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STORIES OF CHANGE

INTEGRATED FISH FARMING & HORTICULTURE PROJECT

(Funded by World Vision & BMZ)

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KEY ACHIEVEMENTS:

Integrated Fish Farming And Horticulture Project

World Vision, through the Integrated Fish farming and Horticulture project (funded by BMZ) initiated farm aquaculture in Homabay County. The aim of the project was to improve the nutrition and income of 900 vulnerable households and 600 unemployed youth. It also sought to strengthen resilience of these populations. The major achievements of the project include the following:

Change of mindset:

This enabled the community to embrace aquaculture, which for a long time was mired with taboos discouraging its practice.

- Based on cultural dictates, only men are allowed to practice lake fishing. But thanks to farm aquaculture, they got an opportunity to get into the fish business which protected women from sexual exploitation. These women are now

able to produce and trade in fish farming. They can now sustain the needs of their children and other dependents. This has led to sustained food and nutrition security, as well as income. With only 75 farmers practicing farm aquaculture (on-farm fish farming) during the project inception in 2016, the number rose to 648 by the end of 2019 due to the change of mindsets among communities. This is due to increased adoption and transition of some fishermen that previously depended on capture fish (lake fish) to culture fish (reared fish) that fetched them comparatively higher and sustained income.

- There is a general restoration of dignity among women and girls and other family members from vulnerable households in the community; and more so those who engaged in Jaboya (sex-for-fish) in the

past. They are able to make informed decisions as they make use of land resource to produce quality food for their families.

- Unscrupulous fishermen previously took advantage of their vulnerability to ask for sexual favours in exchange for fish. This practice, known locally as jaboya (sex-for-fish) has been a major contributor to the high burden of HIV in the County.

Improved resilience as a result of households

improving their income:

Households implementing integrated fish farming (aquaculture combined with poultry and horticulture farming) receive an average net income of ksh 8,997,410.00 every three months. This directly benefited 643 households who reported improved income from the sale of fish, vegetables, poultry and their products (eggs).

Youth in Programming:

The project successfully integrated the youth in development initiatives that have seen them embrace integrated fish farming; hence shifting their focus from the unreliable white colour job market.

Empowered youth and model farmers who directly benefit from the project formed a coalition that supports and sponsors extremely vulnerable children (mostly orphans) to acquire education. A total of 180 such children have been supported. The youth have also been empowered to become advocates for youth development initiatives and child protection matters.



Farmers harvesting young fish to be sold as 'seed' to households seeking to stock their ponds with fish that can mature much faster. © Photo/World Vision

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Who We Are

Founded in 1950, World Vision is an international partnership of Christians serving children, their families and communities in conditions of poverty in nearly 100 countries, primarily through programmes of community development, disaster management and promotion of justice.

World Vision began operations in Kenya in 1974. Its more than 862 committed development staff members work in 46 Area Development Programmes in 35 counties countrywide. Through valued partnerships, World Vision Kenya supports communities to access the knowledge and resources needed to improve the well being of children and overcome poverty.

Aspirations

World Vision has four strategic goals regarding the well being of children:

- Children enjoy good health
- Children are educated for life
- Children experience the love of God and their neighbours, always being mindful that World Vision is a guest in cultures that hold many diverse beliefs
- Children are cared for; protected and participating in the decisions that affect their lives

World Vision Kenya works with the most vulnerable children and communities regardless of religion, race, ethnicity and gender.

Vision Statement

Our Vision for every child, life in all its fullness; Our prayer for every heart, the will to make it so.

Mission Statement

World Vision is an international partnership of Christians, whose mission is to follow our Lord and Saviour Jesus Christ, in working with the poor and oppressed to promote human transformation, seek justice and bear witness to the good news of the Kingdom of God.

Our Core Values

We are Christian | We are committed to the poor | We value people | We are stewards | We are partners | We are responsive

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Mary feeding fish at one of her fishponds.

