Win more, lose less:
Capturing synergies between SDGs through agricultural research

THE CLIMATE-LAND-ENERGY AND WATER NEXUS

IMPLICATIONS FOR AGRICULTURAL RESEARCH

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FROM GOALS TO SYSTEMS

The **SDGs** and **SLOs** give us a reading lens for finding the interlinkages of interest.

The interlinkages are then studied with the underlying physical and social systems.
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**Ex. SYNERGIES**

- **6. Clean Water and Sanitation**
  - 1: Water and sanitation needed for malnutrition
  - 2: Ending hunger and malnutrition could affect water availability

- **7. Affordable and Clean Energy**
  - 1: Energy for food production
  - 2: Competition for resources
  - 3: Food systems for bioenergy

- **13. Climate Action**
  - 1: Climate action for productive and adaptive food systems
  - 2: Climate action could affect land availability and small food producers
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AGRICULTURE AND NEXUS SYSTEMS INTERACTION

Image Source: GAEZ (FAO), https://unsplash.com/photos/WV4B_aVj0aQ
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SELECTED GAPS IN INTEGRATED ASSESSMENTS FOCUSING ON NEXUS

Overall

• Focus usually lies on linkages between **two systems**
• **Climate** consideration and its uncertainty
• Too much focus on **calories** and less on **nutrition**

Inter-sectoral gaps

• **Energy**- Lack of info on **energy footprint** in agricultural production chain
• **Water**- Emphasize on **quantity over quality**
• **Land**- Lack of reliable data on **underground aquifers**, their recharge rates and water carrying capacities
• **Climate**- Going **beyond** just temperature and precipitation
SOME SUGGESTIONS TO MOVE FORWARD.

1. Develop **free and open access tools** overcoming the gaps presented previously.

2. Develop **lighthouse projects** for SDGs interlinkage quantification.