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## Citizen's view on Agrophotovoltaics – A responsible research and innovation study in Germany

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The German energy transition induces conflicts between biomass and power production when open space photovoltaic is installed on agricultural land. Combining food and power production with photovoltaics at the same site and time, Agrophotovoltaics (APV) may help solving the food versus fuel dilemma. However, what is society's opinion on this technology? The presented study investigated the views of citizens on APV technology based on the concept of Responsible Research and Innovation (RRI). To reach that objective, we applied a multi-stage inter- and transdisciplinary research approach referring to the RRI concept. Citizen's and stakeholder's knowledge, expectations and apprehensions as well as their values and evaluations on the APV concept were assessed and integrated in the development of a framework for APV. In the region of Lake Constance in Germany, where the

APV pilot plant was installed, we conducted two citizens' workshops and one stakeholder workshop as well as a survey at the opening ceremony of the pilot plant. Our findings indicate that after exhausting roof and sealed area PV potentials, the participants would prefer APV over open space PV and biogas plants. However, making the innovation responsible means for them embedding APV in a restrictive framework that e.g. defines site criteria and obliges agricultural cultivation below APV. Appropriate plant ownership and operation concepts are also regarded as crucial for a successful implementation and operation of APV. Our research identified chances and challenges including conflicting sustainability goals in the technology development and implementation that need to be addressed in further research.

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