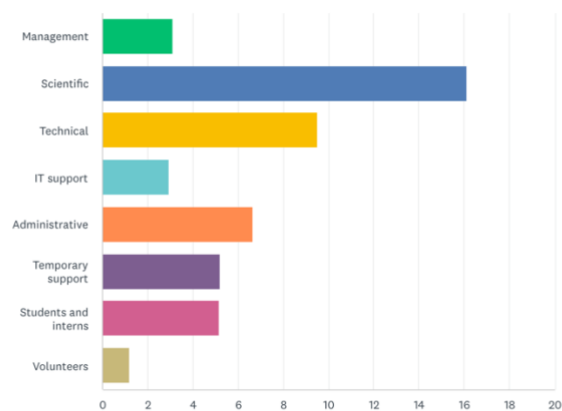
ANSWER CHOICES		AVERAGE NUMBER	TOTAL NUMBER	RESPONSES
Management	Responses	3	190	61
Scientific	Responses	16	936	58
Technical	Responses	10	513	54
IT support	Responses	3	139	47
Administrative	Responses	7	259	39
Temporary support	Responses	5	151	29
Students and interns	Responses	5	155	30
Volunteers	Responses	1	23	19
Total Respondents: 68				

Previous survey:

Answered: 63   Skipped: 8
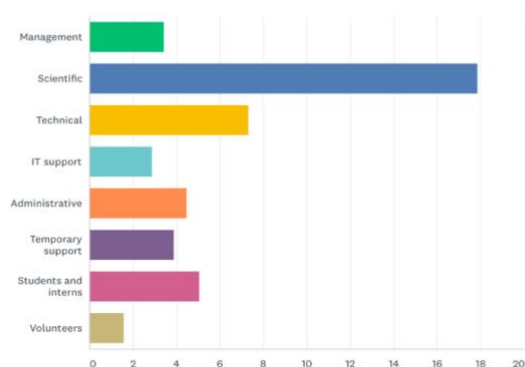
ANSWER CHOICES		AVERAGE NUMBER	TOTAL NUMBER	RESPONSES
Management	Responses	3	185	54
Scientific	Responses	18	928	52
Technical	Responses	7	389	53
IT support	Responses	3	124	43
Administrative	Responses	4	152	34
Temporary support	Responses	4	97	25
Students and interns	Responses	5	111	22
Volunteers	Responses	2	16	10
Total Respondents: 63				

There seems to be a slight decline in the number of scientific staff and an increase in administrative staff.

Q13: How has this number changed year by year since 2019-2021 (previous inter-sessional period)

Answered: 72   Skipped: 2
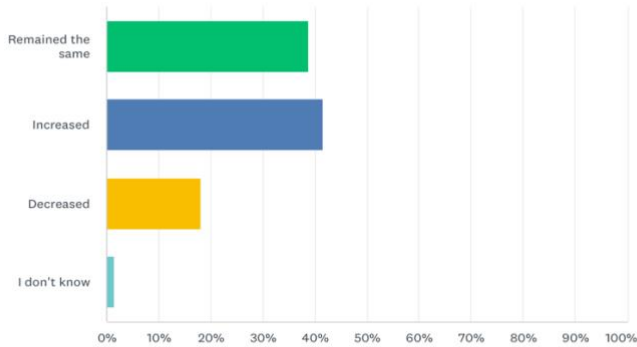
ANSWER CHOICES	RESPONSES	
Remained the same	38.89%	28
Increased	41.67%	30
Decreased	18.06%	13
I don't know	1.39%	1
TOTAL		72

Previous survey:

Answered: 67   Skipped: 4
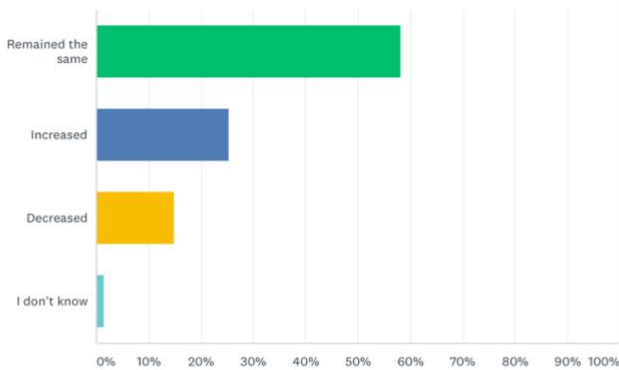
ANSWER CHOICES	RESPONSES	
Remained the same	58.21%	39
Increased	25.37%	17
Decreased	14.93%	10
I don't know	1.49%	1
TOTAL		67

Respondents report an increase of staff (15% more report increase).

Q14: What was the approximate annual operational budget for your data centre (average for 2021 and 2022) (excluding staff cost) [converted into US Dollars]:

Answered: 73   Skipped: 1
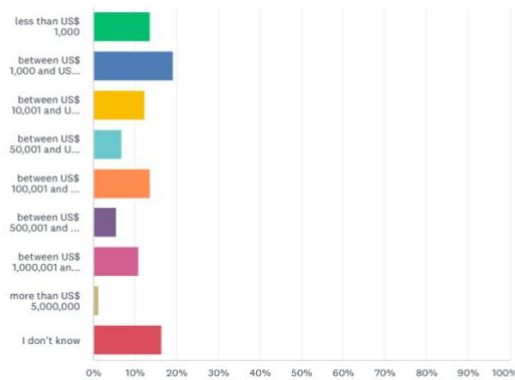
ANSWER CHOICES	RESPONSES	
less than US$ 1,000	13.70%	10
between US$ 1,000 and US$ 10,000	19.18%	14
between US$ 10,001 and US$ 50,000	12.33%	9
between US$ 50,001 and US$ 100,000	6.85%	5
between US$ 100,001 and US$ 500,000	13.70%	10
between US$ 500,001 and US$ 1,000,000	5.48%	4
between US$ 1,000,001 and US$ 5,000,000	10.96%	8
more than US$ 5,000,000	1.37%	1
I don't know	16.44%	12
TOTAL		73

Previous survey

Answered: 66   Skipped: 4
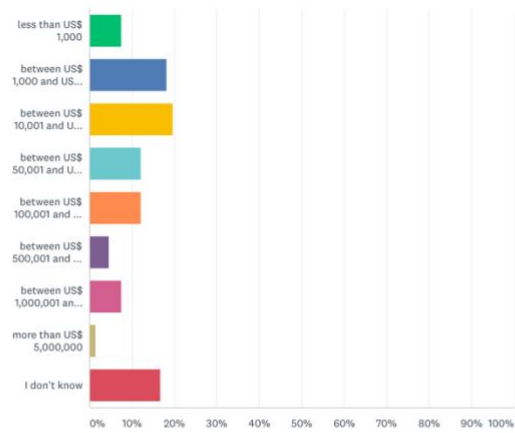
ANSWER CHOICES	RESPONSES	
less than US$ 1,000	7.58%	5
between US$ 1,000 and US$ 10,000	18.18%	12
between US$ 10,001 and US$ 50,000	19.70%	13
between US$ 50,001 and US$ 100,000	12.12%	8
between US$ 100,001 and US$ 500,000	12.12%	8
between US$ 500,001 and US$ 1,000,000	4.55%	3
between US$ 1,000,001 and US$ 5,000,000	7.58%	5
more than US$ 5,000,000	1.52%	1
I don't know	16.67%	11
TOTAL		66

Q15: How has this number changed year by year since 2017-2018 (previous inter-sessional period):

Answered: 72   Skipped: 2
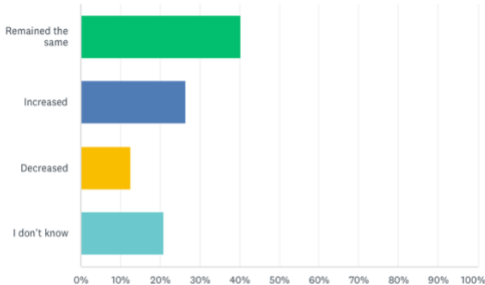
ANSWER CHOICES	RESPONSES	
Remained the same	40.28%	29
Increased	26.39%	19
Decreased	12.50%	9
I don't know	20.83%	15
TOTAL		72

Previous survey:

Answered: 67   Skipped: 3
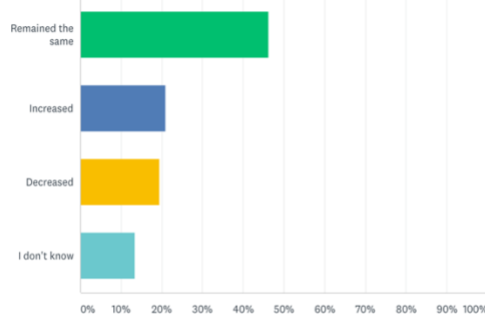
ANSWER CHOICES	RESPONSES	
Remained the same	46.27%	31
Increased	20.90%	14
Decreased	19.40%	13
I don't know	13.43%	9
TOTAL		67

It seems the budget of most of the data centres either remained the same or increased.

