



# BID-REX

Interreg Europe



European Union  
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## Conclusions of BID-REX Interregional thematic workshop

15th June, 2017, Bilbao – Basque Country

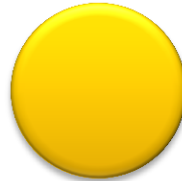
**Marta Ituribarria**

Basque Government

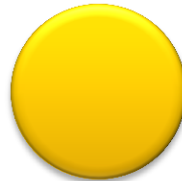
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“ **Index** ”

Summary



Focus of the session



The information we have



- 1.1.- The information
- 1.2.- Driving forces – new processes
- 1.3.- Decision making

Information needed



- 2.1.- Data and information: Access and identification
- 2.2.- How to value the information: Establishing the criteria for assessing information
- 2.3.- Evaluation and impact: Specifying evaluation criteria

Innovation opportunities



- 3.1.- New data sources
- 3.2.- New tools to manage information
- 3.3.- Design of mechanisms and processes

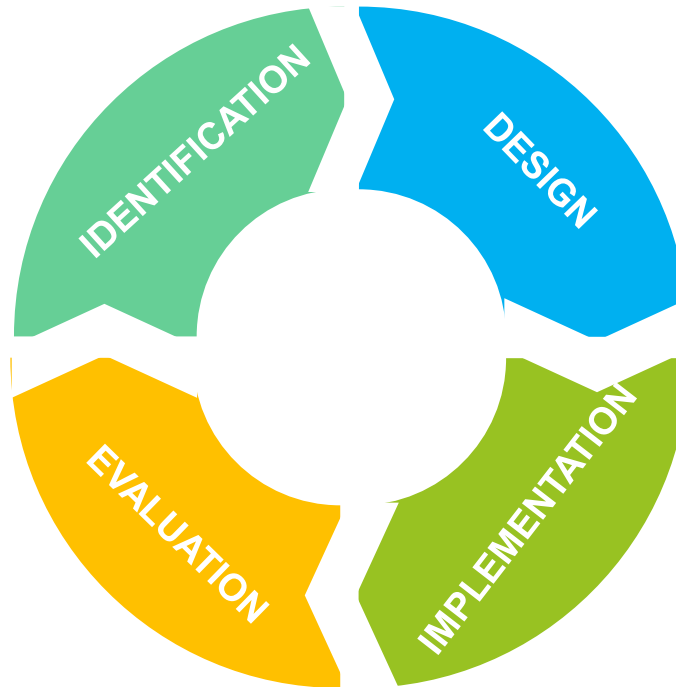
- This document summarises the main contributions made at the **international participatory workshop** held on **15<sup>th</sup> June 2017** in the Basque Country with the participation of 33 people from the 6 regions represented in the project.
- The workshop **was organised by the Basque Government** in collaboration with Innobasque (Basque Innovation Agency), to continue the process launched at regional level in Wallonia in February 2017.
- The first phase of the learning process focused on the identification of data needs for decision makers.



*This second workshop was approached as an opportunity to study whether we are on the right road and if the information generated meets our needs*

## Where are we?

Social awareness  
Analysis of the problem / needs  
Diagnosis  
Models



## Where do we want to go?

Identification and analysis of alternatives  
Choice of solution: objectives, actions, instruments, timeline, financing

## How?

Allocation of resources: human, economic, etc.

## Are we on the right road?

Control and monitoring  
Lessons learned  
Indicators / Tendencies / Factors of change

## 3 big questions for debate:

1.- The information we have, is it fit-for-use based on our requirements?

2.- Information needed to respond to the obligations contained in the regulations, strategic documents and policies

3.- Innovation opportunities: new tools for the capture understanding of the and the information

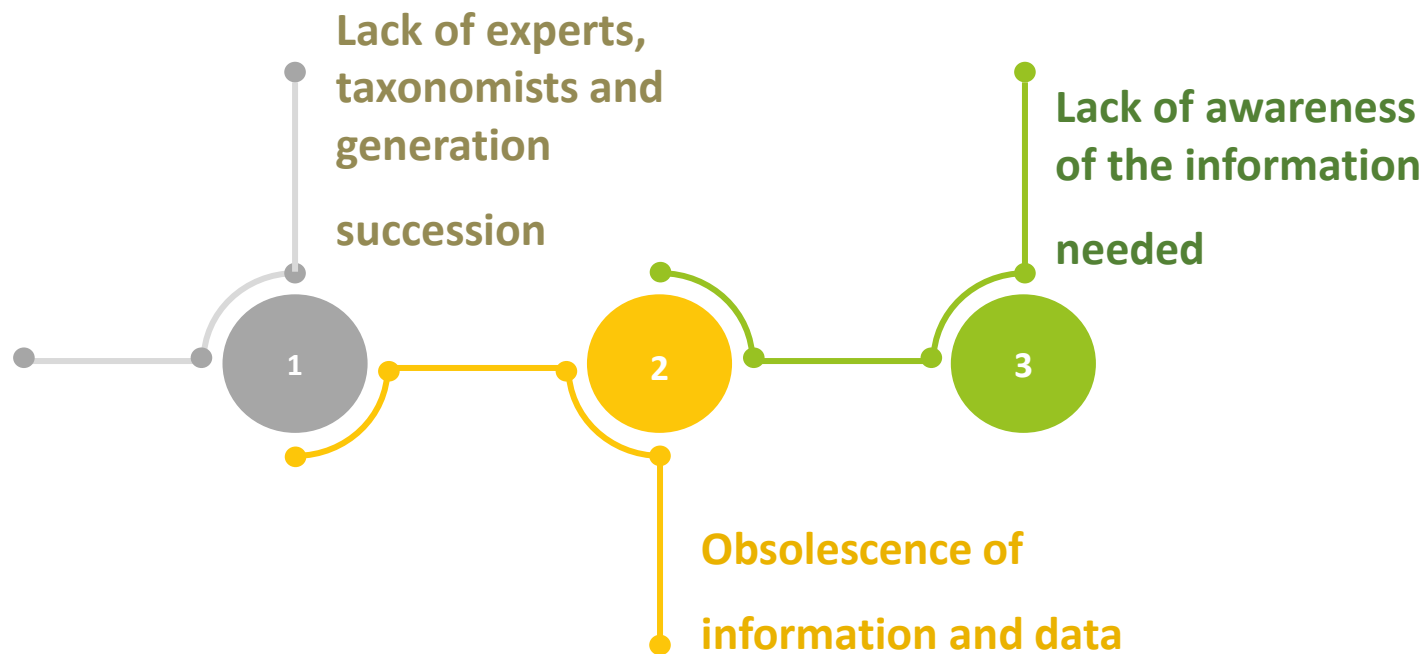




**1 THE INFORMATION WE HAVE, IS IT FIT-FOR-USE BASED ON OUR REQUIREMENTS?**

# 1.1.- The information

The first step to get fit-for-use information is to work on some of the **main obstacles** to obtain quality information.



It is essential to **establish what information is relevant** for each need.

*Here, some of the **main aspects identified to make the information relevant** for each need and use:*



- Identify potential users of existing information
- Analyse needs
- Analyse existing information: review reports, papers, scientific works ....
- Identify what is missing: data, knowledge, experts ...

