



National
Irrigation
Authority

UNYUNYIZI NEWS

10TH ISSUE

JULY - SEPTEMBER, 2021



A publication of the National Irrigation Authority

ISO 9001:2015 CERTIFIED



CONTENTS

5 NIA Returns Sunflower to Bura Crop Fields

10 Baby Corn Farmers Land a Fortune in Irrigation

11 Irrigation Water is Good Life

14 One on One

EDITOR'S NOTE



Daniel M. Nzonzo
Head of Corporate Communication

By any measurable standard, our newsletter, 'Unyunyizi News', is growing: readership, content variety, and citations of our published pieces have increased steadily. We have also progressed in less quantitative ways.

It is our editorial policy to regularly reassess and revise production processes to offer the most efficient and gratifying experience to authors and readers. We are developing because of the support from our loyal readers and the hard work of our editorial staff. We hope

readers will continue to support 'Unyunyizi News'.

In this edition, we feature diverse people who have embraced irrigated agriculture as a source of livelihood through the opportunities opened up by the National Irrigation Authority. We continue to demystify irrigation terms, and in this edition, we focus on 'Siltation'. We also look at protection of the marginalised groups and good governance in the National Cohesion and Values section.

We feature Mr Gitonga Mugambi, the Authority's Chief Executive Officer, in our interview segment.

Enjoy the read.

Chairman of the Board

Hon. Eng. Joshua Toro

Chief Executive Officer

Gitonga Mugambi

Chief Editor

Daniel M. Nzonzo

Editor

Rhoda Mbuvi

Graphic Designer

George Maina

Writers

Daniel M. Nzonzo

Rhoda Mbuvi

Brendah Rajwayi

George Maina

Johnbosco Obonyo

Caroline Maina

Humphrey Muyeka

Photographers

Rhoda Mbuvi

Brendah Rajwayi

George Maina

Johbosco Obonyo

Caroline Maina

WORD FROM THE CHAIRMAN

Congratulations once again to my Board, the National Irrigation Authority Management, staff, farmers and all stakeholders, including the Irrigation Water Users Association (IWUA) for the noticeable impact irrigation is creating in our country. As reported in the Economic Survey 2021 report, “Agriculture, Forestry and Fishing activities were more vibrant in 2020 despite a contraction in global demand in 2020. The sector grew by 4.6 percent in 2020 compared to 2.3 percent growth in 2019. Despite most sectors recording contraction in growths, the economy was somewhat supported by accelerated growths in agricultural production (4.8 per cent).”

In particular, the Kenya National Bureau of Statistics clearly highlighted in the Survey that irrigation had a big role to play. “Although the area cropped decreased by



Chairman of the Board

Hon. Eng. Joshua Toro, REng, MIEK

2.3 per cent from 32.3 thousand hectares to 31.6 thousand hectares, the number of plot holders increased by 8.5 per cent from 15.7 thousand to 17.0 thousand in 2019/20. In paddy rice production there was a 12.6 per cent increase from 160.6 thousand tonnes in 2018/19 to 180.9 thousand tonnes in 2019/20. Paddy rice production from Mwea Irrigation Scheme increased by 17.3 per cent from 121.0 thousand tonnes in 2018/19 to 141.9

thousand tonnes in 2019/20, accounting for 78.0 per cent of total paddy rice production.”

As established in the report, this among others, was attributed to efficient water distribution and management in the Scheme and farmers practising good crop husbandry. All other schemes registered slight increases in paddy production. Gross value of rice output from all scheme areas increased from KSh10.1 billion in 2018/19 to KSh10.5 billion in 2019/20, while payment to plot-holders decreased from KSh.6.4 billion to KSh.5.8 billion in 2019/20.

The statistics are not only giving us a pat on the back but more so encourage us to work harder to keep the graph going high; efforts, which will be rewarding in the long run as we strive to make the country food-secure.

WORD FROM THE CEO

On Wednesday, September 8, 2021, President Uhuru Kenyatta declared drought a national disaster in the country. A number of citizens are currently suffering from food scarcity because of drought. It is a call for us as an Authority to fast-track delivering on our mandate by putting more resources into irrigation due to its enormous benefits.

To this end, the irrigation sector has made several strides boosted by the Irrigation Act, 2019 that expanded the Authority’s mandate to irrigating the whole country contrary to the previous law that restricted it to public schemes. As such, the Authority continues to open up more areas to irrigation through construction of water conveyance systems and irrigation storage facilities among others to scale up farming under irrigation and steer the country towards food security and nutrition in line with the Big 4 Agenda. Recent studies have shown that water-harvesting approach that the Authority has taken can put more than 10 million acres under irrigation, up from the recorded three million acres.

