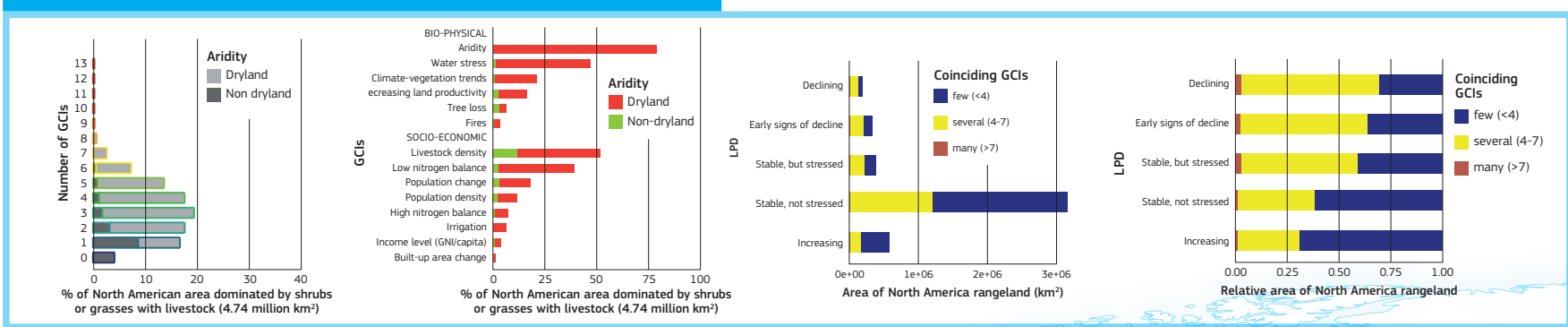


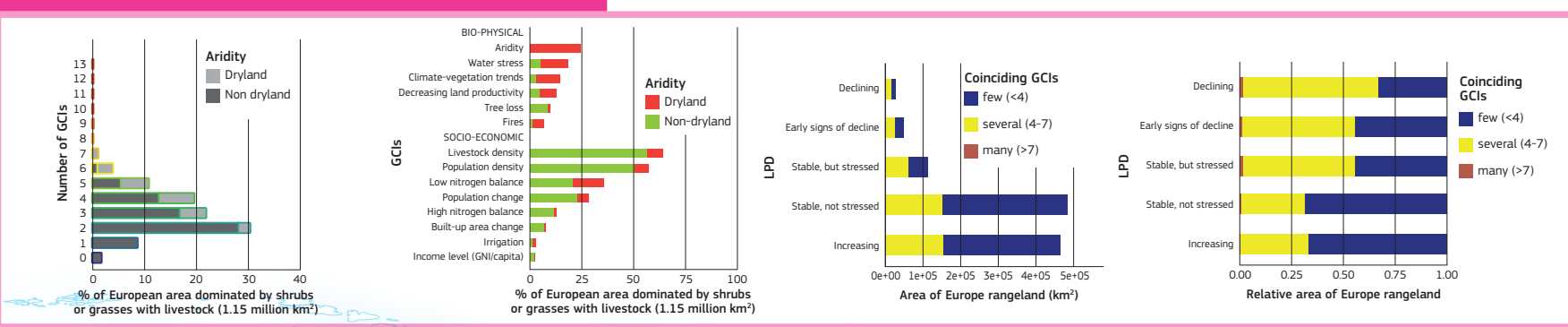
Convergence of Evidence: Rangeland

Rangeland are areas with natural or semi-natural vegetation that provides a habitat suitable for wild or domestic ungulates

