D14.8
REPORT ON COLLECTION OF TRAINING SESSIONS & PRESENTATIONS USED IN CITIZEN SCIENC TRAINING WORKSHOPS

WORK PACKAGE 14 – CITIZEN OBSERVATORIES AND PARTICIPATIVE SCIENCE

LEADING BENEFICIARY: INGV-EMSO

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Abstract

In order to fulfil the requirements of D14.8 ("Collection Training sessions/ presentations"), presentations and workshop activity guidance has been made available in a Google Classroom format. These resources have been developed based on feedback and experience gained during the physical workshops (D14.7) and bring together adapted versions of workshop presentations with additional training, guidance notes/ commentary, and instructional tools, which have been curated to form a training tool for anyone interested in setting up their own citizen science initiative.

All resources can be viewed at: https://classroom.google.com and accessed with Class Code: hl2s2xb.

Note on timing:
The evaluation report was originally intended to be completed by M36, however due to staff changes internally and alterations to the schedule of training workshops to fit in with external events at which it was felt the workshops should be aligned, the delivery of this report has been delayed with agreement.

The change does not affect the budget or other elements of the project.

Document History & Plan

Date	Version
23/07/19	Draft for comments and contributions by citizen science WP Team
27/07/19	Edits from reviewer Mairi Best (Theme 4 and WP14 Lead)

Document Amendment Procedure

Amendments, comments and suggestions should be sent to the authors (Jack Sewell, jase@mba.ac.uk; Jon Parr jpar@mba.ac.uk)

Terminology

A complete project glossary is provided online here:
https://envriplus.manageprojects.com/s/text-documents/LFCMXHHCwS5hh

Project Summary

ENVRIplus is a Horizon 2020 project bringing together Environmental and Earth System Research Infrastructures, projects and networks together with technical specialist partners to create a more coherent, interdisciplinary and interoperable cluster of Environmental Research Infrastructures across Europe. It is driven by three overarching goals: 1) promoting cross-fertilization between infrastructures, 2) implementing innovative concepts and devices across RIs, and 3) facilitating research and innovation in the field of the environment for an increasing number of users outside the RIs.

ENVRIplus aligns its activities to a core strategic plan where sharing multi-disciplinary expertise will be most effective. The project aims to improve Earth observation monitoring systems and strategies, including actions to improve harmonization and innovation, and generate common solutions to many shared information technology and data related challenges. It also seeks to harmonize policies for access and provide strategies for knowledge transfer amongst RIs. ENVRIplus develops guidelines to enhance transdisciplinary use of data and data-products supported by applied use-cases involving RIs from different domains. The project coordinates actions to improve communication and cooperation, addressing Environmental RIs at all levels, from management to end-users, implementing RI-staff exchange programs, generating material for RI personnel, and proposing common strategic developments and actions for enhancing services to users and evaluating the socio-economic impacts.

ENVRIplus is expected to improve the structure and quality of services offered both within single RIs and at the pan-RI level. It promotes efficient and multi-disciplinary research offering new opportunities to users, new tools to RI managers and new communication strategies for environmental RI communities. The resulting solutions, services and other project outcomes are made available to all environmental RI initiatives, thus contributing to the development of a coherent European RI ecosystem.

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Online Resources Overview

Introduction

Citizen science is an emerging and increasingly utilised discipline. The term is used to describe a situation where non-scientists are engaged in the scientific process, through the collection, interpretation and/or processing of data. When deployed effectively and appropriately, citizen science has the potential to support the development of scientific knowledge and to engage people with science, both of which have the potential to benefit European Researchers.

The collection of species distribution and life history data is a role which citizens can readily take on with appropriate tools and training and were selected as the key topic area for the workshops undertaken.

Many systems and tools are available to those wishing to set up their own citizen science project, to support the collection of data by non-experts on a large scale. These include online recording, app-based location recording and other IT systems. There is also a plethora of useful guidance covering issues such as good practice, standards for data quality, copyright and ownership, data format and data collection and use. A number of these tools and platforms were used in the development of 'test systems' (D14.5) designed to collect biological data from citizen scientists and these platforms (CrabWatch, Horseshoe Crab Sightings and others) have been used throughout the training workshops as demonstrators and case studies to enhance the value of events.

D14.7 involved the development and delivery of a 'Citizen Observation Training Program'. Interactive workshops taught the basic principles of citizen science – including when and when not to use it and provide examples of tools and resources available to help collect data from remotely based citizen scientists (human remote sensors). The workshops also drew on, and signposted participants to the review of existing citizen science tools (D14.6) undertaken for ENVRIplus. The workshops presented a range of tools, which participants were given the opportunity to consider and trial for their own scenarios.