In addition to implementing its mandate that is mainly irrigation infrastructure-based, the Authority is building the capacity of communities and farmers who are receiving this infrastructure. Furthermore, as part of our Corporate Social Responsibility (CSR) activities, we are distributing fruit-tree seedlings with eyes on attaining the



Mr. Gitonga Mugambi

CEO National Irrigation Authority

10 percent forest cover in the country.

We are also supporting education in remote areas like Turkana where the NIA has implemented a number of irrigation projects in line with the Vision 2030 economic blueprint. All these efforts aim at safeguarding our country from drought and delivering food security through irrigated agriculture.

I encourage Kenyans to be vigilant about irrigated agriculture and to do their best in efforts to making Kenya food-secure.

CHAMOMILE FARMER TURNS OVER A NEW LEAF WITH WATER PANS



By **Johnbosco Obonyo**

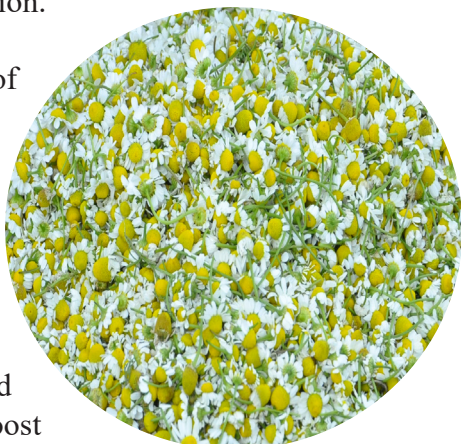
In Ndaragwa's Ngamini village of Nyandarua County, Tabitha Gathecha is on her third week of harvesting chamomile, a venture that has created employment to four ladies. "Since harvesting began, I have been creating employment for four ladies. It goes on for a very long time. The more you harvest, the more fruitful and merrier it gets. It is like these ladies have permanent jobs," Gathecha explains.

"I am farming this lucrative chamomile courtesy of a water pan from the National Irrigation Authority. Before 2019, when the water pan was constructed, life was hard. Extremely hard. Maize would fail due to the scorching sun. Vegetables withered so often. We depended on rain, which is very scarce. We basically survived on relief food. I have so much joy now because I can comfortably feed my family on a balanced diet and meet my children's education and other expenses," she adds. Ms Gathecha expounds that without the water pan, she would have stopped farming years ago.

Chamomile has both relaxing and healing properties. "I was introduced to chamomile by Saumu Empire, an agribusiness company, who supplied me with the seedlings to try them. Chamomile has no much expenses. No inputs. It is pure organic. All I need is manure and labour,"

Chamomile is a herb that comes from the daisy-like flowers of the Asteraceae plant family. Rich in vitamins A and C, it contains essential oils and antioxidants. Once the flowers are dried, they are infused into hot water to make chamomile tea. Many people enjoy chamomile tea as a caffeine-free alternative to black or green tea, for its earthy, somewhat sweet taste that helps to relieve stress and promotes relaxation.

Construction of small water pans is under Household Irrigation Water Storage Project done by the Authority now in its fifth phase. Its aim is to put forward measures to boost



Tabitha Gathecha in her chamomile farm, Nyandarua County

“

Tabitha Gathecha

Chamomile is an herb that comes from the daisy-like flowers of the Asteraceae plant family. Rich in vitamins A and C.

farming activities and changing the narrative of food security under the Big Four Agenda across the country. The water pans store surface runoff during the rainy seasons that once full can provide enough water for irrigated agriculture for up to four months to six months until the next rainy season.

On another piece of land, Ms Gathecha has grown horticultural crops such as oranges, Hass avocado, vegetables, bananas, sugarcane, and maize.

Quick fact :

Chamomile contains essential oils and antioxidants which reduce the risk of many diseases including heart diseases and certain cancers.

NIA RETURNS SUNFLOWER TO BURA CROP FIELDS



Sunflower in Bura Irrigation Scheme



By **Rhoda Mbuvi**

The National Irrigation Authority has reintroduced sunflower at Bura Irrigation Scheme with 300 acres under contract farming between farmers and Bidco Africa.

World Concern, an NGO, is partnering with Bura by paying operation and maintenance fees and will mobilise farmers to return to the crop in this scheme.

Bidco has supplied certified seeds and will provide ready market at KSh33 per kilogramme of seeds.

The farmers will get irrigation water and extension services from the National Irrigation Authority, assuring them of two key requirements for juicy yield.

The estimated production cost per 1.5 acres is KSh22,200 with an assured yield of at least 1,200 kilogrammes. Sold at KSh33 a kilo, the revenue hits KSh39,600, giving a minimum gross

margin of Sh17,400.

Sunflowers can grow in less fertile and semi-arid areas and is commonly intercropped with or used as a rotational crop or break crop for cereals. It grows in any altitude ranging from 0-2,600 metres above the sea level. In Kenya it is typically grown in regions such as Bungoma, Homa Bay, Kakamega, Meru, Kajiado and parts of North Rift and the Coast.

