**TITLE: FLOOD EFFECTS DUE TO SOIL**

**Introduction**

Flooding, a sudden arising natural disaster and the most common life taking aspect. Along with destruction of livelihood floods also makes a great negative impact on soil, by affecting the soil condition. It leads to a massive effect in plants and micro-organisms. It greatly affects soil aggregation and the chemistry of soil-water system.

**Problem Statement**

The study is carried out to observe and detect the effects of flood due to soil.

**Objectives**

* To reduce negative effects on soil
* Analyse and estimate the process to detection of sudden arising floods.
* Focus on the positive impacts leading to more productiveness.

**Literature Review**

During floods, soil nutrients dissolve in floodwaters and are transported from seasonal floodplain surfaces into adjacent rivers, and soil nutrients may also be transported from the river into seasonal floodplains through lateral flows.

Flooding can lead to both increases and decreases in soil nutrient content.

Specially in the coastal regions, floods of high magnitude have resulted in serious consequences caused by heavy rainstorms and water flow to towns and locality.

Flooding results in shortage of food crops due to loss of entire harvest and the destruction of soil quality.

When a soil is flooded (anaerobic conditions), microorganisms use the available soil O2 to survive. Free O2in the soil is usually depleted within a couple of days after flooding. The longer the soil is flooded, the lower the soil O2 levels become more reduced.

Despite the significant consequences of flooding on the environment, flood plays an important role in maintaining key eco-system function and biodiversity in many natural systems. Flood deposits organic materials, minerals, and essential nutrients from rivers and oceans into land which makes the soil richer, fertile and

Increasing demand for land as a result of population increase and food scarcity has made farmers to farm in marginal lands such as lands susceptible to erosion and flooding.

Flood contributes positively to soil properties through the provision of nutrients that maybe lacking in the soil14,15

Wetting of the floodplains and meadows by floods releases immediate nutrients that were left over from the last flood and those that result from the rapid decomposition of organic matter that has accumulated during the flood.

Moisture content, pH, and organic carbon are higher in a soil after flooding than before flooding.. Therefore, this study focuses on the **evaluation of the effect of flooding on soil.**

**Research Methodology**

The effects of flood on soil can be characterised by various methods such as:

Sampling

Soil samples were representatively collected with a soil auger at surface and subsurface depth.

Laboratory Analysis

Statistical Analysis

They include the collection of soil in laboratory and calculating the percentage of nutrients present in the soil. Depending on sand, soil, clay, organic matter, water content and other small organisms.

Particle size distribution

Other physical characteristics include bulk density, moisture content, Gravimetic moisture content and Porosity.

Exchangeable Acidity

Cation Exchange Capacity

Percentage base saturation

On collection of these data, we may get to know the quality of soil and analyse the method for the reduction of soil destruction and flood effects due to soil.

**Conclusion:** The results obtained from the study showed that most of the available nutrients added to the soil during the flooding are washed down slope to the lower course of the river.

Instance, flooding increases the availability of phosphorus to soils,

Environmental Effects: Since floodwater that flows downslope is from urban environment that composed of sewage will pollute rivers and land when it drains back into the river. Similarly, the river that floods onto farmland composed of pesticides and other chemicals sprayed onto the farmland that, when drained back into the river, can pollute it and kill off aquatic organisms such as fishes that inhabits the river.