

LAND DEGRADATION IN THE UPPER EAST REGION OF GHANA, WEST AFRICA

RICHARD ASHALEY

EXECUTIVE DIRECTOR/SENIOR RESEARCH FELLOW

CENTER FOR POLICY INTEGRATION AND RESOURCES MANAGEMENT (CPIRM)

RURAL URBAN PARTNERSHIP FOR AFRICA (RUPFA)

The Upper East region is the smallest and yet, one of the poorest in the country. It is located in the north-eastern corner of the country (Ghana) between longitude 00 and 10 West and latitudes 10 30 N and 11 0 N. It is bordered to the north by Burkina Faso, the east by the Republic of Togo, the west by the Sissala District (Tumu) in Upper West and the south by the West Mamprusi District (Walewale) in Northern Region. It has the highest population density (number of people per unit land area) in the country. The region has 9 administrative Districts/Municipalities namely; Builsa, Kassena-Nankana East, Kassena-Nankana West, Bongo, Bolgatanga, Bawku West, Bawku East, Talensi - Nabdam and Garu Tempane. The land is relatively flat with a few hills to the East (Sapeliga

areas) and southeast (Tongo areas). The total land area of the region is about 8,842 sq km, which translates into 2.7 per cent of the



total land area of the country.

The region falls within the Guinea Savannah zone. However, the Bawku area located in the eastern corner of the region is characteristically a Sudan savanna. These two ecological zones are characterized by savannah woodland and consist mostly of deciduous, widely spaced fire and drought resistant, trees of varying sizes and density with dispersed perennial grasses and associated herbs. These trees satisfy domestic requirements for fuel wood and timber for local housing construction, cattle kraals, vegetable garden fences and materials for handicraft. Among the commonest economic tree species are: *Parkia clapatoniana* (*dawadawa*), *Buttyrospermun parkii* (shea butter), *Adansonia digitata* (*baobab*) etc. The climate is characterized by one rainy season from May/June to September/October. The mean annual rainfall during this period is between 800 mm and 1100 mm. The rainfall is erratic and spatial in duration. There is a long spell of dry season from November to mid April, characterized by cold, dry and dusty

harmattan winds from November to February. Temperatures during this period can be as low as 14 degrees centigrade at night, but can go to more than 35 degrees centigrade during the daytime.

In a region where inhabitants depend upon natural resources for their livelihoods, degradation of such resources is a serious threat to the sustainability of a subsistence life style. This obviously leads to land degradation. Land degradation in simple terms means loss of the inherent natural ability of the land to produce to its virgin capability. Though land degradation is a matter of concern for Ghana in general, it is particularly serious in the Upper East region. This write – up, looks at the forms, causes and solutions to the menace of land degradation in the region.

CAUSES OF LAND DEGRADATION IN THE UPPER EAST REGION

➤ Gold Mining

Gold mining is certainly one of the reasons for the enormous land degradation in the region. Gold was mined during the colonial administration and continued to be mined around Nangodi (Talensi – Nabdam District), about 24 kms from Bolgatanga on the Bolgatanga- Bawku road. Lately, small-scale gold mining, popularly known as “galamsey” (gather and sell) or “alakpiri” has become rampant in the area of Tongo, Sheaga, Duusi, Pelengu and other small villages. In the Builsa District, communities such as Kadema, Chansa and Bachonsa experienced “Galamsey” activities but were stopped by the police for its possible catastrophic effect on the environment. The effect of this being that, trees on lands with gold deposits are being fell , huge trenches and dug – outs that renders

the land uncultivable etc. It is intriguing to note that Nangodi being the worse hit by mining activities ironically is stony thus compelling inhabitants to pick up and gather these stones just to create space for planting.



➤ **Trees Felling for Charcoal Production**

Fuel wood cutting is probably the most obvious activity that leads to land degradation. Cutting trees used to be limited to dry branches and fast growing shrubs, but rising urban demands has included green trees and, hitherto, unwanted species. The shortage of dry trees and the distance involved in travelling to where these are found make people resort to cutting branches of green trees. Though firewood and millet stalks are predominantly used in the rural parts of the region as fuel wood, charcoal is the common source of energy for domestic and commercial purposes in the urban and peri – urban parts of the Upper East region. As a result, large numbers of tree species are fell annually for charcoal production. Most unfortunately, the most economic tree such as *Buttyrospermun*

parkii (shea butter) is noted for its good quality charcoal. This dicey situation leaves locals in a dilemma as to whether to preserve the shea tree for its fruits or to fell them for charcoal production. This problem is probably worsened by the high cost of Liquefied Petroleum Gas that is currently selling at GhC 15.75 per 15kg cylinder.

