

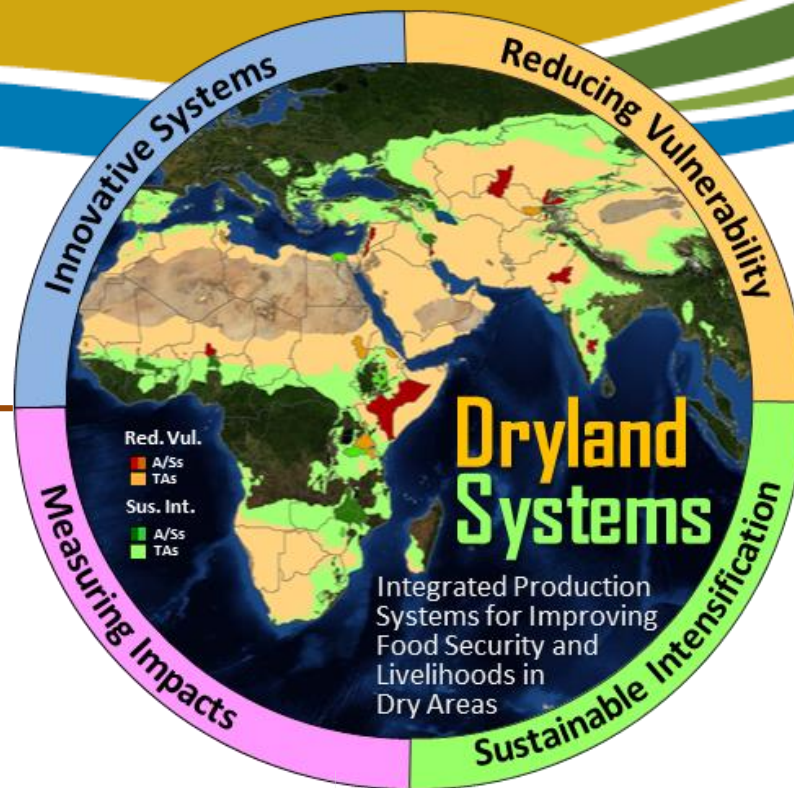


RESEARCH PROGRAMON  
Dryland Systems

*Food security and better livelihoods  
for rural dryland communities*

# Atlas of Action Sites

## Central Asia

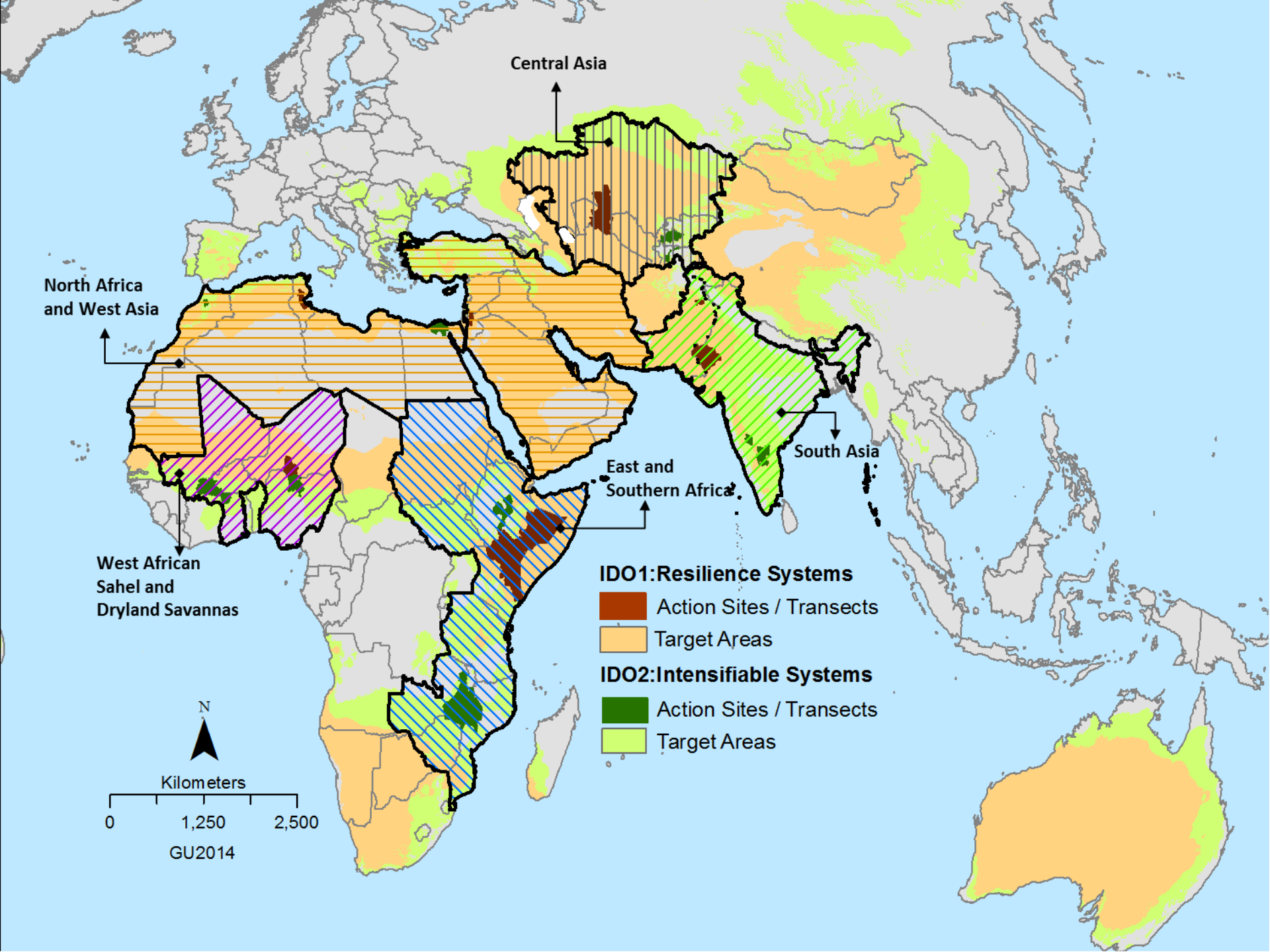


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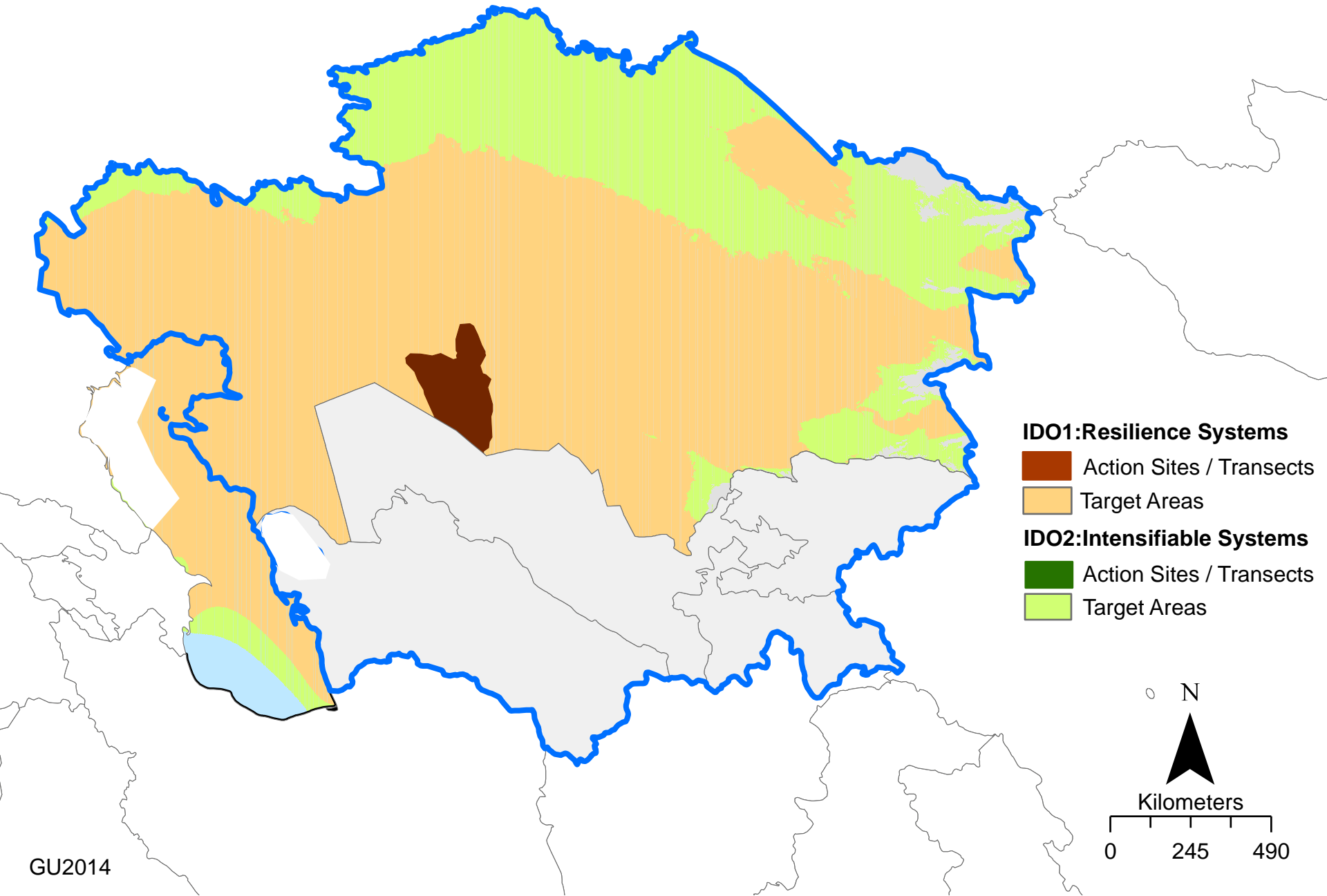


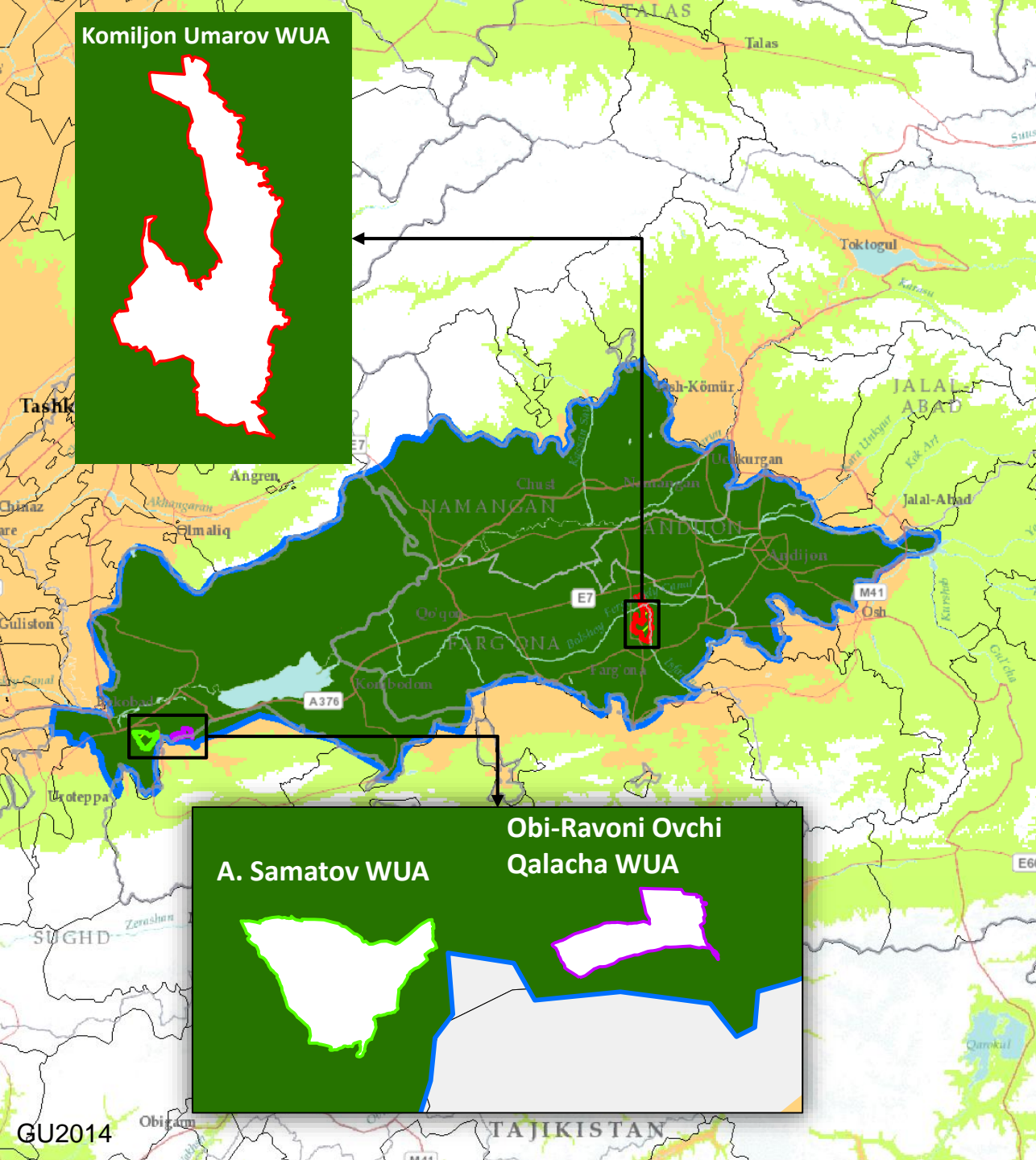
Partners:



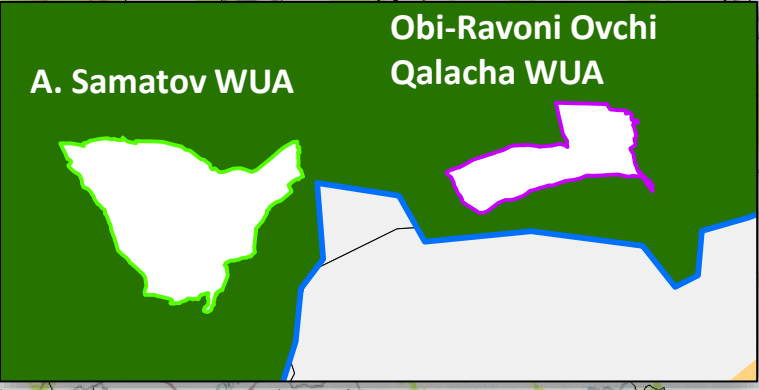
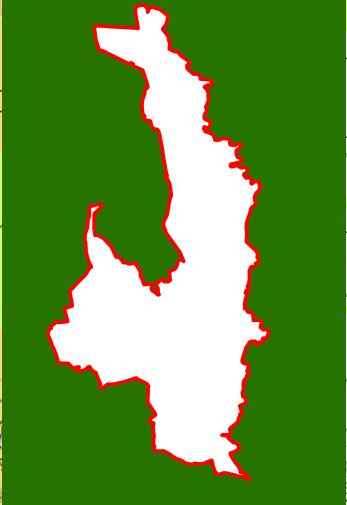











# Central Asia

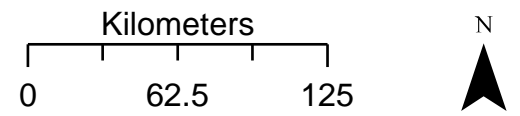
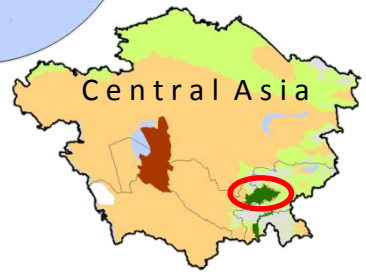
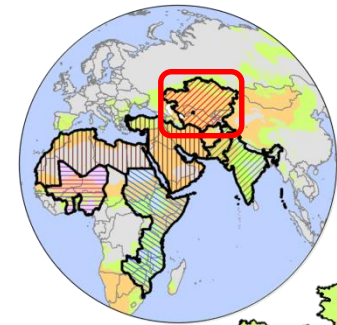




