Sveriges lantbruksuniversitet
Swedish University of Agricultural Sciences

Faculty of Natural Resources and Agricultural Sciences

Wetland Development in the Context of Ecotourism

A Conceptual Design Proposal for a Wetland Site in Lake Victoria, Kenya

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Bachelor´s Thesis 15 HEC
Department of Urban and Rural Development
Landscape Architect Programme – Ultuna
Uppsala 2014

Titel: Wetland Development in the Context of Ecotourism
A Conceptual Design Proposal For a Wetland Site in Lake Victoria, Kenya

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SLU, Swedish University of Agricultural Sciences, Faculty of Natural Resources and Agricultural Sciences
Department of Urban and Rural Development, Division of Landscape Architecture
Credits: 15 HEC
Level: First cycle G2E
Course: EX0725, Project in Landscape Architecture
Landscape Architect Programme, Ultuna
Keywords: Conservation, Ecotourism, Landscape Architecture, Sustainable Development, Wetland
Coverpicture: Modified picture of a site sketch and a close up papyrus photograph, by Freija Carlstén 2014
Year of publication: 2014
Place of publication: Uppsala
Online publication of this work: http://epsilon.slu.se/

Sammanfattning

Resandet tilltar världen över vilket ökar pressen på alla destinationer att ha ett fungerande samhällssystem och goda resurser för att kunna hantera och tillvarata de problem och möjligheter som turismsektorn erbjuder. Området kring Kisumu i Kenya, liksom stora delar av Afrika, behöver turister för att kunna försäkra en stabil finansiell framtid samtidigt som det, till följd av befolkningsökningen, försvinner mer och mer av den natur som många turister vill uppleva. Ansvarsfullt resande till naturområden som gynnar ett bevarande av miljön och förbättrar välbefinnandet för lokalbefolkningen definierar ekoturism. Ett begrepp som innebär ett slutet kretslopp, där allt som tas av besökare förs tillbaka, utan att skapa obalans i samhället.

Invid Victoriasjön förser värdefulla papyrusvåtmarker Kisumu med livsviktiga ekosystemtjänster som exempelvis vattenrening, klimatanpassning och fungerar som en reserv för biologisk mångfald. Våtmarkerna har de senaste 50 åren förlorat mer än 50% av sin volym till följd av en ökande befolkning i området som är den högsta i världen samtidigt som fattigdom och sjukdomar som AIDS är ett ständigt aktuellt problem. För att råda bot på problemen vill flertalet organisationer av olika storlekar i Kisumu etablera ekoturism i området och många projekt har redan initierats, både på nationell och internationell nivå men det krävs ett långvarigt engagemang och rätt profession i sammanhanget för att alla delar av satsningen ska kunna utvecklas tillsammans.

I samförstånd med aktörer på Dunga Beach och vid Jaramogi Oginga Odinga University of Science & Technology ger jag ett förslag på hur ekoturismen i området kan vidareutvecklas. Genom att se området ur en landskapsarkitekts perspektiv vill jag ta vara på de perceptuella intryck som Dungas våtmarker skänker. Förslaget är inspirerat av det i Sverige lyckade konceptet Naturum® samt grundat på The International Ecotourism Society's principer för tillämpande av ekoturism. Syftet är att skapa ett konceptuellt designförslag för en ekoturismanläggning som ska inspirera människor till att vilja skydda den känsliga biotop som finns i området.

Under en Minor Field Study, beviljad och delvis finansierad av Sida, inventerades och analyserades området genom omfattande litteraturstudier, samtal med boende och verkande i området, platsobservationer och med, bland landskapsarkitekter ofta använda platsanalysmetoder så som SWOT och LCA. Utifrån resultaten av inventering och analys skapades ett program i linje med Naturum®s riktlinjer och ekoturismens principer för att få en så välförankrad grund som möjligt till det slutgiltiga förslaget. Kring detta gestaltningsförslag, the Wetland Gallery, förs en avslutande diskussion kring ämnet om hur ett tillgängliggörande kan hjälpa att öka förståelsen för bevarandet av dessa våtmarker.

Det konceptuella förslaget The Wetland Gallery är anpassat för att föra folk närmare och därmed inspirerade och verkande i ett självbildande syfte. De som arbetar på stranden ska kunna dra nytta av anläggningen och ha som ett fungerande komplement till den turistguidning som i dag sker i området, samt vara öppen för allmänheten. Detta för att naturen inte bara ska vara till för de som kan betala för önskade upplevelser. Tanken med the Wetland Gallery är även att det ska vara ett litet steg för att stärka Kisumus varumärke som Ekoturismdestination, ett önskemål från KLIP genom Mistra Urban Future, en underorganisation till Sida.

Abstract

The travelling sector is expanding worldwide, which puts all destinations under pressure to have a functioning social system and good resources to manage the problems and take advantage of the opportunities that the tourism sector can offer a community. The area around Kisumu in Kenya, like much of Africa, tourism can simultaneously ensure a stable financial future while it removes, as a result of a growing population, more and more of the scenery that many tourists want to experience. Responsible travel to natural areas that promotes conservation of the environment and improves the welfare of local people is what defines ecotourism. A concept that implies a closed cycle, where visitor's needs are met in balance with what can be given back, without risking creating imbalances in society.

Along the coast of Lake Victoria, valuable papyrus wetlands provide Kisumu vital ecosystem services such as water purification, climate adaptation while it also serves as a reservoir for biodiversity. The wetland in the area have the last 50 years lost more than 50 % of its acreage and capacity due to an increasing population in the area. The population growth is the highest in the world and poverty and diseases like AIDS and parasites in the lake are recurring issues. To tackle these problems, a plurality of organizations of various size in Kisumu have established ecotourism as a brand for the region. Many projects have already been initiated at a national and international level but it requires a long term commitment and the right profession in context for all parts of the initiative to come, and develop, together.

In agreement with the stakeholders at Dunga Beach and at Jaramogi Oginga Odinga University of Science & Technology , I give a suggestion of how their ecotourism brand can be further developed. By looking at the area from a landscape architect perspective, I want to take advantage of the perpetual impression that Dunga's, and the rest of Kisumu's wetland provide. This proposal is inspired of the successful concept Naturum® in Sweden, and based on The International Eotourism Society 's principles for application of ecotourism. The aim is to create a conceptual design proposal for an eco-tourism site that will inspire people to want to contribute to protect the sensitive habitat in the area.

During a Minor Field Study, granted and partly financed by Sida, the area was inventoried and analysed through extensive literature studies, by discussing with residents and stakeholders in the area, by conducting site observations and through, among landscape architects often used analysis methods such as SWOT and LCA. Based on the results of the inventory and analysis a program was created in line with Naturum®'s guidelines and ecotourism principles to reach a foundation as motivated as possible for the final proposal. A concluding discussion is surrounding the design proposal, the Wetland Gallery, on the subject of how making a site more available can help to increase the understanding of the conservation of it.

The conceptual proposal The Wetland Gallery is created to bring people closer to nature, to be inspired and learning by experiencing. Those who work on the beach should naturally be able to take advantage of the facility and use as a functioning complement to the ordinary tourist guidance that is offered. The main purpose with the design is still that it should be open to the public since nature should not only be for those who can pay a great deal of money for travel experiences. The last goal for me with the Wetland Gallery is for it to be a small step in the direction to strengthen Kisumu's trademark as an ecotourism destination, according to the wishes of the KLIP through Mistra Urban Future, a sub-organization to Sida.

Contents

Introduction

One of the most biodiverse and productive natural areas in the world are wetlands. They link land and water and provide ecosystem-services that benefit both wildlife and the development of human civilization (Ramsar Convention Secretariat 2013).