Sunflower grows well in soils suitable for maize and beans. The soil should be slightly acidic with pH values of between 6.0 and 7.5. It takes between 80 and 120 days from planting to harvest and can be planted three times in a year. Three kilogrammes of seeds plant an acre and the recommended variety is Fedha or H8998.

A ready crop should dry on or off the stem until the back of the head turns brown, the foliage turns yellow, the petals die, and the seeds look plump and loose. With scissors or pruners, the head is cut off the plant (about six inches below the flower head).

Its estimated yield per acre is between 1,000 and 1,200 kilogrammes of

seeds that are sold at between KSh30-35 per kilogramme, depending on quality.

Farmers, consumers, processors, retailers, financiers — name it — are part of its value chain.

Meals and clothes are part of this chain. The same way, irrigated agriculture does not escape this and covers crops that many may think are not irrigable, for example sunflower. Sunflower is an edible oilseed crop that originated in the North American continent. It's characterised by large flowering head, and leafy stem that can grow to diameters of 30cm and heights of three metres. It can self-pollinate but a farmer can keep bees on the same plot to create a new stream of revenue.

A value chain helps with understanding how production, buying and selling works.

In the sunflower value chain, seeds contain healthier fats than most natural oils, hence it is nutritionally more superior than other edible oils. Its oil is also used to make biofuel, animal feeds and rubber.

For a value chain to be successful, everyone involved must benefit and feel they are treated well.

“

The estimated production cost per 1.5 acres is KSh22,200 with an assured yield of at least 1,200 kilogrammes sold at KSh33 a kilo, the revenue hits KSh39,600, giving a minimum gross margin of Sh17,400.

THE PRESIDENT TOURS THIBA DAM



By **Daniel M. Nzonzo**

His Excellency the President of the Republic of Kenya and commander in Chief of the Kenya Defence Forces, Hon. Uhuru Kenyatta, C.G.H, inspecting the ongoing works in Thiba Dam and Mwea Irrigation expansion area in Kirinyaga County in October 18,

2021. He was received by Water, Sanitation and Irrigation CS Sicily K. Kariuki (Mrs), E.G.H, Principal Secretary Joseph Irungu, the Authority's Chairman Hon. Eng. Joshua Toro and CEO Gitonga Mugambi. The President was impressed with the progress of implementation works and promised residents to be back to witness impounding of Water upon completion of the dam.

Thiba dam has a target capacity of 15.6 Million cubic metres. It aims to stabilize water supply to the Mwea Irrigation Scheme

and associated expanded areas (Kianugu, Kiamanyeki, Ndekia to command 25,000 acres) and to the Mutithi Expansion area (10,000 acres).

It will also supply irrigation water to 1,170 farmers neighbouring the Dam area in Kimbithe (120 acres), Rukenya (1,000 acres) and Komboini (50acres). This will increase direct jobs from 125,000 to 175,000.

Once the dam is completed, Farmers will practice double cropping to increase rice production from 114,000 MT to 200,000 MT thus increasing the value of rice from KES 10 Billion to KES 18 Billion and diversification to horticultural crops valued at KES 2.96 Billion per annum.

The dam implementation status is at 79 % against a time lapse of 81%, and is set to be completed by December 2021.

Mutithi Expansion Irrigation area under the Mwea Irrigation Development Project package II whose aim is to optimize utilization of Thiba Dam is at 71% complete.

PICTORIAL



1. Water, Sanitation and Irrigation Cabinet Secretary Sicily K. Kariuki (Mrs) E. G. H (left), National Irrigation Authority CEO Mr Gitonga Mugambi (second left) and other officials from the NIA lay a water pipe in Changachicha Irrigation Project, Nyeri County, on August 27, 2021.
2. Water, Sanitation and Irrigation Principal Secretary Joseph W. Irungu, CBS (centre), National Irrigation Authority CEO Mr Gitonga Mugambi (right) launch the Kahumbu borehole in Murang'a County on September 23, 2021.
3. Water, Sanitation and Irrigation Principal Secretary Joseph W. Irungu, CBS (second left), his Public Works counterpart in the Ministry of Transport, Infrastructure Housing & Urban Development Prof Paul Maringa, CBS (third left), Interior & Citizen Services Principal Secretary Dr. Eng. Karanja Kibicho, CBS (second right) and National Irrigation Authority CEO Mr Gitonga Mugambi (right) inspect the progress of Thiba Dam in Kirinyaga County on August 13, 2021.

