Food and Agriculture Organization of the United Nations

The state of the world's land and water resources for food and agriculture (SOLAW)

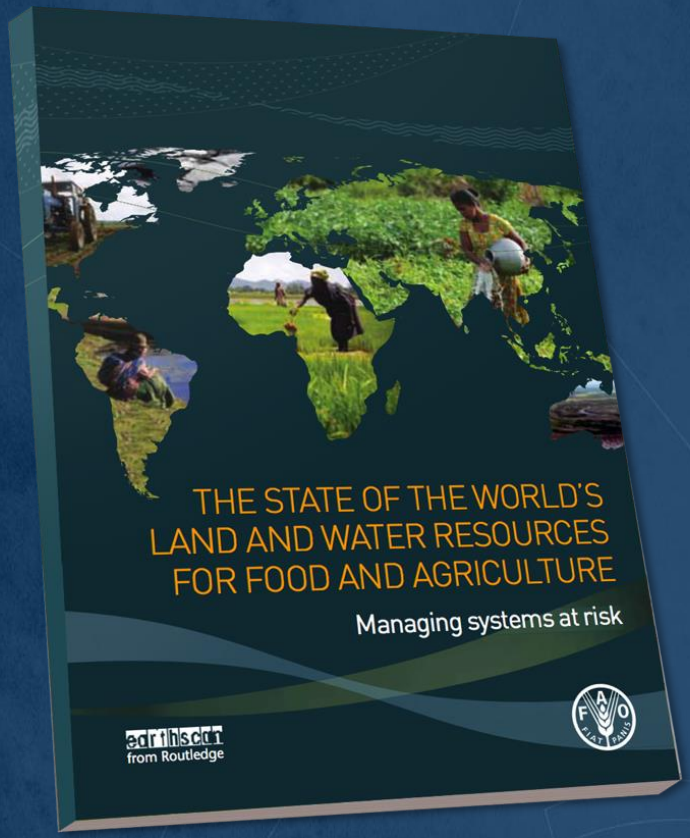
Systems at breaking point

Mr Lifeng Li

Director, FAO Land and Water Division

9 December 2021, Rome

SOLAW 2011 and 2021



The Context

Between 720 and 811 Million people worldwide faced hunger in 2020

We need to produce 50% more food, feed and biofuel than we did in 2012

Around 3.2 billion people are impacted by water scarcity

The Status of agricultural land

Land-use class change, 2000–2019 (million ha)

