

## Soil Conditioners, Minerals/Rocks Resources of Ethiopia

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Agriculture has been the dominant sector of the country's economy, representing nearly 42% of GDP, 77% of employment, and 84% of exports. In addition, the majority of the agriculture sector consists of smallholder farmers who make their living from less than two hectares of land. Despite significant increases in overall agricultural outputs in the recent past, the sector is still dominated by subsistence modes of production (Ethiopian ATA).

In Ethiopia, huge surface areas of highlands located at almost all regional states of the country are affected by soil acidity. According to Schlede (1989), about 40.9 % of the Ethiopian total land is affected by soil acidity. About 27.7 % of these soils are dominated by moderate to weak acid soils (pH in KCl) 4.5 - 5.5, and around 13.2 % by strong acid soils (pH in KCl) <4.5). The main soil forming factors giving rise to increase soil acidity in Ethiopia involve climatic factors such as rainfall, temperature, topographic factors, morphological factors and severe soil erosion.

Some of the well-known areas severely affected by soil acidity in Ethiopia are Ghimbi, Nedjo, Hossana, Sodo, Chench, Hagere-Mariam and Awi Zone of the Amhara regional state. Despite this, no well-recorded documents are available describing the magnitude and extent of soil acidity in the country.

Soil acidity is an impediment to agricultural production in areas where heavy rainfall is causing nutrient loss by way of leaching and soil erosion. It is a complex process resulting in the formation of an acid soil due to excessive concentration of non-soluble and toxic ions in the soil solution.

Salt affected soils in Ethiopia cover a total land area of 11,033,000 ha (Szabolcs, 1979, 1989; FAO, 1988). This land area coverage of salt affected soils makes Ethiopia to stand first in Africa followed by Chad (8,267,000 ha) and Egypt (7,360,000 ha).

Most of salt affected areas are concentrated in the Rift Valley, Wabi Shebelle River Basin, especially the Lower Wabi Shebelle River Basin), the Danakil Plains and various other lowlands and valley bottoms throughout the country. Generally, the problem occurs in almost all National Regional States of the country.

Currently, the farmers use excessive amount of irrigation water; higher than the required increase due to the proposed climate change effect. The impact of salinity increase on the irrigation requirements is much higher than the impact of climate change.

Therefore, application of locally available geological raw materials (Limestone, Marble and Gypsum) is one way to achieve soil productivity & benefits the country to reduce dependency on imported fertilizer by foreign currency.

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