UNSD

European Environment Agency

الاسكوا
ESCWA

UN environment
United Nations Environment Programme

Session 2: Regional and National Work on Environmental Information

Environment Live Data and Services

The Indicator Reporting Information System (IRIS).

Tue-13-Nov-2018 **Session: Time: 11:30 am – 12:30 pm; Venue: UN ESCWA, Beirut, Lebanon**

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Contact email: Erick.Litswa@un.org;

Science and Data driving our Common Future

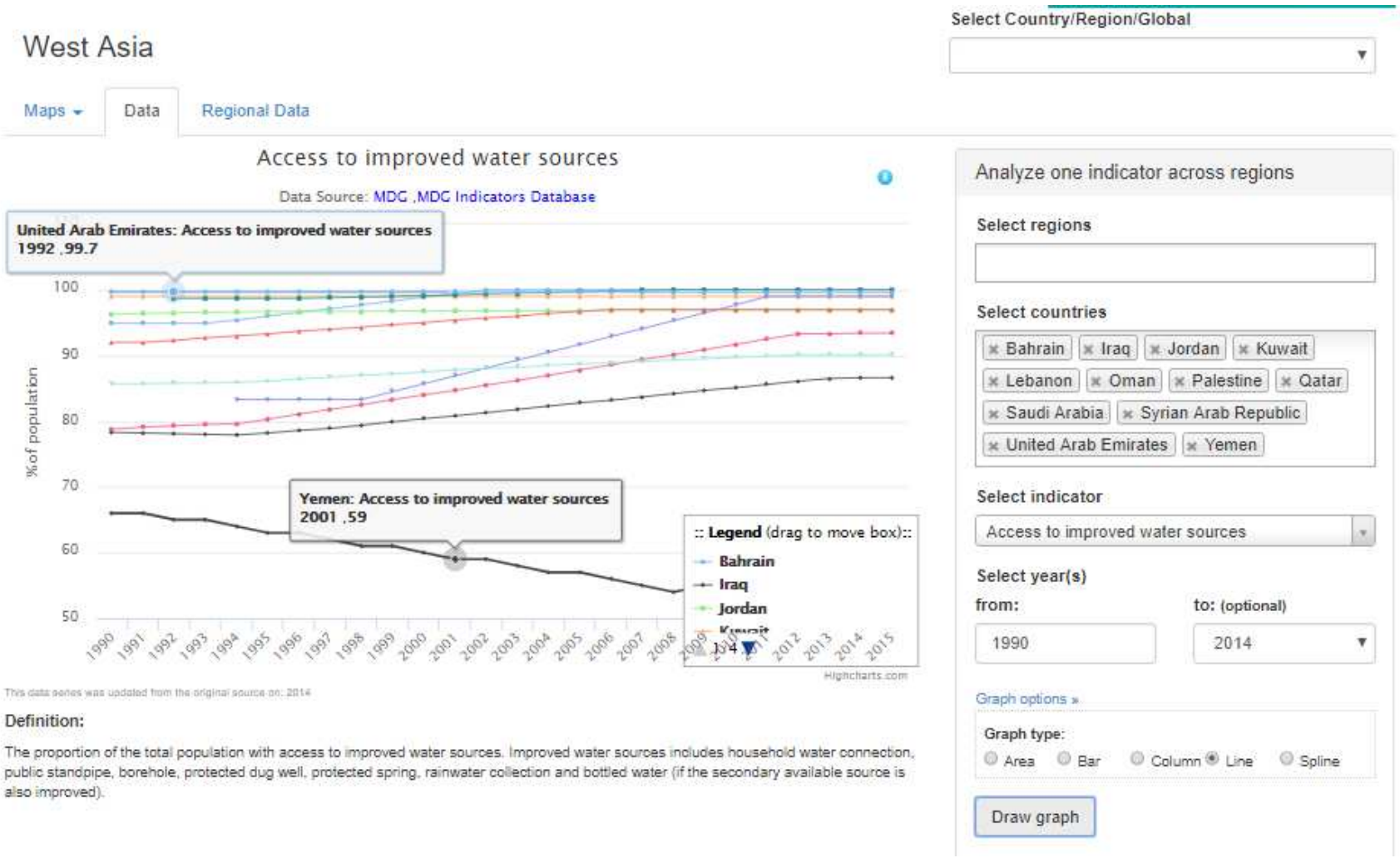
"… The availability of quality, accessible, open, timely and disaggregated data is vital for evidence based decision-making and the full implementation of the 2030 Agenda and realization of its ambitions of leaving no one behind ..." **SDG Progress Report 2018**

"… to demonstrate how UN Environment Programme of Work 2018 – 2021 integrates the 2030 Agenda using its Strategy to support data collection, analysis and reporting. The UN Environment Live initiative provides baseline data and monitors progress against the Goals ..." **UN Environment Executive Director, 2018 Compact**

Environment Live Data and Services -1/3

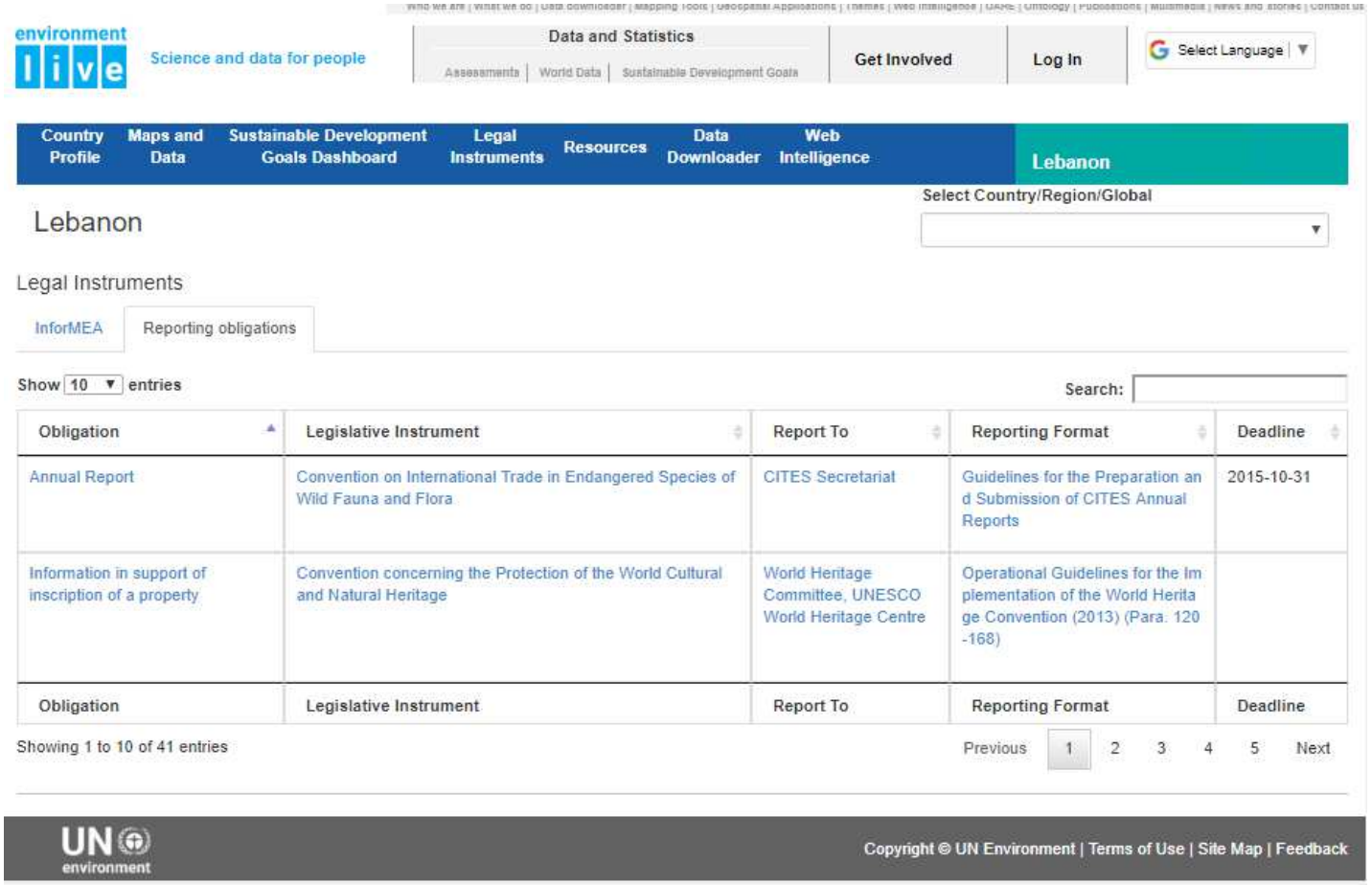
https://environmentlive.unep.org/region/data/WS#charts