Many wetlands of importance are found in the region around Lake Victoria, the world's second largest fresh water lake (NE 2014). In Kenya, wetlands cover 14 000 km^2, which is approximately 3-4% of the land's surface (Kenya Wetlands Forum 2010). The wetlands serve the communities with ten ecosystem-services, listed by Ramsar Convention on Wetlands (2011): Flood control, ground water replenishment, shoreline stabilization & storm protection, sediment & nutrient retention and export, water purification, reservoirs of biodiversity, wetland products, cultural values, climate change mitigation & adaption, recreation & tourism. The lake also belongs to Uganda and Tanzania but even though Kenya's part of the lake only is 6% it still stands for 54 % of the country's fresh water supply (Mocha 2011). Kisumu, Kenya's third largest city with 400 000 inhabitants (MOICT 2009) serves as an important hub for economy, transportation and a growing rural population (Mistra Urban Futures 2013). The city is situated in western Kenya by the northeast shore of the Winam Gulf and is surrounded by wetlands. One of the main wetlands in the area is the Dunga Swamp, named after the fishing village five kilometres south of the town centre. The wetland consists mainly of the sedge Papyrus reeds (*Cyperys papyrus*) and covers an area of 100 hectare, stretching five kilometres around the shore of the Winam Gulf. It was in 2001 classified as an IBA, Important Bird Area, since it holds both globally and regionally threatened bird species (BirdLife International 2014) that support the country's wildlife tourism industry (Michigan State University Board of Trustees 2005). Rapid urbanization, environmental degradation and poverty are some of the challenges facing Kisumu. This increases the pressure on the non-urbanized surroundings, especially the wetlands because of its constant moisture and fertile soil (Mistra Urban Futures 2013).
The Ramsar Convention on Wetlands (1971) has been ratified by the law of Kenya:

> *"Article 2 (6) of the Constitution of Kenya provides that any treaty that is ratified by Kenya becomes part of the law of Kenya. As such, the Convention on Wetlands of 1971 (the Ramsar Convention) is part of the law of Kenya."* (Ministry Of Environment, Water And Natural Resources 2013. p. 12)

but still, none of the wetlands around the Winam Gulf are formally protected other than by environmental protection groups (Percy FitzPatrick Institute of African Ornithology 2005). The problems that the diminishing wetlands generate are known in the region but even though regional, national and international projects are launched for its conservation, it still keeps diminishing in size (Klip Ecotourism Symposium 2013). Alfred O. Owino and Peter G. Ryan (2007) even claim that 50 % of the Dunga Swamp has disappeared between the years 1969 and 2000 and predict its total disappearance in 2020 if the clearing and harvesting continues in the same speed.

Major threats to the Dunga Swamp and its biodiversity are increasing because of the need of water and to use the lake as a resource for fishing. Other factors that contribute to the diminishing and over-harvesting of the Papyrus is the thatching for making, for example mats and baskets, clearing beds for agriculture and the use as grazing ground for cattle (Percy FitzPatrick Institute of African Ornithology 2005). Godfrey Nyotumba[1], says that these factors put the wetland under constantly high pressure to meet the needs of the increasing population in Dunga and Kisumu and that the main reasons to why so little positive change seem to occur are the behaviour among families that have the swamp or lake as their only income and find difficulties in finding another. Samuel at DECTTA[2] says that obvious reasons are that they either lack knowledge about the wetlands value as a natural resource and its function as an ecosystem for the community, or that they do not have the back-up assets to lower their own affects on it even if they are aware of the problem.

In early 2014, when I conducted the Minor Field Study upon which this thesis is based, some projects had already been initiated at the Dunga Beach. For example are courses being held by DECTTA and EcoFinders to spread the knowledge in the village about sustainable living and to enhance the ecotourism orientation at the beach site. There have also been collaborations between PhD students at Gothenburg University and JOUUST and master students at Chalmers University where the main focus has been ecotourism, handicraft and market places. All projects have been conducted in collaboration with the organisation Mistra Urban Futures local platform KLIP (Mistra Urban Futures 2013).

Kisumu and Dunga have thanks to its nature assets, great potential to develop as a sustainable region and become an ecotourism destination that could generate jobs for its inhabitants while still conserving its environment (Klip Ecotourism Symposium 2013).

In agreement with people from JOUUST and the municipality of Kisumu I have produced an investigative design that could be used as a tool for disseminating knowledge and benefit the conservation of shared resources. It was first presented as two different proposals to the stakeholders at the Dunga Beach for them to review and express their opinions. After this revision, we decided to bring out the best part of the two proposals into a merge and I focused my design and thesis on the wetland conservation thanks to the many ecosystem-services they provide to the area. According to me, the wetlands also have not received sufficient attention in the different projects in the area as far as I have been notified. Because of these reasons, I find it suitable for me as a landscape architect and from my perspective, to prioritize the wetlands according to the wishes from the different stakeholders at the beach and at JOOUST.

This work is not only relevant for Dunga but could also be used for other sites around the lake with similar preconditions. A growing rural and urban population needs both aesthetically and educationally appealing shared spaces that do not negatively affects the future environment. This Bachelor thesis could therefore be interesting for both Swedish and Kenyan architects, planners and politicians.

Purpose and question

The purpose of this study is to create a design proposal that make this delicate biotope and its assets more accessible for people to experience and in that way contributes to inspire them to protect and care about its conservation. My question in this thesis is how ecotourism can be further implemented at this specific site and will be answered through my design proposal. The proposal will result in a visible change and added construction in the landscape to enhance the experience of the wetland while respecting a sustainable utility of it. In this way, the area could function both informational and recreational for the people in the community as well as for international tourists.

Delimitation

This Bachelor Thesis is based on a Minor Field Study that was conducted during eight weeks in February and March 2014 in Kisumu, Kenya. The design proposal focused geographically on the case at Dunga Beach even though relations to its surroundings were taken into consideration. The level of details is limited to have the possibility to use it as a prototype for other sites with similar preconditions or for stakeholders at Dunga Beach for inspiration and further development. The main focus was for the design proposal to be educative, ecologically neutrally built and serve as a part of an ecotourism destination, in line with the statements at the Klip Ecotourism Symposium (2013). Poverty, culture, infrastructure, political administration or anything else not directly related to landscape architecture was not further explored in the thesis. I considered these factors to be important for the tourism industry as well as for the development of the region but since the wetland was the main focus, they were further excluded from this study.

1 *Mr. Godfrey Nyotumba, Maseno University. Gzonyotumba@gmail.com [2014-03-14]*

2 *Samuel Owino Jera, Team Leader Ecotourism and Beach Ecology School. Samuel@ecofinderkenya.org [2014-03-16]*

Concept Clarification

One can often see the word and concept **ecotourism** being used with little consciousness about its true meaning. It is often used in commercial purpose, which could be considered as the opposite of what it stands for (Wearing & Niel 2009, p. XI). It is a multifaceted concept and the collecting word could be divided into two parts, eco and tourism. The prefix *eco*, from ecology, has been derived from its origin in the Greek *οίκος,* translated into house or habitat (Nationalencyklopedin 2014) referring to our most fundamental habitat, our home, which aim to fill our vital needs (Wearing & Niel 2009, p. XIII). Then we have tourism, which is according to the World Travel & Tourism Council (2014) one of the worlds largest industries. Or as Alan A. Lew (2008) suggests, the worlds largest service sector industry, since it consists of so many subcategories.

> *"Tourism is considered an activity essential to the life of nations because of its direct effects on the social, cultural, educational and economic sectors of national societies and on their international relations"* (World Tourism Organisation 1995. p.10. 1.1.18)

When looking into the true definition of *eco* and *tourism,* they may seem distant from each other and when intertwined could also be difficult to set a clear definition that can be interpreted in the same way by all people around the world. It is defined by TIES (1990) as *"responsible travel to natural areas that conserve the environment and improve the well-being of local people"* which would seem like an ultimate solution for the whole sector. Still people like Kerr (1991:250) are of an opposite opinion and believe that "ecotourism should not be geared towards the masses, but to smaller groups of discerning visitors who will pay more for an authentic experience".

The concept ecotourism is in this study looked at from a landscape architect perspective. The six principles, also defined by TIES (1990) are supposed to be applied in a practical way to develop an ecotourism site and to further form the framework for those who implement and participate in ecotourism activities.

Principles of Ecotourism

According to The International Ecotourism Society, ecotourism is about "*uniting conservation, communities, and sustainable travel"* with intensions to:

- Minimize impact.
- Build environmental and cultural awareness and respect.
- Provide positive experiences for both visitors and hosts.
- Provide direct financial benefits for conservation.
- Provide financial benefits and empowerment for local people.
- Raise sensitivity to host countries' political, environmental, and social climate. (TIES 1990)

Example of ecotourism

Naturum® is a an example of a Swedish ecotourism site, designed to function as a visitors centre and outdoor museum. It is initiated and name-protected by the Swedish Environmental Protection Agency and it complies with ecotouristic guidelines and the roam (right of public access). These outdoor museums serve as entrances to specific and unique nature types and highlight the areas assets, focusing on the flora, fauna, geology and cultural history. The visitors centre Naturum® is free to visit for the common public and is supposed to be educative by self-learning and nature guidance. A main building is often featured as an indoor museum where you get complementing information to the information signs in the outdoor area. This building is often built in natural, sustainable materials, designed to blend into the surroundings. (Swedish Environmental Protecting Agency, 2014.

