



# UKEOF Horizon Scanning

## Summary Report

2018-2019

Gareth Old, UKEOF Secretariat

### Introduction

It is widely recognised that to be a strategic and forward looking organisation you need to look beyond the usual business planning cycles (~5 yrs) and understand and plan for the risks and opportunities of longer-term change (5+ years) . The UKEOF is well placed to facilitate partner organisations in addressing this longer-term thinking.

Through consulting partners and other experts (e.g. from the Government Office for Science) the UKEOF Horizon Scanning activity developed during 2018. This has been led by Doug Wilson (Environment Agency), the UKEOF Management Group lead, supported by Gareth Old from the Secretariat. A **core group** was established to deliver the activity with horizon scanning experts from the Environment Agency (Jason Dinsdale), Natural England (Helen Doran), Department of Environment Food and Rural Affairs (Phil Tovey) and the Forestry Commission (Ben Ditchburn).

The objective and outcomes of this horizon scanning activity were discussed by the core group and agreed to be:

**Objective:** To identify future priorities (risks and opportunities) for the UK environmental observation community as represented here by UKEOF partners.

**Outcomes:** Common priorities identified; encouraged collaborative working; and a priority activity proposed for UKEOF workplan.

### Summary of approach taken

The start point was using a **questionnaire**, based on the 7 questions futures technique (GOScience, 2017), to consult partner organisations. All partners were invited to contribute to a 6 question (see Box 1 below) questionnaire in February 2019.

#### Box 1: Six question questionnaire sent to all UKEOF partners

1. Looking back, what do you think has been the most successful use of environmental observations and monitoring in the UK over the last 10-20 years? Why do you think it was successful?
2. What novel, emerging or poorly monitored environmental threats do you think environmental observation could help us monitor?
3. What emerging or converging technologies do you think might transform environmental observation in the future?
4. What other future challenges and opportunities may occur for using environmental observation more widely across government? The challenges can be political, economic, social and/or legal.
5. How would you summarise your current observation and monitoring priorities and how are these likely to change in the future?
6. If you weren't constrained by institutional barriers or resources what would be your biggest ambition for environmental observation in the UK?

The expert opinions from the questionnaire formed the basis of a **workshop session in March 2019**. A detailed report from this workshop was shared with all UKEOF partners. The plenary session of the workshop identified the following six future priorities:

1. Accessing Open data
2. What is the potential of Big data and how can this be realised?
3. Balancing the need to maintain consistent long time series against more immediate observation demands (e.g. for policy).
4. Ensuring a cross disciplinary approach to environmental management.
5. Maximising synergies between earth observation and ground based measurements.
6. Using and ensuring the legacy of pre-digital data.

These priorities were then discussed further in the 33<sup>rd</sup> Management Group Meeting (25<sup>th</sup> September 2019) to clarify the scope of each and to identify the top priority. A one hour horizon scanning session was incorporated into the agenda. Prior to the meeting all attendees were asked (by email) to complete two tables; one asking how important each of the six areas are to their organisation and second whether each of the areas is currently an active work area.

#### **Importance of the six areas to UKEOF partners**

Most organisations scored priorities 1 to 5 as being of high importance to their organisations. Furthermore, another priority was proposed (developing approaches to synthesising diverse evidence) and rated with high importance by the Environment Agency and Natural Resources Wales. It is notable that priority 6 (legacy of pre-digital data) was scored with lower importance. Most partners reported that priorities 1 to 5 were active areas of work in their organisations. In line with its lower level of importance in many organisations, priority 6 was also a less common active area of work.

## **Clarifying the scope of each of the six areas**

An open discussion was chaired by Gareth Old to better understand the scope of each of the six priorities (see below).

### **1. Accessing Open data**

What are the usage rights?

Can we depend on these data?

Do we adequately understand the quality of the data? and associated metadata?

Are there any issues around the interpretation of open data?

Should the use of open data be better managed? Availability of data often down to the experience of individuals.

How do we keep track of open data usage for audit purposes?

### **2. What is the potential of Big data (data analytics) and how can this be realised?**

What do we actually mean by Big Data? Is it large unstructured datasets (e.g. those from social media)?

How can we better understand any biases that may exist in the data?

How can we better harness expertise from across UKEOF and externally?

What is the potential to amalgamate varied data?

What tools, techniques, and skills exist to interrogate big data?

### **3. Balancing the need to maintain consistent long time series against more immediate observation demands (e.g. for policy).**

How can we sustain long-term monitoring whilst meeting short term needs?

How can we incorporate innovations in monitoring programmes?

### **4. Ensuring a cross disciplinary approach to environmental management.**

What is meant by a cross disciplinary approach?

What is the value of a cross disciplinary approach?

Define common terminology.

What are the spatial scales of different disciplines?

### **5. Maximising synergies between earth observation and ground based measurements.**

Are there mismatches with regard to spatial scale?

Are there mismatches with regard to timing (e.g. seasons, years)?

What ground based measurements and EO data exist? How do we link them together?

Are we measuring the right things?

Are there barriers to using the data?

What standards exist?

### **6. Using and ensuring the legacy of pre-digital data.**

Need to better understand what we have.

## **Identifying the priority issue for inclusion in the UKEOF workplan**

Doug Wilson chaired the final discussion to identify and develop the scope of a key priority to propose for inclusion in the UKEOF workplan. Priority 3, which is focused on balancing the need to maintain consistent long time series against more immediate demands (e.g. for policy), gained most support.

### **Next step:**

UKEOF secretariat will consult the horizon scanning core group and propose an activity based on priority 3.