



# Enhancing community engagement in Kenya's Yala wetland conservation using the Yala Hub Framework

D.O. Odero <sup>1,2\*</sup>, V.A.O. Odenyo <sup>2</sup>, F. Daudi <sup>2</sup>, P. Omondi <sup>3</sup>

<sup>1</sup> *Retouch Africa International Ltd, Nairobi, Kenya*

<sup>2</sup> *School of Environmental Studies, University of Eldoret, Eldoret, Kenya*

<sup>3</sup> *Department of Geography, Moi University Eldoret, Eldoret, Kenya*

## Abstract

Sustainable management of sensitive ecosystems requires innovative, and sometimes disruptive, interventions. Indigenous Community Conservation Areas (ICCA) are areas previously used for other purposes but are now set aside and protected by local communities. Whereas Indigenous communities have always played a critical role in conserving a variety of natural environments and species for economic, cultural, spiritual or aesthetic reasons, this has shifted to rapid degeneration, sometimes assisted by local communities. Over 65% of Kenya's wildlife live outside protected areas under unofficial conservation measures which could be either beneficial or detrimental to them. Thus, community conservation measures are critical for the survival of the wildlife and biodiversity in those unprotected areas. The Yala Swamp ICCA 10-year management plan was developed using Yala Hub Framework (YHF), a diagnostic and optimization tool, to ensure meaningful participation of the local and indigenous communities to come up with an integrated plan for conserving Yala wetland and its unique biodiversity while promoting sustainable livelihoods of the wetland communities. The plan has a governance system, strategic interventions, conflict resolution mechanism and an equitable benefit sharing mechanism. It was concluded that effective community participation substantially determines, and influences development of ecosystems management plans and the subsequent effective implementation of decisions made therein; and that increased participation through deliberate intervention through YHF does eventually increase the effectiveness of community development. However, it was observed that successful deployment of the framework requires a mindset shift among the local and indigenous communities and technical teams facilitating the process and requisite resources to be operationalized optimally.

**Keywords:** Indigenous Communities; Community Participation; Conservation Areas; Wetland; Yala Hub Framework

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\* Corresponding author. *E-mail address:* [douglas.ouma7@gmail.com](mailto:douglas.ouma7@gmail.com)

## 1. Introduction and rationale

*“If the community would know the value of wealth, they have in their hands in Yala Wetland, they would neither experience hunger nor poverty”.*

*Yala Wetland Elder, 2018*

*“Otoyo adak e samba niang to okia mit niang” meaning a hyena lives in a sugarcane plantation but does not know the sweetness of the sugarcane.*

*Yala Wetland community youth leader*

Indigenous and local communities have always played a critical role in conserving a variety of natural environments and species for economic, cultural, spiritual or aesthetic appeal reasons. Yet, some of these sensitive ecosystems like wetlands are rapidly degenerating with local communities acting as enablers in the degeneration. For example, in Kenya, over 65% of wildlife are living outside protected areas some of which are under the whims of community conservation measures (USAID-MODS, 2022). Therefore, community conservation areas are critical for wildlife and biodiversity found in non-protected areas and innovations in community conservation must be identified and pursued to protect these sensitive ecosystems and the species therein.

### 1.1. Background of community protected areas and ICCAs

Indigenous Community Conservation Areas (ICCA) are areas set aside that were previously used for other purposes but are now protected by local communities. ICCAs can include ecosystems with minimum to substantial human influence as well as cases of continuation, revival or modification of traditional practices or new initiatives taken up by communities in the face of new threats or opportunities. Their sizes may range from very small to large stretches of land and waterscapes (IUCN, 2009).

Three important features that define Community Conserved Areas (CCAs) are i. One or more communities closely relate to the ecosystems and species culturally and/or because of survival and dependence for livelihood; ii. the community management decisions and efforts lead to the conservation of habitats, species, ecological services and associated cultural values, although the conscious objective of management may be different (e.g. livelihood, water security, safeguarding of cultural and spiritual places); and iii. the communities are the major players in decision-making and implementation regarding the management of the site, implying that community institutions have the capacity to enforce regulations. In many situations there may be other stakeholders in collaboration or partnership, but primary decision-making is with the community.

Today, there are many CCAs across the world, including sacred forests, wetlands, landscapes, village lakes, catchment forests, river and coastal stretches and marine areas. In Kenya various types of CCAs include those in: *Pastoralist Landscapes* (e.g. where pastoral communities such as Borana, Turkana, Maasai protect and conserve critical resources such as pasture and water sources for their livestock; Loita Forest in Narok County where the Maasai communities living alongside it have protected it from external encroachment and other development threats; The *sacred forests* of the Mijikenda people of the coastal zone. These groves, known as Kayas, range in size from about 30 to 300 ha and are found along much of the Kenyan coast in Kilifi, Kwale and Mombasa Counties. Eleven representative Kayas spread along the coast were officially inscribed in 2008 as

one of Kenya's six World Heritage Sites (UNESCO, 2011); *Community Conservancies* (e.g. land explicitly for wildlife, often on the basis of tourism investments made by outside companies that enter into contractual agreements with the local community. Examples are found in Maasai Mara, Amboseli, Laikipia, NRT in Northern Kenya and Kenya's North Coast: and *Locally Managed Marine Areas* (e.g. Kuruwitu, Iweni, Kibuyuni, Mradi, Bureni, Mwarembo and Wasini formed to improve the health of reef ecosystem, reduce over exploitation and improve livelihoods.

## 1.2. Rationale for Yala swamp sustainable management

Yala Wetland, third largest freshwater wetland in Kenya, has immense ecological and economic importance in the region (Odhengo et al, 2018b). The swamp acts as a natural filter for a variety of biocides and other agricultural pollutants from the catchments of Yala and Nzoia rivers, and removes silt before the water enters Lake Victoria. Further, the site supports an important local fishery for the neighbouring local communities as well as the national market. Besides, Yala Swamp and the wider basin is home to rare biodiversity which includes globally threatened species of birds, fish, mammals, plants etc. However, the status of many other taxa is little known as they have not been well studied.

Nearly 65% of Yala wetland is occupied by papyrus dominated vegetation (Odhengo et al., 2018a). Yala wetland and the livelihoods it sustains have become more threatened and their ecological integrity endangered by various anthropogenic and hydrodynamic causes. These causes include land use, increased human population and the relations between lake/water level dynamics, weak wetland management and coordination frameworks, under-representation of local communities in wetland decisions making processes. Cumulatively, these have created the enabling environment that is accelerating degradation and loss of these ecosystems, loss of livelihoods and increased poverty among the wetland resource dependent communities (Davis, 2010; Odhengo et al., 2018a; Odero, 2021).

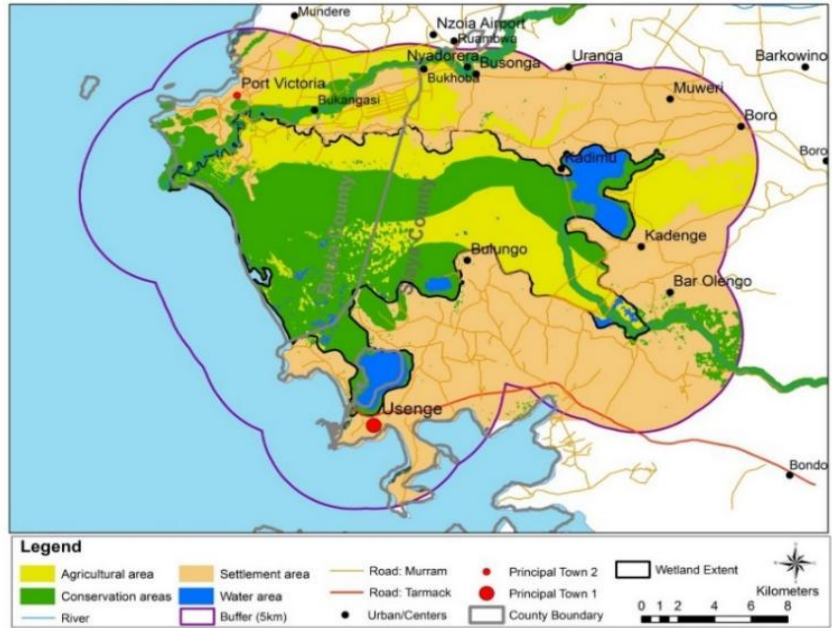
## 1.3. What is the status of public participation in Yala wetland management?

This study presents the process and outcomes of applying the Yala community participation framework in developing the Yala Wetland ICCA Management Plan. The section begins by examining the status of public participation in Yala Wetland management.

Studies on Yala Wetland have pointed out the reasons for under representation of local communities in wetland management include dispossession of community lands by a Dutch company and Lake Victoria Basin Development Authority (LVBDA) without fair compensation and then denying them access to their ancestral lands (KEFRI, 2015). Other recent studies identify incidences of water pollution causing sickness to community members; death of livestock as result of contact with agro-chemicals; lack of awareness / baseline information on Yala wetland inventories and variable climatic conditions and destructive practices by community like overharvesting of wetland plants (Odero, 2021). As result of all these, the local communities had developed no interest in management of the wetland.

Further, the dynamics of community participation that would make their participation effective and meaningful in Yala ecosystem management as their population increase and many stakeholders increasingly get involved in the wetland, are yet to be clearly understood. If they are not well understood, then any design for sustainable management actions will not be attainable thus posing a major threat to the existence of the

ecosystem. This challenge was partly resolved through the development of Yala Hub Framework (YHF) and subsequently used in the development of Yala Wetland Land Use Plan (LUP) which will guide the implementation of various interventions in the wetland (Odero, 2021; Odero and Odenyo, 2021).



**Figure 1.** Proposed Land Uses in Yala Wetland

The Yala Wetland LUP identified three management zones namely Conservation zone, Agricultural zone and Settlement zones (Odhengo et al., 2018a), Figure 1. These designated land use areas do not have stand-alone management plans hence the need to develop one for the Yala Wetland conservation areas that meaningfully recognizes Yala indigenous communities. This management plan seeks to ensure a balance between socio-economic development and environmental conservation in order to secure the livelihoods of the residents of Yala Swamp ICCA members, other people and entities that directly and indirectly benefit from the wetland.

The Conservation zone is faced with myriads of land-use related threats which affect water quantity and quality, biodiversity and the ecosystem’s integrity. The main threats include drainage for commercial irrigation at the Conservation area, intensified use of agrochemicals; unsustainable harvesting of papyrus among others (Odhengo et al., 2018b; Odero, 2021). These pressures are aggravated by demands from the ever-increasing human population and other compounding factors such as climate change. It is therefore imperative to develop an integrated management plan that seeks to strike a balance between the needs of a rapidly increasing population and the conservation of an important ecosystem for posterity. The participation of communities in the management of Yala wetland has been dismal as noted by various studies cited above. This action research conducted alongside the development of ICCA sought to improve local communities’ participation in ICCA development by using the model for optimizing community participation developed during the development of Yala wetland Land use plan called the Yala Hub Framework.

## 1.4. Development of Yala ICCA management plan using Yala Hub Framework

### 1.4.1. Purpose

The Yala ICCA management plan seeks to: provide strategic guidance to local community members and other stakeholders in choosing management decisions that bring most benefits to the present and future generations of the conservation areas; define the roles of various stakeholders in the implementation of the management plan; provide continuity in management during transitions; provide a basis for resource mobilization; provide a framework to assess management effectiveness, resource allocation and accountability; and provide a means to communicate to stakeholders including landowners, neighbours, private sector, donors, government (both county and national) and conservation organizations.

The management plan was designed to ensure the conservation of Yala Swamp ICCAs and their unique biodiversity while promoting sustainable livelihoods for the present and future generations. The 10-year plan provides a suite of management programmes, strategic interventions, a mechanism for identifying and resolving wetland threats, a governance system which defines transformative and authentic leadership ethos required to implement the plan; places communities at the core of wetlands sustainability, and equitable benefit sharing mechanism of wetland resources.

### 1.4.2. Preparation of Yala ICCA

The plan preparation included workings towards ICCA management plan (Mulwa, 2018), ecosystem services assessment (Muoria et al., 2015), Yala Delta LUP (Odhengo et al., 2018 a), strategic environmental assessment (Odhengo et al., 2018b) and Yala Wetland Research on Integrated Community and Participatory GIS in Management of Yala Wetland Ecosystem, Lake Victoria Basin, Kenya (Odero, 2021). Yala ICCA data was collected, analysed and used to develop the draft plan and then taken through rigorous validation processes and final approval by two county Governments of Siaya and Busia in consultation with the National Government relevant agencies as described below. The document sets out the management approach and goals, together with a framework for decision making and sharing wetland resources in conformity with the Kenya Wildlife Conservation and Management Act of 2013 guidelines (GoK, 2013).

### 1.4.3. Data collection and validation

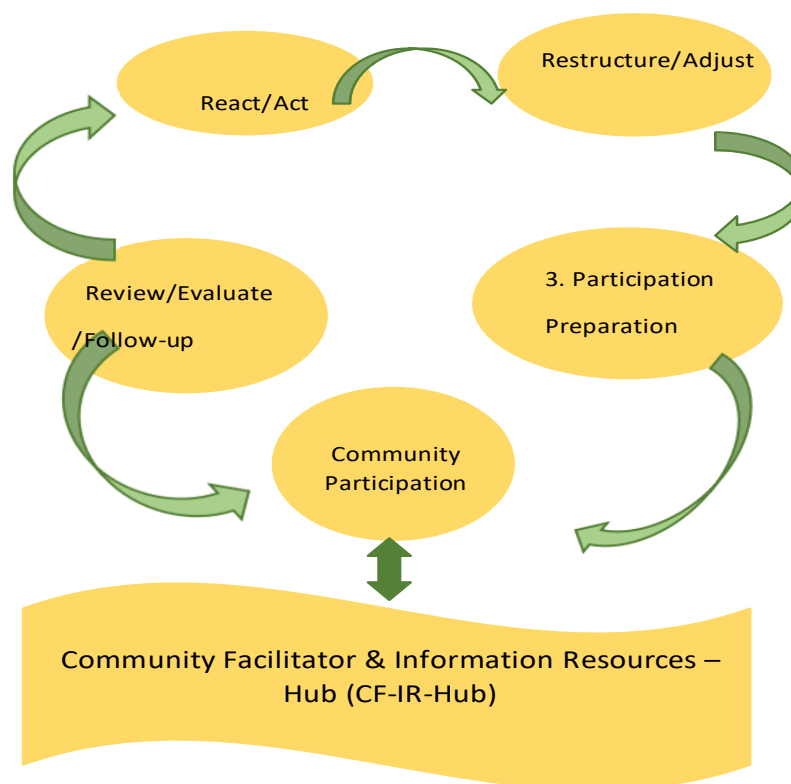
Data gathering commenced in February 2018 when gathering, review and analysis of all relevant literature available was conducted. The first stakeholder meeting was held at Villa Hotel in Siaya town in 2018, a second one in March 2020; validation meeting and technical team consultations in November 2020 (Figures 13 and 14). Follow up/clarification meetings on the draft documents were done with county technical staff during the process of development and validation. Deliberate efforts were made to ensure a large proportion of conservancy members were present. During the consultation meetings, stakeholders developed consensus on plan's vision, mission, core values and principles, goals, baseline data including exceptional resource values such as ecological and biodiversity, scenic sites, culture and cultural sites; identified management issues, constraints and challenges, agreed on a zonation plan for the conservancy, identified management programmes and activities to be included in the plan, developed governance structure for implementing ICCA

plan (i.e. Yala Swamp ICCA Management Committee) and nominated officials to the ICCA management committee in December 2020 during the committee inaugural meeting.

