

STATUS AND PRIORITIES FOR SUSTAINABLE SOIL MANAGEMENT IN LIBERIA

BY

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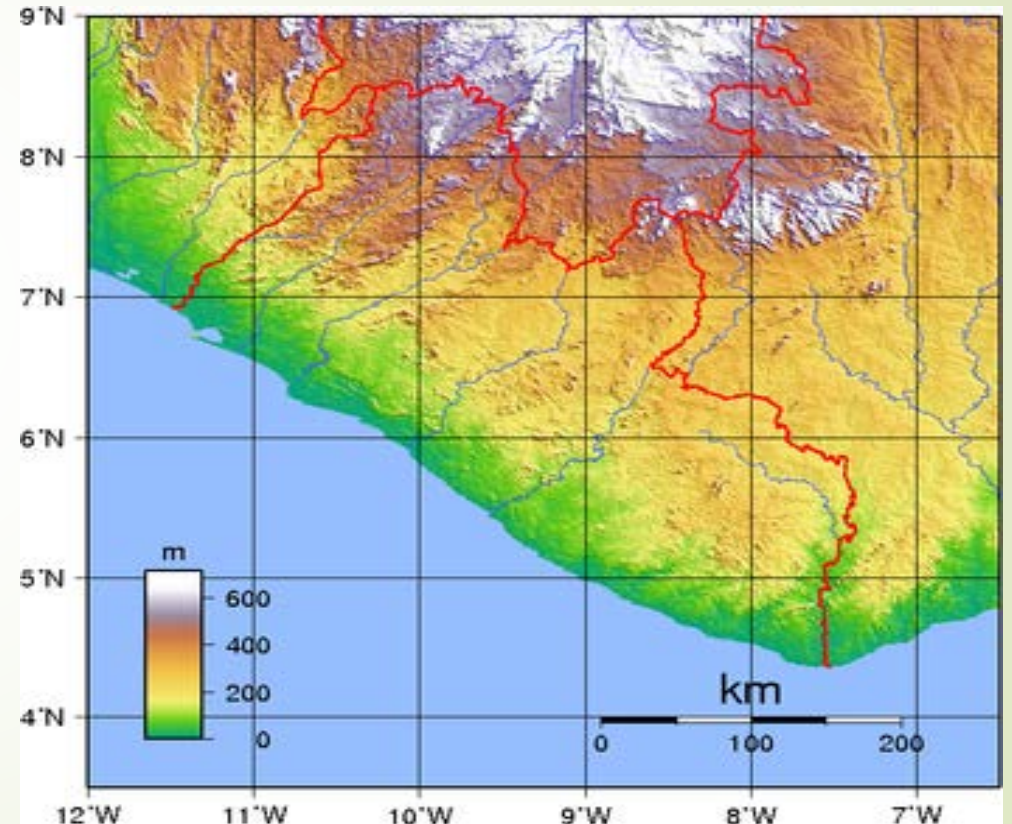
GEOGRAPHY OF LIBERIA

- ▶ **Liberia** is a large Sub-Saharan nation in West Africa located at 6 °N, 9 °W.
- ▶ The total length of Liberia's land borders is 1,587 kilometers (986 mi): 310 kilometers (190 mi) It borders Atlantic Ocean to the southwest (580 kilometers (360 mi) of coastline)
- ▶ with Sierra Leone on the northwest, 560 kilometers (350 mi) with Guinea to the north, and 716 kilometers (445 mi) with Côte d'Ivoire. Liberia currently claims a territorial sea of 200 nmi (370 km; 230 mi).



Terrain

- ▶ Liberia has a mostly hilly terrain, from rolling plains along the coast to a rolling plateau and low mountains in the northeast



Land use and agriculture

Land use in Liberia		
Land type	Area (million ha)	Percent of total land
Forest	4.9	50
Arable (upland and lowland)	4.6	47
Uplands	4.0	41
Lowlands	0.6	6
Others	0.3	3
Total Area	9.8	100

Source: CAAS-Lib, 2007.





A Liberian tropical forest



Crop Production

Crop production in Liberia is mostly rain fed on the uplands while the lowland support short duration crops during the dry season.

- ▶ Rice
 - ▶ Cassava
 - ▶ Potatoes
 - ▶ Maize
 - ▶ Okra
 - ▶ Pepper
 - ▶ Coffee
 - ▶ Cocoa
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- ▶ Liberia is the only country in the Northern Guinea Forest the is 100% Tropical rain-forest bound.
 - ▶ Liberia has more than one type of vegetation:-
 - ▶ Tropical rain-forest
 - ▶ Sudan Sahel
 - ▶ Savannah
 - ▶ Transition region

Soil types in Liberia

Soil type	Liberian classification	Area (%)	Area (ha)	Properties
Lateritic soils or latosols	Kakata, Suakoko and Voinjama Series	75%	8,352,750	Reddish brown, well-drained, deep profile, good structure, leached 10 cm top soil, low cation exchange capacity, calcium deficiency, 4-6% organic matter, acidic, aluminum toxicity, productive agricultural soils, occur in rolling hill country, used for tree crops production.
Lithosols	No information	17%	1,893,290	High gravel content, low moisture retention, shallow, low humus and mineral content, and occur in hilly and rugged terrain, medium agricultural potential.
Regosols or coastal sandy soils	Claratown, Sinkor and Freeport Series	5%	2,227,400	Well-drained, 60% coarse sand, very low water-holding capacity, low humus and few mineral nutrients, found in the coastal plains, low agricultural potential
Alluvial soils or swamp soils	Gbelle, Ballam, Grayzohn and Cuttington Series	3%	22,740	Waterlogged, gray hydromorphic soils, poor drainage, thick dark layer of loamy-peaty organic material with relatively high humus and mineral contents

Source: EPA, 2007; CAAS-Lib, 2007

Status of soils in Liberia



Presence of iron in inland valley



Lateritic soil in uplands in Liberia



Status of soils in Liberia

- Most of the soils in Liberia are Oxisols and Ultisols which contain oxides of aluminum and iron and are very acidic. (pH 3-5)
- The most alarming crop production problem on these soils is that, available plant nutrient is deficient thus leading to inherent low soil fertility
- Presently deforestation is on the increase in Liberia thus resulting to soil erosion, poor soil management and decline in productivity
- Mining is another problem to the agricultural sector of Liberia. Mining of iron ore, diamond and gold remove vegetation cover and expose the soil to erosion
- Slash and burn is widely practiced by majority of the farming population that depends on subsistence agriculture for livelihood in the country.

Hindrances to sustainable soil management

- Lack of knowledge on management of soils by farmers
- Lack of legal and economic instrument for the promotion of sustainable soil management
- Limited use of research technology for farming population



Priorities for sustainable soil management

- Provision of more assistance to the overall budgetary support to the agricultural sector;
- Promotion of soil management practices;
- Afforestation of deforested land to reduce desertification and excessive erosion;
- Conduct of a detailed soil survey of Liberia. (This will guide land usage and related practices;
- Legislation of policy on sustainable soil management
- Capacity building for CARI and other stakeholders in Agriculture production and land use activities;
- Promote lowland development and integrated farming thus reducing upland shifting cultivation, increasing sedentary farming and increasing food production and crop diversification.

Conclusion

- Elimination of hindrances to sustainable soil management
- Legislation of land use policy
- Provision of support to relevant stakeholders;
- Provision of soil map to farmers;
- Regional initiatives thru AfricaRice, IITA, ASRP, WAAPP and GOL efforts;