Environment Live Data and Services – 2/3



https://environmentlive.unep.org/region/data/WS#charts

Environment Live Data and Services – 3/3



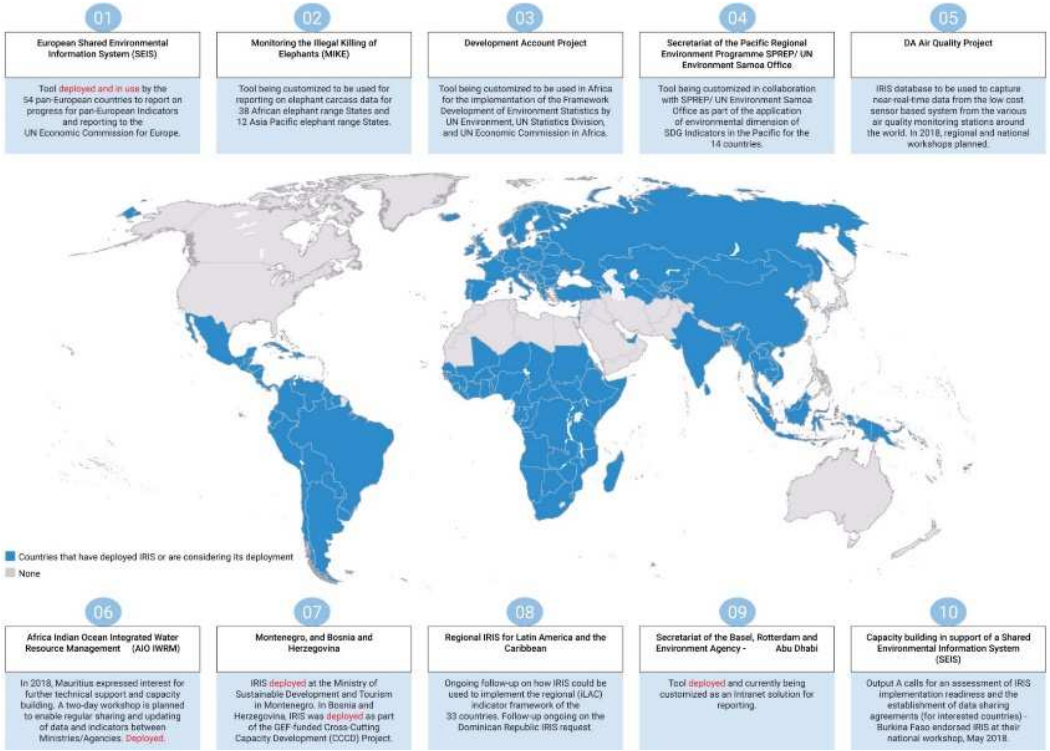
https://environmentlive.unep.org/country/reportingobligations/LB#reporting_obligations

Integrating a variety of services

Services – Technology and Knowledge

1 2 3 4 5 6 7

IRIS
INDICATOR REPORTING INFORMATION SYSTEM



Connecting national and regional indicator reporting systems to data monitoring systems to produce among other products:

- State of the Environment Reports
- Data Compendiums based on the Framework for Development of Environment Statistics

Services – SDGs and Environment Statistics

1 2 3 4 5 6 7

6.3.2, 6.5.1, 6.6.1

Water quality, water resource management and freshwater ecosystems

8.4.1, 8.4.2, 12.1.1, 12.2.1, 12.2.2, 12.3.1, 12.4.1, 12.4.2, 12.5.1, 12.6.1, 12.7.1, 12.a.1, 12.c.1

Sustainable consumption and production, including material flow accounts, chemicals and wastes, environmental policy, food waste and fossil fuels.

14.1.1, 14.2.1, 14.5.1

Ocean related indicators on marine litter, eutrophication, marine management and coverage of protected areas

15.1.2, 15.4.1, 15.9.1, 15.a.1, 15.b.1

Protected areas, including mountains, and national CBD targets, public expenditure on conservation and biodiversity

17.7.1, 17.14.1

Environmentally sound technology and sustainable development policy

UN Environment is custodian agency for 26 Sustainable Goals Indicators

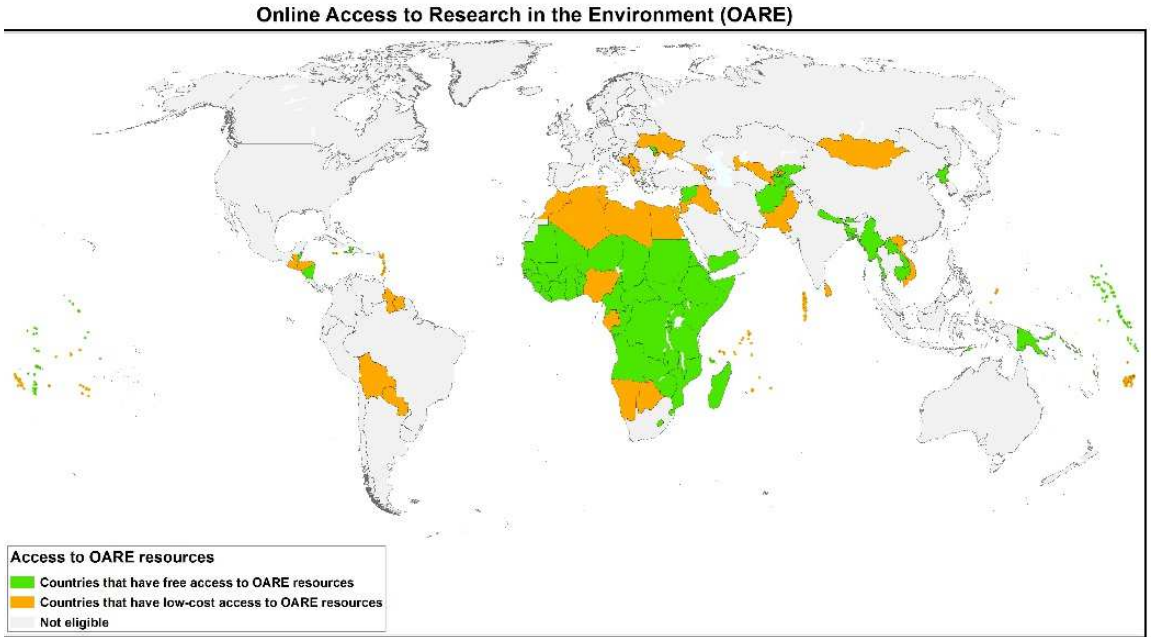
11 out 26 are tier I and tier II and their data is reported to the Secretary General Global database.

Services – Scientific information on the Environment

1 2 3 4 5 6 7

research4life

Research4Life partnership -> Online access to research in the environment (OARE)

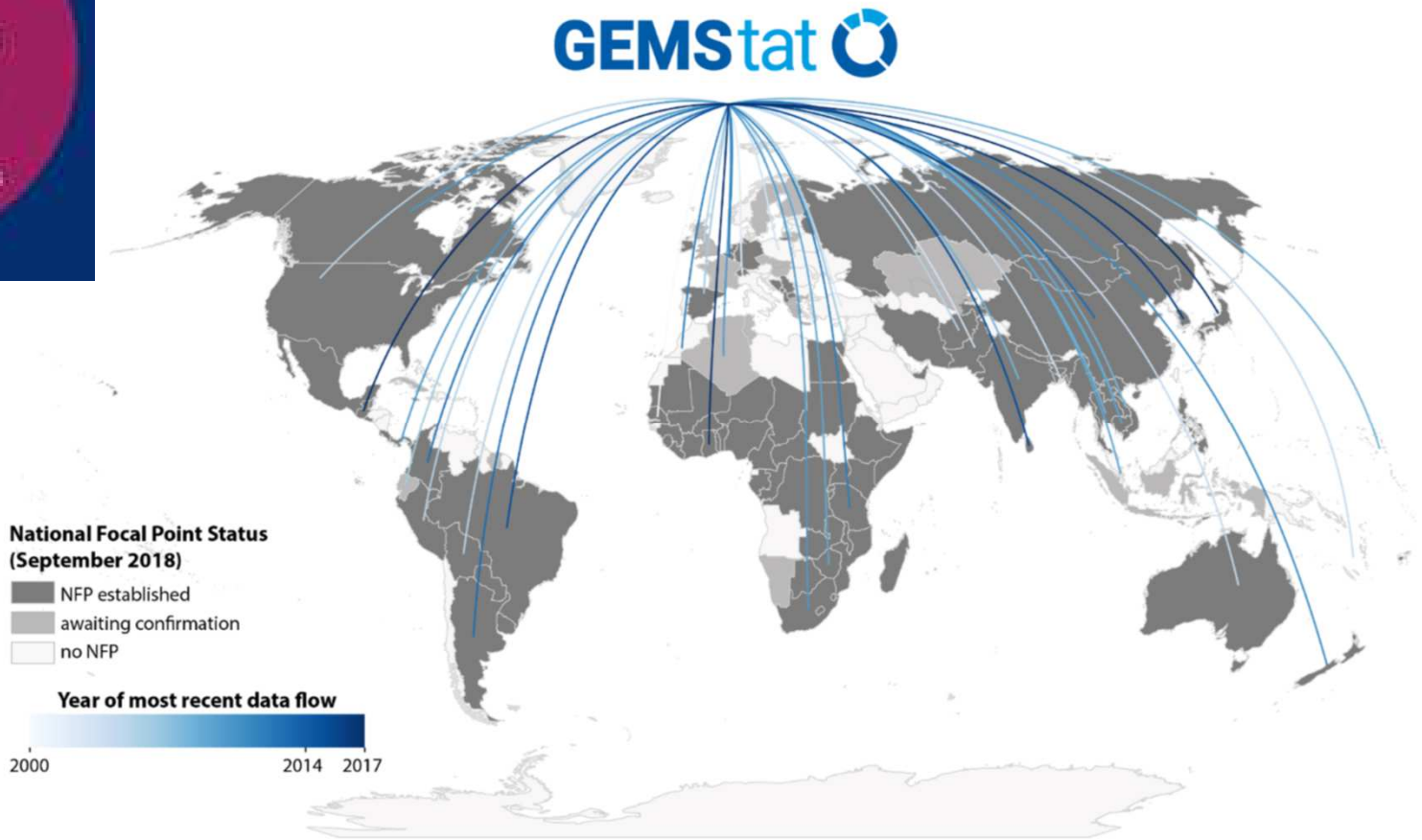


OARE provides access to a collection of up to

- 11,500 scientific journals,
- 27,000 e-books,
- 40 databases and
- other information resources in 118 countries.

