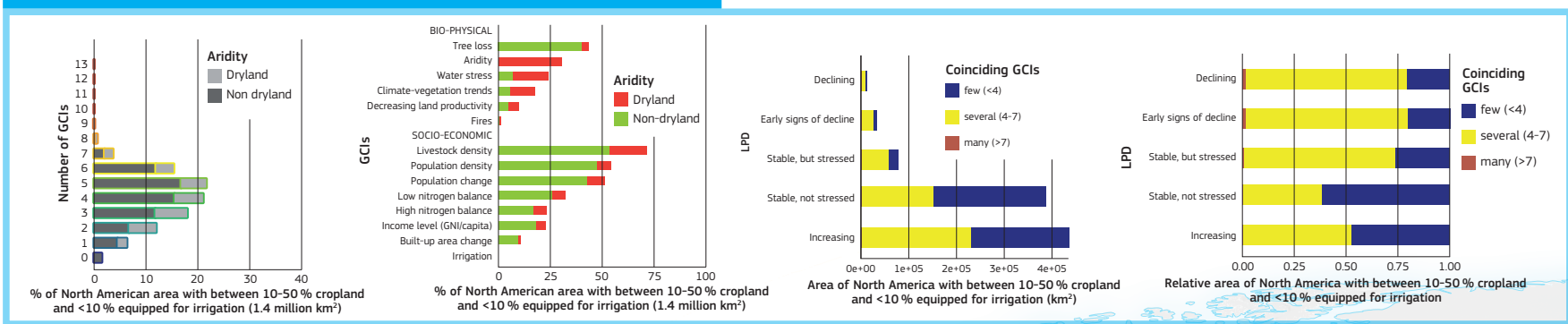


Convergence of Evidence: Low Density-Rainfed Cropland

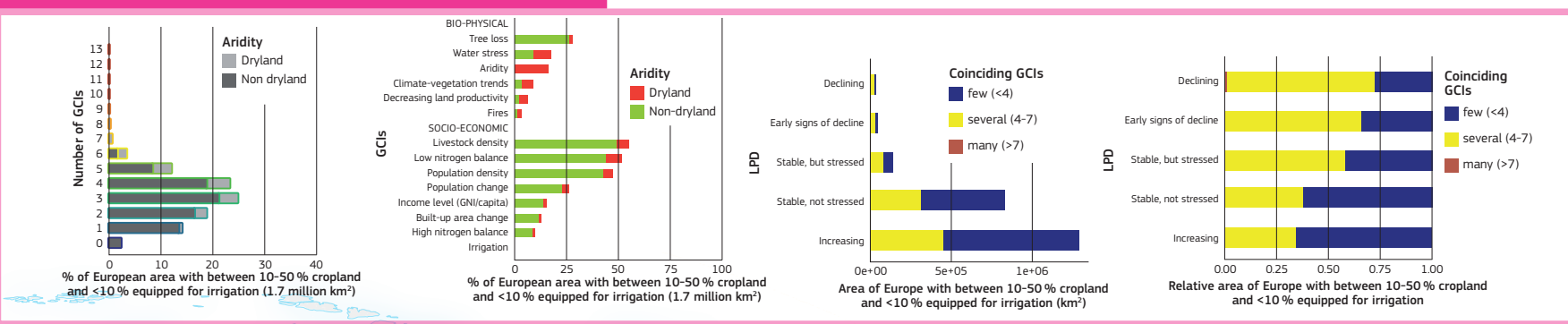
Low density-rainfed cropland are areas where between 10 - 50% of each grid cell (1 km²) is under cultivation and the only source of water is rainfall

See next page for explanatory text.

