The role of data complements & artifical intelligence in decision-making: case studies from gender and environmental evidence assessments

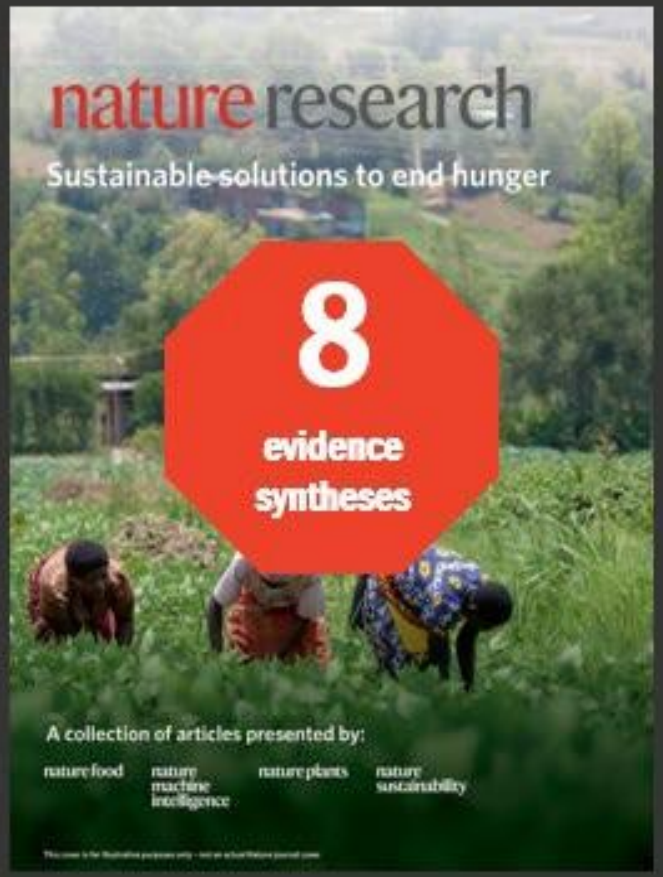
Hybrid donor roundtable: Assessing the Data 'Quantum' Leap in Agriculture and Food Systems: Consultations for New Strategic Directions

