

## Examining the Effect of Vegetation (Trees, Shrubs and Land Covers) in Landscape of Our Environment

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**Abstract:** Landscape design and planning is an environmental engineering act which is yet to be appreciated in developing nations. On a first visit to America, Europe and other developed nations one enjoys an amazing vista created by landscape. The lack of appreciation and integration of landscape principles in our environment, in no small measure is responsible for some life treating natural disasters, which have become recurrent issues. Such environmental mishaps resulting from lack of landscape culture include erosions, deforestation, desertification, flooding and climate change. This paper examined the effects of vegetation (trees, shrubs and land cover) as elements and agents of beautification, preservation, purification and sustainability in the landscape of our environment. The paper advocates for compulsory tree planting as part of national development program in all developing nations and a certification of a landscape plan for all buildings as a condition for building plans approvals.

**Key words:** Architecture • Environment • Landscape • Vegetation

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### INTRODUCTION

An ideal environment is one where the landscape and the buildings are in harmony. An environment such as that described in Eden. A harmonious scenario that had no form of natural disaster, nor epidemics of disease. The place of landscaping in human environment therefore cannot be over emphasized. [1] described landscape as the organization of outdoor space, while [2] defined it as the planning, modifying and arranging of large piece of land with an eye to scenic beauty, especially with reference to the siting of roads and buildings.

Landscape is the art of supplementing the bare form of buildings with a more natural and visual pleasing environment [3]. Landscape may therefore be deduced, from the foretasted definitions, as an art which cuts across science to create harmony, order, aesthetics, balance as well as visual joy in our environment. This paper's express concern is to illuminate trees, shrubs and plant covers, which create beautiful and harmonious effects in our environment as elements of landscape in built environment.

**The Character of Landscape:** Landscape character is that for which the landscape is known and defined by [4]. The character of landscape deals with the natural

inclusion of the landscape attributes that exist over a geographical space, in other words landscape character is concerned with natural elements. These natural elements exhibit, rhythm and harmony and include plants, landforms and animals [5]. A landscape character may get as big as its elements get and may be defined, known and addressed as such e.g., the rolling hills in Okigwe, the desert land of the savannah, the wetland in Mexico, the erosion in Uturu. Other characters for which the landscape of an area may be described include, mountains, table-lands, Rivers, Streams, Swamps, Forest and Valleys. According to [6] these characters may further be split into more descriptive components, such as the forest, which may be split into the savannah and rain forest, or the mountain which may be rocky or table.

[7] observed, that landscapes may be developed or improved on, by removing or eliminating that which is unwanted or that poses a problem, (ii) by adding that, which is needed; good or desirable. And that, landscape elements may be hard or soft.

Hard landscapes are natural and may be very difficult and expensive to modify, they include, mountains, water bodies, desert lands, wetlands and swamps, while soft landscaping, involve minor elements which man may modify easily to suit his joy, they include, landforms, vegetation and water bodies, like artificial lakes, swimming

pools and water fountains [6, 7] further observed that the effects of these elements combine well in our design and construction to present, us with a pleasing, charming, protective and comforting environment and by so, nit up the built environment into a naturally closer and harmonized entity.

**Effects of Trees in the Landscape of our Environment:**

The dynamic nature of landscape could be expressly understood by examining the characteristic of vegetation (trees, shrubs and land cover), which are prone to seasonal changes [5, 4] observes that trees in our landscape environment, create the following aesthetic, architectural, engineering and the socio-economic effects. This paper examined these effects in the landscape of our built environment.

**Aesthetic Effect of Trees in our Environment:** [3] noted that the aesthetic effect of trees in landscaping is best appreciated through the use of trees in combination with landscaping elements such as sculptors, fountains, paved walkways and lightings, which create beauty in our immediate environment through attractive and colorful combination of its plant materials. Plant materials when altered into sensory attractions, provide an aesthetic experience of beauty and an appeal which appear as forms, texture and color that blend into pleasurable sights in our environment.

When trees move, swing or shake due to wind action, they generally improve daily living with its pleasing landscape changes, adorned by its colorful flowers and sweet smelling scents when in full blossom. This beautifies and brings harmony into our environment. An Ariel view of trees reveals an organic aesthetic experience of dense foliage which blends in our environment creating a commercial importance to photographing business [4].

**Architectural and Engineering Effects of Trees in our Environment:** According to [3], landscaping is used in articulating and stipulating spaces; by forming walls, canopies. Plants and other landscaping materials conceal, reveal, modulate, contain and completed space. In Architecture, trees form canopies that create shade; such as found under the base of many trees; which when designed in row, present chain shade and also create aesthetic effects, as cloud be observed in our educational and health environments. Trees such as Azadirachta (Dogwonyaro), Anacardium Occidentate (cashew) and pinups spp (whistling pine) could be used along our walkway to define spaces and functions, while adding

beauty and shade in an eye capturing manner. Other trees that cloud be of economic and aesthetic value in our environment incloues Elates genesis (Oil palm trees), cocus Nucifera (Coconut trees) to mention but a few. Trees have become so prominent that most have been christened, as influence in most tertiary environments [8, 9, 10].

