



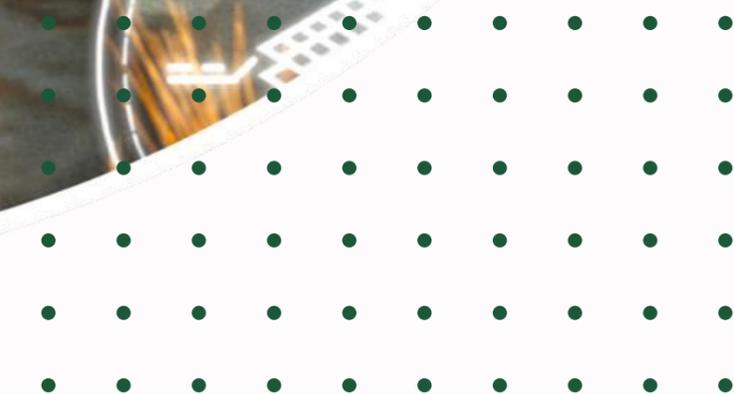
Food and Agriculture
Organization of the
United Nations

14 June 2024

The Metaverse for accelerating agrifood system transformation

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Office of Innovation
FAO

UN
Virtual
Worlds
Day



The GAP



Plant and animal pest and diseases:
Desert locust, fall armyworm



Extreme weather events:
Natural disaster, drought



Conflict:
Threatens food security



Biodiversity:
Threat to the components of biodiversity



Diverse Lands facing Climate impacts



Economic Pressures



Agricultural Salinity

The GAIN
Science, technology and innovation will accelerate change and transform our agrifood systems...

...but we need to **understand how and where to use them**

Desert Locusts: A Devastating Threat



- The most destructive migratory pest
- 1 sq. km of desert locust swarm –up to 80 million locusts, consuming the daily food of 35,000 people.
- Climate change is making desert locust outbreaks more frequent and severe..

FAO, in 2020–2022 :

- ✓ treated 5 million hectares
- ✓ trained 3 800 people
- ✓ Saved 4,6M metric tones of cereals
- ✓ 900M liters of milk
- ✓ Avoided loss of USD1,8 billion

FAO VR Training: Transforming Desert Locust Management



- **Challenge:** threat to food security.
- **Limitations:**
 - Expensive
 - Graphically restricted
 - Not feasible during actual epidemic situation
- **Solution:** FAO VR Training – An immersive, risk-free training experience.
- **Benefits:**
 - Accessible training
 - Practical
 - Empowering

Agrifood systems in metaverse

- Nature-based and agroecological transitions in Brazil
- Precision agriculture in the metaverse
- Metaverse-enabled logistics and supply chain management
- Financial literacy and access
- Food security and disaster preparedness



A few more examples



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IMMERSIVE TECHNOLOGY IN AGRIFOOD:

Extended Reality for Training
& Education

FEB 08, 2024 – 10:00 AM – 12:00 PM (CET)





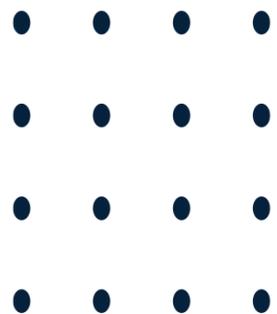
Food and Agriculture Organization
of the United Nations