Following delivery and evaluation of the workshop program, presentations and resources used have been adapted and made available freely online. It was felt that the Google Classroom platform would provide an accessible, structured space in which to present and share available resources, as well as curated additional online support tools and resources. It is anticipated that the provided resources will be utilized and made available as part of the project's legacy and can be easily incorporated into future learning platforms where appropriate.

Online Training Objectives

- Empower participants to set up their own online data collection scheme
- Share examples of best practice for using citizen science to generate scientifically useful information.
- Demonstrate systems and tools to help citizen scientists share marine biodiversity data.
- Help participants to identify when a citizen science approach is and isn't appropriate.
- To be used as a basis for self-led learning or downloaded and used in your own teaching or training.

Online Resources Description

All resources and curated supporting content can be accessed at: https://classroom.google.com and accessed with Class Code: hl2s2xb.

The online resource closely follows the format and structure of the workshops, although some changes have been made to make more of the online format and additional training documentation that has been included or linked to. In particular, detailed instructional manuals have been included in the Data Collection Tools module to enable the user to set up more complex systems using Indicia and Scratchpad. A range of additional background resources, including online guidance documents (see references) and links to relevant YouTube videos have been curated in the relevant modules to enhance and widen the scope of the resources provided (Fig 4). This classroom resource will provide a long-term legacy for the project.

Resources are divided into 3 broad categories (See Fig 1).

1) **'Introduction'**: This section provides an overview of the course objectives, as well as a range of presentations and additional curated resources giving an introduction to citizen science and some information about the basics of getting started.

2) **'Data Collection Tools'**: This section provides an introduction to the concept of data collection tools (why we need them, different types and how to find them) and then provides in depth tutorials – curated and original content – for i-naturalist, Scratchpad and Indicia systems.

3) **'Developing a New Citizen Science Initiative':** Includes presentation and accompanying notes, as well as printable 'flashcards', which were used during the workshops delivered. The section is designed to encourage participants to work through hypothetical scenarios, deciding whether or not a citizen science approach would be appropriate and then to use the tools provided to develop their own project.

All sections include presentations in PDF format for compatibility and to restrict editing and potential misrepresentation of materials (See Fig 2) as well as PDF format notes to accompany the presentations (See Fig 3), which can be used for self-led learning or by a tutor or teacher in using the resources to deliver their own training. Curated resources include a range of freely accessible reports and training documents, as well as carefully selected YouTube videos, chosen for their accuracy, accessibility and relevance (See Fig 4).

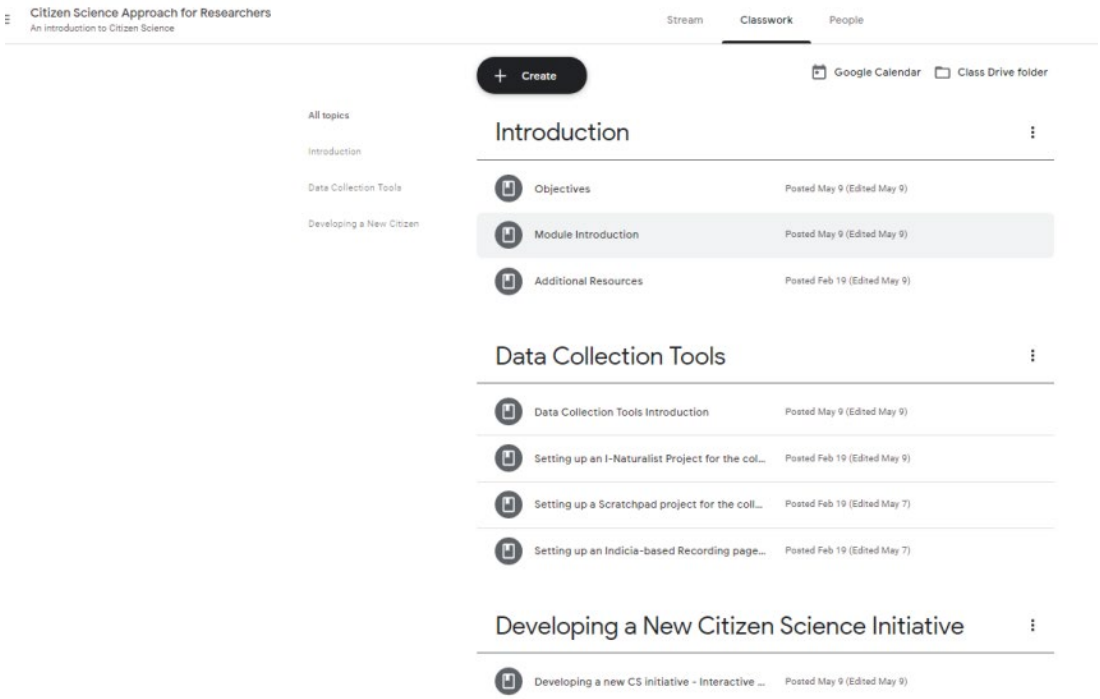

FIG 1. A SCREEN SHOT OF THE GOOGLE CLASSROOM 'CLASSWORK PAGE' SHOWING THE KEY TOPICS AND ORGANIZATION OF MODULES.