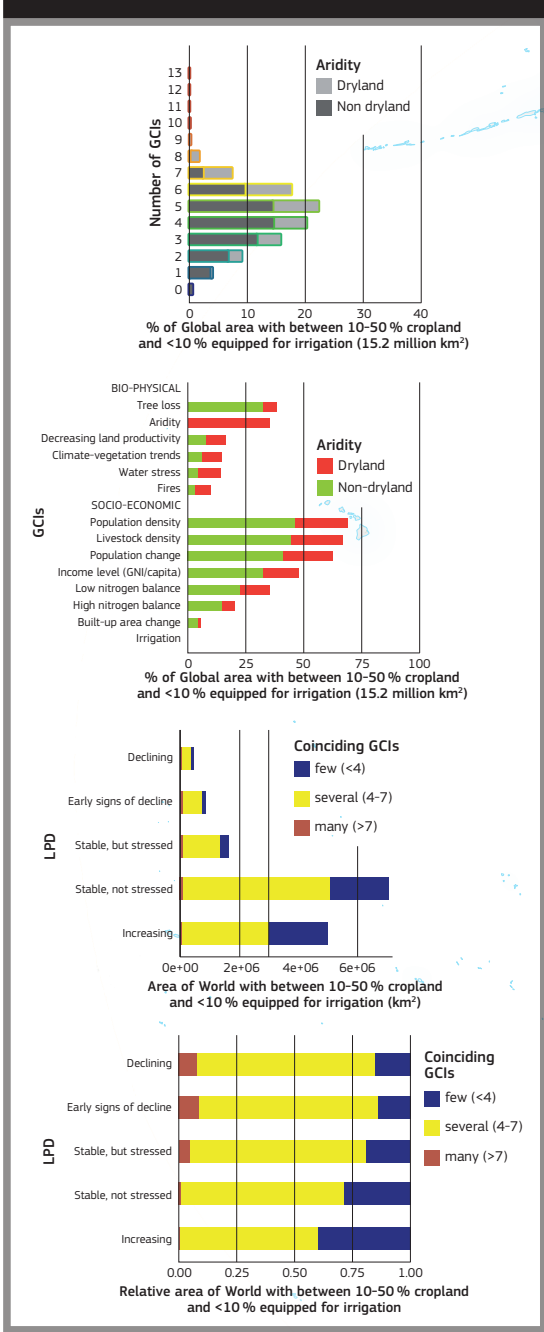
Distributions of predominant issues in NORTH AMERICA



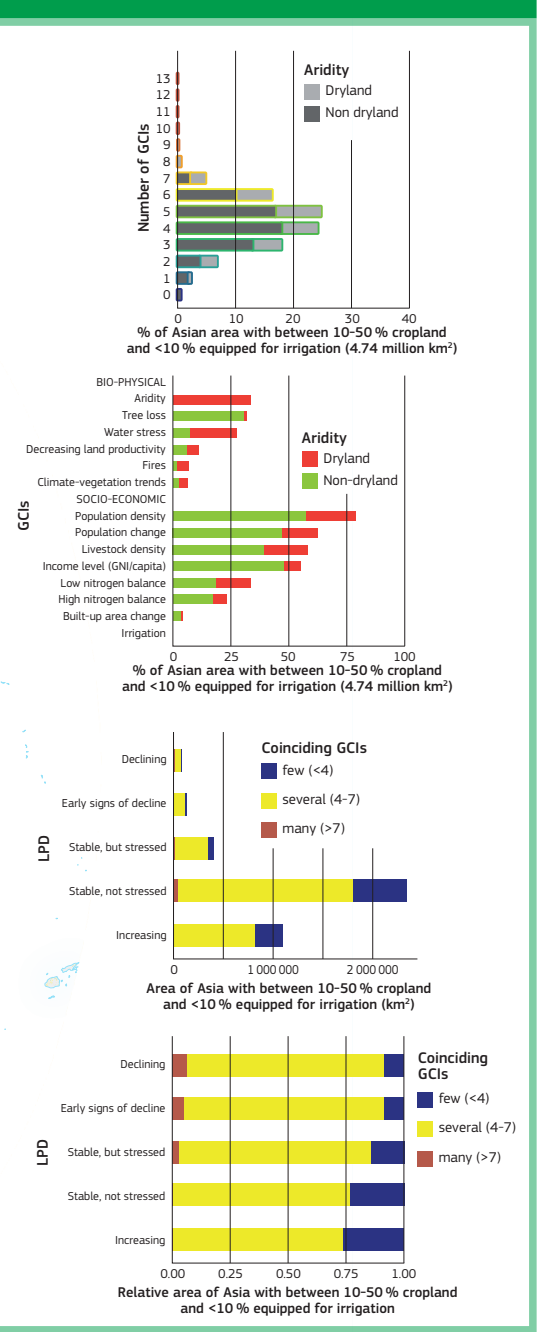
Distributions of predominant issues in EUROPE