PRAYER DAY, SEPTEMBER 30, 2021



1. National Irrigation Authority staff during the opening prayer session led by Ms Jenet Njeru.
2. Ms. Tabitha Gachoki (right) and Ms Ruth Mutuku leading praise and worship session.
3. National Irrigation Authority CEO Mr Gitonga Mugambi (right) and Deputy General Manager (Operations and Irrigation Management Services) praising the Lord during the occasion.
4. The Chairman of National Irrigation Authority Hon. Eng. Joshua Toro,

- RENG MIEK (right) and Mr Daniel M. Nzonzo, Head of Corporate Communication, presenting 1st and 2nd reading.
5. National Irrigation Authority CEO Mr Gitonga Mugambi addresses the staff.
6. Rev. Geoffrey Njenga delivering a sermon.
7. Chief Human Resource and Administration Officer Ms. Victoria Aloo presenting the Authority's prayer needs.
8. Mr Daniel M. Nzonzo, the emcee of

- the day.
9. Ms. Susan Ating'a giving a vote of thanks.

STAFF NEWS

APPOINTMENTS

- Mr. Nathan Kipkemoi Koech; Water Management Technician at Tana Irrigation Scheme
- Mr. James Tsuma Mtana ; Irrigation Engineer at Bura Irrigation & Settlement Scheme
- Mr. Collins Omondi ; Workshop Foreman at Bura Irrigation & Settlement Scheme
- Mr. Norlan Msebe Siyumbu ; Irrigation Officer at Bunyala Irrigation Scheme
- Mr. Geoffrey Mwangi Makumi ; Driver at Mt. Kenya West Region
- Mr. Oscar Mutiga ; Environmental Officer at Head Office

INTERNS

- Ms. Stephanie Nduta Ng'anga; Infrastructure at Mt. Kenya West
- Ms. Pauline Nyokabi Njuguna; Supply Chain Management at Head Office
- Ms. Lucy Kamau; Planning at Mwea Irrigation Scheme
- Mr. Johnbosco Obonyo; Corporate Communication Section at Head Office
- George Maina; Corporate Communication Section at Head Office.

Condolence message to those who lost their loved ones



We pray that you find comfort in the Lord.
May peace be with you and your families.
"A great soul serves everyone all the time. A great soul never dies. It brings us together again and again." Maya Angelou



In loving memory of Eng. Mr Peter Rongo Obare



Mr Peter Rongo Obare passed on Thursday 26 August 2021. He was an artisan stationed at the Ahero Regional Office. He worked hard and always followed the path of honesty. We cherish the milestones we have attained with you. Continue resting in eternal peace.



In loving memory of Eng. Patrick Muriithi Njiru.



Mr Patrick Muriithi Njiru until his demise on Friday 6 August 2021 was an engineer stationed at Mt. Kenya East. He was deployed to National Irrigation Authority from the parent Ministry of Water, Sanitation & Irrigation and has served at the NIA for seven years. Forever in our hearts, Patrick. Rests in eternal peace.



BABY CORN FARMERS LAND A FORTUNE IN IRRIGATION



By **Rhoda Mbuvi**

Mr Peter Kimathi and his wife Esther Wangari are baby corn farmers under the Mutaro irrigation project in Laikipia County. “Since we got this project, water has been sufficient. I am cropping baby corn which compared to maize is more profitable. I have educated my four children through farming and now that they are all grown, we do not bother them to finance our lifestyle. In every two weeks, we are harvesting. Cash gets in every two weeks,” said Kimathi.

Kimathi explains that baby corn cobs are harvested manually after the silk appears on alternate days for one to three weeks. The return yield ranges from 15-25 tonnes per hectare or six to eight cobs per plant, he adds. Kimathi dreams of going international with this rare crop. “I am hoping I pass audit to enable me to go to the international market.”

The major crops planted by farmers in this project are maize, beans and horticultural crops but farmers are intensifying as shown by the Kimathis.

Irrigated baby corns are expected to be a game-changer since an acre will fetch upwards of 10 tonnes compared to conventional agriculture whose best is two tonnes an acre. Taking between 45 and 60 days to harvest, a kilo of this corn sells for between Sh100 and Sh200.

Ms Lucy Njeri, who is cropping onions, says since farmers “were honoured with this project by the Government through the National Irrigation Authority, we feel part and parcel of the economic development spurred by the Food Security and



Mr. Peter Kimathi and his wife Esther Wangari in their Baby corn farm, Laikipia County.

Nutrition basket of the Big 4 Agenda.” She continues: “We never lack water for farming. It has been enough for everyone for farming and domestic use. Security has also improved and I am creating employment to about 20 community members. As I benefit, the community is also benefiting.”

Mutaro Irrigation Project came to be after a self-help group registered on Certificate No. 1828 by the then Ministry of Gender, Sports, Culture and Social Services wrote to the National Irrigation Authority seeking the rehabilitation of a dilapidated irrigation canal. An environmental impact assessment was carried out in July, 2007 and was subsequently signed on July 18, 2007 by experts from Green Globe Foundation registered by the National Environment Management Authority.



Feasibility studies showed the project was feasible with little environmental strain. A topographical survey of the project was carried out on October 22, 2018, designs done a month later and the works began on June 9, 2019

and completed on December 5, 2020.