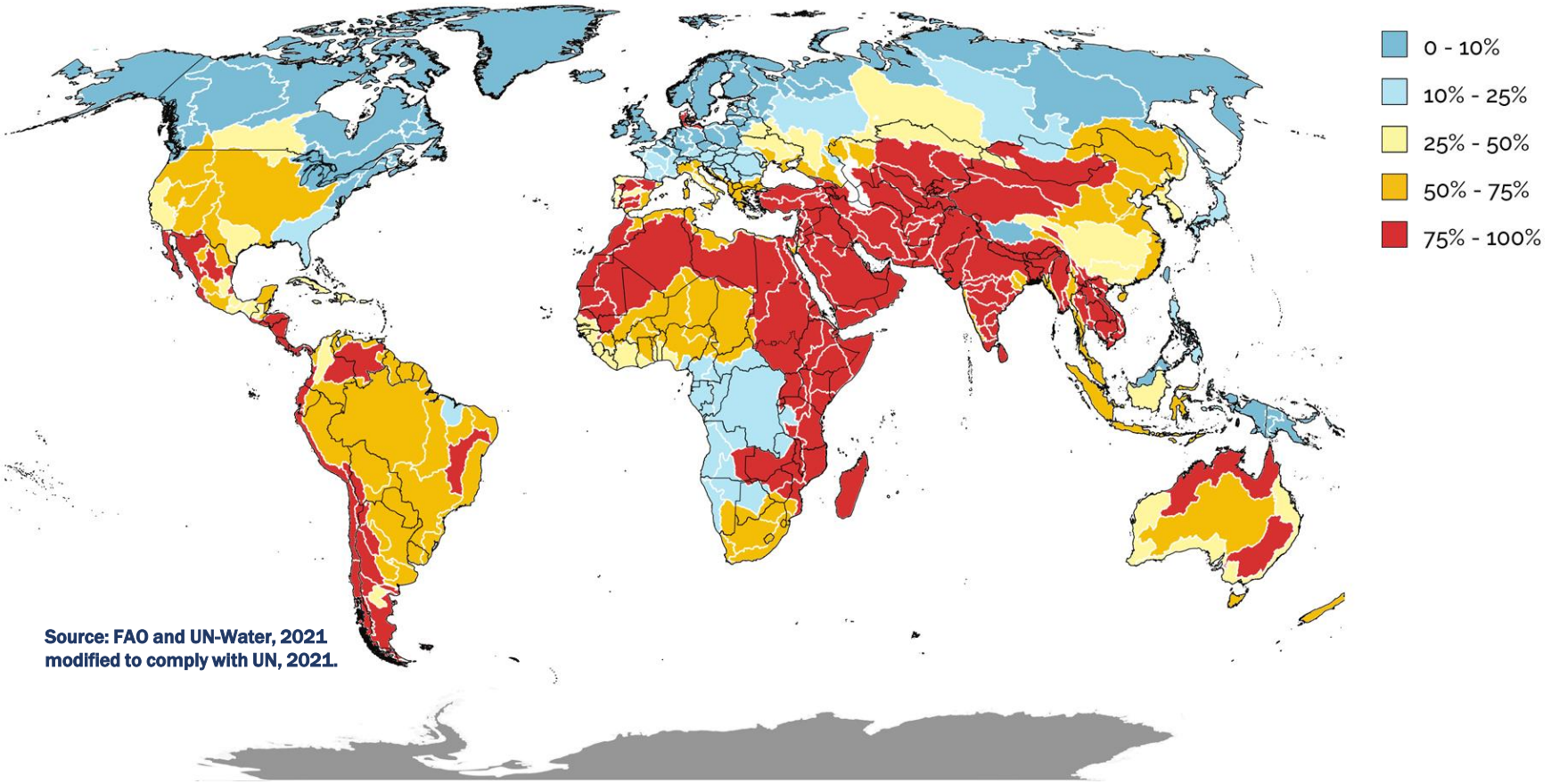
Land-use class	2000	2019	Change
Land under permanent meadows and pastures (a)	3 387	3 196	−191
Cropland (arable land and permanent crops) (b = b1 + b2)	1 493	1 556	+63
- Arable land (land under temporary crops) (b1)	1 359	1 383	+24
- Land under permanent crops (b2)	134	170	+36
Agricultural land (total of cropland and permanent meadows and pasture) (C = a + b)	4 880	4 752	−128
- Land area equipped for irrigation	289	342	+53
Forest land (land area > 0.5 ha with trees > 5 m + 10% canopy cover)	4 158	4 064	−94
Other land	3 968	4 188	+220

22%

Source: FAO. 2020a. FAOSTAT. http://www.fao.org/faostat/en/#data/QC

The State: The interconnected systems of land, soil and water are stretched to the limit