© Photo/World Vision

FISH FARMING INCREASES HOUSEHOLD INCOMES

Seven fishponds surround the home of 50-year-old Mary in Kenya's Homa Bay County. Each of them is stocked with 1000 fish that she looks forward to harvesting in about six months.

Everyday, as Mary feeds the fish and monitors their growth, she is usually filled with nostalgia.

"Sometimes, it's hard to believe that I have all these fish ponds and that my fish farming business is doing well, because starting it wasn't easy," she says.

Mary, just as most inhabitants of Homa Bay County, comes from Kenya's Luo Community that relies mainly on fishing at the nearby Lake Victoria to earn their livelihood.

Therefore, when aquaculture or fish farming was introduced in the area, most people were reluctant to take it up due to the false perception that fish reared in ponds (culture fish) would not survive. And if they did, their taste would be of inferior quality than those coming from the lake (capture fish).

“Many people discouraged me from getting into this business. Some even laughed and said that I was wasting my time and would continue to be poor,” recalls Mary.

Despite these challenges, Mary decided to take a bold step of faith and soldiered on. Through the support of World Vision’s Integrated Fish Farming and Horticulture Project (co-funded by BMZ), she received training and gained useful knowledge and skills on fish farming. They included: pond size selection, fish preparation, effective fish feeding strategies (nutrition), fish growth monitoring, fish handling, fish harvesting and marketing techniques.

Her patience and determination paid off. From her seven fish ponds, Mary now makes an annual profit of about 500,000 Kenya Shillings.

As a mother of six children and two grandchildren depending on her, Mary notes that fish farming turned her life around and improved the wellbeing of her family.

“I can comfortably pay school fees for all my children, including those at the university. Am also able to support other orphaned children. I also constructed a brick house and moved my family from the mud-thatched house that we were previously living in.”

Mary notes that aquaculture has also made it possible for her children to enjoy fish, which she previously could not afford.

“I eat it all the time. It’s my favourite meal,” says Natalia, her three-year-old grand daughter as she enjoys a meal of fish and ugali (maize meal).

Mary’s success in fish farming motivated members of her community to buy into the business venture.

“The money I am making is more than what fishermen get at the lake because the supply there has been reducing due to overfishing and wrong fishing gears. So people are interested in what I do,” she says.

“My fish is sweet too. They have tasted it, and realised that it’s not different from those on the lake. In fact they’re on high demand in the market,” she adds.

Through the Model Farmer Approach and Empowered World View model, which was initiated by World Vision, Mary has mentored more than ten people who adopted effective fish farming techniques.

“Now people treat me with respect. I have inspired many people and that makes me happy because we are all benefiting as a community.”



Some of Mary’s children enjoying fish at Waringa Village in Homa Bay County, Kenya. © Photo/World Vision

HATCHERY ENABLES COMMUNITIES TO ACCESS QUALITY FINGERLINGS AT AFFORDABLE PRICES

Success in aquaculture or fish farming relies on the quality of 'seed' that farmers use. This refers to the quality of fingerlings that farmers purchase for rearing in their fishponds.

"If they are of low quality, then farmers will not be able to enjoy a good harvest, which leads to losses," said 44-year-old Joyce Nyakwara, who relies on aquaculture to fend for her children and family.



Community members getting ready to remove eggs for hatching from the mouth of a female fish at the KIBA fish hatchery whose construction was supported by World Vision and BMZ in Homa Bay County. © Photo/World Vision



The eggs retrieved from the mouth of the fish are made to hatch fast at the KIBA hatchery in Homa Bay County, Kenya. © Photo/World Vision

At Homa Bay County in Kenya, many households have adopted aquaculture, thanks to enhanced awareness and training by World Vision in partnership with the government.

Despite their passion for the trade, many people used to struggle to get quality fingerlings that they could rely on. Since these farmers could not generate their own fingerlings, they had no ability to ascertain the quality of those they acquired from different distant sources.

