



HEALTH HAWKS



IPHPRP Global Health Case Competition 2024

Improving Sustainability Outcomes in Homa Bay, Kenya

IOWA

Meet our team!

Team Health Hawks



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Introduction

Problem Statement

Scope of Work

Priority Area



- Homa Bay County is a county in the former **Nyanza Province of Kenya**
- Located in the Southern part of Nyanza, along the **southern shores of Lake Victoria**
Population of **1,131,950** people
- Covers **3,154.70 sq km** (2019)
- Arable land **2154.9 Km²**
- **51.5% Females** and **48.5% Males**, 4.1% p.a. growth rate
- **248,920 households**, with 125,954 (50.6%) being indigent
- **6.6% Unemployment Rate**
Homa Bay County's **Gini index is 0.416**



Problem Statement

Fish Depletion

...caused by climate change, population growth, increasing demand and overfishing

○ → **Economic Insecurity**

○ → **Food and Nutrition Insecurity**

○ → **Jaboya Relationships - HIV**

○ → **Gender-based violation**



**Hand
Craft**



**Touris
m**



Agriculture

gross revenue
comes from these
sectors, what grows
there



**Light
Industry**

Fishing



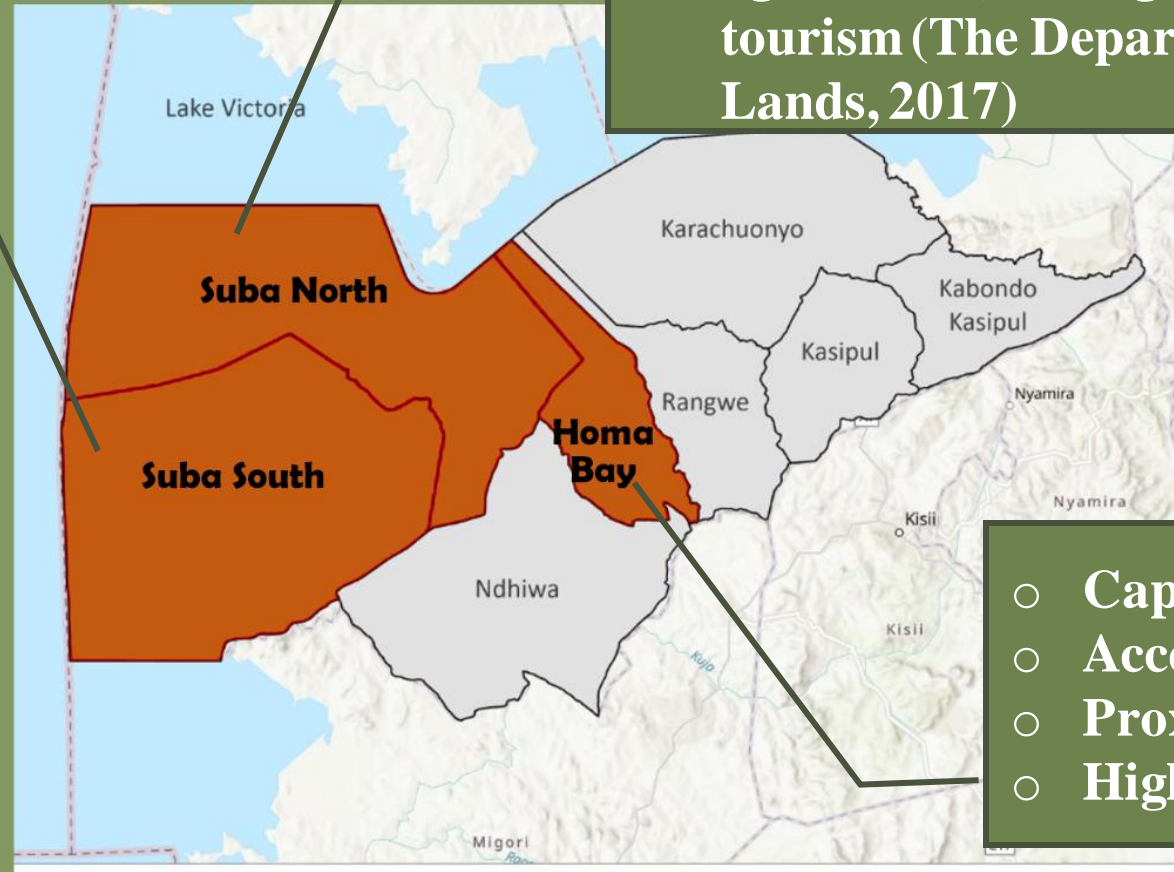


Priority Areas

Initial Project Area

- Proximity to cross-border trading
- Mineral rich soil
- Fishing and fish trades (Omolo, 2011)