清华大学
Tsinghua University

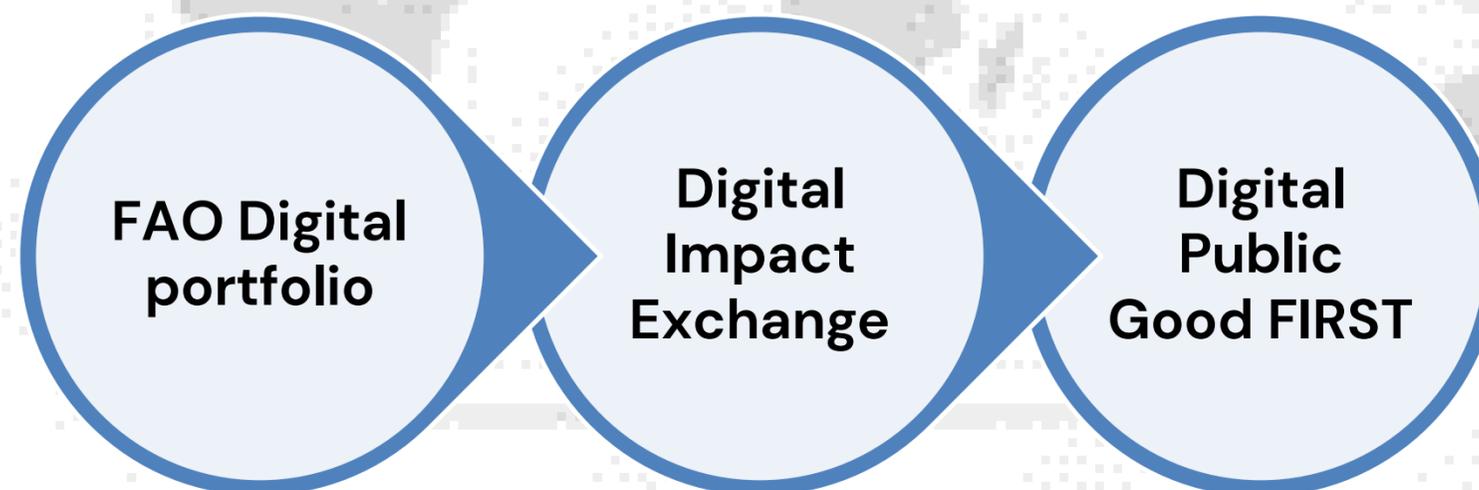
Fusion of traditional heritage systems and modern technologies

- 8 weeks Service Design course in metaverse
- Reshaping the Future of GIAHS (Globally Important Agricultural Heritage Systems)
- 5 GIAHS in China, Japan, South Korea and the Philippines