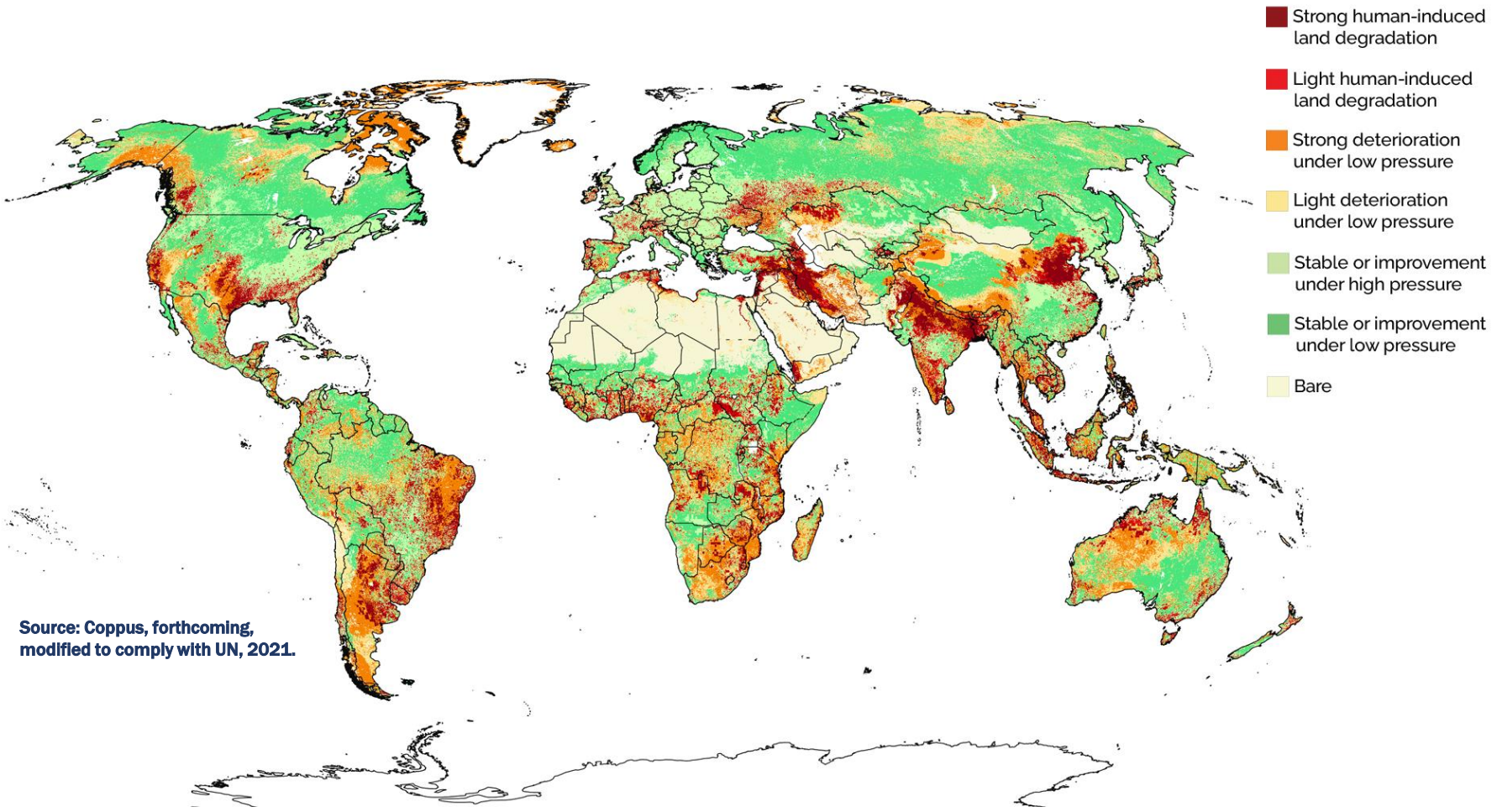
Level of water stress due to the agricultural sector by basin, 2018



Source: FAO and UN-Water, 2021
modified to comply with UN, 2021.

The State: Current patterns of agricultural intensification are not proving sustainable

