Gaming route leads to solid results

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Making environment-related decisions can be a complex business. A wide range of stakeholders need to be co-opted, different options need to be assessed and the impacts and consequences estimated. In order to also include the opinions of the wider public, Eawag has developed a new app that features elements of gaming.
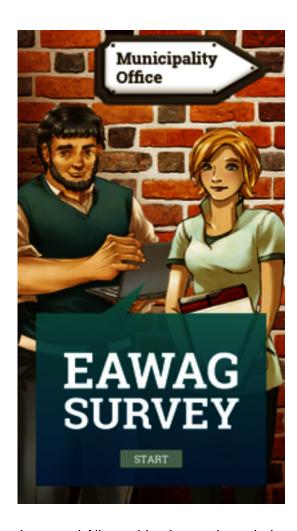
Should a wind farm be built in a particular region, or is the integrity of the landscape a more important consideration? How should the wastewater infrastructure be designed in the future? Multi-criteria decision analysis (MCDA) is a recognised tool for weighing up such environmental questions, and an important stage of the methodology is to ascertain the preferences of those involved: What is important to them when making their decision? What goals do they rate most highly? Individual interviews and moderated workshops are useful means of eliciting these viewpoints, but online surveys would be a far less time-consuming way of doing so. The problem with this is that participants are often unfamiliar with the complex issues, or they give up because the questions are often repetitive. To get around these kinds of obstacles, Alice Aubert from the department of Environmental Social Sciences has developed a new kind of survey app using the example of wastewater infrastructure.

Holding participants' attention

"We packaged the questionnaire in a story in which virtual characters communicate with the participants", explains Aubert. These gaming elements are designed to make the process fun for the users and keep them motivated. The required knowledge is imparted through several iterative levels. The key point of the questionnaire is to get the participants to reflect on their goals and to weigh these up. Conflicts between the different goals inevitably arise in the process. Take one example from Aubert's app: wastewater infrastructure with a high level of phosphorus recovery requires the installation of unconventional toilets, which has the potential to meet with a lower level of acceptance

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among the users. Users have to decide whether phosphorus recovery or social acceptance is more important. If the questionnaire reveals differing preferences within the various methods, the user has to re-evaluate their answer. "Some of the test subjects felt overly controlled by this", says Aubert.

Leon and Alice guide players through the questionnaire, ask questions, motivate and praise.

Concept successfully trialled

The high volume of information proved also to be quite a challenge with the 100-plus guinea pigs, and so in a new version, Aubert intends to enhance the background information with gaming elements. The prototype went down well on the whole, though, and the researcher was pleased with the trial. The evaluation indicated that the test subjects increased their knowledge of the topic significantly, and that the majority stated preferences that were true to form. Aubert is convinced of the potential of such online surveys: "Online tools allow us to gain a more comprehensive idea of the views of the population." This way, long-term decisions in the environmental sphere would have a broader and more solid foundation, and those affected would be more likely to lend their support to the implementation of these decisions.

Want to try out the app for yourself?

The "Eawag Survey App" can be downloaded free from the Apple App Store.
To start the questionnaire a token is required, which can be requested from Alice Aubert:
alice.aubert@eawag.ch

Serious Games in the environmental world

As part of the project, Alice Aubert has created an overview of "Serious Games" in the water sector. These games have goals that go beyond pure entertainment to aims such as communicating a message, exchanging information or training behaviours. The topics of these games range from water management through water quality or scarcity to sustainable fishing.

The "Supplementary Information" contains a list of the subjects. Aubert, A. H., Bauer, R., Lienert, J. (2018) A review of water-related serious games to specify use in environmental Multi-Criteria Decision Analysis. Environmental Modelling and Software, 105, 64-78. doi.org/10.1016/j.envsoft.2018.03.023

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https://www.eawag.ch/en/info/portal/news/news-archive/archive-detail/gaming-route-leads-to-solid-results

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