Scope of works included the main canal and branch canals that consisted of excavations as per the design profiles, concrete works, provision of sluice gates along selected areas, provision of foot across selected areas of the canal, construction of drop structures, Parshall flumes, dump bell with centre bulb contraction and divisional structures.

The Mutaro project is benefiting 1,000 households, ultimately profiting at least 10,000 people directly with at least 3,500 acres under irrigation.

“

Mr. Peter Kimathi

Baby corn cobs are harvested manually after the silk appears on alternate days for 1-3 weeks. The return yield ranges from 15-25 tons per hectare or 6-8 cobs per plant

IRRIGATION WATER IS GOOD LIFE, SAYS TREE TOMATO FARMER WANJIKU



Mary Wanjiku in her Tree- tomato farm in Kiambu County



By Brenda Rajwayi

“I’m delighted that the government gave me water when I needed it most,” Mary Wanjiku, a beneficiary of Kamuka Irrigation Project, exclaimed. The National Irrigation Authority (NIA) is implementing this project in Kiambu County’s Gatundu South Constituency. The Kamuka project, according to

Eng. Loise Kahiga, the Authority’s Chief Engineer, Planning and Design, has irrigated 150 acres, benefiting approximately 100 farmers who grow high-value crops. Construction of a water intake along River Komwathai in Kinari Forest, as well as conveyance pipelines to connect water to farmers, is part of the project.

Wanjiku owns 1.5 acres on which she grows crops to feed her family, pay bills, and educate her three children. This was not always the case. Despite having fertile land, she was dependent on rainfall, which was scarce and irregular. “If it hadn’t been for the

NIA linking us to water, my family would be looking for relief food now that rain has not fallen in a long time,” Ms Wanjiku cries. “And I wouldn’t know where to get school fees for my children. How I hope the good Lord blesses them,” she continues.

The bulk of Wanjiku’s land is covered in tree tomato. She refers to the fruit as Ribena in other contexts. She possesses 330 Ribena trees. “It took roughly a year for the Ribena trees to grow and bear fruit. My first harvest brought me KSh14,000.”

The beauty of this tree is that once you start harvesting, you continue every one to two weeks for the next eight years.

Wanjiku harvests about 100kgs of tree tomato weekly, selling each kilogramme for KSh60, making approximately KSh 6,000 each week. She plants cabbages, too. She does around 1,000 that she harvests every three months and sells for KSh33 a head.

Kale, potatoes, and maize are some of the other crops she grows on a smaller scale for sustenance thanks to the reliable supply of water made possible by irrigation.

TIPS FOR DRIVING SAFELY IN THE RAIN



By Humphrey Muyeka

Rain does not stop us from going on with activities. In fact, we count it as a blessing since rainy seasons deliver bountiful harvests. Here are some tips to help you stay safer when driving in this hazardous weather with skids,

hydroplaning, and slick roads:

- Do not drive if you don’t have to
- Slow down
- Never use cruise control in wet conditions
- Turn on your defroster
- Give extra room to other vehicles
- Turn your lights on
- Avoid hard braking
- Avoid sudden movements
- Stay away from areas prone to flooding
- Turn around, don’t drown
- Never drive off-road during rain
- Know how to handle a skid
- Be calm if you’re hydroplaning

- Drive in another vehicle’s tracks
- Avoid large trucks and buses
- Be ready for gusty winds
- Watch out for pedestrians
- Drive in the middle lanes
- Check your tyres
- Check lights and windshield wipers
- Pull over if it is bad



Courtesy of Road Safety Committee secretary Humphrey Muyeka at National Irrigation Authority

NIA WATERS GOOD GOVERNANCE TO UPROOT MARGINALISATION



By **Caroline Maina**

Safeguarding livelihood and having structures for the exercise of power and authority are the two national values protected at the National Irrigation Authority by ensuring that the marginalised are secured and good governance is thriving.

The management, led by the Chief Executive Officer Mr Gitonga Mugambi, ensures the institution is geared towards attaining its mandate of promoting irrigated agriculture to enhance food security in Kenya. Under his management, the Authority has aligned policies and strategies with the Irrigation Act 2019. More than 260 irrigation projects have been established across the 47 counties, covering marginalised areas such as Samburu, Kajiado, Narok, Baringo, Garissa, Wajir, Mandera, Marsabit, Isiolo, Tana River, Lamu, Turkana, Keiyo and Marakwet.

Under this leadership, all the seven public schemes, two research stations and projects are abuzz, producing throughout the year.

In the 2019/2020 financial year, the NIA was rated the fifth best corporation in the review of ministries, departments and agencies numbering 223. Under Core Mandate, the Authority emerged eighth best in the category.