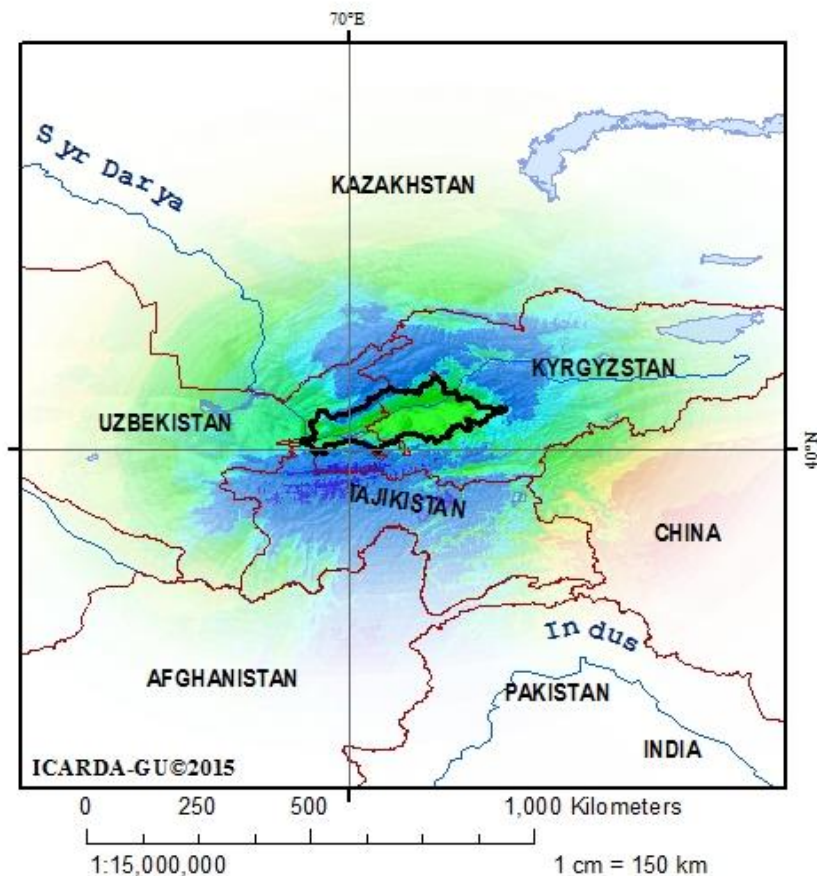
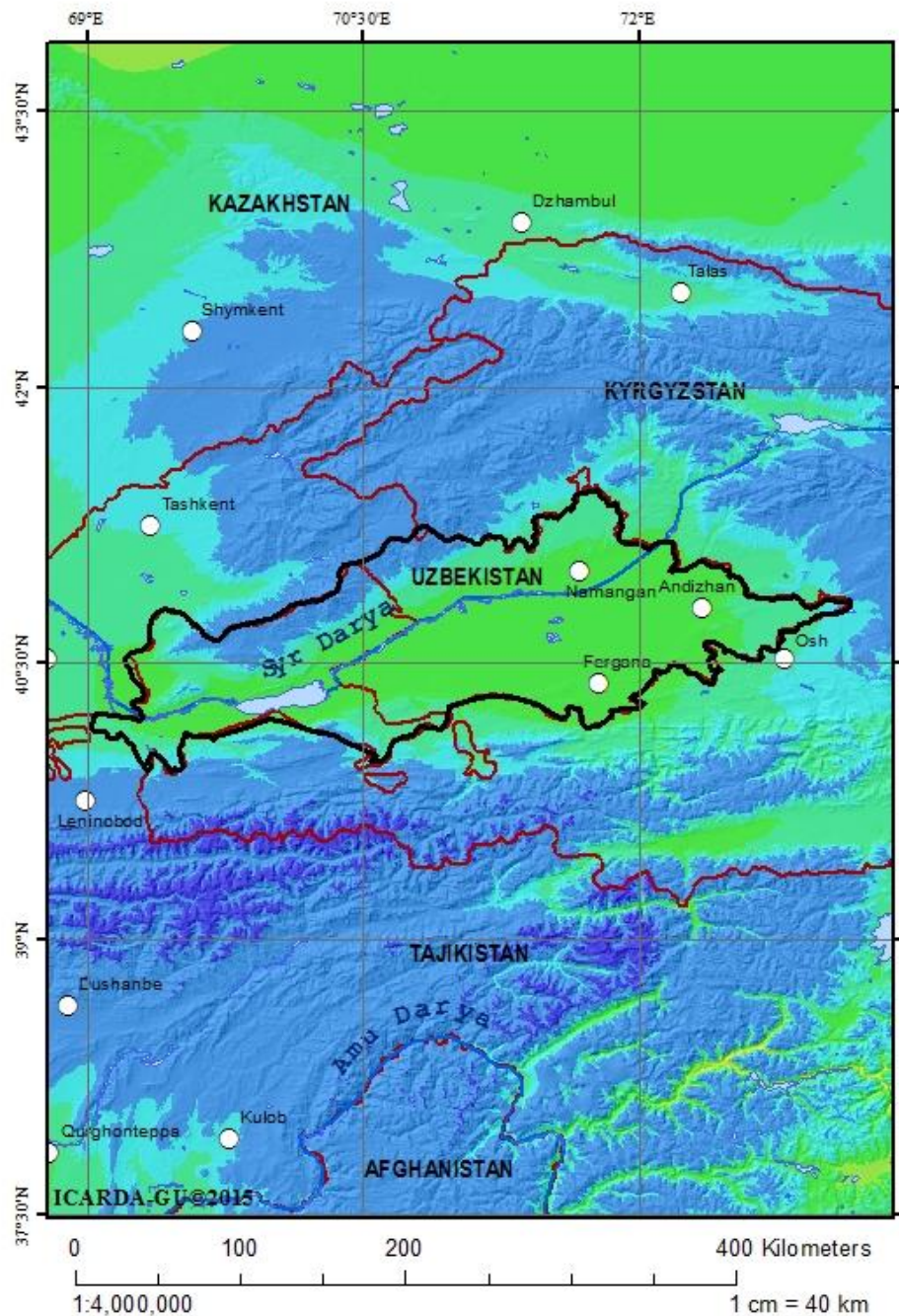
Komiljon Umarov WUA



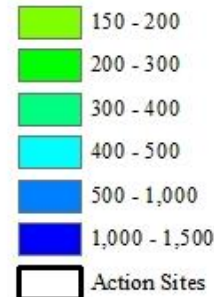
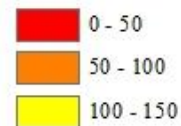
-  Fergana Valley
-  Action Site / Transect
- IDO1: Resilience Systems**
-  Action Sites / Transects
-  Target Areas
- IDO2: Intensifiable Systems**
-  Action Sites / Transects
-  Target Areas
- Field Sites / WUAs**
-  Komiljon Umarov
-  A. Samatov
-  Obi-Ravoni Ovchi Qalacha







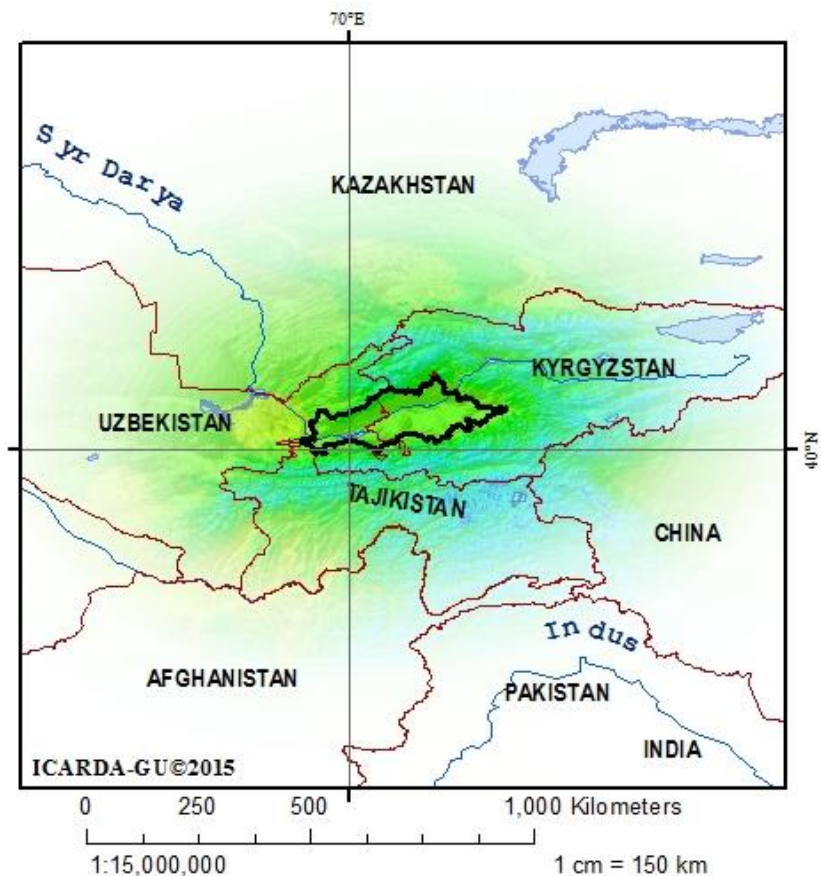
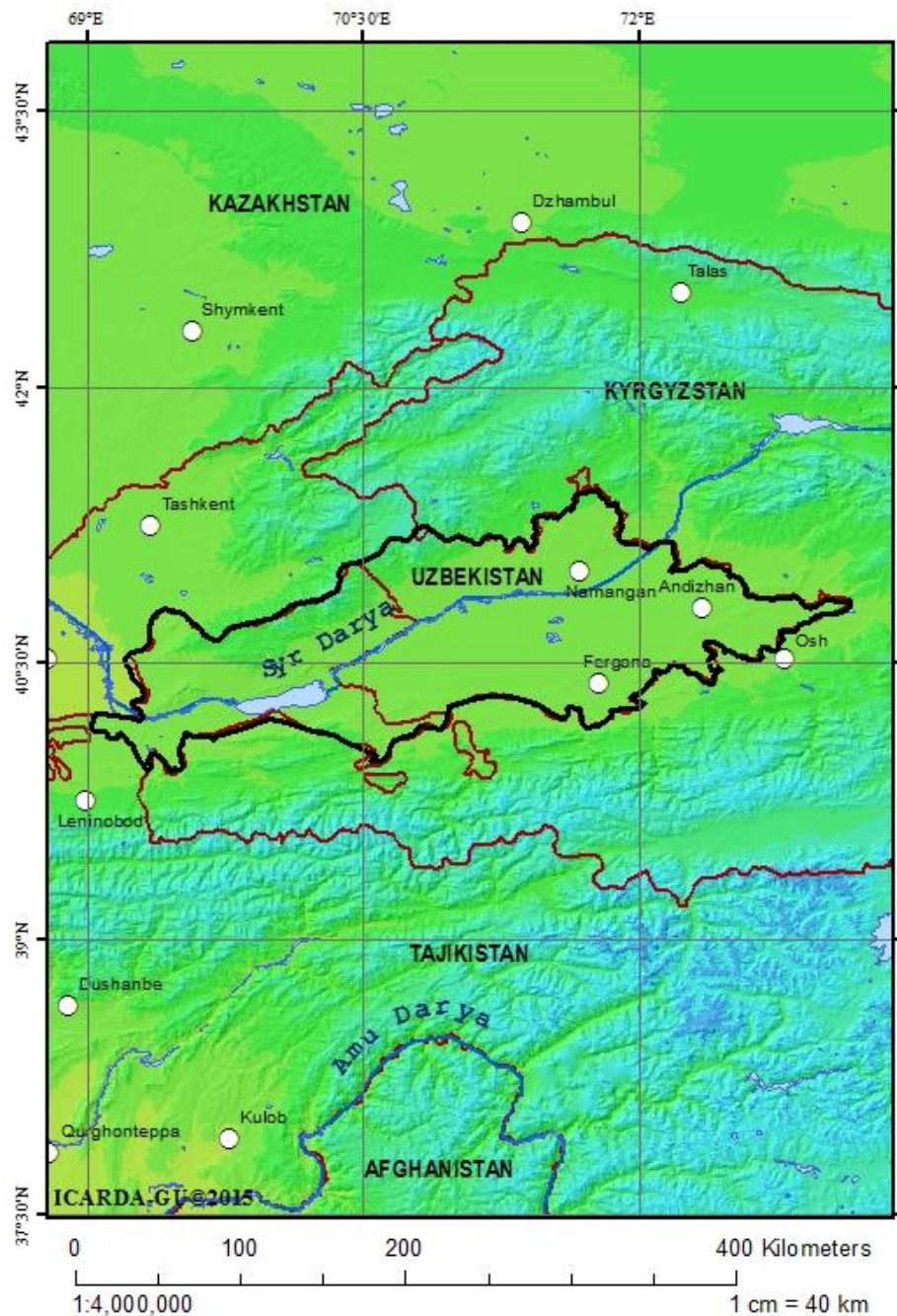
**Annual  
Precipitation  
mm**



**Description:**

Precipitation varies between the flat alluvial plains of the Fergana Valley, which receives 150–250 mm of precipitation per year, and the mountains and foothills around the valley, which receive 300–600 mm of precipitation per year.





**Annual Mean  
Temperature**

**Celsius**

< -10

-10 - -5

-5 - 0

0 - 5

5 - 10

10 - 15

15 - 20

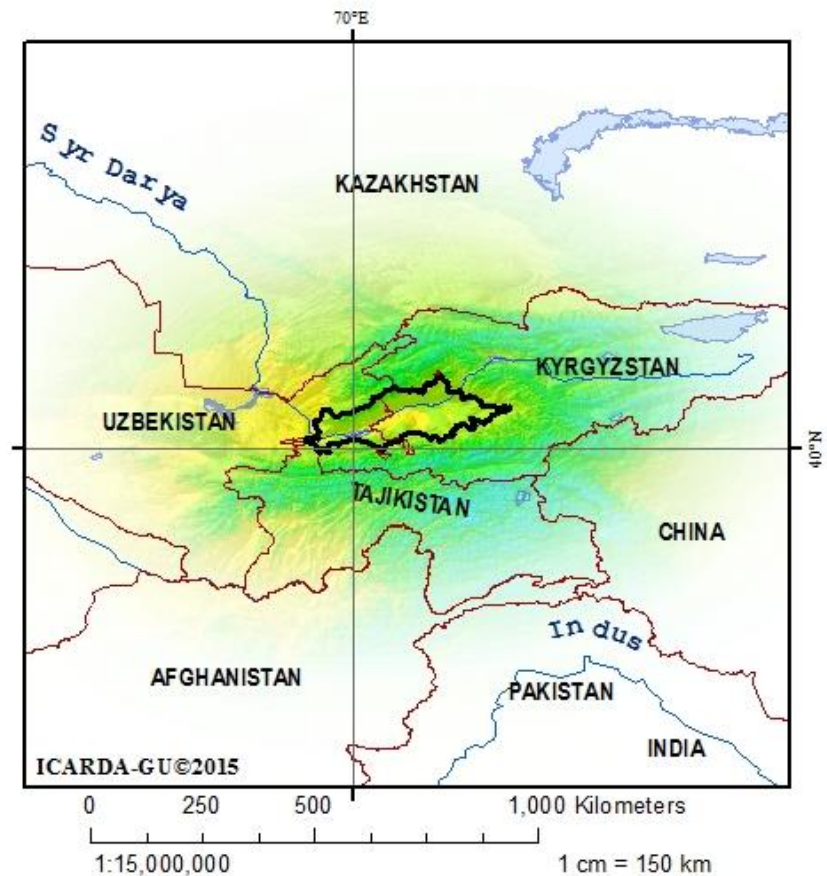
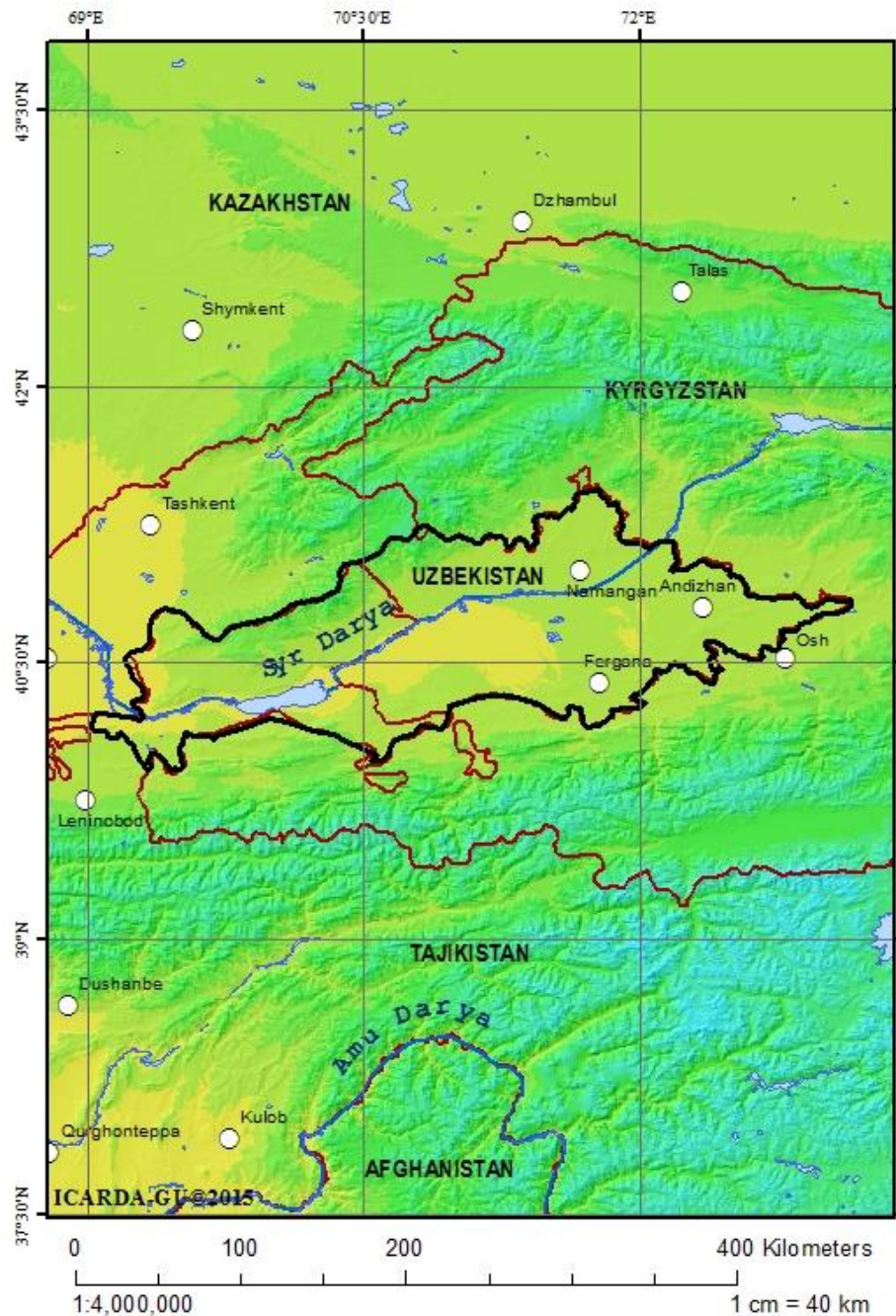
20 - 25

Action Sites

**Description:**

Average annual temperatures range from 7 °C to 11 °C in the foothills of the eastern part of the valley to 14–15 °C in the plains.