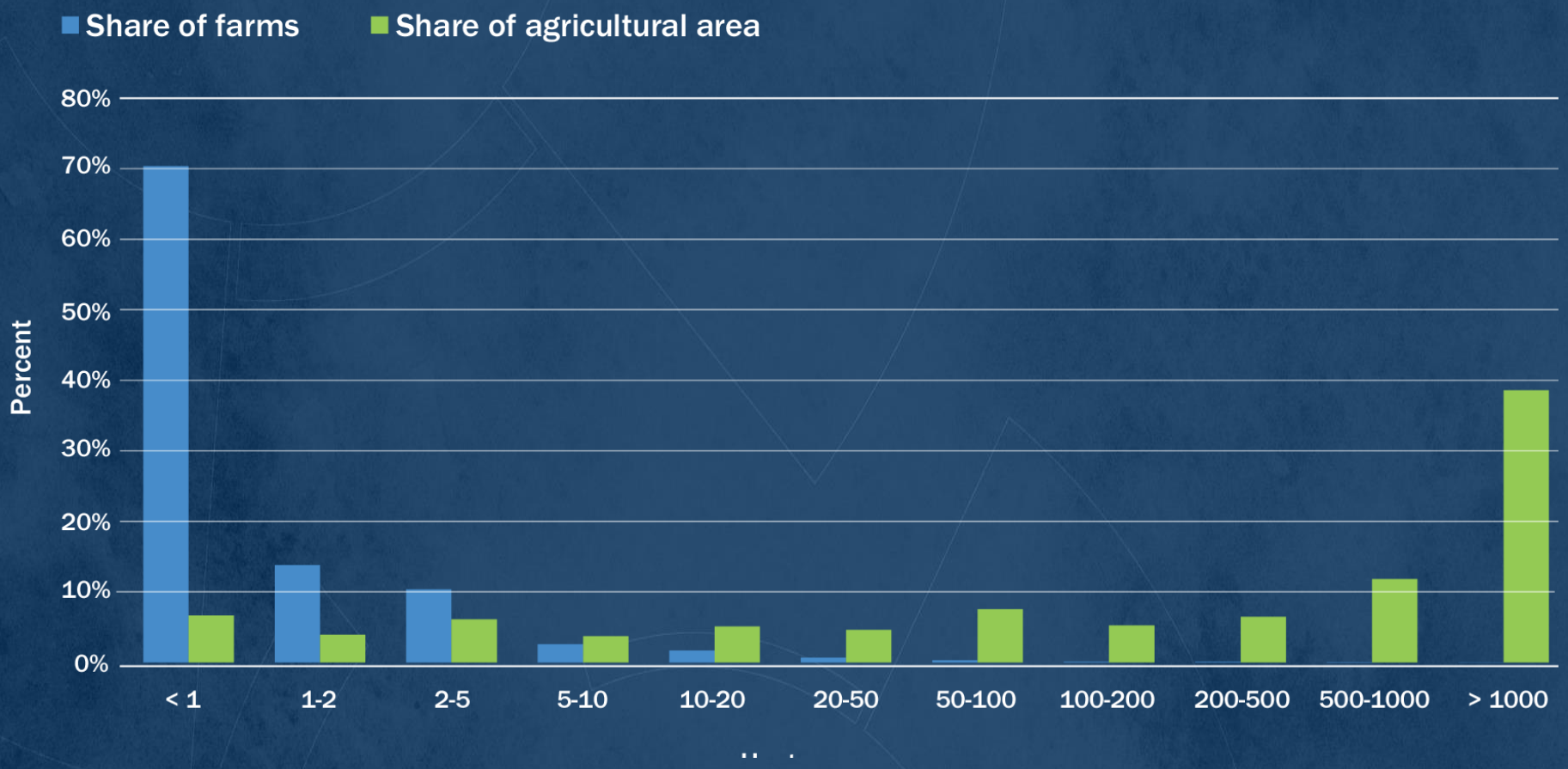
Land-degradation classes based on severity of human-induced pressures and deteriorating trends, 2015



Source: Coppus, forthcoming, modified to comply with UN, 2021.