FIG 2: A SCREEN SHOT OF THE GOOGLE CLASSROOM 'TOOLS FOR DATA COLLECTION' PRESENTATION RESOURCE PROVIDED.

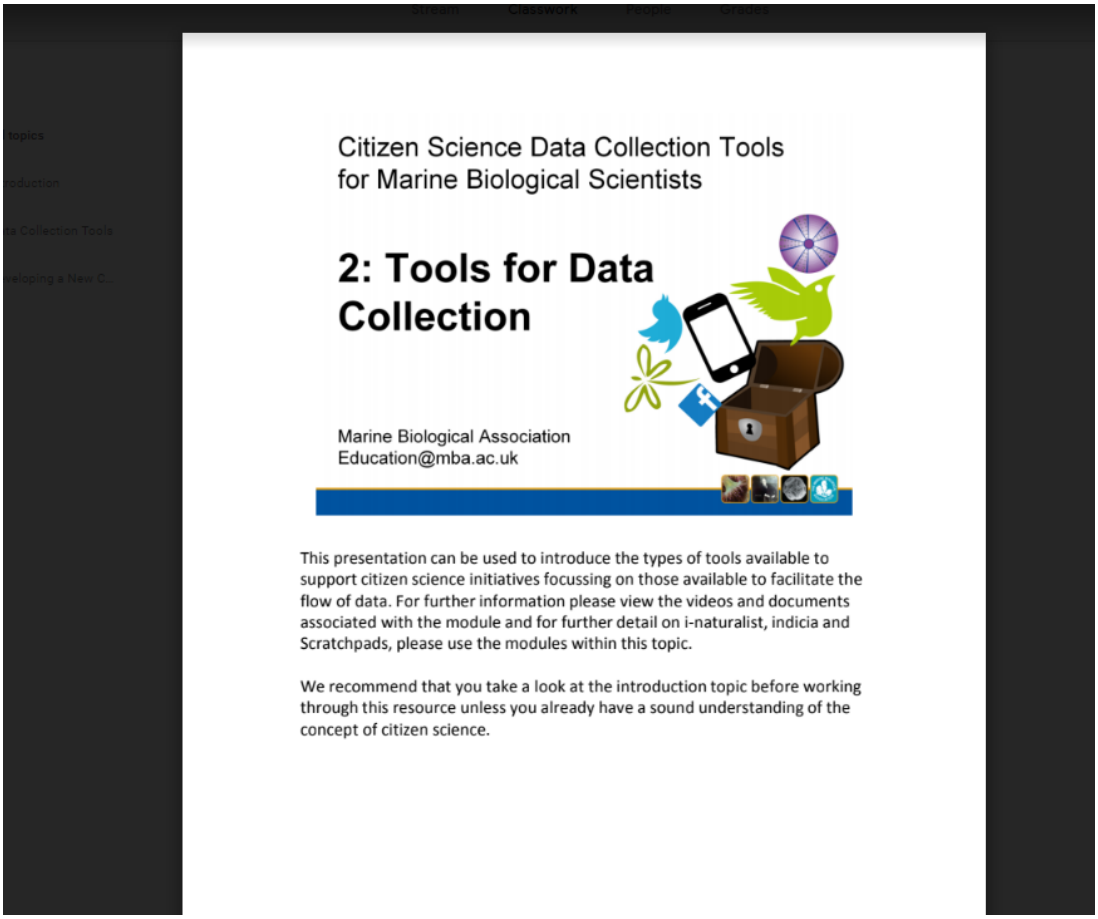

FIG 3. A SCREEN SHOT OF THE GOOGLE CLASSROOM 'TOOLS FOR DATA COLLECTION' NOTES RESOURCE TO ACCOMPANY THE PRESENTATION PROVIDED.