**Annual Max  
Temperature**

**Celsius**

< -5

-5 - 0

0 - 5

5 - 10

10 - 15

15 - 20

20 - 25

25 - 30

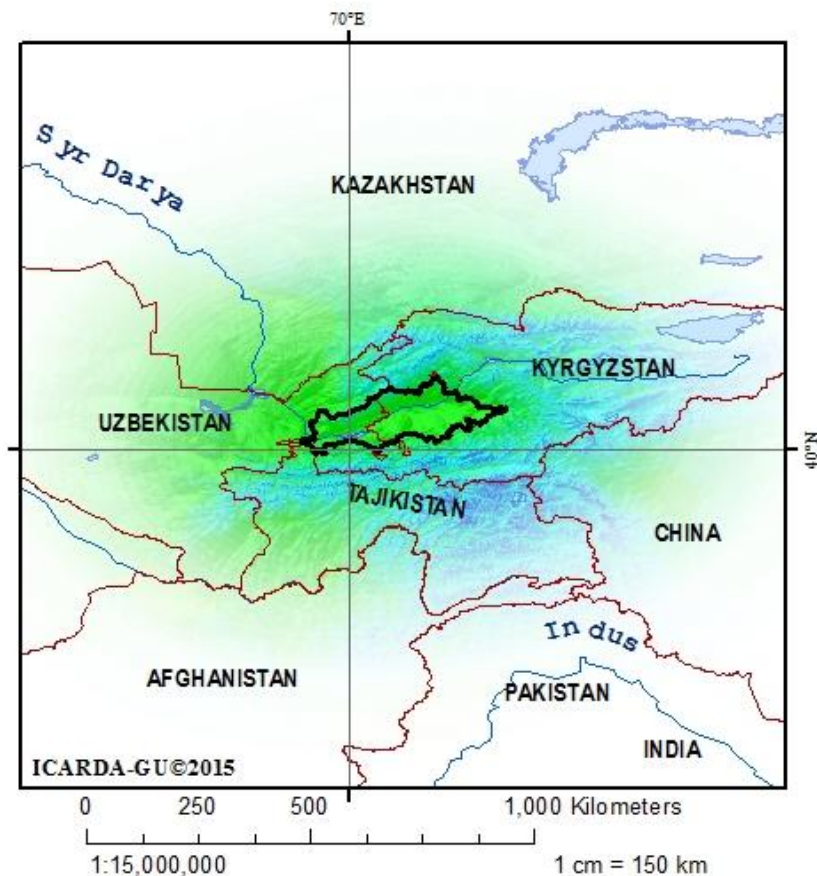
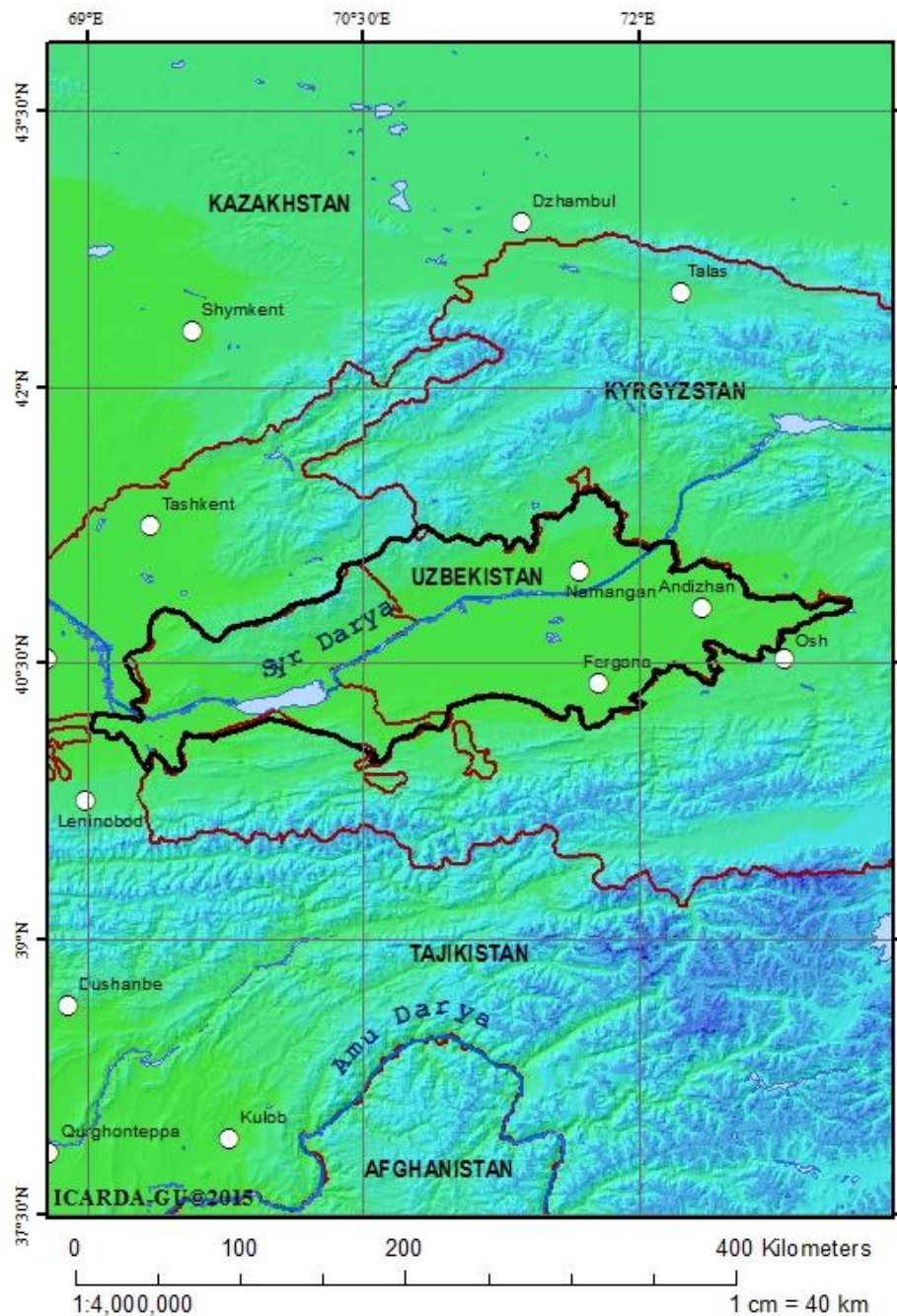
30 - 35

□ Action Sites

**Description:**

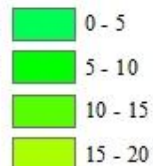
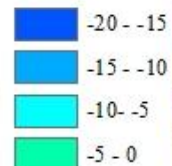
Average maximum temperatures in July are 34–35 °C in the plains and 25–30 °C in the foothills. The absolute maximum temperature is 43.9 °C.





**Annual  
Minimum  
Temperature  
Celsius**

< -20

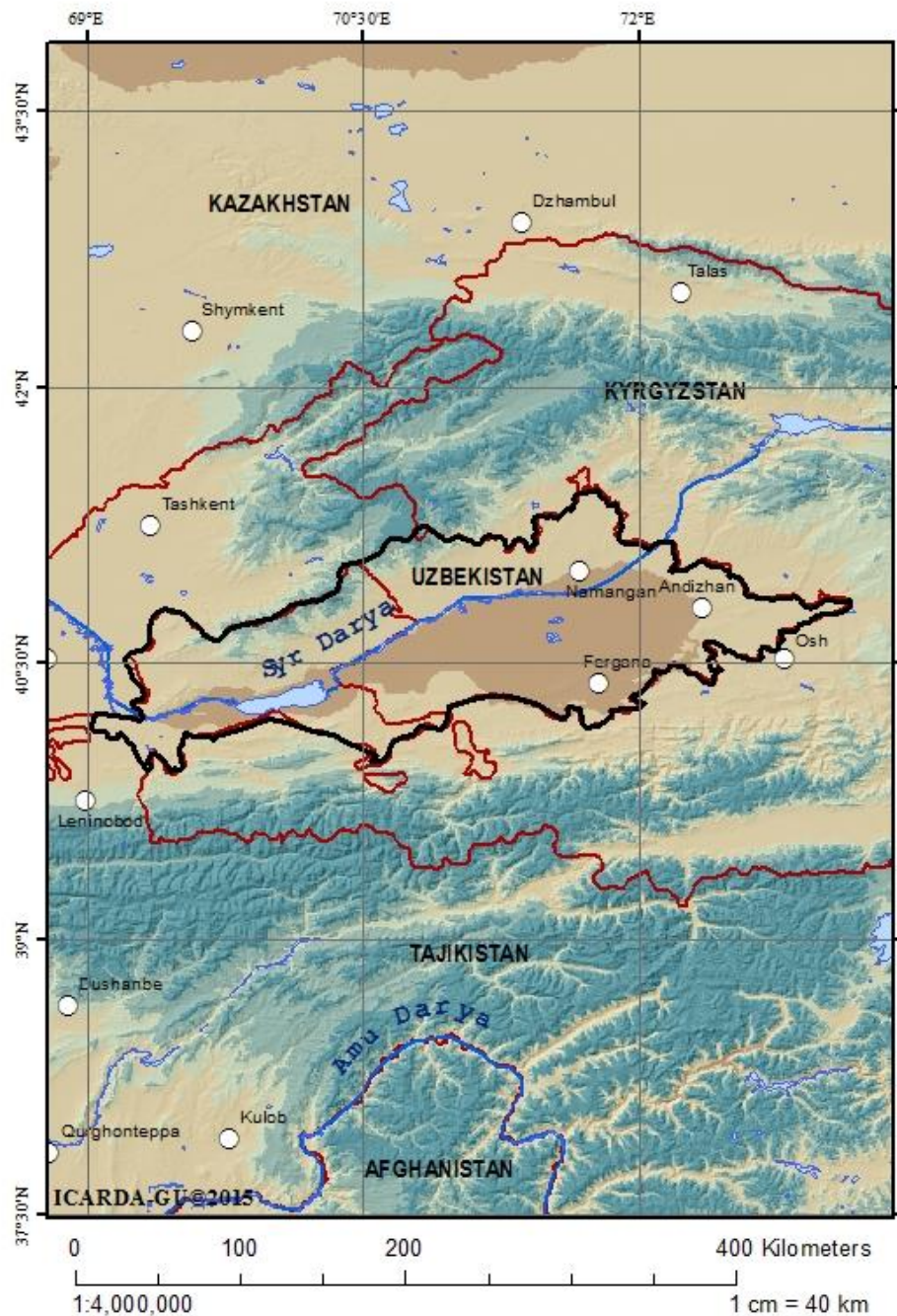


□ Action Sites

**Description:**

The average minimum temperature in the coldest month range from  $-15^{\circ}\text{C}$  in the north to  $-3.5^{\circ}\text{C}$  in the south, with an absolute minimum of  $-39^{\circ}\text{C}$ .

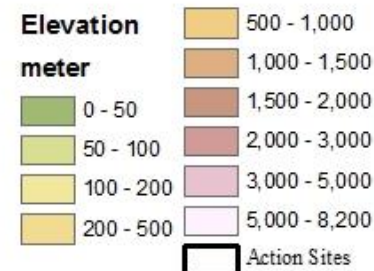
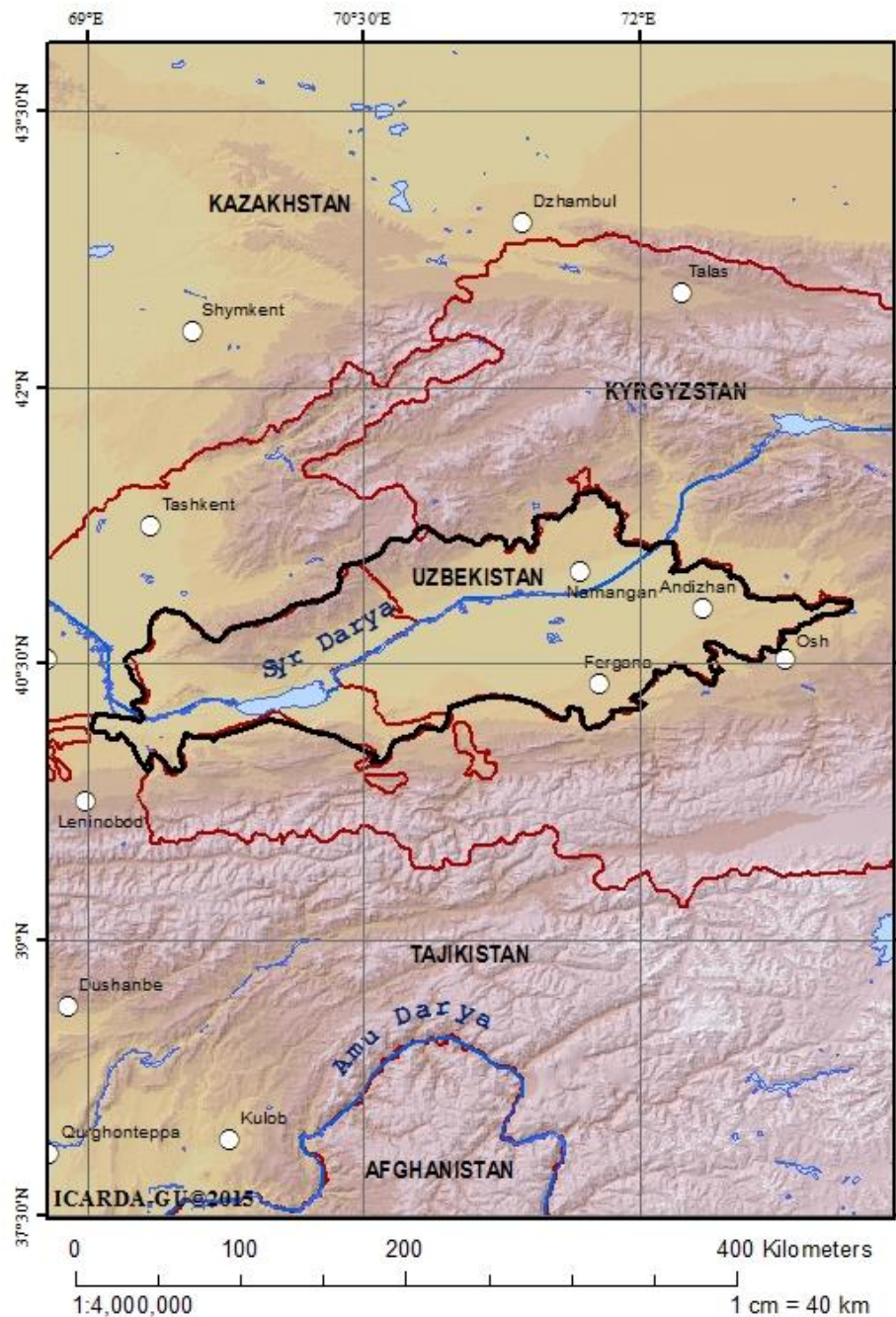




