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A Participant-Centred Model for Citizen Observatories at Scale

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Best practice in citizen science is changing in response to society-policy objectives and new widely available technologies which is leading to an increased role in environmental monitoring. The data generated by these technologies have the potential to inform changes in practice and resolution of issues, many of which are related to matter of environmental concern. A distinctive development in citizen science are citizens' observatories (COs), which seek to extend what is understood as conventional citizen science activity to address participation in data gathering for innovation. However, there are challenges that can affect the uptake and success of COs regarding the generation of robust scientific knowledge, which require longitudinal datasets and quality assurance. The GROW Observatory is tackling these questions of scale and of sustainability across multiple facets and approaches in its focus on soil moisture data across nine EU focus areas, named GROW Places. However, whilst the stewardship of soil is in common to GROW citizens and scientists alike, there are multiple underlying motivations across geographic locations and environmental contexts. Correspondingly, the novelty GROW contributes to citizen science is in addressing the problem of amplifying scale, whilst supporting meaningful participation with citizens and grassroots organisations', as well as policy makers and scientists. This paper presents the development of a seven-step participant-centred model, methodology and associated tools, which is supporting the distribution of 15,000 validated low cost soil moisture sensors. We move beyond citizen science to describe the full articulation of an end-to-end CO process which addresses the question of scale as well as local-contextual environmental interests from the participants' perspective.