Q16: In what IODE projects has your data centre participated in 2021 and/or 2022 (data management): (choose one per row)

	STARTED IN 2021 OR 2022	CONTINUED IN 2021 OR 2022	STOPPED IN 2021 OR 2022	TOTAL RESPONDENTS
AquaDocs (former OceanDocs)	10.00% 1	80.00% 8	10.00% 1	10
GODAR/WOD	7.14% 1	92.86% 13	0.00% 0	14
GOSUD	12.50% 1	87.50% 7	0.00% 0	8
GTSPP	8.33% 1	100.00% 12	0.00% 0	12
ICAN	0.00% 0	100.00% 2	0.00% 0	2
IQuOD	0.00% 0	80.00% 4	20.00% 1	5
Ocean Data Portal (ODP)	28.57% 4	78.57% 11	21.43% 3	14
Ocean Biodiversity System (OBIS)	25.00% 9	86.11% 31	5.56% 2	36
OceanBestPractices (jointly with GOOS)	16.00% 4	84.00% 21	0.00% 0	25
Ocean InfoHub	38.46% 5	69.23% 9	7.69% 1	13
Ocean Data and Information System (ODIS)	38.46% 10	73.08% 19	7.69% 2	26
OceanExpert	19.51% 8	90.24% 37	4.88% 2	41
OceanTeacher Global Academy (including Alumni project)	22.73% 5	90.91% 20	4.55% 1	22
PacMAN	0.00% 0	100.00% 2	0.00% 0	2
IODE QMF	35.71% 5	71.43% 10	0.00% 0	14

- AquaDocs welcomed 10% new partners but also lost 10% (previous as OceanDocs: 28/0)
- GODAR/WOD gained 7% new partners, no loss (previous 14/27)
- GOSUD gained 12.5%, no loss (previous 0/20)
- GTSPP gained 8% new partners, no loss (previous 0/12.5)
- ICAN reported no gain, no loss (previous 40/0)
- IQuOD lost 20% and gained none (previous 33/33)
- While ODP is no longer active as a project, 78.5% reported they continued collaboration and 28.5% reported they started. This requires further investigation (previous 30/8)
- OBIS welcomed 25% new partners and lost 5.5% (previous 20/10)
- OBPS saw 16% new partners, no loss (previous 27/0)
- OIH/ODIS saw 35% new partners but lost 7.7% (previous 41.6/0)
- OceanExpert saw 19.5 new partners but lost 5% (previous 18/0)
- OTGA welcomed 23% new partners and lost 4.5% (previous 23/6.7)
- PacMAN reported no gain and no loss
- QMF welcomed 36% new partners, no loss (previous 33/16.7)

If we compare these numbers with the previous survey results (indicated above between () as gain/loss) then we (carefully) draw the following conclusions:
- AquaDocs is stable but needs some attention as its growth has stopped
- GODAR, after a sharp loss in the previous period is regaining growth
- GOSUD and GTSPP are growing steadily
- ICAN is stable
- IQuOD is cause for concern due to the sharp loss of 20% in its partnership
- Reporting on ODP requires further investigation as the project was halted
- OBIS' growth is steady and loss is less than the previous period
- OBPS growth continues and is substantial
- OIH/ODIS growth continues and is substantial. Some concern over loss
- OceanExpert growth is steady
- OTGA growth is steady
- QMF growth is high and steady

Previous survey:

	STARTED IN 2019 OR 2020	CONTINUED IN 2019 OR 2020	STOPPED IN 2019 OR 2020	TOTAL RESPONDENTS
JCOMM/IODE ETDMP	13.33% 2	93.33% 14	0.00% 0	15
GE-MIM	0.00% 0	100.00% 8	0.00% 0	8
OBIS	20.00% 6	80.00% 24	10.00% 3	30
GODAR	0.00% 0	80.00% 8	20.00% 2	10
WOD	14.29% 2	92.86% 13	7.14% 1	14
GTSPP	0.00% 0	87.50% 7	12.50% 1	8
GOSUD	0.00% 0	80.00% 4	20.00% 1	5
ICAN	40.00% 2	80.00% 4	0.00% 0	5
IQuOD	33.33% 2	66.67% 4	33.33% 2	6
OceanDataPortal	30.77% 4	69.23% 9	7.69% 1	13
OceanBestPractices	27.27% 6	81.82% 18	0.00% 0	22
OceanDocs	28.57% 4	92.86% 13	0.00% 0	14
OceanExpert	18.42% 7	89.47% 34	0.00% 0	38
OceanKnowledge Platform Pilot project	50.00% 2	0.00% 0	50.00% 2	4
OpenScienceDirectory	33.33% 1	66.67% 2	0.00% 0	3
OceanTeacher	23.33% 7	76.67% 23	6.67% 2	30
ODIS	41.67% 10	66.67% 16	0.00% 0	24
IODE QMF	33.33% 4	58.33% 7	16.67% 2	12

Q17: List the most important data activities/projects in which your centre is involved. PLEASE ADD THE URL IF AVAILABLE

(information available only in detailed reporting)

Q18: For measurements from <u>vessels (research, ships of opportunity,etc)</u> for which data types do you manage data:

(red=decline; green=increase; no color=change <2%)

	BIOLOGY	CHEMISTRY	GEOLOGY/GEOPHYSICS	MARINE METEOROLOGY	PHYSICS	TOTAL RESPONDENTS
Profiles (eg CTD)	68.33% 41	75.00% 45	16.67% 10	36.67% 22	83.33% 50	60
Water sample stations	86.21% 50	87.93% 51	18.97% 11	25.86% 15	70.69% 41	58
Underway measurements (eg thermosalinograph)	39.13% 18	52.17% 24	21.74% 10	32.61% 15	73.91% 34	46
Towed instruments (eg towed CTD, net trawl, camera,...)	82.93% 34	43.90% 18	19.51% 8	17.07% 7	63.41% 26	41
Seabed sampling (eg grabs, dredges, cores)	66.67% 32	64.58% 31	62.50% 30	14.58% 7	27.08% 13	48

Previous survey:

	BIOLOGY	CHEMISTRY	GEOLOGY/GEOPHYSICS	MARINE METEOROLOGY	PHYSICS	TOTAL RESPONDENTS
Profiles (eg CTD)	60.00% 33	76.36% 42	29.09% 16	29.09% 16	90.91% 50	55
Water sample stations	72.73% 40	87.27% 48	27.27% 15	32.73% 18	81.82% 45	55
Underway measurements (eg thermosalinograph)	40.54% 15	51.35% 19	24.32% 9	40.54% 15	89.19% 33	37
Towed instruments (eg towed CTD, net trawl, camera,...)	83.78% 31	40.54% 15	24.32% 9	18.92% 7	56.76% 21	37
Seabed sampling (eg grabs, dredges, cores)	69.77% 30	65.12% 28	65.12% 28	13.95% 6	32.56% 14	43

Q19: For measurements from <u>fixed stations/platforms</u> for which data types do you manage data:
(red=decline; green=increase; no color=change <2%)

	BIOLOGY ▼	CHEMISTRY ▼	GEOLOGY/GEOPHYSICS ▼	MARINE METEOROLOGY ▼	PHYSICS ▼	TOTAL RESPONDENTS ▼
▼ Moored buoys (e.g. met. or wave buoy)	33.33% 14	54.76% 23	11.90% 5	61.90% 26	85.71% 36	42
▼ Sub-surface moorings	44.12% 15	58.82% 20	20.59% 7	26.47% 9	79.41% 27	34
▼ Structures/rigs (e.g. sea level stations)	26.32% 10	23.68% 9	13.16% 5	36.84% 14	76.32% 29	38
▼ Beach/inter-tidal zone structures	59.38% 19	31.25% 10	28.13% 9	18.75% 6	53.13% 17	32

Previous survey:

	BIOLOGY ▼	CHEMISTRY ▼	GEOLOGY/GEOPHYSICS ▼	MARINE METEOROLOGY ▼	PHYSICS ▼	TOTAL RESPONDENTS ▼
▼ Moored buoys (e.g. met. or wave buoy)	41.86% 18	44.19% 19	6.98% 3	72.09% 31	97.67% 42	43
▼ Sub-surface moorings	41.67% 15	50.00% 18	16.67% 6	19.44% 7	97.22% 35	36
▼ Structures/rigs (e.g. sea level stations)	17.07% 7	17.07% 7	7.32% 3	48.78% 20	90.24% 37	41
▼ Beach/inter-tidal zone structures	40.00% 10	32.00% 8	28.00% 7	32.00% 8	80.00% 20	25

Q20: For measurements from <u>moving platforms</u> for which data types do you manage data:

(red=decline; green=increase; no color=change <2%)

	BIOLOGY	CHEMISTRY	GEOLOGY/GEOPHYSICS	MARINE METEOROLOGY	PHYSICS	TOTAL RESPONDENTS
Drifting buoys/floats	38.46% 10	38.46% 10	3.85% 1	42.31% 11	84.62% 22	26
Profiling Floats (e.g. Argo)	42.86% 12	57.14% 16	3.57% 1	14.29% 4	96.43% 27	28
Marine mammals/birds	68.00% 17	12.00% 3	8.00% 2	16.00% 4	48.00% 12	25
Autonomous submersible	50.00% 9	55.56% 10	38.89% 7	11.11% 2	88.89% 16	18

Previous survey:

	BIOLOGY	CHEMISTRY	GEOLOGY/GEOPHYSICS	MARINE METEOROLOGY	PHYSICS	TOTAL RESPONDENTS
Drifting buoys/floats	23.08% 6	42.31% 11	15.38% 4	42.31% 11	100.00% 26	26
Profiling Floats (e.g. Argo)	41.38% 12	65.52% 19	20.69% 6	27.59% 8	96.55% 28	29
Marine mammals/birds	86.36% 19	22.73% 5	13.64% 3	13.64% 3	45.45% 10	22
Autonomous submersible	65.00% 13	60.00% 12	40.00% 8	35.00% 7	90.00% 18	20

Q21: Any other platforms, instruments, etc ?