Distributions of predominant issues in NORTH AMERICA

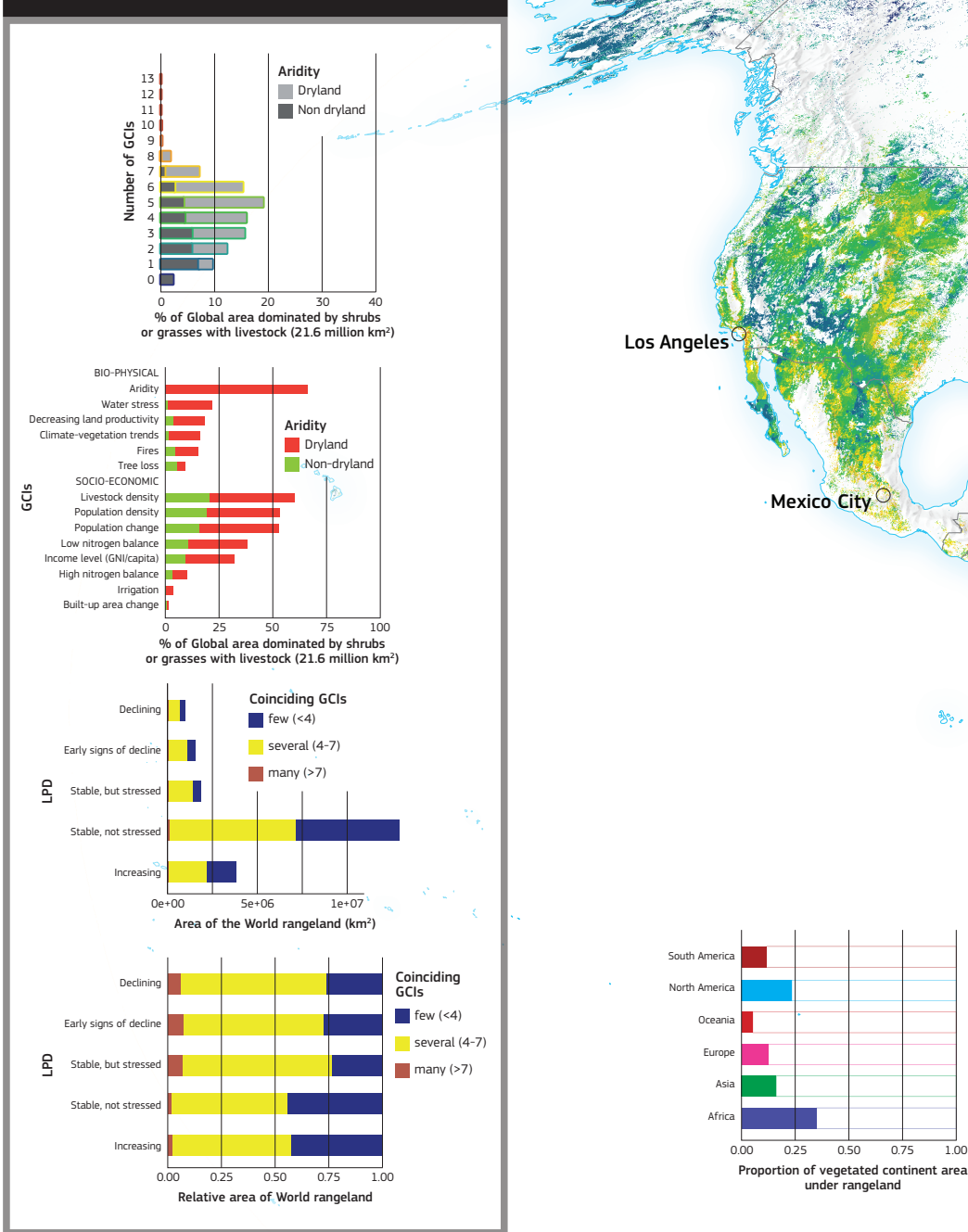


Distributions of predominant issues in EUROPE

