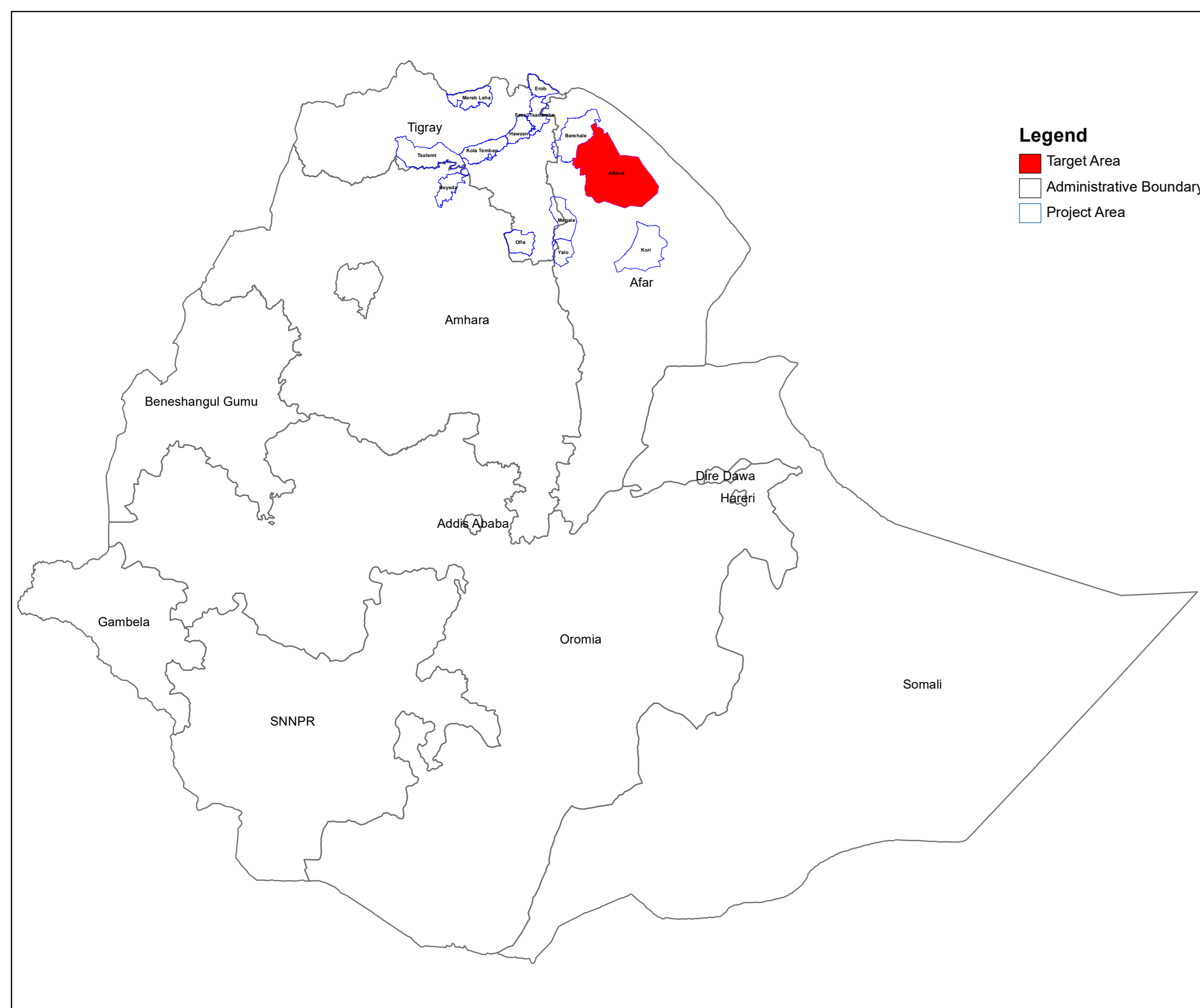