- Proximity to Lake, Suba and Homa Bay
- Large population
- Fishing hub
- High potentiality of agriculture, fishing and tourism (The Department of Lands, 2017)



Priority Areas
Home Bay Sub-Counties

0 5 10 20 Miles



- Capital of Homa bay county
- Access to market
- Proximity to Lake
- High population



Proposed Intervention





**Community Based Agriculture Program
Advocacy for Sustainable Fishing Program**



Community-Based Agriculture Program

Work directly with community to promote

- **sustainable mobile gardening** for **bio-fortified native plants** high in protein, as supplementary food source
- **poultry farming** for eggs and meats to supplement nutritional needs

	SOYBEANS	(boiled)	Per 100 g		SWEET POTATO	(boiled)	Per medium potato		EGG	(boiled)	Per egg		POULTRY	(cooked)	Per 100 g
Calories			172	Calories			147	Calories			147	Calories			165
Protein			17 g	Protein			2 g	Protein			6 g	Protein			31 g
Carbohydrates			10 g	Carbohydrates			27 g	Carbohydrates			1 g	Carbohydrates			0 g
Fat			9 g	Fat			4 g	Fat			5 g	Fat			4 g
Sugar			3 g	Sugar			9 g	Sugar			1 g	Sugar			0 g
Fiber			6 g	Fiber			4 g	Fiber			0 g	Fiber			0 g
Sodium			1 mg	Sodium			41 mg	Sodium			62 mg	Sodium			40 mg



Community-Based Agriculture Program

Promote Climate-Smart Agriculture (CSA)

Enhance resilience to climate change

Reduce greenhouse gas emissions

Includes using drought-resistant crops, agroforestry, and conservation agriculture

Implement Water Management Solutions

Proximity to Lake Victoria

Improve water use efficiency

Proper watershed management enhances agricultural sustainability



Community-Based Agriculture Program

Composting Domestic Wastes and Invasive Plants (Water Hyacinth)



Biogas Production, Moving towards a Bio-Based Economy





Community-Based Agriculture Program

Composting Domestic Wastes and Invasive Plants (Water Hyacinth)

- Has been used as an organic compost **to reduce chemical fertilizer's impact on soil**
- **Fodders** for domestic animals
- **Vermicomposting** is the most effective method for water hyacinth
- **Water hyacinth** is **rich in nitrogen, carbon to nitrogen ratio up to 15 and up to 3.2% of dry matter**

Biogas Production, Moving towards a Bio-Based Economy

- **Small scale at the household level.**
- Highly effective **sustainability solution** to combat climate change
- Producing **renewable energy**
- Improving **waste management**
- Enhancing **soil health** using biogas byproducts as fertilizer.



Community-Based Agriculture Program

Proposed Activities

Identify **community leaders among female** population with influence over peers.

Design **trainings on sustainable gardening** and farming practices.
Producing **organic fertilizer** and biogas.

Select **beneficiaries**
Emphasizing **female and elder** participation in the communities

Direct Attendants

Indirect Attendant's households

Sub Counties	Neighborhood/Communities	Direct Beneficiaries	Indirect Beneficiaries	Community members Introduced
Homa Bay Town	2-3 rural communities near Lake Victoria	50-150	169-507	1,690-5,070
South Suba		50-150	184-552	1,840-5,520
North Suba		50-150	193-579	1,930-5,790
Total		150-450	546-1,638	5,460-16,380

Community-based Agriculture Program

Proposed Activities

Conduct workshops with selected beneficiaries






Distribute bio-fortified crop seeds



Distribute vermicomposting materials for organic composting



Provide cash for buying chicken



Proposed Activities

Provide technical assistance for raising chicken and building coops



Encourage connections between local markets and farmers for effective market entry



Encourage connections between local veterinarians and farmers



Impacts

- Minimizes effects of food insecurity
- Provides alternative sources for food and revenue
- Builds awareness towards mitigating impacts of climate change
- Increases community resilience
- Improves lake water quality, soil fertility, and clean energy production
- Enhance regional market