The State: Farming systems are becoming polarized

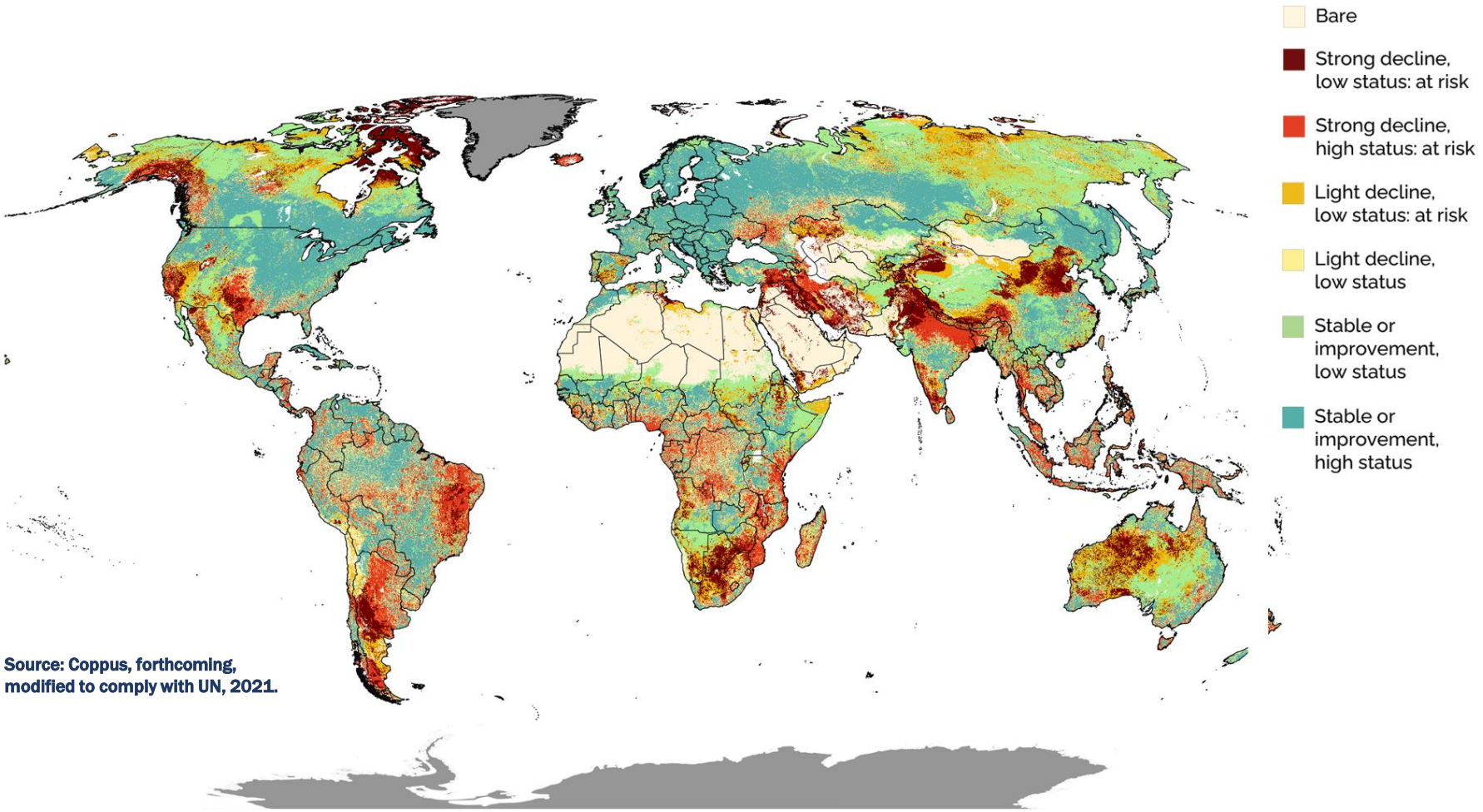
Global distribution of farms and farmland by land size class, 2010



Source: Lowder, Sánchez and Bertini, 2021.

The Challenge: Future agricultural production will depend upon managing the risks to land and water