Worse still, they would fall prey to unscrupulous crude business people - who due to the high demand and limited supply of the fingerlings - used to sell the fingerlings at exorbitant prices.

Yet, many people still complained of poor quality fingerlings that resulted in poor harvests.

To tackle this challenge, World Vision and the German Federal Ministry for Economic Co-operation and Development funded the construction of two fish hatcheries in the county.

The hatchery - managed by a community self help group known as KIBA - serves hundreds of farmers at Pala, Magunga and Lambwe and other areas within Homa Bay County.

Thanks to the hatchery, quality fingerlings are now within easy reach to farmers, at affordable prices.

"Previously, we used to travel long distances to purchase fish fingerlings (seeds). This journey was time-consuming and costly. But now we're happy because the hatchery is in our community and it's being run by people we trust who can't exploit us," said Charles Onguru, the chairman of KIBA Self Help group that manages the hatchery.



Women drying fish and fingerlings (omona) along the shores of Lake Victoria.

© Photo/World Vision

FISH FARMING SAVES WOMEN FROM ABUSE

Giggles, laughter and conversation noises fill the dining room of a home in Kenya's Homa Bay County. Inside it, two children - aged between three and eight years - are all smiles as they enjoy their evening meal of fish and ugali (maize meal) with friends.

Their grandmother Christine looks on, chipping in their conversation - once in a while - as she motivates the children to keep going (with the eating) until their plates are empty.

"Look granny, I am almost done," says three-year-old Stephanie while showing off her half-empty plate.

That earns her a smile and 'thumbs-up' from Christine who also cheers on the other children to accomplish the feat.

"I love my family so much. And I always want the best for them. So I work hard to give them good food that will keep them healthy," says Christine lovingly.

As a mother of eight children and two grandchildren under her care, Christine says that her journey to economic growth and financial sustainability has not been a smooth one.

“Three years ago, my husband and I were struggling to take care of our family as we lacked enough money. Those were tough times and I wanted to do anything possible to get money.”

To make ends meet, Christine decided to get into the fish retail business that is often left to women in her Luo community. This is because culturally, it is only men that are allowed to fish.

As such, women usually flock the shores of Lake Victoria each morning, waiting eagerly for the arrival of fishing boats so they can buy different species of fish caught by fishermen during the night.

Since the supply of fish is limited, women often scramble to buy the few that are available so they can sell and get some income.

Their desperation makes them prone to all forms of exploitation by unscrupulous fishermen that take advantage of their vulnerability.

Many of them usually ask for sexual favours in exchange for a sustainable supply of fish. Left with no choice, many women end up giving in to the demand so they can make ends meet.

This practice, known as ‘sex-for-fish’ or jaboya in the local language, has been a major contributor to the high burden of HIV in Kenya’s Homa Bay County.

“When I began the fish selling business, I thought it would be straightforward. But it was difficult to get the fish on most days and this worried me. That’s when the fishermen came to me and assured me that all my problems would go away if I became their woman,” recalls Christine.

“This was an easy way out. But then I thought of my friends that had died of HIV. If I got infected, I would infect my husband then we would die and leave our children as orphans. I couldn’t do that to my loved ones. So I refused,” she says.

Thereafter, with seemingly no one to turn to, Christine returned home desolate, crying and feeling hopeless about her predicament.

A neighbour trained by World Vision on aquaculture (fish farming), heard about Christine’s suffering and came to her rescue. She introduced Christine to fish farming.

“She taught me how to do it and helped with the journey. Fishing is only done by men here. But nothing stops women from practicing aquaculture or fish farming. So I was open to the opportunity and it changed my life.”

Every six months, Christine harvests fish from her ponds and takes them to the market.

“Since fish populations are dwindling at the lake, sometimes its the men who come to buy from me. I have now become the supplier and not the retailer. God is good,” she states.

The income generated from fish farming has enabled Christine to afford school fees, healthcare bills (through the National Health Insurance Fund) and good nutrition for her family.