Advocacy for Sustainable Fishing Program



Proposed Activities

- Liaison with influential government agencies regarding agricultural policies
- Collaborate with fishermen on sustainable fishing (Opondo 2016)
 - Benefits of cage fishing
 - Breeding period
 - Alternative livelihood sources during breeding period
- Conduct awareness-building campaigns with adolescent girls regarding Jaboya culture, HIV/AIDs
- Generate influence on other organizational policies
 - Organize regular fund-raising events
 - Active communication through social media platforms



Identify Potential Stakeholders/Partners

Ministry of Agriculture, Livestock and Fisheries

Hatching Hope

Department of Agriculture Livestock Production, Homa Bay County Government

Heifer International Kenya

Ministry of Finance

Kenya National Chamber of Commerce & Industry – Homa Bay

Center for Rural Empowerment and Agricultural Transformation for Sustainability

Trees for The Future

USAID

Workaway

International Federation of Red Cross

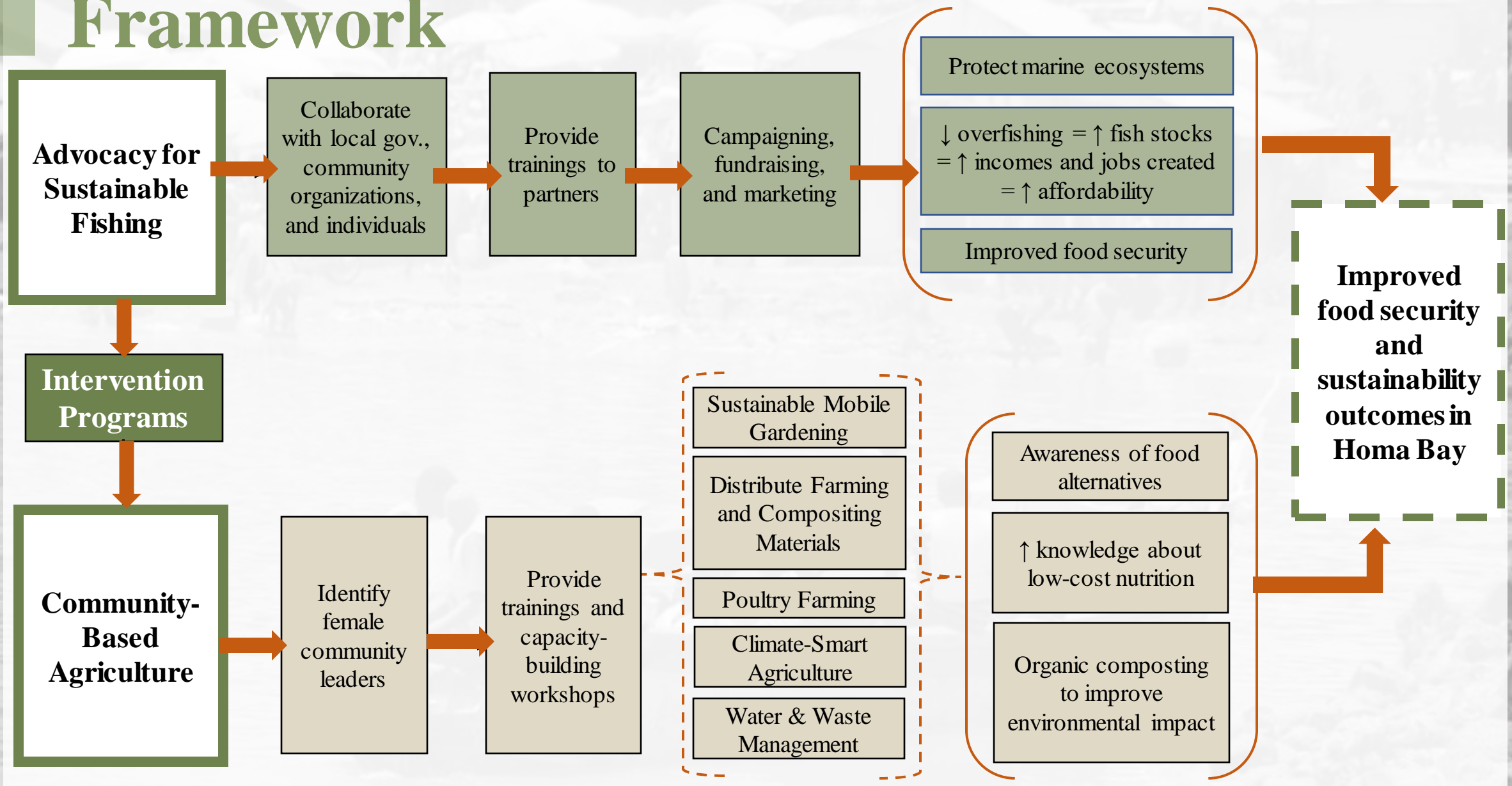
Worldpackers

Food and Agriculture Organization of the United Nations



Framework Possible Funding Solutions

Framework



Possible Funding & Solutions



Possible Funding (13)

