



2024

ZAMBIA AGRICULTURE RESEARCH
INSTITUTE

NATIONAL RESEARCH FIELD DAY REPORT

CREATING A COMPETITIVE FUTURE THROUGH CLIMATE
SMART AGRICULTURE TECHNOLOGIES



Ministry of
Agriculture



Researching Soils, Crops and
Water in Zambia

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MESSAGE FROM THE DIRECTOR

On behalf of the Zambia Agriculture Research Institute (ZARI), I would like to extend my heartfelt gratitude to each of you for your invaluable support and participation in the recently held 2024 National Research Field Day. Her Honour the Republican Vice President Mrs. W.K Mutale Nalumango graced the event, which was attended by 39 companies and over 2,500 participants.

The success of this event is a testament to the collective efforts of our dedicated stakeholders, researchers, farmers and community members who all share a common vision: To drive innovation and improvement in Zambia's agricultural sector. Your participation highlighted the importance of collaborative efforts and reinforced our commitment to enhancing agricultural research and practices that empower our farmers and enhance food security in our nation.

The event was punctuated by keynote addresses that set the tone for Zambia's agri-food system, along with demonstrations of novel agricultural technologies and the sharing of best practices vital for increasing productivity and sustainability. The positive feedback we received from participants illustrates the impact such events can have in fostering knowledge exchange and strengthening partnerships.

We are particularly grateful for the support of the Republican Vice President, whose presence underscored the significance of our work and the government's commitment to advancing agricultural development in Zambia. The role of the private sector cannot go unnoticed as they are a key stakeholder in bringing about the much-needed growth of our agricultural sector. The engagement and enthusiasm of all attendees truly made this field day a memorable occasion, inspiring us to continue our vital research endeavours.

As we move forward, we encourage all stakeholders to remain actively involved in our initiatives. Together, we can continue to innovate, overcome the challenges of climate change and make significant strides toward achieving our goals in agriculture and food security.

Once again, thank you for your support and participation. We look forward to working with each of you in the future as we strive to improve the agricultural landscape of Zambia.

Dickson Ng'uni, PhD

Director

Zambia Agriculture Research Institute

EXECUTIVE SUMMARY

The Zambia Agriculture Research Institute (ZARI), in partnership with seed, fertilizer, mechanization, insurance and agro-companies, hosted the 2024 National Research Field Day (NRFD) on March 22nd at Mount Makulu Central Research Station in Chilanga. Themed "Creating a competitive future through climate-smart agriculture technologies", the NRFD offered a vibrant platform for over 2500 farmers, students, agricultural researchers, and experts to explore innovative approaches for fostering competitive agriculture technologies amidst the challenges posed by climate change. The event, which was held against the backdrop of the impactful 2023-2024 drought, emphasized the importance of research, technology adoption, and resilience-building strategies in sustaining agricultural productivity and livelihoods in Zambia.

Key Highlights

Guest of Honour: The event was represented at the highest level of government, by Her Honour the Vice President of the Republic of Zambia, Mrs. W.K. Mutale Nalumango, who also graced the event.

Participant Engagement: Over 2500 farmers, along with students, agricultural experts and researchers actively participated in the event, demonstrating a keen interest in advancing agricultural practices and technologies.

Our Partners: ZARI partnered with 26 seed, fertilizer, and agro-companies to establish field demonstration plots. The companies presented cutting-edge, climate-smart varieties along with optimal crop management techniques and seed solutions. Similarly, the fertilizer companies showcased a selection of high-quality and cost-effective fertilizers.

ZARI's Demonstration Plot: ZARI's demonstration plot featured 20 crop varieties, including the newly released drought-tolerant sorghum and fall army worm tolerant maize varieties. This initiative highlighted ZARI's dedication to showcasing cutting-edge agricultural technologies and practices that address the pressing challenges facing Zambian farmers.

Research Impact: The event highlighted the critical role of research in combating climate change, with a particular focus on the development and adoption of climate-smart crop varieties and technologies. Through scientific inquiry and experimentation, researchers aim to identify resilient agricultural practices that mitigate environmental risks and enhance productivity.

Farmer Awareness: Recognizing the importance of farmers being exposed to climate-smart technologies and varieties, the event emphasized the need to empower farmers with knowledge and resources. By embracing innovative practices tailored to local agroecological conditions, farmers can enhance resilience, mitigate climate risks and improve livelihoods.

ZARI's Services: Demonstrating its dedication to assisting farmers, ZARI showcased its essential services, encompassing Crop Improvement and Agronomy, Farming Systems and Social Sciences, Plant Protection and Soils and Water Management. These services are geared towards granting farmers access to enhanced crop varieties, effective agronomic techniques, disease and pest management and soil fertility and conservation measures.



The 2024 National Research Field Day at ZARI highlighted government and private sector collaborations in advancing agricultural innovation in Zambia. Through knowledge exchange, technology adoption, and sustainable practices, ZARI remains key to agricultural development and food security.

INTRODUCTION

Significance of Research in Combating Climate Change

Research plays a vital role in addressing the challenges of climate change by providing insights into the adaptation and mitigation strategies necessary for sustainable agricultural development. As the impacts of climate change intensify, the need for innovative approaches, including the development of climate-smart crop varieties and technologies, becomes increasingly imperative. Through rigorous scientific inquiry and experimentation, researchers can identify and harness the potential of resilient agricultural practices that mitigate environmental risks and enhance productivity.