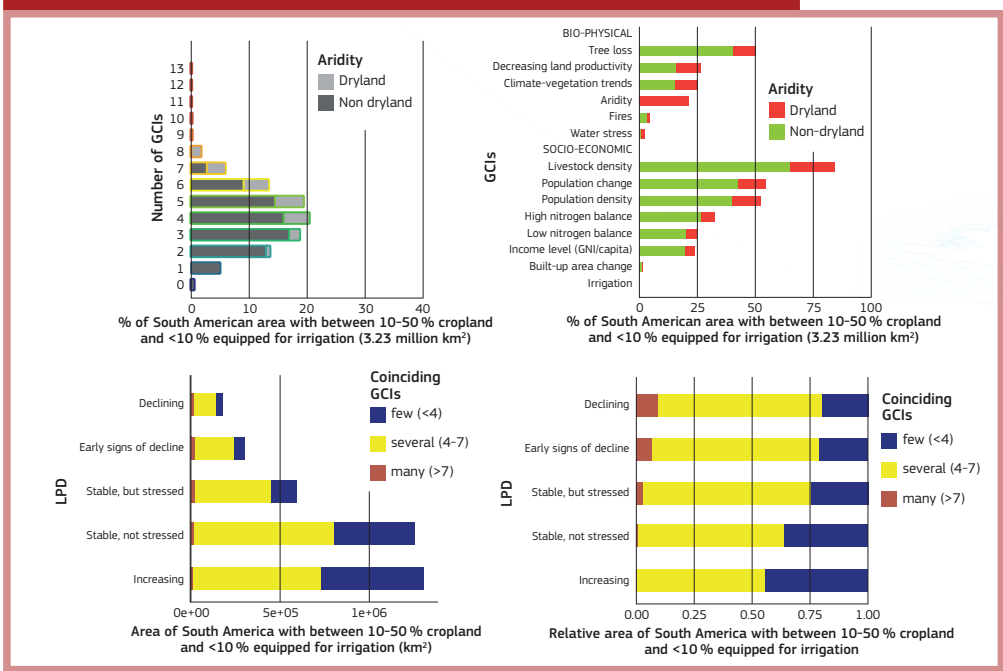
Distributions of predominant issues in WORLD