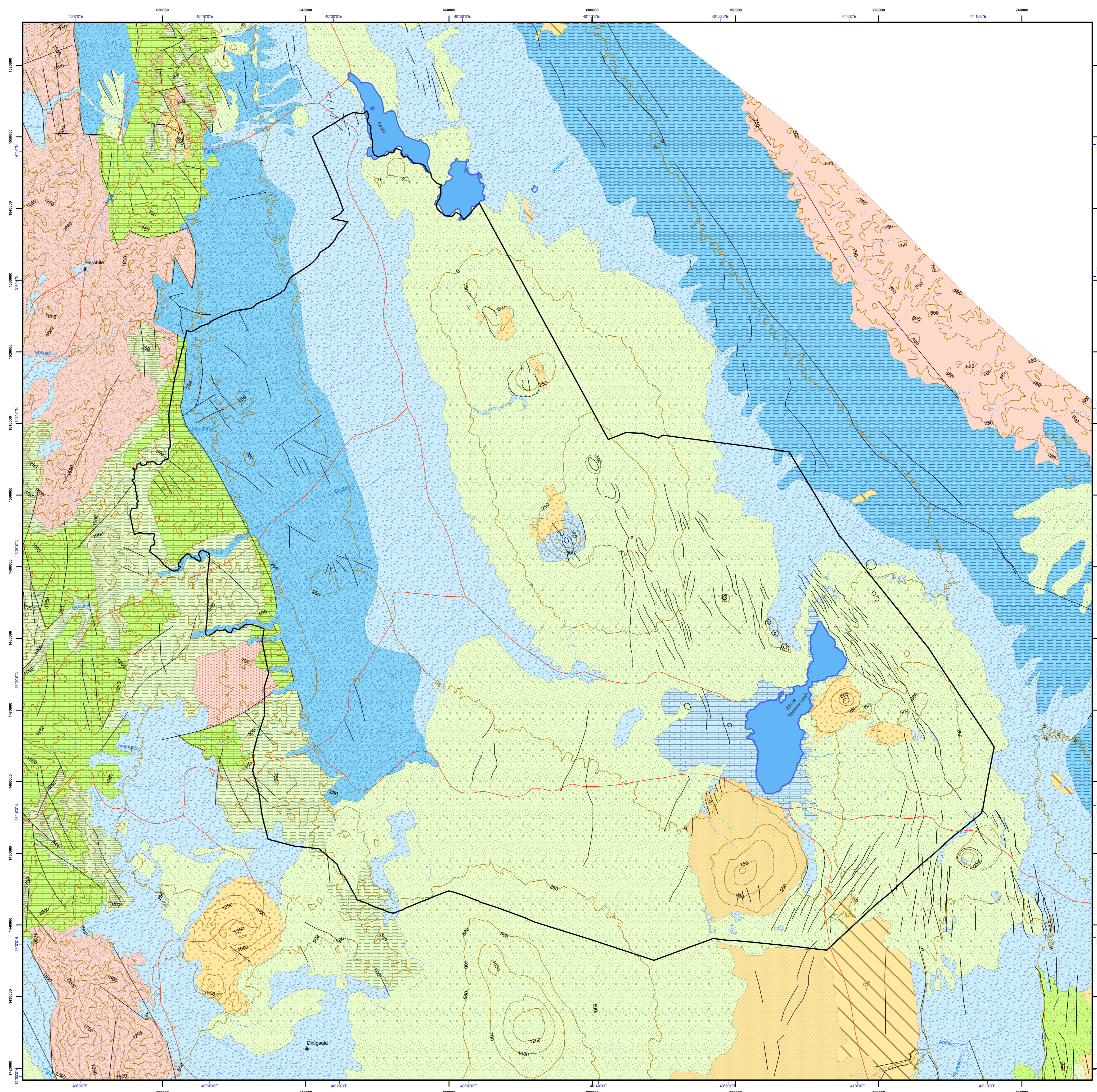