**Description:**

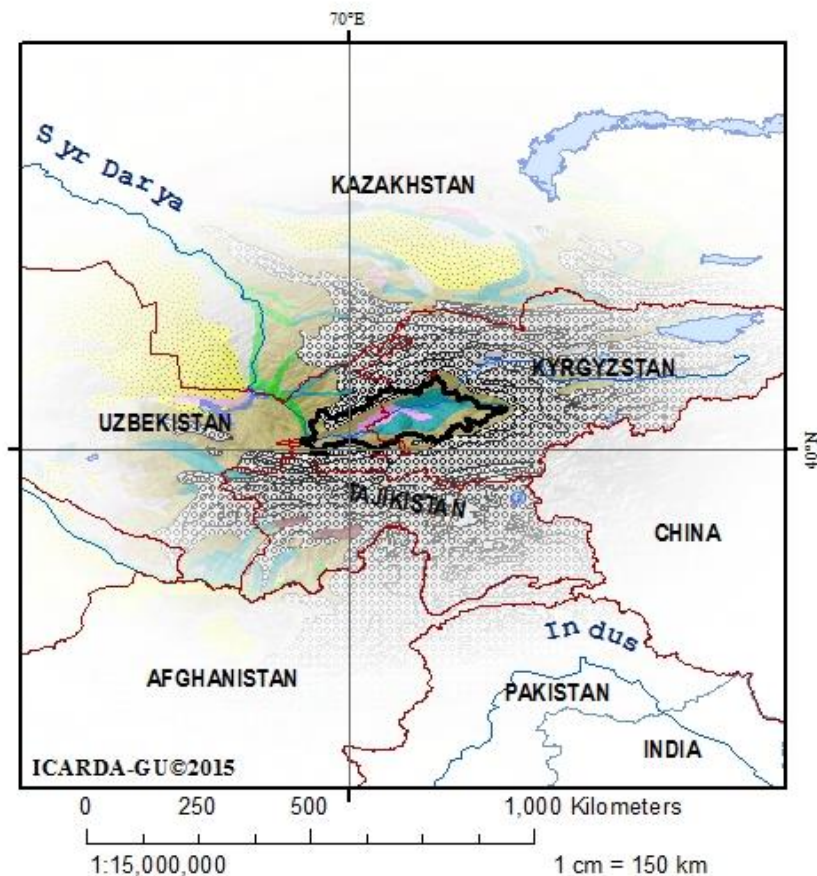
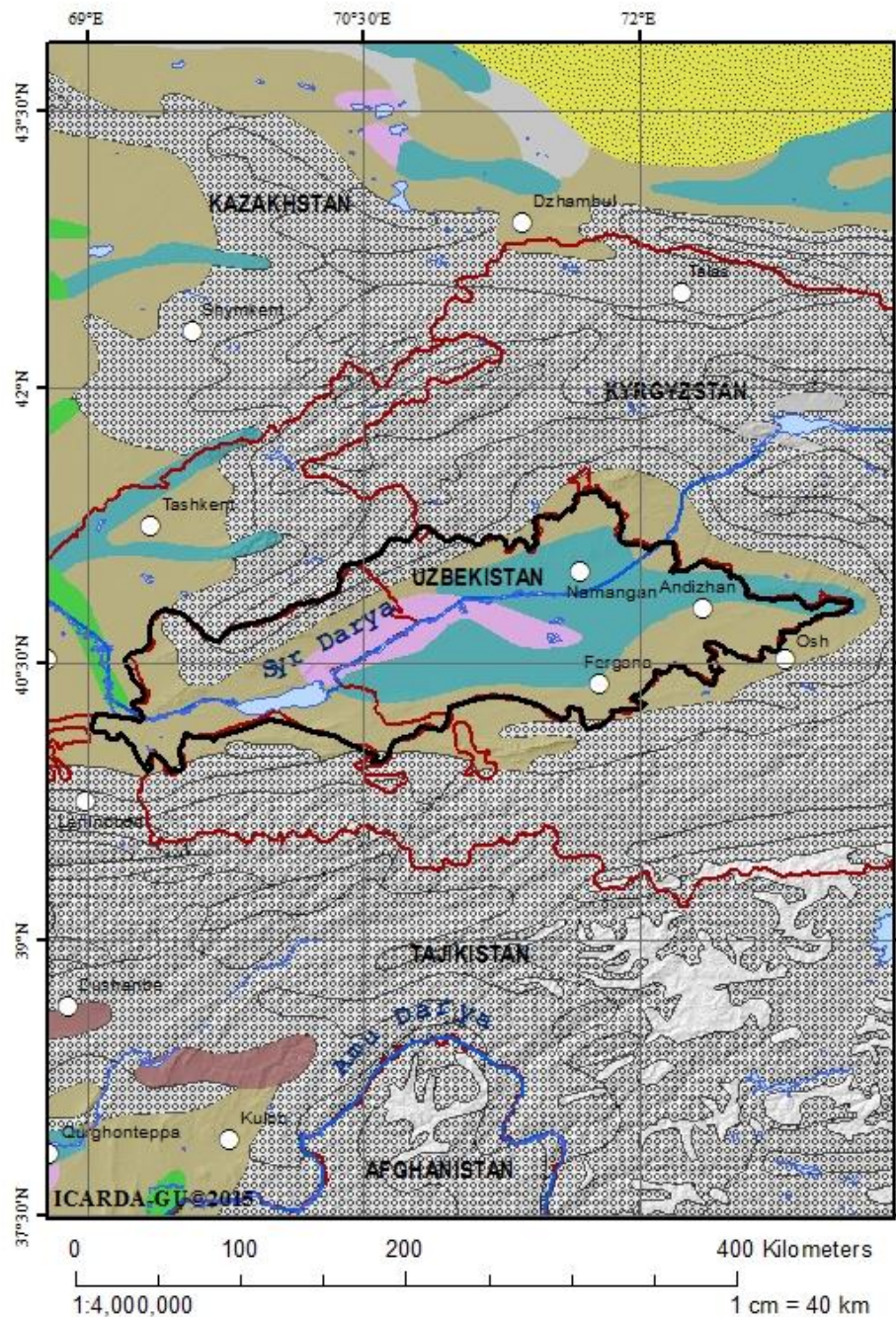
The aridity index across the Fergana Valley action site is between 0.19 and 0.21





**Description:**  
The elevation range in the action site is between 300m and 1000m.





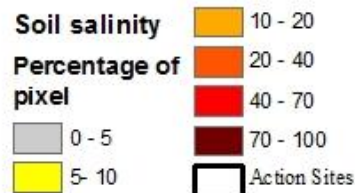
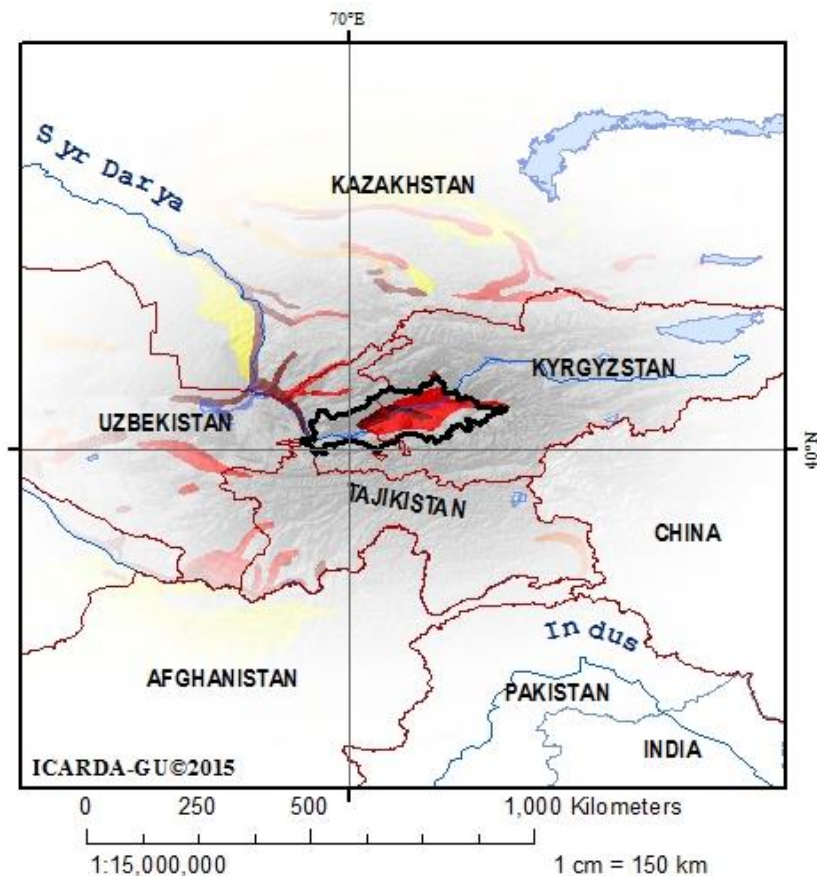
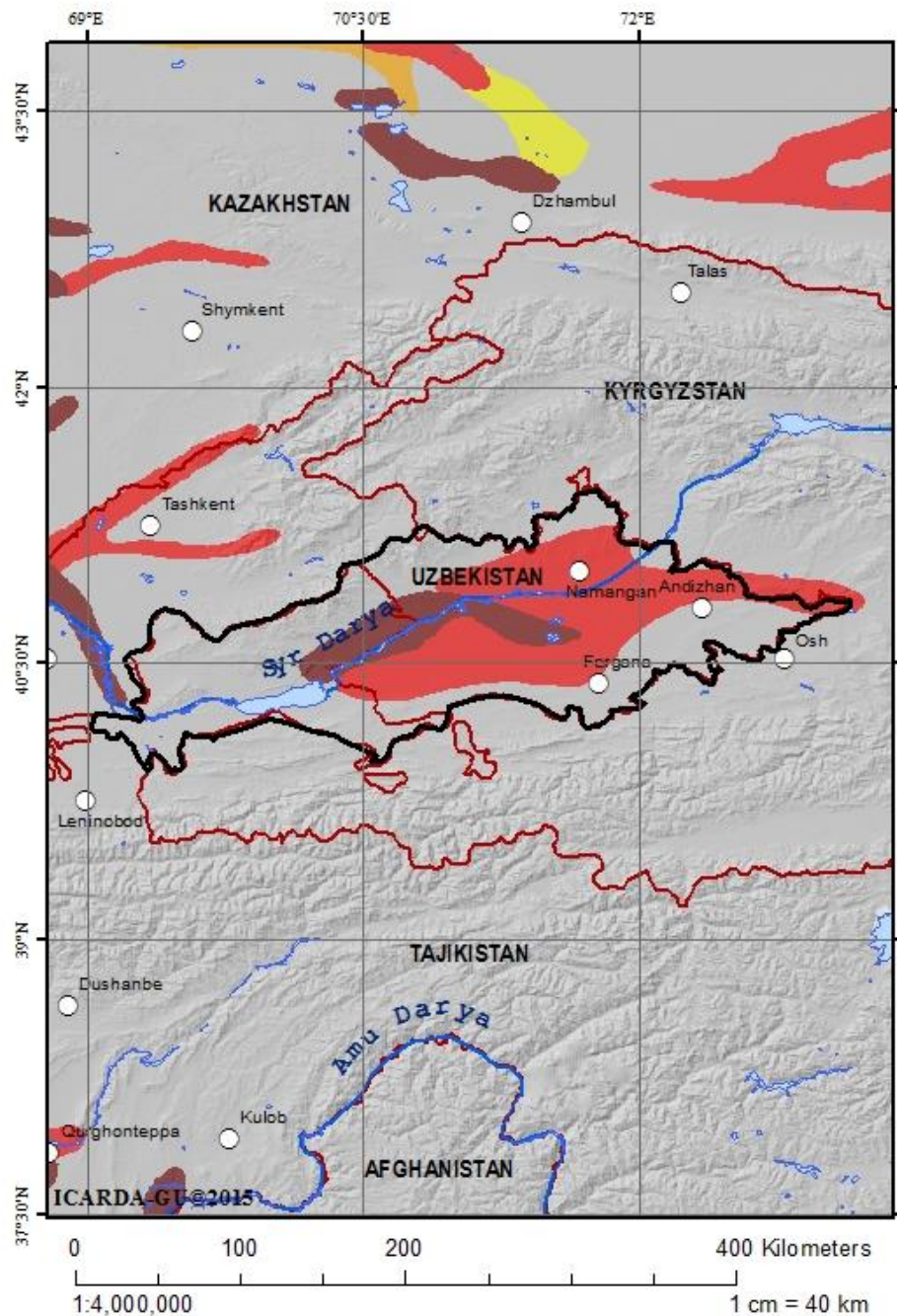
### Soil Types

- |   |   |                                       |
|---|---|---------------------------------------|
| very shallow soils                            | poorly developed soils                                  | acid soils with clay-enriched subsoil |
| sandy soils                                   | dark, well-structured, fertile, calcareous soils        | saline soils                          |
| dunes and shifting sands                      | lighter colored soils with good fertility and structure | sodic soils                           |
| very poorly developed soils of (semi-)deserts | moderately developed soils                              | soils formed on recent alluvium       |
| poorly developed soils of (semi-)deserts      | non-acid soils with clay-enriched subsoil               | poorly drained soils                  |
|   |   | peat soils                            |
|   |   | inland water                          |
|   |   | Action Sites                          |

### Description:

Soils of the area are characterized as old-irrigated meadow-alluvial, sand-desert, sandy, grey-brown soils, and in some places are covering of alkaline soil. Some soils are of the takyry type and strongly saline, with a dark covering of alkaline soil.