“The Integrated Fish Farming Project has really benefited women in Homa Bay County. Now our dignity is restored. We feel valued and empowered as we can make our own money and take care of our children. We are confident and our self-esteem is high,” says Christine.

Christine is among the many women in Homa Bay County that have benefitted from World Vision’s Integrated Fish Farming and Horticulture Project that is co-funded by BMZ



Christine (left) with her children and their friends, together with her friend Mary (right) who mentored and introduced her to aquaculture. © Photo/World Vision

FISH HOLDING UNITS, POPULARLY KNOWN AS FISH BANDAS, CUSHION COMMUNITIES FROM FINANCIAL EXPLOITATION

The fish business, just as other business enterprises require an effective marketing system that enables those partaking in it to benefit from the trade. But this is not the case for most fishing-communities in Homa Bay County.

Many of them work so hard, withering the cold weather at Lake Victoria each night, so as to try and get as much fish as possible for selling.

Sometimes they get a good catch but in most instances, the quantities obtained are minimal. Once this is done, they face the hazardous task of getting the right buyer to purchase the fish at a good price.

Due to high poverty levels in the community, a majority of these fishing communities cannot meet high transport costs required to ferry the fish to major markets in urban centres.

In addition, they lack cold chain facilities such as refrigerators that can preserve the fish over long periods.

As such the fishermen are often vulnerable to unscrupulous middlemen who take advantage of the situation to exploit them.

World Vision addressed the chal-

lenge by supporting the construction of fish holding units (popularly known as bandas) where fishermen groups can collectively weigh their fish and store them safely over long periods.

The bandas were also equipped with cold chain facilities (solar powered freezers and fish tubs) as the area is not yet connected to the national electricity power grid. The cold chain facilities play a significant role in enhancing the shelf life of the fish.

“Now we’re not in a hurry to sell since we have deep freezers and ice-cooled fish tubs to protect the fish from going bad.

Whatever, we get is stored there until we get a buyer who will give us the kind of money we want,” said Kennedy Odera, the chairman of the Doho Beach Management Unit that World Vision supported to construct a fish holding unit (banda).

The banda, which serves approximately 500 fishermen, has enabled communities to negotiate for favourable prices collectively, which further minimises exploitation.

“If you are alone, you meet different buyers at different times and you are at their mercy, because they can leave you and go to

someone else if you don't agree with their prices. You also can't afford to delay as your fish will go bad," said 25-year-old Mohammed Abuge who is among the many fishermen that rely on the new fish-holding unit.

According to Kennedy, the bandas have also created employment opportunities for around 440 youth directly, as well as

vulnerable members of the community such as widows and orphans.

"We employ people to weigh the fish, keep records, clean the banda and store fish in the right place. This gives them additional income that enables them to take good care of their children and families."



Fishermen storing fish in a cooler (deep freezer) at a fish holding unit (banda) established through the support of World Vision & BMZ at Doho Beach in Kenya's Homa Bay County. © Photo/World Vision



Fishermen at one of the fish holding units (Bandas) established through the support of World Vision & BMZ at Doho Beach in Kenya's Homa Bay County. © Photo/World Vision

QUALITY FISH FEEDS FOR BUMPER HARVESTS



1.A feeds fish processing plant managed by the KIBA Self Help group, on behalf of the Pala community in Homa Bay County. © Photo/World Vision

For many small-scale people practising fish farming, getting the right feeds is usually a challenge. Just like human beings, fish need a balanced diet comprising of proteins, carbohydrates (starch) and vitamins. The nutrient rich food can be found in various Aqua Shops but the cost is often out of reach for most small-scale farmers.

With the aim of addressing this challenge, World Vision has been sensitising the community on cost-effective innovative techniques for enhancing the quality of feeds given to fish.

One such approach is the symbiotic integration of aquaculture with poultry farming which provides “free” organic manure for fertilising ponds to enhance the growth of algae and phytoplankton that boost the nutrition of reared fish. This saves the farmer from having to purchase conventional (inorganic)

fertilisers that may be unaffordable to them.