The expert panel professionals from the area among them land use planners, environmentalists, spatial planners and strategic planners contributed to the plan development and reviews before adoption. Collaborative tools such as Google shared files was used to solicit inputs and moderate the discussions from these experts on the SEA, LUP and ICCA contents.

### 1.5. The Yala Hub Community Framework and its relevance to ICCA development

The Yala RAPPEF-CF-IR-Hub Framework (Yala Hub Community Framework) was originally designed to optimize community participation in Yala wetland ecosystem management in Lake Victoria basin Kenya (Odero, 2021; Odero and Odenyo, 2022). The framework sought to remedy the weaknesses of the original Yala Project Advisory Committee (YPAC) mechanism as well as tap opportunities presented as an outcome of an action research. The Yala Hub framework was later deployed in preparation of Siaya County Integrated Development Plan 2018-2022 with appreciable success including creation of directorate of public participation, provided a mechanism to aid Siaya County Government meet public participation requirement as well as improved the quality of citizen participation in CIDP preparation (Odero et al., 2022). Thus, Yala Hub Framework is a diagnostic and optimizing tool for community participation processes.



**Figure 2.** The YALA RAPPEF-CF-IR-Hub Framework for optimizing community participation in Yala Delta Land Use Plan



The framework is called Yala RAPPEF-CF-IR Hub Framework (shortened as the Yala Hub Community Framework) derived from the various steps of using it. The five steps are 1. React/Act. 2. Restructure/Adjust the participation framework based on the reactions. 3. Participation Preparations. 4. Community Participation and 5. Review, Evaluate and Follow-up and these are supported at the base by a Community Facilitator (CF) and an Information Resources Hub (IR-Hub) to support its execution as presented in Figure 2. The details of how this framework works are discussed below.

### *1.5.1. Step 1. React/act.*

The first thing is to gain entry to participate in the process with a high degree of acceptance if the process is already ongoing. The intervener has to find appropriate entry point which depends on the context and how the facilitator positions self (e.g. researcher with their interest at heart, their own representative with technical expertise in the process, known conservationist of good reputation with community) and also application of emotional intelligence to penetrate the ongoing process (e.g. understand their areas of greatest need to participate in the process). If the process is ongoing, one should proceed to conduct stakeholder analysis tier two, which reviews existing stakeholders and their level of participation, and special preference be given local communities. The key guiding question is how effective the process is in representing the local communities (i.e., their interests, sharing accrued benefits from the local resources).

The guiding questions for this step are:

1. What does this community regard highly that can lead to high degree of acceptance of an outsider/ a facilitator?
2. Who is participating in this process? Who is missing on the decision-making table? Which other important voices are not being heard on this planning agenda? Are the divergent voices included in this process? Does participation ensure fair geographic representation? The process facilitator should identify these and ensure their inclusion.
3. What are the strengths and challenges of the existing community participation framework currently being implemented? On the spectrum of public participation (informing, consulting, involving, collaborating to empowering) levels.
4. Using the 10 indicators for public participation effectiveness, what are strengths and weaknesses of the current community participation framework in development intervention processes? How do you ensure the weaknesses are mitigated going forward? The 10 indicators are Objective of participation; Contexts for the participation; Levels of Involvement; Who was involved, how were they chosen and by who? What methods were used (maps, interviews), if they did, did they work? Innovation of the methods used; Commitment to community participation; Inputs (time, money etc. and results in relation to those inputs); Outputs (hard outputs, reports, posters, press, completed survey forms); and Outcome.

### *1.5.2. Step 2. Restructure/adjust the participation framework based on the feedback step*

The outcome of step one forms the basis for adjustment and restructuring at this stage. In the processes the researcher adjusts the participation process by bringing to the decision-making table very important stakeholders who were initially left out. It expands the representation of local communities to include

community formations/ organizations and learning institutions at their bases in addition to given participation framework. Both preparations and actual implementation methodologies are modified, and new ones added based on step one feedback. If the project or program is new, then it moves from step 1 to step 3, bypassing step 2. Guiding questions were:

1. Who needs to be added to the participation processes? What uniqueness do they bring on board?
2. How can one ensure meaningful participation from the people joining an ongoing process?
3. How are the elements that were hampering community participation effectiveness being tackled in the adjusted mechanism?
4. How can one use participatory methodologies to improve participation?
5. What should one do to improve the environment for participation and harness creativity?

### *1.5.3. Step 3. Participation preparations*

The third step calls for thorough preparation before the actual participation. Consequently, this step evaluates participation readiness and ensures the process is ready by addressing identified concerns/feedback; identifying facilitator(s) and equipping them to manage the process effectively; practical training on facilitation skills including mock training amongst facilitators; enabling logistical support, and framing issues for discussion with the identified stakeholders in step one using appreciative lenses focusing on root causes and suggesting the possibilities of tackling them. The guiding questions for this step are:

1. What is the level of community participation in this activity? Does the process provide local communities with room to articulate their interests and concerns?
2. What are the units of participation? What is the smallest unit for participation in this case? How are they organized to enable smooth flow of information and receive timely feedback?
3. What type of persons will be required to facilitate this participation process?
4. What type of skills and training are required to equip facilitators of this process?
5. What logistical support and budget will be required to conduct this participation?
6. How does one frame issues for effective discussion with the identified stakeholders in step 1 above?
7. Which participatory methodologies are appropriate/best? And how will one use these in community participation processes?
8. What creativity and innovations will one bring to this community participation process?

### *1.5.4. Step 4. Community participation*

This step is where the target communities interact with the planning processes and relay the feedback to the main planning secretariat (technical team). Various methods are used for these interactions which enable the communities to express themselves holistically. For example, by empathy walks; consulting in communities' local languages; artistic works where talented community members express themselves; and cultural artifacts to express themselves. The CF manages the community participation processes using various participatory methodologies and resolves any participation challenges to ensure maximum interaction of communities in



the planning process and relaying critical feedback to the technical team and other planning organs outside the formal consultation sessions. The guiding questions were:

1. How does one conduct community consultations that will allow participation of the new groups to smoothly integrate with other existing teams?
2. Summarize the key issues about (i.e. ICCA) process to date? What are the areas of convergence? What are the areas of disagreement? What other concerns about resources do the communities have?
3. What participation tools are appropriate for the targeted community and why?
4. How are the processes outcomes documented, validated by the communities and relayed to the technical team for inclusion?
5. What do the target communities' value most about the planned resource and why? What are the communities' non- negotiables on resources being planned?

#### 1.5.5. Step 5. Review, evaluate and follow-up: Participants feedback about participation processes

At this stage stakeholders evaluate the participation processes and outcomes guided by the following questions:

1. What went very well? b. What could be done even better/improved next time?
2. How does one feel about the final outcome of the plan?
3. What follow-up mechanism is in place to ensure community participation issues/outcomes in the plan are later implemented?
4. How does one get the community as a key player in the implementation processes?
5. How does one ensure that the benefits from planned resources are shared equitably with the target communities and their key actors with a mutual accountability system?

#### 1.5.6. Community facilitator

At the core of optimizing community participation in planning processes is the Community Facilitator (CF) who helps communities navigate those five steps and is supported by an Information Resources Hub (IR-Hub). The CF should have relevant attributes and skills in interpreting scientific and technical information to the community. A key feature CF also provides was for a *safe environment of trust, inspired confidence and mutual respect for participation*. Thus, relationship building is vital aspect of increasing community participation which the CF brings into participation in the planning process. The CF has to build relationships and nurture trust in relationship building to increase participation levels and quality. This requires capability to apply emotional intelligence skills by the CF to hasten this process.

The type of stakeholders targeted in the expanded process determines the type of data collection tools adopted. For example, the youth prefer a mix of media concurrently (audiovisuals, social media e.g whatsapp, facebook, instagram, group work sent to their phones directly, X (formerly Twitter), TikTok, while in schools one can use artwork, debates, essays with queries that focused on challenges and what future they envisioned of the future of the resource /planned area. For environmental events days the team can choose gallery walks, display of artistic works, display of resource products, live performances like poems and dramas with planning

messages, display of ecotourism sites and thematic songs delivered with aid of traditional instruments (such *nyatiti, ohangla, orutu, pekee, tung*) and talks by both government and community leaders based on the theme of the event. The CF also seizes these occasions to update them on ICCA progress, key planning issues and obtained their feedback on the same (leveraged participation points and new feedback loops).

In addition, the steps intentionally involved the use of local leaders to co-facilitate the meetings with the researchers after being trained on ICCA specific issues to guide focus group discussions and community meetings.

### 1.5.7. Information Resources Hub (IR-Hub)

The *IR-Hub* was vital in gathering, processing and relaying timely data and information required to inform the processes. The IR-Hub is a support mechanism to enable communities to access relevant and timely information and knowledge for decision making in planning processes. It entails sourcing, processing, repackaging, storing, retrieving, dissemination and feedback.

Thus, Yala Hub Community Framework (YHF) is a facilitative model with a Community Facilitator (CF) and Information Resources Hub (IR-Hub) being the foundation to its execution (35%). Its five steps which account for 65% of its effectiveness are: Step 1. React/Act; Step 2. Restructure/Adjust the participation framework based on the reactions in step one; Step 3. Participation Preparations, Step 4. Community Participation; and Step 5. Review, Evaluate and Follow-up. Each of these five steps has coaching/guiding questions to help tease out information for actualizing the process. Whereas the processes are sequential, the application can be iterative, as feedback from preceding steps provide insights and revelations that may take the user back to mine more data and information before moving ahead in the continuum. Given the changes of involving local communities in the management of the Yala wetland, it was prudent to apply this model in the development of Yala ICCA as discussed under the results section.

## 2. Materials and methods

### 2.1. Materials

#### 2.1.1. Yala wetland overview

The Yala LUP, local communities and other stakeholders identified suitable areas for ICCAs in the Yala wetland core planning covering both open waters (mainly lakes) 2000 ha and community conservation areas (8315 ha), a total of 10,315 ha (Figure 3a-d). The criteria for selection of these ICCAs included: presence of key biodiversity (Important Bird Area, hosting at over 100 bird species); threats to biodiversity (Lake Victoria cichlid fish, already exterminated in the main lake); endangered Sitatunga antelope (*Tragecephalus spekeii*); vulnerability to conversion through agricultural expansion; representativeness (habitat, biodiversity, ecological function and ecosystem services); connectivity (among the ICCAs, with corridors that allow the movement of water and wildlife to maintain the ecological functions and ecosystem services of the swamp); suitability for community engagement; and potential for ecotourism.

The Yala Swamp ICCAs area of 10,315 ha covers open waters (mainly lakes Kanyaboli, Sare, and Namboyo and the water corridors connecting the three lakes to the lower parts of the swamp in Bunyala and the community conservation areas (the lower reaches of the swamp).

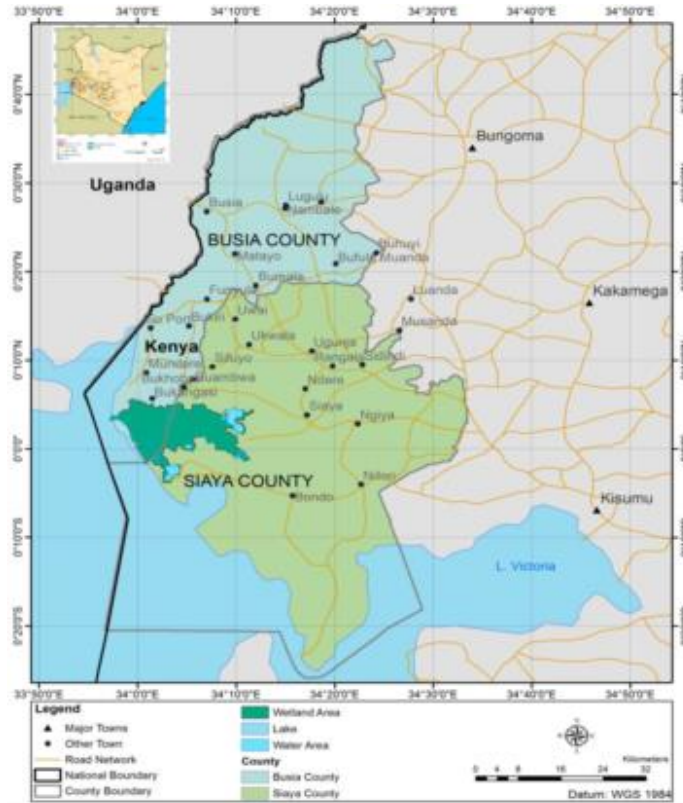


Figure 3a. Location of Yala Swamp (Odhengo et al., 2018a)