Acronyms used

AIDS	Acquired Immunodeficiency Syndrome
BMU	Beach Management Unit
DECTTA	Dunga Ecotourism and Environmental Group
HDK	School of Design and Crafts, Gothenburg
HIV	Human Immunodeficiency Virus Infection
IBA	Important Bird Area
JOUUST	Jaramogi Oginga Odinga University of Science and Technology
KLIP	Kisumu Local Interaction Platform
LCA	Landscape Character Assessment
MFS	Minor Field Study
OSIENALA	A National Non-Profit Organisation based at Dunga Beach in Kisumu
Sida	Swedish International Development Cooperation Agency
SLU	Swedish University of Agricultural Science
SWOT	Analysis Of Strengtsh, Weaknesses, Opportunities, Threats
WTO	World Tourism Organization

Methods

The methods consisted of different parts in order to create a relevant design program from where a design concept was created. The concept helped creating two design proposals that were presented and elaborated DECTTA and EcoFinders in order to achieve a final design proposal. The landscape and its features where analysed and evaluated according to its existing assets. Some of the results may quickly be out of date since there currently are a lot of different projects going on in this busy area. Therefore the main focus on the site is from a landscape architect perspective where the wetlands are prioritised according to the wishes from the different stakeholders at the beach and at JOOUST.

Literature study

A literature study was made to understand the current situation and achieve relevant background information about the area. The literature study also included reading approximate bachelor and master theses. A study was made to get inspiration and concrete examples on how to design in areas with similar preconditions. This was done by going through personal notes from earlier excursions to similar sites and by searching at the internet for visitors centre in wetlands. For example Naturum® Vattenriket in Kristianstad, Sweden.

Inventory

In the inventory the objects and assets where objectively noted in repeated site observations during February 2014 complemented with literature research and information from guides working in the village. The whole village of Dunga was observed in terms of Geography, Topography, Access and Residents. In the Flora, Fauna and Land Use the main focus was at the Dunga Beach area. The inventory of Land Use was deliberately categorized into historical and contemporary land uses to get a clear picture of the needs when making the program for the design proposal.

Perceptual Site Analysis

The five terms, defined by Kevin Lynch (1960); paths, edges, districts, nodes and landmarks, where used to describe the perceptual and aesthetic assets in the beach area in an objective site observation. The site analysis collected data through site observations and map research, about how the site was used and what could be experiences when visiting. Views and scale was also added and gave a wider perspective to the analysis.

Explanations of how the different terms of Lynch defined the elements in the beach area

Paths - Public roads or unofficial trodden paths where people or animals travel.

Edges - Elements that are perceived as borders and prevents a continuity like a path or view. It may in this analysis be shrubbery, water, a busy road, buildings or height differences.

Districts – Different districts are defined as spaces with similar elements that differs it from the area around.

Nodes – Places with potential for interactions. It could be crossing paths, seating areas, squares or market-places.

Landmarks – Distinct element that are strongly associated with a certain place. Landmarks often function as similitudes when trying to remember a place you've visited.
Views – Certain element can look very different depending on from which angle they are looked at. Views are often depending on the open sight lines but can also be a distinct, smaller view depending on where it ends and what's to be seen.
Scale – A very important for how safe we feel in a certain place. In most cases, small places favour intimacy but big scales can also be positive in a more magnificently way.

LCA - Habitat Types/Vegetation and Zoning

The Landscape Character Assessment - Guidance for England and Scotland (Carys Swanwick 2002) was used to properly perform the various stages of the second analysis even though this area was slightly smaller than the examples in the guidance. The first step was to define the purpose with the LCA and decide the level of detail. The second step, a desk study, involved preparing a sheet study with maps and that could be used in step three, which meant conducting the field survey with a different sheet for every perceived sub area. The last step in the LCA was to compile and evaluate the results. The LCA-analysis was divided into two parts, the first to describe the different habitat types that could be educed and the second described the different perceived zones. The purpose of the division was to clarify the difference between subareas and habitat types since these highly affect where the final proposal would be placed. The LCA was also submitted with photographs and sketches for each area.

SWOT Analysis

A SWOT Analysis is an environmental analysis and a common tool for business companies to define their strengths, weaknesses, opportunities and threats (Investopedia, US 2014). It gives distinct answers to what problem needs to be dealt with and how it can be done. The SWOT Analysis was based on observations, interviews, relevant literature and earlier studies. The focus was natural resources, such as vegetation, water and wildlife and human activities.

Consequence Analysis

A consequence analysis was made from the outcome of the static SWOT to see which factors in society that contribute to affect the swamp in a negative way and how that in the other way strike back and affect society. It puts more focus on the wetland and is based on my experiences.

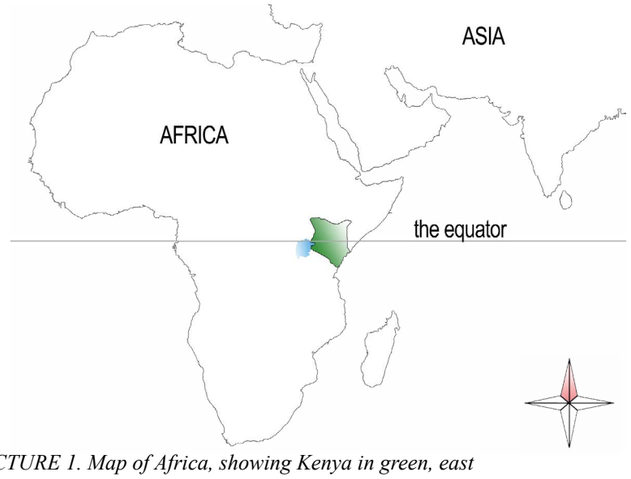
Design program

The program for the design concept was based on the summary of the inventory and analysis that where made in Dunga in February 2014. It was compiled as program items with the focus on ecotourism and the wetland. Some of the guidelines for Swedish Naturum® has been incorporated with the permission from the Swedish Environmental Protection Agency, as well as the six principles, defined by TIES (1990), for people who implement ecotourism activities. The program has been modified in collaboration with DECTTA and EcoFinders. The program was the main framework that motivated the design and functions of the construction.

Design concept

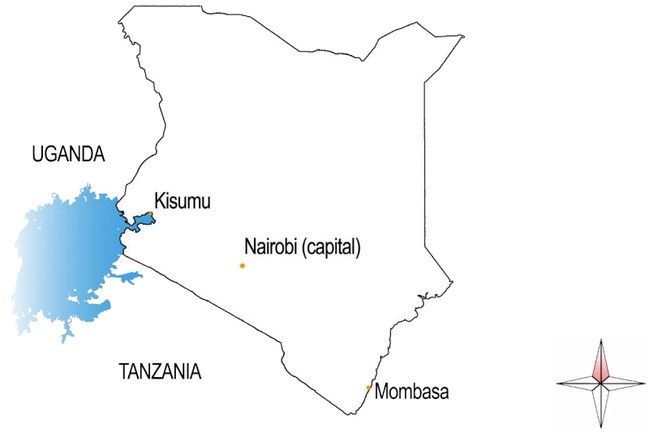
A design concept was derived from the program where the conditions and problems that needed to be resolved where defined. It is a common method in landscape architecture to create a concept to use as a tool for creating a framework for the fundamental idea and to help to answer design related questions.

Results



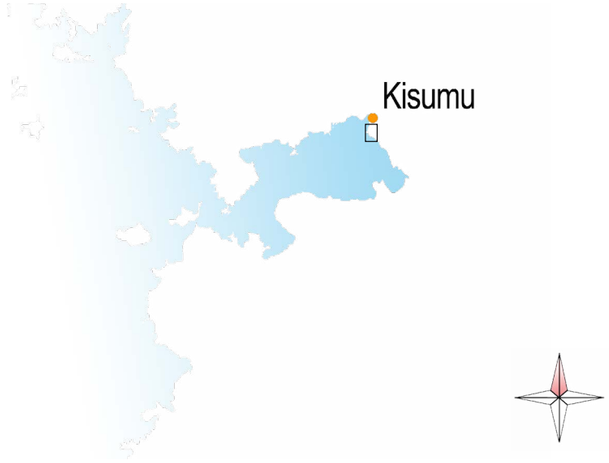
PICTURE 1. Map of Africa, showing Kenya in green, east of Lake Victoria. United States federal government in the public domain. Modification: Carlstén 2014.