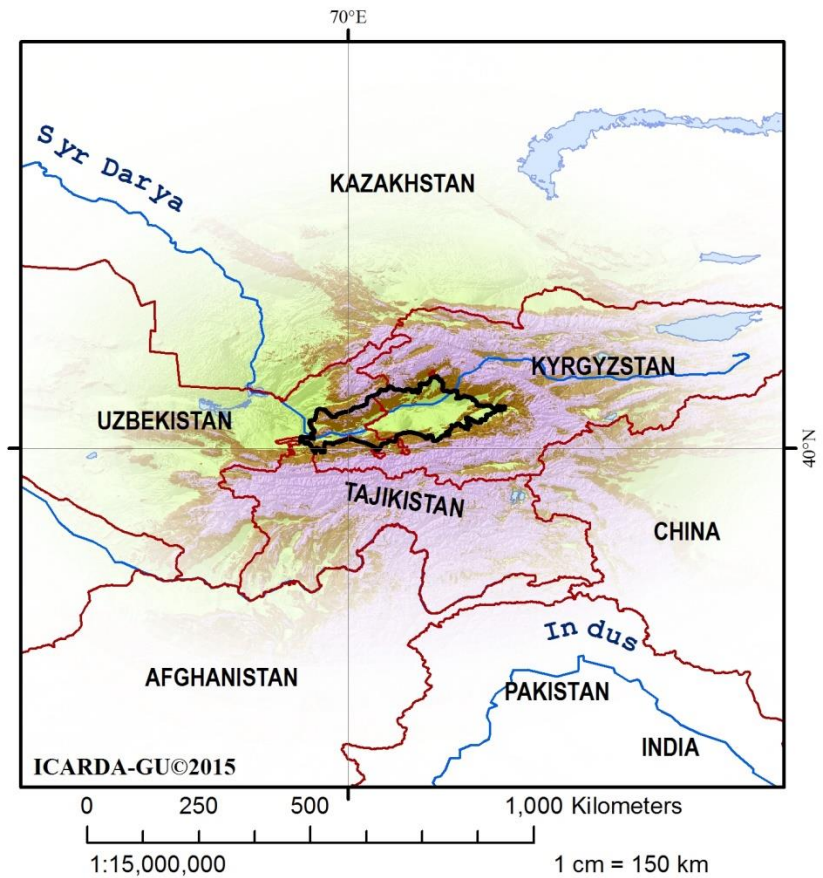
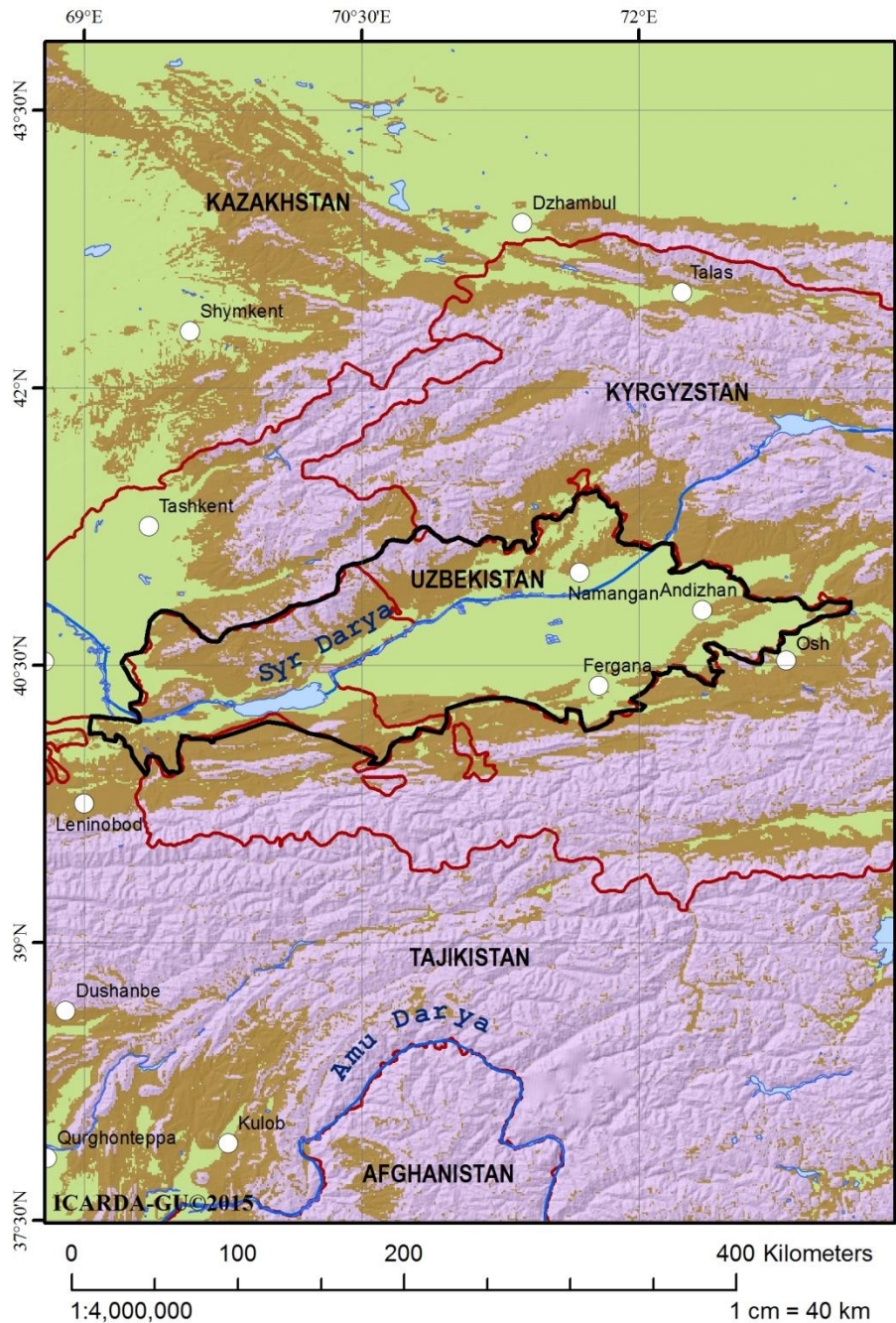




**Description:**

This map shows the distribution of salt-affected soils in the region. Using the Fertility Capability Classification (FCC)





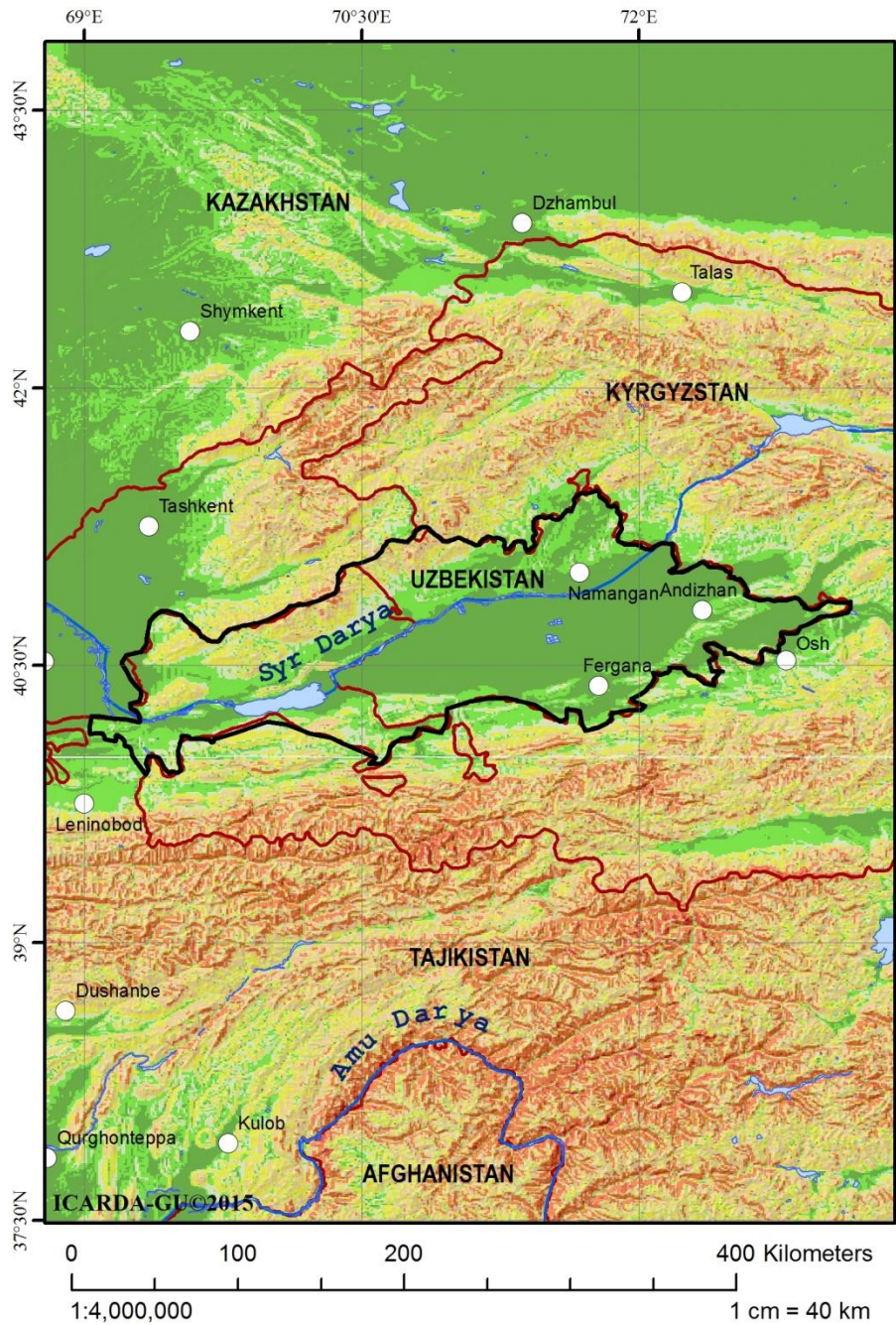
**Landform**

- Plains and plateaux
- Hills
- Mountains
- Action Sites

**Description:**

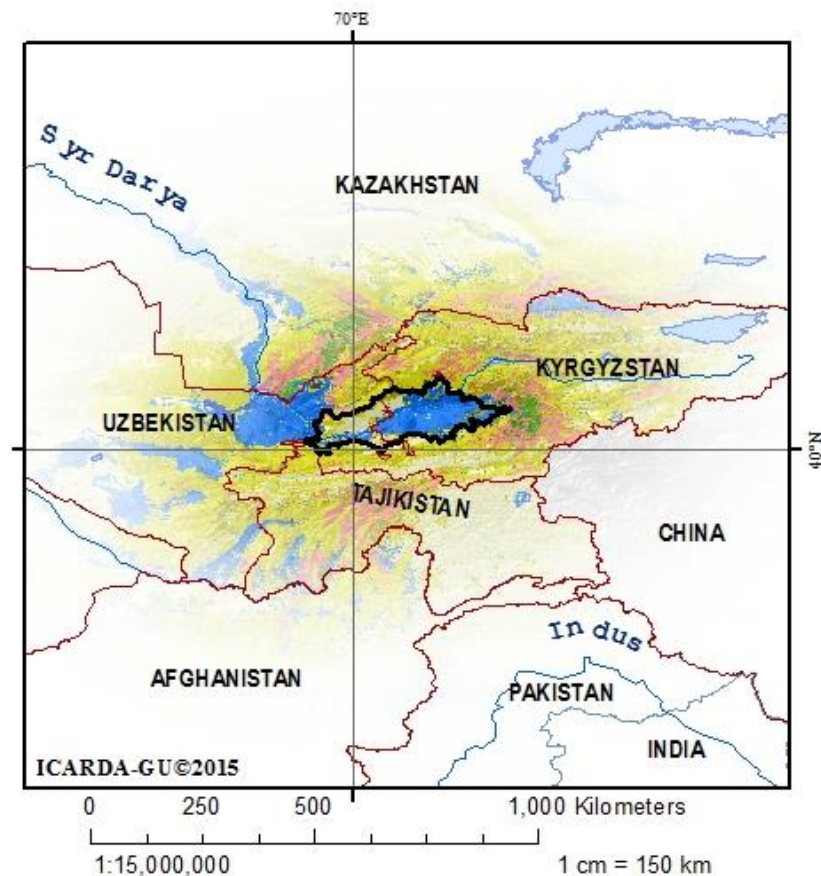
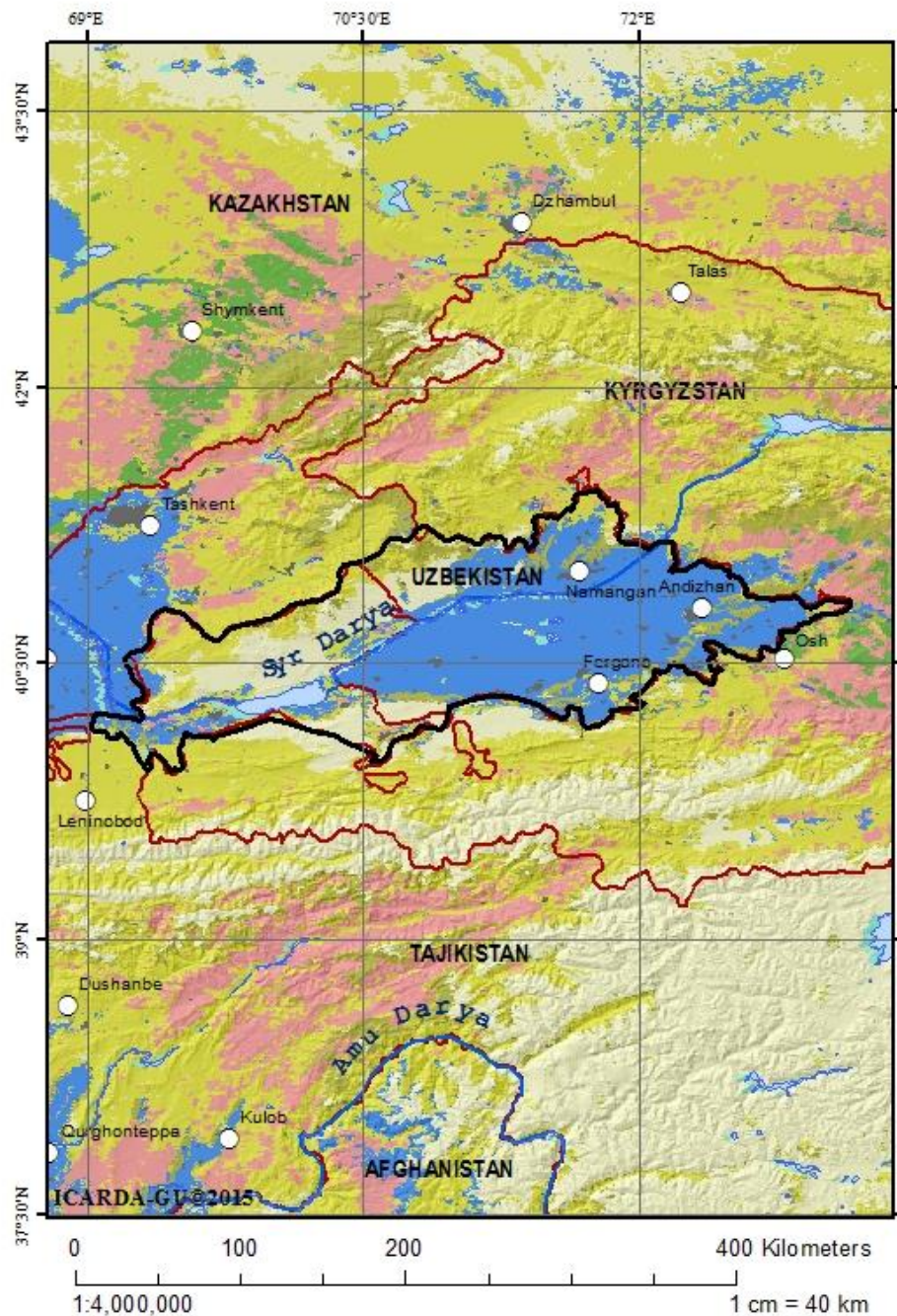
Most of the Fergana action site land is plain and plateaux, with some hills on the edges.





**Description:**  
 The slope in the action site is between 0 and 5% which means that the area is flat with no steep slopes.