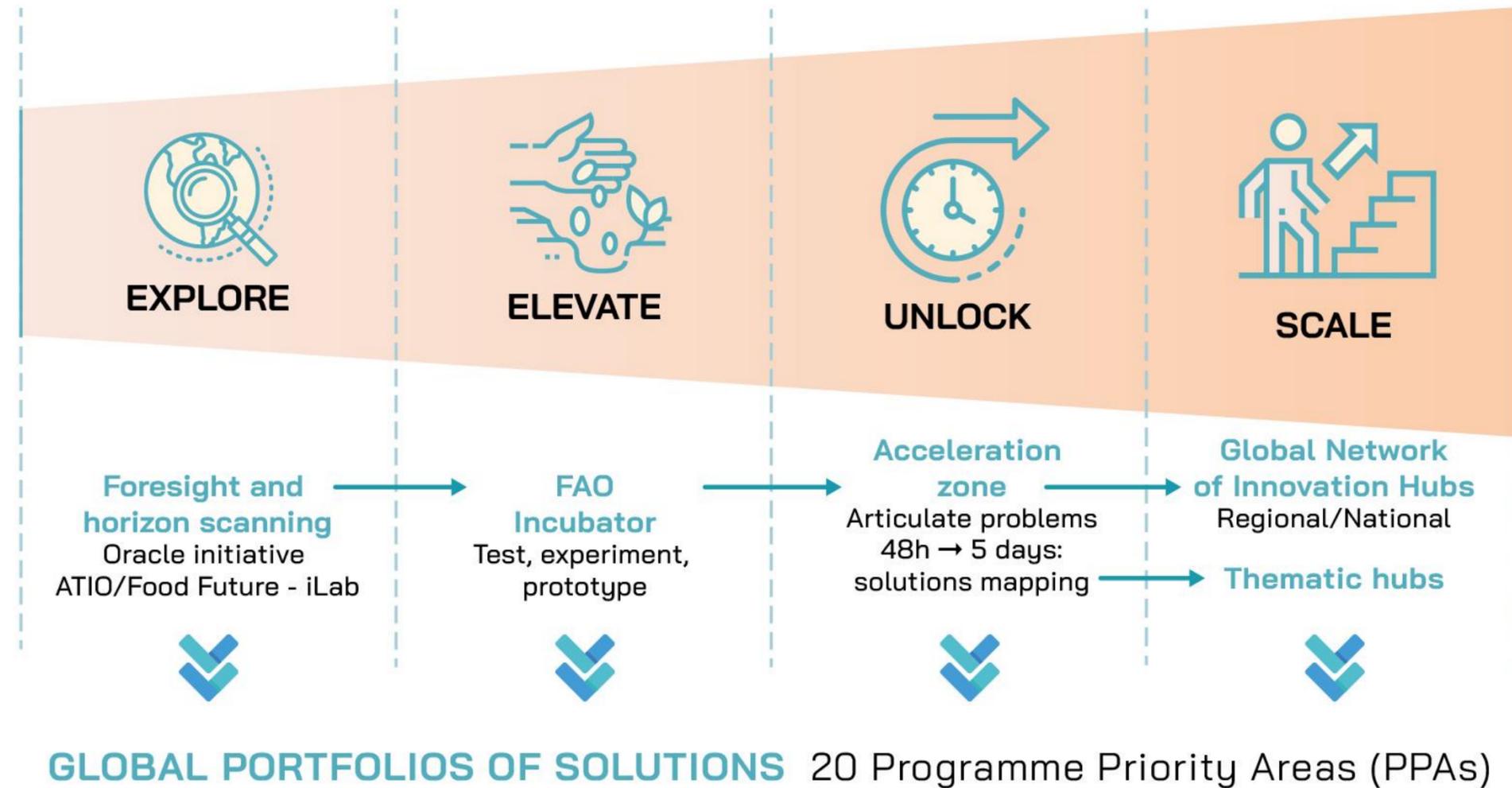
