



The Citizens Observatories collection and utilization of citizen information

A relevant case of crowdsourcing in disaster/risks management is represented by the Citizens Observatories (COs) that enable the collection and utilization of volunteer information from citizens. Through this exercise, citizens are empowered to better control their environment first by acquiring the capacity to recognize signals of danger and to transmit these signals to the relevant authorities/experts and, then, by being involved in the management of the related risks. COs main objective is to obtain useful volunteer information related to risk management (e.g., on floods, more specifically about flooded areas and water level in the river bed), in order to provide that information for decision-making. In COs, citizens-volunteers are considered as "human sensors" "since (in the case of floods) they can observe important parameters of flood risk management in a local environment. To facilitate the information provision about flood risk, the interpretation mechanisms are represented by different categories, whereas the tags for each mechanism are represented by subcategories. Thus, the volunteer can identify, more easily, the category that best represents the observed scenario. To send a report, volunteers can use both a mobile application and a Web site" (Castro Degrossi, L., Porto de Albuquerque, J., Fava, M. C. and Mediondo, E. M. 2014). Sending a report requires that volunteers provide information such as their observation (for example, the water level or flooded area), the mechanism used to interpret the environmental variable, which provides information about the water level in the river bed and the place from where the information is sent. Due to the uncertainty about the credibility of this information, reports are checked by the emergency agencies involved in risk management before they are made available on line. Moreover, this type of information is integrated, as far as possible, with data from other sources, such as (in the case of floods) sensors and rain gauges, among others. This use of volunteer information in flood risk prevention has been experimentally validated, e.g., in Brazil (De Brito Moreira, R., Castro Degrossi, L. and Porto de Albuquerque, J. 2015). It has been found that this exercise is effective in obtaining useful and accurate volunteer information since volunteers can easily provide information about the water level in the riverbed. This is an important step since in certain regions of Brazil there are no water gauges to perform such measurement in real time. In this specific case, citizens are trained on three points: the mechanisms used to interpret environmental variables (see the three scenarios mentioned above); the crowdsourcing platform used to obtain volunteered information; and instructions about how to insert a report in the platform. The METAGRI Project implemented by WMO in collaboration with the National Meteorological Services of Benin, Burkina Faso, Cape Verde, Chad, Côte d'Ivoire, Gambia, Ghana, Guinea, Guinea-Bissau, Liberia, Mali, Mauritania, Niger, Nigeria, Senegal, Sierra Leone and Togo in West Africa provides another example of citizens' empowerment through the citizens' observatory tool (and the case of Tanzania and Central Asia mentioned above can be assimilated to COs too). Developed in a region affected by both extreme droughts and floods, this project aims at increasing the self-reliance of rural farmers by raising their awareness about effective weather and climate risk management and the sustainable use of weather and climate information and services for agricultural production. Between 2012 and 2015, 12,499



persons (mostly subsistence farmers) were trained, through roving seminars, by multidisciplinary teams (including NMHS staff) in how to access and use weather and climate information to maximize yields and minimize risks (WMO 2015). In this project, farmers became key partners in collecting and managing climate information. National Meteorological and Hydrological Services involved in the project distributed 3,095 rain gauges to farmers who were trained in their use in conjunction with sowing calendars, which indicate suitable planting dates and appropriate crop varieties in the different locations, depending on the rainfall measurements obtained. Moreover, the interaction between NMHSs, other institutional partners, and farmers whose livelihoods depend on weather and climate increased, including more farmers in decision-making processes. The project team is currently working on the improvement of communication channels which would enable farmers to directly transmit field data to NMHSs (SMS, mobile application, etc.). Benefits would include increased availability and relevance of climate information and a better understanding by NMHSs of the needs of the farmers. Citizens' observatories are also at the core of European Commission interest. A specific topic "Coordination of citizens' observatories initiatives" will be funded by the DG Research in the frame of H2020 Societal Challenge No. 5 "Climate action, environment, resource efficiency, and raw materials". Citizens' observatories are intended to be community-based environmental monitoring and information systems which build on innovative and novel earth observation applications embedded in portable or mobile personal devices. Thanks to the vast array of ubiquitous information and data they can provide, citizens' observatories can enable authorities to obtain evidence and inform environmental policy making, complementing more authoritative in-situ observation and monitoring networks and systems with a very positive cost-benefit ratio. Data and information collected through Citizens' Observatories help empower societies, enabling citizens to play an active role in community decision-making and planning, in partnership with governments and local authorities. In the recent past two workshops on this issue, hosted by the European Commission, were held in Brussels on January, 29-30 2013, and December, 3 2014. The day later, an open conference "The Citizens Observatories: Empowering European Society" was organized in order to provide an opportunity for citizens to engage with experts and practitioners working across a range of European citizen science initiatives and policy making bodies (all that reflects the fact that the EC considers the citizens' observatories as an empowerment tool).

Note: See source document for full reference.

Applicable to:

Stakeholders: [Local knowledge](#), [Attitudes toward environmental issues](#)

Disaster Phases: [Preparedness](#)

Types of Actors Concerned: [Non-active citizens](#), [National civil protection body](#), [UN and other international organisations](#)

Hazards: [Natural hazards](#)

Recommendations:

- [The use of new technologies \(e.g. Bluetooth\) can improve communication strategies in disaster management situations](#)
- [Foster the adoption of a culture of disaster prevention and resilience by informing and motivating citizens to take action](#)
- [Use new technologies, such as crowdsourcing to collect information from citizens, as a means to foster community engagement](#)
- [Use cultural factors to improve the effectiveness of disaster communication](#)

Source

[Deliverable D7.1 "Report on literature review" \(page 54\)](#)



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