(information available only in detailed reporting)

Q22: Did you handle (incoming) delayed-mode or real-time data:

Previous survey:
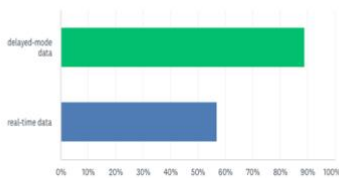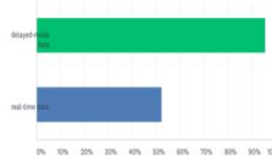
There is a decline of 6.6% in delayed mode data and an increase of 4.7% in real-time data.

Q23: Did your data centre have links with, and/or manage data from major science programmes (e.g., CLIVAR, IMBER, Argo, Future Earth, SOLAS, etc) in 2021 and/or 2022?

Answered: 72   Skipped: 2
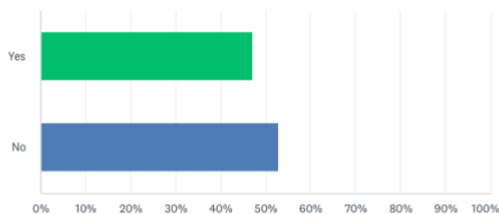
ANSWER CHOICES	RESPONSES	
Yes	47.22%	34
No	52.78%	38
TOTAL		72

Comments (33)

Previous survey:

Answered: 67   Skipped: 3
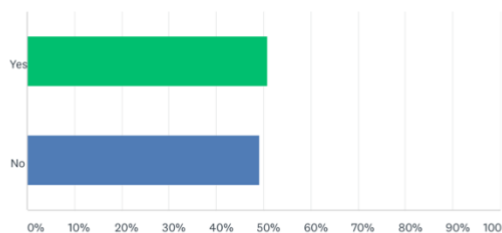
ANSWER CHOICES	RESPONSES	
Yes	50.75%	34
No	49.25%	33
TOTAL		67

There is a decline of 3.5%

Q24: Do you manage GOOS Essential Ocean Variables (EOV)? Please tick one or more EOVs of which data are managed by your data centre during 2019-2020. Note that more info (including specifications) can be found on the web page
http://www.goosocean.org/eov
(red=decline; green=increase; no color=change <2%)

ANSWER CHOICES	RESPONSES	
PHYSICS: Sea state	53.57%	30
PHYSICS: Ocean surface stress	19.64%	11
PHYSICS: Sea Ice	16.07%	9
PHYSICS: Sea surface height	48.21%	27
PHYSICS: Sea surface temperature	91.07%	51
PHYSICS: Subsurface temperature	67.86%	38
PHYSICS: Surface currents	55.36%	31
PHYSICS: Subsurface currents	48.21%	27
PHYSICS: Sea surface salinity	80.36%	45
PHYSICS: Subsurface salinity	67.86%	38
PHYSICS: Ocean surface heat flux	21.43%	12
BIOGEOCHEMISTRY: Oxygen	71.43%	40
BIOGEOCHEMISTRY: Nutrients	76.79%	43
BIOGEOCHEMISTRY: Inorganic Carbon	50.00%	28
BIOGEOCHEMISTRY: Transient tracers	14.29%	8
BIOGEOCHEMISTRY: Particulate matter	48.21%	27
BIOGEOCHEMISTRY: Nitrous oxide	39.29%	22
BIOGEOCHEMISTRY: Stable carbon isotopes	17.86%	10
BIOGEOCHEMISTRY: Dissolved organic carbon	48.21%	27
BIOGEOCHEMISTRY: Ocean colour	32.14%	18
BIOLOGY AND ECOSYSTEMS: Phytoplankton biomass and diversity	67.86%	38
BIOLOGY AND ECOSYSTEMS: Harmful Algal Bloom (HAB) incidence	0.00%	0
BIOLOGY AND ECOSYSTEMS: Zooplankton biomass and diversity	64.29%	36
BIOLOGY AND ECOSYSTEMS: Fish abundance and distribution	53.57%	30
BIOLOGY AND ECOSYSTEMS: Marine turtles, birds, mammals abundance and distribution	39.29%	22
BIOLOGY AND ECOSYSTEMS: Hard coral cover and composition	21.43%	12
BIOLOGY AND ECOSYSTEMS: Seagrass cover	35.71%	20
BIOLOGY AND ECOSYSTEMS: Mangrove cover	25.00%	14
BIOLOGY AND ECOSYSTEMS: Macroalgal canopy cover	26.79%	15
BIOLOGY AND ECOSYSTEMS: Ocean sound	30.36%	17
BIOLOGY AND ECOSYSTEMS: Microbe biomass and diversity	21.43%	12
BIOLOGY AND ECOSYSTEMS: Benthic invertebrate abundance and distribution	55.36%	31
Total Respondents: 56		

Previous survey

ANSWER CHOICES	RESPONSES	
PHYSICS: Sea state	45.28%	24
PHYSICS: Ocean surface stress	15.09%	8
PHYSICS: Sea Ice	16.98%	9
PHYSICS: Sea surface height	58.49%	31
PHYSICS: Sea surface temperature	86.79%	46
PHYSICS: Subsurface temperature	71.70%	38
PHYSICS: Surface currents	62.26%	33
PHYSICS: Subsurface currents	50.94%	27
PHYSICS: Sea surface salinity	77.36%	41
PHYSICS: Subsurface salinity	67.92%	36
PHYSICS: Ocean surface heat flux	15.09%	8
BIOGEOCHEMISTRY: Oxygen	64.15%	34
BIOGEOCHEMISTRY: Nutrients	66.04%	35
BIOGEOCHEMISTRY: Inorganic Carbon	43.40%	23
BIOGEOCHEMISTRY: Transient tracers	11.32%	6
BIOGEOCHEMISTRY: Particulate matter	33.96%	18
BIOGEOCHEMISTRY: Nitrous oxide	32.08%	17
BIOGEOCHEMISTRY: Stable carbon isotopes	15.09%	8
BIOGEOCHEMISTRY: Dissolved organic carbon	32.08%	17
BIOGEOCHEMISTRY: Ocean colour	41.51%	22
BIOLOGY AND ECOSYSTEMS: Phytoplankton biomass and diversity	60.38%	32
BIOLOGY AND ECOSYSTEMS: Harmful Algal Bloom (HAB) incidence	0.00%	0
BIOLOGY AND ECOSYSTEMS: Zooplankton biomass and diversity	52.83%	28
BIOLOGY AND ECOSYSTEMS: Fish abundance and distribution	39.62%	21
BIOLOGY AND ECOSYSTEMS: Marine turtles, birds, mammals abundance and distribution	32.08%	17
BIOLOGY AND ECOSYSTEMS: Hard coral cover and composition	15.09%	8
BIOLOGY AND ECOSYSTEMS: Seagrass cover	24.53%	13
BIOLOGY AND ECOSYSTEMS: Mangrove cover	18.87%	10
BIOLOGY AND ECOSYSTEMS: Macroalgal canopy cover	13.21%	7
BIOLOGY AND ECOSYSTEMS: Ocean sound	22.64%	12
BIOLOGY AND ECOSYSTEMS: Microbe biomass and diversity	22.64%	12
BIOLOGY AND ECOSYSTEMS: Benthic invertebrate abundance and distribution	41.51%	22

Total Respondents: 53

Q25: Does your centre maintain a data discovery portal for the data managed by your data centre in 2021 and/or 2022?

Answered: 70   Skipped: 4
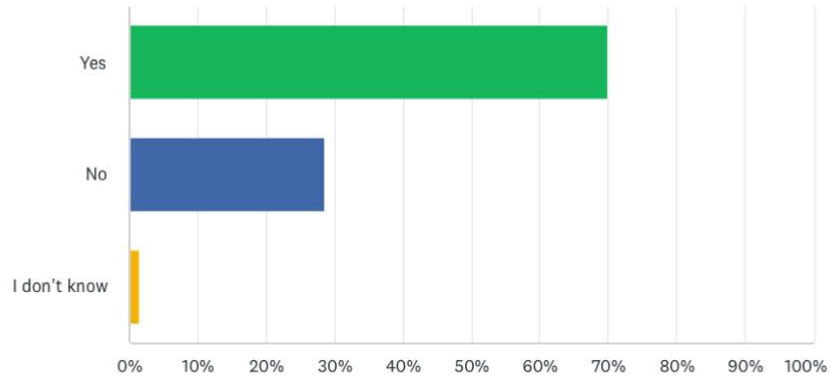
ANSWER CHOICES	RESPONSES	
Yes	70.00%	49
No	28.57%	20
I don't know	1.43%	1
TOTAL		70

Previous survey:

Answered: 67   Skipped: 3
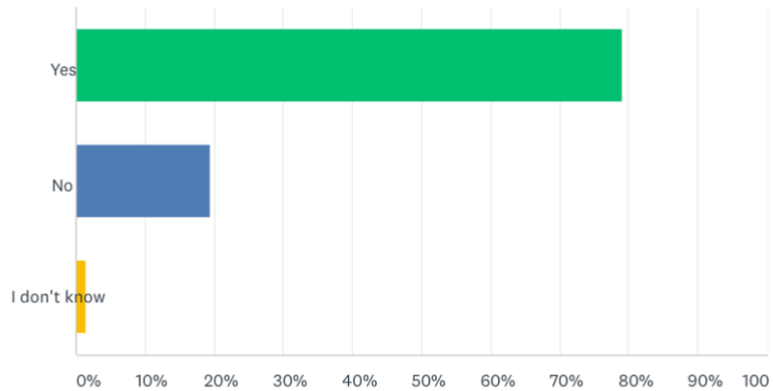
ANSWER CHOICES	RESPONSES	
Yes	79.10%	53
No	19.40%	13
I don't know	1.49%	1
TOTAL		67

There is a significant decline in the data centres that report a data discovery portal (9%). This requires further investigation.

