

## **BUILDING WITH NATURE – THE CONCEPT OF GREEN INFRASTRUCTURES**

Green infrastructure is the process of recreating a system by building with nature to solve urban challenges and climatic problems such as flooding and pollution. Green infrastructure forms an interconnected network of green spaces that conserves ecosystem values and functions and provides associated benefits to human populations. Such includes urban parks, green permeable pavements, flower gardens, roof top gardens, green walls like climbers in houses, potted plants, reforestation zones, high value farm lands, good sewage and drainage systems, rain gardens and rain water harvesting structures. These structures help to mitigate impacts of climate change like flooding; it also helps in provision of cleaner air and water.

Meru town is proud to have Nteere Park which was opened end of last year but in most counties urban expansion has emerged as a major threat to conservation of green zones. The urge to develop our towns and cities has increased as our country struggles to become industrialized. It's true that town parks are the few remaining public green spaces to preserve native forest as well as cater for the leisure needs of human population. According to the new Kenya Constitution which was promulgated in August 2010, Chapter 69 (1) (b) states that the Kenyan state shall work to achieve and maintain a tree cover of at least ten percent of the land area in Kenya. Conserving urban parks means maintenance of the indigenous flora and fauna found within these parks hence partially fulfilling this constitutional requirement

We all need to have an environment conscious mind when developing any form of structure, in order to avoid putting up grey infrastructures (those which do not conserves ecosystem values and functions). This is why every developer needs to have an Environmental Impact Assessment (EIA) license given by National Environmental Management Authority (NEMA) before putting up any kind of infrastructure from parks, roads, bridges, residential flats, hospitals, churches, schools, hotels, commercial buildings to factories. The EIA will advise any developer of the environmental benefits and harmful effects the structures may bring and advise on the mitigation measures. However if the structures were developed without carrying out an EIA then an Environmental Audit (EA) is supposed to be carried out by NEMA which will still advise the client on the effects and how to mitigate any negative impacts the projects has caused to the human population and the environment.

Most towns lack green infrastructures hence rainwater cannot be absorbed into the ground in the urban areas because of the amount of buildings and streets on top of the soil. What happens instead is it carries trash, bacteria, heavy metals and other pollutants from urban places to nearby bodies of water and contaminates them. In underdeveloped urban areas that do not have effective sewage or drainage systems, increased rainwater can also cause erosion and flooding as well as overflow of sewage. This is a situation experienced in most towns where some parts of the town become impassable due to flooding.

On a city level green infrastructure provides flood protection, cleaner air and cleaner water. For the town dwellers lets engage in greening our towns by having rain water harvesting mechanisms, potted plants, roof top gardens, good sewerage & drainage systems, permeable pavements and wall climbers. On a rural, neighborhood or site scale green infrastructure can be rain-water management that mimics natural water catchments by soaking up and storing rainwater either by using storage tanks and water pans, this water can then be used for later use. Rural set ups also may allow for establishment of high value farmlands, flower gardens, agro-forestry and ensuring that 10% of their farms contains trees as required by Kenya Forest Service (KFS)

In maintaining green spaces we increase the number of carbon sinks, climate regulation, and storage banks for indigenous and exotic tree & plant species, aesthetic value, high tourist and historical attraction. Let's build with nature and sustainably manage our natural resources (land, water, forests, fisheries) even as we embrace devolution in our country Kenya.

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