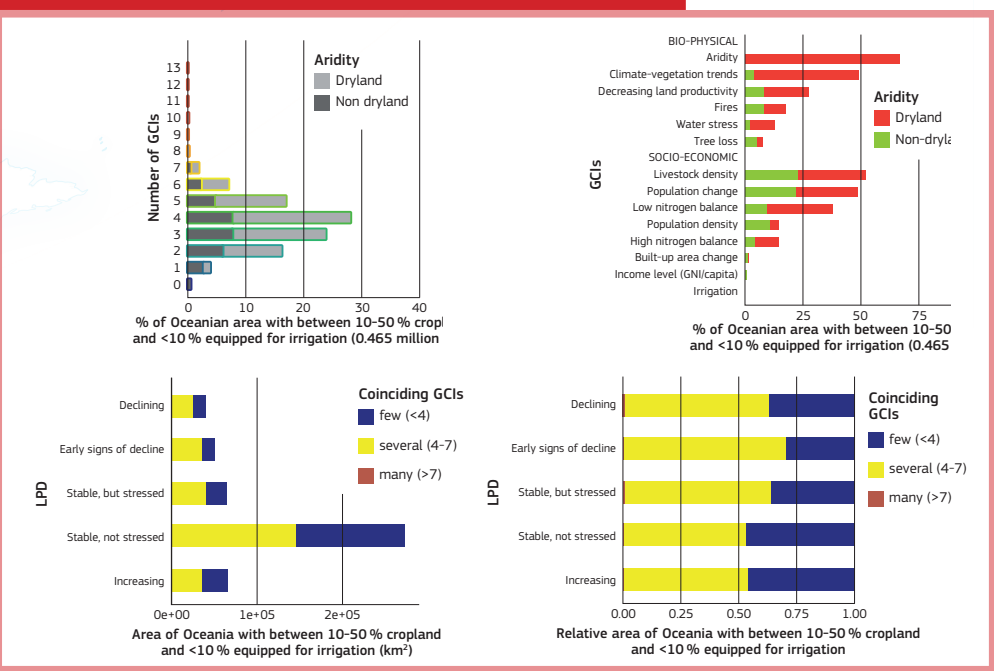
Distributions of predominant issues in ASIA



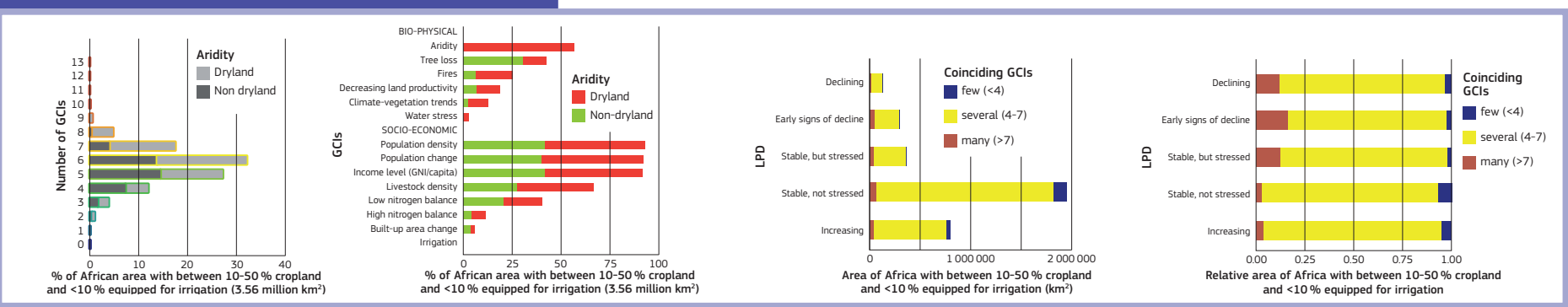
Distributions of predominant issues in SOUTH AMERICA



Distributions of predominant issues in OCEANIA



Distributions of predominant issues in AFRICA



Convergence of Evidence: Low Density-Rainfed Cropland

See previous spread for data.

Low density-rainfed cropland are found mostly (more than 70%) in non-drylands (mainly in the tropics) and have more issues than the high density-rainfed cropland.

Examples of global regions where low density-rainfed cropland are affected by global change issues (GCI; see Table, page 145) include:

- Africa: Western and central parts of the Sahel, the southern coastal areas of the Gulf of Guinea countries; southern Somali coastal area, parts of Kenya and Tanzania, Zimbabwe and the eastern coast of Madagascar; a zone around Kenge in central Democratic Republic of Congo, a trans-boundary area in southern Angola and northern Zimbabwe; and limited areas in northern Morocco
- Asia: South-East Asia and areas in the Philippines and Indonesia;
- Central Asia: Northern Kazakhstan.
- South America: The Pampas and parts of the Chaco in Argentina, central Paraguay, southern Brazil (Parana and Rio Grande rivers northeast highlands, Belem area), coastal areas in Ecuador, central Nicaragua, Honduras and Guatemala.