Q26: If you answered yes to the previous question, then is the database openly available online

Answered: 55   Skipped: 19
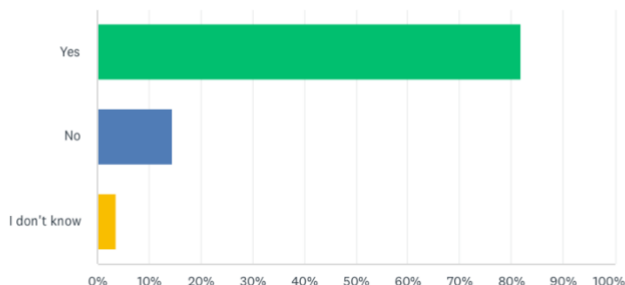
ANSWER CHOICES	RESPONSES	
Yes	81.82%	45
No	14.55%	8
I don't know	3.64%	2
TOTAL		55

Comments (43)

Previous survey:

Answered: 56   Skipped: 14
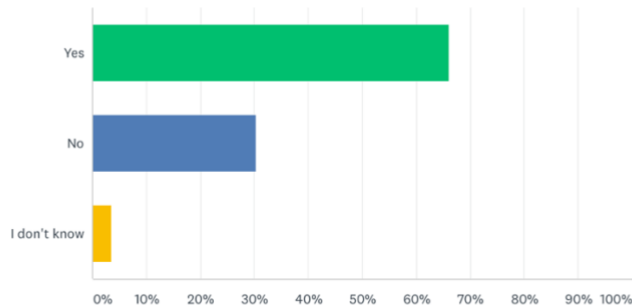
ANSWER CHOICES	RESPONSES	
Yes	66.07%	37
No	30.36%	17
I don't know	3.57%	2
TOTAL		56

We note a substantial increase (15.8%) in portals that are openly accessible.

Q27: What kind of quality control procedures (if any) are used in your institution? (add bibliographic references, if possible):

(information available only in detailed reporting)

Q28: What spectrum of services (e.g. data and products) were started/continued/ended by your centre in 2021 and/or 2022? (choose one per row):

	STARTED IN 2019 OR 2020	CONTINUED IN 2019 AND 2020	STOPPED IN 2019 OR 2020	TOTAL
quality-controlled delayed-mode data sets	7.27% 4	85.45% 47	7.27% 4	55
access to real-time data	2.78% 1	86.11% 31	11.11% 4	36
maps	3.92% 2	92.16% 47	3.92% 2	51
GIS layers	4.35% 2	93.48% 43	2.17% 1	46
statistics	13.64% 6	84.09% 37	2.27% 1	44
data atlases	2.78% 1	86.11% 31	11.11% 4	36
numerical modelling outputs	7.32% 3	85.37% 35	7.32% 3	41

Previous survey:

	STARTED IN 2019 OR 2020	CONTINUED IN 2019 AND 2020	STOPPED IN 2019 OR 2020	TOTAL
quality-controlled delayed-mode data sets	8.93% 5	89.29% 50	1.79% 1	56
access to real-time data	5.88% 2	91.18% 31	2.94% 1	34
maps	6.98% 3	88.37% 38	4.65% 2	43
GIS layers	13.64% 6	81.82% 36	4.55% 2	44
statistics	10.00% 4	90.00% 36	0.00% 0	40
data atlases	11.54% 3	80.77% 21	7.69% 2	26
numerical modelling outputs	9.38% 3	90.63% 29	0.00% 0	32

A significant number of data centres ended their activities related to quality-controlled delayed-mode data sets, access to real-time data, data atlases numerical modelling outputs and, to a lesser extent, maps, GIS layers and statistics.

Q29: List the most important products and services (up to 15) provided by your data centre in the period 2021-2022. These may be new (started in 2021/2022) or ongoing products/services. If they are online products/services then please also provide the URL.

(information available only in detailed reporting)

Q30: How were data made available (e.g. by request, on-line access, etc.) in 2021 and/or 2022? (you can tick multiple rows but only 1 per row)

	STARTED IN 2018 OR 2020	CONTINUED IN 2019 AND 2020	STOPPED IN 2019 OR 2020	TOTAL
online without charge	10.20% 5	83.67% 41	6.12% 3	49
online with charge	0.00% 0	66.67% 4	33.33% 2	6
offline upon request without charge	8.70% 4	89.13% 41	2.17% 1	46
offline upon request with charge	0.00% 0	85.71% 12	14.29% 2	14
not at all	16.67% 1	33.33% 2	50.00% 3	6

Previous survey:

	STARTED IN 2018 OR 2020	CONTINUED IN 2019 AND 2020	STOPPED IN 2019 OR 2020	TOTAL
online without charge	9.62% 5	90.38% 47	0.00% 0	52
online with charge	0.00% 0	100.00% 7	0.00% 0	7
offline upon request without charge	6.00% 3	94.00% 47	0.00% 0	50
offline upon request with charge	0.00% 0	100.00% 17	0.00% 0	17
not at all	75.00% 3	25.00% 1	0.00% 0	4

Comments (8)

A positive development is that 33% less data centres charge for online data access as compared to the previous survey.

Q31: Indicate the average number of requests and services your centre provides in a year

2021

	LESS THAN 1000	BETWEEN 1001 AND 10,000	BETWEEN 10,001 AND 50,000	BETWEEN 50,000 AND 100,000	BETWEEN 100,000 AND 500,000	OVER 500,000	TOTAL
Number of requests per year (online and offline combined)	59.18% 29	16.33% 8	2.04% 1	2.04% 1	4.08% 2	16.33% 8	49
For online requests: number of visits to the online data service/portal per year	22.22% 8	30.56% 11	5.56% 2	11.11% 4	8.33% 3	22.22% 8	36

2022

	LESS THAN 1000	BETWEEN 1001 AND 10,000	BETWEEN 10,001 AND 50,000	BETWEEN 50,000 AND 100,000	BETWEEN 100,000 AND 500,000	OVER 500,000	TOTAL
Number of requests per year (online and offline combined)	58.70% 27	17.39% 8	2.17% 1	2.17% 1	6.52% 3	13.04% 6	46
For online requests: number of visits to the online data service/portal per year	22.22% 8	33.33% 12	8.33% 3	8.33% 3	11.11% 4	16.67% 6	36

Previous survey:

2019

|	LESS THAN 1000	BETWEEN 1001 AND 10,000	BETWEEN 10,001 AND 50,000	BETWEEN 50,000 AND 100,000	BETWEEN 100,000 AND 500,000	OVER 500,000	TOTAL
Number of requests per year (online and offline combined)	63.64% 28	15.91% 7	9.09% 4	2.27% 1	6.82% 3	2.27% 1	44
For online requests: number of visits to the online data service/portal per year	36.36% 12	30.30% 10	12.12% 4	6.06% 2	9.09% 3	6.06% 2	33

2020

|	LESS THAN 1000	BETWEEN 1001 AND 10,000	BETWEEN 10,001 AND 50,000	BETWEEN 50,000 AND 100,000	BETWEEN 100,000 AND 500,000	OVER 500,000	TOTAL
Number of requests per year (online and offline combined)	65.91% 29	15.91% 7	6.82% 3	2.27% 1	4.55% 2	4.55% 2	44
For online requests: number of visits to the online data service/portal per year	36.36% 12	33.33% 11	9.09% 3	3.03% 1	12.12% 4	6.06% 2	33

Q32: Who are your users? (tick one or more)