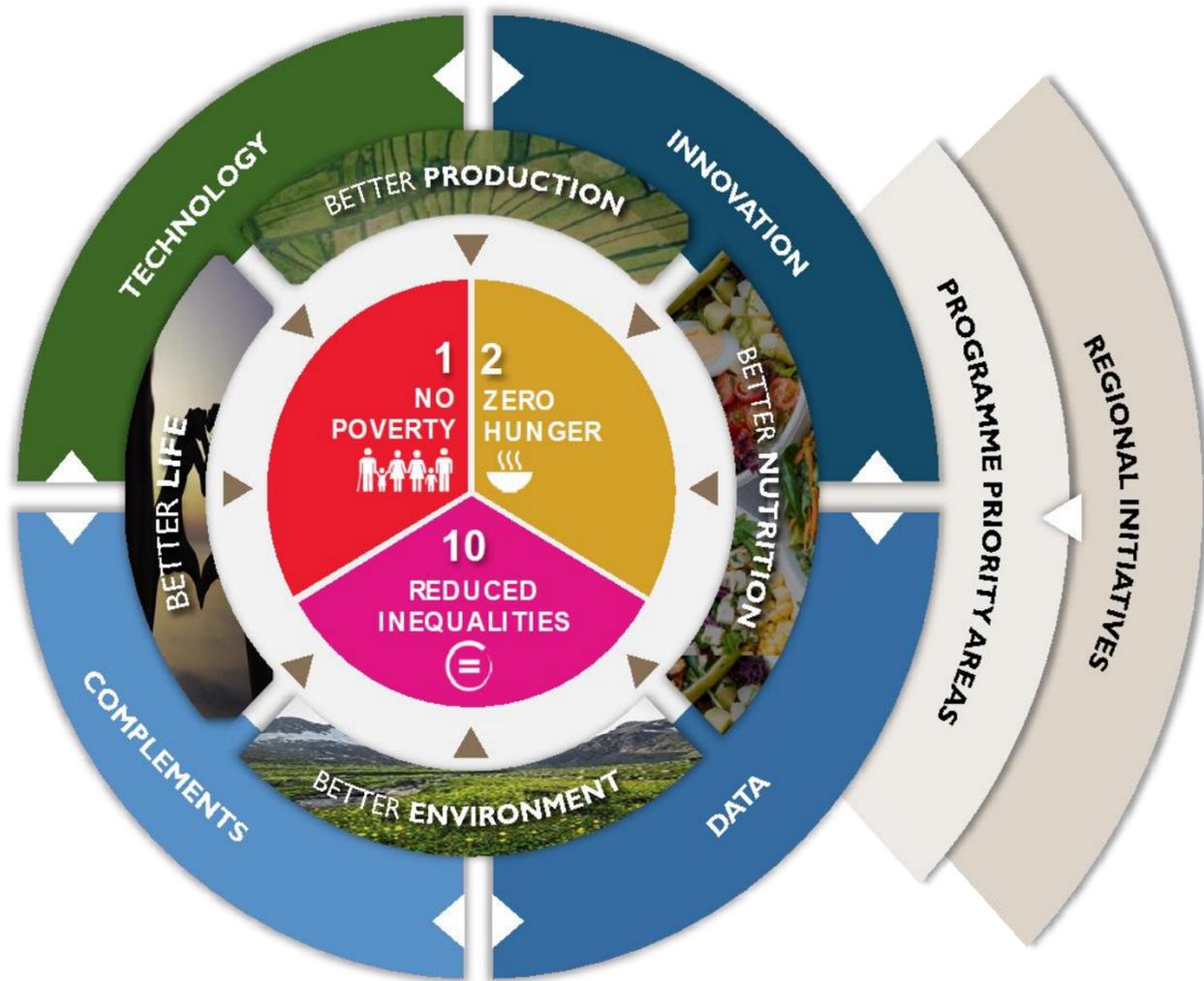