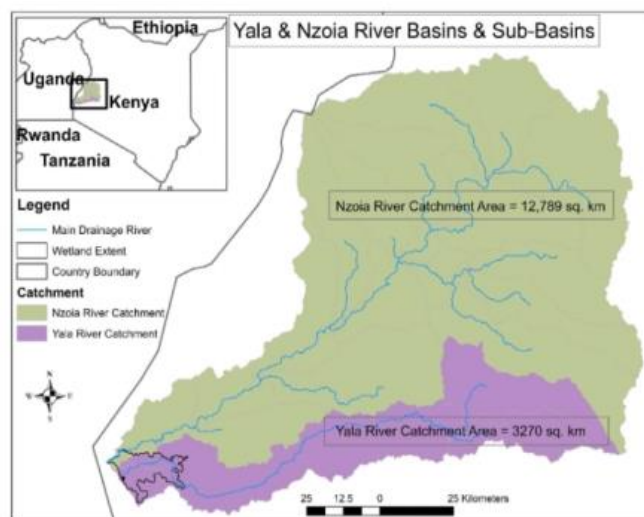
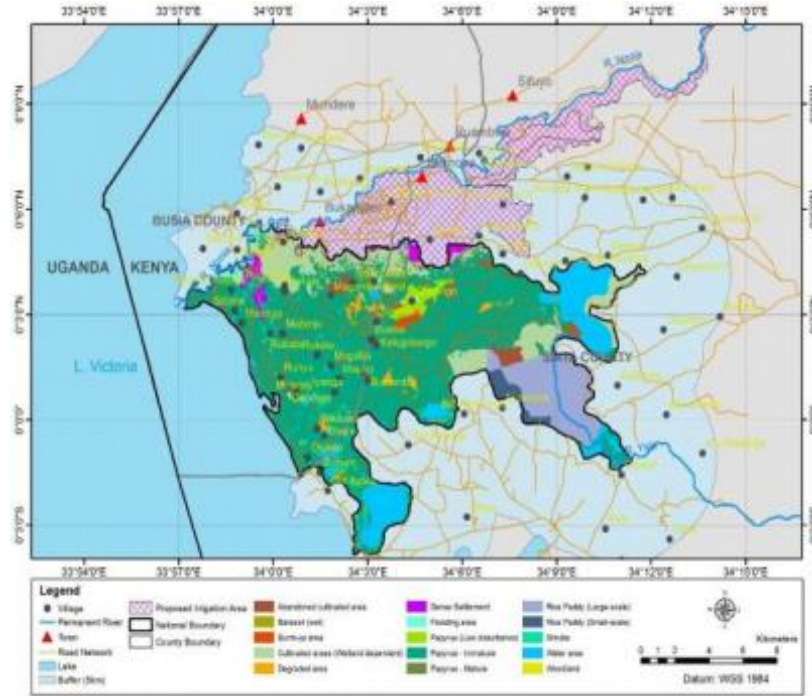
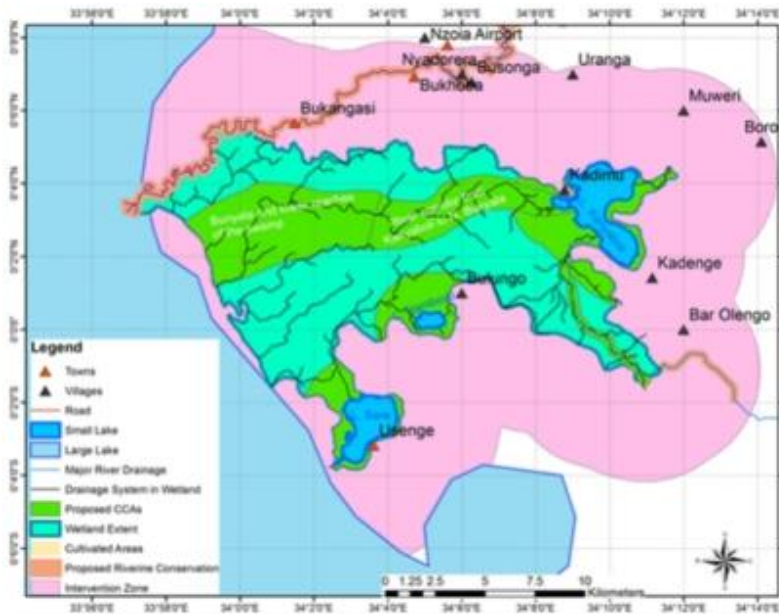


Figure 3b. Yala River and Nzoia River Catchments (Source: JICA, 2013)



**Figure 3c.** Proposed Lower Nzoia Irrigation Scheme in relation to Yala Swamp (Source: Odhengo et al., 2018b)



**Figure 3d.** Map of identified community conserved areas and open waters (Lakes Kanyaboli, Sare and Namboyo) (Source: Odhengo et al., 2018b)

Semi-commercial fishing takes place in the three lakes although there has been a decline in the populations of many endemic cichlid fishes due to predation pressure by the introduced Bar Nile perch, *Lates niloticus*;

intensive non-selective fishing, extreme changes in the drainage basin, increased eutrophication, and the invasion of the lake by the water hyacinth. Lake Kanyaboli is particularly critical as a refuge for endemic and endangered fish and has been gazetted as a National Reserve. Further development of agricultural activities is a major threat to the lakes' survival and the fishing industry that they support. It is important to ensure that enough water flows through the lakes to maintain their ecological integrity. The lower reaches of Yala Swamp in Bunyala were also identified as potential ICCAs.

### *2.1.2. Demography of Yala swamp and ICCA*

The swamp is located in an area that has a high population density of 375 persons per square kilometre (KNBS, 2020) and a high growth rate in the country. It is densely populated especially around Boro, Sakwa, Yimbo and Budalangi. Siaya County has a population of approximately 993,183 people with a population density of 393 per Km<sup>2</sup> and growth rate of 1.7 %. The settlement on the northern periphery of the swamp is unstable as a result of frequent flooding when River Nzoia breaks its banks. Busia County has a higher human population of 993,183 (2019) and density of up to 710 persons per Km<sup>2</sup> and 3.1% growth rate (KNBS, 2020).

The communities are sparsely living around the swamp comprises mainly the Luos of Siaya County and the Luhyas of Budalangi of Busia County. However, the swamp island villages have relatively dense population. These include Rukala, Lunyu, Maduwa, Bulwani and Namabusi. The homesteads on the Luo side are arranged in a traditional Luo pattern. The mean household size is 5.05, although population density in the swamp and adjacent areas is not uniform (Nature Kenya, 2011). According to Thenya (2006), most households within Yala Swamp are mainly monogamous (52%) but with a significant proportion of polygamy (26%).

### *2.1.3. Ecological zones of the Yala Swamp and ICCA*

#### *2.1.3.1. Water corridors and riparian zones*

The Yala Swamp ICCAs include the riparian areas around open waters and the land buffering key water corridors (river channels) that allow connectivity of Yala River and Lake Kanyaboli and also Lake Kanyaboli and Lake Victoria. The key planning issues in this area are biodiversity loss, destruction of riparian vegetation, and lack of data on biodiversity and climate change. Protection of these zones will have a direct relationship on fisheries production and the recreation potential of the planning area.

#### *2.1.3.2. Open water zone*

This area mainly comprises three Lakes, Kanyaboli, Sare and Namboyo. Key planning issues in this area include reduction in water quality due to pollution particularly from agrochemicals, reduction in water quantity due to diversion for irrigation and other uses, biodiversity loss due to poaching and overfishing, destruction of riparian vegetation, lack of data on biodiversity and impacts of climate change.

#### *2.1.3.3. Permanently flooded areas/papyrus zone*

Here the land is permanently under water because it lies below the normal water level of Lake Victoria. The area would be difficult to reclaim with the current technology, but in environmental terms it is vitally important to the maintenance of the overall swamp ecosystem.



#### 2.1.3.4. Scrub/woodland zone

The scrub/woodland is an important element of the wetland and plays a vital ecological function. Major concerns in this zone include encroachment and habitat loss for terrestrial biodiversity such as birds, mammals, reptiles etc.

The ecosystem services enjoyed by the community and wildlife at large in Yala Swamp and ICCA are crop production, papyrus reed harvesting, building materials, fishing, fuelwood; flood protection, ecosystem support, employment, research, heritage/uniqueness, cultural support, biodiversity conservation.

#### 2.1.3.5. Yala swamp ICCA climate

The climate within the Yala Swamp is generally typical of the Lake Victoria region lacking clear pronounced dry season. The region has a variable rainfall pattern that generally increases from the lake shore to the hinterland (Ekirapa and Kinyanjui, 1987). The mean annual rainfall in this part of Kenya ranges from 1055 – 1157 mm and is bimodal. Long rains occur between March and - May and short rains occur between October and- December. The long rains and short rains contribute 44% and 25% of the total mean annual rainfall (TMAR) respectively while January-February and June to September contribute 11% and 20% TMAR respectively. The mean annual daily maximum and minimum temperatures are 28.9° C and 15.9° C respectively – giving a mean annual temperature of 24.4° C (Ekirapa and Kinyanjui, 1987).

#### 2.1.4. Biodiversity of Yala swamp and ICCA

The Yala Swamp is an exceptionally rich and diverse ecosystem, containing many rare, vulnerable and endangered species of flora and fauna. Although birds and fish of Yala are better known, data gaps exist for many other taxonomic groups which remain poorly studied such as small mammals and herpetofauna.

##### 2.1.4.1. Vegetation

Yala Swamp is the largest papyrus swamp in the Kenyan portion of the Lake Victoria. Almost the entire area of the remaining wetland comprises of stands of papyrus which require high temperatures and constantly saturated soil or stagnant water to thrive. The growth of papyrus results in the formation of a dense vegetation matt which impedes surface water movement and helps to create ideal swamp conditions. It also traps sediment and acts as a natural water purifier which is of great importance in protecting the water quality of Lake Victoria. Papyrus is, however, very demanding in terms of water and evapo-transpiration from one square metre exceeds 4.5 litres a day, which is 40% higher than the already high evaporation from open water (Odero, 2021).

The swamp is characterized by four vegetation types, i.e. Aquatic plants, Riparian plants, Grassland and Terrestrial weeds. This unique system therefore holds species of diverse ecological significance and specialised habitat, and micro-habitat needs.

##### 2.1.4.2. Plants species

The predominant and most ecologically important vegetation in Yala Swamp is the papyrus (*Cyperus papyrus*) with *Phragmites mauritianus* in shallower areas and swamp grasses around the periphery. Over 100 vascular plants have been recorded within Yala Swamp of which 13 are invasive (Odero, 2020).



The key plant species within different vegetation types include *Aquatic plants* e.g. *Nymphaea nouchali*, *Ludwigia stolonifera*; *Riparian plants* e.g. *Echinochloa hapoclada*, *Cyperus papyrus*, *Typha latifolia*, *Pragmites australis*, *Polygonum salicifolium*; *Grassland species* e.g. *Sida acuta*, *Phyla nodiflora*, *Kylinga sp.*, *Aschenomene shimperi*, *Centella asiatica*, *Trifolium burchellianum*; *Terrestrial weeds* e.g. *Schkuhria pinnata*, *Datura stramonium*, *Stachytarpheta jamaicensis*. The invasive plant species (13) found within the lower Yala basin include *Acanthospermum hispidum*, *Azolla Asiatic*, *Cynodon dactylon*, *Datura stramonium*, *Eichhornia crassipes*, *Lantana camara*, *Mimosa pudica*, *Pistia strutiotes*, *Ricinus communis*, *Schkuhria pinnata*, *Senna didymobotrya*, *Tithonia diversifolia*, and *Xanthium pungens*.

#### 2.1.4.3. Bird species

The Yala Swamp hosts nearly 170 bird species. The papyrus vegetation provides breeding and feeding grounds critical for the survival of these bird species. According to Birdlife International (2014), the Yala Swamp is an important site for East Africa's papyrus endemics. These include Papyrus Yellow Warbler (*Chloropeta gracilirostris*-Figure 4), Papyrus Gonolek (*Laniarius mufumbiri*-Figure 5), Carruthers's Cisticola (*Cisticola carruthersi*), White-winged Scrub-warbler (*Bradypterus carpalis*) and Papyrus Canary (*Serinus koliensis*). Regionally threatened species including the Great egret (*Casmerodius albus*) and Baillon's crane (*Porzana pusilla*) have also been recorded. A high population of birds also feed in nearby grounds across the swamps and primary ponds. Egrets, kingfishers, and hamerkops dominate the inshore areas of the swamp.



**Figure 4.** Endemic Papyrus Yellow Warbler (*Chloropeta gracilirostris*).  
Photo credit Ibrahim Onyango, Lake Kanyaboli tour guide.

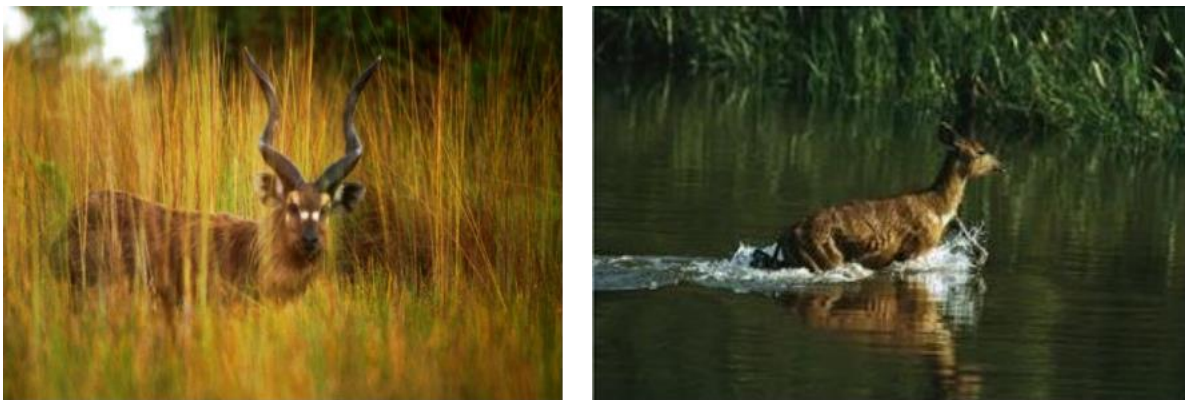


**Figure 5.** Papyrus Gonolek (*Laniarius mufumbiri*).

Photo credit Ibrahim Onyango, Lake Kanyaboli tour guide.

#### 2.1.4.4. Mammal species

Over 30 mammal species have been recorded at Yala Swamp (Odero, 2020). They include the Sitatunga (*Tragelaphus spekeii*-Figure 6), a shy and rare semi-aquatic antelope that is nationally listed as Endangered (GoK, 2013) (plate 3). Other mammalian fauna found in Yala Swamp include Hippopotamus (listed as Vulnerable by IUCN (2018), wild pigs, vervet monkeys, Otters, various species of bats among others.



**Figure 6.** Endangered 'Sitatunga' antelopes spotted in Yala wetland.

#### 2.1.4.5. Fish species

The swamp provides an important refuge for Lake Victoria cichlid fish, many of which have been exterminated in the main lake by the introduction of the non-native predatory fish, Nile Perch (*Lates niloticus*). Recent surveys in Lake Kanyaboli recorded 19 fish species within nine families, which included all the two critically endangered cichlids species thought to be extirpated in the main Lake Victoria namely *Oreochromis esculentus*

and *Oreochromis variabilis* (IUCN, 2018). The fishes including *Protoptera Ethiopicus* -Figure 7 and *Clarias Liocephalus*-Figure 8 use the swamp as a breeding ground, nursery, and feeding grounds (Aloo, 2003).



**Figure 7.** *Protoptera Ethiopicus (monye)*.

Photo credit: Author, 2020



**Figure 8.** Endangered Fish species *Clarias Liocephalus (duri)*

Photo credit: Author, 2020



#### 2.1.4.6. Herpetofauna species

Few species of herpetofauna i.e. snakes, lizards and chameleons, frogs etc. have been recorded largely because few studies have been conducted for these taxa.

#### 2.1.4.7. Invertebrate species

Little invertebrate surveys have been conducted at Yala Swamp e.g. a rapid assessment conducted by Kenya wetland forum in 2006 indicate presence of Oligochaetes (*Branchiura sowerbyi*), Stoneflies (Plecoptera), Dragonflies (Odonates), and May flies (Ephemeroptera).

### 2.1.5. Yala Swamp ICCA exceptional resource values

#### 2.1.5.1. Exceptional biodiversity value under threat

Yala Swamp ICCA has exceptional biodiversity values due to diverse biodiversity that includes mainly globally threatened species some of which are endemic to the delta ecosystem. These include sitatunga antelopes, Cichlid fish species i.e. *Oreochromis variabilis* and *O. esculentus*; for birds Papyrus Warbler and Papyrus Gonolek. Yala wetland hosts a wide variety of biological diversity namely fish, mammals, birds, reptiles, amphibians, invertebrates and plants, including range restricted, endemic, endangered and migratory species.