Lake Victoria, in the west of the country is surrounded by wetlands that are some of the most productive ecosystems in the world (Ramsar Convention Secretariat 2013). The port city Kisumu at the eastern shore of Lake Victoria, just below the equator (34° 47.00' E, 0° 10.00' S), serves as an important hub for a large rural population, economy and transportation (Mistra Urban Futures 2013). With its 259,258 habitants in the urban core and 409,928 in total, it is the third largest



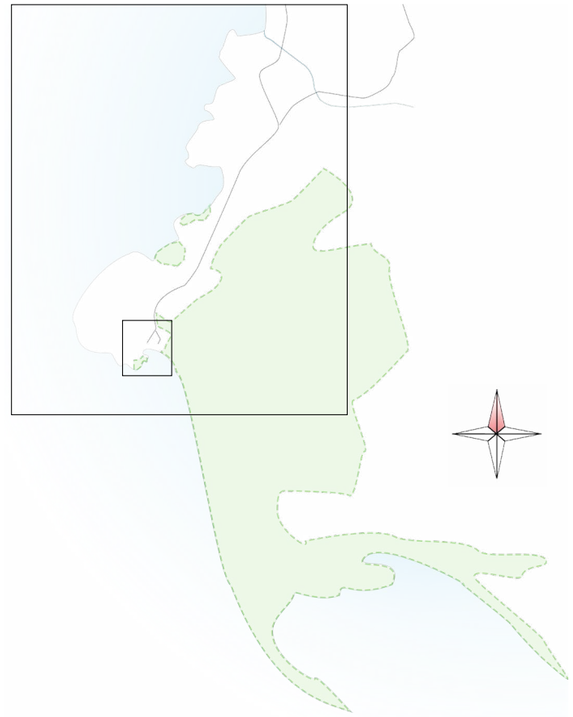
PICTURE 2. Map of Kenya, showing its borders to Tanzania and Uganda and The city Kisumu. United States federal government in the public domain, modified by Carlstén 2014.

city in Kenya whereof 4 500 resident living in the village Dunga (UNdata 2009). The fishing village Dunga is situated five kilometres south of central Kisumu and is mainly known for its fish, birds and wetlands. The wetland Dunga Swamp, is classified as an Important Bird Area, IBA, and consists of a belt of Papyrus about 5 kilometres long and 50 to 800 meters wide, measuring approximately 100 ha depending on the water level and the extent to which people burn or harvest at the measured moment (BirdLife International 2014). The area holds numerous endemic bird species and can offer spectacular nature assets and many different experiences for tourists (CREE 2013).

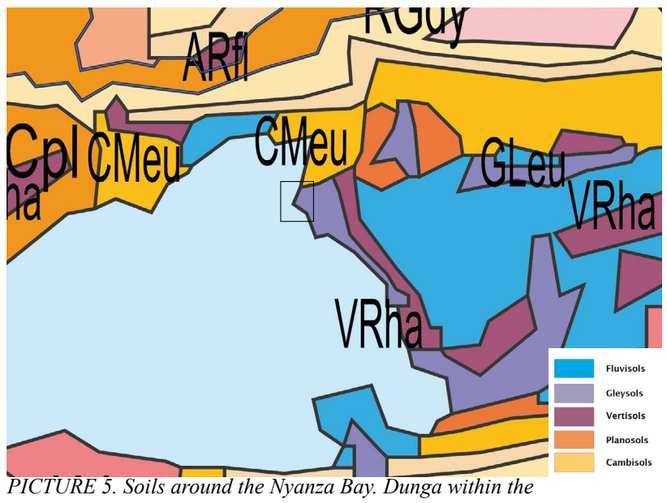


PICTURE 3. Map of east Lake Victoria and Kisumu. Dunga Beach within the square. United States federal government in the public domain. Modification: Carlstén 2014.

Inventory - existing assets and objects in the village and beach area



PICTURE 4. Dunga village and part of the Dunga Swamp in the big square as shown in picture 3. Dunga Beach within the smaller square. United States federal government in the public domain. Modification: Carlstén 2014.09286-



PICTURE 5. Soils around the Nyanza Bay. Dunga within the square. Map: The European Commission. Joint Research Centre.

Geography

The peninsula Dunga is surrounded by Lake Victoria on the west and south side and by the wetland on the east. The wetland consists mainly of Papyrus, *Cyperus papyrus* with shrub like water growing trees along the shore. The soil in the beach area is a gleisoil, which means that it is "*consistently saturated by groundwater and therefore develop a characteristic greyish/blue colour pattern as a result of lack of oxygen in the soil*" (European Commission Joint Research Centre 2013). It is safe to build smaller houses up on the dry soil but if something heavier would be built, it would probably be necessary to pole since the soil will be unstable, especially during the rain season.

PICTURE 6. Section of a typical gleisoil. Photo: The European Commission. Joint Research.

Residents in the village

A majority of the people living in Dunga and along the shores of lake Victoria, heritage to the Luo tribe, and their language Dholuo is well known in the village just as in the rest of Kisumu (Kenya Information Guide, 2014). People from the Luo tribe in these rural areas around Lake Victoria get their main income from fishing but poverty is an all-time issue due to many different problems. The increasing population, ecological damage from environmental pollution from sewage that flow directly into the river, over fishing and thriving water hyacinths covering the surface of the lake are just some of the daily problems that the habitats in the area struggle with. Thanks to financial aid and help program, clean drinking water and electricity has been introduced in the latest ten years in the village. This almost doubled the population but also resulted in a lot of difficulties for the area in terms of planning for further facilities such as sewer system and new settlements (The Foundation Dunga Kenya Development, 2014).

Access

Since Dunga Beach is situated on the end of a peninsula surrounded by wetlands or open water, the only access is the road that goes from Kisumu via Milimani and through the village Dunga. It begins in the centre at Kisumu-Kakamega Highway (A1) - Jomo Kenyatta Highway (C85) – Kaunda Hill (C85) and ends at OSIENALA (Friends of Lake Victoria). The condition of the road is very poor but at least there are numerous alternatives to access the area like bicycle, tuc-tucs, motorcycle, by foot or car. There are a lot of school classes visiting the area so even big buses traffics the bumpy road. Along the road you can see signs for numerous tourist attractions like the Impala sanctuary, The yacht club, Kiboko Bay, Hippo Point and Dunga Hill Camp but nowhere a sign for Dunga Beach. Therefore it is not easy to find your way to the site if it is you first visit and someone who knows the area does not accompany you. Along the road, people in the village are selling fruit and vegetables at small stalls and "hotels" in temporary settlements are frequent. Cattle like cows and goats are also walking on the road, but that hardly come as a surprise since that is a frequent sight at the African countryside.

Topography

The closeness to the wetland offers small variations in the topography due to the narrowness of the peninsula. The highest point is Dunga Hill Camp where you get a good view over the surroundings in every direction. This Hill serves as a landmark with nice potential that has been taken advantage of by placing a restaurant and a camp. Because of the low variety in the topography, The Dunga Beach is very vulnerable for the fluctuating water level.

Flora and Fauna

There is a big difference between the level of moisture in the soil, which is visible in the flora growing in the area. The dryer area is filled with succulents like cactuses and ground close climber. The more water in the soil, the more and bigger grasses. For example Hippo Grass (*Echinochloa stagnina*) and Touch-Me-Not (*Mimosa pudica*). In the wetland the Papyrus stands are thick and fast growing. In the lake, depending on season, the alien water hyacinths thrive and cover great areas of the surface, diminishing the oxygen supply in the lake which is a great problem all around the lake (Ong'ang'a, Obiero. 2010). Depending on the level of water hyacinths, different fishes in the lake are affected and can both benefit and suffer from these circumstances. For example the lungfish, flatheaded butterfish and catfish can easily survive in oxygen-low water where other fishes struggle to survive[3]. On the other hand, when water hyacinths are off-season, other fishes like the Nile Perch (*Lates niloticus*) thrive and has done since the 1980 because the lack of natural predators. This because they were implanted in the lake in the late 1950 (Tijs Goldschmidt, T., Witte, F. & Wanink, J. 1993). Numerous bird species are indigenous in the wetland such as the globally threatened Papyrus Gonolek (laniarius mufumbiri) and Papyrus Yellow Warbler (chloropela gracilirostris), the regionally threatened birds Great Egret (Ardea alba) and Bailon's Crate (porzana pusilla) are also part of the wetland wildlife. But not only is the swamp serve as home for numerous bird species, it also serve as a habitat for the Sitatunga Antelope (Tragelaphus spekel), Spotted-necked otter (Lutra maculicollis) and the Hippopotamus (Hippoppotamus amphibius). Due to human impact on the swamp, the diversity and presense of these animals has fluctuated over time (L, Adrian & P, Derek 1989; BirdLife International 2014).