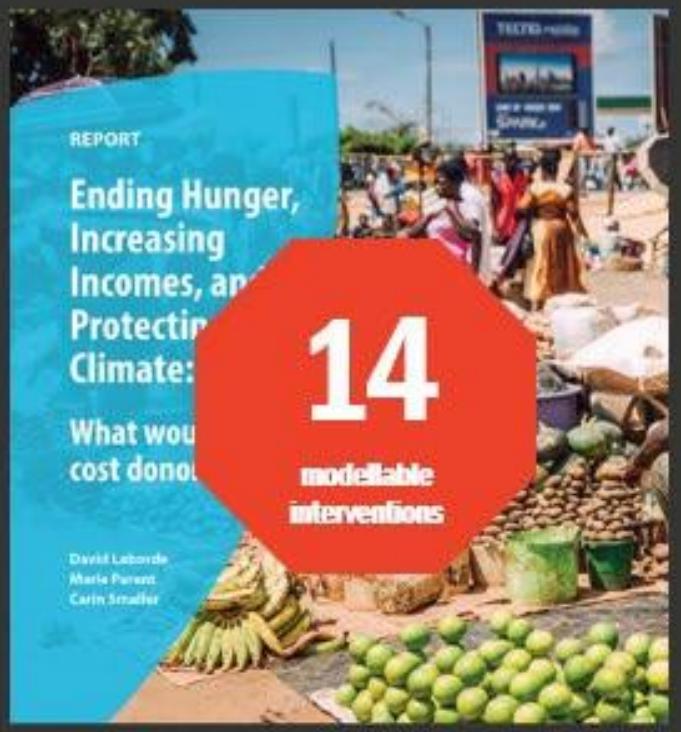
February 13, 2023

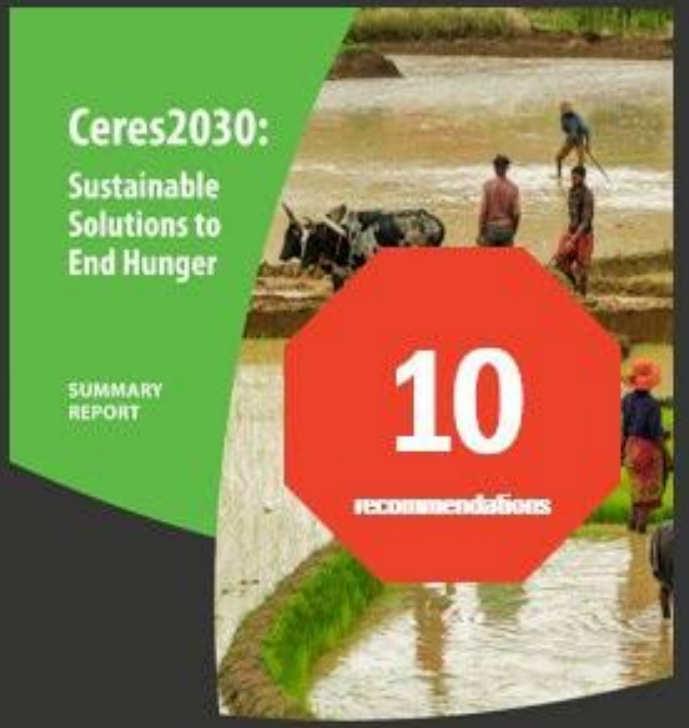
Jaron Porciello, University of Notre Dame

Ceres2030 collection

Sustainable Solutions to End Hunger







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http://ceres2030.org

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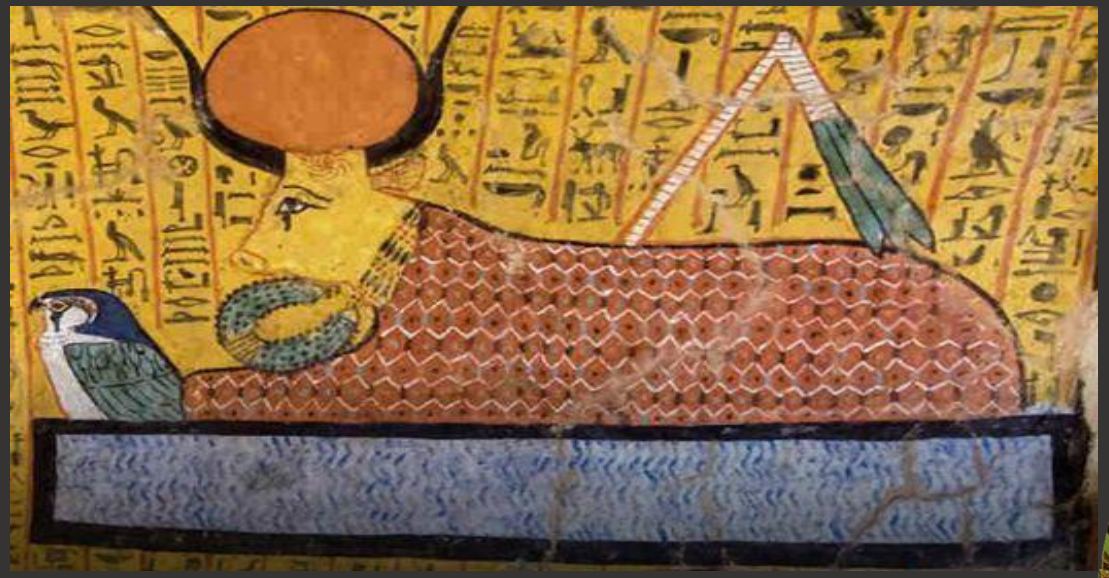
Launching soon

A global roadmap to end hunger sustainably and nutritiously



The Problem

We have doubled our knowledge in just ten years. **That's more knowledge in one decade than in all of human history.**

Billions of dollars of investment and revenue are lost because we cannot easily make use of innovations coming from science to solve real-world problems.

An estimated **new scientific article is published every twenty seconds.**

80% of the world's data is unstructured – photos, papers, reports, published in various platforms that are unconnected from each other.