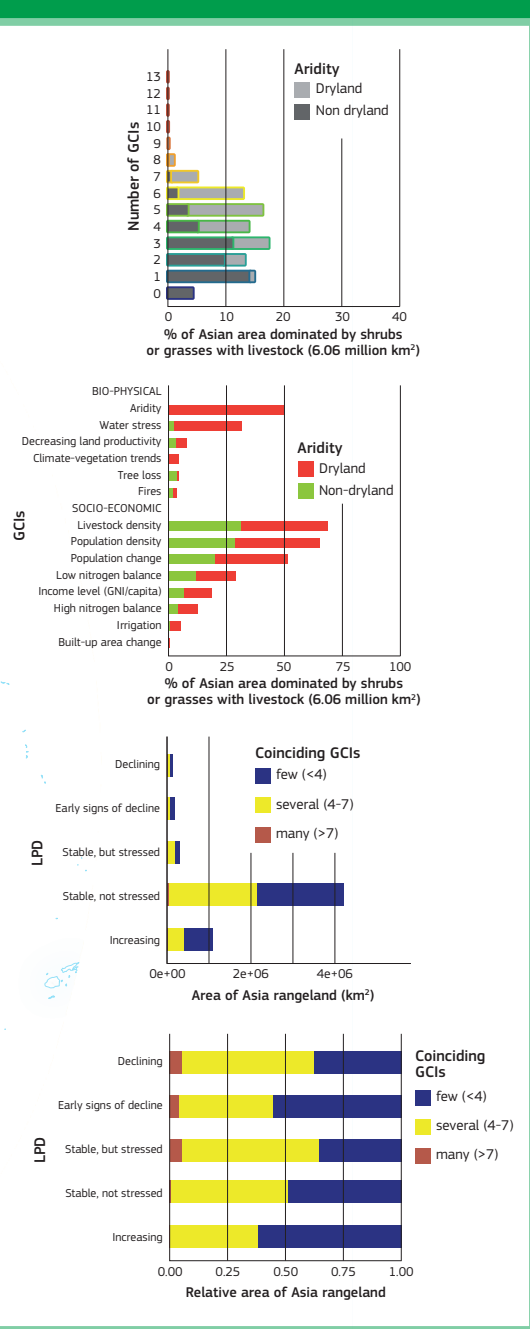


See next page for explanatory text.

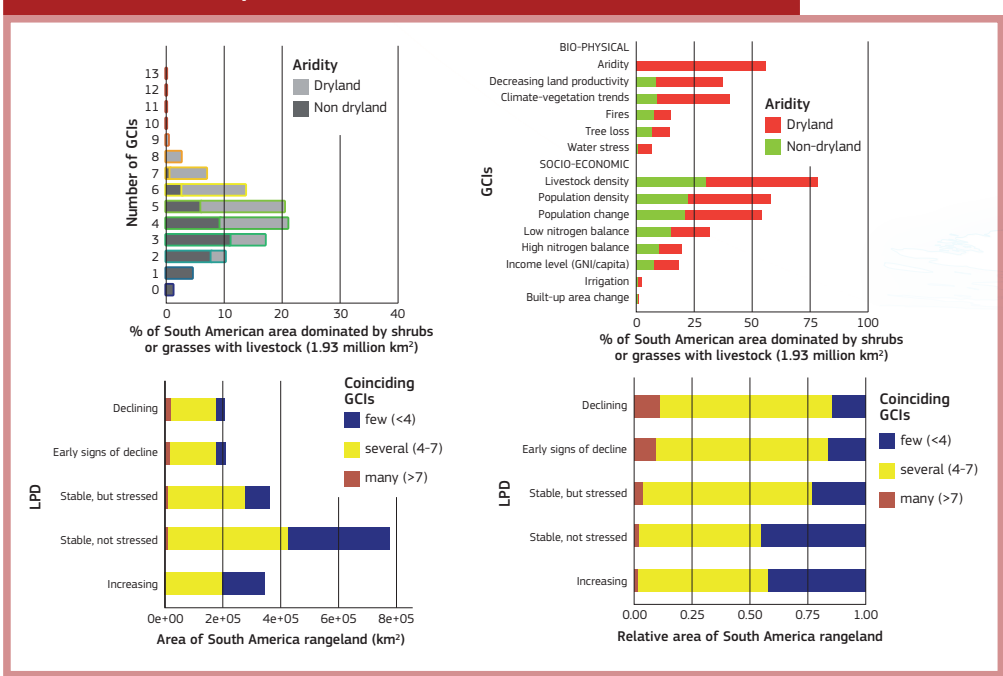
Distributions of predominant issues in WORLD