3 *John Steve Okumu. Treasurer, DECTTA, Head of Eco-craft and Market Place, Dunga Beach. Johnstevo76@gmail.com [2014-03-18]*

Land use

Historical	Contemporary land uses
Fishing	Coal selling
Boat building	Tourism guiding
Fish market	Restaurants and pubs
Traditional fish preparation	Amusements – Pool Table
Market place – crafts and fruit	Boutique – Candy and other supplies
Animal grazing	Education centre – EcoFinders office
Harvesting of Papyrus	Water kiosk
	School/Church

Analysis - perceptual and aesthetic assets in the beach area

Paths

Paths in the village mainly follow the roads but there are also unofficial walking paths that lead to important places where vehicles normally never need to go. Like between the beach and the village area behind OSIENALA and paths in zone 2 and 10 (see LCA-zoning).

Edges

The wall that fences OSIENALA creates the major edge in the beach area, giving you the feeling that they want to keep their business for themselves which may feel excluding. Other perceptive edges are the waterfront, the dry area with cactuses, all fences and of course the wetland. Since the wetland is my main focus, the problem that you can't experience the wetland close up as a visitor anywhere in the area is a big issue.

Landmarks

PICTURE 7. The Giraffe statue outside the pier of OSIENALA's head quarter. Photo: Carlstén

The giraffes at the pier outside OSIENALA draw people attention from the east side of the beach area. It is neither locally connected, nor fit in aesthetically. The pier also function as a characteristic landmark where boats dock and people gather before going out on a boat trip. It easily gets crowded which could be dangerous since there are no fences.

Districts

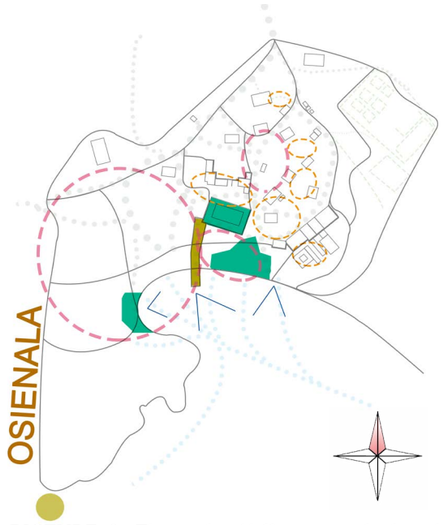
The different zones in the beach area can be defined in terms of opposites; private and non-private, commercial and non-commercial. For a first time visitor it is hard to define the differences between the districts and it could be intimidating to walk without a guide in the area since you do not know whether these people live or work here.

Nodes

Important nodes in the beach site are where people meet and gather. Since fishing is the main occupation in the area, all activities connected to the fishing sector contribute to creating nodes. For example the shore around 10 am when fishing boats are arriving, the women's fish market where they prepare the smaller fishes traditionally and the big fish market where he bigger ones are weighted and sold to town.

Views

The viewpoints in the beach area are aesthetically more appealing the closer you get to the waterfront and water is without hesitation the prime asset in the village. For people not familiar with the lake and wetland flora, the graceful yet massive Papyrus wetlands offers an impressive yet excluding sight even though you only can experience them from the outside.



PICTURE 8. The paths (different sized, dotted lines, blue in water, green on land), landmarks (yellow), nodes (green), views (dark blue lines) scale (dashed lines, pink for bigger scale, orange for smaller). 1:4000 in A3. Map: Carlstén

Scale

The scale in the beach site is larger by the entrance and gets more intimate the closer you get to the houses. Then it opens up again the closer you get to the waterfront. The houses and trees are what mainly control the scale.

PICTURE 9. View from the west side of the beach. Photo: Carlstén

LCA - Habitat Types and Vegetation

Zone 1 – Dry and dusty

Dry soil, elements of low growing grass and mimosa with stones sticking up from the ground. There are very few or no trees, and the established ones are a huge asset and offer shadow for birds and humans. It is hard to establish new trees since the soil is basically unusable due to heavy use. The zone is characterized by its openness and flatness. The dry soil creates dust and is not arable if water is not supplied.

PICTURE 10. LCA. Habitat types and vegetation 1:4000 in A3. Map: Carlstén

Zone 2 – Dry with vegetation

Dry soil, sporadically spread trees and low growing vegetation and shrubs dominate this zone and vegetative climbers grow around trees and fences. Man made stone piles and established bigger stones create a topographically varying landscape with dryer vegetation. This zone serves as grazing area for cattle during raining season.

Zone 3 - Muddy

Between the terrestrial and wet zone, depending on water level, this zone could either be filled with water or serve as grazing area for cattle. Zone 3 persists of grasses like hippo grass and with elements of Papyrus. Thanks to its moisture the soil in this zone is very fertile.

Zone 4 - Wetland

Though it is named the Dunga Swamp, this zone would according to Cowardin, L, M., Carter, V., Golet, F, C & LaRoe, E, T. (1979) classify as a marsh since the dominant vegetation distinguishes the two major types of mineral soil wetlands: Grasses dominate **marshes**, trees dominate **swamps**. Both marshes and swamps may be freshwater or saltwater. Papyrus grass is dominating the area with shrubby, indefinable trees along the shores, planted to serve as a stopper for the wetland to spread further and cover the beach area when the water level is lowering. This vegetation serves as a breeding zone and hiding place for both birds and fishes.[4]

4 *Samuel Owino Jera, Team Leader Ecotourism and Beach Ecology School. Samuel@ecofinderkenya.org [2014-03-16]*

LCA - Zoning

1. The outer entrance

The main entrance to the beach area from where you can not yet see the lake. The red coloured, dust roads leans down a bit though and gives a hint that the goal destination is being approached as well as the signs around the white painted gate entrance. It is a busy and dusty area where vehicles and pedestrians share the same space. The sight is a bit monotonous and the area feels unpleasant due to the messy yard outside the entrance. A large tree overshadows a small metal house outside the gates.

2. The north border

A narrow leftover on the side of the main road increasing in width as it is leading down to the west border of the area where you also find the community hall and water kiosk. In the narrower, more exposed area you can find an almost non-visible walking path, parallel to the busy road but due to cactuses and other wild plants it does not seem to be in use. There is also a power line leading through the area that slightly interferes with the line of sight. This is a messy area with a wild character that seems to be a left over due to its location between the road and a fence that separates the beach area from the rest of the Dunga. In that way it functions as a delimiter for the closest private buildings.

PICTURE 11 . Area 3, The east entrance of the Ecocentre. Photo: Carlstén

3. The inner entrance – Yard of the EcoFinders

This is the first view of the area when you have entered through the main gates. This is where the main building for EcoFinders is placed and it is partially defined by the furnished outdoor area around the EcoFinders office and by a huge, half built house-skeleton in metal that has been left unfinished due to financial difficulties. Despite this, the area has an inviting character in an intimate scale, which makes it feel safe. This is the most varying area in topography due to a pile of stones, vegetated with low growing plants, cactuses and climbers on the east side of the house and with a deep hole filled with water on the west side. The area is inspiring with a peaceful character and provides the village's only public seating in the shade.

4. The east entrance area – School, church, toilets

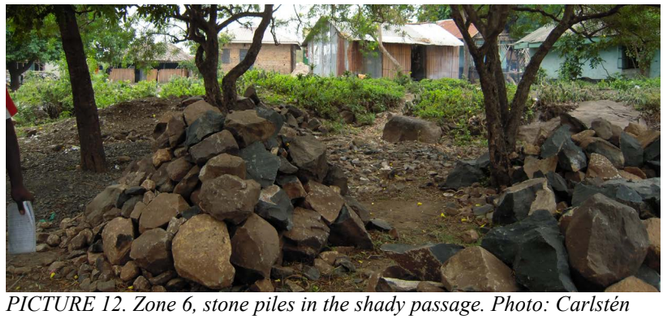
When entering the beach area, there is a church/school in a metal house with a playground on the left. This is a characterizing factor for the zone and gives it a private and exclusionary approach. The scale is large and feels open, yet safe and in the distance you can see the wetland. The only plants are low-growing grass and cactuses on a stone pile. The east road leading to the beach passes through this zone and here are also the public toilets placed.

