This map shows the soils of eastern Morocco, northern Algeria, Tunisia and western Libya. The major landscape features in this region are the Atlas Mountain range and the hot and arid Sahara Desert. The mountains manifest themselves as a band of stony Leptosols running NE-SW across the map, decreasing in elevation towards the east. Along the coast, a Mediterranean climate, with mild wet winters and hot dry summers, prevails. However, precipitation decreases away from the coast. In the west, the southern edge of the Atlas denotes the beginning of the Sahara Desert where semi-arid conditions quickly grade into desert (daily temperatures can rise above 40°C, rainfall is irregular). To the east, the lack of elevation makes conditions hotter and drier. In more humid mountainous areas, extensive oak and conifer forests occur. At lower elevations, intensive clearance and grazing have produced a distinctive scrubby landscape known as macquis. Olive trees are common in the coastal plains. In the arid desert areas, there is little natural vegetation although the date palm is extensively cultivated in oases.

To the north of the Atlas mountains, soils with high levels of calcium carbonate (Calcisols) dominate the landscape, especially in drier conditions. While many of these soils are suitable for agriculture, water availability is a key constraint. More humid conditions along the Mediterranean give rise to more vegetation and more developed, clay-rich soils such Luvisols, Kastanozems and Cambisols. Vertisols are quite pronounced along the north-eastern Algerian coast and into Tunisia. These soils support extensive cereal cultivation in the winter and grazing in the summer.

To the south of the Atlas Mountains, conditions are much more arid and daytime temperatures are significantly higher. Soils are characterised by minimal development and low or negligible organic matter content. Regosols, stony Leptosols and soils with accumulations of gypsum (Gypsisols) dominate – especially in south-central Tunisia. Arenosols denote the locations of large sand seas and dunes.

Saline soils occur in depressions across the region. The chotts of Algeria and Tunisia are closed flat-bottomed basins of salt and clay accumulation that are periodically covered by water which either slowly infiltrates into the groundwater system or evaporates into the atmosphere, causing the deposition of salt. In basins dominated by groundwater inputs, sediment influxes are low and saline crusts dominate. Highly soluble sodium chloride tends to be found in the centre of the chotts with less-soluble sulphates and carbonates at the outer margin.

The blue linear features are Fluvisols, demarcating river systems in the region. Many are ephemeral in nature (i.e. dry for much of the year). In northern regions, many are intensively cultivated.

Where the soils have a well developed structure, and moderate levels of organic matter, clay and water are available, many Mediterranean soils are quite productive. However, excessive lime and the presence of salts can be problematic. Away from the coast, the increasing semi-arid conditions generally lead to poorly developed soils that are vulnerable to degradation by human activities such as overgrazing which can lead to erosion, especially by flash flooding after intense rainfall. Soil organic carbon levels are generally low or very low and droughts are common. Desertification is key concern throughout the region.

SCALE 1:3 000 000

1 CENTIMETRE = 30 KILOMETRES; 1 INCH = 47.3 MILES

0 100 200 km

0 50 100 miles

PROJECTION: Lambert Azimuthal