CGIAR Research Program on Dryland Systems

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WHAT IS THIS MAP TELLING US?

The map shows the distribution of dryland agricultural production systems (also known as the CGIAR Research Program on Dryland Systems) in Africa. Dryland systems are characterized by low and erratic precipitation, persistent water scarcity, extreme climatic variability, high susceptibility to land degradation, including desertification, and higher than average loss rates for natural resources, such as biodiversity. The lack of water is the main factor that limits profitable agricultural production. Dryland systems consist of combinations of plant and animal species and management practices farmers use to pursue livelihood goals based on several factors including climate, soils, markets, capital, and tradition. Dryland Systems is a multidisciplinary research program that aligns the research of CGIAR research centers and partners. It aims to tackle complex development issues in two key strategic research themes known as intermediate development outcomes (IDOs). The first IDO focuses on low-potential and marginal drylands and developing strategies and tools to minimize risk and reduce vulnerability. The second IDO focuses on higher-potential dryland regions and supporting sustainable intensification of agricultural production systems. Within each large target area, a number of representative action sites and complementary satellite sites serve as test sites where most of the research will be conducted. These sites—which include the Kano-Katsina-Maradi Transect in Nigeria and Niger; Wa-Bobo-Sikasso Transect in Ghana, Burkina Faso, and Mali; Tolon-K and Cinzana along West African Sahel and dryland savannas in Ghana and Mali; the Nile Delta in Egypt; Béni Khedache-Sidi Bouzid inTunisia; the Ethiopian Highlands; and Chinyanja Triangle in Malawi, Zambia, and Mozambique—were identified based on criteria relating to aridity index, length of growing period, market access, hunger and malnutrition, poverty, environmental risk, land degradation, and demography.

WHY IS THIS IMPORTANT?

The goal of the Dryland Systems research program is to identify and develop resilient, diversified, and more productive combinations of crop, livestock, rangeland, aquatic, and agroforestry systems that increase productivity, reduce hunger and malnutrition, and improve quality of life for the rural poor. The research program aims to reduce the vulnerability of rural communities and entire regions across the world's dry areas by sustainably improving agricultural productivity. The map provides a starting point for implementing interventions for intermediate development outcomes. It also can help researchers extrapolate from the research outcomes at action sites to target areas and scale up better interventions to target regions over time.

TABLE 1 Dryland Systems sites in Africa, 2013

Action Sites	IDO1	IDO2
Area (ha)	32,861,151	60,865,568
Population	924,092	18,621,053
Households	184,818	3,724,211

Source: Author.
Note: IDO=intermediate development outcomes.

WHAT ABOUT THE UNDERLYING DATA?

The Remote Sensing (RS)/Geographic Information Systems (GIS) Units of the participating CGIAR centers characterized dryland systems to delineate target areas, action sites, and complementary satellite sites, using various spatial layers, such as aridity index (p. 55), length of growing period (p. 57), access to markets (p. 66), environmental risk, land degradation, and additional criteria from regional and representative target region perspectives (CGIAR 2012).

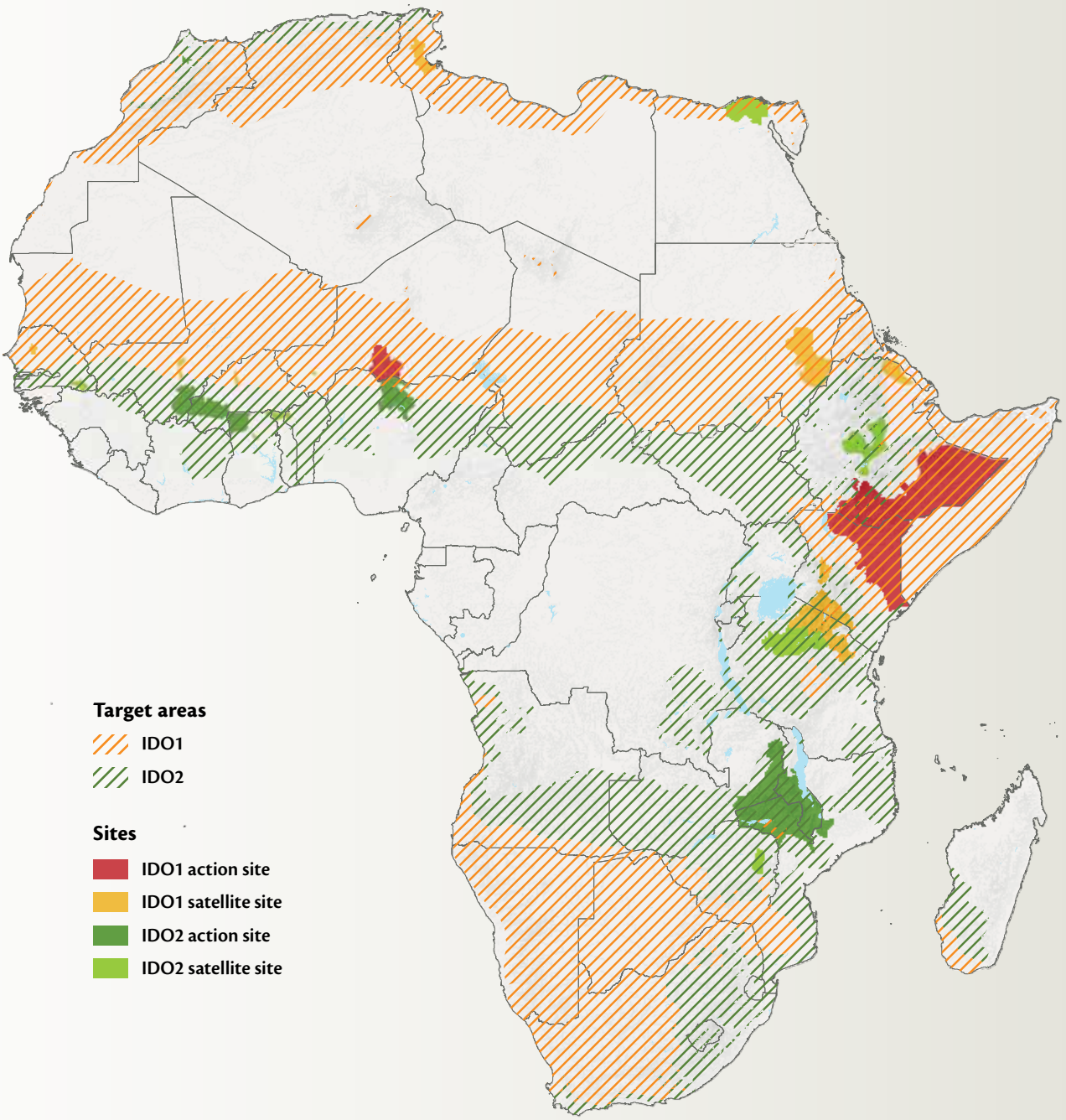
WHERE CAN I LEARN MORE?

Dryland Systems: http://drylandsystems.cgiar.org

ICARDA Geoinformatics: http://gu.icarda.org

Dryland Systems and Other CGIAR Research Programs: http://bit.ly/1eQnJdC

MAP 1 Dryland Systems action sites and target research areas



Data source: GeoInformatics Unit/ICARDA 2013.

Note: IDO=intermediate development outcomes. Action sites are representative areas of major widespread agroecosystems where initial intervention takes place to identify best approaches and top priorities for scaling out to large areas (target regions). Satellite sites are complementary (back-up) action sites.

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