5. The east border – Entrance to the wetland

Through a narrow footpath through zone 4 you enter zone 5, which offers an alternative, not official, entrance to the area, but through Dunga village. The walking path also passes some farming areas that currently aren't in use. Since it's close to the wetland, the soil is more moist and the vegetation therefore lusher and more colourful. The zone is a bit lower than the entrance area and offers a calm and shielded space, distanced from the village with a beautiful view over the borders of the wetland. Though the wetland is quite inaccessible due to the swampy soil there is a cleared entrance with a walkway where Papyrus has been cut down to enable access to the wetland for harvesting purposes.

6. The shady passage

Behind what is supposed to be a washing room (not yet completed), enclosed by the backside of the BMU-office and a the beach hotel, lies an enclosed passage linking the west road with zone 7, The Commercial Marketplace. Piles of fist-sized stones which are leftovers from stone mining, dominate the area and yellow oleander trees offers an enclosed, intimate and relaxing space with birds singing in the foliage. Though garbage and a septic tank hole in the ground lower the experience of the area, it still has a great potential.



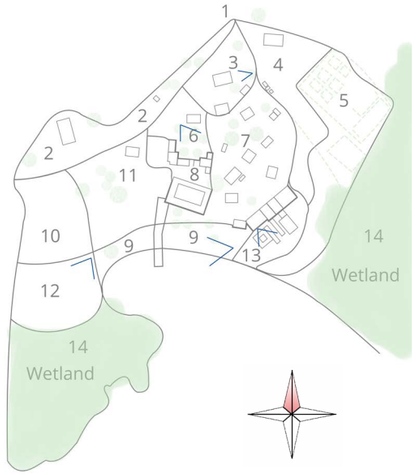
PICTURE 12. Zone 6, stone piles in the shady passage. Photo: Carlstén

7. The commercial marketplace

The area is open with building spread randomly all over the place. A big Cape Mahogany (*Trichillia emetica*) serves as ornamental tree and gives shelter and shadow from the heat for both humans and birds. The area is characterized by its large scale and the variety of buildings serving different purposes. The scale and openness makes the area exposed and therefore serves primarily as a passing area for visitors but more relaxed for locals.

8. The intimate centre

Serves as a passage between zone 11, The Dry Open Centre with zone 7, The Commercial Market Place, flanked by the front of the BMU-office and The Beach Restaurant on the north side and the fish-market on the south side.



PICTURE 13. Zoning, vegetation and views. 1:4000 in A3. Map: Carlstén

9. The water shore

The area is surprisingly dry despite the closeness to the water and lack ground vegetation because of the business that characterizes the area. From early morning fishermen and tourist boats traffic the shore and the fish is prepared in the traditional way (dried or fried) by women. A few dried out trees constitutes the areas only vegetation except for a few water hyacinths floating in the water. The place is open and exposed but the further you get from the pier the more intimate it gets. The diversity is high and it might seem a bit unorganized. It might seem private to visitors but the area offers interesting views.

PICTURE 14. Zone 9, the watershore, the pier and OSIENALA's head office in the background. Photo: Carlstén

10. The rocky stone area

The varying topography with shrubs and plants serves as a rough grazing for cows and goats in the village. Due to thick vegetation of cactuses, the area is inaccessible except for a walking path leading from the northwest corner in the area to the beach. Because of the texture, the area could seem threatening, challenging and unpleasant to step into.

11. The dry open space

The area is very open and exposed with bare soil and the only shelter is an umbrella tree that the local habitats use for shadow and crafting boats. As a visitor you may feel left out. With vehicles driving through and serving as a parking place for buses the area looks unpleasant and unsettling and a bit monochrome.

12. The lush mud

As a preface to the smaller wetland this muddy zone is covered with luscious greens and hosts a great variety of bird species trying to catch rests from the women cleaning fish by the shore. Stones of different sizes are sticking up from the mud and serves as stepping stones during the dry season. The impression is that the area is in a good condition, probably because its inaccessibility without getting wet. The area is open, yet peaceful and pleasant to just watch. The smooth green colours in combination with the white storks are a splendid sight.

PICTURE 15. Zone 12, high tidal bring moist to the soil. Photo: Carlstén

13. Backside of the restaurants

With a terrific view over the wetland and flat topography making the water from the lake cover the stones on the ground when the tide is high. Some planks serve as temporary, unstable boardwalks to make it possible to walk through the area. This zone is calm and offers a unique closeness to the water and wetland that can't be experienced in any other place in Dunga. Due to the linked restaurant buildings that are separating the 13th zone from zone 7, it makes it feel as being in a totally different place.

PICTURE 15. Zone 13, high tidal in the restaurant. Photo: Carlstén

14. The Wetland

The wetland is a complex area to assess since it's only viewable and not possible to enter due to its watery ground and thick vegetation. Though it's beautiful to just watch and there's a busy traffic of small birds flying in and out from it. The texture of the Papyrus is very elegant and graceful and the area feels very fresh.

SWOT Analysis

Strengths The papyrus The birdlife - IBA Partly established tourist attraction Closeness to the lake Trees with signs Established grown up trees A lot of projects going on The dustbins for garbage	**Opportunities** Wetland as an attraction Established restaurants in the area Fishing business generates income and defines Dunga Comfortable facilities Centre for education Cooperation with neighbouring school The women's fish market
Weaknesses Entrance to the site is in bad condition The Ecocentre is lacking an exhibition area As a visitor you do not know weather people live or just work here A lot of garbage around the restaurants Dunga Beach is hard to find if you not are familiar with the area Poor information on site about the assets Bad communications Substandard condition of the road A lot of different groups operating in the same area	**Threats** Irrational clearing of the papyrus and burning of wetlands Rumours about sicknesses and diseases in the lake Coal sellers at the beach does not go well with the ecotourism approach Poor information if you not are a paying visitor Too little emphasis on wetland conservation at the beach site Bad communications to the village if you are new to the area No access to the wetland if one can not pay for a boat ride Vehicles driving in the area

PICTURE 16. SWOT-analysis. By: Carlstén

Consequence Analysis

What affects the swamp in a negative way

- Population increasing in the Kisumu area – the highest in the world (Ong'ang'a, Obiero, 2010. p. 43-44).
- Villagers in the area harvests papyrus to use as fuel or to sell for an income. And when the population increases, the harvesting will too.
- Poor information at Dunga Beach about the decreasing wetland situation. The information between guiding tours and real facts differ. The guides tell visitors what they see in the area and don't base their knowledge on facts.
- Too little emphasis on the wetland problem in Dunga and Kisumu – people don't notice the direct effects of the diminishing wetland, or can at least not link some of the environmental problems to its decreasing.
- Agricultural activities from the expanding slum Nyanlenda.
- Risk of uncontrolled fire spreading when burning for harvesting make wetlands decrease rapidly.
- Rumours and facts about diseases and pollution in and around the lake scare visitors, especially international tourists.
- The tourism information centre in Kisumu city does not offer any information folder about Dunga Beach.
- Over fishing forces more people to clear the wetland instead.
- The poverty in the province may seem unattractive to some tourists who have high standards.
- Climate change affects the rain period being more unpredictable and could also be a reason why the water level in the lake is lowering.

PICTURE 17. Woman harvesting Papyrus to sell as fuel. Photo: Carlstén

What the decreasing swamp affects in a negative way

- Animal, fish and bird species relying on the wetland vegetation is declining – leading to economical problems for the fishermen relying on a stable yield.
- Increased number of aquatic snails, intermediate hosts for Schistosoma causing Schistosomiasis (Bilharzia) (Awange, Joseph L. & Ong'ang'a, Obiero, 2006).
- Heavy thinning, burning and harvesting in the wetland increase exposure for sunlight and wind speed resulting in a drier local climate which make the harvested area dry out, unfavourable to species sensitive to desiccation.
- The biggest consequences of the papyrus harvesting are not immediately noticeable and therefore it is hard to push the seriousness of the situation to the people living in the area.

PICTURE 18. Vast area burned Papyrus wetland. Photo: Carlstén

Design Program

An added construction in the wetland is supposed to function as a self-educative outdoor museum where visitors may enjoy natural assets. Visitors can also get information about the importance of wetland conservation, the efforts that are made in the area and how they can participate. This wetland development could help raise attraction to the destination, be educative for visitors and promote a sustainable community with a living wetland.

Target groups

The main target group of visitors to the Dunga Beach Site should be members of the general public of all ages without special knowledge (Swedish Environmental Protection Agency, 2009). By having such a broad approach, the information provided needs to be readily comprehensible for all these groups with different needs:

- Residents of Dunga and Kisumu as a recreational area
- Visitors/tourists for outdoor activities
- Men and women in the fishing business
- School pupils
- Tourists (national and international)

Visitors
The number of visitors to the beach area can vary significantly depending on weekday. Usually, school classes represent the largest number of visitors during weekdays and tourists during weekends. Some people come here to buy fresh fish for dinner but the citizens from Kisumu rarely use the area for recreation purposes. The focus is therefore to attract both local habitants and international tourists to the site to get a greater variation of visitors.