#### 2.1.5.2. Yala basin mammalian diversity

At least 40 mammal species have been recorded within Yala river basin (Mulwa et al., 2015). The upper catchment forests are rich in primates namely Vervet monkey (*Cercopithecus pygerythrus*), Black and white (guereza) colobus (*Colobus guereza*), Blue monkey (*Cercopithecus mitis*). Red-tailed monkey (*Cercopithecus ascanius*) and the nationally engendered De Brazza's monkey (*Cercopithecus neglectus*) (Odhengo, 2018b). Some of the challenges faced by these mammalian diversities include: pressure caused by high population densities on the swamp edges thus they hunt these mammals for food (wild pig, sitatunga antelopes, and hippopotamus).

#### 2.1.5.3. Avifauna biodiversity of Yala basin

There are about 600 bird species within 61 families found within the entire Yala basin (Bennum and Njoroge, 1999; IUCN, 2016). The upper basin unique forest ecosystems of Nandi and Kakamega harbour most forest species. Yala basin hosts 14 species that are threatened with extinction. These include Papyrus Warbler (vulnerable) and Papyrus Gonolek (near threatened) found in the lower basin of Yala Swamp; Grey Parrot (engendered), Turner's Eremonela (engendered) and Chapin's Flycatcher (vulnerable) within the forests in the upper basin and Grey Crowned crane (endangered) and Martial Eagle (vulnerable) which occurs across the entire basin.

Various birds' species are known to perform various functions. For example, *Magungu* for early warning for impending rains; Owl (*Tula nyangoro*) and *Arum*, *Munglu* spell death and calamities; *Tel tel* good fortune but indicates bad fortune when it chirps repeatedly (*anouya*), *Arum koga* (bad omen) (Odero, 2021).

An additional 107 bird species are migrants, of which 71 originate from Europe (e.g. Osprey, Figures 9a/9b) and Asia while three are from Madagascar, the rest being intra-African migrants. Some of the challenges on these bird species include low level of awareness hence some local residents' communities trap and kill the

birds instead of releasing them (personal communication, 2018). There have been accidents of migratory birds caught in fishing nets and rescue mission taking much longer because of absence of a bird conservancy in the area. Other challenges and threats to biodiversity conservation include: lack of sound documentation and uptake of indigenous knowledge in biodiversity conservation.



**Figure 9a.** Osprey (*Pandion haliaetus*) bird after it had been captured by Mr Walter Tende in his fishing net in Yala wetland. Osprey tagged as ring No. M 68528 on 08.07.2017 in Pielavesi, Pohjois-Savo, Kuopio (SF81), Finland and found on 16.01.2020 in Usenge, Siaya County, Kenya (GP00) 0°4'S 34°3'E (WGS84 Photo Credit: Ayiro Lwala Chair Yala Ecosystem site support group.



**Figure 9b.** Tende's son holds osprey bird in their homestead. Students are inculcated into the value and care for migratory birds. Photo Credit: Ayiro Lwala Chair Yala Ecosystem site support group.

Therefore, Yala Swamp ICCA represents a unique in-situ genetic resources bank that is critical for ecosystem functioning and biodiversity conservation; and should be managed in a way that ensures retention of large areas with good condition of papyrus. The rich biodiversity heritage can be used to market Yala Swamp as a key tourist destination.

#### 2.1.5.4. Carbon sequestration

Wetlands are very effective ecosystems for carbon storage. The Yala Wetland vegetation takes up carbon from the atmosphere and converts it into plant biomass during the process of photosynthesis. The Wetland can therefore be seen as a giant 'sink' which is recovering the greenhouse gas, carbon dioxide, from the atmosphere. In many wetlands, waterlogged soil conditions prevent decomposition of the plant material thereby retaining carbon in the form of un-decomposed organic matter (i.e. Peat) (NEMA, 2016). The long retention of carbon in wetlands prevents excessive amounts of atmospheric carbon, thereby reducing global warming. The retained carbon is easily released into the atmosphere wherever peat lands are drained and exposed to fires. A detailed study of carbon storage in the Yala Wetland in 2015 confirmed that the present wetland is storing close to 15 million tonnes of carbon within the papyrus wetland, with less than 1 million tonnes stored in the remaining areas of reclaimed farmland and immature papyrus (Muoria et al., 2015).

#### 2.1.6. Legal status of Yala Wetland Land

According to the Kenya Constitution 2010, the ownership of Yala Wetland is currently vested under the County Governments of Siaya and Busia under a previous Trust land Act. However, some areas are perceivably communally owned while others are privately owned. Some local people have acquired land through self-allocation and later passed it on through inheritance along their kinship (Thenya, 2006).

The Constitution and the Community Land Act 2016 requires that all Trust Lands must be registered according to the Act (GoK, 2010a; GoK, 2016). If communities do not register their lands themselves, the law indicates that County Governments must plan to register community lands, but they might include local people in the registration process and communities might lose some of their lands and might not be able to make their own rules for governing and managing their lands. The Dominion Farms Ltd leased about 6,900 hectares (about 40% of the wetland) to undertake agriculture from 2003 for 25 years (Dominion Farms, 2015; Owiyo et al., 2014; Kenyan Wetlands Forum Report, 2006). This matter has often resulted in numerous conflicts and tensions, partly due to the lack of information on how the process of leasing actually took place. Consequently, many people in the communities feel that the process was flawed and riddled by corruption and bribery (van Heukelom, 2013). The conflicts surrounding the Yala Wetland revolve around three structural problems: poor communication, cultural and social misunderstanding, and political involvement (van Heukelom, 2013). Dominion Farms ceased its operations in 2017 in Yala Wetland and its place taken up by the Lake Agro Limited who have vast interest in sugar in Western Kenya.

Lake Kanyaboli was gazetted as a National Reserve through Legal Notice No 158 of 2010 (GoK, 2010b). The total area of the reserve is 41.42 km<sup>2</sup> and is legally under the management of Siaya County Government with technical and policy support from Kenya Wildlife Service. In addition, Kenya Wildlife Service has initiated the process of having the site listed as a Wetland of International Importance under the Ramsar Convention.

Responsibility for the management of water resources within Yala Wetland falls under the Water Resources Authority (WRA), although other agencies like the Kenya Wildlife Service have parallel commitments and the



private sector plays a disproportionate role in directing water flows to different parts of the wetland. The Yala LUP proposes formation of a Land and Water Management Committee to oversee both land and water management in the Yala Plan Area (Odhengo et al., 2018b; NEMA, 2016). A task force of specialists of Yala Swamp Water management committee shall record and regulate water flows and water availability in all areas of the Plan Area.

## 2.2. Methods

### 2.2.1. action research design

Given the complex nature of the ecologically sensitive Yala wetland, action research was deemed to be the best methodology to unravel participation issues therein. Action research methodologies would assist the “actor” in improving and/or refining his or her actions (Reason, 1994; Stringer, 1999; Mills, 2000). Kurt Lewin, then a professor at MIT, first coined the term "action research" in 1944 (Mills, 2000). Also, it seeks transformative change through the simultaneous process of taking action and doing research, which are linked together by critical reflection (Lewin, 1958; Johnson, 1976). Thus, Action Research is problem centered, client centered, and action oriented. It involves the client system in a diagnostic, active-learning, problem-finding and problem-solving process.

This study used multiple methods including purposive and stratified sampling to collect data. Training community facilitators were identified, trained and deployed to facilitate community participation consultations on Yala ICCA development in Yala wetland. Multidisciplinary research using case study design employed exploratory action research with both qualitative and quantitative methods of data collection and analysis (Dawson et al., 1993; Krueger and Casey, 2008; Natasha et al., 2005; Neuman, 1997; Reason, 1994). Appreciative Inquiry (AI) methodology and participatory approaches and secondary data were used in data collection and analysis (Dweck, 2008; Cooperrider, et al., 2008). The secondary data included policy and legal frameworks, Planning guidelines and procedures by National Government, relevant studies to public participation from elsewhere. This qualitative research used was supported by quantitative methods. Strauss and Corbin (1990) noted that quantitative and qualitative methods are tools that complement each other.

The data gathered were analyzed in an inductive manner, where themes were generated based on emerging similarities of expression in the data material. Many of these elements provided quotations in the write-up of research findings and other similar elements were quantified using descriptive statistics to give a sense of the emerging themes. The results were validated, final document approval by both Siaya and Busia executives and county assemblies.

Literature review was conducted on public participation, policies, laws and relevant studies that provided secondary data and a valuable source of additional information for triangulation of data generated by other means during the research and this has also been used by many researchers (Friis-Hansen and Duveskog, 2012; IYSLP, 2017).

## 3. Results and discussions

This study presents the process and outcomes of applying a Yala community participation framework in the development of Yala Wetland ICCA Management Plan.

### 3.1. Deployment of Yala hub community framework to preparation of Yala ICCA management plan 2019-2029

During the development of Yala ICCA the Yala RAPPEF-CF-IR Hub framework was applied as follows:

#### 3.1.1. Step 1. React/act

The researcher joined the process as the consultant for ICCA development. This process had already started earlier and even generated working notes on the ICCA plan. In providing technical assistance, the consultant (as Process Facilitator) reviewed the processes that had since taken place. It was found that the process was technically skewed with mainly high-level stakeholder consultation with minimal local communities' substantial inputs. Therefore, improving community participation would require inclusivity up to the village levels adjacent to the conservation areas and in the islands' villages rather high level than county headquarter level consultations. It further needed good linkage with the national government to ensure compliance, integration with national and regional plans and to benefit from lessons learnt from wetlands management. The researcher therefore applied stakeholder analysis tier two which identified various formation of community groups (fisherfolks, islanders, students, motorcycle riders (bodaboda). The Community facilitator then designed the mechanism of reaching to these communities in their set ups to seek their inputs in ICCA development through focus group discussions, key informant interviews and environmental empathy walks.

#### 3.1.2. Step 2. Restructure/adjust the participation framework based on the feedback from reaction step 1

Informed by the above analysis, the ICCA development team expanded the consultation framework. The stakeholder's analysis tier two done at the community participation training of ICCA facilitators, to equip them for the task. The wards bordering the Yala ICCA were able to identify their stakeholders who were then included in the ICCA development processes.

Among the stakeholder left out initially but second level of identification brought on the fore were: Motorcycle operators (boda boda); various community-based organizations neighbouring ICCA, people who are not in groups such as older person in the society; students in schools; ICCA neighbouring residents who were out of the county and country at the time (diasporians) and conservation professionals hailing from around the proposed ICCAs.

#### 3.1.3. Step 3. Participation preparations

This entailed preparing draft document arising from plans from various relevant plans: NEMA Yala Wetland Management Plan; Yala Wetland Land Use Plan, Yala wetland Strategic environmental plan (SEA,) Research reports on Yala wetland including in Integrated Community and Participatory GIS in Management of Yala Wetland Ecosystem, Lake Victoria Basin (Odero, 2021) Siaya and Busia County sector and departmental plans touching on Yala swamp; previous CIDP 2013-2017 review and peer reviews inputs. The ICCA facilitators at the village level were trained on ICCA planning process; facilitation skills, data collection, processing and documentation, sensitive ecosystem and systems approaches.

The team identified facilitators from the community groups in wards bordering the ICCA zone. The facilitators had a two day-training of facilitators (TOF) to equip them with the new approach to planning (integrated county planning and sensitive ecosystems planning (Figure 10a).

The training content included: Understanding the County Integrated Planning Processes; Why Public Participation? Public Participation Data Collection Tools i.e. Stakeholder mapping and analysis, Problem Analysis using problem tree tool, Appreciative Inquiry (The Opportunity Tree); Group work and simulation; Facilitation skills for public fora; sensitive ecosystem and systems approaches. Ward based Action planning and development of a road map to public participation.



**Figure 10a.** Multifaceted approaches including Video of the “disabled mum taking care of her child” being aired to the participants as part of emotional intelligence package for helping change mindset from helplessness to using what you have to transform.

THEFT OF NETS	SEXUAL EXPLOITATION OF WOMEN	PROBLEMS CAUSED BY POLICE	PROBLEMS CAUSED BY SUBSIDIES	INADEQUATE STAFFING	SCORE	RANK
THEFT OF NETS	TN	TN	PP	ISF	2	3
SEXUAL EXPLOITATION OF WOMEN		AXP	PP	ISF	0	5
PROBLEMS CAUSED BY POLICE			PP	ISF	1	4
PROBLEMS CAUSED BY SUBSIDIES				PP	4	1
INADEQUATE STAFFING					3	2

**Figure 10b.** Sample pairwise ranking for problems facing the fishing communities in Yala wetland.



**Figure 11.** Community stakeholders meeting during Wetlands Day in 2019.



**Figure 12.** Syndicate group validating various programmatic areas in the ICCA plan with the researcher interrogating with them through salient issues. ICCA validation was conducted under strict observance of Covid-19 health protocols.

The trainees conducted mock public participation where they applied the pair-wise ranking and recorded the feedback from the communities (Figure 10b). The mock identified areas where they had difficulties, had these clarified by lead trainer-researcher and members of ICCA planning team deployed as back-up to the teams during public participation. The team also mapped out potentially challenging stations based on previous experience, incitement by local leadership; territorial control base of some leaders and back-up team assigned appropriately with those concerns in mind. Likewise, teams in those potential challenging areas were psychologically prepared and the respective ward administrators coordinated the pre-event activities. The ward administrators developed a plan and a checklist preparation of ICCA community participation to ensure sound preparations.



**Figure 13.** ICCA Validation meeting taking held on 12 November 2020 at Villa Hotel, Siaya.



**Figure 14.** Government Team Technical Consultative meeting on the Yala ICCA Management Plan in Busia on November 17, 2020 (Photo credit: Author, 2020)

#### 3.1.4. Step 4. Community participation

The notice for the meeting was sent out in the local daily newspaper, placed on noticeboards, local FM radios and by word of mouth through local administrators. The community facilitators mobilized communities in their locations and also the message was passed through them. The participation forums were held at convenient timings for communities mainly between 10 a.m. and 6.00p.m. The community facilitators provided leadership in their respective areas. The new concept planning, integrated development planning, was explained and given local metaphors for the communities to comprehend-the dreams and aspiration of the wetland “*Lek mar Yala mag ndalo mabiro*”. The team also explained sensitive ecosystems and the planning required to for them using principles of sound environmental management.

The wetland communities were able to participate in the process directly through various participatory methods including FGDs in their villages, key informant interviews, community meetings, empathy walks with community facilitators, participation in environmental events, students in school debates, essays, songs and



artworks to express their future desires (vision) for wetland using appreciative enquiry methods (Figures 11,12 and 16). This time they drew maps, composed songs about the wetland and drew their vision maps. They also participated in planting papyrus in degraded areas with some incentives of labour compensation that was sensitive to high poverty levels that pressure them to over exploit wetland resources.

The following captures some of their views and concerns while participating in ICCA and LUP processes.