- Methodologies and harmonization in data collection and management
- Criteria to define the information required for each need
- Build consensus trough networking

- Incorporate the "new" approaches (ecosystem services, green infrastructure ...)
- All knowledge is useful
- New sources of information: technologies, spatial data and services



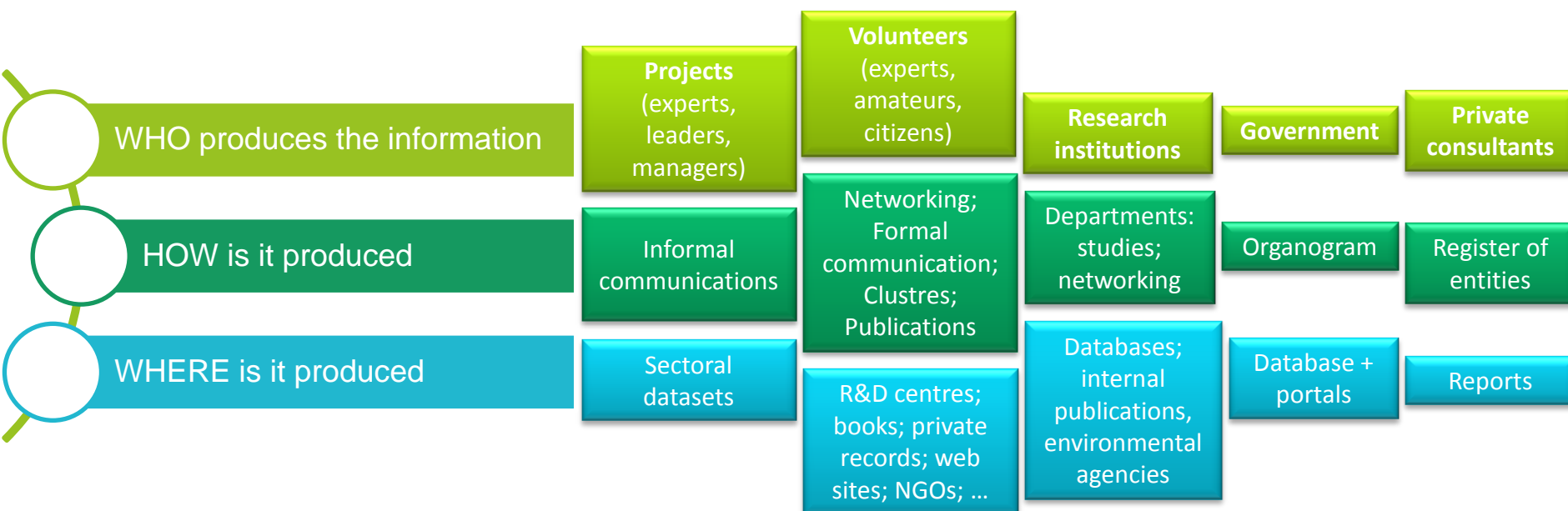
- Define the process linked to the goal (needs - available information – objective - gap - missed information)
- Focus on what would answer the questions
- Prioritization: needs for data and which data is required for those needs
- It's important to acquire in the correct way the need (through tool) and to extract the answer (through tool)

- Talk – share thoughts and opinions among involved people
- Participatory processes - “committee of stakeholders”
- Ask the end users – communication
- Organize technical meetings with providers and users
- Communication between administration and scientific community
- Panel of experts from authorities, politicians, other stakeholders, data providers, etc.



# 1.2.- Driving forces – new processes

Even knowing the **relevant information**, the real challenge is to **obtain and use it in a more efficient manner**:



**Technology** could play a **key role** in guaranteeing and facilitating access to information

# How can we facilitate access to, and use of, information?

Be sure that the information provided is the information needed

- Dialogue between producers and users
- Administrations should inform scientific institutions about the species/habitats they are interested in
- Information should be provided as an interpreted product that meets the needs of the users/authorities

Usability is first – user experience approach

- User friendly interfaces and appropriate portals (websites / apps)
- Create simple tools for involving citizens in biodiversity knowledge
- The development of apps allows citizen scientists to record observations and experts to validate them
- Web portals for biodiversity data

Unify structures, standards and methodologies

- Make data compatible by unifying data structures as much as possible
- Metadata and structured data standards
- Insure quality of information
- Unify methodologies
- Databases gathered/managed in one place (or at least as few as possible)
- Make clear the intended limits of use of the data: identifiers for citation/reuse of information.
- Administrations should share information and maps openly

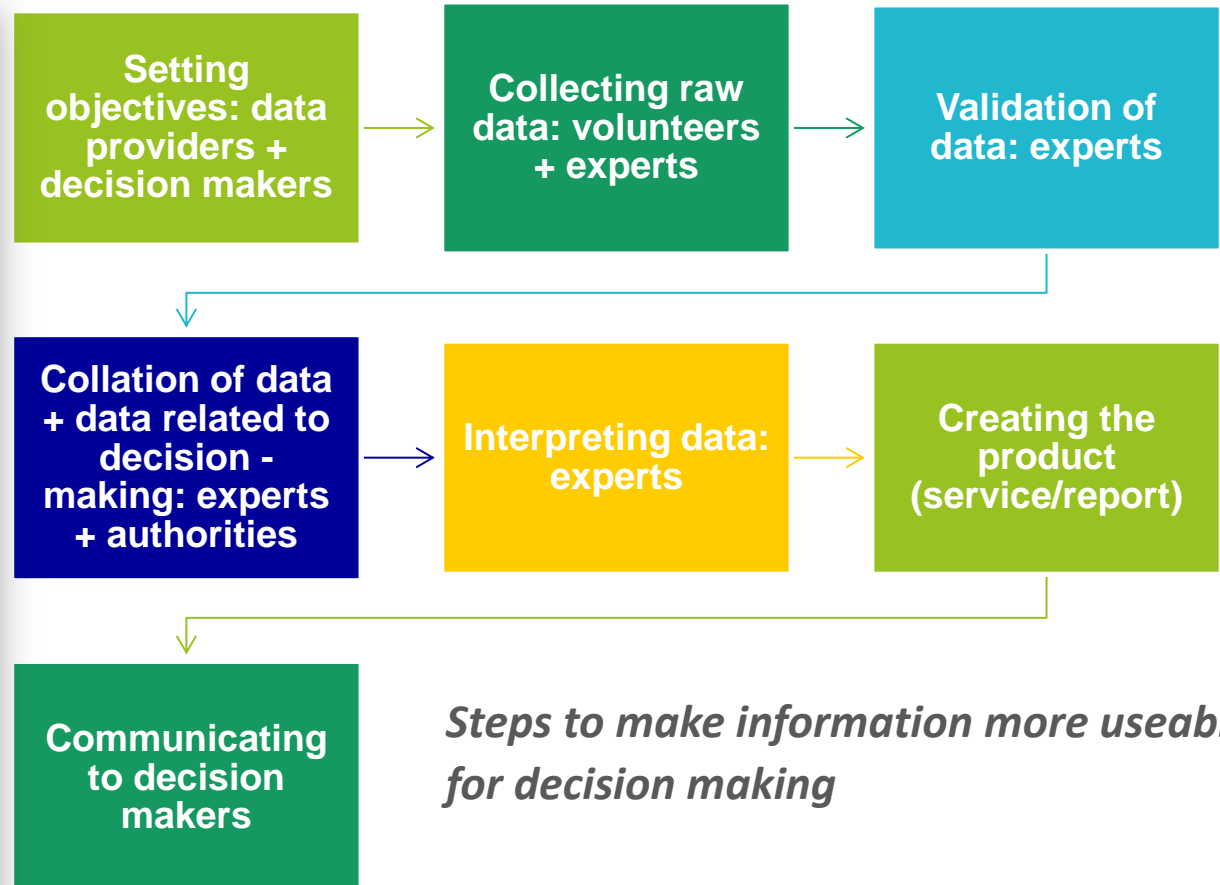
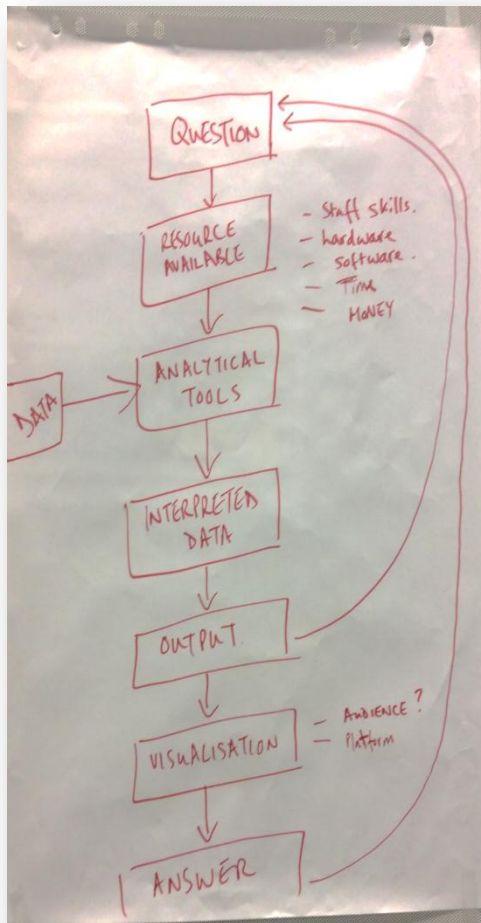
Dissemination and communication