Services – Global Environmental Monitoring

1 2 3 4 5 6 7



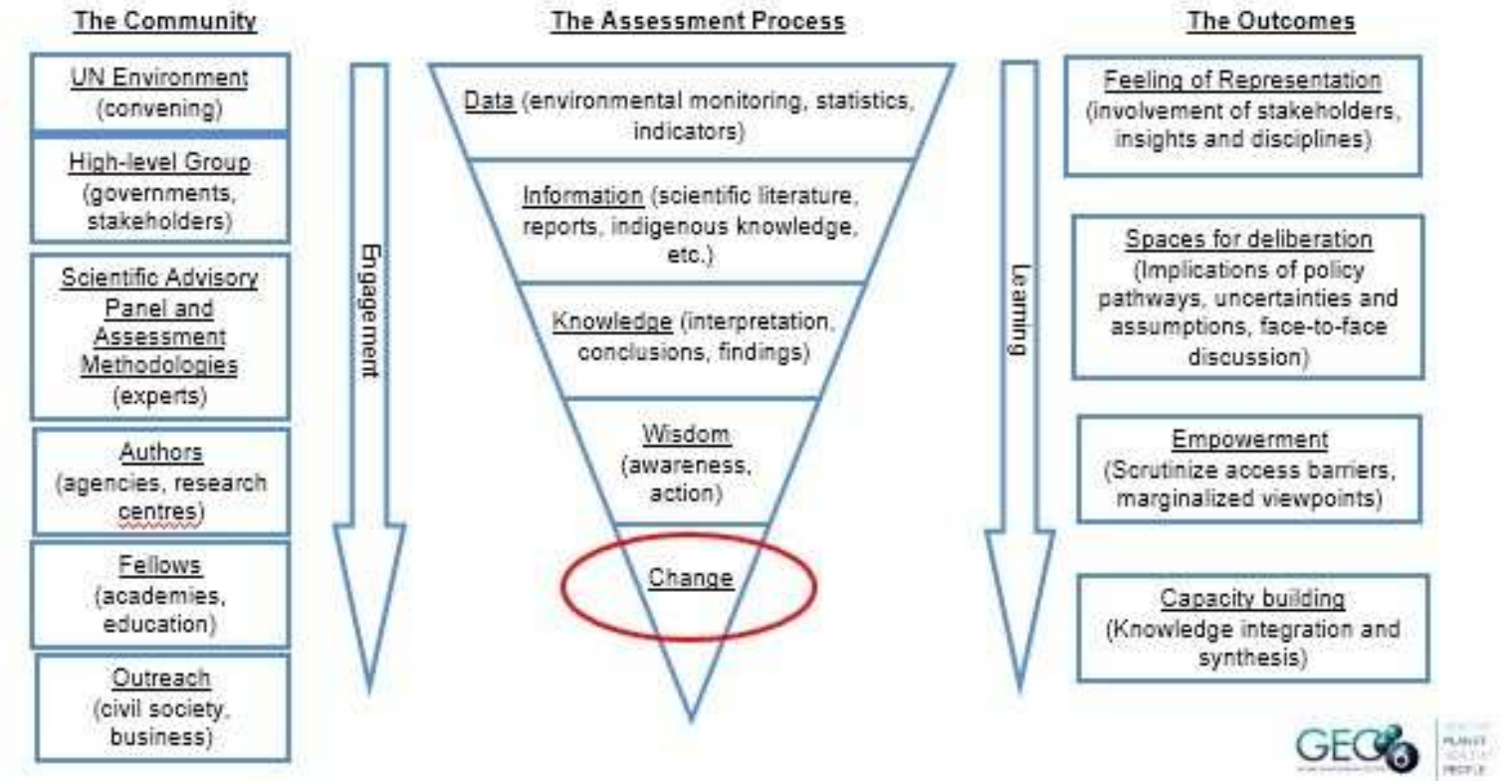
Collecting global water quality data since 1978

Network of over 4,000 stations in 75 countries

Services – Global Environment Outlook, Scientific Assessments and other Thematic Assessments

1 2 3 4 5 6 7

Different groups that are engaged in the process

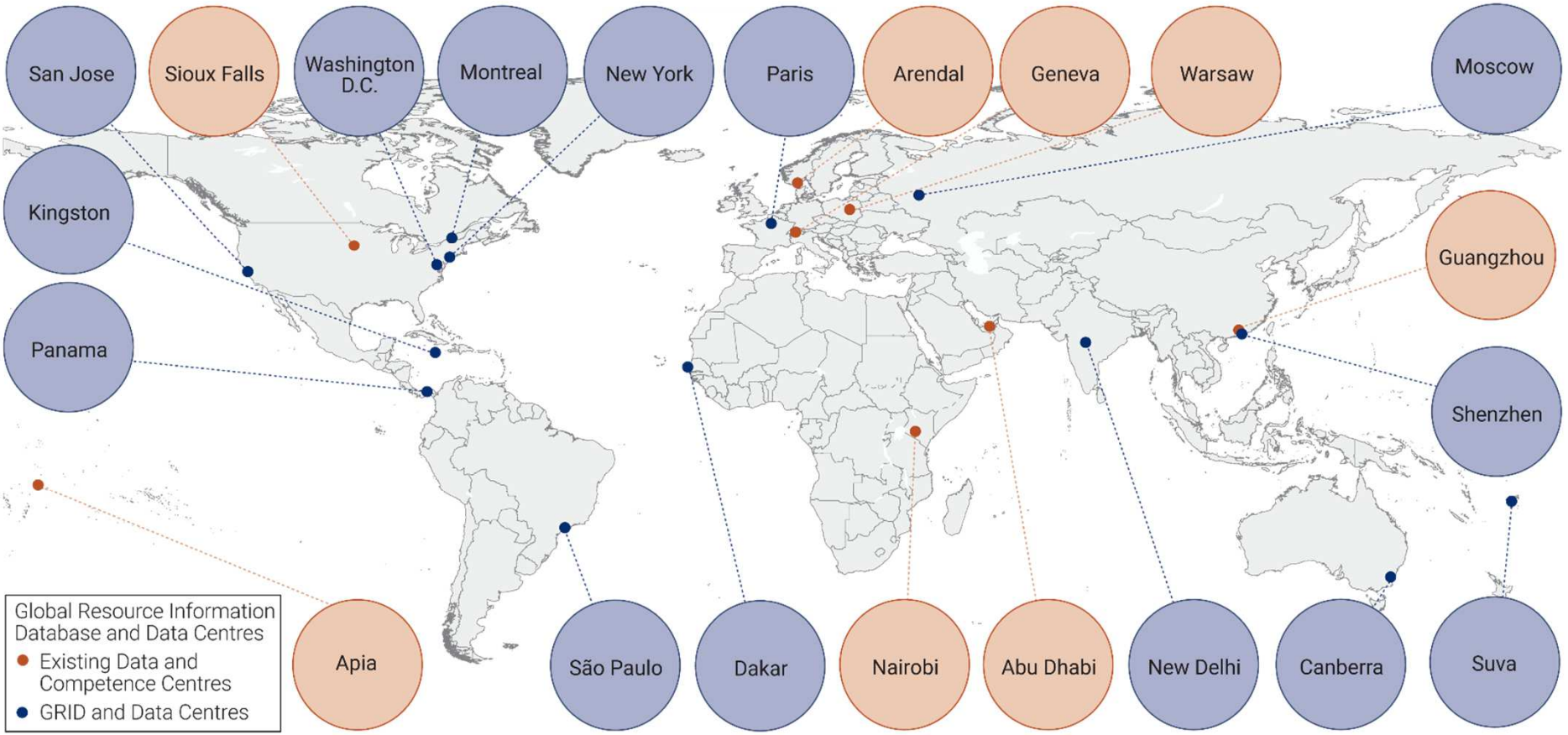


The full GEO-6 as well as the translated Summary for Policy Makers will be made available to the Fourth United Nations Environment Assembly in March 2019 for endorsement.