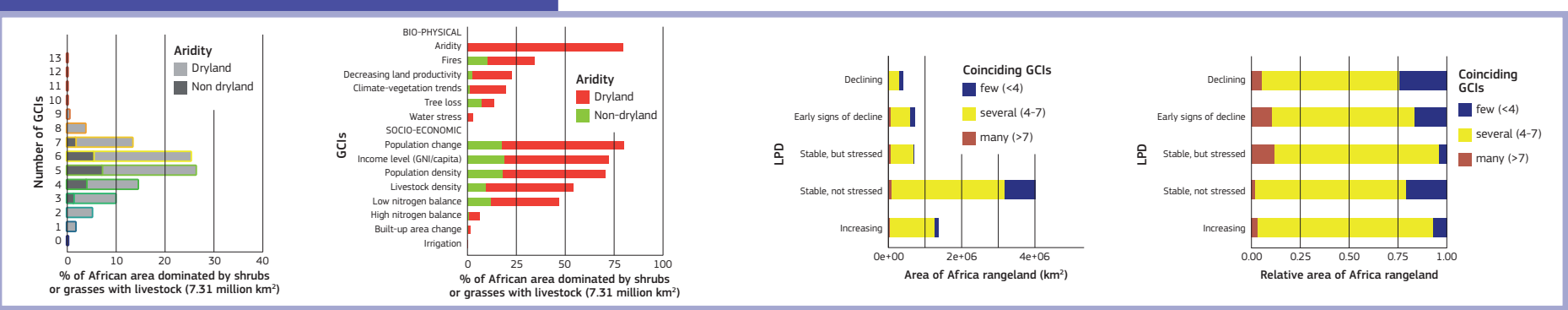
Distributions of predominant issues in ASIA



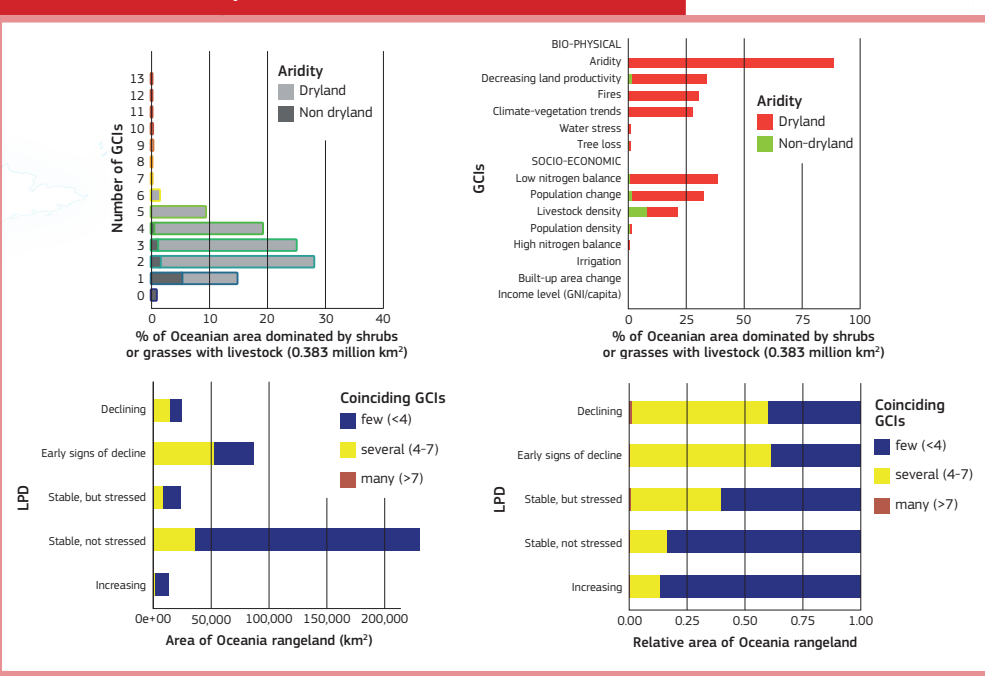
Distributions of predominant issues in SOUTH AMERICA



Distributions of predominant issues in AFRICA



Distributions of predominant issues in OCEANIA



Convergence of Evidence: Rangeland

See previous spread for data.