- Public promotion
- Open data public repositories
- Raise awareness on the importance of biodiversity knowledge



# 1.3.- Decision making

In the decision making process, **the way we manage information** is as important as obtaining it.



*Steps to make information more useable for decision making*

# 1.3.- Decision making

Another important consideration in the decision making process is  
**how the quality of information used can be evaluated**

*To ensure good quality of information, it is essential to work on a **basic criteria framework** that will help us to **establish a set of indicators***

## HOW CAN WE EVALUATE THE QUALITY OF INFORMATION?

### Criteria

- Useful for objectives (understood by decision makers)
- Methodology standards: how it is obtained & where
- Based on successful experiences
- Integrated in existing data bases
- External audit
- Metadata (identify origin of data, update...)
- Reliable sources

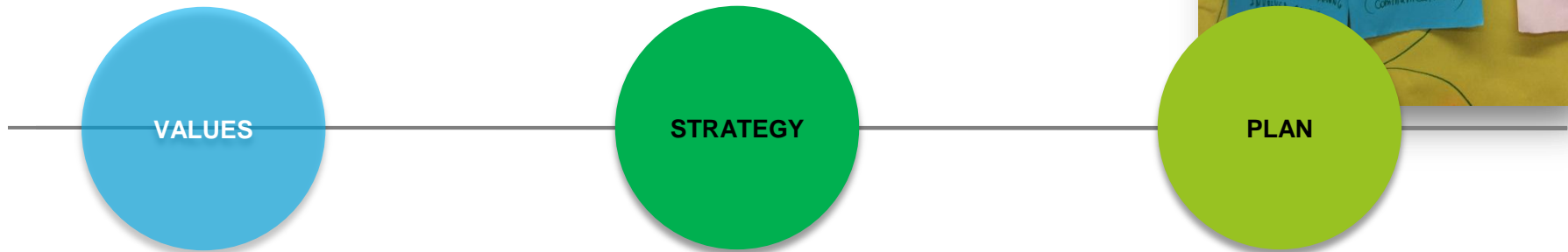
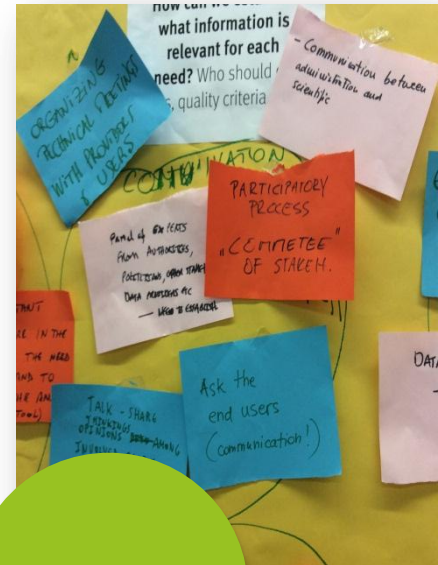
### Indicators

- Experts / Volunteers (percentage of professionalism)
- Complexity
- Confidence analysis
- Error assessment
- Fixed period (if the update of data is important)
- Usefulness
- Respectful obligation nature directive
- Rate of successful experiences (% correct decisions made)

# 1.3.- Decision making

A **regional scale network** can be a useful tool for regional governments to inform their decision making processes.

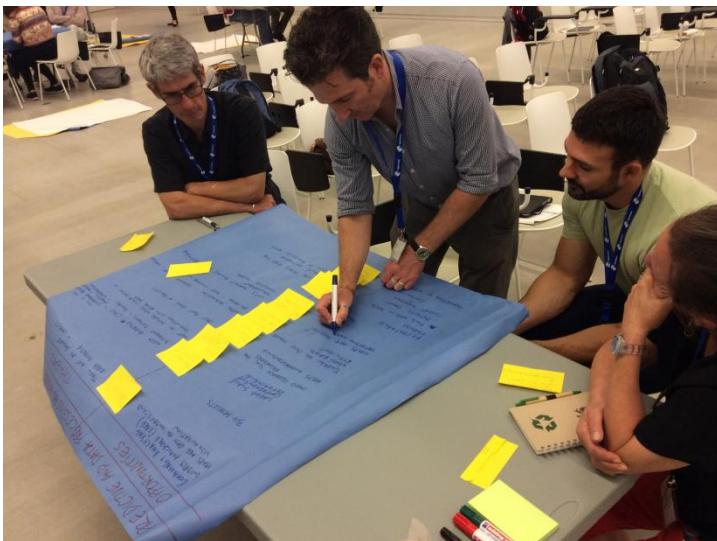
*But managing such networks can be very challenging. Sharing values, strategy and an implementation plan is essential to manage a regional scale network*



