

Working definition of “drylands”

Dryland Systems (also known as dryland agricultural production systems)– are integrated agro-ecosystems characterized by low and erratic precipitation, persistent water scarcity, extreme climatic variability, high susceptibility to land degradation, including desertification, and high loss rates for natural resources, including biodiversity. In Dryland Systems, the lack of water is the key factor that limits profitable agricultural production.

Drylands definition based on Aridity Index (AI)

After careful consideration of the advantages and disadvantages of various classification schemes, for reasons of simplicity and for consistency with widespread common practice, it has been decided to define “drylands” on the basis of the Aridity Index (AI). Under this approach, which has been endorsed by the 195 parties to the United Nations Convention to Combat Desertification (UNCCD) and which also is being used by the United Nations Food and Agriculture Organization (FAO), drylands are defined as regions having an AI of 0.65 or less.

Drylands are defined by aridity index (AI) between 0.03 to 0.65.

Aridity index (AI) is expressed as a generalized function of precipitation, temperature, and/or potential evapotranspiration (PET), Zomer et al., 2008).

$$\text{Aridity Index (AI)} = \text{MAP} / \text{MAE}$$

Where: MAP = Mean Annual Precipitation and MAE = Mean Annual Potential Evapotranspiration

Drylands are furthermore sub-divided into four zones: hyper-arid, arid, semi-arid, and dry sub-humid. The Aridity Index ranges used to define these four zones appear in Table 1 below.

Table 1. Aridity Index ranges used to define drylands

Dryland zone	Aridity Index range
Hyper-arid	0.00 – 0.03
Arid	0.03 - 0.20
Semi-arid	0.20 - 0.50
Dry sub-humid	0.50 - 0.65

Because the hyper-arid zone (AI of <0.03) is incapable of supporting crop and livestock production activities, it is very sparsely populated, making it of little interest to the drylands systems. **For purposes of the regional flagship report “drylands” is therefore defined as the area characterized by an AI of between 0.03 and 0.65, encompassing the arid, semi-arid, and dry sub-humid zones.**

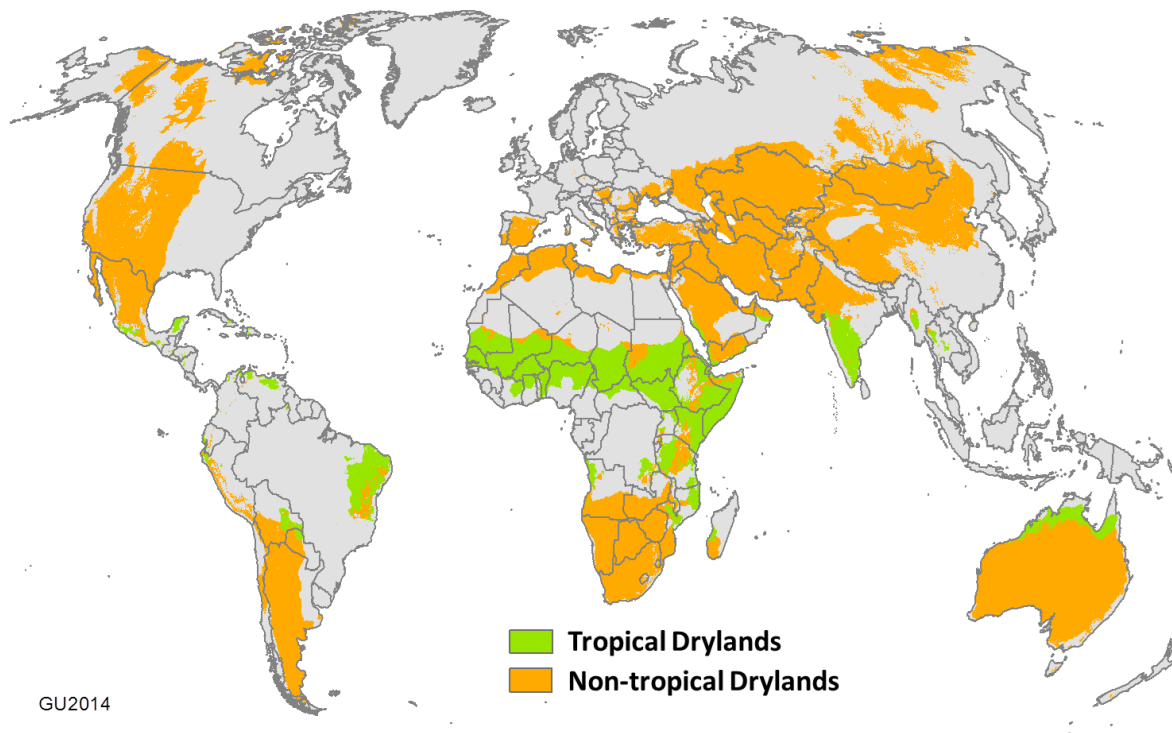
Definition of the tropical and non-tropical drylands:

Drylands are defined by aridity index (AI*) between 0.03 to 0.65, these are further categorized into tropical and non-tropical drylands;

The 'non-tropical' drylands are the areas in which there is at least one month with mean temperature below 20 degrees C and 'tropical' drylands are the areas where all months have mean temperature above 20 degrees C).

Drylands has been also stratified as strategic research theme 1 (and 2

Aridity Index range	CRP DS Drylands	Tropics
0.03-0.35	CRP DS SRT2 (IDO 1)	Tropical= <20°C Non-tropical=>20°C
0.35-0.65	CRP DS SRT3 (IDO 2)	Tropical= <20°C Non-tropical=>20°C



Map 1. Tropical and non-tropical drylands of the world (GU, 2014)