AGRA
Swedish International Development Cooperation Agency
Agence Francais Development
The Bill & Melinda Gates Foundation
United States Agency for International Development
European Union
Agency for Cooperation and Research in Development (ACORD)
World Bank
Department for International Development
Ford Foundation
Rockefeller Foundation
Food and Agriculture Organization
United Nations Development Programme

Short-Term (<1 year) Solutions

- Alternative food sources available
 - From mobile gardening and poultry farming
 - From knowledge of growing alternative food sources
- Reduced overfishing
 - From campaigns, fundraisers, and marketing

Long-Term Solutions

- More fish available, more jobs created
 - Due to reduced overfishing
- Greater affordability of fish
 - ↑ supply = ↓ costs
- Organic composting → Enhanced sustainability outcomes
- **GOAL:** sustain the short-term impacts



Program Budget

Design and provide a reasonable budget for implementing the case.

Intervention Areas	Unit	Total Quantity	Unit Price (Ksh)	Budget (Ksh)	Budget (USD) (1 USD = 132 Ksh)
Community based Agriculture Program					
Expected Outcomes:					
<ol style="list-style-type: none"> Beneficiaries have built their capacity in mobile gardening and organic composting. Beneficiaries are aware of the nutrition needs and available food sources to fill their nutrition gaps Beneficiaries are aware of the market value of organic bio-fortified produces and organic composts 					
Activities:					
Training/capacity building orientation on mobile gardening, poultry and organic composting (50-150 participants in each three sub-scounties)					
- Training materials (Venue, community billboards, white board, pen, paper, trainer logs etc.), food, travel voucher	pcs	150-450	24,100	3,615,000 - 10,845,000	27,386.36 – 82,159.09
Distribution of bio-fortified crop seeds (Sweet Potatoes + Soybeans)	KG	150-450	220	33,000 - 99,000	250 - 750
Distribution of earth worms	KG	150-450	2,500	375,000 -1,125,000	2,840.91 – 8,522.73
Distribution of cash for chicken and chicken coops	Ksh	150-450	600	90,000 - 270,000	681.82 – 2,045.45
Advocacy for Sustainable Fishing Program					
Expected Outcomes:					
<ol style="list-style-type: none"> Beneficiaries will be aware of HIV/Aids threat to income Beneficiaries are aware of the importance and benefits of breeding period and aquaculture 					
Activities:					
After school training/learning session on sex education, HIV/Aids (50 adolescent girls in each three sub-counties)					
- Training materials (leaflet/brochure, pen, paper, trainer logs etc.), food etc.	pcs	150 (3*50)	10,100	1,515,000	11,362.5
Training/capacity building orientation on sustainable and environment friendly fishing practice (50 fishermen in each three sub-counties)					
- Training materials (venue, community billboards, white board, pen, paper, trainer logs etc.), food, travel voucher etc.	pcs	150(3*50)	24,100	3,615,000	27,112.5
Total		900 – 2,100	61,620	9,243,000 - 17,469,000	70,022.73 – 132,340.91

Data Collection & Evaluation



Community-Based Agriculture

Data to Collect

(Pre-, during, & post-Intervention)

Collected by community leaders

- Quantitative:
 - Crops grown/seeds planted
 - Utilized vermicomposting materials
 - Chickens and food sold
- Qualitative:
 - Determine citizen satisfaction
 - Knowledge about mobile gardening, organic composting, and food alternatives

Methods of Evaluation

- Report item inventory (monthly)
 - From farmers, markets, and community leaders
- Focus groups (every 3 months)

Advocacy for Sustainable Fishing

Data to Collect

(Pre-, during, and post-Intervention)

Collected by community partners and/or government agencies

- Quantitative:
 - Fish stocks and population
 - New fishing jobs
- Qualitative:
 - Determine citizen satisfaction
 - Improved climate outcomes

Methods of Evaluation

- Qualitative collection (focus groups)
- Viewing trends for quantitative data

Cultural Sensitivity



Community Engagement



Available Resources

Regular Monitoring & Evaluating



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Thank You

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