- Confidence and trust
- Openness
- Efficiency
- Visibility and recognition

- Clear objectives and rules
- Outcome expected

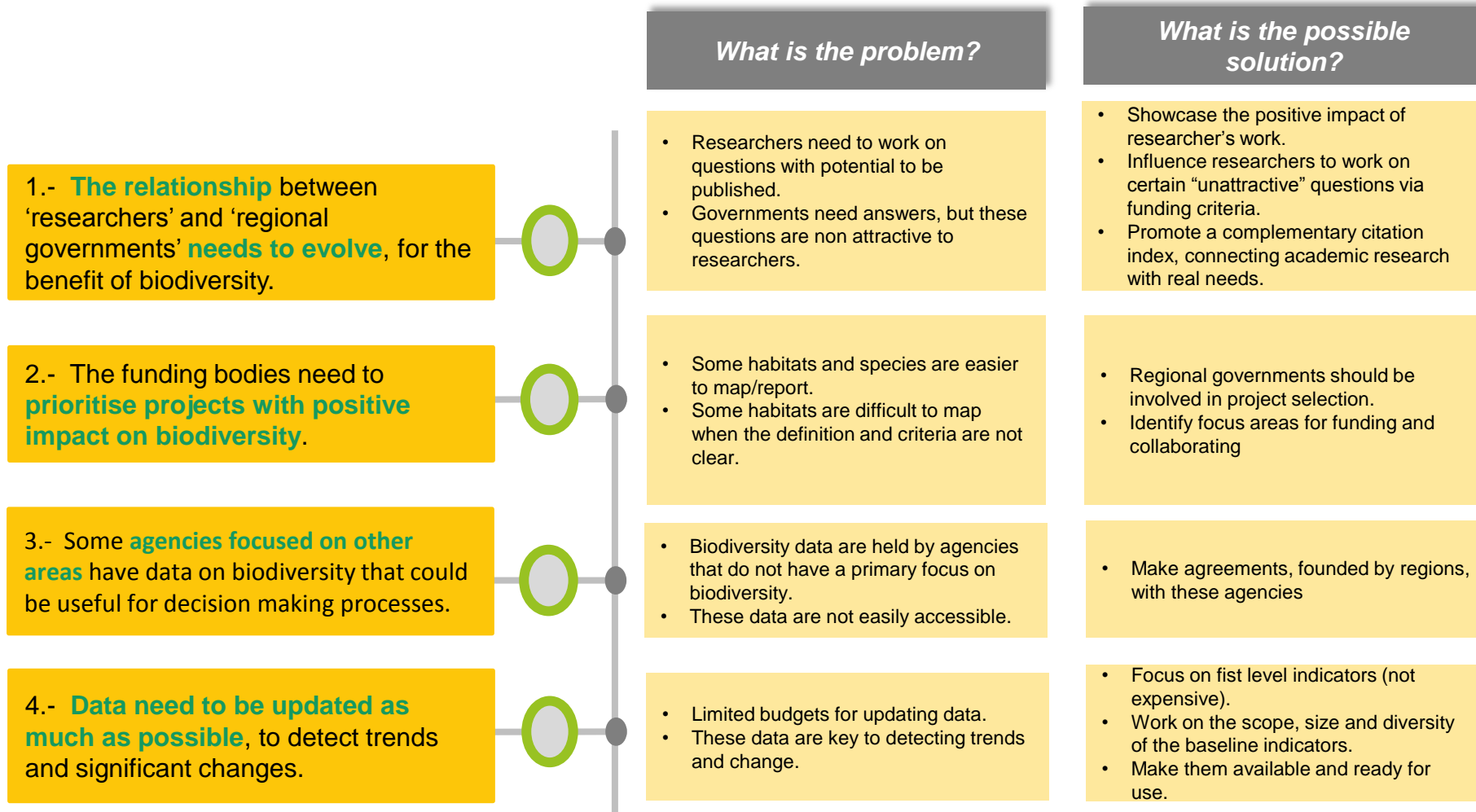
- One responsible body to coordinate
- Communication in different directions with updated information: between members, between the body and members...
- Feedback processes (share what we produce and the gaps)
- Incentives for members: equipment, challenges.
- Training



**2 INFORMATION NEEDED TO RESPOND TO THE OBLIGATIONS CONTAINED IN THE REGULATIONS, STRATEGIC DOCUMENTS AND POLICIES**

# 2.1.- Data and information: Access and identification

**Problems** associated with compiling habitat and species inventories and maps **that should be solved to improve the access and identification of the information** needed.



# 2.1.- Data and information: Access and identification

In addition to this, there are **3 key elements to consider** when policy makers have to decide upon the **allocation of public resources** to get a **more efficient and effective system**:

## Focus on real problems.

Go beyond biased perspectives

## Public and private cooperation.

E.g, maintain and assist external structures

## Communicate and disseminate.

Explain the contents and the use

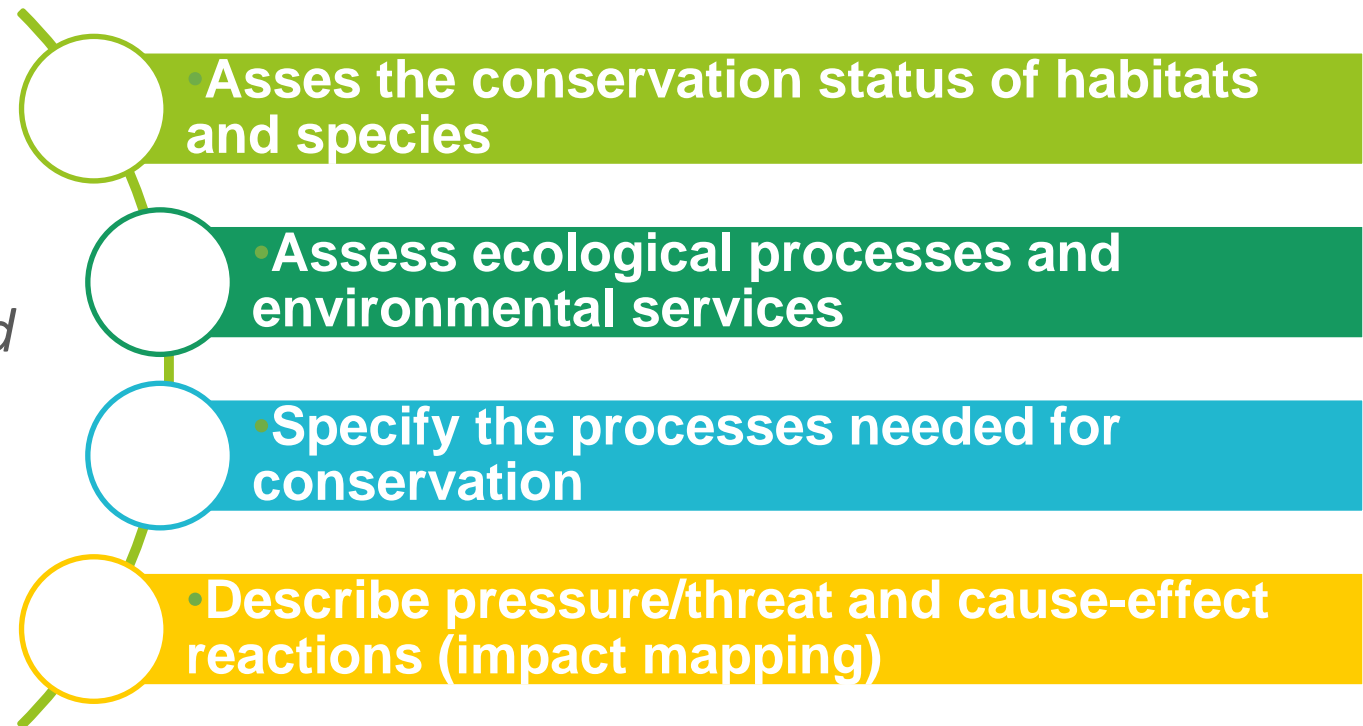


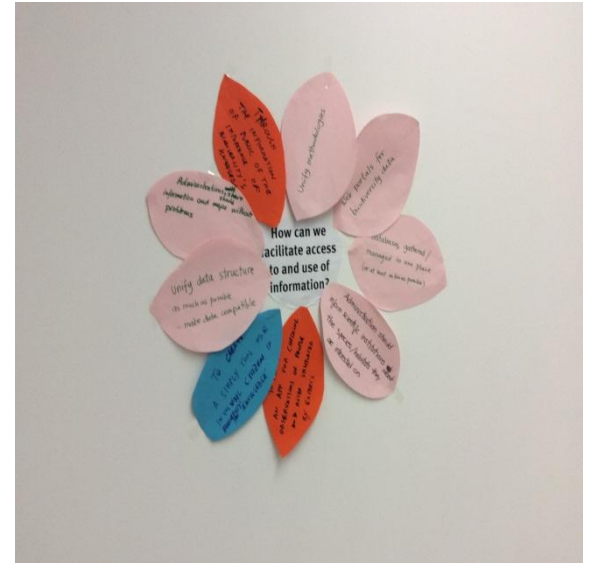
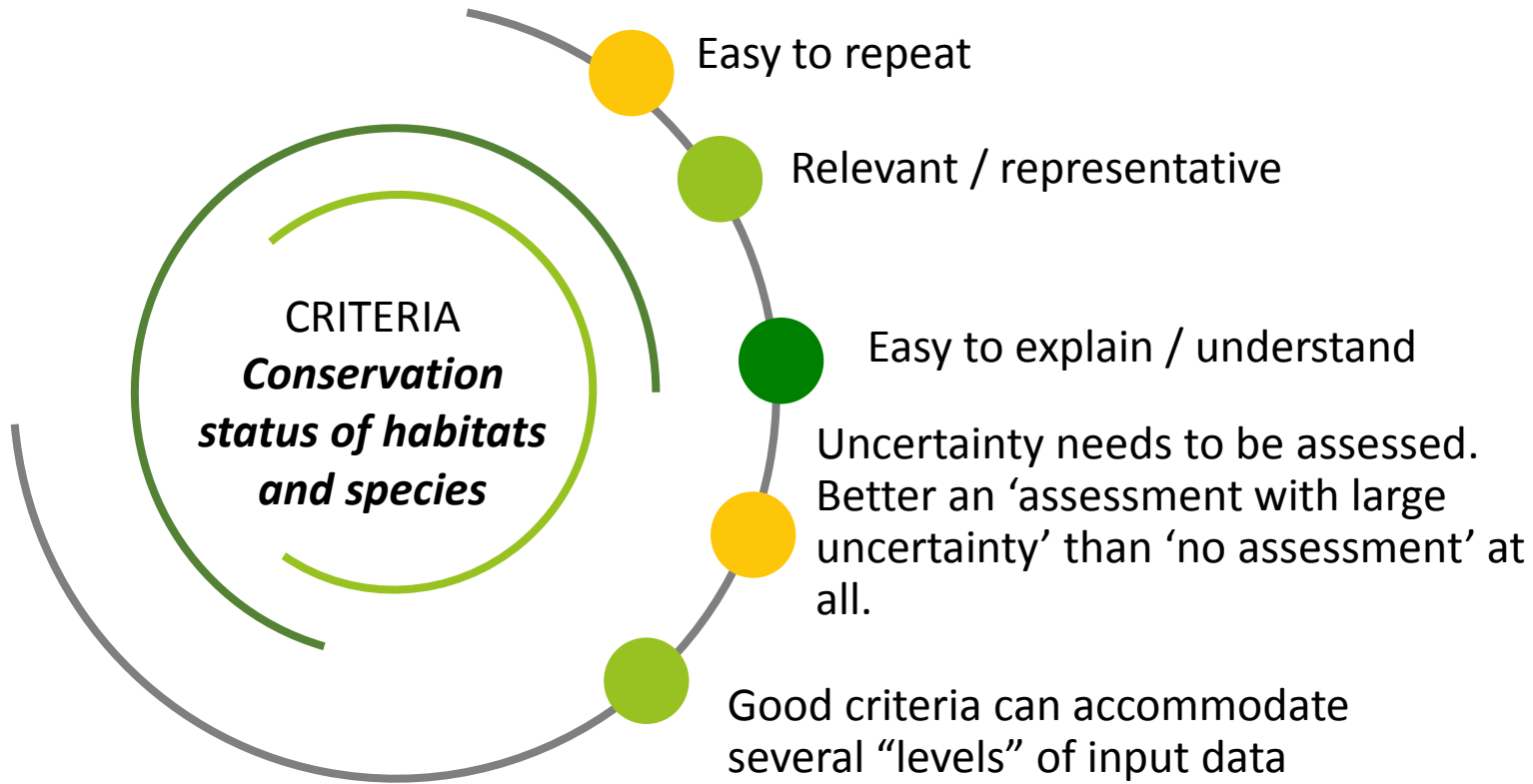


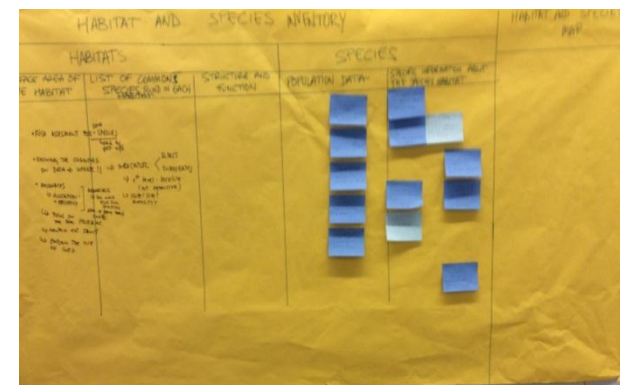
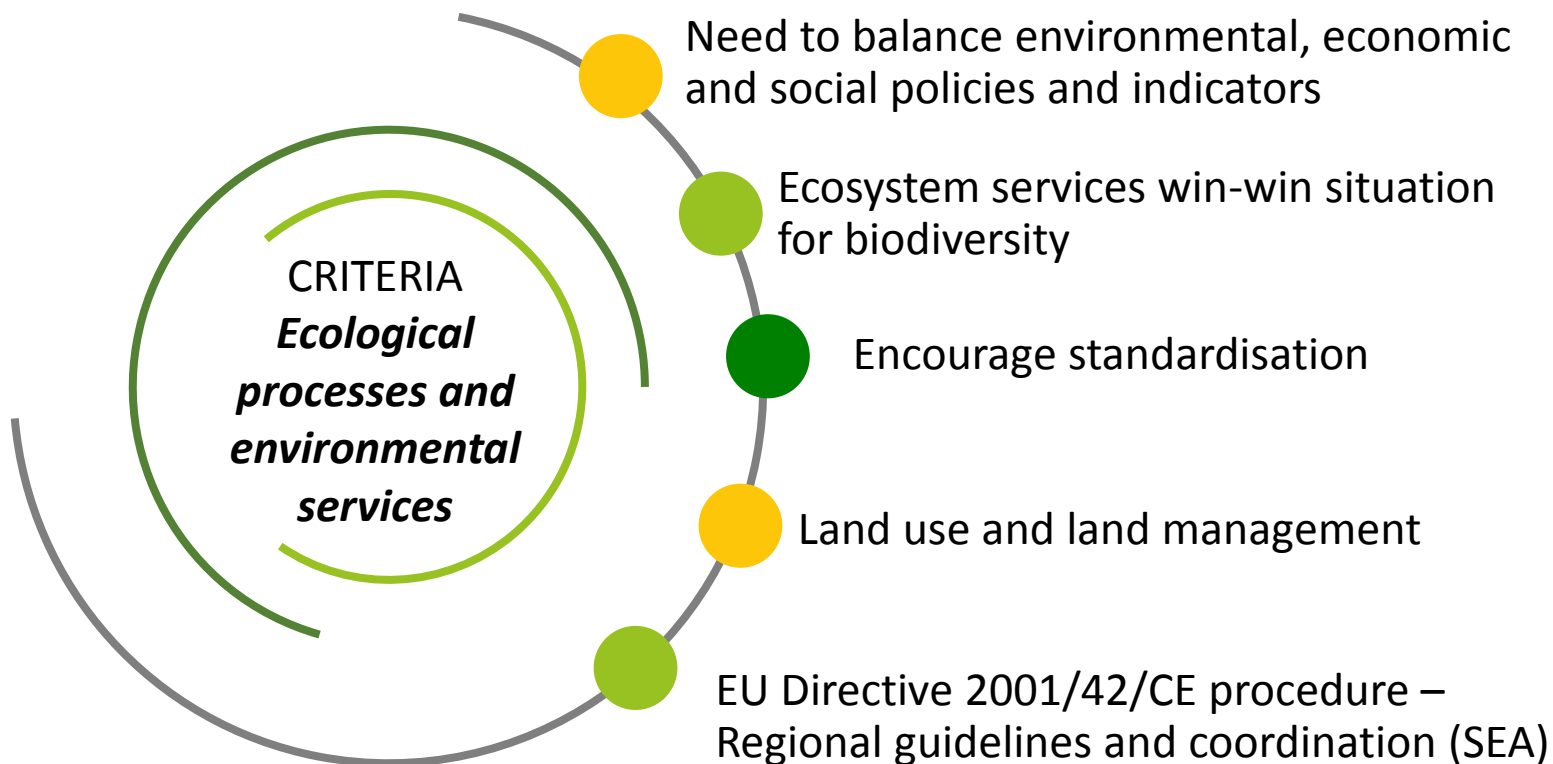
## 2.2.- How to value the information: Establishing the criteria for assessing information