Answered: 68   Skipped: 6
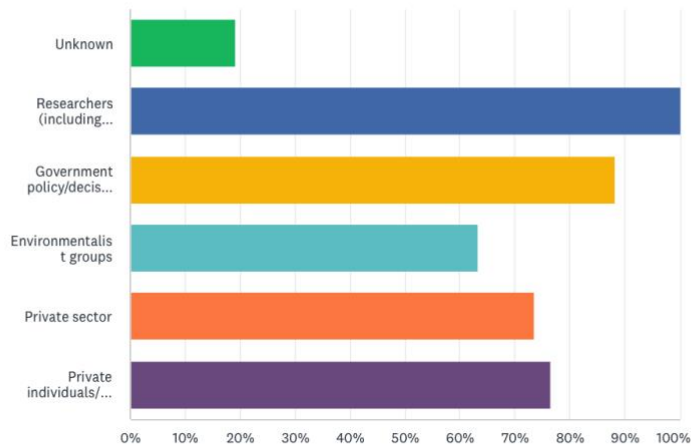
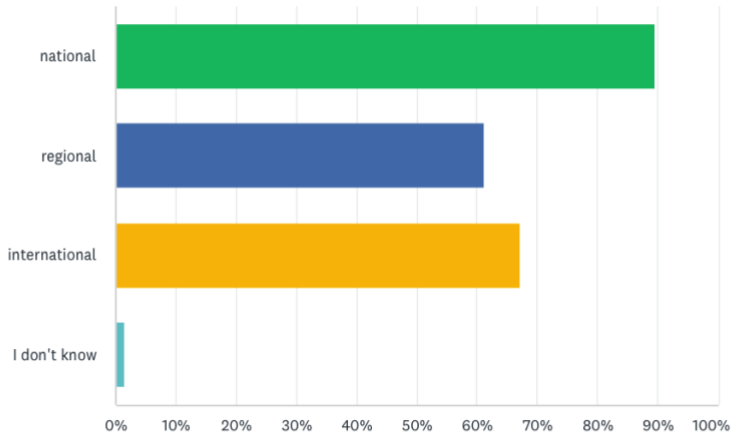| ANSWER CHOICES	RESPONSES	
Unknown	19.12%	13
Researchers (including academics/students)	100.00%	68
Government policy/decision makers	88.24%	60
Environmentalist groups	63.24%	43
Private sector	73.53%	50
Private individuals/ general public	76.47%	52
Total Respondents: 68		

Previous survey:

Answered: 66   Skipped: 4
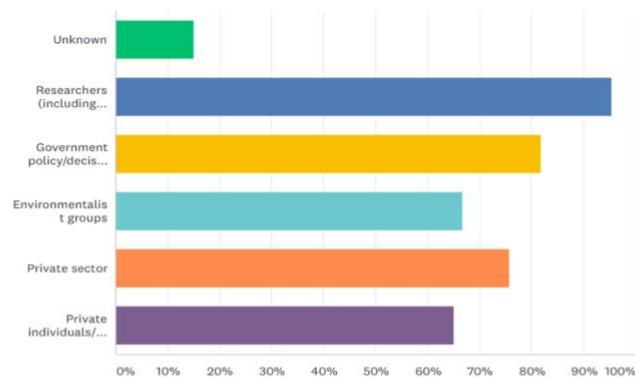
ANSWER CHOICES	RESPONSES	
Unknown	15.15%	10
Researchers (including academics/students)	95.45%	63
Government policy/decision makers	81.82%	54
Environmentalist groups	66.67%	44
Private sector	75.76%	50
Private individuals/ general public	65.15%	43
Total Respondents: 66		

We see an increase in researchers, government policy/decision makers. Private sector have remained stable. There is also a substantial increase in users from the general public. Environmental groups have declined.

Q33: What is the geographic origin of your users
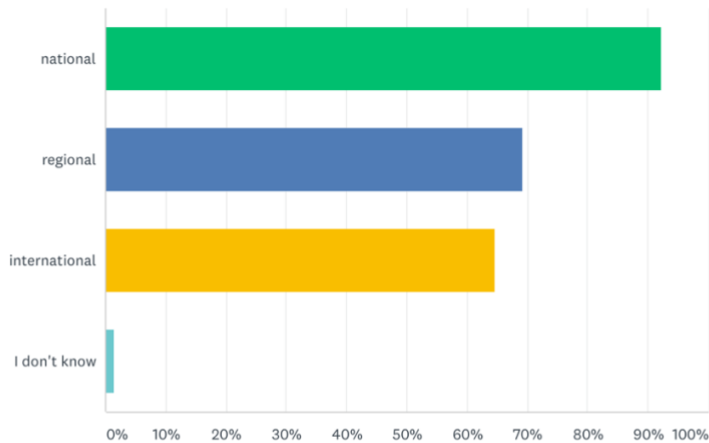
Answered: 67   Skipped: 7

ANSWER CHOICES	RESPONSES	
▼ national	89.55%	60
▼ regional	61.19%	41
▼ international	67.16%	45
▼ I don't know	1.49%	1
Total Respondents: 67		

Previous survey:

Answered: 65   Skipped: 5

ANSWER CHOICES	RESPONSES	
▼ national	92.31%	60
▼ regional	69.23%	45
▼ international	64.62%	42
▼ I don't know	1.54%	1
Total Respondents: 65		

There appears to be a decline of regional users but a slight increase in international users.

Q34: Do you participate in a national distributed data network

Answered: 66   Skipped: 8
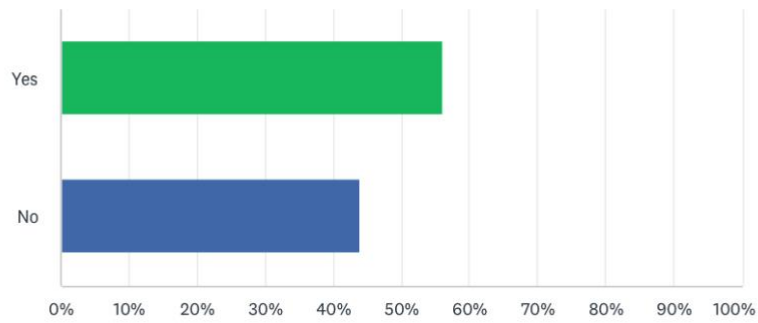
ANSWER CHOICES	RESPONSES	
Yes	56.06%	37
No	43.94%	29
TOTAL		66

Previous survey:

Answered: 63   Skipped: 7
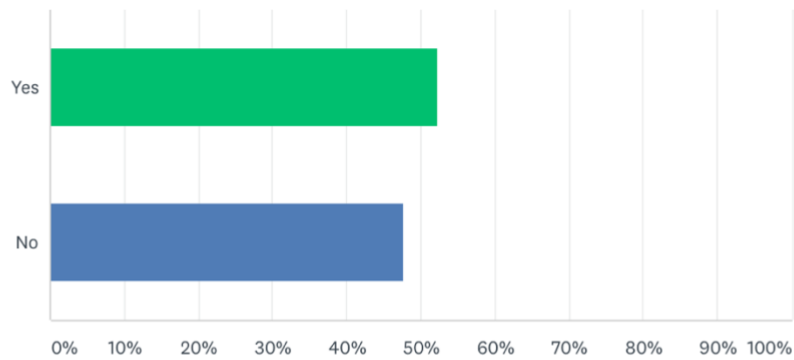
ANSWER CHOICES	RESPONSES	
Yes	52.38%	33
No	47.62%	30
TOTAL		63

There is a slight increase in participation in national networks.

Q35: Do you provide data through the following international data networks
(red=decline; green=increase; no color=change <2%)

Answered: 53   Skipped: 21
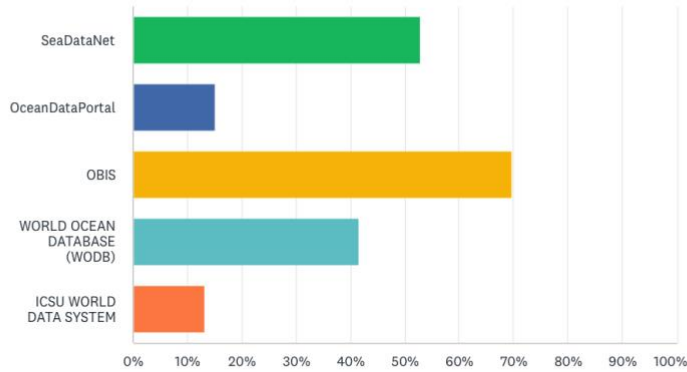
ANSWER CHOICES	RESPONSES	
SeaDataNet	52.83%	28
OceanDataPortal	15.09%	8
OBIS	69.81%	37
WORLD OCEAN DATABASE (WODB)	41.51%	22
ICSU WORLD DATA SYSTEM	13.21%	7
Total Respondents: 53		

We see an increase for OBIS and WOD and a slight decrease for SeaDataNet

Previous survey:

Answered: 50   Skipped: 20
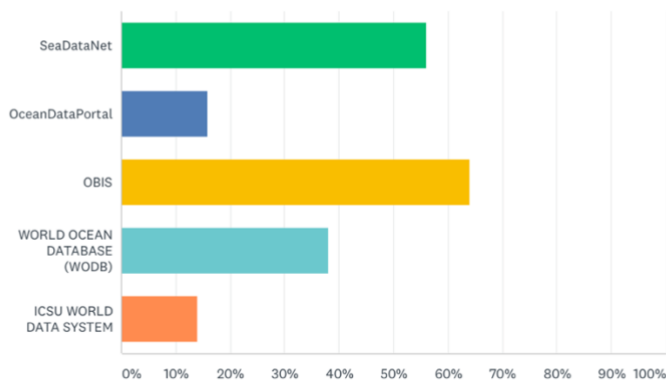
ANSWER CHOICES	RESPONSES	
SeaDataNet	56.00%	28
OceanDataPortal	16.00%	8
OBIS	64.00%	32
WORLD OCEAN DATABASE (WODB)	38.00%	19
ICSU WORLD DATA SYSTEM	14.00%	7
Total Respondents: 50		

