Food and Agriculture Organization of the United Nations

Agriculture and Water Quality

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www.fao.org/land-water

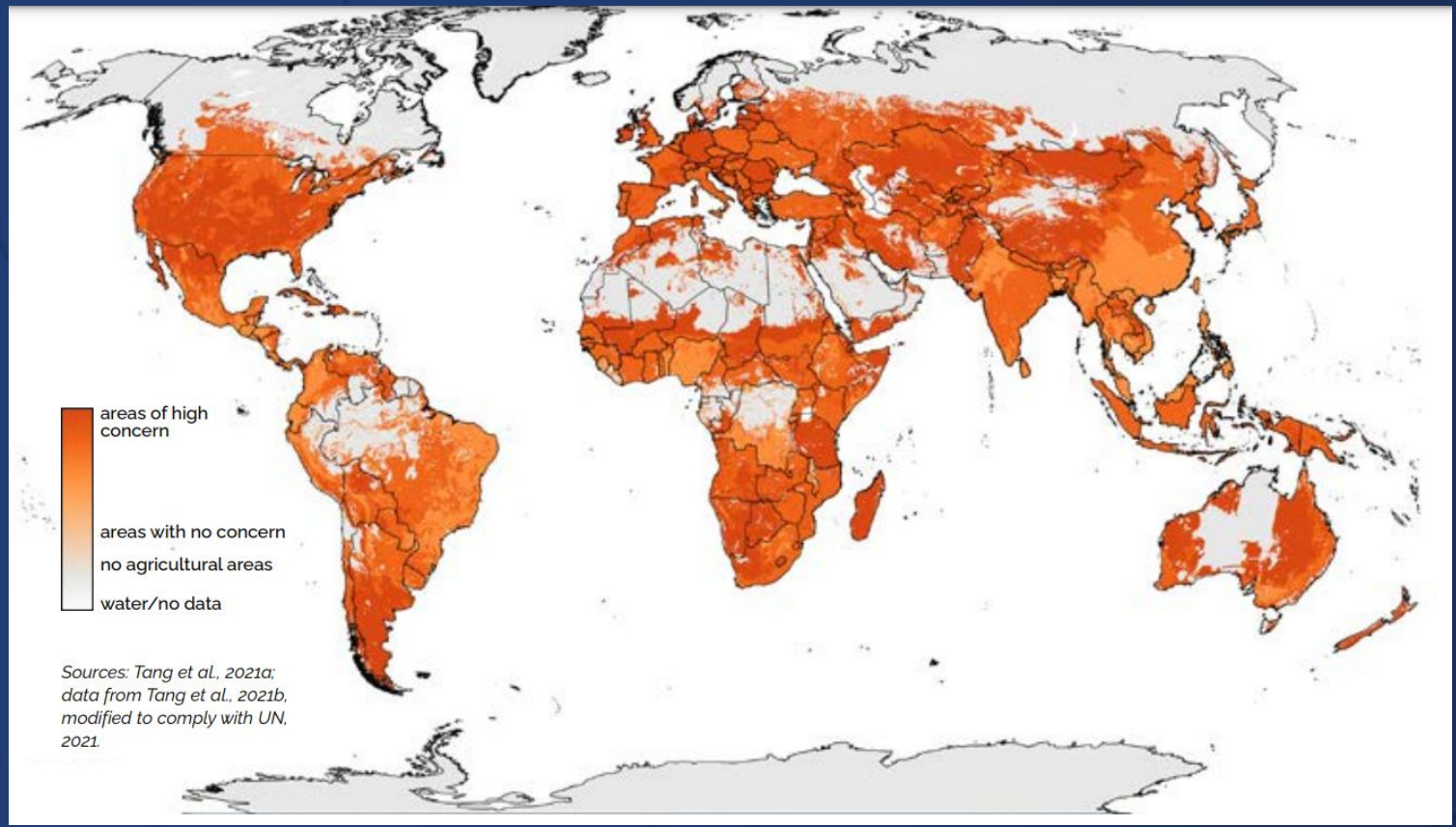
Agricultural water quality

- Agriculture is by far the greatest water user in the world and consequently a major cause of water pollution.
- Expansion and intensification of agriculture have led to an increasing use of fertilizers and pesticides.
- By 2050 the world will need an estimated 60 percent more food than is available today.
- Degrading water quality is a significant threat to food safety and food security.

March 2021-Multan Pakistan - A Pakistani farmer sprays pesticides in the field of wheat crops in Multan city in Punjab province

Agricultural pollution

- The main water quality issues from agriculture are salinization and pollution from nutrients and pesticides.
- Nitrogen fertilizer use rose from 81 million tonnes in 2000 to 110 million tonnes in 2017.
- 80% of anthropogenic nitrogen fixation comes from fertilizer production and agriculture.
- Phosphorus input to water bodies totals 1.47 million tonnes annually, with 62% from industrial/domestic sources and 38% from agriculture.
- Potash use increased from 22 million tonnes in 2000 to 39 million tonnes in 2018.



Global areas susceptible to pesticide pollution (FAO SOLAW Report, 2021

Ecosystem-based solutions and water quality

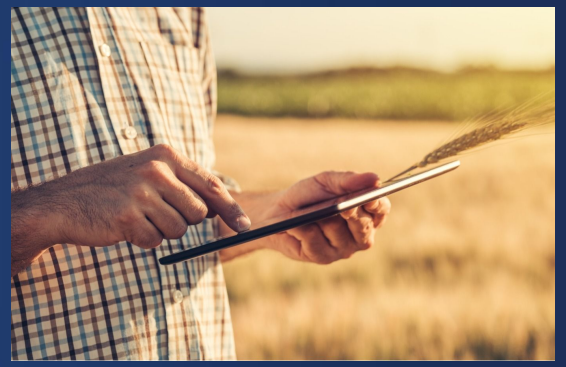
- Ecosystem-based Solutions (EbS) are underused due to the complexity of engaging multiple stakeholders, but they offer broad economic and social benefits across sectors, supporting various policy goals.
- EbS can help to:
  - Treat polluted water by filtering sediments and pollutants through soils, vegetation, and chemical processes.
  - Protect groundwater by removing contaminants like heavy metals and pollutants.
  - Reduce strain on water treatment infrastructure and improve wastewater quality, often through bioretention and constructed wetlands.

FAO E-learning courses:

- ***Pesticide Registration Toolkit:*** *The use of pesticides in agriculture and public health, and the associated benefits and risks, the importance of pesticide registration and FAO's role in pesticide management.*

Highly Hazardous Pesticides (systems for identification, mitigation.

Examples of Anticipatory Actions



Using FAO methodology to compute damage and loss

Real water savings in agricultural systems

More courses available at: https://elearning.fao.org/

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Thank you for your attention!

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