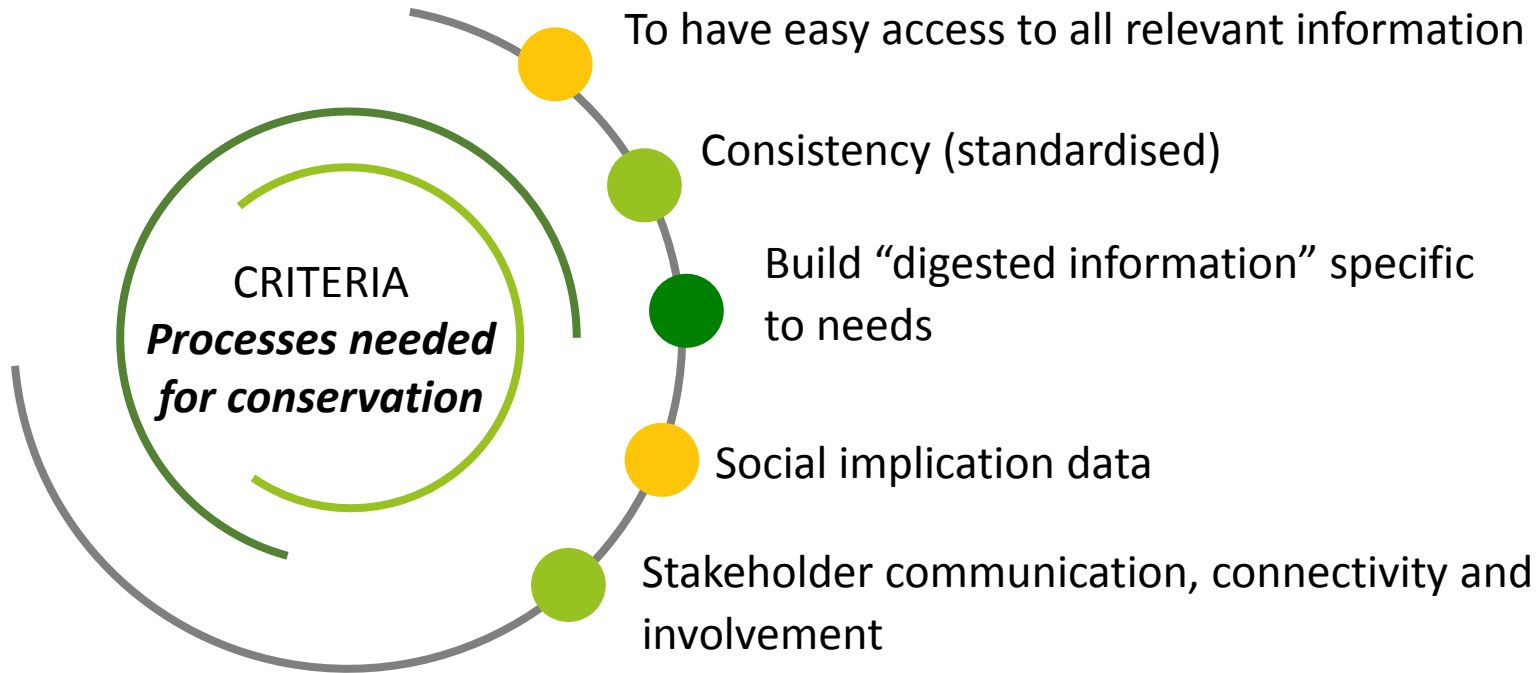
**Next step** to develop a solid process for decision making is to **define a set of criteria to assess this information.**

*Different **criteria** have been defined in **four areas***









CRITERIA  
*Pressure / threats and  
cause-effect reactions*

Standardise criteria

Create suitable proxies

Be able to map pressures

Establish list of pressures - threat/pressure  
data can help interpret biodiversity trends

Finalise the EU directive (2001/42/CE)  
procedures by specific guidelines



## 2.3.- Evaluation and impact: Specifying evaluation criteria

Often, **the evaluation and impact criteria are the most difficult to establish** but they are essential as they end the evaluation circle giving sense and significance to the measurement efforts made before.

### The participants focused on three main questions:



How can we **adapt data and information needs** in accordance with scale (regional, biogeographical, for protected sites, etc).



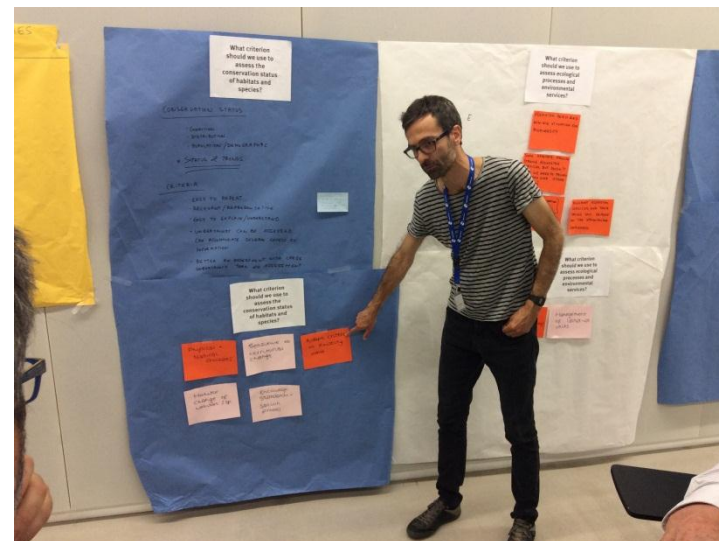
How can we **use information** on biodiversity to improve public funding systems, particularly ERDF funds.



**What indicators** should we use to measure the degree of implementation and effectiveness of the measures and actions.

How can we **measure the evolution** of the distribution and conservation status of habitats and species.

How can we **assess the effectiveness of public funding.**



## 3 INNOVATION OPPORTUNITIES: NEW TOOLS FOR THE CAPTURE AND UNDERSTANDING OF THE INFORMATION



Identify and analyse the **impact of new data sources**

**New tools** to manage information

Design **processes and mechanisms** to make them more useful



Many **new data** sources have been developed during the last years, but some of them are still **not used to their full potential**.

Moreover, occasionally users and policy makers are not aware of the weaknesses and strengths of each source, so some **information is lost**.