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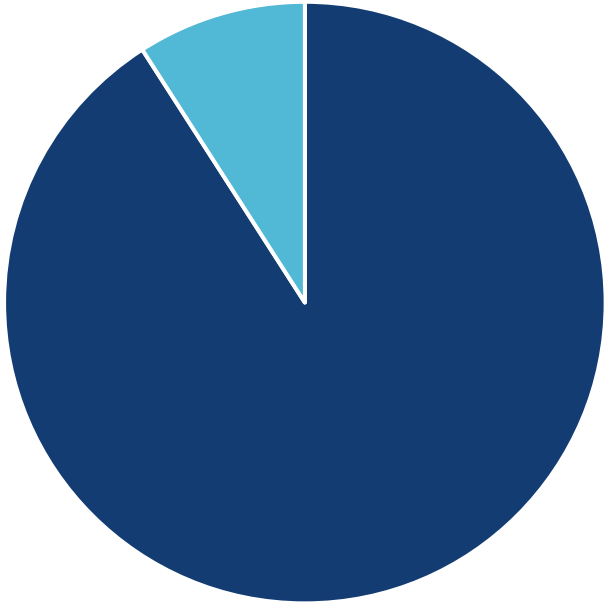
Tapping into “small and wide” data

Artifical intelligence can support a “quantum leap”—but it requires a roadmap.

- Who are the communities that we serve? (We call these **user populations**.)
- What are the problems these communities face? (We call these **open-ended questions**.)
- What are the range of solutions available to address these problems? (We call these **interventions**.)
- What do these solutions solve, and are they measurable? (We call these **outcomes**.)
- How do we implement the solutions to drive forward action? (We call this **data-driven insight.)**

Persistent gaps in **gender**

Ceres2030 scoping reviews (100,000 papers)

