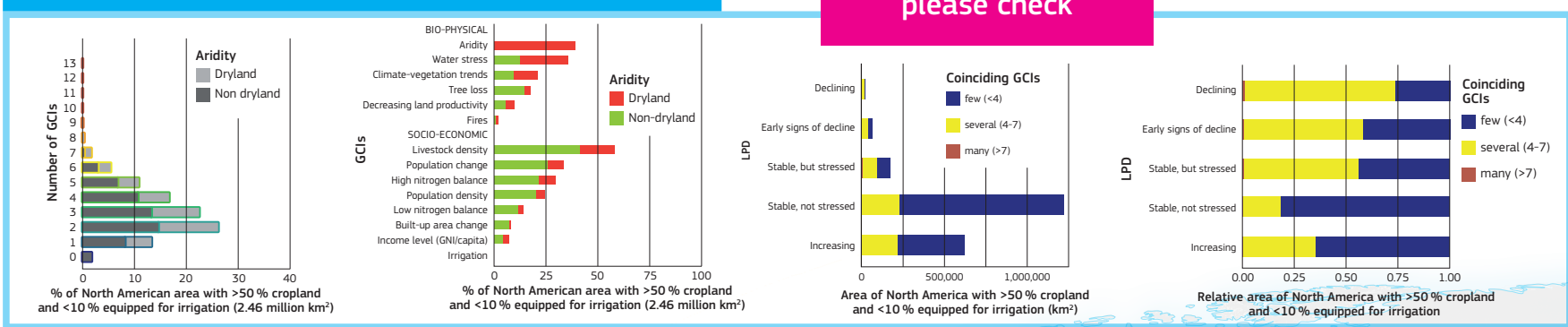


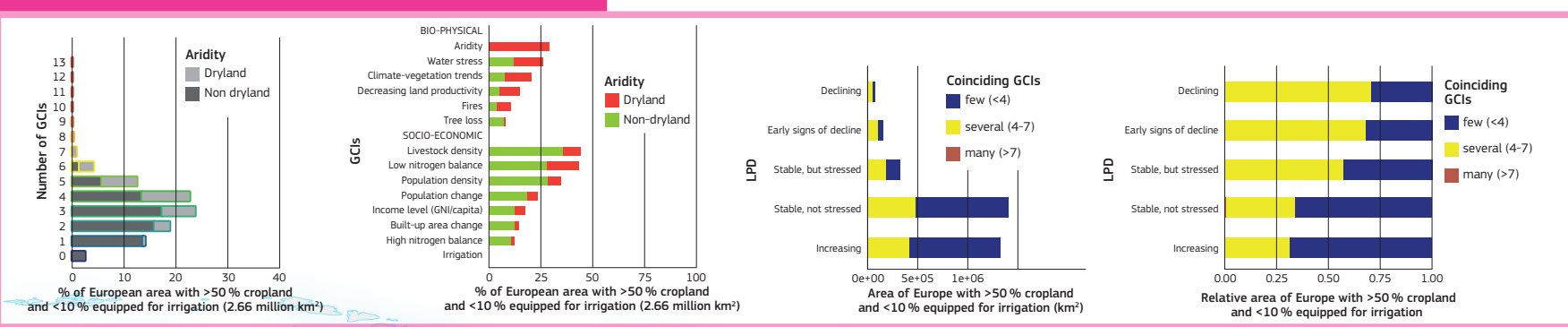
# Convergence of Evidence: High Density-Rainfed Cropland

High density-rainfed cropland are areas where >50% of each grid cell (1 km<sup>2</sup>) is under cultivation and the only source of water is rainfall