Utilization
Since the climate is warm all year around, there will probably be no difference in the number of visitors. Maybe there will be less international tourists visiting during the rainy seasons.

Program for the design proposal
The program serves as a support in the design process and function as an inspiration and check-list for needs that the site needs to fulfil to meet the purpose of the study. The guidelines, which constitute the program, has been generated and modified in collaboration with the stakeholders DECTTA, BMU and EcoFinders. With the permission from the Swedish Environmental Protection Agency (2009. p. 8) I have also incorporated some parts of their guidelines for Swedish Naturum® with an undertone of the ecotourism intensions from TIES.

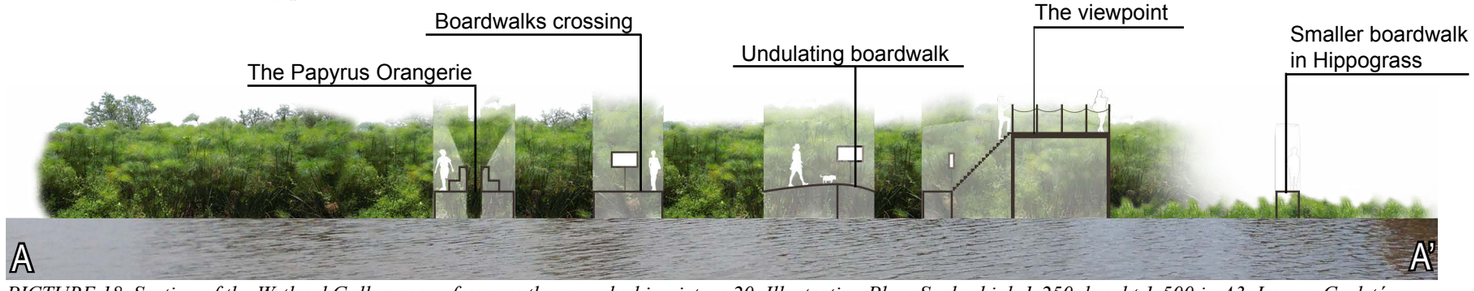
Guidelines for the design program
- » Accessible as far as possible for people with disabilities, wheelchairs or strollers.
- » The additions used will be made of sustainable material as far as possible with low impact on the sensitive environment. They shall also fit in aesthetically and highlight the area's distinctive landscape type and assets.
- » The area should continue to attract both schools, tourists and the local public.
- » The site should offer a wide range of activities, preferably initiated by people in Dunga, to give everybody, visitors and hosts, the possibility to experience the nature in the wetland area and in that way show the importance of its conservation.
- » By consciously placing a nature trail, highlight the qualities in the landscape to enhance the experience for the visitors.
- » Increase awareness and interest in science, the nature and its conservation.
- » Add public seating and gathering places with interesting designs, with the purpose to fit into the area. As far as possible local craftsmen should make them in materials from the village.
- » Site-specific architecture inspired by elements in the village.
- » By strengthen the ecotourism mark of the site, inspire people in the village to take the initiative to start small businesses in the same sector.

Design Concept – The Wetland Gallery

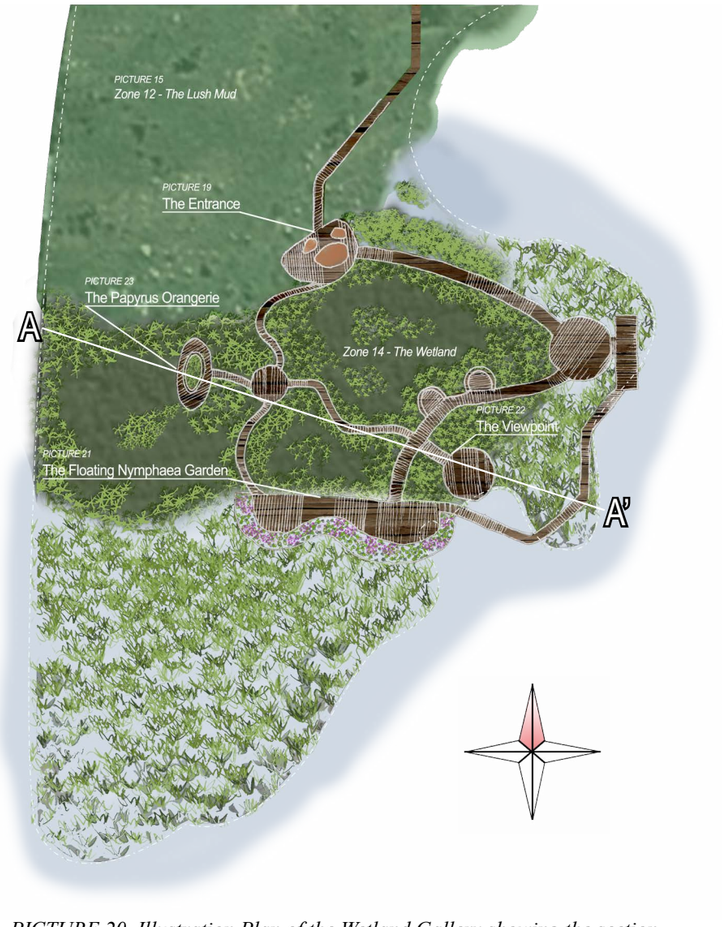
The Wetland Gallery is the tranquil yet exciting outdoor museum at Dunga Beach. A sustainable building complex of boardwalks, bridges and jetties that blends into the surrounding wetland inspires, educate and will highlight the current state of the Dunga Swamp. The structure of bridges leads the visitor into a part of the wetland that is accessible directly from the beach area. The complex offers viewpoints, information signs, rest areas, gathering places of different sizes and an exhibition space for local arts and crafts. The design invites the visitor to experience the dynamics between openness and enclosure and fulfils the village need for a recreational area by letting them get closer, inspired and educated.

PICTURE 19. The entrance to the Wetland Gallery where one will get information about wetlands, why are they important – the project, map of the complex, welcoming, code to digital folder for download. Image: Carlstén

The Entrance
A low boardwalk takes the visitor from the dry area, over the swampy area and to a gathering place by the entrance of the Wetland Gallery. The boardwalk will also ease for the women, who are working at the beach, to reach their working place.



PICTURE 18. Section of the Wetland Gallery, seen from south as marked in picture 20. Illustration Plan. Scale: high 1:250, lenght 1:500 in A3. Image: Carlstén.



PICTURE 20. Illustration Plan of the Wetland Gallery showing the section A-A' 1:1000 in A3. Image: Carlstén

The Viewpoint

If the inner boardwalk is followed, the visitor will after 60 metres reach a 3 meter high viewpoint which offers a sight in every direction, allowing the visitor to step up and see over the top of the Papyrus and get a view over the beach area and the great (as in big)

PICTURE 22. At the two metre high Viewpoint, visitors will be able to learn about threatened birds species in the area, the history of the swamp and how its decreasing affects Kisumu and its environs. Image: Carlstén.

Dunga Swamp and its species.

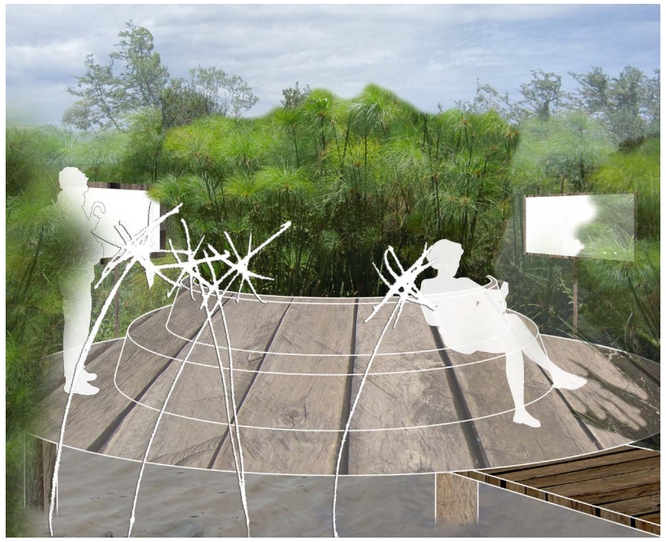
The Floating Nymphaea Garden

A floating garden of fenced Nymphaeas surrounds a jetty with smooth curves. With the whole lake in front, visitors can here sit down on a bench or in the recess in the bridge while enjoying the view of fishing boats spreading out their white sails.