Examples of global regions where rangelands are affected by global change issues (GCI; see Table, page 145) include:

- Africa: Sahel, southern Somalia, southern Madagascar, South Africa, and Lesotho;
- Asia: scattered areas in Iran, vast areas in Afghanistan, eastern Turkmenistan, central Kyrgyzstan, India (including the Thar Desert), Inner Mongolia (China), and scattered areas in South-East Asia;
- South America: Central Argentina, coastal areas of northern Peru, northeast Brazil;
- North America: Central United States, northern Mexico.
- Oceania: Australia (New South Wales, Queensland).

Global change issues (GCI) associated with transformations (including land degradation) in rangeland include several socio-economic (high numbers of livestock, human population density, low income) and biophysical (water stress, decreasing land productivity, fire, drought conditions (i.e. climate-vegetation trends GCI, see table) issues.

Analysis shows that in rangelands:

- About 3% (or 0.49 million km²) of the rangeland area experiences potential pressure from 8 to 13 GCIs. Signs of land productivity decline are observed in 60% of this area. Approximately 55% (12.3 million km²) of the rangeland area experiences potential pressure from 4 to 7 GCIs. Signs of land productivity decline are observed in 25% of this area (3.1 million km²).
- Approximately 37% (8.55 million km²) of the rangeland area experiences potential pressure from 1-3 GCIs. Signs of land productivity decline are observed in 14% of this area (1.16 million km²).
- Around 5% (1.5 million km²) have no GCIs.

- Total global rangeland area is 29 million km², of which 63% is found in drylands.
- High population density and high population growth occur in about 50% of the area, and income is low in 33%.
- High livestock density is found in 55% and fires on 16% of the area.
- Decreasing land productivity occurs in about 18.5% or about a fifth of global rangeland (14% of which is in drylands).

Consistent biomass reduction occurs over 15% of global rangeland. Where this coincides with other global change issues, additional pressures building up can trigger land degradation.

At a continental scale, some patterns with regard to rangeland and global change issues (GCI) emerge:

- **Africa.** Rangeland occupies 9Mkm², of which 79% is in dryland. High population densities are found in 72% of the area, high population growth in 81%, low income in 74%, high livestock density in 52% and high agriculture inputs in 7%. Fire was found in 38% and tree loss in 16%. Decreasing land productivity occurs in 22% of African rangeland.
- **Asia.** Rangeland occupies 8.7Mkm², of which 59% occurs in drylands. High population densities are found in 63% of the area and high population growth in 51%. Low incomes occur in 25% of the area, high agriculture inputs in 12%, and 30% has high water stress.
- **South America.** Rangeland occupies 3.75Mkm², of which 50% is in dryland. High population density was found in 57% of the area, and high population growth occurred in 52%. Land productivity was decreasing or stressed in 35% of the area. High livestock density was found in 80% of the area, 24% of the area was found to have high inputs.
- **Europe.** Only 1.3Mkm² is classified as rangeland. Compared to other continents, there are few coincident GCIs. Population change and high population densities exist in resp. 28% and 57% of the area. Areas of low income cover less than 3%. High livestock density occurred in 62% of the area. High inputs are found in only 12% of the area.

- **North America.** Rangeland occupies 6.3Mkm², of which 66% is in drylands. High water stress was found in 37% of the area, high population densities in 10%, high population growth in 19%, low incomes in 3%, and high livestock densities in 40%.
- **Oceania.** Rangeland occupies 483Kkm², of which 86% is in drylands. High population growth was experienced in 34% of the area, and only 2.5% had high population density. There were essentially no low-income areas. High livestock densities were found in 21% of the area.

- Theme layer derived from: FAO GLC-Share v1.0³⁹, 2014 and Robinson T., Livestock distribution³⁸ 2008.
- 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.

Shrub encroachment in grasslands - which may result in a change in land productivity - is considered land degradation in some regions of the world. Local contextual information is needed to make such a determination.