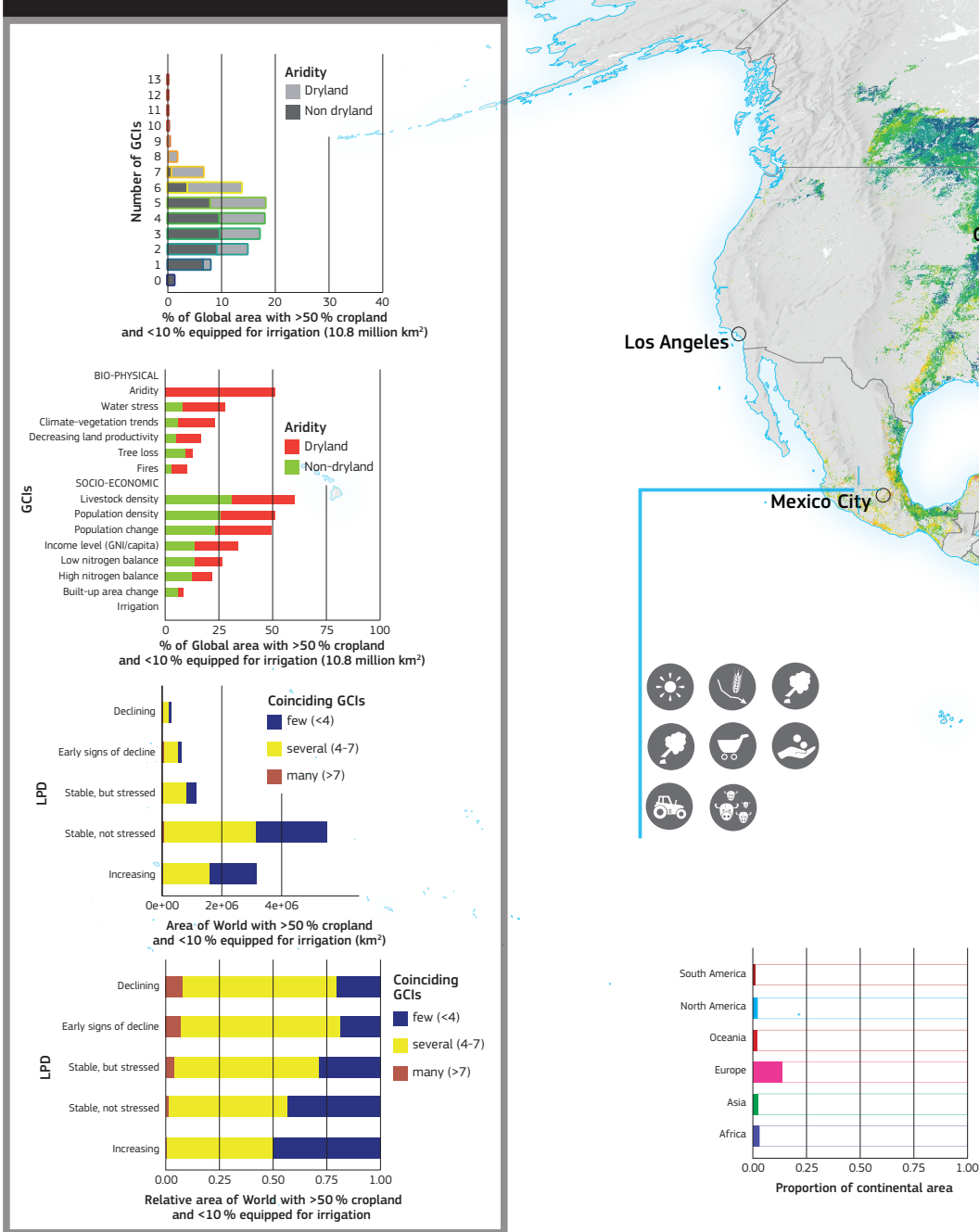
## Distributions of predominant issues in NORTH AMERICA