Regions at risk based on status and trends of land resources, 2015



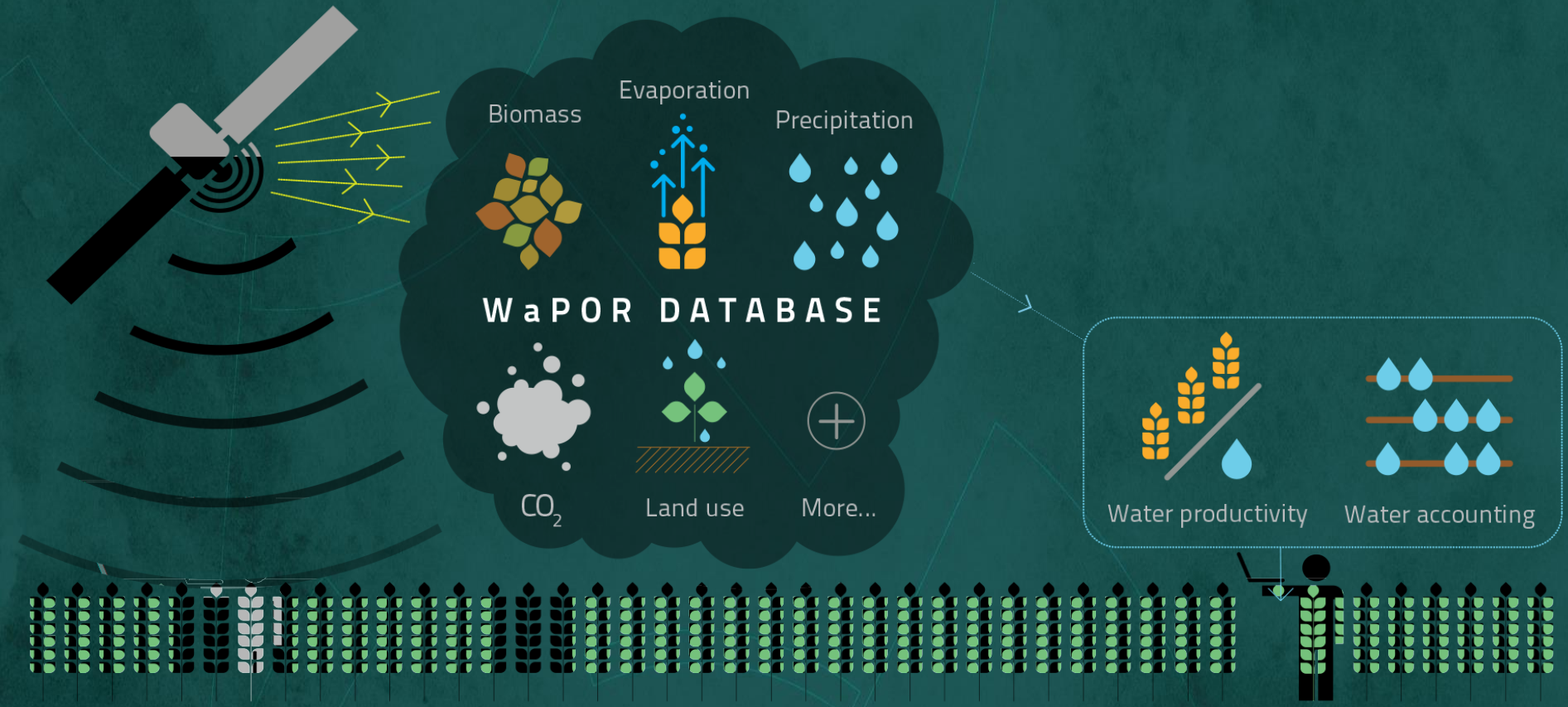
Source: Coppus, forthcoming, modified to comply with UN, 2021.

The challenge: Land and water resources will need safeguarding

The responses: Land and water governance has to be more inclusive, adaptive and effective.

The responses: integrated solutions need to be planned and implemented at all levels

The responses: Technical and managerial innovation can be targeted to address priorities and accelerate transformation



The responses: agricultural support and investment can be redirected towards social and environmental gains derived from land and water management.

No “one size fits all” solution exists, but a “full package” of workable solutions is available

Food and Agriculture Organization
of the United Nations

Over 95% of food is produced on Land and begins with Soils and Water.

Let's work together to produce more with less and safeguard these resources for the future.

Thank you !

Mr. Lifeng Li
Director, FAO Land and Water Division
NSL-Director@fao.org

www.fao.org/land-water
Twitter: @FAOLandWater