PICTURE 21. At the Floating Nymphaea Garden, visitors can learn about the water hyacinth, is it a plague or recourse? When did it come to the lake? Why and how is it spreading and how can it be prevented? Image: Carlstén

The Papyrus Orangerie

In an intimate room surrounded by Papyrus, the visitor is allowed to have a rest at a specially designed bench where plants of Papyrus comes up in the middle. Water resistant speakers are mounted inside the bench, which provides the visitor with an experience for both body and mind.



PICTURE 23. The Papyrus Orangerie. A place for relaxation and maybe art or photograph exhibitions of local talents. Here the history of the Papyrus will be told on the information sign. Photo: Carlstén

How the design answers to the program

- The majority of the boardwalks are adjusted in width and slope, making it accessible for people with disabilities, wheelchairs or strollers.
- Local, untreated wood should be used as far as possible but in certain cases, to pole or in order to prevent from termites, concrete and metal may be used. Ropes woven by water hyacinths will draw attention to themselves by showing a positive way to deal with the alien. They also fit into the surroundings aesthetically and highlight the area's assets.
- By letting the entrance to the complex be free of charge for all visitors the area will continue to attract school pupils and tourists and will probably attract more people from the local public.
- Different kinds of activities can be arranged at the different gathering spots around the wetland complex. Workshops in local handicrafts, bird watching, kayaking, preparation of fish and photographing are some examples of activities that could be arranged by the different groups working at the beach that can take place at the boardwalk complex. When in that way show the importance of its conservation.
- The boardwalk will go in and out from the wetland, offering interesting views and giving the visitor the experience of being able to see the wetland from the inside.
- By complementing the boardwalk paths with information signs, the visitor will raise awareness and interest in the wetland and its features.
- The boardwalk trail is complemented with seating along the way, placed consciously to get interesting views of the lake. By letting craftsmen from the village make the seating, job will be provided and can at the same time be part of workshops for visitors.
- Details in the design will be inspired by elements in the village.

Discussion

The purpose with the study was to create a design proposal for the wetland site Dunga Beach outside Kisumu in Kenya. The design aim to follow up and strengthen the ecotourism brand that partly has been initiated and to inspire locals and tourists to come closer, get inspired and educated by nature to eventually reach out to governments. First, the methods used to create a program and concept will be discussed but the main focus will be how the design proposal corresponds to the initial purpose and how the term ecotourism could be further applied.

Method

The literature helped me understand more about ecotourism as a concept and to verify the facts I was told by people in the area who assisted with slightly different facts. I got a good basis for the proposal with the different site analysis which represented an essential part of the study. The methods I used are frequently used in the landscape architecture profession which I have practised in my education. They formed a broad foundation for my decision of where to place the complex but could be more customized for this site. I would have put in more preparatory work to analyse and study the wetland with its specific premises if I had known before that I would place it inside of it. The main purpose with the program was to facilitate as many guidelines as possible from Naturum® and TIES to enhance the ecotourism business at the site and if implemented I would suggest to make a quantitative study or survey in the whole village to get an established citizen participation - a corner stone in ecotourism.

Results

The design proposal is presented on a conceptual level but with a unique design, customised for this specific site. It answers to how ecotourism in one way can be further implemented in the area and fulfil the purpose with the study - to create a design proposal that make this delicate biotope and its assets more accessible for people to experience and inspires them to protect and care about its conservation. The final design proposal was well received by the stakeholders at the beach and the decision to first make two different proposals to readjust was a good decision. This allowed further discussions with people concerned to make sure it met their needs, fulfil my purpose with the study and respond to my question.

Ecotourism

Kerr (1991:250) consider that "ecotourism should not be geared towards the masses, but to smaller groups of discerning visitors who will pay more for an authentic experience". That argument only nourishes the aspect of non-caring, environmental damaging and ordinary tourism, with ecotourism as a choice only for those who already have an interest in nature experiences. The goal should instead be for all types of tourism to be sustainable, just as everyday life at any place need to be, to ensure a sound environment for generations. A first step could be to benefit small-scale initiative with laws from non-corrupted governments, preferably with collaborating over land borders. If following Kerr's opinion, ecotourism would remain as something for richer people, who are paying to get to these exclusive sites and would neither be accessible for the least favoured people to benefit from these kinds of experiences. Ecotourism cannot be exclusive and excluding if the purpose is to educate and inspire to apply good habits. It is therefore important for ecotourism sites not only to attract visitors from abroad, but also the ones who live there, who know how to take care of their own habitat, their ecology, *oíkoς*.

Tourism is often linked with consumption and it may seem ambiguous to combine it with the prefix *eco-*, which purpose is to favour sustainability and a closed cycle. But when merging two such strong opposing forces, the outcome could be that the purpose of one of them will be improved. The KLIP Ecotourism Symposium (2013) promotes ecotourism as the best solution for Kisumu as it provides an alternative development avenue for present and future holistic transformation of the region in an integrated process. This suggestion is backed by The Nature Conservancy (2014) that even suggest that ecotourism can provide sustainable economic development and serve as an alternative for communities with few other income generating options. I believe that ecotourism, where one gently and consciously makes nature more available, can be self-learning for people who gain access to it. I think that my proposal can contribute to that purpose and help people come closer to nature and by offering that experience, I also think it can inspire them to make changes in their own behaviour and contribute to the conservation of this delicate area.

Dunga Beach

Dunga Beach could by further developing its ecotourism brand with this outdoor museum – The Wetland Gallery, serve as a good example for the rest of Kisumu and the cities around lake Victoria to show how to get closer, inspired and educated by nature. It can also be a good inspiration to promote conservation of valuable nature areas for other communities to follow and adapt. Dunga could be known as the place where all people are welcome, no matter social class. Since it is the people with the lowest income who can not find other ways to finance their daily lives than without clearing the wetlands, they are an important target group. They should be given the opportunity to realise the importance of wetlands as an ecosystem in need to be conserved without having to pay money for a guided tour or a boat ride to experience it closely. So when developing the ecotourism brand in the area, this target group may get inspired and come up with further ideas.

I see possibilities for this Wetland Gallery concept to be used elsewhere around Lake Victoria and I think it could be developed as a series of outdoor museums as a good marketing strategy that will attach the important of wetlands to the region. The term ecotourism is wide and have many different approaches and could be hard to implement in the same way at all sites since the perception and interpretation of the term could be individual. For this industry to grow in the area I think it is important for the city council of Kisumu to create a framework and define the tools on how to implement it in a small scale. I could have studied other cases with more similar preconditions but I think Dunga and Kisumu is a suitable place for experimenting with new concepts since they already have a gateway into sustainability with an expanding network. I do not suggest that all people in the area should work in the ecotourism business but the industry generates income in many stages, both directly and indirectly.

The concept

The design concept is based on an easy modifiable idea that even if not built in its entirety, it can still fill the main purpose and answer my question. The concept is inspired by Swedish visitors centres, Naturum®, but adapted to the current conditions in Kenya. The idea of making this area available for all people for free wondered the stakeholders a little, yet they found the idea appealing and realizable with a functional method of funding. I think the question of wonder could have to do with local prerequisites or cultural differences. I find this very interesting since it differs from the fundamental ideas from where my concept was partly derived.

I think it was good to combine the guidelines for ecotourism, that may be a little difficult to implement for such a small project, with the guidelines for Naturum® that are proved to be working in 31 examples with different conditions in Sweden (Swedish Environmental Protecting Agency 2014).

If the proposal would be implemented, the requirements for it to be free to visit would probably be the main issue to implement which may seem foreign for Swedish citizens who are used to have infinite access to nature through the roam (right of public access). I understand how the perception of how to make a living may differ from a Kenyan point of view but in this case I wish for the city council to take part and responsibility in these kinds of projects to show the world what I believe about this region: That Kisumu can offer new insights and experiences for tourists and have a great potential of expanding in the tourism sector if they aim to conserve their nature assets and developing their ecotourism brand. It is our shared nature, our *oíkoς,* and it is our shared responsibility, whether visiting or dwelling in that environment, to affect its future.

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Images, photos and maps

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Picture 5 & 6: Soil map and Photo by European Commission. Joint Research Centre. (2013). Soil atlas of Africa. Luxembourg: Publications Office of the European Union. Access: http://eusoils.jrc.ec.europa.eu/library/maps/africa_atlas/index.html [2014-02-03]