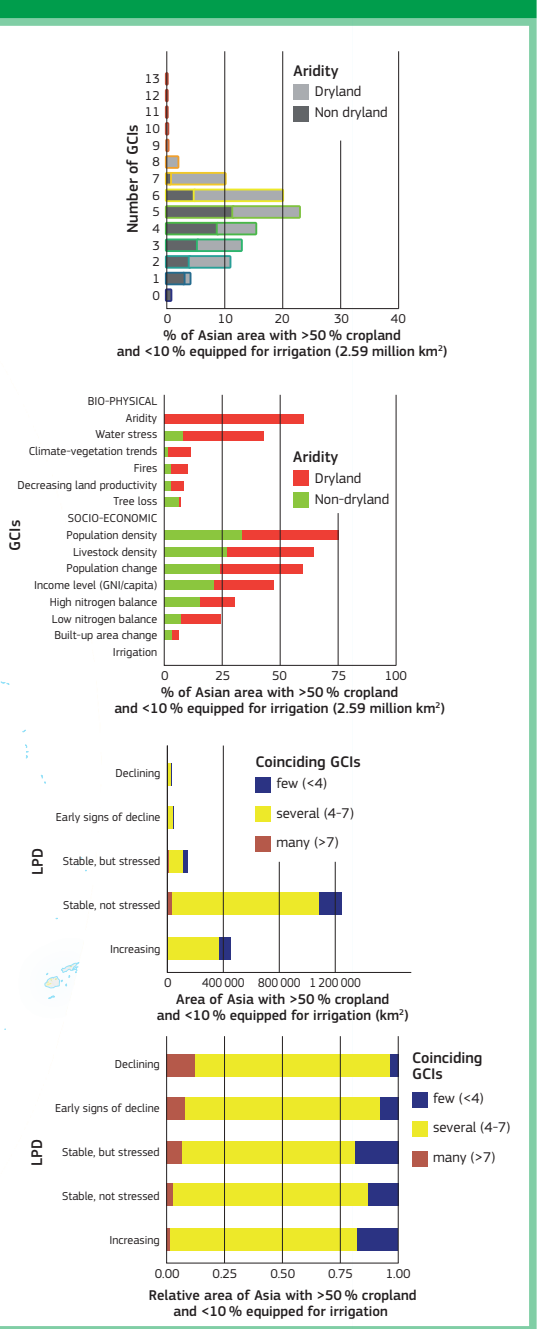
## Distributions of predominant issues in EUROPE



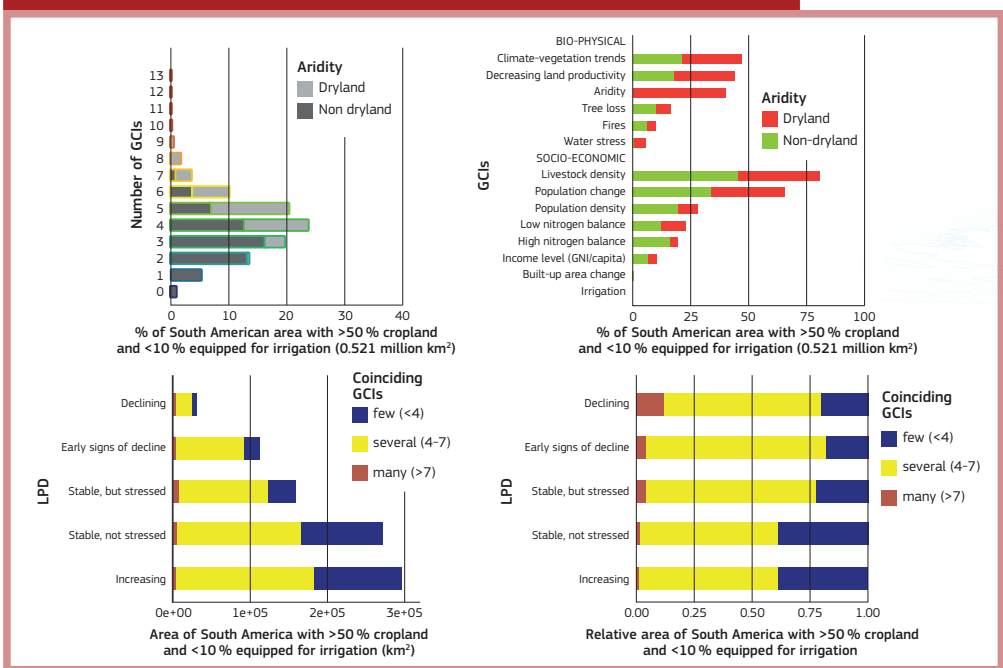
## Distributions of predominant issues in WORLD