**Land use/land cover 1993**

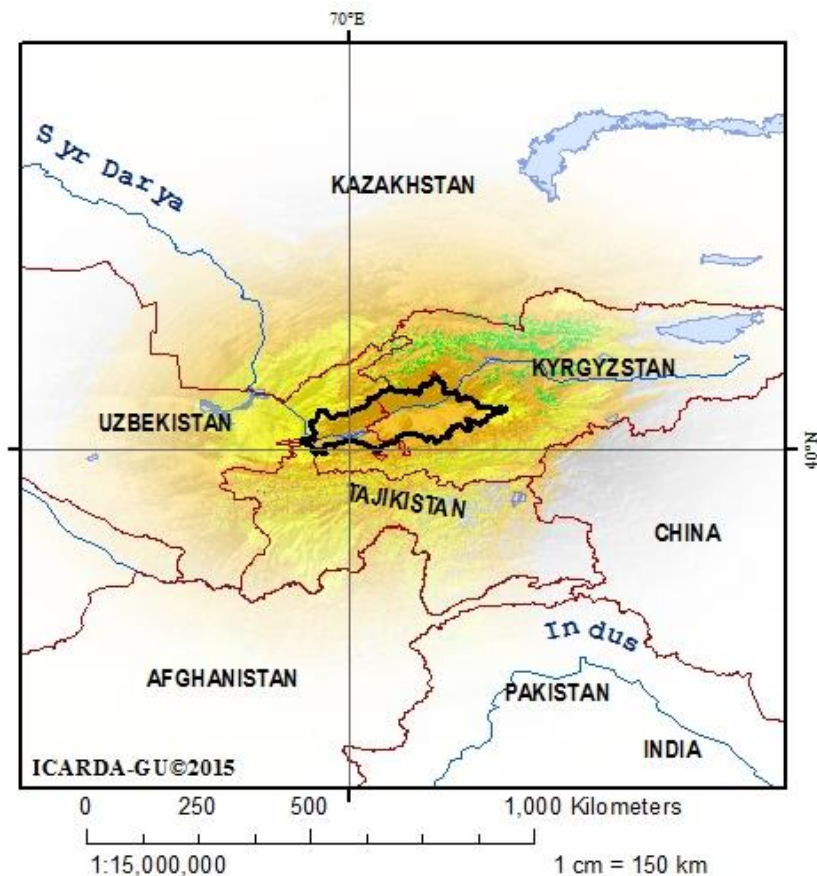
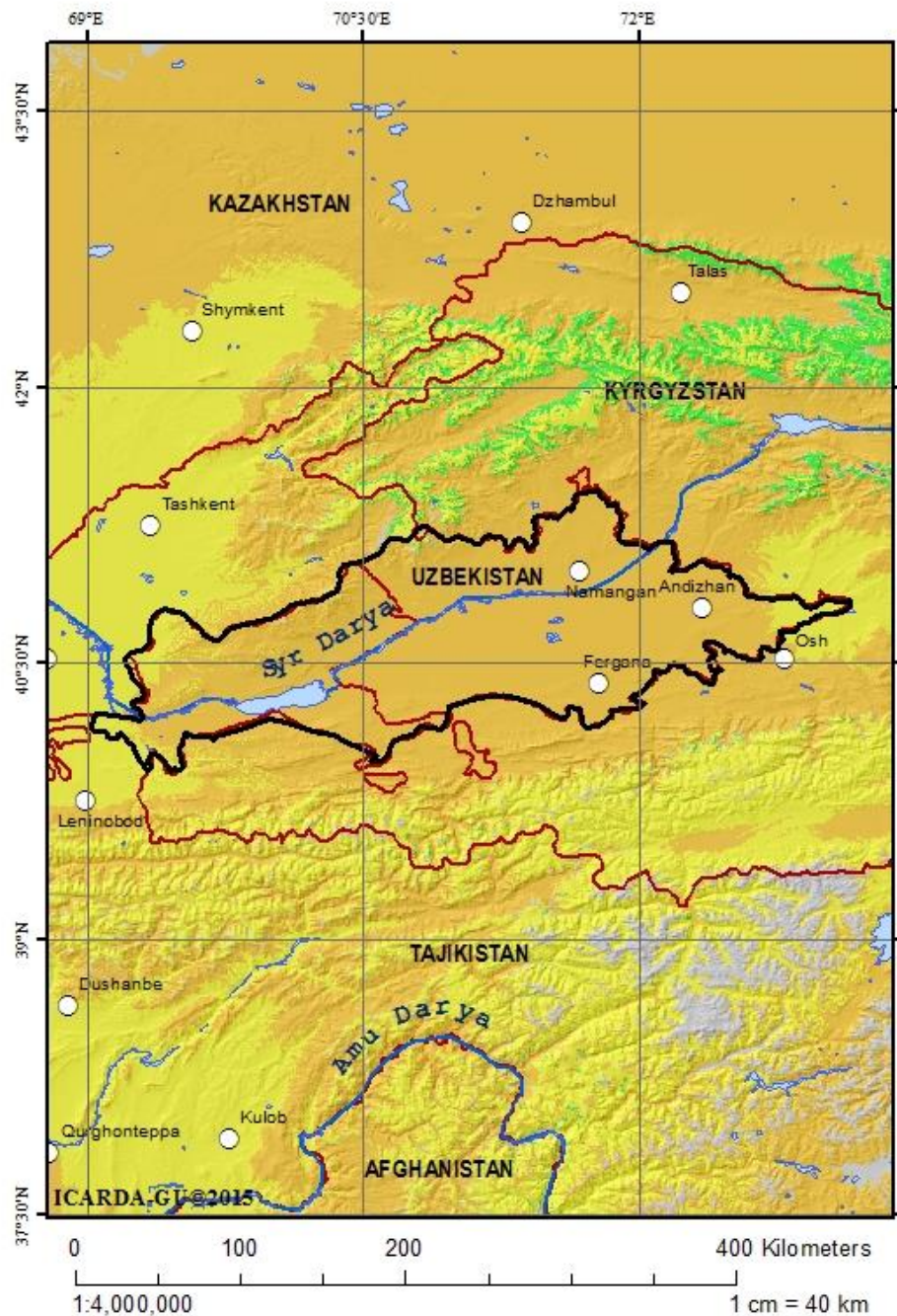
- Irrigated crops
- Rainfed crops
- Rangelands

- Forests/tree crops/closed shrublands
- Inland water
- Barren/ sparsely vegetated
- Urban/ built up
- Vegetation of high mountains
- Action Sites

**Description:**

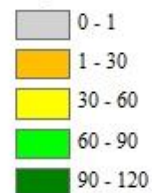
This map compiled by aggregation of an initial 12-class land use/land cover classification based on image analysis of AVHRR data at 1-km spatial resolution for the period April 1992 to March 1993.





**Length of growing period**

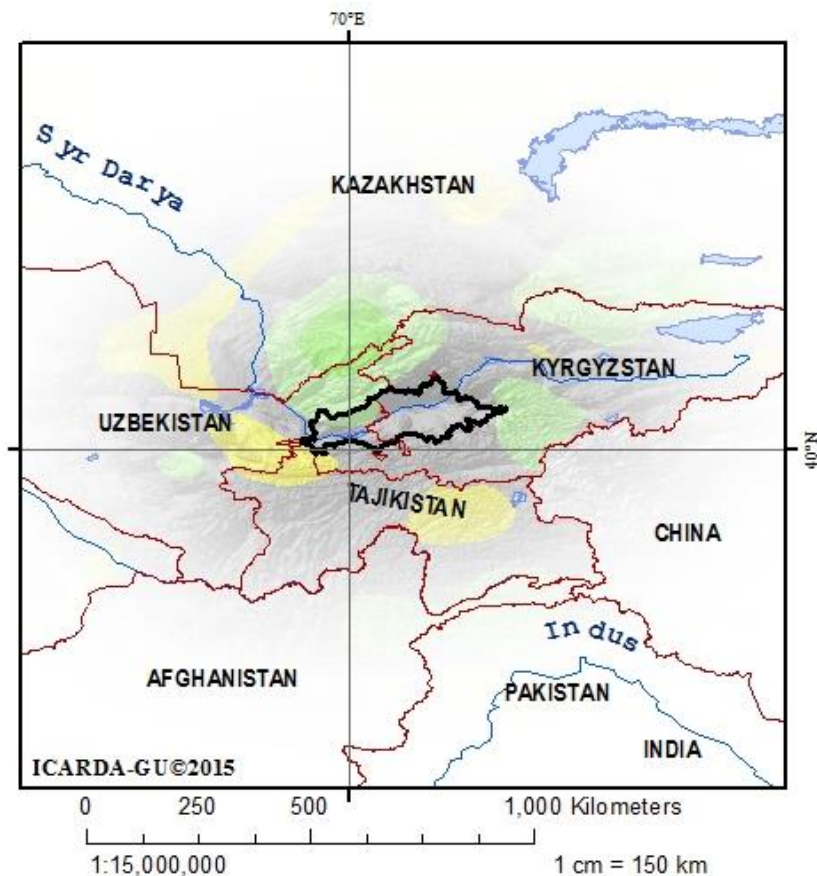
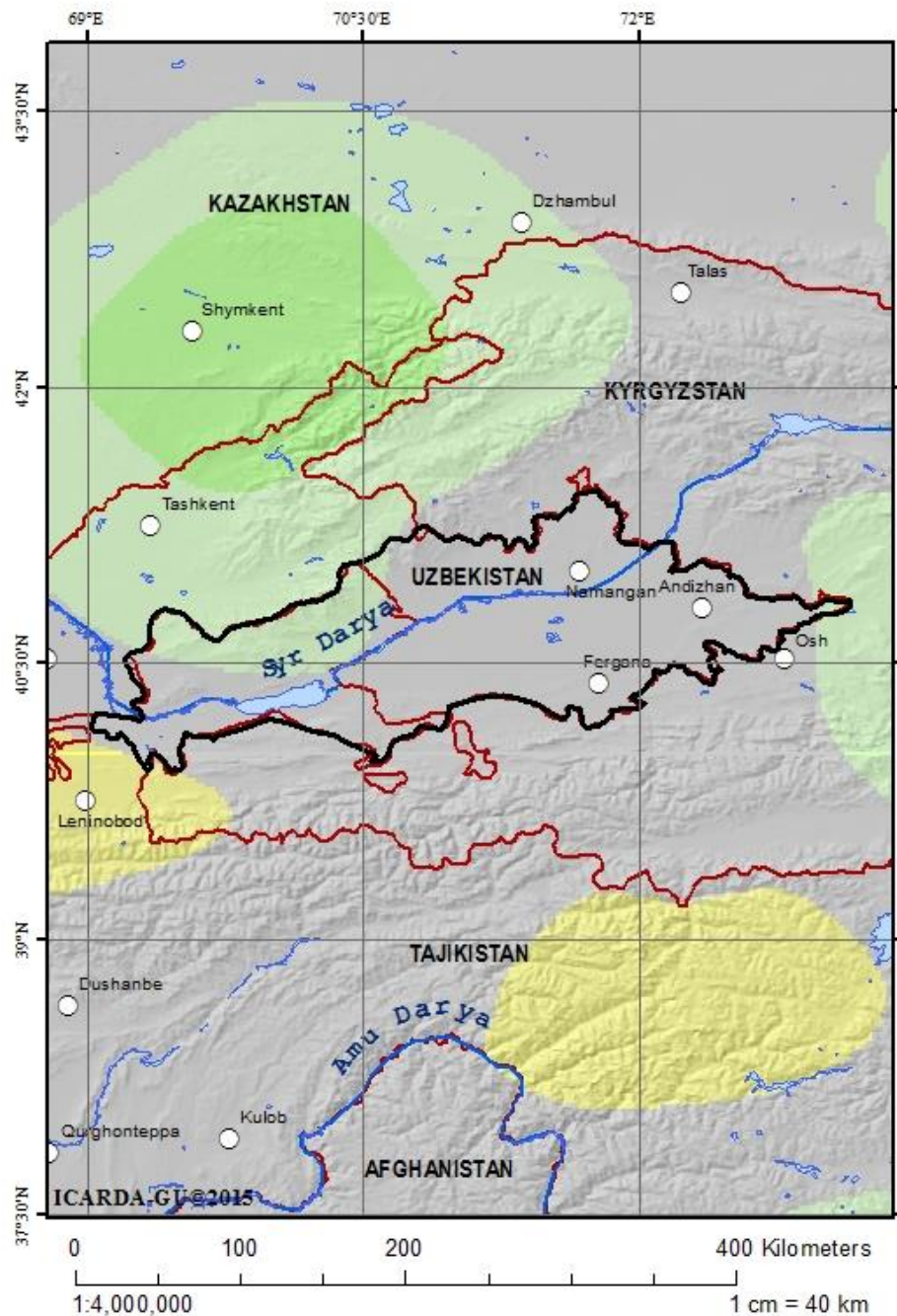
**Days**



**Description:**

This map shows the combined estimated length (in days) of both the first and the second growing period, limited by both moisture availability and temperature adequacy.





**Absolute change in annual Trend precipitation 1901 -2077 (mm / year)**

-2.5 to -1

-1 to -0.5

-0.5 - 0

0 - 0.5

0.5 - 1

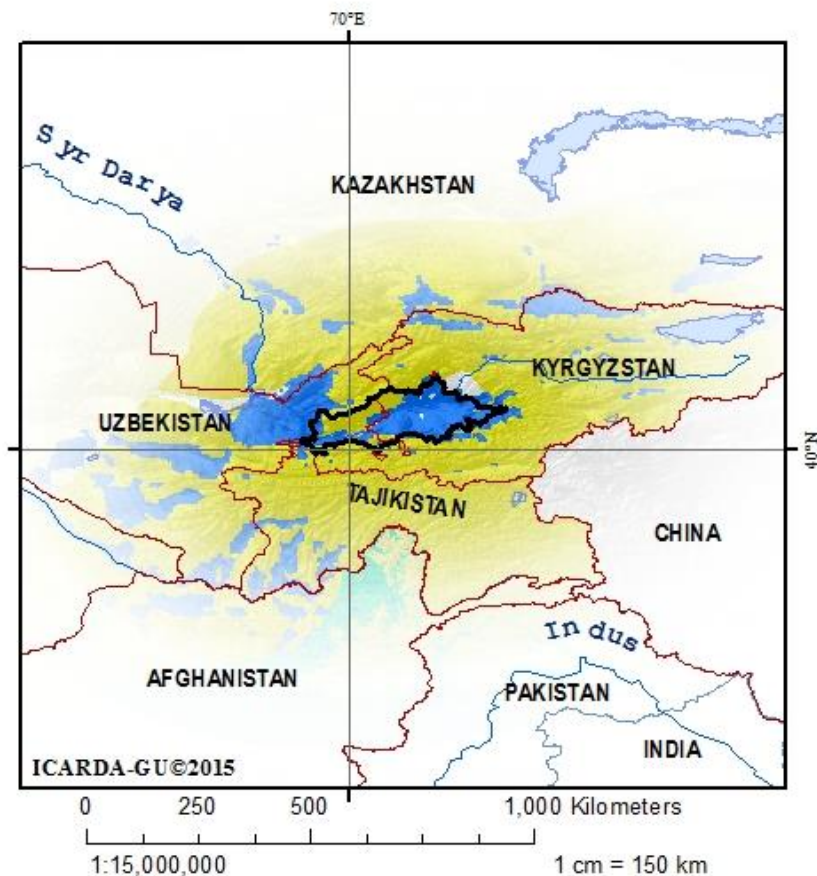
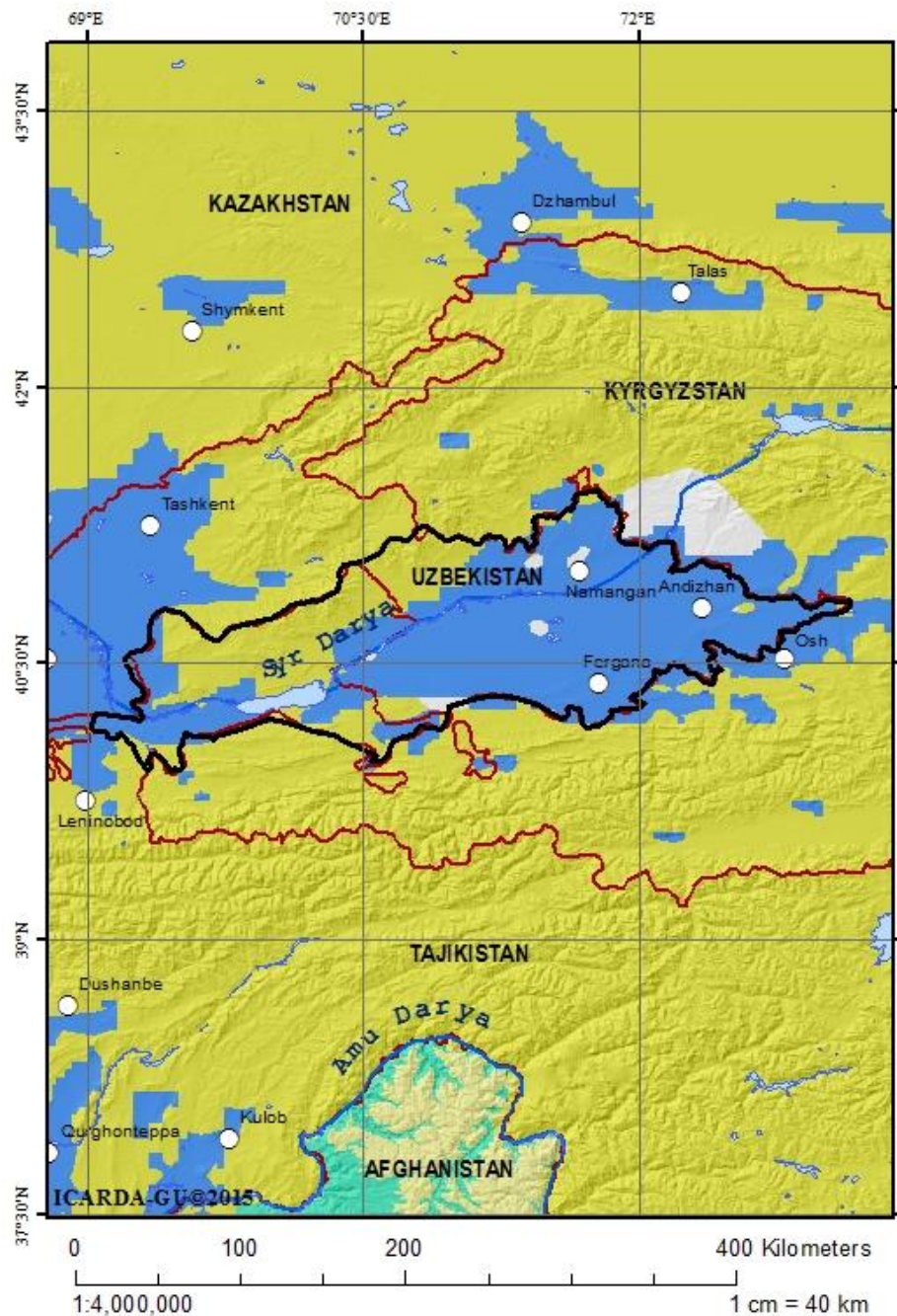
1 - 2.5