Services – Private and Citizen Science

1 2 3 4 5 6 7

One Global Partnership including the Private Sector



Services – Global Partnership

Services – Foresight, Green and Emerging Issues

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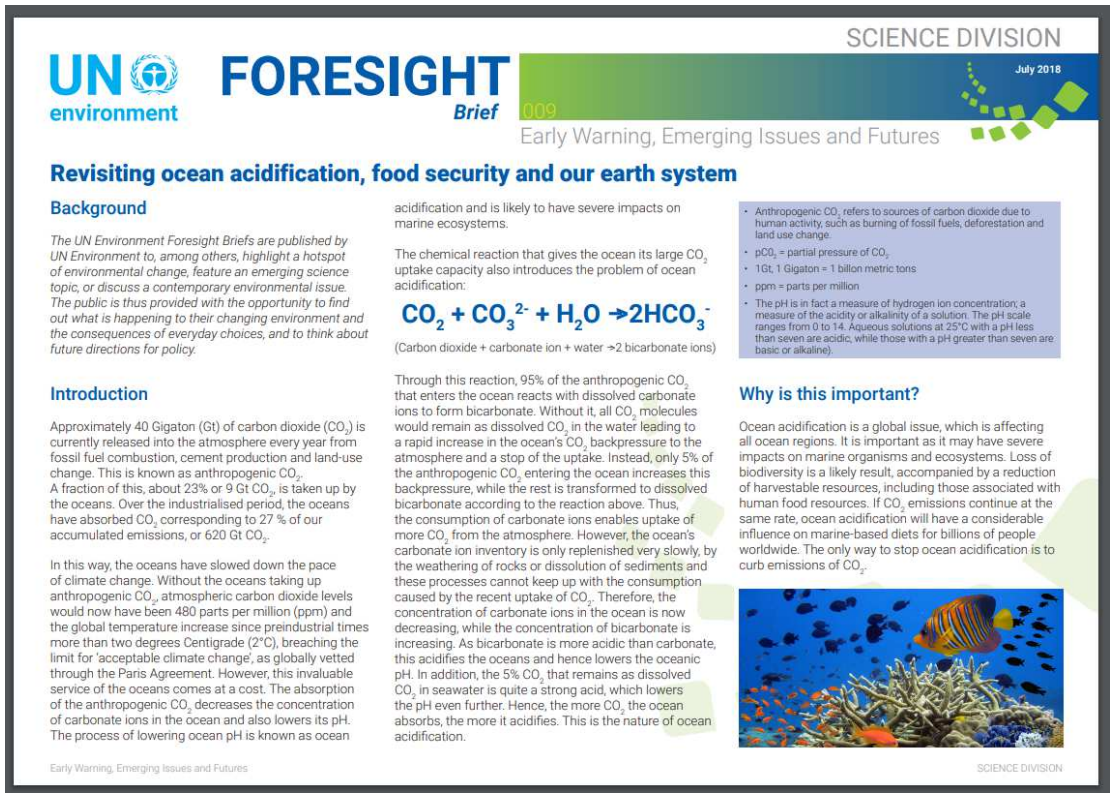


SCIENCE DIVISION

UN environment **FORESIGHT** *Brief* 009 July 2018

Early Warning, Emerging Issues and Futures

Revisiting ocean acidification, food security and our earth system

Background

The UN Environment Foresight Briefs are published by UN Environment to, among others, highlight a hotspot of environmental change, feature an emerging science topic, or discuss a contemporary environmental issue. The public is thus provided with the opportunity to find out what is happening to their changing environment and the consequences of everyday choices, and to think about future directions for policy.

Introduction

Approximately 40 Gigaton (Gt) of carbon dioxide (CO_2) is currently released into the atmosphere every year from fossil fuel combustion, cement production and land-use change. This is known as anthropogenic CO_2. A fraction of this, about 23% or 9 Gt CO_2, is taken up by the oceans. Over the industrialised period, the oceans have absorbed CO_2 corresponding to 27 % of our accumulated emissions, or 620 Gt CO_2.

In this way, the oceans have slowed down the pace of climate change. Without the oceans taking up anthropogenic CO_2, atmospheric carbon dioxide levels would now have been 480 parts per million (ppm) and the global temperature increase since preindustrial times more than two degrees Centigrade (2°C), breaching the limit for 'acceptable climate change', as globally vetted through the Paris Agreement. However, this invaluable service of the oceans comes at a cost. The absorption of the anthropogenic CO_2 decreases the concentration of carbonate ions in the ocean and also lowers its pH. The process of lowering ocean pH is known as ocean acidification and is likely to have severe impacts on marine ecosystems.

The chemical reaction that gives the ocean its large CO_2 uptake capacity also introduces the problem of ocean acidification:

$$CO_2 + CO_3^{2-} + H_2O \rightarrow 2HCO_3^-$$

(Carbon dioxide + carbonate ion + water →2 bicarbonate ions)

Through this reaction, 95% of the anthropogenic CO_2 that enters the ocean reacts with dissolved carbonate ions to form bicarbonate. Without it, all CO_2 molecules would remain as dissolved CO_2 in the water leading to a rapid increase in the ocean's CO_2 backpressure to the atmosphere and a stop of the uptake. Instead, only 5% of the anthropogenic CO_2 entering the ocean increases this backpressure, while the rest is transformed to dissolved bicarbonate according to the reaction above. Thus, the consumption of carbonate ions enables uptake of more CO_2 from the atmosphere. However, the ocean's carbonate ion inventory is only replenished very slowly, by the weathering of rocks or dissolution of sediments and these processes cannot keep up with the consumption caused by the recent uptake of CO_2. Therefore, the concentration of carbonate ions in the ocean is now decreasing, while the concentration of bicarbonate is increasing. As bicarbonate is more acidic than carbonate, this acidifies the oceans and hence lowers the oceanic pH. In addition, the 5% CO_2 that remains as dissolved CO_2 in seawater is quite a strong acid, which lowers the pH even further. Hence, the more CO_2 the ocean absorbs, the more it acidifies. This is the nature of ocean acidification.

- Anthropogenic CO_2 refers to sources of carbon dioxide due to human activity, such as burning of fossil fuels, deforestation and land use change.
- pCO_2 = partial pressure of CO_2
- 1Gt, 1 Gigaton = 1 billon metric tons
- ppm = parts per million
- The pH is in fact a measure of hydrogen ion concentration; a measure of the acidity or alkalinity of a solution. The pH scale ranges from 0 to 14. Aqueous solutions at 25°C with a pH less than seven are acidic, while those with a pH greater than seven are basic or alkaline).

Why is this important?

Ocean acidification is a global issue, which is affecting all ocean regions. It is important as it may have severe impacts on marine organisms and ecosystems. Loss of biodiversity is a likely result, accompanied by a reduction of harvestable resources, including those associated with human food resources. If CO_2 emissions continue at the same rate, ocean acidification will have a considerable influence on marine-based diets for billions of people worldwide. The only way to stop ocean acidification is to curb emissions of CO_2.

Early Warning, Emerging Issues and Futures SCIENCE DIVISION

The public is provided with the opportunity to

- Find out what is happening to their changing environment
- Find out the consequences of everyday choices
- Think about future directions for policy.

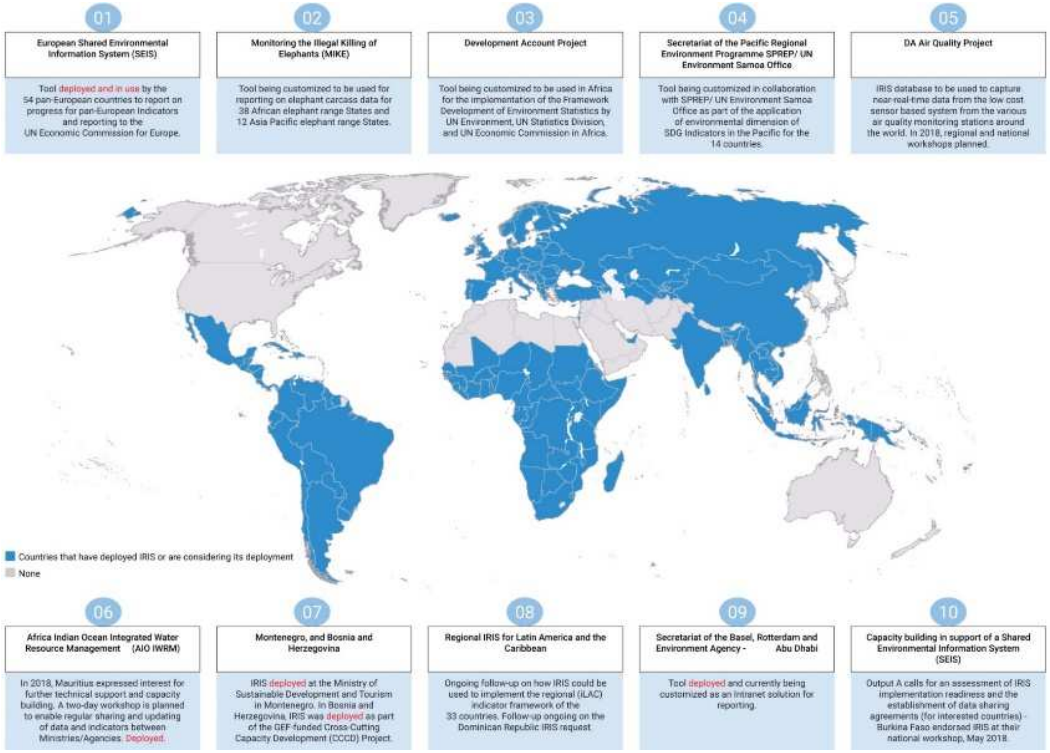
Published monthly to, among others:

- highlight a hotspot of environmental change,
- feature an emerging science topic, or
- discuss a contemporary environmental issue

The Indicator Reporting Information System (IRIS)

1 2 3 4 5 6 7

IRIS
INDICATOR REPORTING INFORMATION SYSTEM



Connecting national and regional indicator reporting systems to data monitoring systems to produce among other products:

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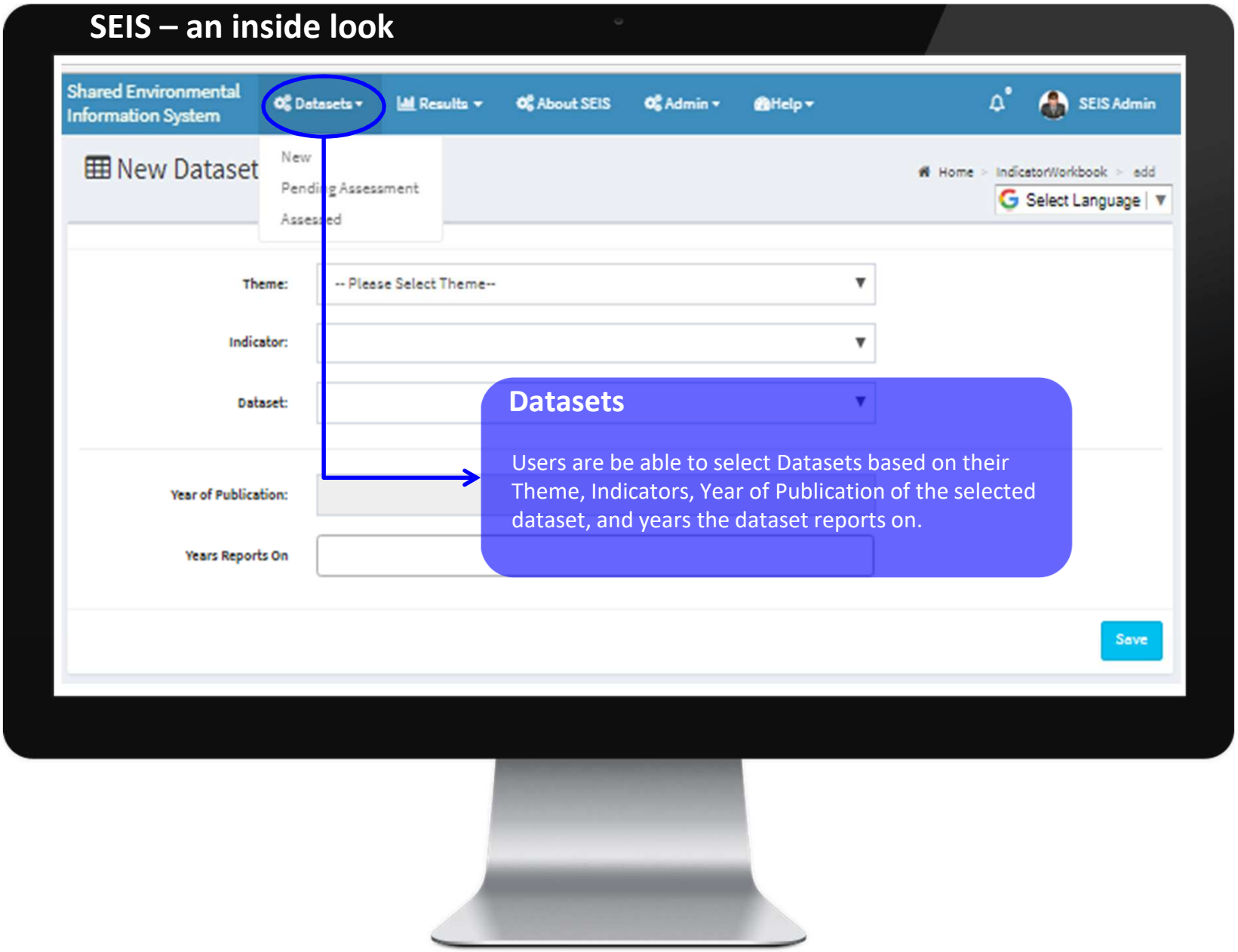
Indicator Reporting Information System