The phytoplankton also consume carbon dioxide and produces oxygen that is essential to fish.

In addition, algae make the pond water to turn green. This helps to shade the pond bottom, thus preventing the growth of aquatic weeds that can “take over” the water and inhibit fish production.

Together with other micro-organisms such as bacteria, algae help minimise levels of toxic forms of nitrogen that can be harmful to fish within pond ecosystems.

Studies show that fertilisation greatly increases fish production, resulting in bumper harvests of healthy and ‘big’ fish that are of high value.

During the water-recycling period, the fertilised (nutrient-rich) pond water does not go to waste. It is used to fertilise horti-

cultural plants like vegetables, tomatoes and fruits (such as bananas, mangoes, pawpaws and citrus fruits) that farmers have in their gardens. This increases yields and sustains crop productivity.

Another innovative technique for increasing access to protein rich food for fish entails placing solar lamps at strategic locations around and above the fishpond at night. The light attracts insects that hover around the pond and eventually fall on the water surface where they can be eaten by fish. This phenomenon is referred to by fish farmers as the 'natural feeding of fish'.

In addition, World Vision through funding from BMZ has empowered and supported fish farmers in Homa Bay to establish fish feeds processing plants in Pala, Lambwe and Magunga. They provide stater mash and floating fish pellets for feeding reared fish at affordable prices.

This has brought down the cost of feeds, making them affordable and accessible to communities. In Homa Bay, the basic ingredients for making feeds such as rice, wheat bran and the fishmeal - like shrimps and fingerlings (omena) - found along the lake are readily available. This is of great benefit to fish farmers.



Members of the KIBA Self Health group displaying shrimps that are used to prepare fish feeds, Homa Bay County. © Photo/World Vision



Members of the Waringa Youth making fish feeds at a processing plant that was established through the support of World Vision and BMZ at Lambwe Valley in Homa Bay County. © Photo/World Vision

EMPOWERED WORLD VIEW TRAINING TRANSFORMS MINDSETS AND REVIVES HOPE IN COMMUNITY

For many years, residents of Lambwe Valley in Kenya struggled to make ends meet due to high poverty levels in the area.

Despite going to the nearby Lake Victoria each day to fish, they were still unable to get sufficient funds to take good care of their families. This poverty cycle was intergenerational and many people had lost hope for a brighter future.

It seemed like they would always be poor and dependent on the assistance they got from well-wishers and non-governmental organisations.

With an aim of changing the negative attitudes and reviving people's hope, World Vision began training some of the most affected community members on its Empowered Worldview model.

The training seeks to help people understand their own worth and how they can utilize their full potential by employing their talents and the resources available to them.

"This training touched our hearts and changed our minds. It opened our eyes and we began seeing things differently," says Wilson Bwana, one of the men that

benefited from the training.

He added: "We used to think that we had nothing and could only get help from outside. But we realised that we had the power to change our lives."

Thanks to the Empowered World View training, Wilson and members of the Ogando Self-help group that he mentors, were able to embrace World Vision's Integrated Fish Farming (aquaculture) and Horticulture project, which was rolled out in the area, through funding from BMZ.

"We were stuck in the old ways, just relying on open lake fishing to earn our living. But the fish numbers had been reducing over the years. So, there wasn't much sell," said Wilson.

He added: "Now we realise that the good income we get from fish, vegetables, eggs, chicks and poultry sales feeds our pockets and stomachs."

Initially, when the aquaculture project was introduced in the community, people were reluctant to embrace it. They felt it was against their culture of lake fishing, and could not therefore work. But this was just a myth.

“But the Empowered World View training inspired us to dream big and think outside the box. As fishermen, we were in the fish business. And this was the same thing we were going to be doing with aquaculture,” said Lukio Andhamo, who is also a member and secretary of the Ogando Self-Help group.