OPPORTUNITIES ← DATA SOURCE → THREATS

| OPPORTUNITIES   | DATA SOURCE  | THREATS  |
|---|--|--|
| Should be lots of data  | Agricultural direct payment                        | Need lots of control<br>Lack of data accessibility   |
| Internationally consistent comparable data<br>Defined network (long-term)   | Framework directives (WFD, MSFD)                   | Expensive<br>Defined network – can't be changed (12 years)   |
| Good for species with low detectability                                     | Trail cans   | Low coverage   |
| Adds context<br>Free  | Non – biodiversity data – visitor counts           | Who has it?<br>Capacity / methodology  |
| Fills spatial gaps<br>Target sampling<br>No need for full survey – coverage | Predictive models                                  | Uncertainty / False certainty<br>Explaining the limitations to users                                 |
| Scale   | Crowdsourcing (internet)                           | Needs good promotion<br>Validation / verification<br>Difficult to keep long-term interest            |
| Cryptic species<br>Precise, sure  | DNA  | Expensive<br>Technically difficult   |
| Lots of data<br>Cheap & Open<br>New participants                            | Geotagged photos<br>Social media: Flickr, Facebook | Needs validation / verification<br>Quality of photo<br>Lack of ID features & structure / methodology |
| Cheap   | Satellite imagery                                  | Resolution (spatial). Processing.<br>Verification – sampling bias to general                         |
| Temporal resolution   | NDVI (vegetation index)                            | Spatial resolution   |
| Available (freely, online, fast)<br>Resolution<br>Replicable                | Aerial photos<br>LIDAR                             | Cost   |
| Standard format   | Drones – UAV                                       | License  |
| More affordable cost  | Citizen science                                    | Engagement can require effort<br>Repeatability   |
| Value for money<br>Big datasets<br>Social engagement                        | Monitoring Programmes                              | Engagement can require effort  |
| Easily communicable results (e.g. charismatic animals, species)             | Camera traps                                       | Costly (equipment + processing)  |
| 2 <sup>o</sup> / 3 <sup>o</sup> users = cheap                               | Private consultants                                | Costly – maybe for primary user  |
| Big datasets<br>Sampling effort lower                                       | eDNA   | Costly – no reference standards for every species &<br>Difficult to interpret                        |
| Real time up to date & Big datasets<br>Sampling effort lower                | Acoustic monitoring                                | Equipment cost   |

Participants were asked to list **as many raw data sources as possible**, and afterwards to agree on **opportunities and threats** associated with each source. This table is a structured summary of the information collected

After considering opportunities and threats of each data source, and to guarantee an effective use, it is essential to work on **how can we combine and respond** to the **needs and interests** of both the **research and management perspectives**.

These are the key elements that should be considered to fulfil both:

Setting priorities and timeframes to allocate resources: money (cost in euros), people



Coordination and capacity building - capacity of data use

Communication, bottom up dialogue and feedback to understand real needs



Integration & linking policy and research

Public accountability & transparency (guidelines, advertising data)



Data structure, data quality and data flow: metadata, monitoring vs. casual, raw vs interpreted, user focussed, public and open

## 3.2.- New tools to manage information

Regarding data sources, there are **new predictive and data processing and interpreting tools** that could help with **getting the information needed for decision making process.**

**The opportunities and threats of each tool should be considered carefully** to address the interest and needs of the stakeholders involved in the process. Especially from the public administration point of view, budget, proportionality or scale, are the key issues to balance the choice amongst them.

← **OPPORTUNITIES**      **TOOLS**      **→** THREATS

| OPPORTUNITIES   | TOOLS   | THREATS  |
|---|---|--|
| Specific interpretations (+/-) Generating funding / income  | <b>Past and future scenarios</b>  | Adapt to questions from end users<br>Lack of translation to end user   |
| Clear answers to inform decisions Defined network (long-term)   | <b>Species audit</b>  | Effort   |
| Open source, free   | <b>Stats software e.g. PRIMER</b>   | Lack of experts  |
| Accessible / understandable results Free  | <b>Decision support tools (e.g. software)</b>   | Difficult to implement   |
| Accessible / understandable results Good feedback tool for recorders<br>No need for full survey – coverage  | <b>Visualization tools</b>  | Difficult to implement<br>Only first stage of process  |
| Accessible / understandable results   | <b>Geographics</b>  | Difficult to implement   |
| Analysis + classification<br>Combining and analyzing<br>Widely available (free)<br>Maps are easy to understand Visualization  | <b>GIS and other geo-referencing tools</b>  | Cost<br>Tool, not an answer!<br>Need expertise – capacity  |
| Removes emotion for decision making process – just money<br>Stakeholder involvement, e.g. zonation  | <b>Natural capital accounting</b>   | Auditable  |
| Removes emotion for decision making process – just money<br>Stakeholder involvement e.g. zonation<br>e.g. zonation Standard format  | <b>Ecosystem service</b>  | Auditable<br>Difficult to implement – lack of standards<br>What to do with this valuation. Ethics?<br>Over simplification<br>Validation / measure of uncertainty |
| Big datasets  | <b>Database management tools</b>  | Need expertise (all) – this is the difference between collecting and analysing, and interpreting<br>Different platforms and formats                              |
| Large scale<br>Comprehensive<br>Repeatable  | <b>Image processing (Remote sensors, DTM, LIDAR)</b>  | Not an answer need visualization + combination with other data   |
| Powerful for policy makers<br>Needs based<br>Efficient  | <b>Indices, indicators (e.g. species)</b>   | Needs explanation – metadata, methods...<br>Validation – does indicator work?<br>Effort  |
| Helps get funding?<br>Detecting underlying patterns<br>Can pick up small changes<br>Greater statistical power / confidence  | <b>Big data HOW BIG?</b>  | Lots does not always equal better Management<br>Computing power<br>Verification / validation   |
| Standardisation (statistics)<br>Repeatable<br>Trend detection<br>Fills gaps in data<br>Detects errors<br>Target surveying<br>Monitoring<br>Targeted at users<br>Spatial and temporal trends | <b>Statistics<br/>Spatial distribution models<br/>Ecological network models<br/>Opportunity mapping<br/>Population models<br/>Habitat suitability modelling (HSM)</b> | New models every time<br>False confidence<br>Lack of biological basis<br>Misinterpretations  |

*The following table is a list of the opportunities and threats related to the processing and interpreting tools listed in the workshop*

## 3.3.- Design of mechanisms and processes

After analysing different sources and tools, participants were asked to **propose ways in which these tools could be useful for different stakeholders** (researcher, policy makers, citizens...).

Considering the opportunities and threats listed before, **two types of maps have been developed.**