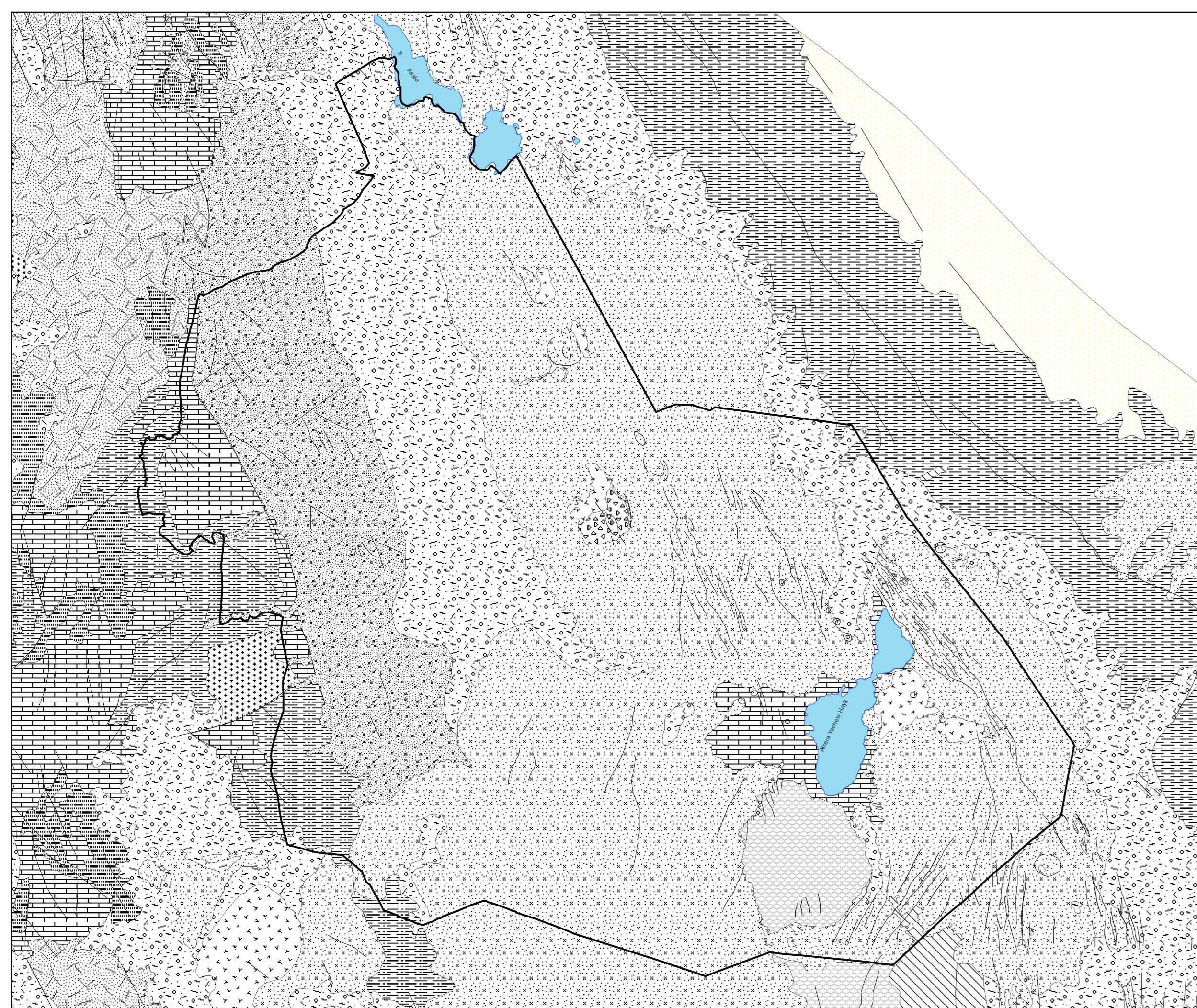
HYDROGEOLOGICAL MAP OF AFDERA