➤ **Soil erosion**

Soil erosion, the most visible and most widespread form of soil degradation, could have a serious negative effect on economic development in Ghana as the economy of this country depends heavily on land, forests, and water bodies for its agricultural growth and rural development.



➤ **Bushfires**

The Region is also notorious for its recurrent bush fires in the dry season. The few forest reserves in Tilli (Bawku West), Bopong, Sissili Central, Pogi, Kandembeli, Wiaga and Gia (Builsa) Siriku (Bolga), etc experience annual bush burning between November and April during the long spells of drought. These fires are set by locals in their quest for Game (bush meat), under the pretext of driving wild animals that advance towards the communities, as means of land preparation etc. They could also result from the use of fire for honey hunting. The effect of this is that the fire rips the land of its vegetative cover by burning trees and grasses thus pastures for livestock are largely destroyed. The soil is then exposed to erosion as it lies bare for most of the season between November and April. Many economic trees such as *Buttyrospermun parkii* (shea butter) experience heat shock resulting in reduced flowering and fruiting.



EFFECTS OF LAND DEGRADATION IN THE UPPER EAST REGION

Many factors are driving long-term soil and vegetation degradation in Ghana, including naturally occurring processes such as drought, floods, population pressure, increased urbanization, and climatic changes. Droughts are a recurrent feature of the area with devastating impacts on vegetation, soil and animal husbandry. Bush fires that destroy the land during droughts are incomparable to any human land-use type. Floods have turned the surface of the landscape into an architectural drawing of gullies and channels that are hardly used as water channels. Vegetation and the rich top soil are carried away during floods, thereby, causing land degradation.

These long term driving factors are reflected in agricultural, mining and other production practices that have led to soil erosion, soil nutrient depletion, overgrazing, pollution, river and groundwater depletion, and desertification arising from deforestation. In the short-term, the causes of land degradation are mainly natural factors and human activities. Natural factors include the physical and other characteristics of the soil, which affect the erodibility of the soil and its capacity to retain and drain water and to hold nutrients; topography; and climatic conditions. The human-associated factors driving long-term soil and vegetation degradation in the Upper East Region of Ghana are reflected in unsustainable farming practices, removal of vegetation cover (including deforestation and overgrazing), mining activities, and urbanization and industrial activities caused by increased population growth pressures.

Conclusion

The Upper East Region of Ghana is the worst degraded region. Then human activities responsible for the fast degradation of the land are shifting cultivation, intensive farming on one piece of land, indiscriminate felling of trees for fuel wood and charcoal production, bush burning, over grazing and small scale mining. The main cause for these harsh human activities towards the environment is poverty, which makes them carry out the activities just to earn income for a livelihood.

REFERENCES

Alo, C. A., and Pontius Jr, R. G., 2008. Identifying systematic land-cover transitions using remote sensing and GIS: the fate of forests inside and outside protected areas of Southwestern Ghana. *Environment and Planning B: Planning and Design 2008*, Vol. 35, pp.280-295.

Archibald, S., Scholes, R. J., Roy, D. P., Roberts, S., and Boschetti, L., 2010. Southern African fire regimes as revealed by remote sensing. *International Journal of Wild land Fire*, 19, pp.861-878.

Diaz-Delgado, R., Lloret, F., and Pons, X., 2010. Influence of Fire Severity on Plant Regeneration by Means of Remote Sensing Imagery. *International Journal Of Remote Sensing*, Vol.24, No.8, pp. 1751-1763.

Dickson, K.B., and Benneh, G., 1995. *A New Geography of Ghana*. Longman, London, pp.21-33.

International Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences, Volume XXXIX-B8, 2012
XXII ISPRS Congress, 25 August – 01 September 2012, Melbourne, Australia