*The wetland has plenty of resources both in dry season and rainy season, we get a lot of income from the swamp, therefore, it is our mother". Respondent 1*

*"The community have been used, cheated on, and lied to by some NGOs. Most of these organizations have betrayed the community trust and as a result they developed negative attitude to any kind of development on Yala swamp". Respondent 2*

*"People have different understanding of the LUP and that's why chaos will always arise. The community would not wish to be squatters in their own land like Dominion made them to be". Respondent 3*

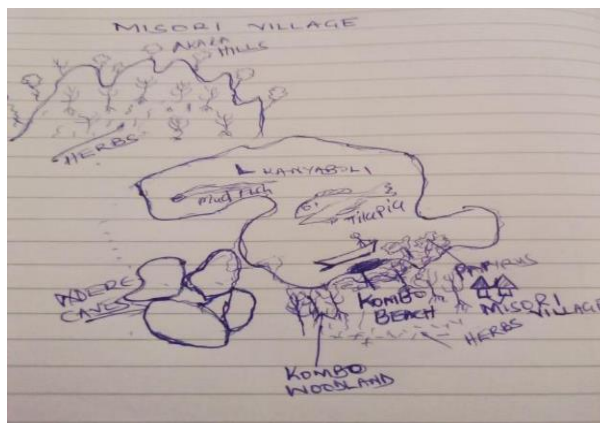
*"I don't know who my parents are, neither my mother nor my father, the first person to cloth me and buy me blanket is the swamp, the swamp is my only parent I have ever known". Respondent 4*

*"Since we started cultivating the swamp, we don't beg for food anymore, no more big lorries from Uganda and other provinces in our mother land bringing us food, we have enough now from our precious swamp". Respondent 5*

*"One day it was very cold outside, and the elephant was freezing helplessly and he could not survive, it moved to a nearby home seeking for help, it requested the owner of the house to allow only one of its feet into the house which was very warm, the owner showed mercy and agreed, it requested the 2nd foot, the 3rd one and the 4th foot. Finally, the elephant occupied the whole house in the end displacing the owner of the house ruthlessly". Respondent 6*

Due to historical resource challenges over time, communities found it difficult to believe that they could envision a world where there would be no constraints indicating a shift from resource constraint mindset to resource abundance mindset. Interestingly, some community meetings within the Yala swamp (a key resource for the county) were able to present issues they had presented during SEA/LUP meetings (where the framework was developed) like expanding the fishing industry, protection of Yala swamp while deriving benefits from the swamp, co-management of wetland resources with government agencies, fear of the wetland being taken by the government as a protected area thereby allowing only limited community access to its benefits (Odhengo et al., 2018a; Odhengo et al., 2018b).





**Figure 15.** Misori Village and Kombo Beach Community Resources map drawn by communities itemizing resources from Yala Wetland and their access and ownership rights.



**Figure 16.** Syndicate groups discussion during the second consultative meeting 2020 in Siaya (led by Luo Council of Elders deputy vice chair and first ICCA Chairperson Mr. Thomas Achando).

The local communities at the shore of lake Kanyaboli in Misori village near Kombo beach mapped the natural resources and gave their ownership as follows: Akara Hills, Ndere caves, Kombo beach, Kombo woodland, papyrus, herbs, vegetables and fish in the lake to be owned by community (Figure 15). They recognized that Kanyaboli resort was privately owned while Sitatunga was owned by Kenya Wildlife services. This perception by community is not the true position hence the need to create awareness on land ownership and tenure regimes to guide decisions and discussion on resource ownership and access from an informed social and legal position. The community indicated that they have access to all the places for free even those owned privately but resource access in private areas requires permission from the owners.

3.1.4.1. Key environmental issues identified by indigenous and local communities

Findings indicated that Yala wetland communities’ main environmental issues were encroachment and reclamation of the wetland, this being the highest ranked, burning of papyrus (second highest ranked), resource use conflicts (third highest ranked), weak framework of their participation in wetland management while poverty effects and invasion of alien species was the least ranked. The harvesting of the wetland’s natural products had led to loss of biodiversity of such as critically endangered Haplochromine fish (*Lipochromis maxilaris* and *Xystichromis phytophagus*) of Lake Kanyaboli and the vulnerable *Oreocromis esculentus* and poaching of the nationally endangered Sitatunga (Figure 6).

The various threats in different land use /land cover areas in the Yala Swamp ICCA zones are shown in Figure 3d. It is interesting to note that communities confirmed their weak participation in wetland management due to lack of a facilitative mechanism.

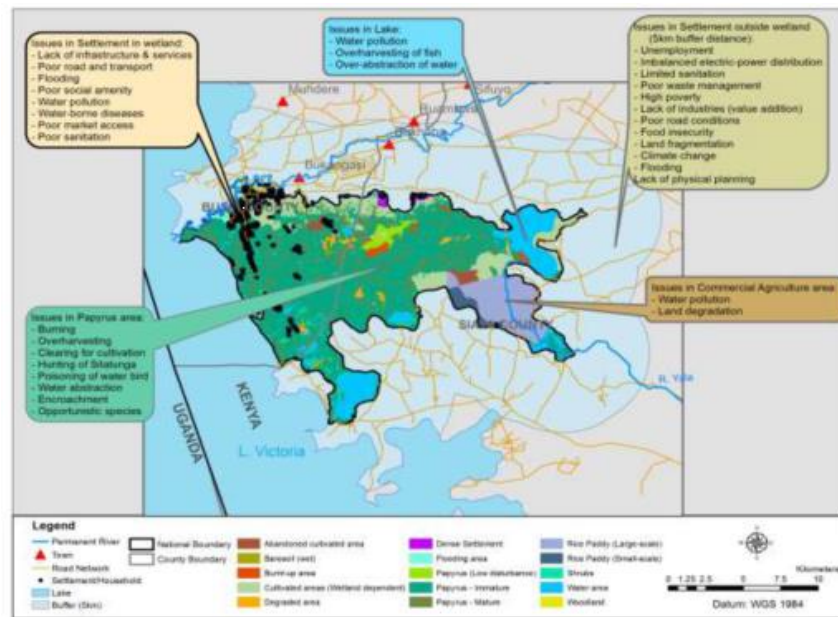


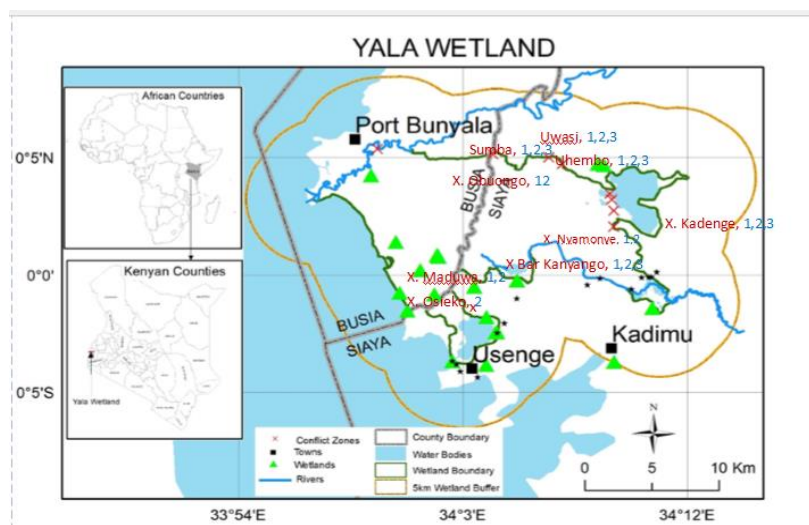
Figure 17. Threats in different land Use /land cover areas in the Yala Swamp ICCA zones (Odhengo et al., 2018b)

Respondents were able to identify the root causes of these environmental issues (Figure 17) which formed the basis for designing the desired future using the appreciative learning methodology which turned challenges into opportunities. The root causes were used with the help of appreciative enquiry to change the world view and look at the opportunities in the challenges which became the basis for their contributions on what LUP and the future Yala Wetland should look like. As Dweck (2008) notes, mindset change is key in how one views the desirable future for them to create it. These results pointed to priority issues that ICCA processes had to incorporate, like improving the participation structures and processes as well as issues that should be included in the final ICCA plan.

### 3.1.4.2. Conflict prevention, resolution and management over Yala Wetland resources

Given the historical challenges the local communities have faced in the swamp, they delved into this as a way to find a lasting solution. The main conflicts related to Yala Wetland ecosystems management included: conflicts between the local community and investors, with the government and other third parties; size of Yala Wetland, ownership/land tenure of Yala Wetland, lack of participation in planning and management of the wetland; creation of Lake Kanyaboli game reserve, boundary issues conflicts among the local communities, inequitable benefit sharing accruing from wetland resources; over-abstraction of water from the wetland including Lake Kanyaboli (Lake Kanyaboli inlet), which will eventually dry up if the status quo remained, the effects of the Nile Treaty particularly with constraints of water use/water conflicts either in the wetland or on the wetland as communities go for encroachment on rich fertile alluvial soils (Figure 18). Lack of access to wetland resources and equitable benefit sharing guidelines/mechanism has also exacerbated these conflicts.

Efforts on managing and resolving these conflicts have, however, been dismal particularly resolving some of the outstanding conflicts which have triggered other conflicts. The proposed long-term ways of resolving these conflicts include:



**Figure 18:** Conflict areas in Yala Wetland (Credit: Author, 2018)

*Key: 1. Human-wildlife 2. Human-human conflicts occurring among residents themselves 3. Resource use conflict such as between residents and investors 4. Conflicts in management frameworks*

One, an equitable benefit sharing mechanism, which was developed during these consultations with local communities would be key in resolving these outstanding conflicts and future ones. The communities designed the formula for benefit sharing at 70%:30% between investors and community and government, and 60%:40% for community and government. They further prioritized areas of using the benefits that would ensure effective implementation and monitoring.

Two, developed Yala Swamp Management Committee governance mechanism and a resource-based guidelines/code of conduct that would give institutional mechanism for resolving and managing the wetland's

resource use conflicts. This governance would oversee the implementation of the proposed equitable benefit sharing mechanism. The committee would also link up with other governance mechanism in the wider Yala wetland and Lake Victoria Basin region as shown in Figure 20. This structure is compliant with provisions of the Kenya Government Wildlife Conservation and Management Act of 2013 for community conservation areas as a mechanism to help manage their human wildlife conflicts.

### 3.1.5. Step 5. Review and evaluation: Participants feedback about participation

The preparation of public participation was evaluated during facilitators training and feedback used to fine tune planning processes by the ICCA facilitators. Some of the feedback about the training included:

The village, CBO and ward level consultations were done for five days. They involved mobilization of communities by announcements through vernacular FM radios on Mayienga and Ramogi FM Radio stations; word of mouth by the community facilitators; chiefs and their assistants at local community meetings (barazas). Participants said the consultations made them feel like co-owners of the ICCA plan hence would actively participate in plans' implementation.

The ICCA management plan was validated three times, each generating a refined draft plan and also a technical validation by government technical team (Figure 13,14 and16). The final ICCA plan was then presented to the Siaya and Busia County governments for approvals within their system both the executives and county assemblies. These have since been approved Busia (2022) and Siaya (by County Executive in 2024, pending County Assembly).

### 3.1.6. Community facilitator support

A key element of Yala RAPPEF-CF-IR Hub framework is a *dedicated community facilitator (CF)* who seizes the concerns of local communities and ensures they are integrated in the planning processes. The facilitator provides a safe environment of trust and mutual respect for participation. In the ICCA this function was done by the consultant/researcher for ICCA process. The CF again was native of the county and hails from Lake Kanyaboli, is an Organizational Development practitioner and Environmental Management Specialists who had access to decision makers such as some the CECs and CCOs, Directors in Siaya and Busia counties and development partners that supported Yala wetland conservation. The researcher found traction with local communities during local level community consultations where he could identify with issues and events as narrated by discussants. The CF was pivotal in finalizing the ICCA with views from the expanded stakeholders brought on the planning process.

### 3.1.7. The Information Resources Hub (IR- Hub)

The researcher/consultant (CF) used information resources from research work collection done during development of Yala Land Use Plan. The information and tools contained were available at Nature Kenya office and CF Yala wetland resource centre. Yala wetland resource pool included previous studies on Yala wetland assembled by the researcher and key informants who had crucial information on Yala wetland. The facilitating team updated this with new resources and lessons learnt in the process of executing the task. Schools were also involved, and they generated information from the debates, essays and artworks on how they envisioned

Yala wetland and their conservation activities in the wetland. Information Resources Hub sub-component provided timely access to relevant information, repackaged technical information to the level of communities, kept new forms information flowing in the process thereby allowing evidence and outcome-based participation in the process and subsequent decision making. Further effort should go in developing home grown solutions for wetland conservation challenges. This will require integrating scientific and local knowledge of species conservation generated from the Yala and Nzoia River Basin and Lake Victoria Basin landscape over time. Yala ICCA management must intentionally collaborate with the other Conservation Programs to benefit from their ongoing research on species conservation.

These findings are consistent with those of Berkes (2007) who pointed out that scientific input is important to ensure that community conservation management plans support conservation given new threats from globalization and habitat loss to biodiversity values that may have formerly been conserved as an indirect consequence of indigenous or local people's management for tangible and intangible livelihood needs. Berkes further suggests that cross-sectoral and cross-scale partnerships are important because local management alone cannot address new and pervasive threats to biodiversity and cultural heritage that emanate from deeper level institutions and larger scale systems. However, if they are to be the primary decision makers, indigenous people need to be the prime drivers of knowledge integration, as is also increasingly acknowledged in other contexts (Bohensky and Maru, 2011).

### 3.2. Key outcomes of deploying Yala Hub Framework in ICCA development

#### 3.2.1. The ICCA core plan

The 10 -year ICCA management plan seeks to ensure a balance between socio-economic development and environmental conservation in order to secure the livelihoods of the residents of Yala Wetland ICCA members, other people and entities that directly and indirectly benefit from the wetland.

- *Vision:* To be an ICCA model of a community-driven biodiversity conservation and natural resource management area.
- *Mission:* To conserve Yala Wetland ICCA ecosystem and its unique biodiversity while promoting sustainable utilization of wetland resources.

##### 3.2.1.1. Core values and guiding principles for Yala ICCA

Core values and guiding principles for Yala ICCA includes the following:

- *Leadership core values:* Volunteerism; Accountability, Transparency, Honesty and Integrity; Courage and love for Environmental Conservation; Hard work and Continuous Improvement spirit; Self and Community Empowerment; Daring and Embracing Innovation.
- *Guiding Principles for execution of plan:* Stakeholder Participation, Community Empowerment, Equitable Benefit sharing, Good Governance and Subsidiarity; Sustainable Resource Use/Wise Use, Ecosystem Based Management Approach, Polluter Pays Principle- Precautionary Principle.



3.2.1.2. Exceptional biodiversity value under threat

Yala Swamp ICCA has exceptional biodiversity values due to diverse biodiversity that includes mainly globally threatened species some of which are endemic to the delta ecosystem. These include Sitatunga antelopes, Cichlid fish species i.e. Oreochromis variabilis and O. esculentus; for birds Papyrus Warbler and Papyrus Gonolek. Yala wetland hosts a wide variety of biological diversity namely fish, mammals, birds, reptiles, amphibians, invertebrates and plants, including range restricted, endemic, endangered and migratory species.

3.2.2. The Core Programmes

The potential for sustainable utilization of the wetland resources as identified in the Yala Delta Land Use plan is shown below.