Q36: Did you provide data to World Data System (WDS) in 2019 and/or 2020 (you can select more than one or none)
(note: this questions was erroneously referring to 2019-2020)

Answered: 25   Skipped: 49
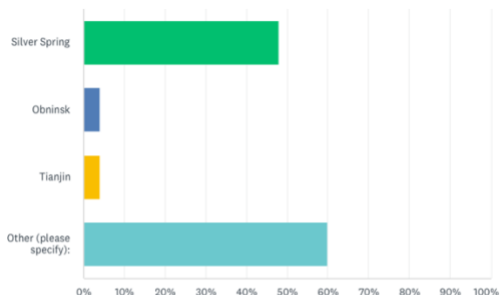
ANSWER CHOICES		RESPONSES	
Silver Spring		48.00%	12
Obninsk		4.00%	1
Tianjin		4.00%	1
Other (please specify):	Responses	60.00%	15
Total Respondents: 25			

Previous survey:

Answered: 25   Skipped: 45
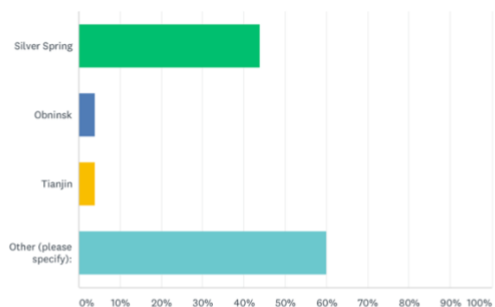
ANSWER CHOICES		RESPONSES	
Silver Spring		44.00%	11
Obninsk		4.00%	1
Tianjin		4.00%	1
Other (please specify):	Responses	60.00%	15
Total Respondents: 25			

We see a 4% increase of submissions to the Silver Spring USA WDC

Q37: Did you send data to global specialized data centres (that are not ICSU WDSs) such as GDACs in 2019-2020? (you can tick as many as relevant)
(note: this questions was erroneously referring to 2019-2020)

Answered: 41   Skipped: 33
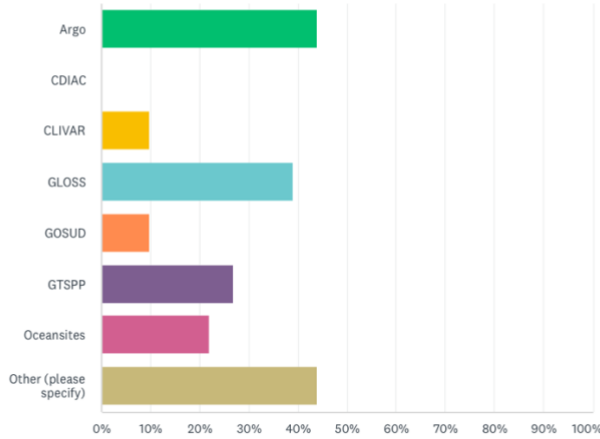
ANSWER CHOICES		RESPONSES	
Argo		43.90%	18
CDIAC		0.00%	0
CLIVAR		9.76%	4
GLOSS		39.02%	16
GOSUD		9.76%	4
GTSPP		26.83%	11
Oceansites		21.95%	9
Other (please specify)	Responses	43.90%	18
Total Respondents: 41			

Q38: In how many IODE training courses did you participate in 2019 and/or 2020
(note: this questions was erroneously referring to 2019-2020)

Answered: 68   Skipped: 6
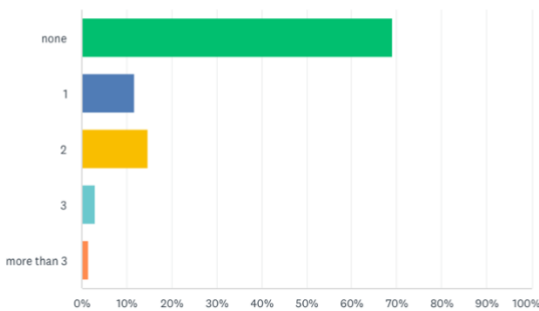
ANSWER CHOICES		RESPONSES	
none		69.12%	47
1		11.76%	8
2		14.71%	10
3		2.94%	2
more than 3		1.47%	1
TOTAL			68

Q39: Did the IODE training assist you in your work after you returned home?

Answered: 68   Skipped: 6
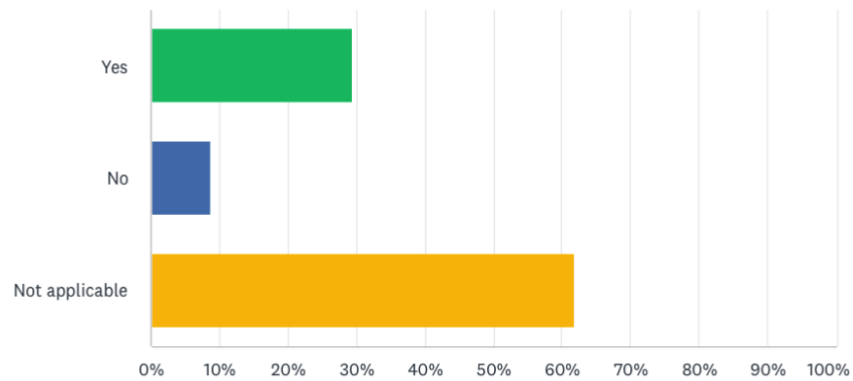
ANSWER CHOICES	RESPONSES	
Yes	29.41%	20
No	8.82%	6
Not applicable	61.76%	42
TOTAL		68

Q40: In how many other training courses did you participate in 2019 and/or 2020 organized by national or other organizers
(note: this questions was erroneously referring to 2019-2020)

Answered: 68   Skipped: 6
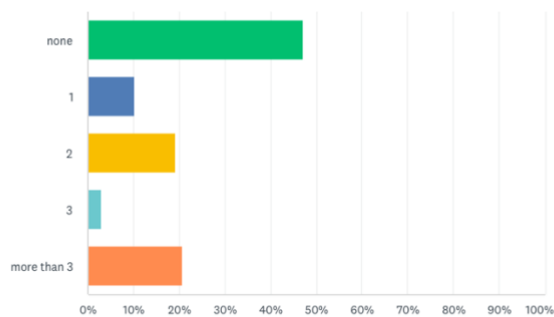
ANSWER CHOICES	RESPONSES	
none	47.06%	32
1	10.29%	7
2	19.12%	13
3	2.94%	2
more than 3	20.59%	14
TOTAL		68

Q41: How many working days would you estimate the contribution of your data centre to IODE through participation in IODE activities (e.g. participation in IODE meetings for which your data centre or country funded your trip) during the period 2021-2022 (2021 and 2022 added together)?
(red=decline; green=increase; no color=change <2%)

Answered: 68   Skipped: 6

ANSWER CHOICES	RESPONSES	
0 days	19.12%	13
1 - 5 days	23.53%	16
5 - 10 days	23.53%	16
10 - 20 days	8.82%	6
20 - 30 days	11.76%	8
30 - 50 days	0.00%	0
50 - 75 days	2.94%	2
75 - 100 days	2.94%	2
100 - 150 days	1.47%	1
More than 150 days	5.88%	4
TOTAL		68

Previous survey:

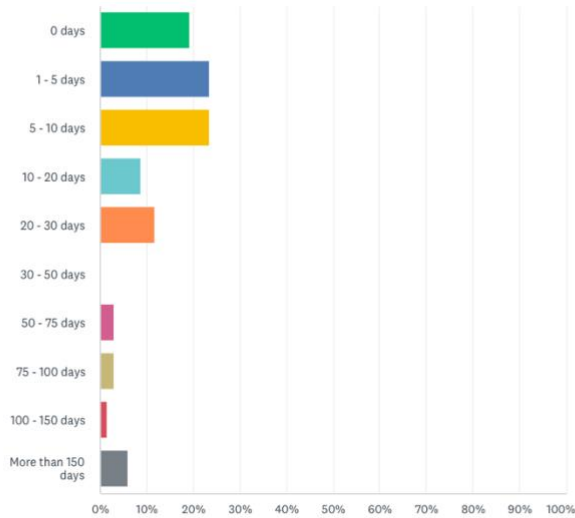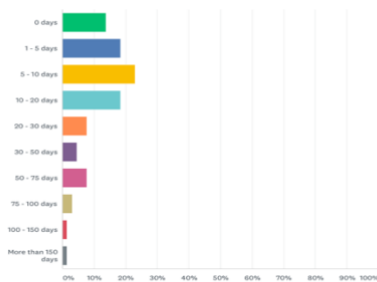| ANSWER CHOICES	RESPONSES	
0 days	13.85%	9
1 - 5 days	18.46%	12
5 - 10 days	23.08%	15
10 - 20 days	18.46%	12
20 - 30 days	7.69%	5
30 - 50 days	4.62%	3
50 - 75 days	7.69%	5
75 - 100 days	3.08%	2
100 - 150 days	1.54%	1
More than 150 days	1.54%	1
TOTAL		65

More than 19% of the respondents reported spending 0 days on IODE matters (5% increase compared to the previous survey). The majority (47%) spend between 1 and 10 days on IODE matters. A shift is noticeable towards less time spent on IODE matters.