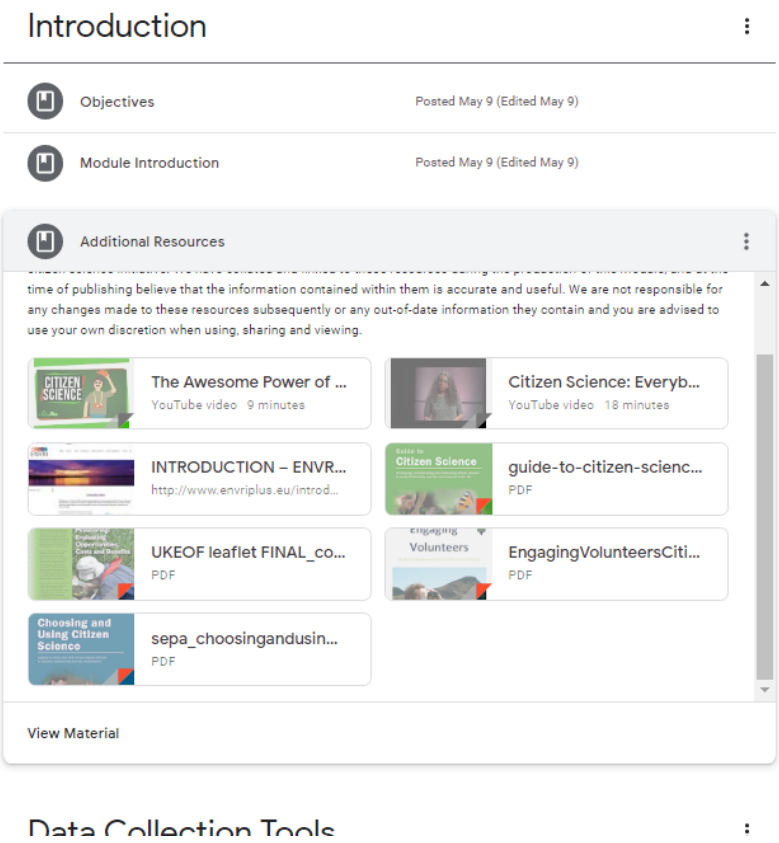

FIG 4: AN EXAMPLE OF SOME OF THE ADDITIONAL TRAINING RESOURCES, CURATED FOR THE GOOGLE CLASSROOM PLATFORM TO ENHANCE THE TRAINING RESOURCE PROVIDED.

References

Pocock, M.J.O., Chapman, D.S., Sheppard, L.J. & Roy, H.E. (2014). Choosing and Using Citizen Science: a guide to when and how to use citizen science to monitor biodiversity and the environment. Centre for Ecology & Hydrology.

https://www.ceh.ac.uk/sites/default/files/sepa_choosingandusingcitizenscience_interactive_4web_final_amended-blue1.pdf

The Conservation Volunteers. Engaging Volunteers. Guide to Engaging Volunteers in Citizen Science Projects. Online:

https://www.tcv.org.uk/sites/default/files/172/files/EngagingVolunteersCitizenScience.pdf

Blaney, R.J.P., Jones G.D., Philippe, A.C.V., Pocock, M.J.O. (2016) Citizen Science and Environmental Monitoring: Towards a Methodology for Evaluating Opportunities, Costs and Benefits. Final Report on behalf of UKEOF. WRc, Fera Science, Centre for Ecology & Hydrology

http://www.ukeof.org.uk/resources/citizen-science-resources/UKEOFleafletFINAL_cost_benefit.pdf

Tweddle, J.C., Robinson, L.D., Pocock, M.J.O. & Roy, H.E (2012). Guide to citizen science: developing, implementing and evaluating citizen science to study biodiversity and the

environment in the UK. Natural History Museum and NERC Centre for Ecology & Hydrology for UK-EOF. ISBN: 978-1-906698-37-9

http://www.ukeof.org.uk/documents/guide-to-citizen-science/at_download/file

*Garcia-Soto, C., van der Meeren, G. I., Busch, J. A., Delany, J., Domegan, C., Dubsky, K., Fauville, G., Gorsky, G. von Juterzenka, K., Malfatti, F., Mannaerts, G., McHugh, P., Monestiez, P., Seys, J., Węsławski, J.M. & Zielinski, O. (2017) Advancing Citizen Science for Coastal and Ocean Research. French, V., Kellett, P., Delany, J., McDonough, N. [Eds.] Position Paper 23 of the European Marine Board, Ostend, Belgium. 112pp. ISBN: 978-94-92043-30-6

http://marineboard.eu/sites/marineboard.eu/files/public/publication/EMB_Policy_Brief_5_Marine_Citizen_Science_0.pdf

Cigliano, John & Ballard, Heidi. (2017). Citizen Science for Coastal and Marine Conservation. Routledge.

Gura, Trisha (2013). Citizen science: amateur experts. Nature. 496 (7444): 259–261. doi:10.1038/nj7444-259a.

https://www.nature.com/naturejobs/science/articles/10.1038/nj7444-259a

Online Tools

http://scratchpads.eu | http://www.indicia.org.uk | https://www.brc.ac.uk/irecord | www.inaturalist.org | www.zooniverse.org | https://www.spotteron.net | https://ecsa.citizen-science.net | www.scistarter.com