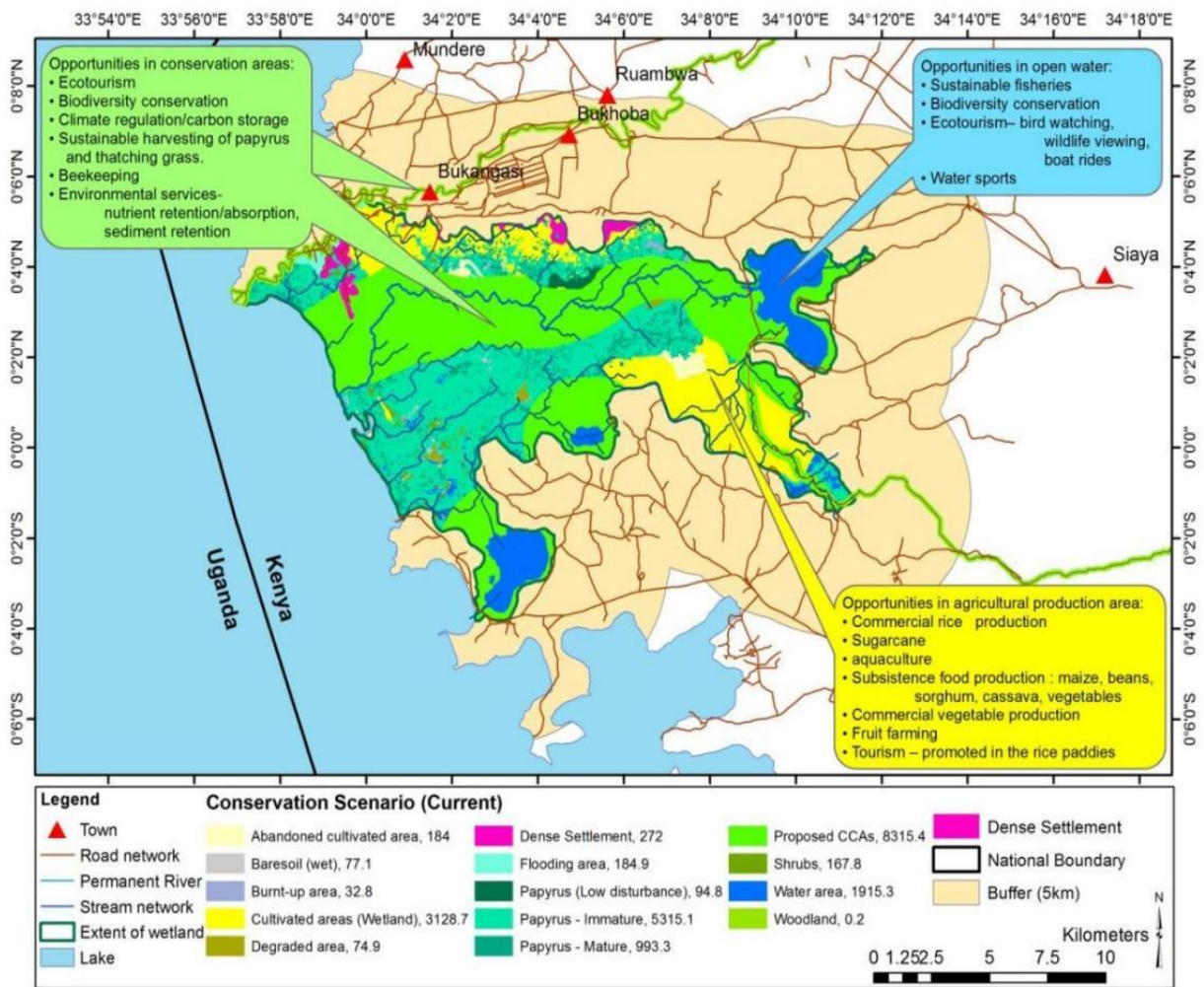


Figure 19. Potential Land Uses in Yala Wetland Planning Zones (Source: Odhengo, 2018a)

The core programmes for this ICCA which are in line with LUP potentials are:

- Governance and Conservancy operations which includes Environmental governance and Environmental conservation education.



- Food and Nutritional Security which entails Fisheries, Limited Crop production in the islands and Controlled Livestock Access through access to grazing lands during drought and controlled livestock keeping and grazing.
- Wildlife, Water and habitat conservation and management which include Wild animals, Water, Papyrus and Waste management.
- Socio-Economic Development including Tourism and recreation, Beekeeping/aquaculture, Carbon trading, Wildlife utilization and other Conservation enterprises
- Resource Mobilization from various sources including National and County Government Resources; Payment for Ecosystem Services, Yala Swamp Community Conservation Fund, Private sector partnerships, Development partners, High Net-worth Individuals/Conservation Friends of Yala ICCA, Equitable benefit sharing mechanism from investments on Yala Wetland.

The issues from community maps and other community level consultations have been factored in the five programmes such as access to shrines and cultural places within the wetland, access to grazing designated zones during dry seasons, equitable benefit sharing of wetland natural resources and controlled farming for the island communities. Contributions from learning institutions such schools' artwork, essays, songs and debate themes on what they envision for Yala wetland in 2063 in line with Africa Union's Vision for the *Africa We Want*.

The ICCA management plan has been costed with a budget of USD \$407,110 (Kshs407, 110, 000) for first three years and USD \$1, 2213, 300(Kshs1,221,330, 000) for 10 years.

### 3.2.3. Management Plan Implementation Framework

#### 3.2.3.1. Governance Framework for ICCAs

In order to remedy weak framework for community participation in Yala Wetland, a governance structure named Yala Swamp Management Committee with a wide membership representation and has put wetland communities at the core of the managing Community Conservation Areas in the Wetland Ecosystem was designed. This structure (Figure 20 and Table 1) provides for co-option where umbrella bodies of Nzoia and Yala river catchment organizations will be represented to provide the linkage for the whole Yala wetland and its catchment. It also has fluidity to bring very passionate members on board who can provide linkages for resources, thoughts leadership and innovations.

The analysis identified that quality of leadership to lead the conservation efforts at community level when wetland ownership is substantially transferred to them to be another weakness and proposed core leadership qualities for Yala ICCA. The qualities are strong, passionate and transformational leadership at the community level on wetland issues with a philosophy and vision to rally other group members around that vision. This corroborates with George's (2003) five characteristics of authentic leadership especially on the need for a clear purpose, strong ethical values, establishing trusting relationships, demonstrating self-discipline and action and having passion. Thus, while identifying the leaders to operationalize Yala Wetland governance structure, this quality of leadership criteria will be a practical indicator for nominating, electing and even capacitating committee leaders.

The membership is to be drawn from the conservation area zone of the Yala LUP initially, but other zones such as Settlement and Agricultural would also be linked to it. The 11-point management committee’s roles and responsibilities spelt out are adequate to deliver their Yala Swamp ICCA Management Plan 2019-2029. This governance structure has put wetland communities at the core for managing conservation areas of Yala Wetland Ecosystem which has been their ultimate desire; being co-owners and co-creators of the sustainable Yala Wetland ecosystem. This governance structure fills the existing gap for managing Yala Wetland Ecosystem identified by previous studies and fits into the proposed governance framework for implementing the Yala Wetland LUP namely “Yala Wetland Land and Water Management Committee” (YSLWMC) (Odhengo et al., 2018b), NEMA’s proposed governance framework for implementing the Yala Wetland Integrated Management Plan 2016-2026 (NEMA, 2016) and is also compliant with provisions of the Kenya Government Wildlife Conservation and Management Act of 2013 on community conservancies.

The implementation of ICCA plan will ensure these pathways to sustainability are maintained and remain responsive to the changing dynamics in the Yala Wetland ecosystem.

3.2.3.2. ICCA governance components

The Yala swamp ICCA governance has four distinct components namely Management Committee; ICCA secretariat; Sector by-laws/code of conduct; and benefit sharing guidelines.

(a) ICCA management committee

Yala Swamp ICCAs shall be governed by a Management Committee. Since Yala Swamp is a trans-boundary resource shared between Busia and Siaya counties, community stakeholders agreed that the governance structure for Yala Swamp ICCAs should have representation of the community resources user groups from both counties; County VNRLUC, Inter -county ICCAs steering committee, YESSG, and CSOs. In addition, technical staff from the various county and national government sectors and other agencies (e.g. Agriculture, Fisheries, Tourism, Wildlife, etc.) will be co-opted in the committee as need arises. The ICCA Management Committee shall provide strategic leadership, mobilize resources, provide oversight on conservation areas’ programs implementation.

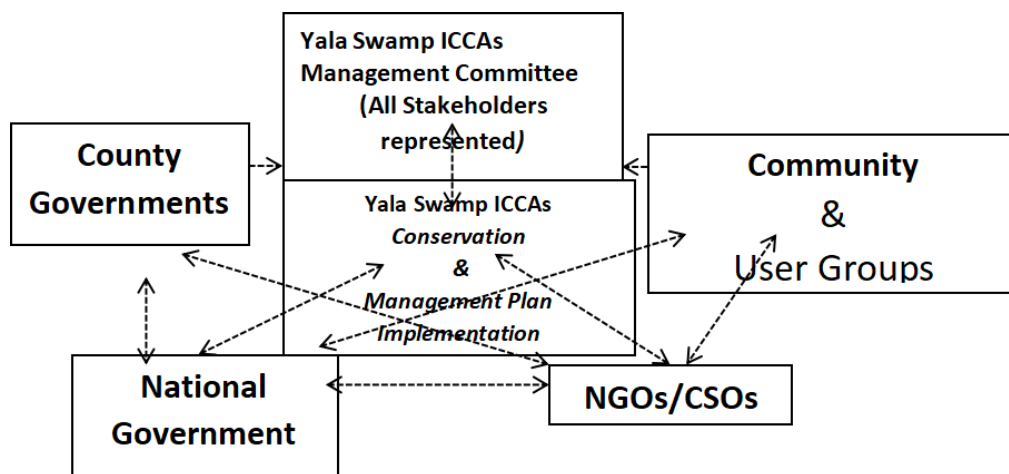


Figure 20. Proposed Governance Structure for Yala Swamp ICCAs

Table 1 shows the proposed community committee composition, where the 47 positions will be shared based on fair representation and equity between Busia and Siaya Counties and 3 coopted on need basis.

**Table 1.** Yala Swamp ICCAs Management Committee Membership

<b>Position</b>	<b>Number</b>
Representatives from each of the 5 CCA cluster sites i.e. Kanyaboli-2, R. Yala corridor-1, Lake Namboyo-1, Lake Sare-1, Bunyala Central-1, Bunyala South-2, Islands-2	10
Beach Management Unit-Alego Usonga BMU Network-1, Bondo BMU Network-1, Bunyala-1	3
Farmers (small holders (2) and Commercial (2) farmers)	4
Water Resources Users Association-MUWERI-1, Lower Nyandera-1, BUCAWRUA-1	3
Community Forest Association	2
County Wildlife Conservation & Compensation Committee	2
Sand Harvesters Association/From caucus/coalition of Sand harvester Associations	2
Community Warden/scouts	2
Community tour guides association	2
Handicrafts (papyrus, palm leaves weavers)	2
Medicinal gatherers/Herbalists	2
Cultural/religious groups	2
Traditional conservationists (formerly hunters)	2
Representatives from the County Environment Committee/Chairs of County Environment Committees	2
Civil Society Organization/Network	2
Private Sector/Network	2
Coopted members (including strategic and conservation friends committed to ideals of ICCA and as agreed by the ICCA management committee.	3
<b>Total</b>	<b>47</b>

*(a-1) The Yala ICCA management committee- composition, terms of reference and qualifications*

The management committee shall consist of: the Chairperson, Deputy Chairperson, Secretary, Assistant Secretary,

Treasurer, Community Facilitator (Head of ICCA secretariat), Committee members, Nominated members (special interest).

*(a-2) Terms of Reference*

- Facilitate the development and implementation of Yala Swamp ICCA management plans.
- Organize Yala ICCA members to perform the communities' functions effectively (election and co-option of members to perform their duties-chair, secretary, assistant secretary, treasurer, Program Coordinator/Community facilitator)
- Provide strategic leadership, mobilize resources and offer oversight on programs implementation in consultation with the National Government and relevant Government Agencies.
- Recommend/ issue user-rights in line with the management guidelines and government legal framework.
- Monitor and provide a general oversight role over activities and resource use taking place within Yala Swamp ICCAs.
- Provide mediation or arbitration on disputes arising from the use of resources within the ICCAs.
- Ensure that benefits derived from the use of ICCAs resources are distributed in accordance with the provisions of the agreed guidelines (fairness and equity).
- To ensure compliance to ICCAs rules and guidelines
- Maintain up-to-date records for all permits, licenses and fees paid including RUAs
- Seek and facilitate the amendment on ICCAs guidelines in line with the vision and mission of the ICCA
- To respond to any emerging issues that will impact on sustainable management of Yala ICCA including nominating special interest persons to ICCA management committee.

*(a-3) Qualifications for committee membership*

To be elected and /or nominated member shall fulfill these conditions: shall be of good character, has a good track record and espouse the following values: integrity, honesty, trustworthy, transparent, and accountable. The officials need to demonstrate their love for conservation and leaderships skills (transformative and authentic grassroots leadership). Shamir and Eilan (2005) defined authentic leaders as genuine, principled, and original. George (2003) presented five characteristics of authentic leadership that are especially relevant to Yala Swamp ICCA leadership: (1) having a clear purpose, (2) having strong ethical values, (3) establishing trusting relationships, (4) demonstrating self-discipline and action, and (5) having passion.

There shall be co-opted members to be called upon on need basis. These are member from county governments and National government agencies (as technical matter specialists and advisors) namely: NEMA, KWS, KFS, WRA, relevant departments; Agriculture, Livestock, Fisheries, Tourism, Lands, Education, Culture; MCA; Schools/ Learning institutions, National Irrigation Board (NIB).

*(b). The Yala ICCA secretariat*

The ICCA secretariat will be headed by Community Facilitator (CF) as the CEO and will have technical staff (an Environmentalist/Ecologist, Agriculturalist, Enterprise development specialist to ensure the plan is studiously implemented. The secretariat will develop organizational systems to operationalize its implementation functions (financial, human resource, assets, programs implementation, monitoring and evaluation). The secretariat shall be the primary vehicle support the Yala Swamp ICCA management committee to implement the ICCA management plan (Odero, 2021). It shall promote communication, education and public awareness

among stakeholders to enhance their appreciation and participation in Yala Swamp Conservation (participatory management). The secretariat also needs to espouse the traits of authentic and transformative leadership to be in synch and support the management committee. For a start, ICCA management committee shall request an established organization such as Nature Kenya to initially provide secretariat services while it mobilizes resources to stand on its own. This implementation framework is in line with a study recommendation from action research on Integrated Community and Participatory GIS in Management of Yala Wetland Ecosystem, Lake Victoria Basin, Kenya (Odero, 2021).