PROJECT AREA



Legend
■ Target Area
 Administrative Boundary
 Project Area

GEOLOGICAL MAP OF AFDERA



LEGEND

Aquifer Classification

- Highly productive porous aquifers ($T = 10 - 100 \text{ m}^2/\text{d}$, $q = 1 - 10 \text{ l/s.m}$, $Q = 5 - 25 \text{ l/s}$ for wells and/or springs) or locally extremely productive aquifers
- Moderately productive porous aquifers ($T = 1 - 10 \text{ m}^2/\text{d}$, $q = 0.01 - 1 \text{ l/s.m}$, $Q = 0.5 - 5 \text{ l/s}$ for wells and/or springs) or local or discontinuous but highly productive aquifers
- Highly productive fissured / karst aquifers ($T = 10 - 100 \text{ m}^2/\text{d}$, $q = 1 - 10 \text{ l/s.m}$, $Q = 5 - 25 \text{ l/s}$ for wells and/or springs) or locally extremely productive aquifers consisting of sedimentary and volcanic rocks
- Moderately productive fissured aquifers ($T = 1 - 10 \text{ m}^2/\text{d}$, $q = 0.01 - 1 \text{ l/s.m}$, $Q = 0.5 - 5 \text{ l/s}$ for wells and/or springs) or local or discontinuous but highly productive aquifers consisting of sedimentary and volcanic rocks
- Low productive fissured aquifers ($T = 0.1 - 1 \text{ m}^2/\text{d}$, $q = 0.001 - 0.01 \text{ l/s.m}$, $Q = 0.05 - 0.5 \text{ l/s}$ for wells and/or springs) in which flow is mainly developed in irregular system of fissures & weathered mantle of a crystalline rock
- Aquifers minor aquifers with local & limited groundwater resources consisting of sedimentary and volcanic rocks

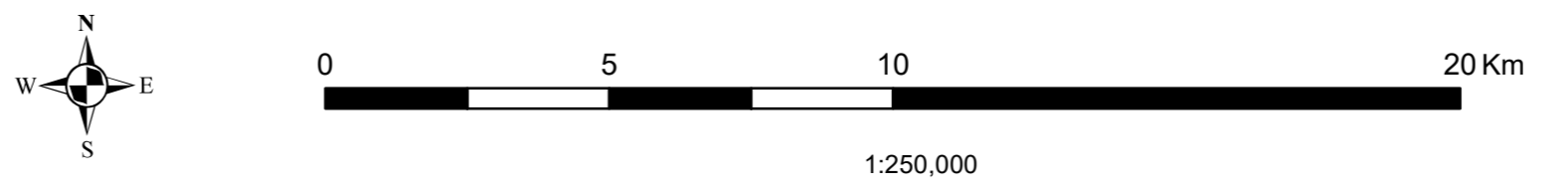
- Perennial river
- Intermittent river
- lake
- Contour
- Fault
- Town
- Road
- Woreda Boundary

Lithology

- Alluvial and lacustrine sediments – clay and sand with gravel, dunes and other aeolian deposits (in Afar)
- Basic pyroclastic of sub aerial origin
- Basalt with minor trachyte and upper pyroclastic
- Trachyte and phonolite - Adera Flugs
- Intermediate and silicic lavas of Adera volcano
- Gabbroic intrusive, metagabbro and metapyroxinite
- Limestone, undifferentiated slates, calcareous sediments, marble and fossiliferous and sand limestone

**Hydrogeological Mapping for
Climate Resilient Wash in Ethiopia - Lot 1**

Disclaimer:
 This document was produced with the financial assistance of the Department for International Development, UK. The boundaries in this map are not authoritative or political. Geology compiled by Geological Survey of Ethiopia from 1971 to 2015. Hydrogeology compiled by: Jiri Sima, 2021. Digital Cartography: Shiferaw Ayele Mamo, 2021.



Horizontal Datum: WGS 1984
 Vertical Datum: Mean sea level
 Projection: Universal Transverse Mercator, Zone 37N