With knowledge on effective fish farming strategies (such as having the right and standard pond sizes, feeds and quality fingerlings), Lukio, Wilson and other members of the community that received the Empowered World View training have improved the economic status of the households.

They have gone further to integrate aquaculture with poultry and horticulture farming so as to further enhance their income sources.

In addition, they have established a complete poultry value chain, which enables them to produce their own improved chicks using solar incubators received from World Vision and BMZ.

“As women, we never had a voice in this community. But now people respect us, since own our own businesses and get money to take good care of our families and children,” said Beatrice who is among the many women that have embraced fish farming and Savings for Transformation (S4T) in Lambwe.



Members of the Ogando Self-Help group that have benefited from World Vision's Integrated Fish Farming and Horticulture project in Homa Bay County. © Photo/World Vision



Members of the Ogando self-help group using the solar poultry hatchery that they received through support of BMZ and World Vision.

© Photo/World Vision



Wilson at his poultry house which provides manure for fishponds in the homestead.

© Photo/World Vision



Michael feeding fish as he trains members of the Sanjweru self-help group on fish farming at Magunga in Homa Bay County, Kenya. © Photo/World Vision

AQUACULTURE ENABLES FAMILY TO PRACTICE INTEGRATED AGRICULTURE

Michael and his wife Eunice have established three fish ponds in their home that allows them to practice integrated farming.

Upon participating in training on aquaculture that was organised by World Vision through funding from BMZ, Michael learned about the significance of fertilising ponds to boost fish production.

Since he could not afford conventional (artificial) fertilisers sold in the market, Michael decided to begin rearing chicken so he could tap on their organic manure.

The poultry house is constructed next to one of the fish ponds, with its wooden floor raised above the water. When the chicken produce droppings, they fall through the well

designed wire-meshed open spaces or wooden slates on the floor and get into the pond where they offer key nutrients to fish.

This has enabled Michael to get good fish yields and harvests for family use and market consumption.

During the pond water recycling process, the fertilised water does not go to waste. He uses it to irrigate various types of horticultural crops such as fruits and vegetables on his farm.

“With the farm and the fish pond, I have sufficient food in the family for a balanced diet. The vegetables and fruits give us vitamins while fish and chicken are good sources of high value protein,” says Eunice

She added: “I have three children and

they are all healthy and energetic because we feed them well. We thank God that they rarely get sick. And those in school are intelligent. They perform very well since they have all the nutrients required.

Aside from fertilising the pond, the chicken that Michael has also produces eggs and meat that increase the earnings of the family.

He initially started with indigenous chicken breeds, and later moved to improved breeds that take

a shorter time to mature and are less costly to rear.

To improve the livelihoods of other members of his community, Michael is a mentor to many youth under the Sanjweru Self Help Group that he chairs.

World Vision supported the group to acquire a solar incubator and brooder, which they use to hatch chicks and sell to households practicing poultry farming. This venture generates income for the group.



Members of the Sanjweru Self-Help group with World Vision staff. © Photo/World Vision



Michael and his wife Eunice at their integrated agriculture farm in Magunga, located in Kenya's Homa Bay county. © Photo/World Vision



Michael with eggs from the solar incubator that he received through the support of World Vision and BMZ. © Photo/World Vision

POND LINERS REDUCE WATER LOSS IN FISH PONDS

Fish rely on water to thrive and grow. But this may be a challenge in arid and semi-arid areas with scarce water resources and poor soil structure like Homa Bay. In these areas, the water holding capacity of soil is poor. This causes rapid absorption and evaporation of water, which is detrimental for fish farming.

In a bid to tackle the problem, World Vision – through funding from BMZ- has empowered farmers to acquire pond liners that help in water retention. As such, farmers are able to have sufficient water that sustains fish during their growth cycle in the pond.



Members of the Jowiro self-help group that have made bumper harvests through the use of pond liners in Homa Bay County, Kenya.

© Photo/World Vision





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