Action Sites

**Description:**

This map is based on the Full Data Reanalysis Product Version 4 of the Global Precipitation Climatology Centre (GPCC). It has been obtained by linear regression fitted to the 107-year time series of annual precipitation





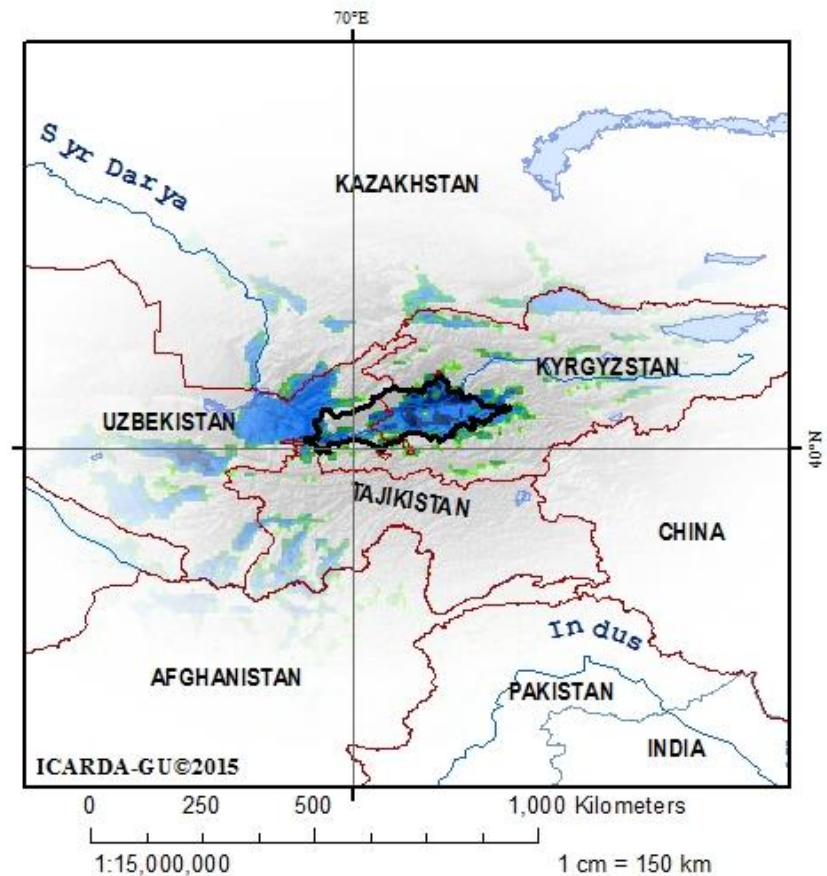
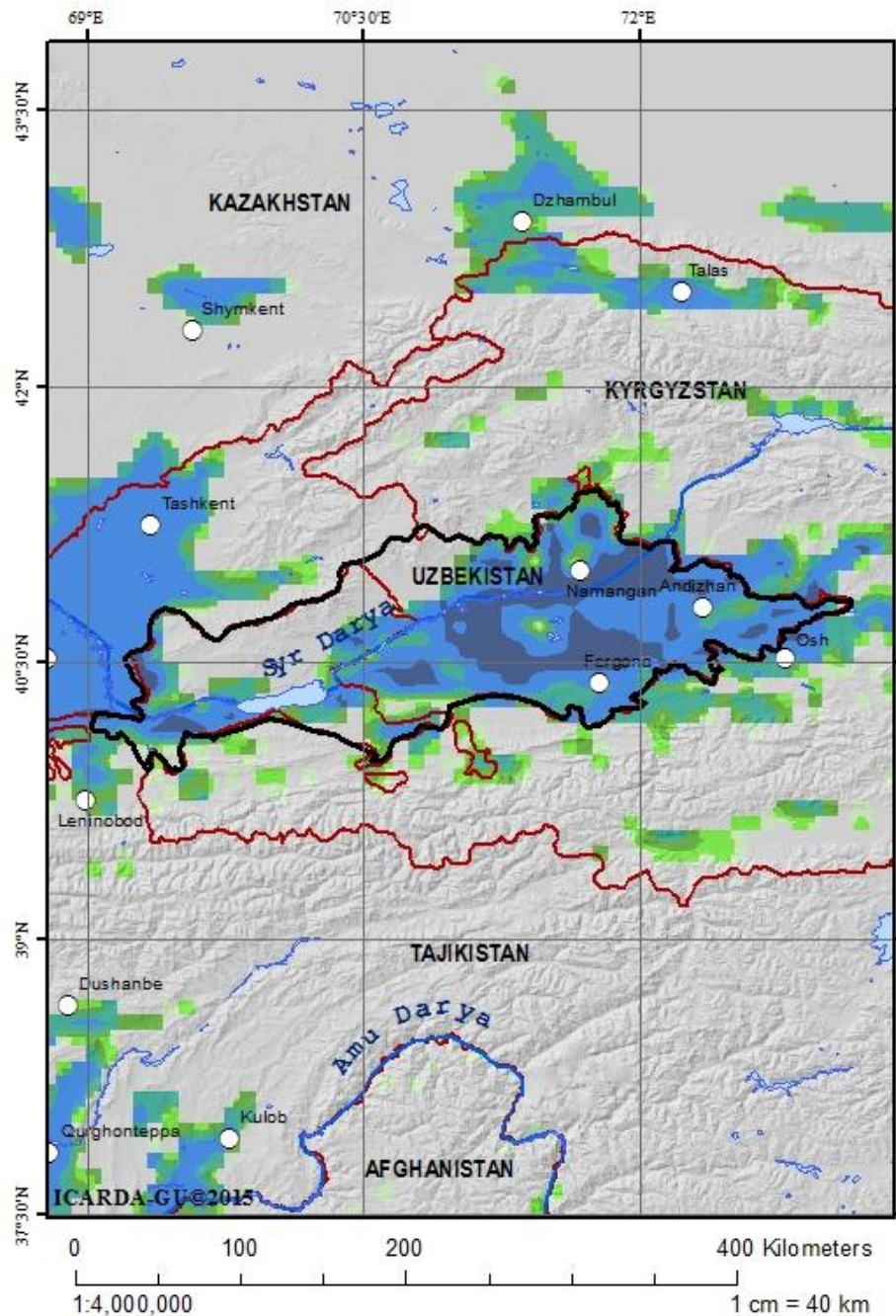
#### Farming systems

- Irrigated
- Pastoral
- Sparse (arid)
- Extensive cereal-livestock
- Rice-wheat
- Highland mixed-summer rainfall
- Sparse (mountain)
- Action Sites

#### Description:

This map differentiates 19 farming systems on the basis of the classification developed by Dixon et al (2001, see Data source). It illustrates the diversity of the production systems and their adaptation to highly diverse environments.





**Irrigated areas**

**Percent**

0 - 1

1 - 5

5 - 10

10 - 20

20 - 40

40 - 70

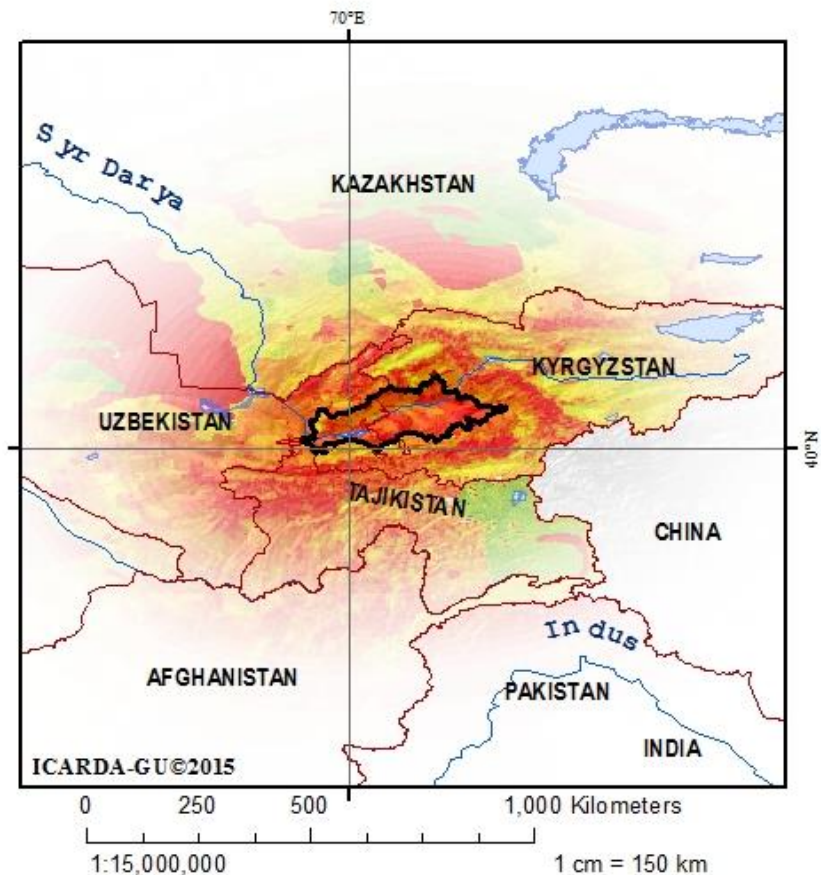
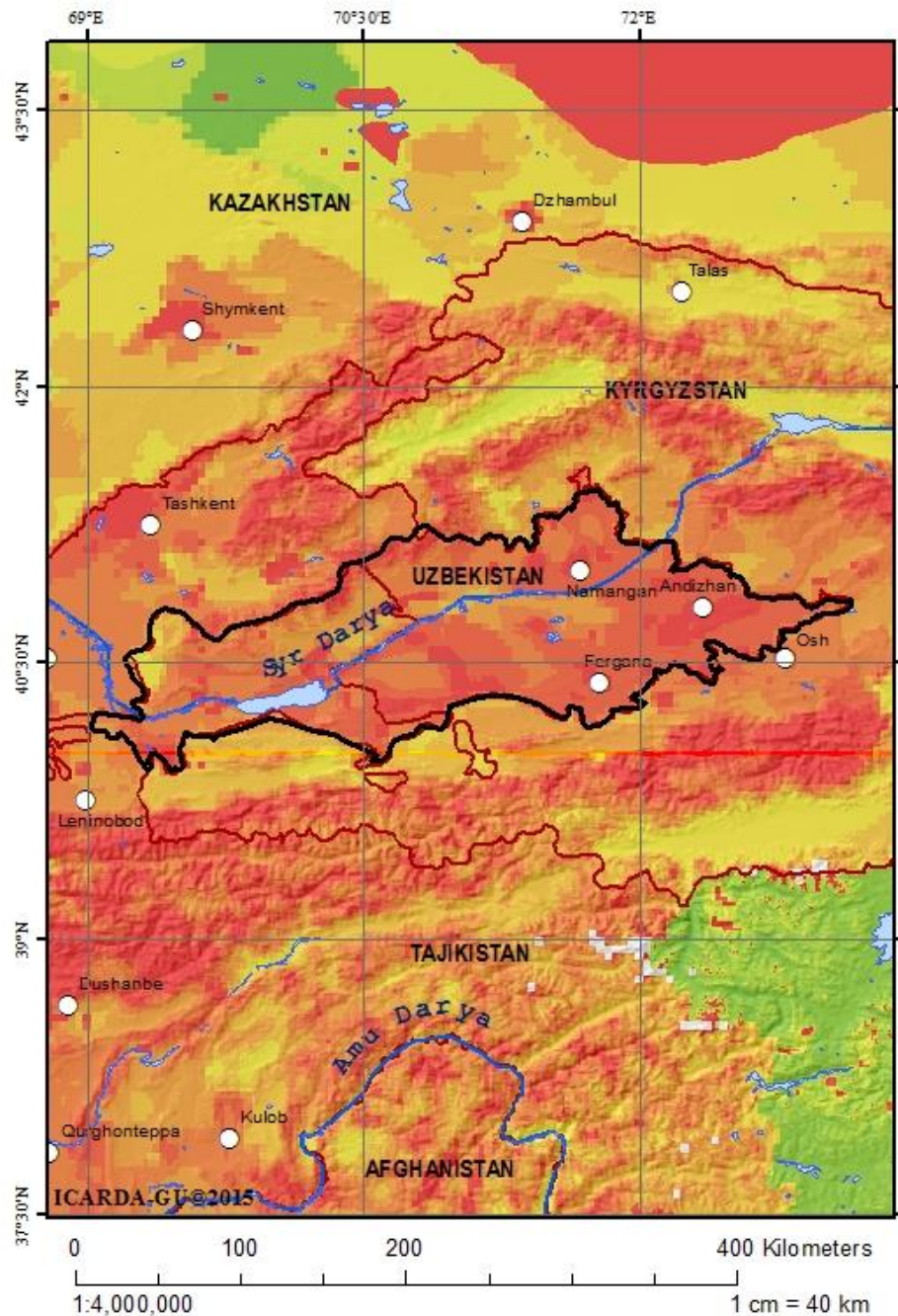
70 - 100

□ Action Sites

**Description:**

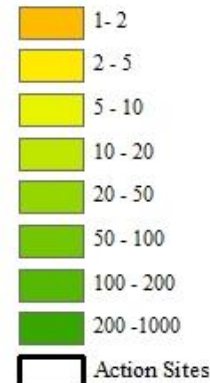
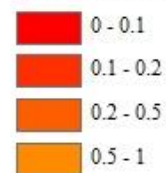
This map shows the percentage of land that is irrigated. Whereas irrigation is the ultimate solution for agricultural water shortage,





**Agricultural resource capital and population density**

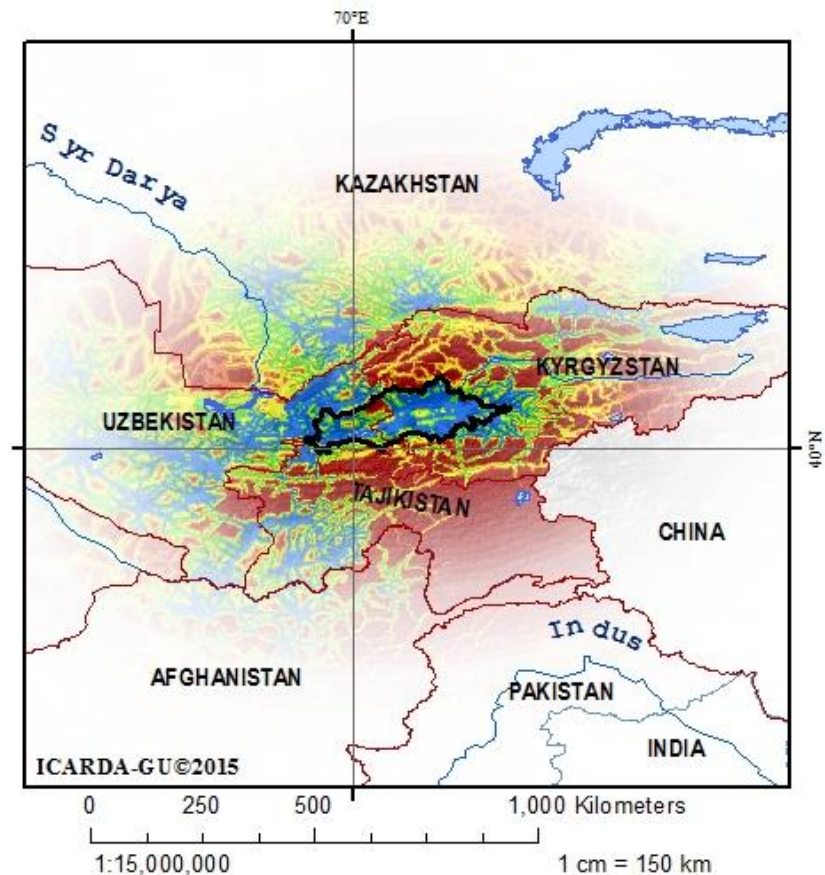
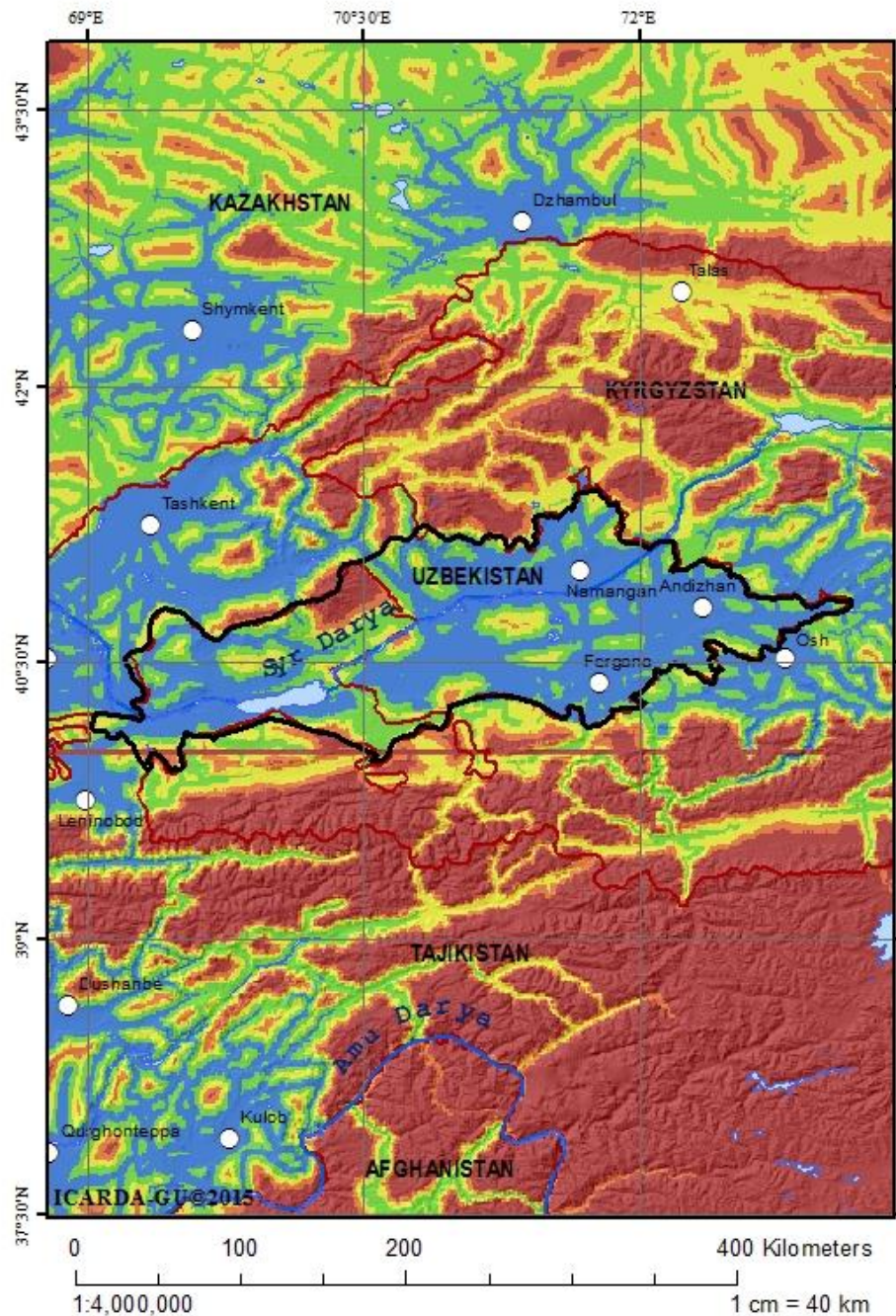
**Person/Km 2**