Q42: Will your country be providing direct financial support to IODE in 2023-2024 through the IOC (confirmed)?

Answered: 68   Skipped: 6
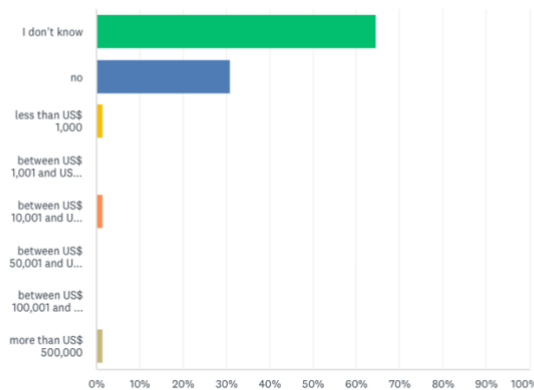
ANSWER CHOICES	RESPONSES	
I don't know	64.71%	44
no	30.88%	21
less than US$ 1,000	1.47%	1
between US$ 1,001 and US$ 10,000	0.00%	0
between US$ 10,001 and US$ 50,000	1.47%	1
between US$ 50,001 and US$ 100,000	0.00%	0
between US$ 100,001 and US$ 500,000	0.00%	0
more than US$ 500,000	1.47%	1
TOTAL		68

Previous survey:

Answered: 65   Skipped: 5
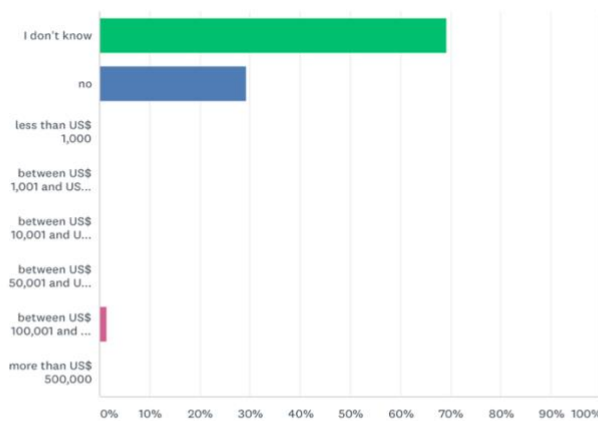
ANSWER CHOICES	RESPONSES	
I don't know	69.23%	45
no	29.23%	19
less than US$ 1,000	0.00%	0
between US$ 1,001 and US$ 10,000	0.00%	0
between US$ 10,001 and US$ 50,000	0.00%	0
between US$ 50,001 and US$ 100,000	0.00%	0
between US$ 100,001 and US$ 500,000	1.54%	1
more than US$ 500,000	0.00%	0
TOTAL		65

The majority of respondents was not able to answer this question indicating that the data centre probably does not have control of this matter.

Q43: Would your country/data centre be able to provide a visiting expert/secondment to the IOC Project Office for IODE in 2023-2024 (either working at the IODE project office in Belgium, or working from his/her usual place of work) for a period of 3-12 months?

Answered: 68   Skipped: 6
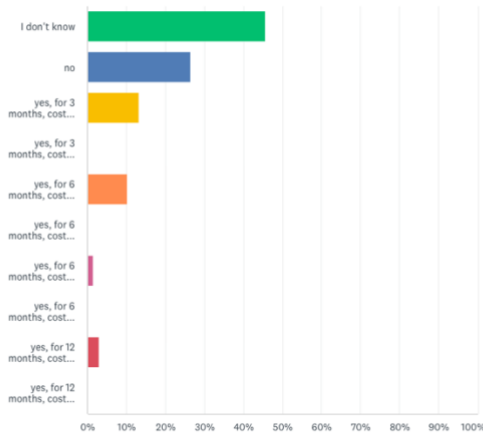
ANSWER CHOICES	RESPONSES	
I don't know	45.59%	31
no	26.47%	18
yes, for 3 months, costs of travel and local expenses to be covered by IODE	13.24%	9
yes, for 3 months, cost fully covered by your country	0.00%	0
yes, for 6 months, costs of travel and local expenses to be covered by IODE	10.29%	7
yes, for 6 months, cost fully covered by your country	0.00%	0
yes, for 6 months, costs of travel and local expenses to be covered by IODE	1.47%	1
yes, for 6 months, cost fully covered by your country	0.00%	0
yes, for 12 months, costs of travel and local expenses to be covered by IODE	2.94%	2
yes, for 12 months, cost fully covered by your country	0.00%	0
TOTAL		68

Previous survey:

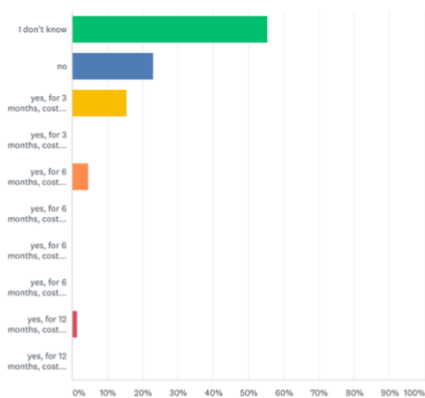| ANSWER CHOICES	RESPONSES	
I don't know	55.38%	36
no	23.08%	15
yes, for 3 months, costs of travel and local expenses to be covered by IODE	15.38%	10
yes, for 3 months, cost fully covered by your country	0.00%	0
yes, for 6 months, costs of travel and local expenses to be covered by IODE	4.62%	3
yes, for 6 months, cost fully covered by your country	0.00%	0
yes, for 6 months, costs of travel and local expenses to be covered by IODE	0.00%	0
yes, for 6 months, cost fully covered by your country	0.00%	0
yes, for 12 months, costs of travel and local expenses to be covered by IODE	1.54%	1
yes, for 12 months, cost fully covered by your country	0.00%	0
TOTAL		65

We see a 5% increase in "No". In cases of a positive response we see a decline in duration.

Q44: Is the host institution of your data centre involved in activities related to the Sustainable Development Goals? (you will find more information on http://en.unesco.org/sdgs/ioc)

Answered: 62   Skipped: 12
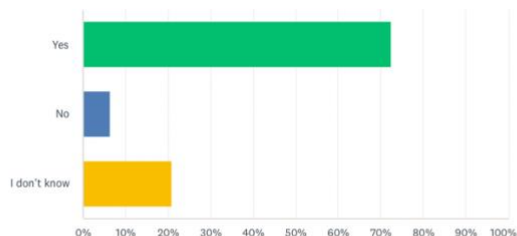
ANSWER CHOICES	RESPONSES	
Yes	72.58%	45
No	6.45%	4
I don't know	20.97%	13
TOTAL		62

Previous survey:
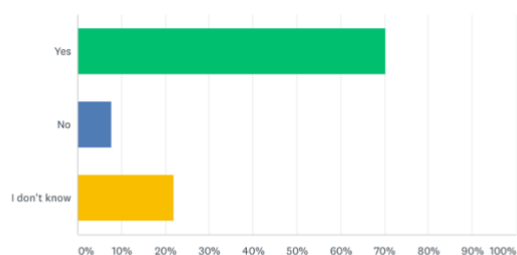
ANSWER CHOICES	RESPONSES	
Yes	70.31%	45
No	7.81%	5
I don't know	21.88%	14
TOTAL		64

We see a slight increase

Q45: If you answered "yes" to the previous question then please provide details

(information available only in detailed reporting)

Q46: Is the host institution of your data centre planning activities for the UN decade of Ocean Science for Sustainable Development?

Answered: 63   Skipped: 11
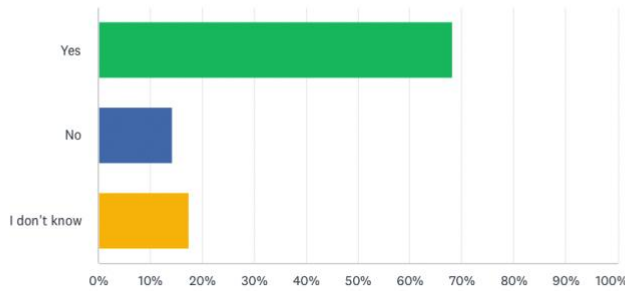
ANSWER CHOICES	RESPONSES	
Yes	68.25%	43
No	14.29%	9
I don't know	17.46%	11
TOTAL		63

Previous survey:

Answered: 64   Skipped: 6
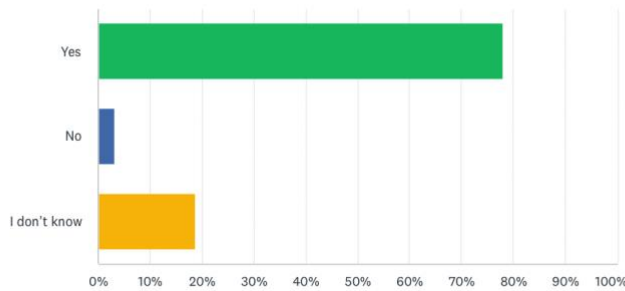
ANSWER CHOICES	RESPONSES	
Yes	78.13%	50
No	3.13%	2
I don't know	18.75%	12
TOTAL		64

We see a substantive decline of 10% which is concerning.