### HOW TO MAKE MORE USEFUL DATA GATHERING TOOLS CONCEPT MAPS

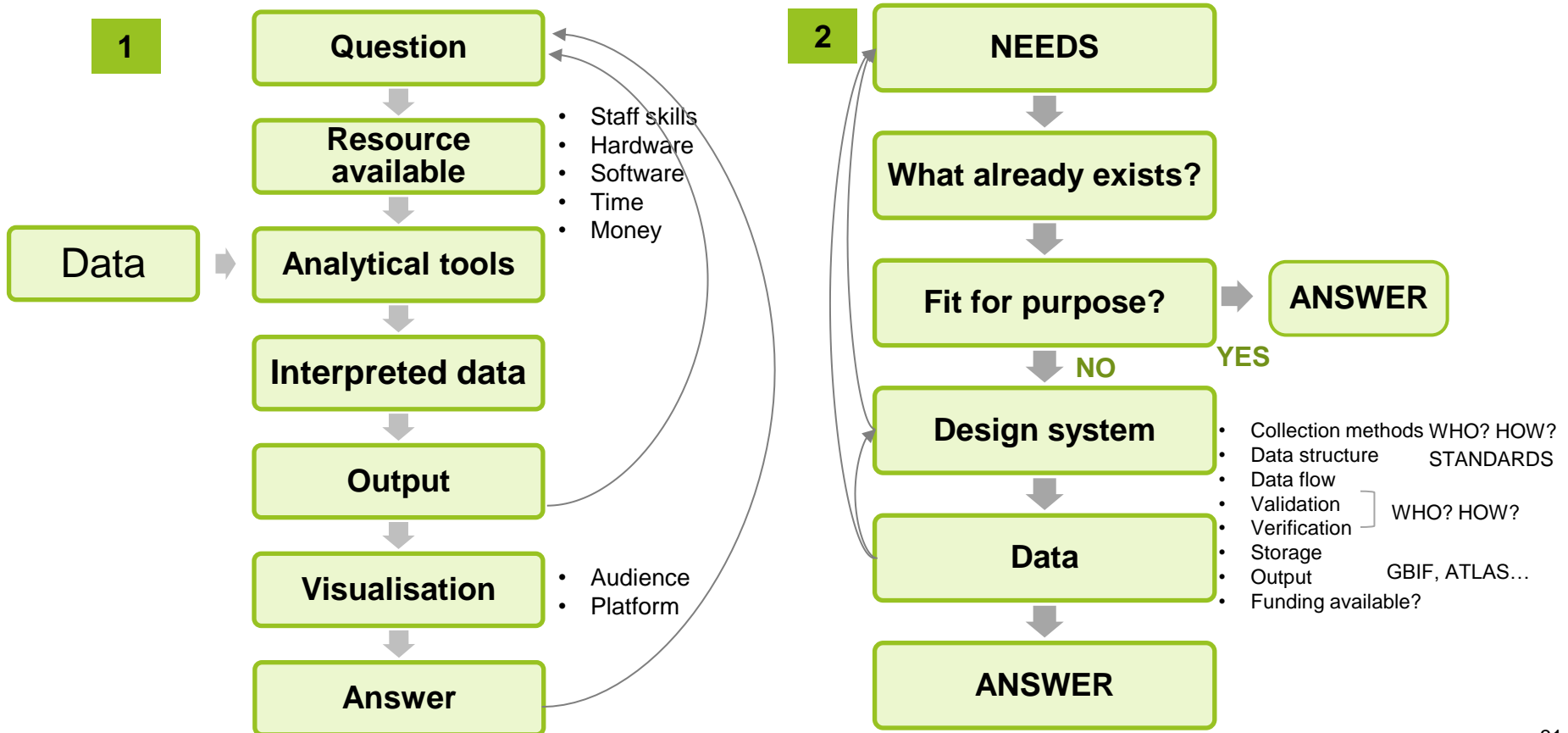
The first **two maps** define the processes and mechanism behind an effective use of data gathering tools.

### HOW TO MAKE MORE USEFUL PREDICTIVE AND DATA PROCESSING AND INTERPRETING TOOLS CONCEPT MAPS

The next **two maps** refer to predictive and data processing and interpreting tools.

## Data gathering tools

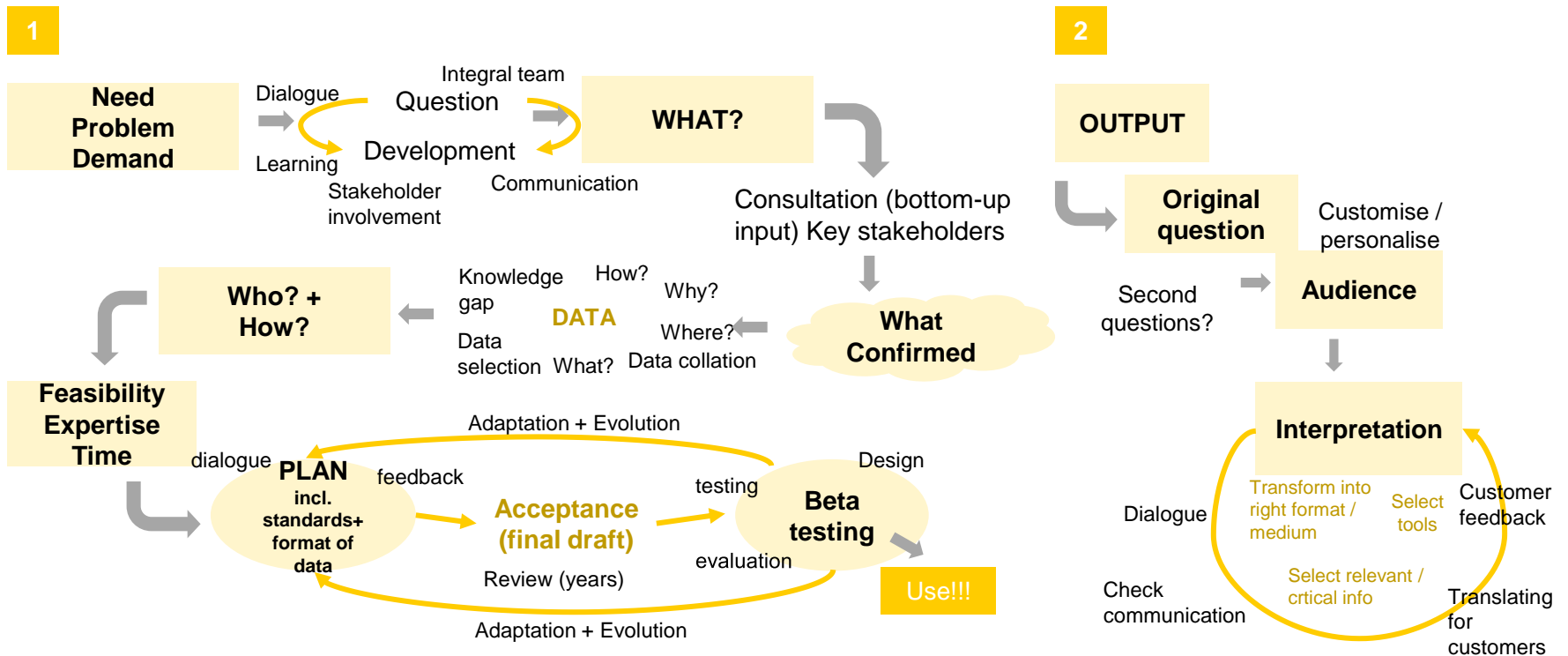
- Keep in mind what the real question is from the beginning to the end
- Look for the information that already exists, do not reinvent the wheel
- The cycle must be adjusted and repeated until the information is fit-for-use
- Focus on the audience; adapt the results accordingly and make them visual



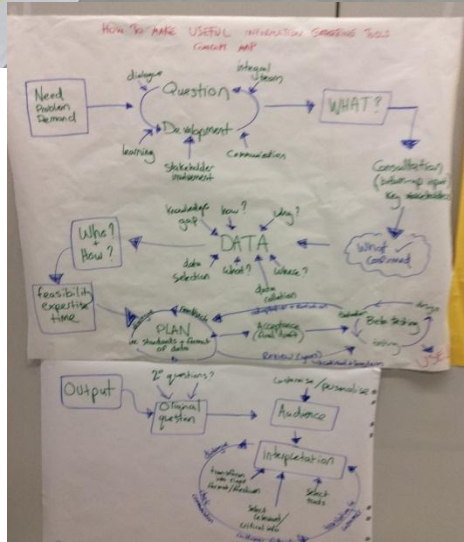
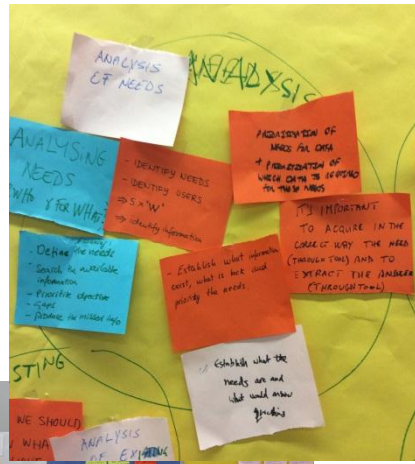
# HOW TO MAKE MORE USEFUL PREDICTIVE AND DATA PROCESSING AND INTERPRETING TOOLS CONCEPT MAPS

## Predictive and data processing and interpreting tools

- Analyse and interrogate the original question as much as necessary
- Interpretation is key: adapt language, get feedback, improve dialogue
- Test and evaluate the the outputs you get - make the tool as usable a possible by customising it
- Select and prioritize the data you get and the steps you make









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# Thank you!

Questions welcome



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