*(c). Community level resource management guidelines and enforcement mechanisms*

The wetland resource groups shall organize themselves as such and develop simple management guidelines and enforcement mechanisms. The specific resource groups' guidelines/regulations for water, fisheries, forests, papyrus, land and other natural resources shall be in line with proposed land use policies in "Yala Delta LUP". For example, the Natural Resources and Land Use Committees (VNRLUCs) shall do the following: Formation of VNRLUCs with wider representation of youths, women, and people with disabilities, registration of Yala Swamp management committee into a legal entity, such as, CBOs or Self-help group, develop VNRLUCs rules and regulations, code of conduct for governing the management of ICCA, Creating awareness among the community members on the importance of ICCA and on the actions agreed with YSSG and the ICCA management committee, mobilize community to engage in dialogues on ICCA management and conflict resolution, mobilize the community for engagement in ICCA activities including biodiversity conservation and monitoring, ecotourism, sustainable agriculture and livestock production activities, Assist the community to negotiate the ICCA development process, The various sector-based community-based organizations shall develop their sector specific by-laws, code of conducts and enforcement mechanism (Village Natural Resources and Land Users Committees, Beach Management Units (BMUs), Community Forest associations (CFAs) (Got Ramogi); Water Resource Users Associations (WRUAs)-Muweri and Lower Nyadorera, Species Conservation groups, Sand Harvesters Association (Usenge and Osieko, others) Community Warden/scouts/Volunteers), Traditional Conservationist (formerly hunters), Medicinal gatherers/Herbalists Handicrafts (papyrus, palm leaves weavers) Smallholder Farmers and Commercial Farmers Associations.

*(d). Village natural resource and land use committees (VNRLUCs)*

Yala Ecosystem Site Support Group (YESSG) is made up of 46 CBOs including self-help groups, Beach Management Units, Water Resources Users Associations, Community Forest Associations, Women groups and was formed at the onset of developing Yala Wetland Land Use Plan development. It was formed to provide a platform for communities to participate in the LUP processes and management of Yala wetland resources. YESSG is desirous of expanding its membership on the ground to promote community representation in the ICCA governance, and for effective delivery of ICCA management actions. To achieve this, YESSG will establish VNRLUCs in all the 62 villages within the ICCA.

A VNRLUC is a group of people within a village who live to promote and implement management actions that enhance biodiversity conservation and ecosystem services from the Yala Swamp ICCA. VNRLUCs are formally registered, are YESSG members and form crucial building blocks for delivering on-the-ground actions as agreed with YESSG and the ICCA management committee. VNRLUCs have work plans and action plans agreed with YESSG for delivery of ICCA management actions.



(e). Guidelines for equitable benefit sharing of wetlands resources

This study sought to answer the question: Who benefits from Yala wetland resources? Does participation equate with benefit sharing? as a way to get to the root cause of community conflicts over Yala swamp.

*“Otoyo adak e samba niang to okia mit niang”* meaning a hyena lives in a sugarcane plantation but does not know the sweetness of the sugarcane. This quote from Yala Wetland community youth leader captures the essence of communities’ perception of their relationship with the wetland’s resources, underscoring that they do not derive optimal benefits from the wetland.

As communities participated in wetland protection and conservation activities, they had not received commensurate benefits. As a result, conflicts over wetland resources had risen as demonstrated by cases witnessed during the study. At the core of these conflicts was the skewed access and utilization of the wetland resources by the wetland communities and lack of an equitable benefit sharing guidelines (Reconcile n.d).

Equitable benefit sharing of Yala wetland’s resources would therefore help resolve some of the current conflicts while making anticipated future ones manageable. The ICCA plan processes revealed that wetland communities considered elements of equitable benefit sharing to include clear identification of **who benefits** from the resources and what portion of the resource pool would be assigned to them. Further, they considered community participation to be effective only if it entailed an honest discussion and agreement of benefit sharing where local communities felt needs, fears and concerns were addressed in the agreed mechanism. The equitable benefit sharing demands certain fundamentals such as inventorying the benefits found in the entire wetland and its buffer zones including Yala, Nzoia and Hwiro river basins taking into account its sensitivity based on ecological and anthropogenic factors and a trusted organization to oversee it. For Yala Wetland it is the Yala Swamp Management Committee that communities gave the mandate to oversee its implementation.

Thus, Yala Wetland communities proposed benefit sharing formula of 70%:30% between investors and government and wetland communities and further sharing between government and community portion (i.e. the 30%) at 60%:40%, with clear eight priorities of utilizing the benefits is a clear attempt to resolve the long-standing conflict in Yala Wetland with investors, government agencies and the wetland communities. The eight priorities are:

First, provide safe and portable water for communities in Yala wetland and its surroundings about 5km radius. The water should be at designated points where communities can easily access it (e.g. water kiosks). Individuals, who can tap could extend to their homes while overtime the county government should strive to extend to all homesteads. Therefore, investors in the swamp should contribute to this Water Provision Fund.

Second, allocate part of the Wetland (high potential agricultural areas) for food production and adopt modern farming methods to raise the food and nutritional security in the region. The investors will have mechanisms for providing mechanized labour and warehousing on pro-rata basis and their produce made accessible at subsidized rates and regulated (quotas) to tame abuse but rather focus on food and nutritional security and food safety. Foods security organizations can help support this mechanism and continuously innovate on it.

Third, provide health care support for the local community by equipping and operationalizing the existing health facilities (medicines, health equipment and medical staff). On the glaring health gaps that compromise effectiveness and efficiency such as for inadequate staff, drastic timely measures such as the investors’ kitty

could be used to pay for the remuneration of the medical staff while the government provides the drugs and equipment.

Fourth, support education fund to help the needy children to pay for their school fees and maintenance. The contributions for education bursary scheme to be channeled to schools where students can pursue their education and be exposed to enabling environments. This support should target pupils' complete secondary education and absorption in post-secondary education and mentorship programs for agribusiness within their farms. Synchronize with other bursary systems to ensure high impact of the education benefit.

Fifth, consider supporting centres and mechanisms that seek to improve social life and environment of the disadvantaged children from the communities and eventually strive to see that all children receive ample opportunity to develop their minds. Turkheimer's research on heritability that found that environmental factors are the major cause of Intelligent Quotient (IQ) disparity and therefore deliberately improving social life and environment of the poor and disadvantaged children has the potential of increasing their IQ's significantly within short period of time (Turkheimer et al., 2003 as cited by Nisbett (2007)).

Sixth, support action research in the research and tertiary institutions that address key challenges of the local people in the wetland and its environs. Funding county's centres of excellence in Siaya county, translating research into practice to address counties key challenges e.g. extension programmes, environmental/sustainability education.

Seventh, support community projects which address the local communities felt needs and in line with their aspirations as itemized in the LUP study.

Eighth, support Infrastructure project for community within the Conservation area and the greater Yala Wetland and its buffer zone.

However, this proposal requires piloting and nurturing to see its full potential. These findings are consistent with European Union Life Environment Wise Use of Flood Plan project lessons that recognizes that participation requires time investment (nurturing the proposed benefit sharing) and partnership working especially local host organization to help build up trust and ongoing relationship especially for cross-border situations (transboundary wetland resources for Yala wetland) (Harrison et al., 2001). A working example is the Ishaqbini Hirola Community Conservancy (IHCC) in Ijara, Garissa County, Kenya that focuses on conserving the endangered Hirola antelopes (*Beatragus hunteri*) has a benefit sharing guideline of 60:40 where 60 percent of community sanctuary benefits go to the communities while 40% goes to the sanctuary for its management operations (USAID-MODS, 2022).

#### *3.2.4. local and indigenous communities' knowledge in the management of the wetland*

Communities' participation in Yala Wetland ecosystem management was determined by their interactions with the wetland resources and agencies therein as they seek support for their livelihoods and this affected the wetland either positively or negatively. It is the negative impact of their interactions which exacerbates wetland degradation necessitating development and execution of management plans that seek to remedy this.

The local communities had participated in the management of the Yala wetland in various ways alongside other actors. They had done this through their community-based organizations, through chiefs' meetings/open public gatherings, religious groups/networks, schools and cooperative societies and by carrying subsistence farming, fishing, harvesting papyrus and making crafts for use and sale, hunting wild animals and birds in the

wetland, sand harvesting, harvesting herbs, working for investors in the wetland and other agencies doing various development projects in the wetland among others.

Findings further revealed that utilization of Yala Wetland resources has been partly informed by how the local communities perceive its formation. Four postulations on formation are advanced by the communities. These were: existence of the wetland was from a water body that disappeared miraculously; from flooding experienced in the 1960s and believed as a curse from the gods; the construction of Owen Falls Dam in Uganda in 1954 resulting in backflow water challenge; and flooding to River Nzoia channel expansion for construction of Webuye Pan Paper Factory resulting in floods around Musoma thus submerging the island villages. For those who perceived it as God's gift for them, they utilize wetland resources as their own and as such take genuine care of the resources therein. Other community postulations do not support sustainable utilization of the wetland resources because it is menace and a government resource that uses it without consulting the local communities and this requires a mindset change if they have to change to support sustainable interventions for the wetland. Thus, improvements to sustainably manage the wetland ecosystem ought to factor in the historical and contextual information. In the final SEA and LUP reports, this historical and contextual information was included as chapter 4 in the SEA report, titled understanding the Yala Wetland, recent History of Yala Wetland that shaped the final LUP plan and its implementation plan and other related ecosystem management plans like the Yala Wetland ICCA 2019-2029.

The study revealed that local communities had developed positive conservation practices by attaching defined significance to the various wildlife species. For example, some birds are totems and therefore cannot be eaten by those communities. However, there was no documentation of these local knowledge for managing the wetland. Yet, this was needed to integrate local communities' conservation knowledge and SEA/LUP planning information used by technical team.

The analysis thus demonstrated the complementary role of community indigenous knowledge and planning science in management of wetland ecosystems. Yala Wetland ecosystem planning requires a thorough understanding of the area particularly history and context of the area, political economy, past planning and management initiatives and future aspirations of the local communities. Additionally, practical experience showed a disconnect between decision making and adequate scientific evidence as a guide in the two counties of Siaya and Busia, but broader stakeholder education, involvement and participation was core for making wetland management decisions. The study succeeded in integrating various sets of information on local communities' knowledge for conserving the wetland, its formation and their aspirations for the future toward providing complementary information to the LUP and ICCA.

### *3.2.5. Data integration and Yala Wetland information system*

To a large extent the local communities' environmental issues and their causes from FGDs, key informant interviews, community meetings and students' essays, debates, songs and artwork corroborated with those of remote sensing and GIS information used for developing Yala LUP and ICCA. Local communities' knowledge and satellite data had been integrated to support wetland ecosystem planning. The key environmental issues depicted by wetland communities using community participatory approaches like appreciative enquiry methods, community maps and priority ranking such as trends of changes in the wetland ecosystem over time, have augmented what remote sensing data such as the extent of wetland degradation and ecosystem value by 2014 as the basis for LUP and other ecosystem plans.

Further, the envisioned future of Yala Wetland in 2063 captured in a mosaic from different artworks submitted by students crystalized the issues from the perspective of learners thereby providing another crucial data set for integration of wetland issues. Likewise, the presentation of wetland information spatially helped the wetland communities to visualize the magnitude of the environmental challenges and opportunities, specific spatial locations the challenges, variety of planning data and information required to plan Yala LUP and ecosystem management plans. The process of integration was evident when the planning processes provided many nodes of obtaining their inputs into the planning processes, both official and informal channels. The formal channels included stakeholders' meetings, community meetings, FGDs, key informant interviews while informal channels used were participation in environmental days, wetland days, schools' competitions through essays, artwork, debates and songs. Additionally, the process provided for various feedback loops which expanded wetlands communities space for participating into the planning and management of Yala ecosystem. These feedback loops accorded wetland communities opportunities to correct (data) anomalies as seen in satellite images and GIS analysis data which amplified what communities had and then used as the basis for corrective measures like participating in restoration of degraded papyrus by planting more papyrus up to 100 ha out of 410 ha targeted area. This confirms the benefit of data integration between community held data and spatial information provided by remote sensing and GIS analysis for use in wetland ecosystem planning and management.

There was a gap in Yala Wetland Information System, for collating existing relevant information, information generated by SEA, LUP and ICCA studies and processes information, and others for ICCA finalization and implementation. Similarly, community spatial information needs to be strengthened for managing the wetland ecosystem and therefore should be integrated in Siaya and Busia County GIS departments and ICCA Yala wetland information system.

### 3.3. Challenges, outcomes and lessons learnt in deploying the Yala RAPPEF-CF-IR Hub Framework on ICCA development

The application of the Yala RAPPEF-CF-IR Hub framework on ICCA development brought out challenges and lessons which should be used to improve this process in future. The Siaya and Busia County Public Participation and Environment directorates needs to consider these lessons and frame the 5-steps guiding/coaching questions appropriately and adapt the Community Facilitator and Information Resource Hub accordingly.

#### 3.3.1. Challenges

##### 3.3.1.1. Ownership conflicts

Previously, there were ownership issues dealing with the history of conflict with communities and Dominion Farms. The wetland is a community land held in trust by county government. Hence, the county government entered into agreement with the investor and subsequent benefits have not trickled down to the communities as per their expectations. Intrinsically, this Yala Hub Framework in the SEA, LUP and ICCA processes gave a second chance to Yala Wetland communities to seek the way of resolving those outstanding conflicts. As Dominions Farms has since left, new investors should seek to remedy this by engaging with the Yala Swamp Management Committee directly and ensure the equitable benefit sharing mechanism proposed in this study

is agreed by all the parties (wetland communities, governments and their agencies with mandate on Yala wetland and the investors). Some restitution of the previous misdoings should be considered. Likewise, the ICCA committee should pursue with the county governments of Busia and Siaya the transition of ownership from Trust Land to Community Land as per Community Land Act, 2016 so that it secures wetlands equitable benefit sharing.

### 3.3.1.2. Establishment of Lake Kanyaboli national game reserve conflict

Lake Kanyaboli was gazetted as a National Reserve through Legal Notice No 158 of 2010 (GoK, 2010b). The total area of the reserve is 41.42 km<sup>2</sup> and is legally under the management of Siaya County Government with technical and policy support from Kenya Wildlife Service (KWS). In addition, KWS has initiated the process of having the site listed as a Wetland of International Importance under the Ramsar Convention. However, some local communities had not welcomed that development. The Usonga communities did not welcome the creation of Lake Kanyaboli reserve and as a result made it difficult to operationalize it. Their concerns were that the reserve would take away some portion of Yala Wetland from them hence would not be available for their use (farming, accessing wetland resources) and they feared that having the KWS staff around would result in controlling their activities in the wetland including hunting. They also felt that the wetland was part of their ancestral land hence could not be taken away. Consequently, the Usonga communities obtained a court injunction challenging the decision. Despite these concerns and decision to pull out their representative from Yala Wetland LUP process where communities voices are factored in the plan development; the researcher accessed some insiders among them and got limited entry to get them back in the SEA/LUP/ICCA processes.

### 3.3.1.3. Mindset shift to design ICCA Future/ Using transformational learning methodologies to design the Siaya County's future

Change of mindset is key in applying this framework. Siaya county communities used transformational learning methodologies to reflect and act upon their world to change it to future aspirations. When the respondents shifted their lenses and energies because of applying appreciative enquiry methods aided by the CF, they were able to identify possibilities for sustainable wetland ecosystems management. This changed world view (mindset) became the basis for generating their inputs in the development of ICCA Management Plan 2019-2029.