Global change issues (GCI) associated with transformations (including land degradation) in low density-rainfed cropland include tree loss, which is the most important biophysical GCI (31% of the area, most of which occur in non-drylands). Other GCI include declining land productivity (over 17% of the area) and income level (an issue in nearly 50% of the area).

Analysis shows that in low density-rainfed cropland:

- About 2% (or 0.32 million km²) of the low density-rainfed cropland area experiences potential pressure from 8 to 13 GCI. Signs of land productivity decline are observed in 61% of this area (0.19 million km²).
- Approximately 67% (10.2 million km²) of the low density-rainfed cropland area experiences potential pressure from 4 to 7 GCI. Signs of land productivity decline are observed in 22% of this area (2.2 million km²).
- Approximately 29% (4.48 million km²) of the low density-rainfed cropland area experiences potential pressure from 1-3 GCI. Signs of land productivity decline are observed in 11% of this area (0.49 million km²).
- Around 2% have no GCI.

- Population density and population change affects more the 60% of the area, hence these areas are susceptible to infrastructure and urban expansion, which encroaches into agricultural lands.
- Globally, higher than average livestock numbers are common

Rather than being remote, most low density rainfed cropland are closer or mixed with populated areas and thus tend to have more issues than high density agriculture areas.

At a continental scale, some patterns with regard to low density-rainfed cropland and global change issues (GCI) emerge:

- **Africa.** Low density-rainfed agriculture is widespread and associated with areas that have high population density and low income. About 58% occurs in drylands, twice the global average. Important GCI are tree loss (40% of the area), low agricultural input (40%) and fire (25%). Fire is an important issue in Senegal, Mali, Burkina Faso, Chad and parts of Eritrea, as well as in the southern fringes of the Gulf of Guinea countries. Declines in land productivity are observed on the coastal areas of Somali.
- **Asia.** In this region, 4-5 coincident GCI predominate, which is slightly above the global average. Population tends to be high (75% of the area) and income levels lower (60% of the area) than median global income. Land productivity has decreased in about 10%, as exemplified in Central Myanmar, parts of Rajasthan (India), and the Philippine islands of Luzon and Mindanao.
- **South America.** High population and livestock densities are common GCI in low density-rainfed cropland in South America, although vast areas of Brazil and Argentina have few coincident GCI. Higher than median livestock numbers is an issue in over 80% of the area and tree loss (50% of the area) is above the global average. In areas of agricultural expansion, such as the Argentina soybean and Chaco areas, high input agriculture occurs in 30% of the area. In the

Ecuadorean coastal areas, tree loss, drought conditions and land productivity declines coincide with population density and livestock numbers.

- **Europe.** In Europe, which has a highly concentrated population and extensive land use, low density-rainfed cropland are dispersed throughout the landscape. Convergence of GCI is lower than the global average. Livestock numbers and low inputs are key GCI in over 50% of the area. Tree loss is in more than 25% of the area while decreasing land productivity affects less than 10% of the area.
- **North America.** Spread over the central and eastern United States and Canada, low density agriculture areas have relatively few GCI beyond livestock numbers and tree loss (in nearly 40% of the area). Built-up area is higher than the global average in similar areas (10% of the area).
- **Oceania.** A relatively small area of Oceania (0.46 MKm²) is low density-rainfed cropland. More than 60% of it is dryland. Half has been affected by droughts conditions, mainly in eastern Australia. Decreasing land productivity occurs in just over 25% of the area.

Much of the African low density rainfed cropland is associated with low income levels and nutrient deficiency occurs over a vast part of it (40% of the area).

- Theme layer derived from: FAO GLC-SHARE v1.0³⁹, 2014 and Siebert S. 2014: GMIA^{36, 37} (see page 56).
- This map has grid cells of 1 km².
- Statistics - in total area (km²) or percentage of total area - are given for both global and/or continental scales.
- Refer to global change issues (GCI) in the table on page 145.
- Refer to 'how to read the maps' on page 146.