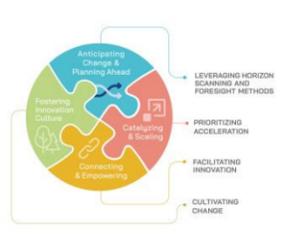
Lessons learned & Challenges

- **Early adopter's advantage**
- **Importance of collaboration**
- **The need of digital inclusion**



FAO's Approach



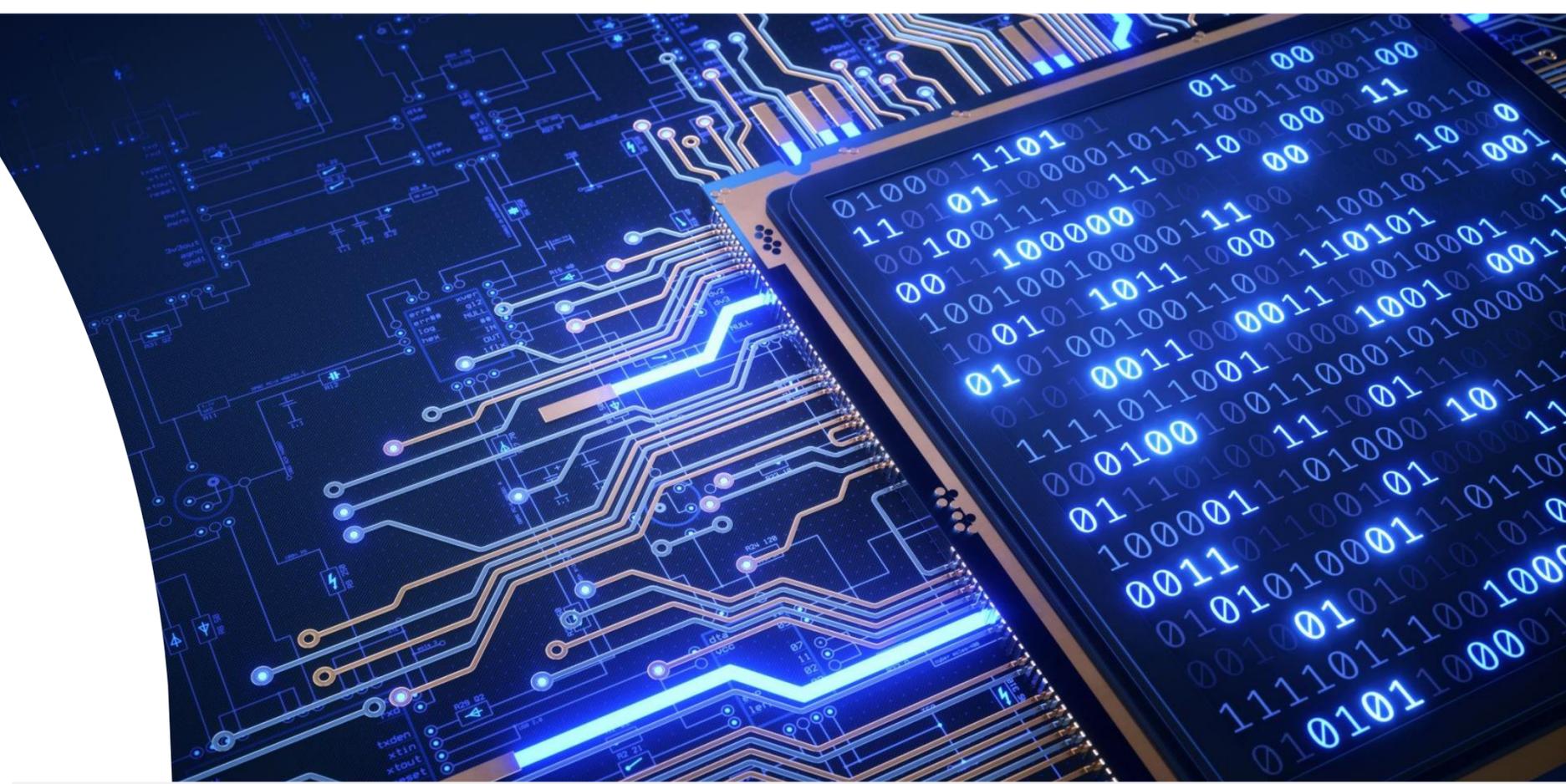


Anticipate and Plan Ahead

Closing the STI Gap

FutureFood-I labs

- 20 most impactful emerging technologies and innovations
- **New paradigm: efficiency, sustainability, democratization**
- **AI, geospatial technologies, and policy and ecosystem innovations as the most impactful forces.**
- **Metaverse can increase the impact of projects, capacity development programmes, anticipate the effect of financial and policy instruments and thus, ensure accelerated progress of the SDGs**



Harvesting change: Harnessing emerging technologies and innovations for agrifood system transformation

Global foresight synthesis report

[Harvesting change: Harnessing emerging technologies and innovations for agrifood system transformation \(fao.org\)](https://www.fao.org/publications/collection/en/collection/14844)

The Future of Food and Agriculture: A Metaverse of Possibilities

- The metaverse has the potential to revolutionize the way we produce food, in combination of other technologies and non technological innovations.
- It can create a more efficient, sustainable, and resilient food system for all.
- Collaboration is key to achieve this vision



Creating Impact Together



A hand in a white shirt cuff points towards a glowing, grid-like digital chip in the center of a blue circuit board background. The chip is surrounded by intricate white circuit traces. In the top left corner, there is a small grid of white dots.

Thank you.

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X: @FAOInnovation