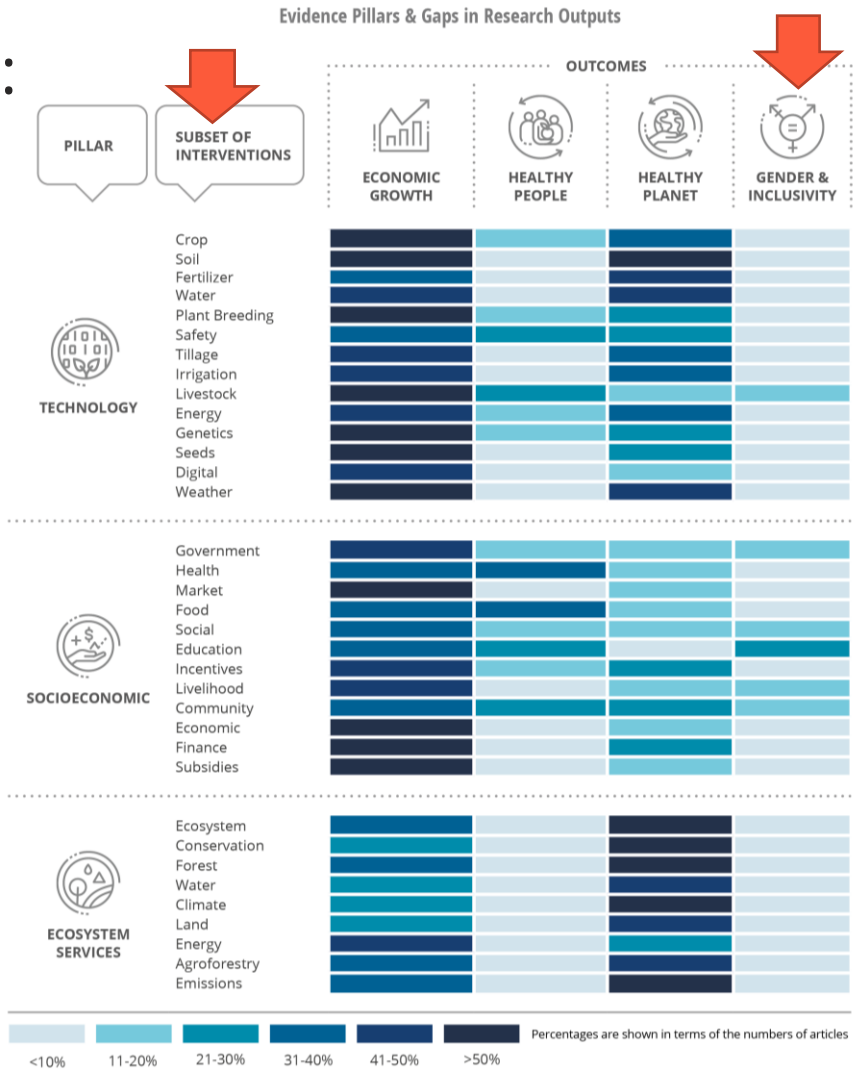


Limited data about gender

Papers supporting Gender

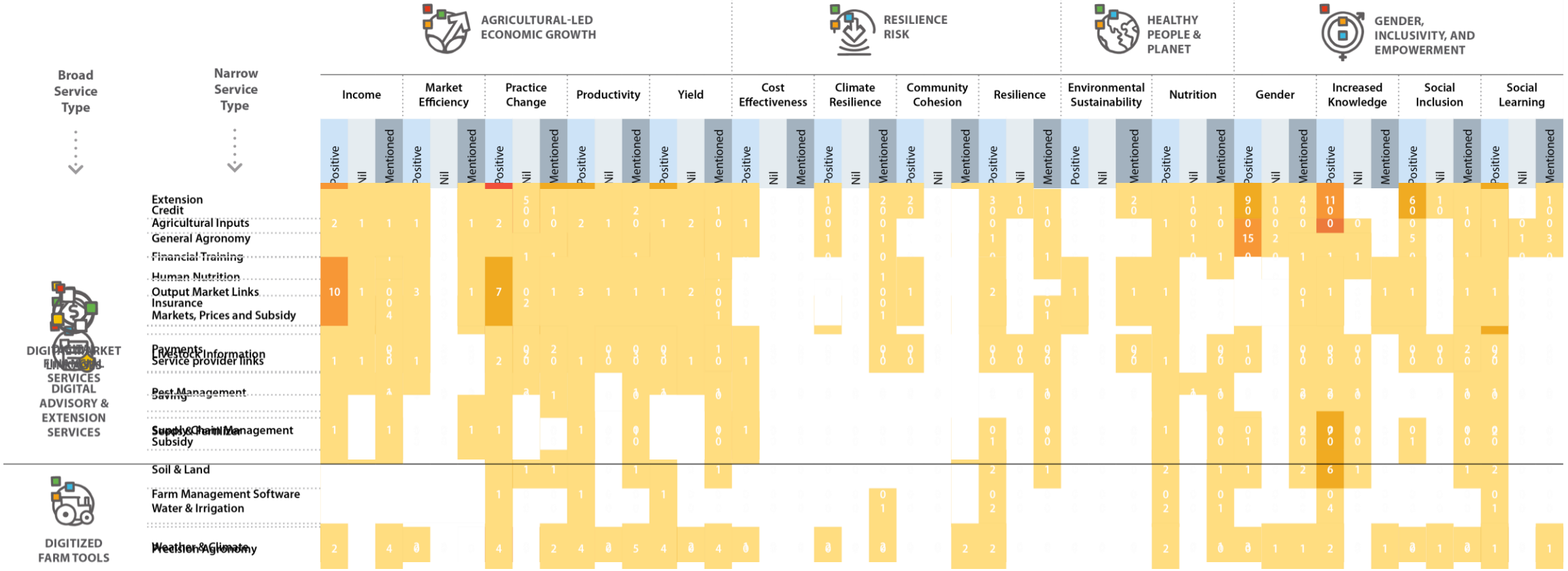
https://www.nature.com/collections/dhiggjeagd

Mining the Gaps: 1 million papers on small-scale farmers



https://www.frontiersin.org/articles/10.3389/fsufs.2022.1013701/abstract

Climate & environment gaps



Digital agriculture services in low- and middle-income countries: A systematic scoping review
https://doi.org/10.1016/j.gfs.2022.100640

The Way Forward

AI is helping us find how to make quantum leaps using unstructured data.

Data complements are an important opportunity.

Coordination is essential.

THANKS