The Community Facilitator inducted the wetland communities on the application of opportunity-based view/lenses through appreciative inquiry methodology, which they quickly adopted and used to develop the plan. The broader wetland community representation through CF intervention using the framework for bringing fundamental changes as provided in Theory U (Scharmer, 2009) and Post-Modernism Theory (Beck and Wynne, 1992) enabled local communities to envision, dream, and articulate their aspirations of the future Yala Wetland using possibility-based mindset and eventually provided for wider co-ownership which is a prerequisite for the sustainable management of Yala Wetland ecosystem. Significant wetland communities' perspectives were incorporated in the final ICCA Management Plan (2019-2029).

These findings point to the fact that in planning and management of the wetland, it is important to set the frame that derive the possibilities rather than lack from the communities. This shift will also be taken to the implementation which shall require their highest level of involvement at collaboration and empowerment



levels of public participation levels. This mindset shift among the local communities and the technical staff is required to apply this framework with appreciable degree of success.

### 3.3.2. Outcomes

#### 3.3.2.1. Envisioned future

The other aspects of that information sought their views on the envisaged future and what it shall take to deliver those aspirations. The following quotations capture their broader view on what it should contain and partly formed the basis for the vision of ICCA management plan vision, mission and core values.

“I have a compelling desire for change and development and with this I will encourage community leaders and youths to take initiative of sustainable livelihood programmes and stop lamenting for help. During my tenure as the Councilor, I initiated Ndekwe bridge, which was constructed. I also wrote a letter to the Minister for Lands in the National Government expressing communities’ views that Yala Wetland should be converted from trust land to community land” (Interview with a retired civil servant and former Councilor of Bunyala ward, 2018). This changemaker advised that Yala Wetland management should be guided by the philosophy that “every step you take towards a goal/ success requires implementation of brilliant ideas and determination to achieve what you believe in.”



**Figure 21.** Students artwork envision the future of Yala wetland.

The chairperson, Kaugagi Hawinga Yala Wetland Farmers Association pointed out the following: “If the community would know the value of wealth, they have in their hands in Yala Wetland; they would neither experience hunger nor poverty. Enhancing equity within the community is important since this will harmonize every community member's potential in the development of our community.” Other change makers including the Luo Council of Elders’ leadership, youth and women role models emphasized that Yala Wetland communities must be intentional in mainstreaming gender equity in development issues while the younger generation should be mentored for them to meet their future needs. They agreed on the need to transform Yala Wetland communities’ perception on the importance of agriculture as a key driver of the wetland’s economy. Finally, they recommended functional cooperatives by farmers to boost their level of production and income.

In addition, Focus Group Discussions and sermon write-ups by religious leaders on what they saw as God's dream of a perfect Yala Wetland identified the following key themes: preservation of sacred sites and shrines; protection of biodiversity in the wetland, good stewardship of God's creation on animals and plants; communicating with God through nature in Yala Wetland, the helplessness mentality and the need to change that mindset.

The learning institutions also managed to envision artistically the future Yala wetland as shown in Figure 21.

#### 3.3.2.2. Embracing Diversity

The communities and students were able to envision the Yala Wetland they would like LUP to help in designing and eventual attainment. Whereas FGD respondents were able to identify their top 3 priorities as biodiversity conservation, enforcement of policies, laws and regulations and agriculture; these were different from students' top priorities on the envisioned future which were recreation and tourist facilities, agriculture and then biodiversity conservation in that order. This shows how different actors within the wetland experience the services it offers and aligns these with their life needs. Therefore, designing actions for implementation will have to factor in the various stakeholders' priorities, perspectives and sensitivities and purpose to develop targeted and aligned interventions to those needs. For example, schools' interventions for managing the same will include recreational elements while local communities target biodiversity conservation actions that also provide food to the increasing wetland population. These were factored in the proposed interventions ICCA plan.

#### 3.3.3. Lessons Learnt

First, the local communities appreciated their involvement in the development of ICCA management plan. However, the lower-level consultations at village levels required support of community facilitator (CF) who would take lead to relate with various stakeholders taking part in the development consultations. Thus, the Yala Hub Community Framework suited this need and became an enabler for local communities to participate in ICCA development. This additional participation facilitation requires a mindset shift on the communities and technical teams to do what they have not been accustomed to do.

Second, on language and mode of expressions used in the community participation as designed with technical team, data collection tools were not user friendly to communities, therefore required simplification, use of multiple communication channels for mobilization including FM radios and subsequent discussions on the radio messages (pavement radios) for adults, social media platforms especially for the younger generation and intensive use of participatory tools. Likewise, the community facilitator helped with this simplification and repackaging process.

Third, the community had very high expectations and unrealistic timelines for achieving the ICCA outcomes. Therefore, there must be continuous civic education in relation to ICCA, devolution dividends and key support for ICCA structure to take off and manage these expectations as they plan is being implemented. The community must also quickly mobilize resources for the plan's implementation including securing and ring-fencing county government budgets (through legislation).

Fourth, the community facilitator has to meet the following criteria: one whom the community respects, trust and has the power to engage with at all stages and structures of ICCA and CIDP development mainly heads of two arms of county government. On the other front, good networking and advocacy skills with development partners, national government and the business community. For example, it took the facilitator's professional reputation to negotiate with financial institutions to support schools' essays competitions that provided valuable input in the ICCA plan.

Fifth, use participatory methodologies that were emotionally intelligent. These included trainings and guidance for various stages of ICCA development that were packed with materials, coaching with emotional intelligence, empathy walks with communities, living with the people (i.e. total immersion), previous experience, societal structures to get people issues very deeply and infuse creativity in the process. The study identified other participatory methodologies and situations where they are best applicable that would be useful in optimizing communities' participation in various county development interventions. These include the watering plants and circles and stars tools for financial data and services; the extension river tool for community advisory services; the food diary tool for dietary diversity; the ideal job tool for youth job opportunities, the land access and control matrix tool for women empowerment; and the social protection traffic light tool for community social protection.

Sixth, community participation in ICCA planning takes place in a continuum and therefore multiple participation avenues should be provided such as Wetlands' Day, Environmental Day and Migratory Birds Day as well as incentivized like happened during the study through facilitation of community meetings, schools' participation in competitions and awarding prizes, and conservation publications. The widened the participation avenues, added intergenerational perspectives and new feedback loops, blended learning, iterations and actioning from participation on ICCA processes. This finding is consistent with Lewin's action research in organizational development assertion that motivation to change is strongly related to action hence when they are active in decision that affect them, they are more likely to adopt new ways (Lewin,1958). Thus, increasing participation avenues that Yala Hub Community Framework added to the ICCA planning expanded their involvement in the planning as various segments of the wetland community will be called upon to implement the plans. And since implementation of plans has been a challenge in Yala Wetland, involvement at conceptualization and design with many feedback loops in readiness for joint implementation of ecosystem management plan broadened the ownership for wetland communities through groups, schools, religious networks, professionals, traditional institutions and investors. The process is iterative and therefore must be properly managed by the Community Facilitator with Information resources in facilitating the 5-steps of the framework.

Seventh, effectiveness of public participation requires technical and institutional knowledge, information resources, trusted broker and a genuine commitment to implement the plan in which the citizens see themselves as co-creators. The researcher became (Community Facilitator (CF) in ICCA planning process thereby providing the link amongst local communities, the ICCA secretariat team and the elected leaders including the MCAs. The CF provided multiple feedback loops to the ICCA secretariat at various plan development stages.

#### *(a) The Community facilitator*

The creation of *community facilitator (CF)/process facilitator* to the framework served many practical purposes. A key feature it provided was a safe environment of trust, inspired confidence and mutual respect for

participation. This is confirmed by top-level leadership respondents' remarks "you are our son please tell us, will our ideas be taken seriously, or they will do like what Dominion Farms did." And the meeting with MCA leaders on CIDP 2018-2022 while expressing their sentiments on participation in Lake Region Economic Block regional programmes on establishment of a proposed regional bank. The proposed bank required every county to contribute Kenya Shillings 200 million (USD\$ 2,000,000) in which they expressed the following, "You are our son, is this thing really going to benefit us? Why are the governors deciding up there and then forcing it down without consulting us"? This further confirms the need for *inspired confidence* to participate in ICCA in which the researcher played the role of Process Facilitator. The CF-IR-Hub component of the framework sought to reduce the disconnect between decision makers and technical information for Siaya and Busia Counties. The CF had to marshal some power that was needed to penetrate other powers within planning and management processes as transformative learning theory pointed out that empowerment is changing power relations in favour of those who previously exercised little power. The CF needed to be creative on how to gain and remobilize this power and then use it to empower wetland communities in decision making about the wetland. For instance, CF became part of the technical team and had access to the decision makers hence would weigh in to provide this nexus. This required some shift on the CF through self-awareness (to be intentional despite limitations to focus on the client), deep level listening (listening to understand level 3 (empathic) and listening to generate collective creativity level 4 (generative) and reframing the conversation from an I (self) to We (collective) to co-create the many possibilities (Scharmer, 2009; 2016).

*(b) Information seeking behavior and opportunities for optimizing participation*

The stakeholder analysis tier two further identified sources of participation and revealed primary *influencers of decision makers* that were not identified in the tier one analysis but are key avenues of participation and pivotal to information transmission continuum at both community and county leadership levels which ought to be appropriately utilized as participation entry points. The citizen focused facilitation helped with simplifying the ICCA processes, languages and simulations of the issues at community meetings. Likewise, local communities were able to draw simple maps to give their inputs, used their proverbs and sayings to pass their concerns on the ICCA which were then repackaged by the researcher and relayed to the technical team. Thus, repackaging ICCA management plan information this way for communities helped to educate them and then sharpened their contributions through those community channels, radio, music, religious leader sermon, local administration barazas, funerals, special community events, special events such as Environment Days, and Partners Field days, competition in learning institutions through essays, debates, performances such dramas, songs, and artwork among others. The information access and seeking behaviors of the wetland community leaders showed diversity. The analysis revealed that various groups had their different and unique information seeking behaviours and had different interactions among themselves and how they influenced one another. Thus, the different information seeking behaviours and outcomes of interactions among wetland communities offer opportunity on what factors and nuances are key in ensuring effective community participation.

*(c) The application of Yala RAPPEF-CF-IR-Hub framework in ICCA development as a system and the relative weight of its subsystem*

The components of this framework which operate as a complete system have relative weights that determine the overall effectiveness of community participation based on action research outcomes as demonstrated in SEA/LUP processes (Odero, 2021; Odero and Odenyo, 2021), Siaya CIDP 2018-2022 development (Odero et al., 2022) and now in Yala ICCA 2019-2029 Management Plan. The relative weights of effectiveness of the

various components of the Yala Hub Community framework as applied in CIDP preparation were Step 1. React/Act; (10%); Step 2. Restructure/Adjust the participation framework based on the reactions of step 1 (7%); Step 3. Participation Preparations (20%); Step 4. Community Participation (16%); Step 5: Review, evaluation and follow-up (12%) and the base- CF-IR-Hub (35%). Whereas the processes are sequential, the application are iterative as feedback from preceding step provides insights and revelations that will take the user back to mine more data and information before proceeding to the next step. This proposition is supported by the works of Dr. Brent Peterson of Columbia University (2004) who found that learning effectiveness is a product of three subsystems namely pre- work (26%); learning event (24%) and follow-up/post learning event (50%), thus pre-course work and post-event follow-up contributes a combined total of 86% of learning effectiveness.

These findings are also consistent with the challenges of managing common pool resources as elucidated by the three models of The Tragedy of the Commons, the Prisoner's Dilemma Game and the Logic of Collective Action (Ostrom, 1990; Hardin, 1968). Further, the findings are in line with increasing global attention being given to formal recognition of indigenous and community conserved areas as part of national and/or global protected area systems. These systems are generating novel encounters between the customary institutions through which indigenous peoples and local communities manage these traditional estates and the bureaucratic institutions of protected area management planning (Davis et al., 2013; Wood et al., 2002). These, ought to reflect the distinctive socio-cultural and political characteristics of community conservation areas and support indigenous people as the primary decision makers and drivers of knowledge integration in indigenous protected areas with a focus on customary institutions in governance and strategic planning approaches that respond to interlinkages of stewardship between people, place, plants, and animals.

#### 4. Conclusion

The application of Yala Hub Community Participation Framework in Wetland ICCA Management Plan 2019-2029 increased participation rates added new feedback loops, blended learning, iterations and actioning from participation; and, provided a safe environment of trust, inspired confidence and mutual respect for participation which was highly valued by the Yala Wetland communities. It also led to development of a premier 10-year Yala conservancy management plan, created a governance structure (Yala Swamp Management Committee) that puts communities at the centre of conservation and defined the kind of transformative and authentic leadership ethos required to implement the plan, and developed an equitable benefit sharing mechanism of wetland resources. The governance framework will ensure that wetland communities are part and parcel of Yala wetland resource decision making processes, on ground actions and eventual custodians of its sustainability.

The study concludes that effective community participation substantially determines and influences development of ecosystems management plans and the subsequent effective implementation of decisions made therein; and that increased participation through deliberate intervention (Yala Hub Framework) as a diagnostic and optimizing tool does eventually increase the effectiveness of community development. However, it is emphasized that successful deployment of the framework requires a mindset shift among the local and indigenous communities and technical teams facilitating the process and requisite resources to be operationalized optimally.



## 5. Recommendations

The study recommends the following:

- First, strengthen the capacities of Yala Swamp Management Committee to deliver Yala Wetland Ecosystem management plans to restore Yala wetland ecological health and ensure sustainable management thereafter.
- Second, conduct research and document local/ indigenous knowledge on Yala wetland conservation, preserve them in appropriate media and integrate in Yala Wetland Information System for Yala ecosystems management.
- Third, community spatial information needs to be strengthened for managing the wetland ecosystem and therefore should be integrated in Siaya and Busia County GIS departments and ICCA Yala wetland information system.
- Fourth, since the Yala RAPPEF-CF-IR Hub (Yala Hub) Framework has different sub-components with the Community Facilitator and Information Resources Hub as its base accounting for 35% overall effectiveness, there is need for and valuing of a Community Facilitator (CF) and an Information Resources Hub (IR-Hub) in Yala Wetland ecosystem management.
- Fifth, there is need to strengthen Yala Wetland Information System that collates, stores and disseminates existing relevant wetland information, research studies and processes generated information; and others to help with the implementation of Yala Wetland Management plans. The Yala Community Participation Framework's IR-Hub sub-component developed during this study therefore becomes part of this Yala Wetland Information system.
- Sixth, institute, a timely tracking of land use/landcover changes every three years to monitor the changes in Yala Wetland ICCA areas and subsequently inform the implementation of the Yala ICCA management plan. Additionally, systematically document and preserve Yala Wetland local communities' knowledge systems and integrate with other management data during the implementation of Yala ICCA management plan and Yala LUP.
- Seventh, deploy Yala Community Participation Framework in future LUP processes to wetlands with "similar challenges" as Yala (such Omo, Malewa, Nyando, Sondu-Miriu and Nzoia) and to continue validating the framework.

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