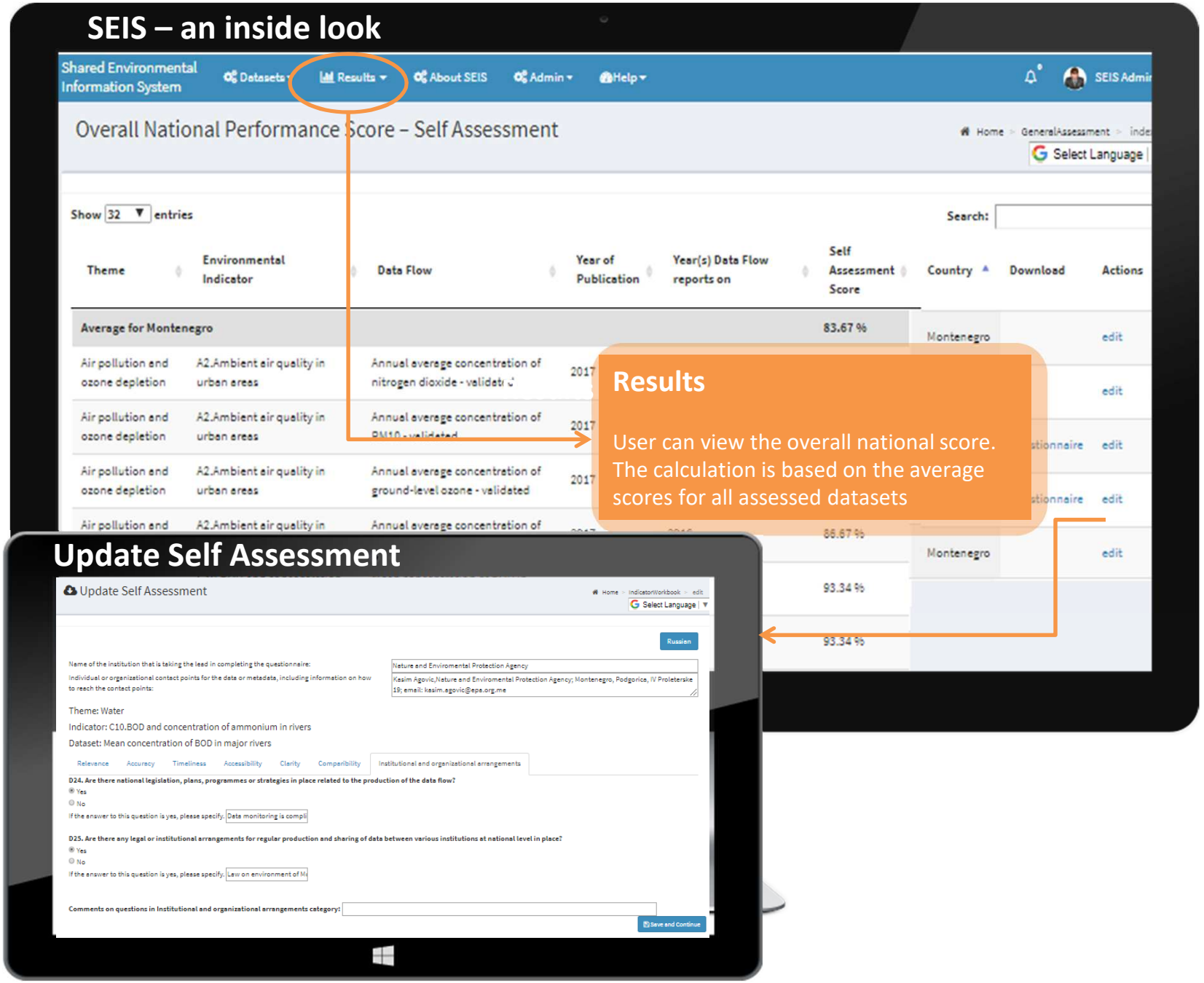
SEIS Home Page

https://environmentlive.unep.org/seis/default

SEIS – an inside look



SEIS – an inside look



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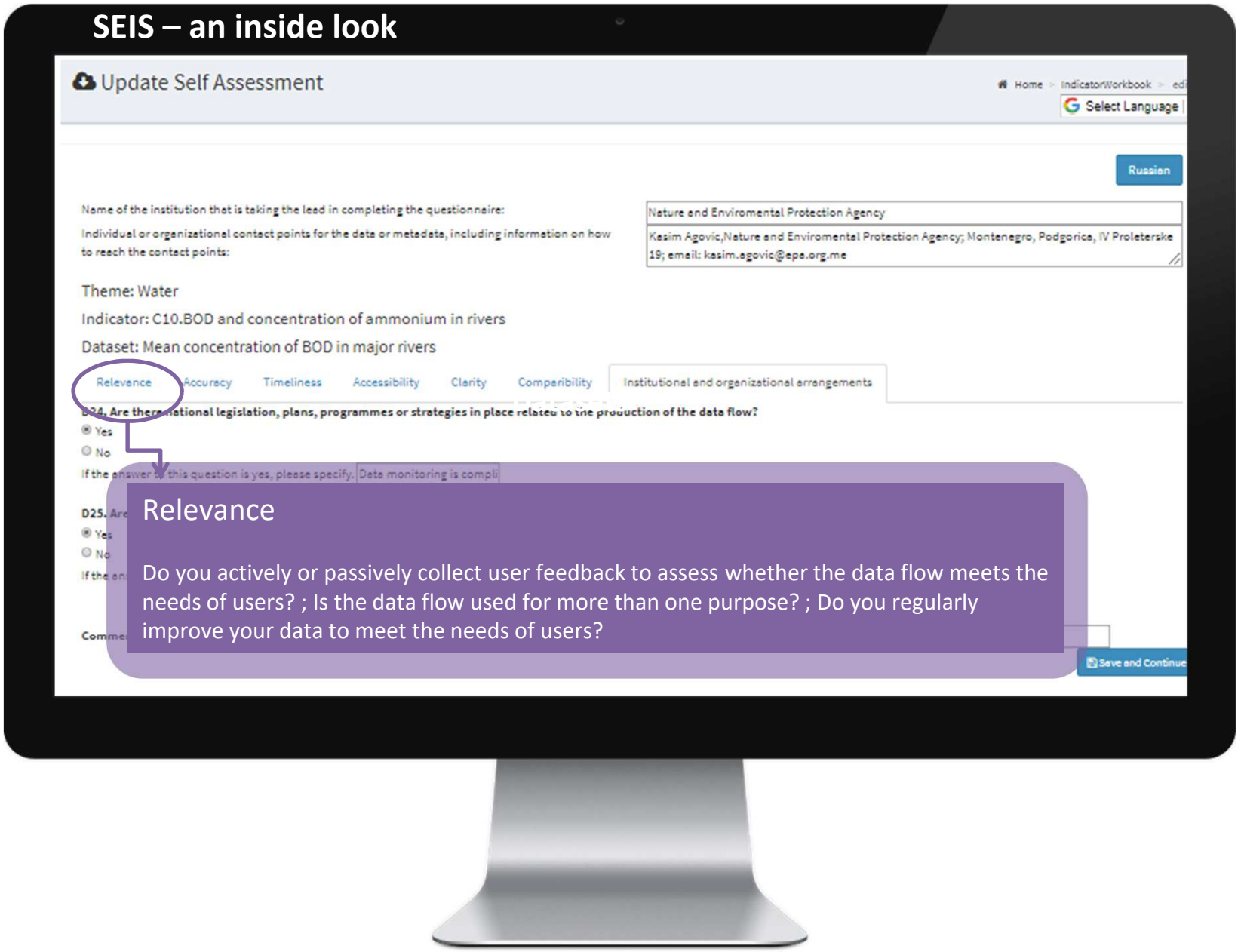

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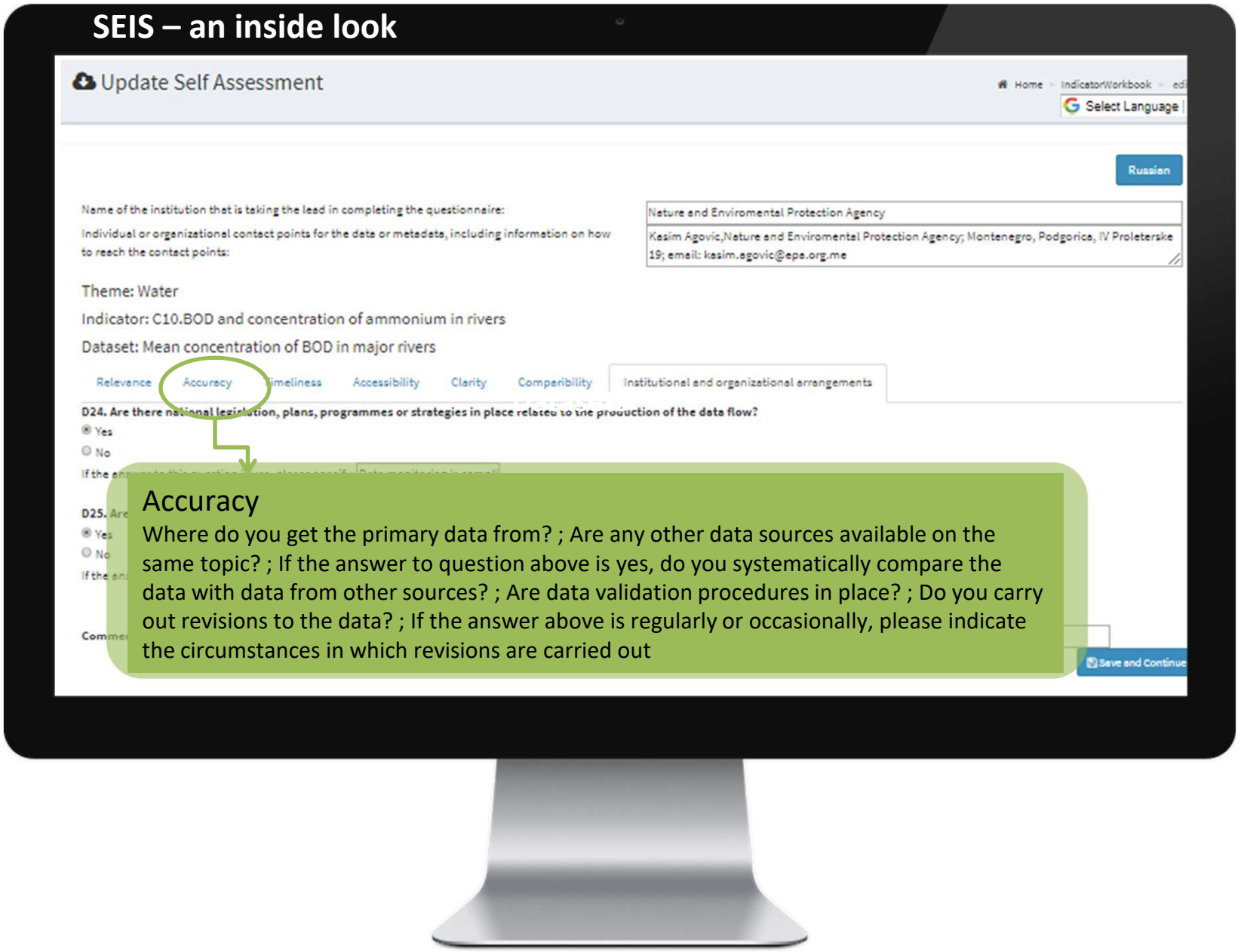