Q47: If you answered "yes "to the previous question then please provide details

(information available only in detailed reporting)

[end of document]

ANNEX 1: List of IODE NODCs and ADUs
indicating if they responded to the 2021-2022 survey

MS with data centre	Country	Member State of IOC since (year)	Type/ Date of creation of national data centre	Survey response
1	Argentina	1961	NODC, 1974	YES Fabricio M. IDOETA
			ADU, 2014 CCT CENPAT-CONICET	YES Marcos Zarate
2	Australia	1961	NODC, 1964	YES Sebastien Mancini
			ADU, OBIS node, 2014 CSIRO	
3 SIDS	Barbados	1982	ADU, 2014	
4	Belgium	1961	Accredited NODC NODC, 2000 (Accredited by IODE-XXIII)	YES Ruth Lagring
	Belgium (Flanders)	1961	Accredited NODC NODC, 2000	YES Lennert Tyberghein
5 AFR	Benin	1986	NODC, 31/10/2002	YES DEGBE Cossi Georges Epiphane
6	Brazil	1961	NODC, 1971	YES Cesar Borba
			ADU (OBIS Brazil)	YES Ana Carolina Mazzuco
7	Bulgaria	1969	NODC, 1985	YES Atanas Palazov
8 AFR	Cameroon	1973	NODC, 28/2/2001	YES NGUEGUIM Jules Romain
9	Canada	1961	NODC, 1963	YES Frank Oliva

			ADU, 2015 (OBIS node (OTN)	YES Jonathan Pye
10	Chile	1961	NODC, 1968	YES Carolina Calvete
11	China	1961	Accredited NODC NODC, 1979 (and WDC Oceanography) (Accredited by IODE-XXIII)	YES Shi Suixiang
12	Colombia	1969	NODC, 2003 (changed 7/2018)	YES Ruby Viviana Ortiz Martinez
			ADU, 2015 INVEMAR	YES Paula Cristina Sierra Correa
			ADU, 2015 Fundacion Universidad de Bogota Jorge Tadeo Lozano	
			ADU, 2015 Parques Nacionales Naturales de Colombia	
13 AFR SIDS	Comoros	2000	NODC, 2001	
	Congo (Democratic Republic of)	2010	-	
14 AFR	Cote d'Ivoire	1961	NODC,??	YES N'GUESSAN KOUADIO BENJAMIN
15	Croatia	1992	NODC, 23/4/2013 DNA, 1996	YES Vlado Dadic
16	Cyprus	1977	NODC, 1997	YES George Zodiatis
17	Denmark	1961	NODC, 1997	

			ADU, 2014 GBIF	
			ADU, 2014 ICES	YES Neil Holdsworth
18	Ecuador	1961	NODC, 1975	
			ADU, 2017 CPPS	
			ADU, 2018 INP	
	Egypt	1971	(NODC was established in 1971 but now inactive)	
	Estonia	1992	-	
	Finland	1961	DNA, 1960 (no longer active)	YES (as another data centre) Kimmo Tikka
19	France	1961	Accredited NODC (2017) NODC, 1971(accredited by IODE-XXIV)	YES Michele Fichaut
20	Georgia		ADU, 2014	YES Kakhaber Bilashvili
21	Germany	1961	NODC, 1967	YES Susanne Tamm
			ADU (OBIS node), 2022	YES Hanieh Saeedi
22 AFR	Ghana	1961	NODC, 2001	YES EUNICE NUERKIE OFOLI ANUM
23	Greece	1964	NODC, 1986	YES Athanasia Iona
			ADU, 1986 Institute of Marine Biology, Biotechnology and Aquaculture - Hellenic Centre for Marine Research (OBIS Mediterranean node)	YES Dimitra Mavraki

24 AFR	Guinea	1982	NODC, 1990	YES Bangoura Kandé
25	Iceland	1964	-	
			ADU, 2015 Conservation of Arctic Flora and Fauna (CAFF)	YES Tom Barry
26	India	1961	NODC 1964-2004: NIO 2004-...: INCOIS	YES TVS UDAYA BHASKAR
27	Indonesia		NODC, 2014	
			ADU, 2018 LIPI	
28	Iran (Islamic Republic of)	1975	Accredited NODC (2017) NODC, 1995 (accredited by IODE-XXIV)	
29	Iraq	1971	ADU, 2015	
30	Ireland	1978	Accredited NODC NODC, 1993	YES Eoin O'Grady
31	Israel	1961	NODC, 2001	
32	Italy	1961	NODC, 27/6/2002	YES Alessandra Giorgetti
33	Jamaica	1969	ADU OBIS node (ISA)	YES Sheldon Carter
33	Japan	1961	Accredited NODC (2018) NODC, 1/4/1965 (accredited by IODE-officers 21/10/2108)	YES Tasuo Komori

			ADU, 2015 JAMSTEC	YES Takashi Hosono
34	Kazakhstan	2005	NODC, 7/2006	YES Natalya Ivkina
35 AFR	Kenya	1973	NODC, 1996	YES Harrison Ong'anda
			ADU (OBIS node)	YES Nina Wambiji
	Korea, (Democratic People's republic of)	1978	(NODC 1987 but now inactive)	
36	Korea (Republic of)	1961	Accredited NODC (2017) NODC, 1974 (accredited by IODE Officers, 23/8/2017)	YES Joon-Soo Lee
	Kuwait	1974	-	YES (as another data centre) Faiza AlYamani
37 AFR	Madagascar	1967	NODC, 26/4/2000	YES Aina Le Don NOMENISOA
38	Malaysia	1965	DNA, 1994 NODC, 24/7/2010	
		2014	Accredited ADU (2018) ADU, 20/6/2014 (accredited by IODE Officers, 2/1/2018)	YES Aidy M. Muslim
39	Mauritania	1961	NODC, 16/10/2000	YES Bambaye Hamady
40 AFR SIDS	Mauritius	1971	NODC, 7/7/2000	
41	Mexico	1961	NODC, 30/6/2011	
			ADU (bathymetry), 2022	YES mario angel jahuey amaro
42	Mozambique	1981	NODC, 7/7/2000	YES Clousa Maueua

43	Netherlands	1961	NODC, 17/09/1997	YES Taco De Bruin
	New Zealand	1962	-	YES Kevin Mackay
44 AFR	Nigeria	1973	NODC, 1990	YES PRINCE JAMES O. MMUOMAIHE
45	Norway	1961	NODC, 1972	YES Helge Sagen
	Pakistan	1961	NODC, 1981	YES Muhammad Uzair Lodhi
46	Peru	1967	NODC, 1984	
47	Philippines	1964	ADU, 1984 ASEAN	YES Christian Elloran
			ADU, 2018 FISCH OBIS q-quatics	
	Poland	1961	-	YES (as another data centre) Marcin Wichorowski
48	Portugal	1971	(NODC, 1986 - no longer operational)	YES (as another data centre) Sara Almeida
			ADU, 2015 **Oceans Past Initiative, Portuguese Center for Global History**	
49	Romania	1961	NODC, ??? DNA, 1970	YES Luminita Buga
50	Russian Federation	1961	NODC, 1964	YES NIckolay Mikhailov
51 AFR	Senegal	1969	NODC, 28/10/2002	YES Saliou FAYE
52 AFR SIDS	Seychelles	1979	NODC, 1997	

53	Slovenia	1994	NODC, 3/2/2004	YES Branko Čermelj
54 AFR	South Africa	1969	NODC, 1977, changed host 2020 ADU (MIMS), 2022	YES Tshikana Rasehlomi
55	Spain	1961	NODC, 1968	YES Elena Tel
			ADU, 2018 **SOCIB-**Balearic Islands Coastal Observing and Forecasting System	YES Juan Gabriel Fernández
	Sri Lanka	1977	(NODC established in 1996, no longer operational)	
56	Sweden	1965	DNA established in 1971 NODC established 2017	YES Lotta Fyrberg
57 AFR	Tanzania (United Republic of)	1969	NODC, 2002 DNA, 1996	YES Desiderius CP Masalu
58 AFR	Togo	1975	NODC, 28/3/2001	
	Trinidad and Tobago	1969	-	
59 AFR	Tunisia	1961	NODC, 09/03/2001	
60	Turkey	1962	NODC, 1993	YES Yasin Bakış/ Emre TUKENMEZ
61	Ukraine	1962	NODC (2019) (after ADU, 2014)	
62	United Kingdom (of Great Britain and Northern Ireland)	1961	Accredited NODC (2017) NODC, 1969 (accredited by IODE Officers, 23/8/2017)	YES Ian Moores/ Mark Hebden

			ADU, 2016 SCAR/Antarctic OBIS	
			ADU, 2018 MBA (obis-uk)	YES Clare Postlethwaite
			ADU, 2020 CEFAS	YES Laura Hanley
63	United States (of America)	1961	NODC, 1961	YES Hernan Garcia
			ADU, 2013 BCO-DMO	YES Daniella Kinkade
			ADU, 2016 OBIS-USA	
			ADU, 2017 OBIS-SEAMAP	
			ADU, OBIS, 2018 FISH OBIS	
	Uruguay	1961	(NODC established in 1986 (inactive)	
64	Venezuela (Bolivarian Republic of)	1964	(NODC established in 1985 (inactive))	
			ADU, 2014 Institute of Technology and Marine Sciences (INTECMAR) Universidad Simón Bolívar **(Caribbean OBIS)**	

[END OF DOCUMENT]