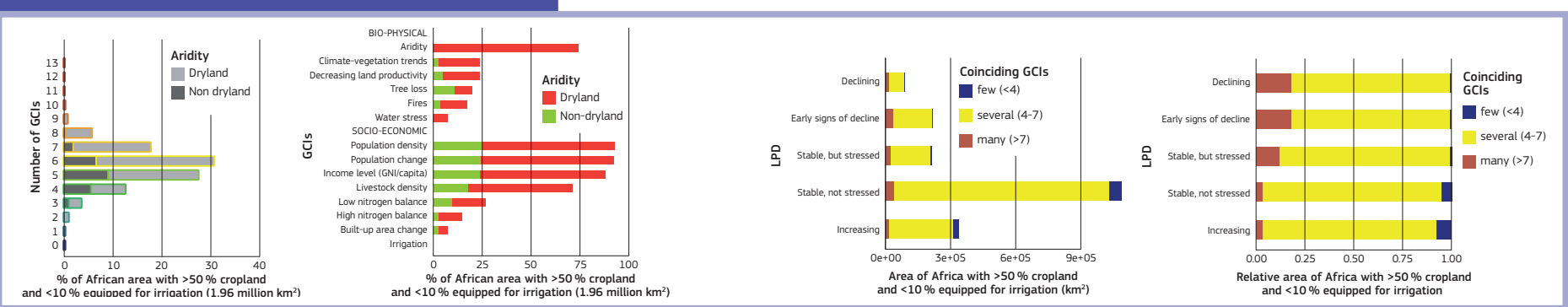
## Distributions of predominant issues in ASIA



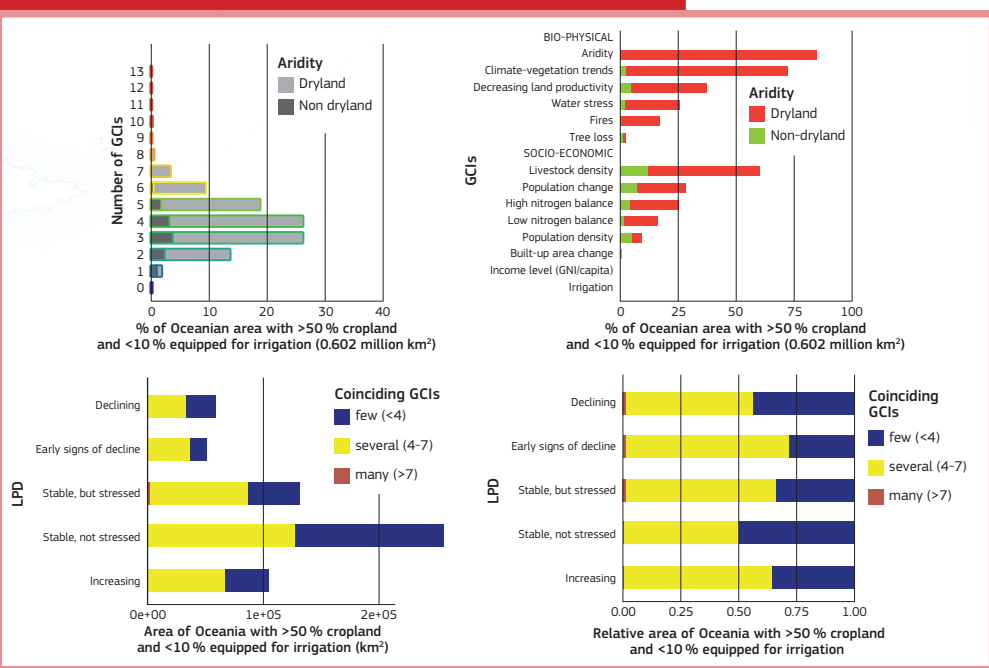
## Distributions of predominant issues in SOUTH AMERICA



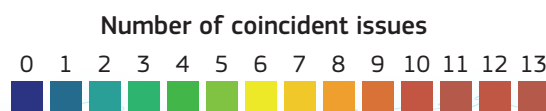
## Distributions of predominant issues in AFRICA



## Distributions of predominant issues in OCEANIA



See previous page for explanatory text.