Farmers in Katilu Irrigation Scheme one of the marginalised communities with a bumper harvest

Additionally, the Authority is faithfully implementing the Access to Government Procurement Opportunities (AGPO), an affirmative action programme that empowers

women, youth and persons with disability by giving them more access to do business with the Government. “We provide jobs. Our studies have shown that for every acre you irrigate, you create five jobs. As you produce, you are producing raw materials to support industries, hence industrialisation, in addition to improving the incomes of farmers, and they are able to afford housing. People who are food-secure are naturally healthy, so less sickness, and they can also afford to meet their hospital bills,” explains Mr Mugambi. The Authority is committed in bringing on board all participants from all cadres to take active part in making the country green and food-secure.

“

The Authority is committed in bringing on board all participants from all cadres to take active part in making the country green and food-secure.

OPINION NOOK

How Unyunyizi newsletter has impacted our lives

This is the tenth issue of ‘Unyunyizi News’, a publication of the National Irrigation Authority. In this issue, we feature feedback on how the newsletter has impacted the lives of our readers. We got the responses through phone text messages, calls and face-face interviews.

“The newsletter has been helpful in training me in how to do agriculture, especially through irrigation. Now, I have more knowledge on how to produce more food in small parcels of land.” **Kiragu Ng’ang’a, Nakuru County**

“The newsletter has been very informative on initiatives the Government has taken to provide water for irrigation in the country. I am grateful that the Government has not forgotten Nyeri County. We don’t rely on rain water to grow our crops as we used to.” **Nahashon Kamore, Nyeri County**

“There has been a notable growth in both the writing of the articles and photo selection. Keep it up.” **John Mbataru, Nairobi County**

“The articles are educative and well-researched. The newsletter in general is amazing.” **Sharon Tanui, Eldoret County**

“The design is simple and elegant.” **Jimmy Nzioki, Kajiado County**

“The newsletter has been informative. Sometimes the speed of wind in our region is very high. It affected me because I used sprinkler irrigation method and could only irrigate my crops once a day when the speed of wind is low. I read about drip irrigation method in the newsletter, which helped me so much. Now, I can irrigate my crops all the time using the drip irrigation method without worrying about the speed of wind.” **Gilbert Mwangi, Nakuru County**

A publication of the National Irrigation Authority

DEMYSTIFIED: SILTATION IN IRRIGATION INFRASTRUCTURE



By **JOHNBOSCO
OBONYO**

Unyunyizi News sat down with experts to help in understanding “siltation”. Eng Jairus Serede, an Irrigation Engineer at the Authority, says siltation is also known as sediment pollution; it is an undesired accumulation of sediments (fine particles of sand, mud, and other materials) in irrigation structures such as dams and canals.

What causes siltation?

Most often it is caused by soil erosion or sediment spill. Sediment entry into irrigation channels can occur both from natural causes such as heavy runoff and human behaviour such as overgrazing or deforestation.

Effects

Siltation affects water distribution; its accumulation can create hazards, including diversion of water from its original channel and the sediments can gradually fill reservoirs, suffocate spawning beds, clog or damage water inlets and gates.

Water systems can also be blocked, causing reduced water flow leading to limited water usage for irrigation and agriculture and other areas like transportation.



Excavator removing accumulated silt from a canal in Perkerra Irrigation Scheme

Mitigation

“Occasional flooding in our schemes/projects leaves most of the irrigation infrastructure in a dilapidated state, calling for their rehabilitation. To mitigate this, schemes/projects have a schedule for maintenance of irrigation infrastructure that includes desilting the affected structures”.

Further, proper designs of these infrastructures, that is design of minimum slopes, velocities of flow in channels to prevent siltation for given discharges, flows and depth,

is a major way of preventing siltation, explains Eng Serede.

“Silt traps and sedimentation basins are also an effective way of reducing silt build-up into dams and subsequent irrigation infrastructure. Besides infrastructure designs, vegetation growth on the inner and outer canals have also proven effective in the catchment zones, abstraction points, conveyance zones and infield infrastructure”, says Christianus Murunga, an Environmentalist at the Authority.

He further adds that using conveyance pipes and lining of canals has been effective in dealing with siltation.

“

Eng. Jairus Serede

Siltation or sedimented pollution is undesired accumulation of sediments (fine particles of sand, mud, and other materials) in irrigation structures such as dams and canals.



Farmers disilting a canal in Katilu Irrigation Scheme Turkana County

GITONGA MUGAMBI: A PASSIONATE LEADER AND SEASONED AGRONOMIST KEEN ON TRANSFORMING LIVES



By **Daniel M. Nzonzo**

Gitonga Mugambi: A passionate leader and seasoned agronomist transforming lives

Mr. Gitonga Mugambi is the Chief Executive Officer of the National Irrigation Authority (NIA) serving his second term following his reappointment on August 1, 2020. He is passionate about irrigation and says one of his biggest dreams is to see Kenya food-secure through irrigated agriculture.

