

Assessing the exposure of irrigated agriculture to drought is crucial for understanding its impact on food security. Remote sensing data, particularly the Vegetation Condition Index (VCI) from MODIS product¹, helps evaluate drought extent (values below 40 percent). The International Centre for Integrated Mountain Development (ICIMOD) land cover dataset (2018)² was used to extract irrigated agriculture, which was overlaid on the drought data to assess the level of exposure in each province. The results were visualized using a hexagonal map (90 km² per hexagon) with a color-coded legend, indicating various levels of exposure (low to high). These findings are important for the Afghanistan Emergency Food Security Project (OSRO/AFG/213/WBK), providing essential information to address food security challenges and implement appropriate interventions.

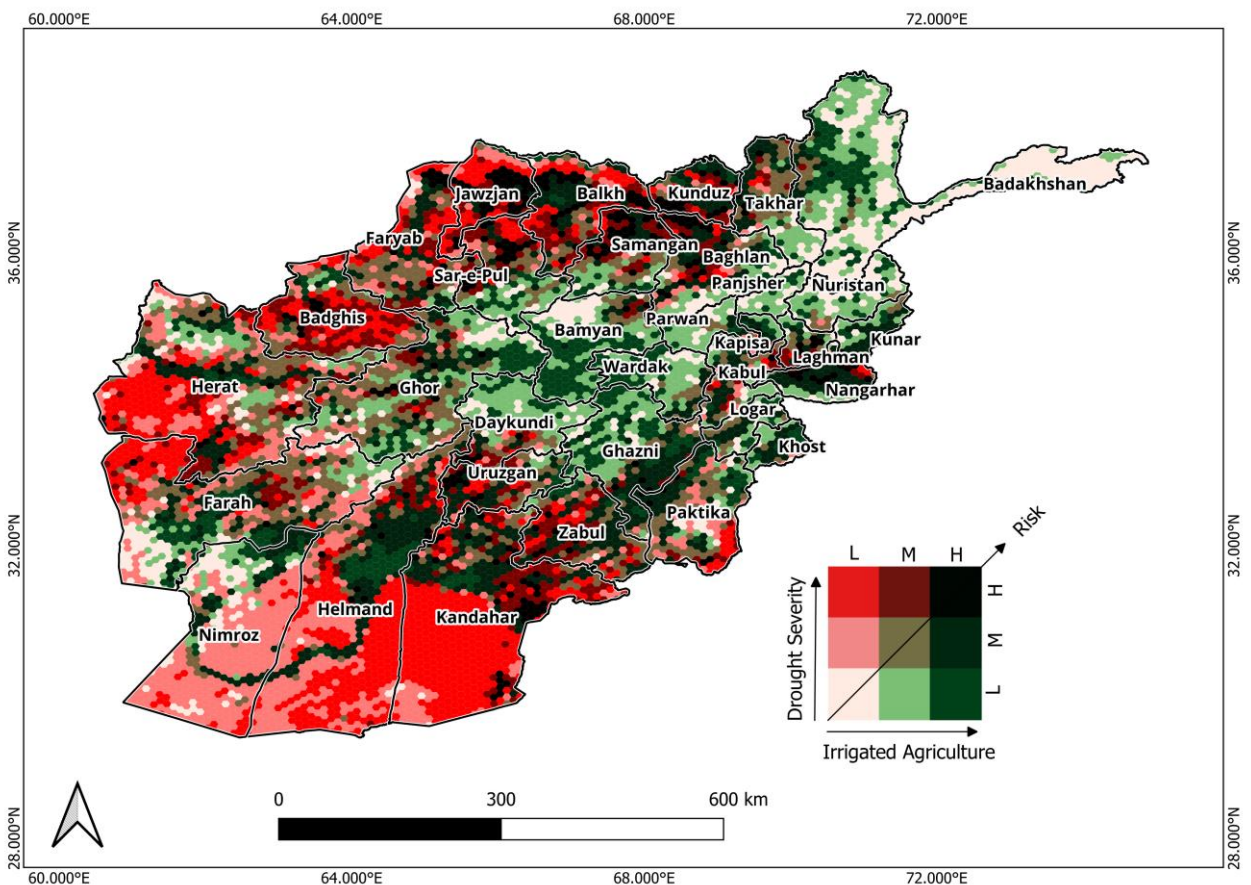


Figure 1: Exposure of irrigated agriculture towards drought in 2022 in Afghanistan.³

Key Finding:

The study findings highlight that a substantial proportion of irrigated agriculture in Afghanistan faced severe drought conditions in 2022, with significant impact observed in the northern, western and southern regions (Figure 1). Figure 2 provides a comprehensive visual representation of the exposure of irrigated agriculture to each drought severity class in every province. Additionally, Table 1 summarizes the top six irrigated agriculture provinces most exposed to drought in 2022.

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¹ K. Didan. 2021. MOD13Q1 MODIS/Terra Vegetation Indices 16-Day L3 Global 250m SIN Grid V061. NASA EOSDIS Land Processes DAAC. <https://doi.org/10.5067/MODIS/MOD13Q1.061>

² ICIMOD. 2022. Land cover of Afghanistan. ICIMOD. <https://doi.org/10.26066/rds.1973187>

³ GAUL, 2015 Disclaimer: The boundaries and names shown, and the designations used on these map(s) do not express any opinion whatsoever on the part of FAO concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers and boundaries. Dashed lines on maps represent approximate border lines for which there may not yet be full agreement.

Table 1: Top six provinces most exposed to drought impact on irrigated agriculture (extent in km²) in 2022 in Afghanistan.

Province	Exposed Irrigated Agriculture (km ²)				
	Extreme	Severe	Moderate	Mild	Total drought
Balkh	281	272	267	248	1 068
Helmand	36	181	320	463	999
Jawzjan	248	256	159	89	751
Farah	20	85	191	278	574
Kudnuz	33	107	187	241	569
Ghazni	42	90	136	173	441

Figure 2: Irrigated agriculture exposure (extent in km²) by each drought severity class across provinces in 2022 in Afghanistan.