# Convergence of Evidence: High Density-Rainfed Cropland

See next spread for data.

Examples of global regions where High Density-Rainfed Cropland are affected by global change issues (GCI; see Table, page 145) include:

- Africa: Northern Morocco, west Senegal, vast areas in central-north Nigeria, Sudan, areas around Lake Victoria, Zimbabwe, and the main agricultural areas in central-east South Africa;
- Asia: Northeast China, Myanmar, India and northern Afghanistan;
- South America: Central Argentina, small areas in Brazil and Bolivia;
- Europe: Limited areas.
- North America: Some areas in western Mexico, the United States, and Canada;
- Australia: southwest and eastern Australia.

Global change issues (GCI) associated with transformations (including land degradation) in High density-rainfed cropland include water stress (27% of the area), drought conditions (23% of the area) (i.e. climate-vegetation trends GCI, see table) and decreasing land productivity, low income, and higher than average livestock densities. There are slightly more of these cropping systems with low (26%) versus high agriculture inputs (21%). High input agriculture and livestock densities are the most widespread combination in this rainfed cropland, mostly in North America and Europe.

Analysis shows that in high density-rainfed cropland:

- About 2% (or 0.22 million km<sup>2</sup>) of the high density-rainfed cropland area experiences potential pressure from 8 to 13 GCIs. Signs of land productivity decline are observed in 54% of this area (0.12 million km<sup>2</sup>).
- Approximately 56% (6.1 million km<sup>2</sup>) of the high density-rainfed cropland area experiences potential pressure from 4 to 7 GCIs. Signs of land productivity decline are observed in 24% of this area (1.5 million km<sup>2</sup>).

- Approximately 41% (4.4 million km<sup>2</sup>) of the high density-rainfed cropland area experiences potential pressure from 1-3 GCIs. Signs of land productivity decline are observed in 0.5% of this area (11 million km<sup>2</sup>).
- Around 2% have no GCIs.
- About 10% of the global area has more than 7 coincident GCIs, which are associated with decreases in land productivity.
- These cropland are nearly equally distributed between dryland and non-drylands (51 vs. 49%, respectively).

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

- **Africa.** More than 75% of high density-rainfed agriculture occurs in drylands (the most of any continent). Important GCIs are drought conditions, decreasing land productivity, high population densities, population growth, and low income. Nearly 60% of high density-rainfed agriculture in Africa has more than 6 coincident GCIs.
- **Asia.** In Asia, 60% of the area is considered drylands. Hence, water stress is a common GCI, especially in regions of rapid agricultural expansion, such as northeast China. Although low income occurs in about 45% of the area, high-input agricultural is an important GCI in about 30% of the area. In northern Afghanistan, water stress and drought conditions are key biophysical GCIs.
- **South America.** Drought conditions (45% of the area) and decreasing land productivity (43% of the area) are widespread biophysical GCIs. These coincide with high livestock densities (80% of the area) and population change (64% of the area).
- **Europe.** In southern European drylands, drought conditions (i.e. climate-vegetation trends GCI, see table) and water stress are important GCIs, while elsewhere, livestock density and agriculture inputs (both high and low) are concerns.
- **North America.** Very few GCIs, mostly 2 or 3, coincide in high density-rainfed cropland. Water stress and drought conditions (i.e. climate-vegetation trends GCI, see table) are important GCIs in some areas. High livestock numbers exist over 59% of the area and high inputs are found in about 30% of the area.
- **Oceania.** Drought conditions (i.e. climate-vegetation trends GCI, see table) and decreasing land productivity are important GCIs in Australia.

High density-rainfed cropland in the mid-latitudes face fewer coincident global change issues than similar areas in the tropics.

Drought conditions occurred in 23 % of global high density-rainfed cropland during the past 3 decades.

- Theme layer derived from: FAO GLC-SHARE v1.0<sup>39</sup>, 2014 and Siebert S. 2014: GMIA<sup>36, 37</sup> (see page 56).
- This map has grid cells of 1 km<sup>2</sup>.
- Statistics - in total area (km<sup>2</sup>) 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.