Mr. Mugambi holds a Master of Business Administration in Strategic Management from Kenya Methodist University and a Bachelor of Science degree in Agronomy from the University of Nairobi. He is also an accomplished agronomist with experience of more than 30 years in planning and strategy, resource mobilisation and formulation of irrigation development programmes such as Economic Stimulus Programme. His experience is valuable in policy formulation, implementation and management of the National Irrigation Authority.

Describe yourself.

I am a team player and driven by desire to leave a legacy. Currently, my main goal as the CEO of the National Irrigation Authority is to be remembered for the number of acres I have put under irrigation in my term of service. I am married



CEO National Irrigation Authority Mr. Gitonga Mugambi

to a very hardworking lady whom I love dearly. We have three children, a girl and two boys. My first-born will be graduating from university soon.

Additionally, I am a businessman. Together with my wife, we own a family business that cuts across fuel, transport, manufacturing and farming.

How do you balance work and personal life?

I usually wake up at 4:45am every day and get into the office by 6:00am. I purpose to scribble down my to-do list for the day in this black notebook you see here (he lifts it from his desk) and clear the files on my desk between 6:00am and 7:00am so as to create time to see those who come to seek our services. This being a public office I need to make myself available to see my publics and hear them too. In the evening, between 5:00pm and 7:00pm, I resume to finish any pending work on my desk then watch the 7:00pm news from my office and leave at around 8:00pm. This schedule has left me having very little time for my family and I know that sometimes my children miss me. Regardless of my tight work schedule, I always talk to each of them every morning and spend at least an hour with them every evening. Sometimes when taking my short breaks during the day I call them to catch up.



National Irrigation Authority CEO Mr. Gitonga Mugambi(R) with Principal Secretary, Ministry of Water, Sanitation and Irrigation (MoWSI) Joseph W. Irungu, CBS (center, in black cap) laying a water pipe in Mirira Irrigation Project Murang'a County

I have not heard you mention any hobbies...

(Chuckles) Actually, my family too has complained about this area. My life starts and ends with work. Having worked from Monday to Friday, you will still find me in the office most Saturdays working until noon. Upon leaving the office, I usually join my wife and get an update on the progress of our family business; after which, I get to socialise with my friends in the evening. I dedicate my Sundays to family and rest before resuming the same routine on Monday.

I have tried golfing but could never afford time for it and ended up dropping it. However, I love travelling and one thing I intend to do when I get the time is travel this world.

Given how much you have dedicated your life to NIA, was

this your childhood dream?

Growing up, I wanted to become a doctor and my father really supported it. In fact, he would always tell me that I must become a doctor. Upon doing my Advanced Level exams, however, I was called to do dental surgery. I wanted to deal with the whole human body and not the head alone, hence refused to study dental surgery against my father's wishes. During that time, I met Prof Jacob Kaimenyi, who was the Chair of the Dental School at the University of Nairobi then. He challenged me to consider other options and I opted to take a Bachelor of Science in Agriculture where I missed only one point to graduate with First Class Honours.

I started my career fresh from university in Mwea Irrigation Scheme. As such, I hold it very dearly to me. This is where I can say I built the foundation of my career. I believe the lessons I learnt while in Mwea guide my work to date. It is an honour to have been a contributor to the success story of Mwea Irrigation Scheme, being the biggest irrigation scheme, covering 25,000 acres as of today and cropped to the last inch.

The institution would later sponsor me to study Project Management in Japan for a year. I later did my master's at KeMU [Kenya Methodist University] and studied Community Mobilisation in Morogoro University in Tanzania. I have taken several management courses and at some point even registered to take a PhD in Project Management but could not keep up with the demands and the pressure. One day however... one day... I will finish the PhD.

Having worked in the Authority for about three decades now, what has been your drive?

The space that irrigated agriculture holds in this country, Kenya, is immeasurable and the potential it holds in Kenya's economy is far incalculable. The Authority gives Kenyans access to water for agriculture and consequently domestic use that in itself is fulfilling. The vision of the Authority, 'Water to Every Irrigable Acre' is thrilling enough to get you out of bed, get to the office to work. The fact that the Authority also ensures that its efforts bear fruit through offering extension services such as building the capacity of farmers through training and benchmarking to ensure the sustainability of the projects, is a game-changer. Who wouldn't be passionate about this game-changer?

What are some of your major achievements as a CEO?

Allow me to start with the transition from National Irrigation Board to National Irrigation Authority. Operating under an old Act enacted in 1966 was limiting. The old Act was enacted at a time the country was still transitioning, just a few years after Kenya gained its Independence, hence you can tell many transition issues from a colonial country to an independent one informed the Act. Almost 60 years down the line there has been a need to change that and redirect irrigation to suit the modern Kenya. The former Irrigation Act was restricting the institution to the seven public schemes, yet there was a need to move to all parts of the country. For that to happen legally, there was a need to have the Act reviewed. It was an honour to take part in the process of review and enactment of the Irrigation Act, 2019

as well as overseeing the transition from NIB to NIA, a process that we are almost completing.