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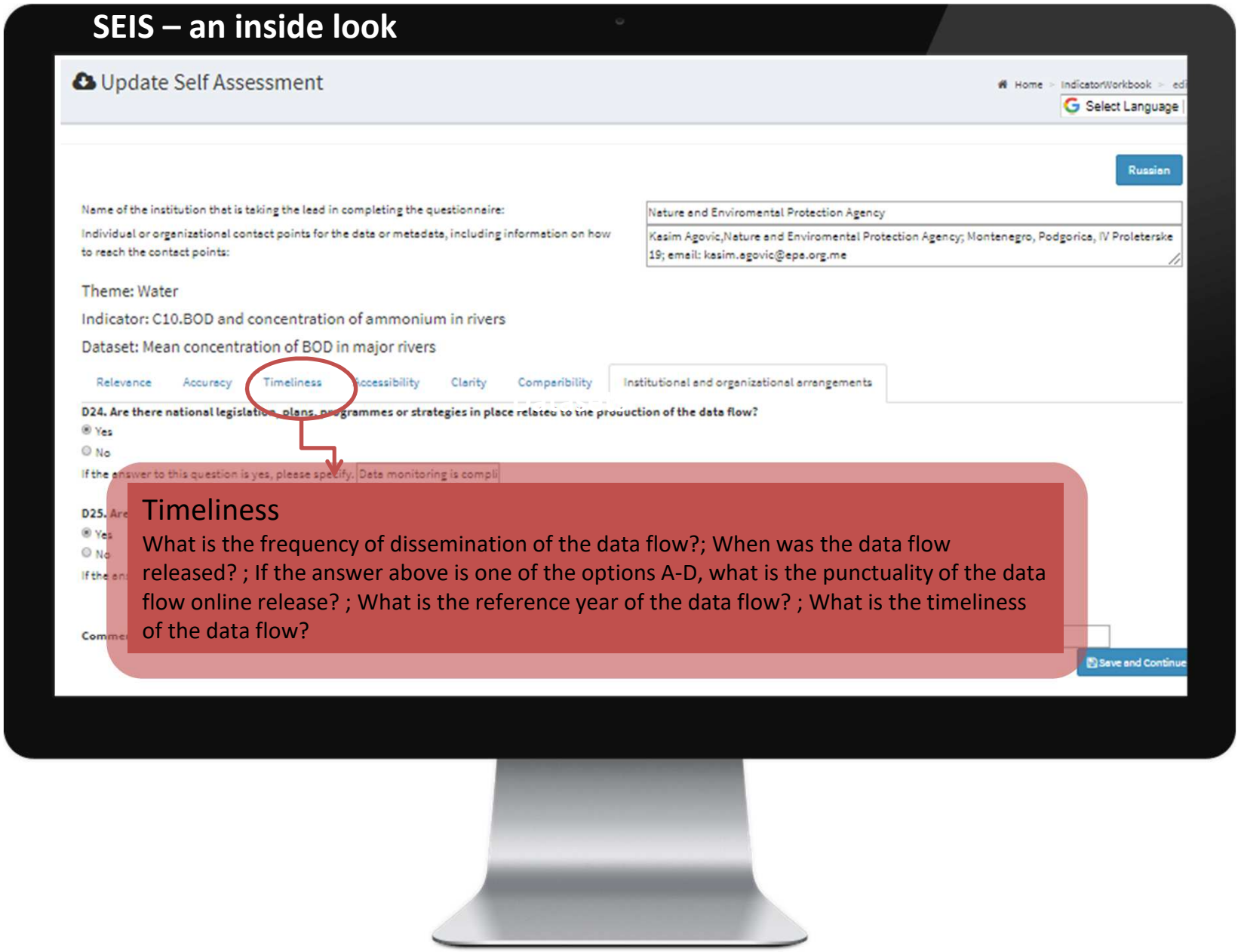

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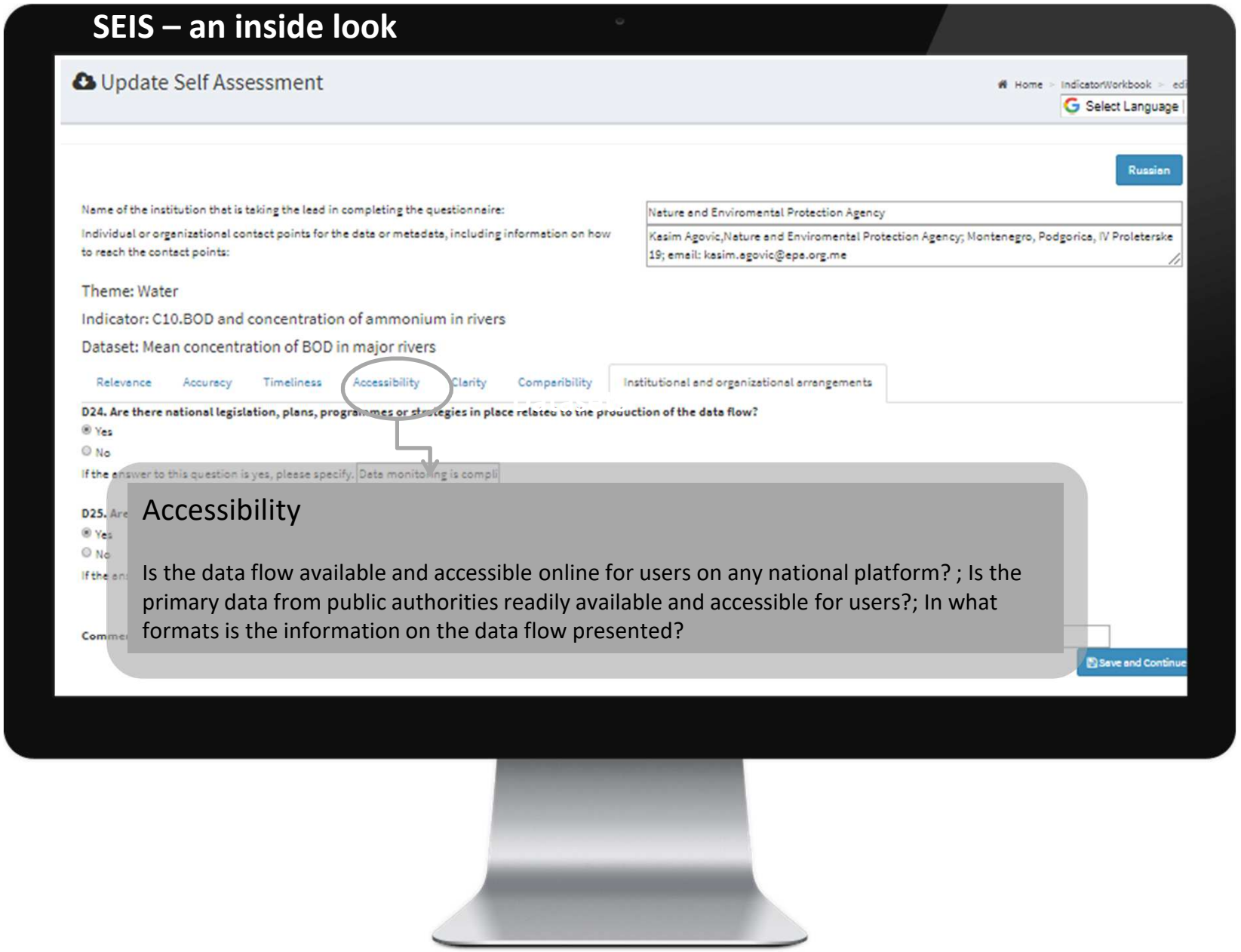

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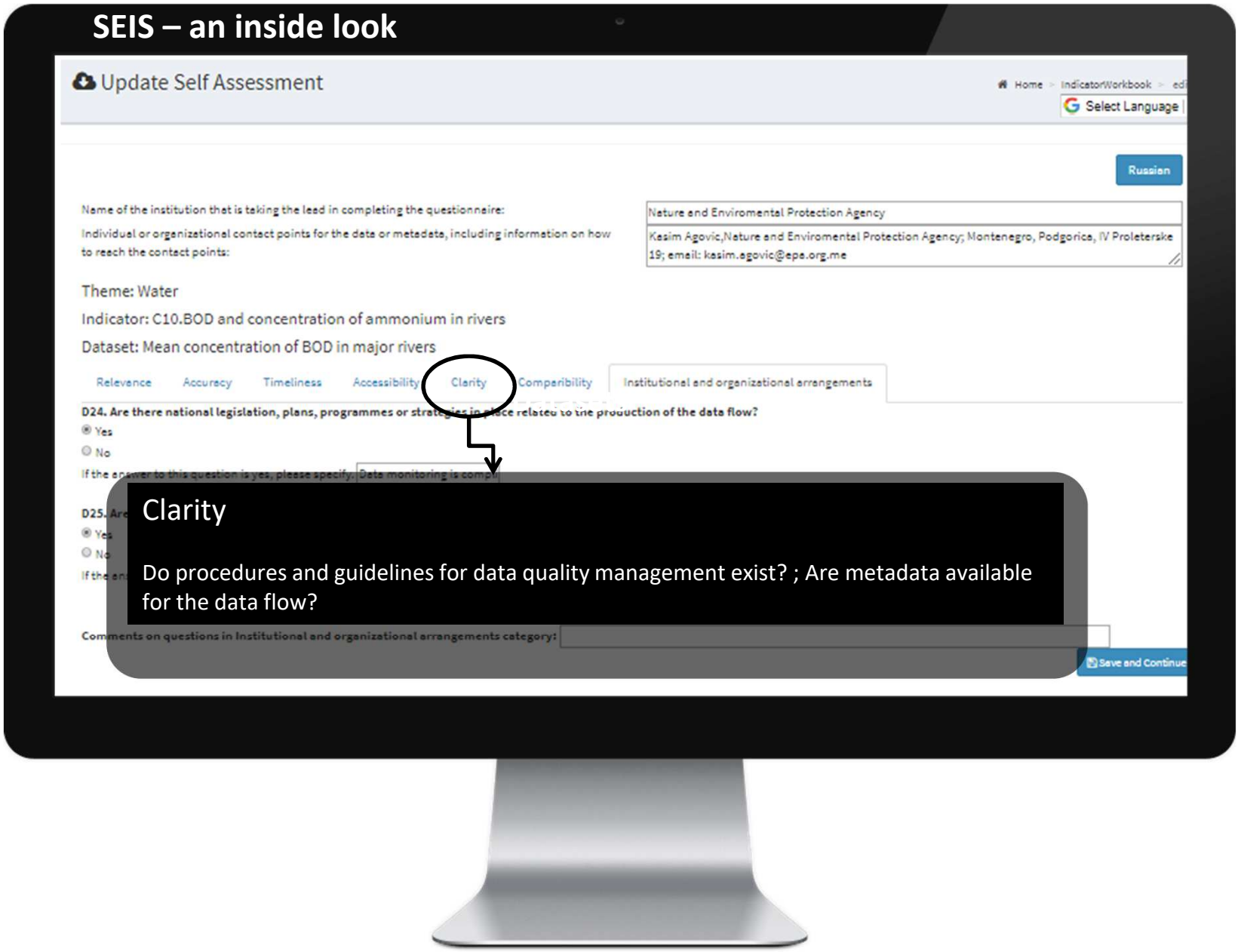

