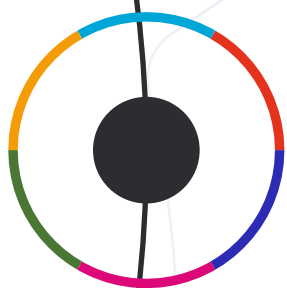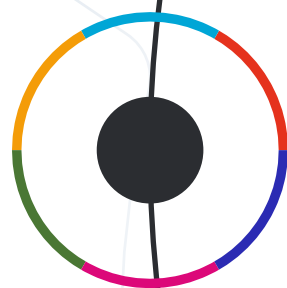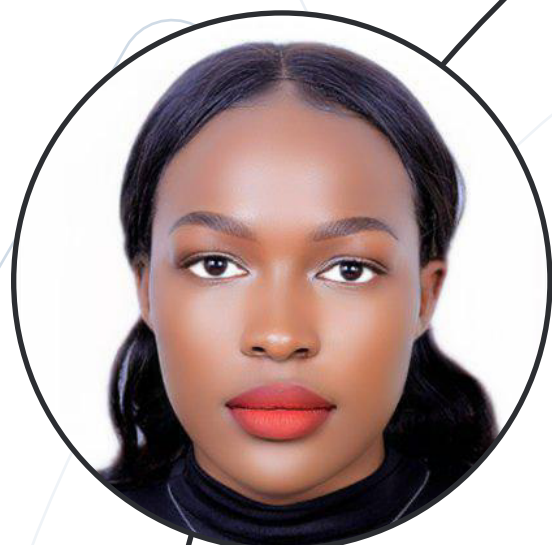# Crowd4SDG

CLEAN UP
waste management webapp

A web app that provides a citizen science solution for poor waste management through effective communication.
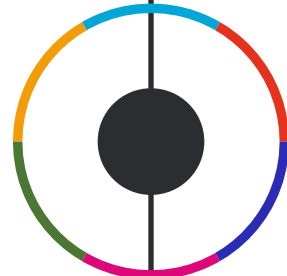
Objective of the project

Our mission is to achieve a cleaner, healthier environment, by optimizing waste management. This project aims to reduce waste abandoned on the ground to avoid deriving dangers for the environment and people's health. Our solution is meant to be potentially implemented everywhere, as it works with the involvement of citizens.
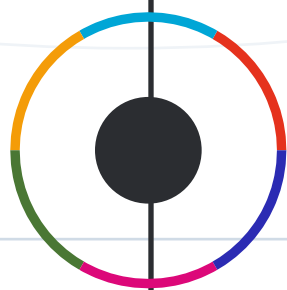
Problem addressed

The project takes place in Rome. Here many citizens don't sort waste and there are many different backgrounds and situations. We are addressing the lack of communication: many citizens and tourists don't know how to report abandoned waste and the company in charge of waste in Rome struggles to locate waste hotspots and the needs within the city's areas. Meanwhile, waste piles up on the ground and citizens, angry, behave incorrectly (settings bins on fire, reducing separate collection and leaving further waste on the ground). This problem is also causing the spread of diseases-carrying animals attracted by waste (eg. boars).
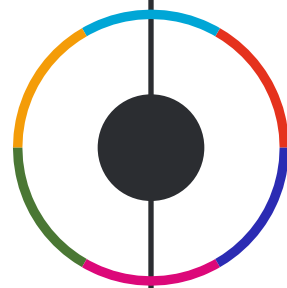
Solution proposed

A web app which helps the municipality find waste hotspots. It links key stakeholders and gives a voice to citizens from different backgrounds. We gather posts from Twitter, filtering them with NLP. The data go on Project builder for validation and are displayed on the web app (the waste management companies are notified). Citizens can post relevant pictures on social media, perform data validation tasks, share ideas and vote on proposals. They can solve issues and see them all on the web app. We'll implement: direct reports, (marketplace) a rewarding system for eco-friendly challenges, GPS to show the issues according to users' place. We'll widen the project and perform comparative studies among cities, suggesting (case-based reasoning) suitable previous solutions to problems. We also plan to forecast the hazard of abandoned waste with neural networks (according to the HP scale, the registered effects on the population and the linked subsequential issues).
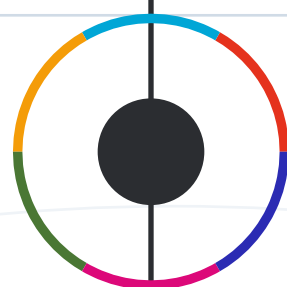
Expected impacts

We expect the project to drive positive change in citizen behaviour, immediately showing them the results of the correct actions (eg: you sort waste properly and recycle => you earn coupons to buy a recycled product). We expect to reduce the amount of abandoned waste and, as a result, the linked risks for people's health and the environment (as the problem is linked to pollution also in other spheres). We expect to increase climate resilience by quickening the response of waste collecting and, in the long term, by forecasting possible hazards.
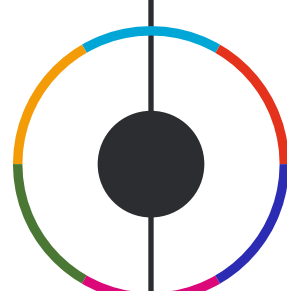
Current state of development and What is the project looking for?

We created the website with some functions: to collect waste and boars reports from Twitter (VisualCit), displaying them along with their resolution; to facilitate discussions and proposals for everyone (Decidim4CS), ML algorithms (NLP) for text parsing, data validation (CS Project Builder). We talked with the relevant stakeholders and we partnered with a software house placed in Rome (KG Partners), which is helping us with the web app development. We also connected with a waste safety consultant, in Rome, who is helping us in assessing the severity of the waste-related issues, in view of the plan for forecasting waste hazards.

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