The Role of Citizen Science for Delivering Nature Based Solutions

Jonathan Wheatland
The River Restoration Centre

j.wheatland@cranfield.ac.uk

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Citizen Science

- **Citizen science** – the active involvement of members of the public in scientific research

- Citizen science projects often have **impacts across multiple ‘domains’**:  
  - Environment  
  - Society  
  - Science & Technology  
  - Governance  
  - Economy

- Increasingly popular as a means of tackling complex issues
Citizen Science in Nature Based Solutions (NbS)

- NbS: involve suitable management practices and use of nature for tackling complex socio-environmental issues
- Mutually beneficial relationship between NbS and citizen science

Benefits for NbS:
- Data gathering
- Maintenance and management
- Wider acceptance and support

Benefits for citizen scientists:
- Increased sense of community
- Develop new skills
- Empowerment - involvement in decision making

Image source: The Rivers Trust
Citizen Science – Is It Worth It?

• Given the resources required to initiate projects... are they worth it?

  **YES!**

• Like any project there are successes and failures

• We need *ways to predict and measure the impact* of citizen science projects *to increase their efficiency and effectiveness*
The MICS Project: Background

- **MICS** - [www.MICS.TOOLS](http://www.MICS.TOOLS) - aims to *develop tools for measuring impact of citizen science*
- Tools and metrics will be available through an *online platform*
- Allow project coordinators to measure *evolving impact*
- **Why measure impact?**
  - Increase *efficiency* and *effectiveness*
  - Provides information on a project's *sphere of influence*
  - Supports *funding bids*
  - Encourage the *wider use* of citizen science
Background to the MICS Case Studies

- Focus on citizen science projects incorporating NbS
- Case studies selected from 3 distinct regions
- Regions defined based on their differing needs, contexts and approaches to environmental management
- Varying levels of citizen science application
- Opportunity to evaluate the different citizen science approaches
Assessing NBS Application Across Europe

• Alongside developing the online platform we’ve been considering...
  • What does impact mean from the point of view of NbS?
  • What are the facilitating factors and barriers to NbS uptake?
  • How can citizen science mitigate barriers and increase impact of NbS

• We have engaged with practitioners of NbS through an online survey to gain a more in-depth understanding

• Results from this are being used to develop policy briefs
We asked Practitioners of NbS: Rank the Barriers to NbS Uptake

Space limitation; NbS require more space

Willingness to adopt new approaches

Resistance from local communities

Lack of long-term funding commitment

Inadequate policies supporting NbS

Barriers to NbS implementation

Lack of understanding regarding NbS

High Costs

Poor communication between government departments

Lack of funding sources

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We asked Practitioners of NbS: How Important was Local Involvement

- 80% respondents believed the involvement of local communities in NbS to be either important or very important

“NbS are [also] designed to solve societal issues…”

“[Urban area] are often relatively small and used by diverse stakeholders…”

“…they have local knowledge that can improve the effectiveness of NbS…”

“…increases the knowledge and awareness about the potential of NBS…”

“…civilians can put a pressure on decision makers…”
Levels of Citizen Science Engagement

Contributory
Citizens are only involved in carrying out activities (e.g. data collection, restoration work)

Collaborative
Citizens contribute data and may also help in project design, but aims decided by managers

Co-created
Citizens are engaged in all stages of project, working alongside project coordinators to identify the aims, agree activities and collect data
Contributory and collaborative Citizen Science Projects: Outfall Safari and Riverfly

- **Outfall Safari** and **Riverfly** two examples from the UK case study
- Contributory projects can become more collaborative over time
- In collaborative projects volunteers have more input into designing project activities
- **Lincolnshire Chalk Stream Project:**
  - Riverfly hub applying established ARMI methodology
  - Volunteers wanted to expand the methodology
  - This led to the development of the Extended Riverfly survey
Co-designing Citizen Science

- **Co-design** focuses on generating CS activities that are purpose-driven by jointly agreed societal challenges (*Wehn 2020*)

- **Co-design methodology** developed by Ground Truth 2.0 project (H2020, 2016-2019) **adopted for MICS case studies**

- **Best practice** in the set up of hands-on citizen science helping to sustain **longer-term** citizen science involvement

1. Rapid screening
2. Tailor methods to context
3. Initiate co-design group & capture requirements
4. Technical review & CS tool set up
5. Validate functional & technical design
6. Plan & launch Citizen Science activities
7. Enhance & sustain CS tools & activities

Wehn, U. (2020). D4.6 *Guidance for co-design of citizen science activities in the MICS case-study sites*, deliverable report of project H2020 MICS (grant agreement No 824711)
Co-created Citizen Science Projects

The MICS case studies in Hungary, Italy and Romania are co-designed.

- Creek Rákos, Budapest, Hungary
  - Issues related to flood risk and urban pollution
  - Increase engagement and local support
  - Data collection to identify sites suitable for NbS

- Marzenego River, Venice Lagoon, Italy
  - Flood management
  - NbS previously implemented in form of wetlands
  - Citizen science activities to monitor success of NbS
  - Maintenance and management of wetlands
Online Workshops to Gauge Impact

• Online workshops with volunteers and project managers to ask them to discuss their impact
• Create Impact Journey Maps
Concluding remarks

Citizen science can help to deliver and support NbS

Citizen science can help overcome or tackle many of the barriers commonly identified as impeding NbS uptake

Co-design offers a powerful approach that brings together different stakeholders and puts them on the same footing as project managers

Next Steps

• Develop impact indicators and test in case studies
• Deliver citizen science impact assessment workshops
• Develop and test the online platform

If you’d like to find out more visit us: www.MICS.TOOLS
Assessing NBS application across Europe - Have Your Say!

• Help us to understand NbS in practice and how citizen science can be used to support and facilitate NbS

• Fill in our questionnaire!

• https://docs.google.com/forms/d/1r72Q5yDzSHWHXV0ABM4qe2yxr_dcG-F0huTFBzlxrno/edit
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