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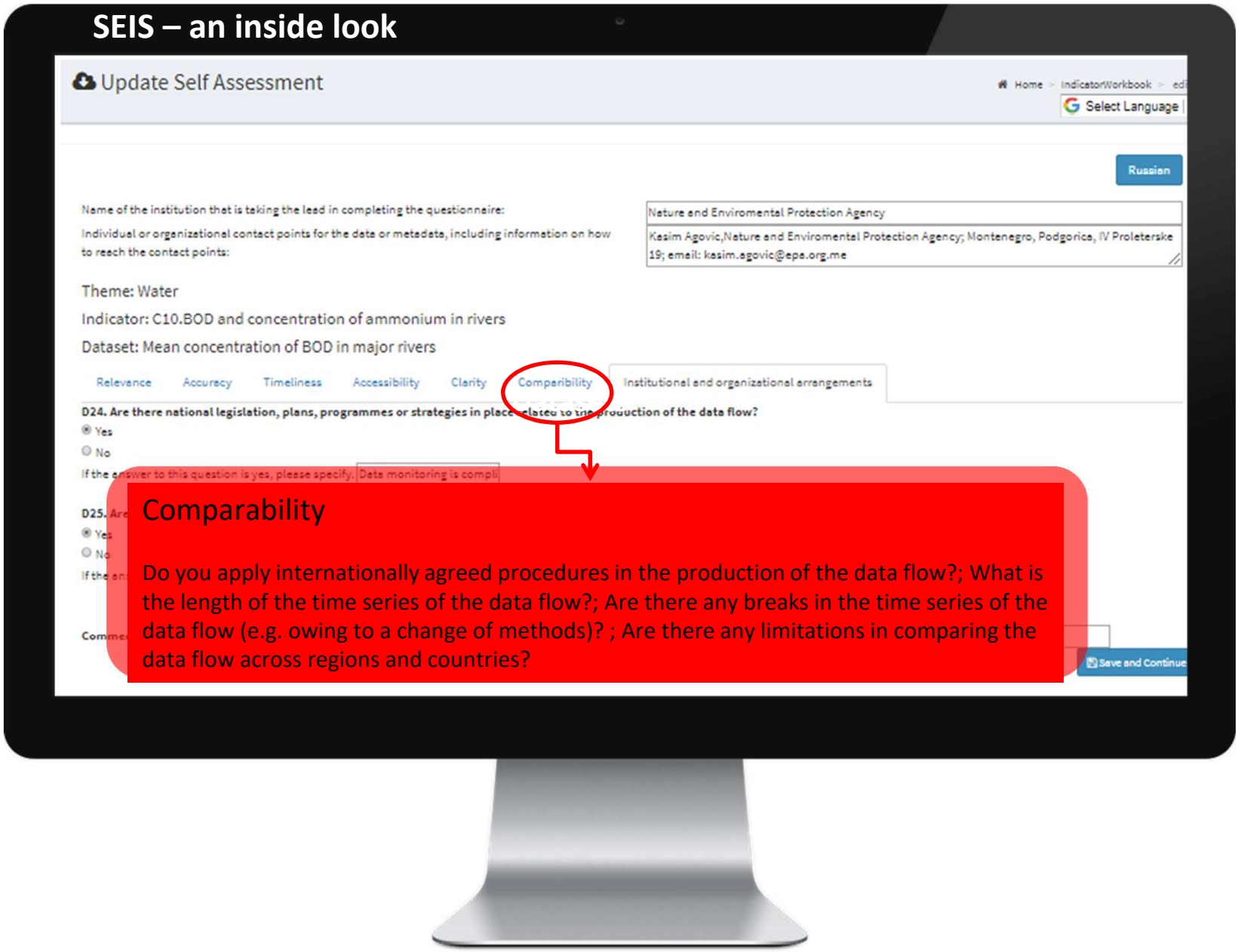

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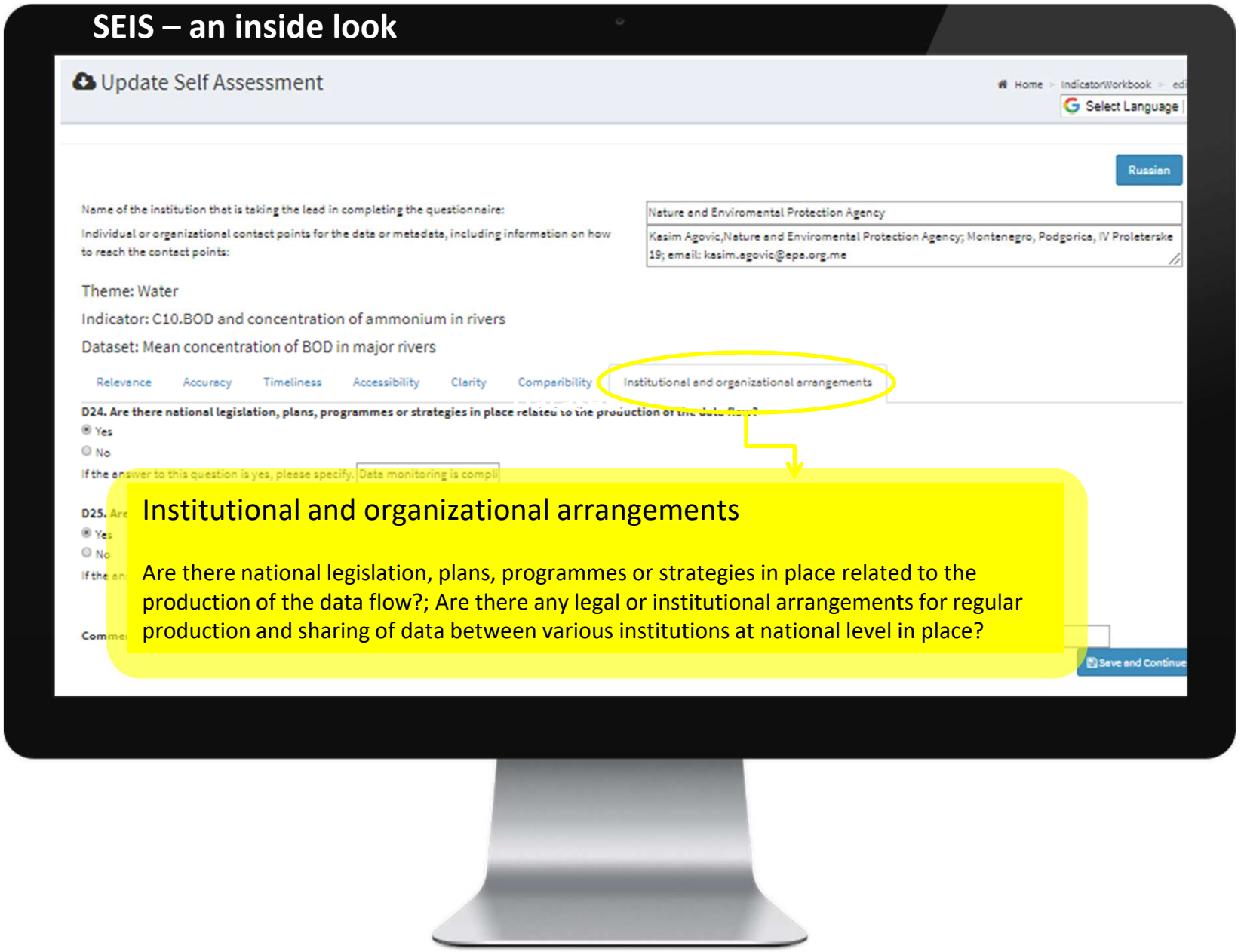

Institutional and organizational arrangements

Are there national legislation, plans, programmes or strategies in place related to the production of the data flow?; Are there any legal or institutional arrangements for regular production and sharing of data between various institutions at national level in place?

Value Proposition

1. Harnessing Big Data for DECISIONS, POLICY and ACTION (UN Wide Strategy and Across UN Environment)

2. World Environment Situation Room: UN Environment response to Big Data on the Environment Revolution

3. It is about IMPACT ON PEOPLE and on the GROUND (countries)

4. Based on Solid SCIENCE and building the FUTURE: FORESIGHT

5. A Worldwide HUB PARTNERSHIP including the PRIVATE SECTOR

OFFICIAL LAUNCH OF THE WORLD ENVIRONMENT SITUATION ROOM BY THE UN ENVIRONMENT EXECUTIVE DIRECTOR March 2019

UNSD

European Environment Agency

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United Nations Environment Programme

THANK YOU