**Description:**

A high-potential agricultural resource base can be insufficient for a large rural population, whereas areas with lower potential for agriculture but also lower population densities can be sustainable. This map links agricultural resource poverty to population density.





**Accessibility to markets**

2 - 4 hours

4 - 6 hours

6 - 8 hours

> 8 hours

**Travel time to city**

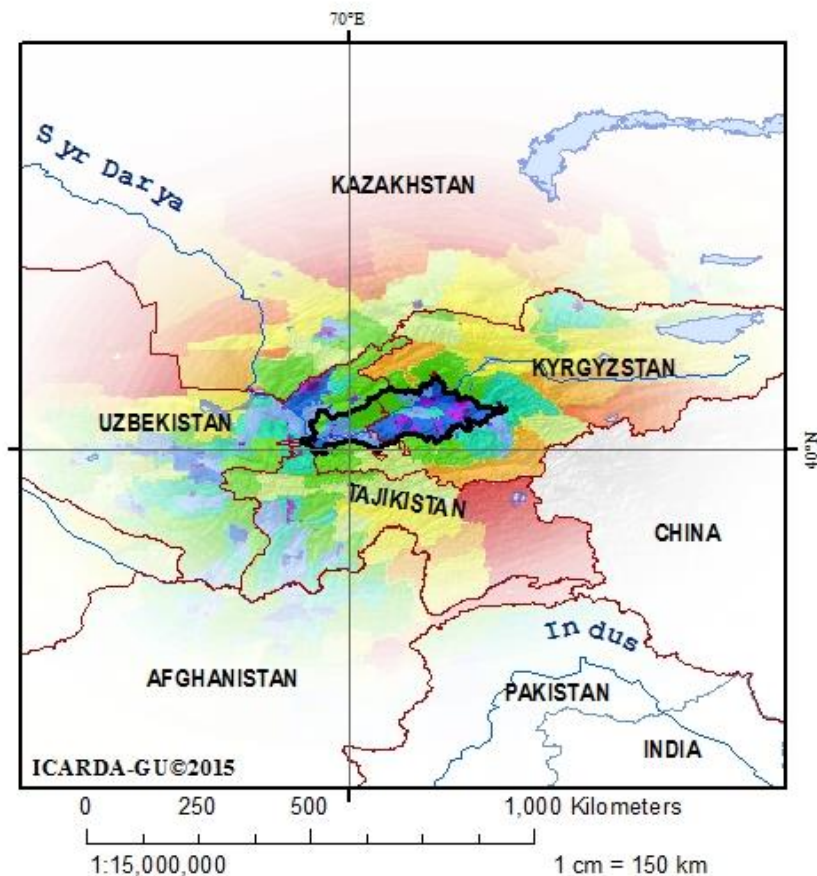
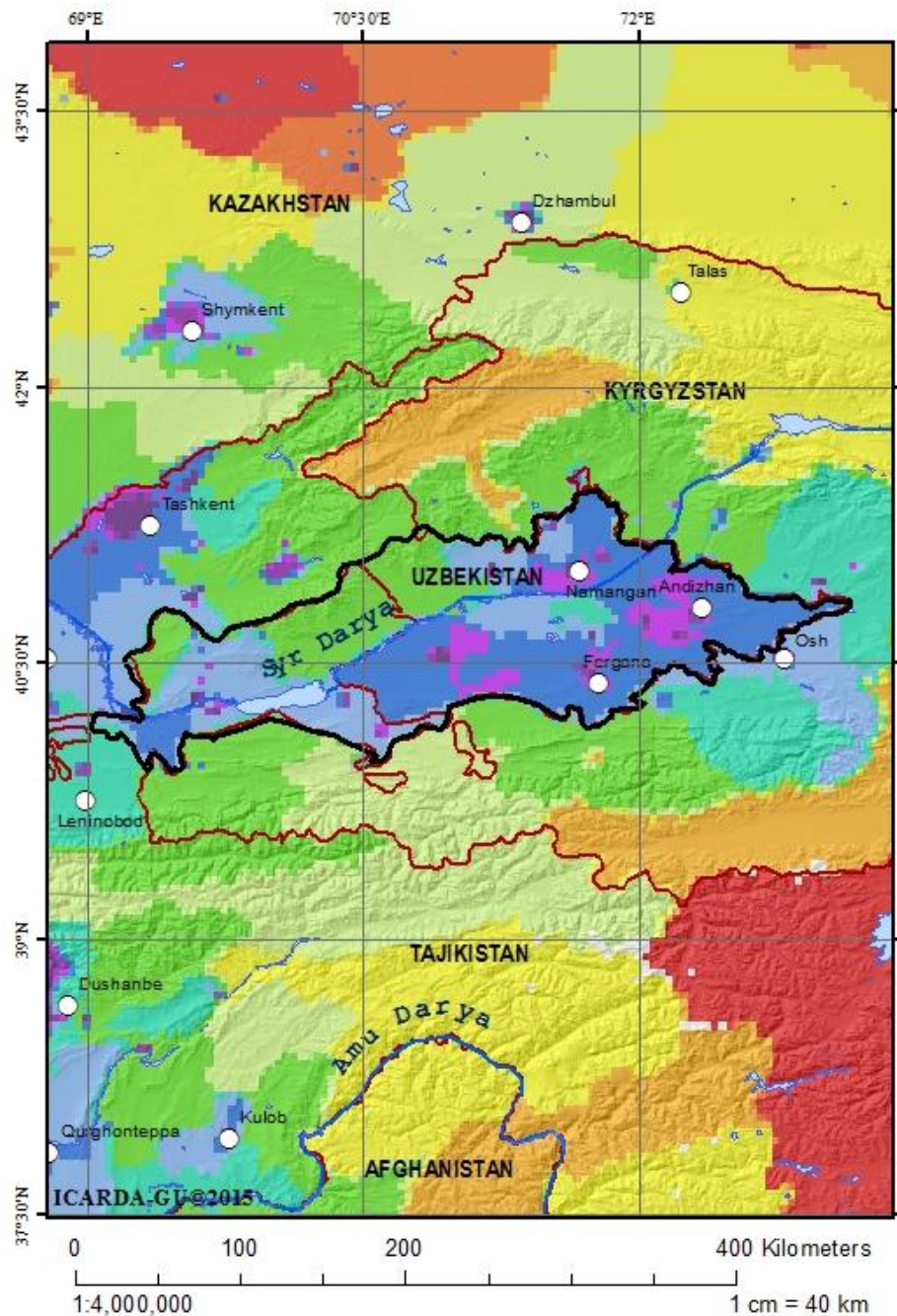
< 2 hours

Action Sites

**Description:**

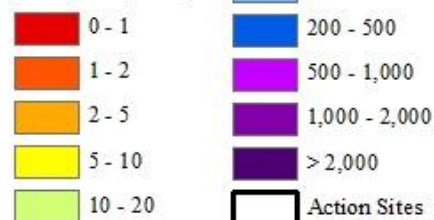
This map shows travel time to cities with at least 50,000 inhabitants as an indicator of accessibility to markets.





**Population density**

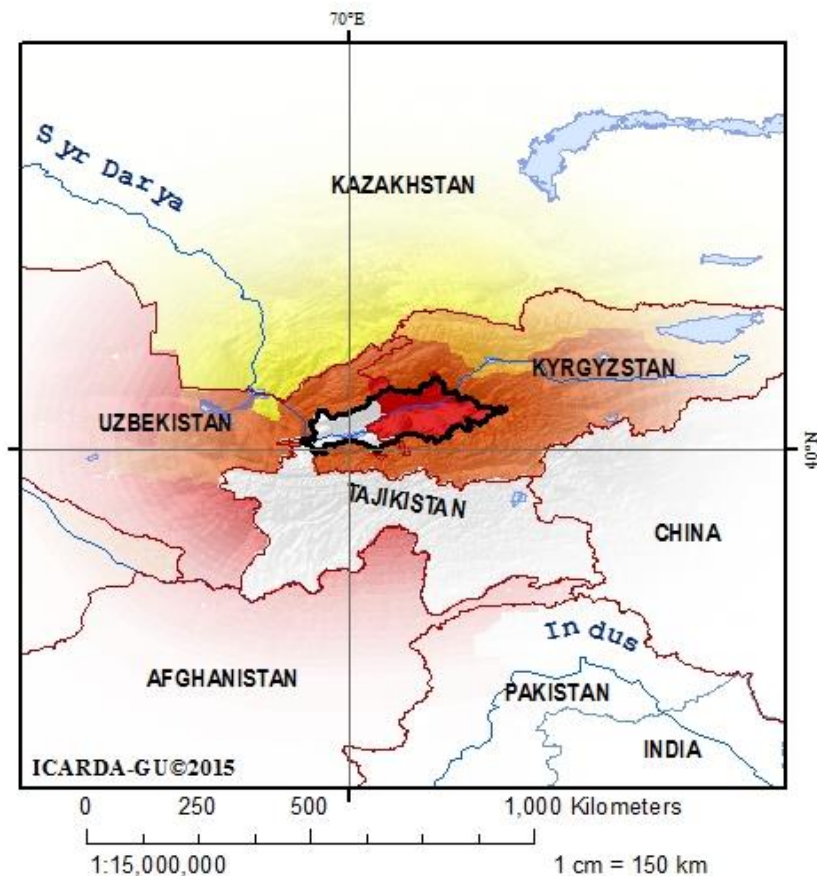
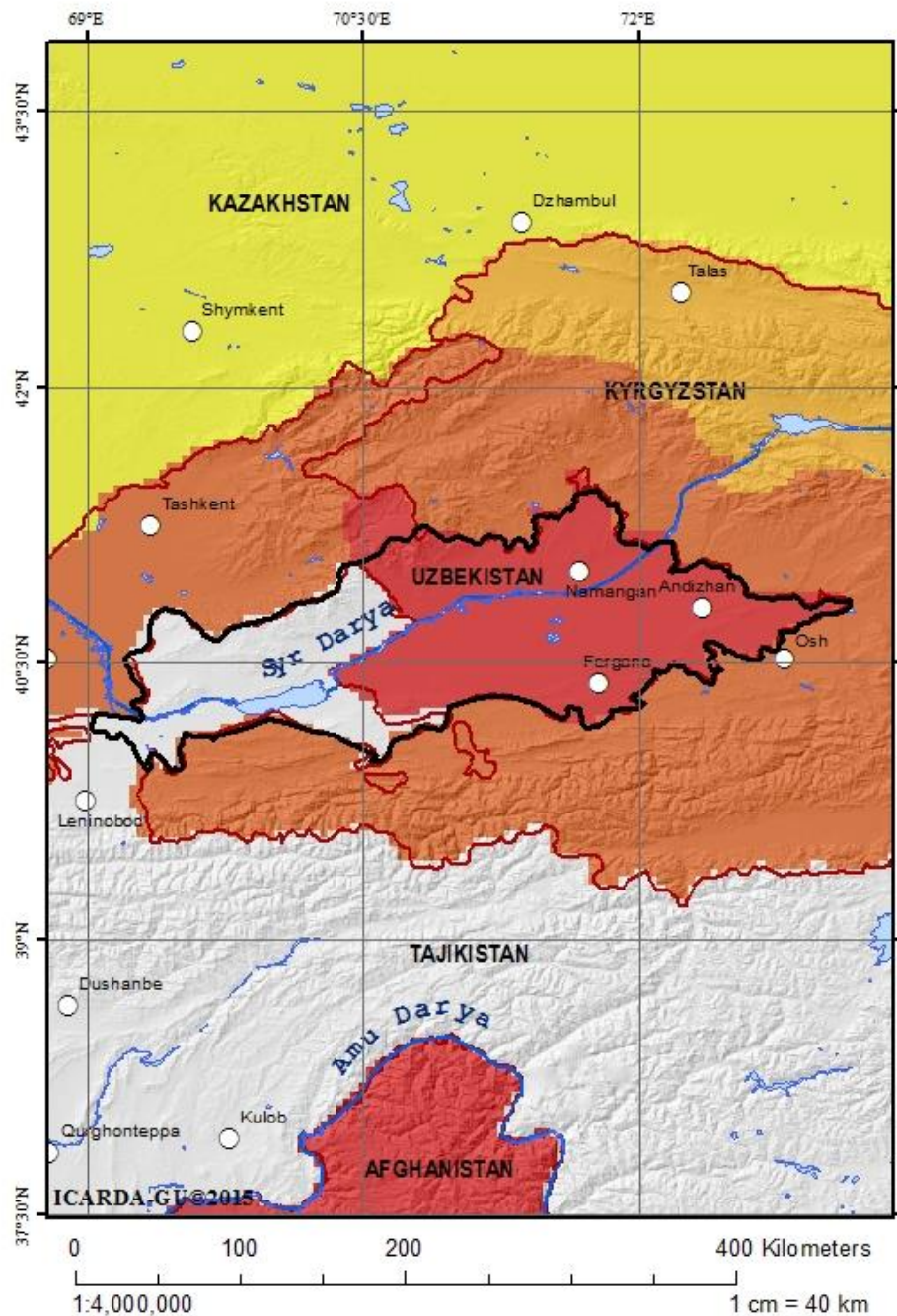
(People/sq.km)



**Description:**

This map shows population density as persons per square kilometer. The uneven pattern of large and small polygons is more a reflection of the size of the statistical units available in different countries than of the actual distribution of people.

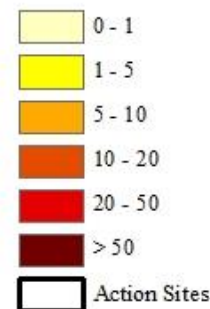




**Proportion of underweight children**

(%)

□ No Data



**Description:**

This map shows the percentage of underweight children. As with the map of population density, the uneven pattern of large and small polygons is an artifact due to differences in the size of the statistical units available in different countries.