Trees may be used to define major entrances while protecting the user from ultra violet rays and are also used in marking major axis in institutional and administrative buildings as well as residential home. Trees may also be used as reference points or landmarks. [4] noted that trees may be used effectively in screening off buildings, as found in military bases, or in creating buffer zones and sound barriers in areas where limited noise is needed, such as in libraries, [4] also remarked that trees enhances cross ventilation in our buildings. Trees according [7] may be used as engineering elements in our landscapes. Trees may be used in controlling soil erosion, in reduction of harsh and obnoxious sounds and in removing of pollutants from air as well as in the control of glare and reflection.

Trees slow down the effects of erosive winds and anchor their roots deep down the earth which help in checking erosion. The leaves from trees fall and cover the earth, this help in reducing infiltration rate while the leaves and branches slow down the velocity of rain drops, which could corrode the soil. Leaves from tress are source manure [11, 12].

**Desertification and Physiography:** The act of felling trees for domestic and construction needs may lead to loss of flora and fauna, it may also cause desert encroachment. The cutting down of vegetal cover which is the secondary forest of our environment, may bring about desertification with its consequent effects. The felling of trees especially those on the hill slopes influences the physiographic state of the site in terms of landscape and landform and aggravate soil erosion which may lead to alteration of the existing situations.

**Climatic Effects:** According to [1], the climatic effects of trees include the provision of shade, wind breakers and slowing down the velocity of rain droplets. Trees also act as snow fences and their foliage also catch dust and filter the air, thereby reducing air pollution which is dangerous to human health and comfort. Trees such as Azadrachta (Dogwonyaro), Anacardium occidental, oranges, pears etc grow with their leaves spreading wide and providing shade. Trees increase human comfort by shading the

sun's rays thus intercepting solar radiation and by transpiration releases water into the air, which reduces soil evaporation resulting in cooler humid and friendlier microclimatic environment [2]. Trees help in harnessing the prevailing wind that help in the quality and quantity of air flow in the indoors of our buildings and by so doing creates an improved indoor thermal comfort, especially in hot humid climates [1].

**Socio-Economic Effects:** Some tree species are of economic value in our environment. Such trees include cashew, mangoes, orange etc. Most trees are used as herbs and many bear fruits which are sold for money, this is in addition to its engineering values. Some trees are felled and used as fuel, for cooking. Some trunks are naturally felled to add drama to our arena where they are used as logs for seating, during cultural and clan meetings and for moonlight tales and dances. Tree trunks are used as for erecting homes and sometimes in checking minor soil erosion. Trees form habitats for some creatures, such as birds and reptiles [2, 3].

**The Effects of Shrubs and Ground Covers:** Shrubs are woody, perennial plants of low stature, characterized by heights persistent stems and branches springing from the base. There are deciduous plants, occurring in our environment whose heights are not more than three meters. Prominent amongst the shrubs is the Ixora which is used in creating boundaries and in edging between walkway and soft grasses [7].

[5] further noted that shrubs are effectively used in controlling traffic within the environment; flowers of these shrubs create beauty that attract man and insects alike as their nectar provide food for the insects especially bees and butterflies. Our environment may appear dull and drab and very uninteresting without them. Shrubs and ground covers (grasses of different species) on our sites check erosion. [6] opined that erosion can be a serious menace in our environment especially in areas of heavy precipitation and on soils of low capillarity and advocate for the use of shrubs and grasses as prominent controls to the effects of erosions, noting also that grasses minimizes leaching.

[4] noted that shrubs acts also as buffer and shading devices and also add to vistas. Shrubs enforce privacy in combination with the trees; and modify the micro-climate to bring soothing effects into the building interior and that the hazards of line squall or dust devils which erode the top soil are reduced by climbers and creepers which cover the earth's top soil and protecting it from being eroded.

The effects of shrubs and ground covers in combination with building designs make for good street façade. The foliage of shrubs and trees eliminate unsightly scenarios such as fearful erosion sites. Leaves from shrubs add nutrients to the soil when they decay and form manure, thereby creating bumper harvest, thus save farmers the cost of procuring chemical fertilizer, furthermore, these tree covers save cost since in design, most of them are incorporated or modified to suit our desires. Shrubs when used as hedges form habitats for reptiles such as lizards and snakes and this helps in preserving our ecosystem [5, 6].

## CONCLUSION AND RECOMMENDATIONS

The effect of trees and its consequences in our environment cannot be over looked rather must be emphasized. This must be if we desire better future, more aesthetic and healthy environment, especially with the hard realities of climate change today. Planting of trees must return as culture, trees must be planted for the beauty of planting them or for economic, aesthetic or engineering reasons.

The tree planting enlightenment campaigns of the 1980's and 1990's that encouraged felling a tree and planting one back, must be visited and number of trees to be replanted increased. Government and private institutions must be encouraged to do so. Our streets and educational institutions, as a matter of urgency must be decorated by variety of trees. Erosion site may be easily prevented or checked by planting trees. A culture of beautifying our environment with trees must be developed. It recommended that detailed landscape drawings that provided for planting of vegetation become part of approval document for all building designs, maintaining that if our environment is to take its place alongside its American and European counterparts landscaping must be endorsed as the practice will emerge beautiful and healthy environments with improved the income and living standard.

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