



**PRESS RELEASE**

---

## **Politecnico di Milano: A Study in *Earth's Future* on Agrivoltaics Reducing the Competition Between Food and Energy**

Milan, 17 April 2025 – Can agriculture and solar energy work together instead of competing? A study led by Maddalena Curioni, Nikolas Galli, Giampaolo Manzolini and Maria Cristina Rulli, researchers in the Department of Civil and Environmental Engineering and the Department of Energy at the Politecnico di Milano, sheds new light on the potential of agrivoltaics. Published in the prestigious journal *Earth's Future*, the paper analyses how the coexistence of photovoltaic panels and agricultural crops can help solve the global conflict over land use.

With the growing demand for renewable energy and the need to produce increasing amounts of food, the pressure on arable land is intensifying. Today, between 13% and 16% of ground-mounted photovoltaic installations occupy land that used to be agricultural, a sign of agriculture and energy competing for the same space.

But there is a third option. The study reveals that between 22% and 35% of non-irrigated agricultural land around the world could host agrivoltaic systems while continuing to produce food. It presents an opportunity to integrate two basic needs without compromising one or the other.

To reach these conclusions, the researchers used a spatial agro-hydrological model, simulating the response of 22 crops to the reduction in solar radiation caused by the panels. The model enabled an assessment of potential crop yields in different climates and geographical areas, resulting in a global map of possible places to apply agrivoltaics.

*'Agrivoltaics cannot be applied everywhere, but according to our results, it would be possible to combine cultivation and energy production in many areas of the world without significant reductions in yield,'* says **Nikolas Galli**, Glob3Science Lab researcher and co-author of the study.

*'Using the land for both cultivation and photovoltaic systems increases overall output per occupied surface area while reducing production costs. In addition, installing crops underneath the photovoltaic panels reduces the panel operating temperature and increases their efficiency,'* adds **Giampaolo Manzolini**, professor in the Department of Energy and co-author of the study.

*'This technology could help reduce land competition while improving the sustainability of agricultural and energy systems,'* concludes **Maria Cristina Rulli**, lab coordinator and co-author of the study.

The results provide a sound scientific basis for guiding policy choices and investments for more efficient and sustainable land use.

**FOR INFORMATION:**

**Emanuele Sanzone**, +39 3316480248, [relazionimedia@polimi.it](mailto:relazionimedia@polimi.it)