Ensuring that all irrigation schemes are functioning and initiating more irrigation projects across the country to involve more farmers in food production activities is also valuable to me. It makes me happy seeing farmers earn a living from their farms with the simple act of giving them access to water. To date, I have done more than 200,000 acres and my target by the time I leave this office is to reach about 300,000 acres. This means I will have doubled the acreage done before I took over.

the water pans as well, which we have reduced from about KSh700–800 per cubic metre to KSh180 is worth this basket.

“

Mr. Gitonga Mugambi

Irrigation gives life and peace through feeding people. Some of the areas in Kenya that have insecurity due to competition for scarce resources such as grazing land and water for livestock has realized peace through adoption of irrigated agriculture

What challenges have you experienced in implementing your mandate?

Resistance: Some communities have proven challenging to penetrate. From convincing them to teaching them how to farm to having them adopt modernised farming. Some move very fast and utilise the irrigation infrastructure whereas others have a slower uptake and a lot of capacity building is needed. You know how adoption of new ideas happens: from early adopters who take it immediately to laggards who take time.

Budget allocation: The 2021–22 financial budgetary allocation for irrigation was KSh11 billion compared to a budgetary requirement of KSh64.43 billion, according to our Strategic Plan. We appreciate the support the Government has accorded us, but I feel it should allocate more resources to irrigation to enable us tap into this huge potential and make the country food-secure.

Land compensation also comes as another challenge. It sometimes diverts resources from the main infrastructure. Sometimes we have enough resources to implement an irrigation project to completion but when the issue of compensation comes in, it diverts resources, making the project stall or delay. It also comes with a lot of activism, making it more difficult. There is a need to set standards and limitations for compensation.

In your capacity as the CEO, what has been your contribution to the Big Four Agenda?

The Authority is at the centre of it all, hence directly influences the Big Four Agenda pillars. In providing water for irrigation, we are empowering farmers to explore their potential. Our farmers hold this country. Through farming, there is provision of food, employment, raw materials and income to support livelihoods, hence covering health care and housing.

Our studies have shown that for every acre put under irrigation, five jobs are created. Raw materials such as cotton, sunflower, chamomile, rice by-products and more produced by farmers across the country supports industries, hence industrialisation. It is fulfilling to steer this ship (NIA) that aims to provide water to every irrigable acre and in turn contributing to the above. This is thanks to a unified management team working harmoniously with the Board of Directors and a committed work force.

Any advice to the young people starting out on their careers?

Work hard. Anybody who works hard and has integrity gets many blessings. The lazy and dishonest pay dearly. It has taken me more than 20 years to be the CEO of this organisation and 30 years to be where I am today, hence patience is a virtue one needs to afford.

Parting shot?

We need this county to appreciate irrigation. Irrigation can create a lot of wealth for this country and the potential for irrigation is enormous. We are carrying out new studies, which are showing that with water harvesting, we can have more than 10 million acres irrigated, up from the recorded three million acres.

Irrigation gives life and peace through feeding people. Some of the areas in Kenya that have insecurity due to competition for scarce resources such as grazing land and water for livestock have realized peace through adoption of irrigated agriculture. With more investment in water harvesting and capacity building, such communities will completely change and adopt farming as a new way of life.

Lastly, you need to be felt in whatever capacity you hold in your place of work, family, Government, church.... everywhere.



Mr. Gitonga Mugambi planting a tree

It feels like there is more to add in the milestones basket...

Yes. There is joy in making a difference. Supporting education in remote areas like Turkana County through Corporate Social Responsibility (CSR) initiatives where the Authority has implemented a number of irrigation projects is also noteworthy. This support has been given in the form of building schools and it is a joy to take care of the future by getting our children in class.

Also, successfully restructuring the Galana Kulalu Food Security Project and realising success out of it, doubling the size of Ahero Irrigation Scheme and implementing irrigation projects in marginalised communities such as Wajir, Mandera, West Pokot, Turkana and Kajiado just to mention a few. My heart jumps with joy when I see peoples' hope restored.

Last but not least, revision of the cost of doing irrigation projects from an average of KSh160,000 per acre to KSh90,000 per acre and this applies to



VISION

“Water to every irrigable acre”



MISSION

“Provide and Coordinate Sustainable Development and Management of Irrigation Services in Kenya.”



CONTACTS

Unyunyizi House, Lenana Road,
P.o Box 30372-00100,
Nairobi, Kenya.

Mobile No: 0711 061 000,
0711 061 140

 ceo@irrigation.go.ke, communication@irrigation.go.ke



www.irrigation.go.ke



National Irrigation Authority



@irrigation_Auth



National Irrigation Authority