Importance of Farmer Awareness of Climate-Smart Technologies and Varieties

While research lays the groundwork for climate-smart agriculture, the successful adoption of innovative technologies and varieties by farmers is essential for realizing tangible benefits on the ground. Farmers must be empowered with the knowledge and resources to adopt practices that enhance their resilience to climate variability and promote sustainable livelihoods. By embracing climate-smart technologies and crop varieties adapted to local agro-ecological conditions, farmers can mitigate the impact of climate change on their livelihoods while improving productivity and income.



Objectives of the Event

The following were the objectives of the 2024 NRFD:

- To facilitate knowledge exchange and collaboration among farmers, researchers and experts in addressing the challenges of climate change in agriculture.
- To showcase innovative approaches, technologies and crop varieties aimed at enhancing agricultural resilience and sustainability.
- To raise awareness about the importance of research, technology adoption and farmer empowerment in combating climate change and improving livelihoods.
- To provide a platform for farmers to access essential services, resources and expertise offered by ZARI to support their adaptation efforts and enhance agricultural productivity.

SERVICES OFFERED BY ZARI TO FARMERS

ZARI provides a range of essential services aimed at supporting farmers in their efforts to adapt to climate change and improve agricultural productivity:

1. CROP IMPROVEMENT AND AGRONOMY:

ZARI's Crop Improvement and Agronomy division focuses on the development and adaptation of appropriate crop varieties and agronomic technologies tailored to the diverse agroecological regions of Zambia. Under this division, the units include:



National Oilseeds Development Programme (NODP): Research on edible and non-edible oilseed crops, aimed at enhancing oil content, quality and composition.

Wheat Breeding Programme: Dedicated to improving wheat production to address the country's wheat shortage and increase self-sufficiency



Sorghum & Millets Improvement Programme (SMIP): Focused on enhancing sorghum and millet production for food security in marginal areas.

National Plant Genetic Resources Center (NPGRC): Dedicated to conserving genetic diversity in agricultural and horticultural crops for present and future use



Tree and Plantation Crops: Research and development aimed at promoting the technical progress that will improve fruit production.

Maize Breeding Programme: Focused on enhancing maize production, which is a staple food in Zambia, through the development of stress-tolerant varieties and improved productivity.



Vegetable Research: Focuses on boosting production to meet dietary needs, achieve self-sufficiency, and generate export surplus through cultivar improvement, agronomy, plant protection, indigenous vegetable development and seed research.



Soybean Breeding Programme: The team focuses on developing superior, high-yielding soybean varieties that are well-adapted to local conditions.



National Food Legumes Improvement Programme: Focused on legumes research and development to improve production and productivity, contribute to soil health and improve household nutrition.



2. FARMING SYSTEMS AND SOCIAL SCIENCES:

The Farming Systems and Social Sciences team adapts technologies generated to farmers' social-economic, nutrition, gender and cultural settings. The unit offers guidance to farmers on resource allocation, farm management practices and production strategies thereby supporting farmers in maximizing efficiency and sustainability in agricultural production.

SERVICES OFFERED BY ZARI TO FARMERS

3. PLANT PROTECTION DIVISION:

ZARI's Plant Protection Division is dedicated to the development and adaptation of pre and post-harvest technologies aimed at preventing crop losses due to pests and diseases. Additionally, the division provides diagnostic services for pest and disease identification, equipping farmers with the knowledge and tools to effectively manage crop health and minimize losses. The units in this division include:

 **Plant Pathology:** Focuses on generating and adapting disease management technologies and providing disease identification and advisory services to increase crop productivity.

Entomology Research Team: Generates technologies and offers advisory services on insect pest and weed control to mitigate their impact on crop yield and quality.



 **Postharvest Technology Unit:** Generates and adapts post-harvest technologies to ensure reduced post-harvest crop losses caused by pests.

4. SOILS AND WATER MANAGEMENT:

ZARI's Soils and Water Management division focuses on promoting appropriate soil and water management practices to enhance crop production and sustainability. By offering soil advisory services and promoting soil conservation measures, ZARI assists farmers in optimizing soil fertility, water use efficiency and crop resilience to environmental stressors. The units in this division include:

 **Soil Chemistry:** Conducts research on soil nutrient levels and soil amendment recommendations to improve soil health and crop productivity. This unit also offers soil testing services for chemical parameters such as pH and plant nutrient content. Fertiliser quality testing and certification is also done in this unit.

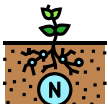
Soil Microbiology: Explores plant-microbe interactions to improve soil health, plant nutrition, and crop productivity through beneficial soil microorganisms.



 **Soil Survey:** Facilitates the transfer of soil fertility information and contributes to the understanding and proper use of land resources

Soil Physics: Conducts research on soil physical properties and offers services such as infiltration tests, irrigation system design and soil moisture monitoring to enhance soil and water management practices.



 **Herbage Chemistry:** Focuses on improving soil fertility through integrated soil fertility management, offering plant chemistry analyses to support sustainable soil fertility management decisions.

GOVERNMENT URGES COLLABORATION FOR CLIMATE SMART AGRICULTURE: INSIGHTS FROM VICE PRESIDENT OF THE REPUBLIC OF ZAMBIA, LUSAKA PROVINCE MINISTER AND AGRICULTURE MINISTER

By Dorcas Kabuya



Vice President Mutale Nalumango speaking during the 2024 NRFD

Vice President, Mutale Nalumango, applauded Zambia Agriculture Research Institute (ZARI) for its continued effort in improving the agricultural sector in the country.

Speaking during the launch of the 2024 National Research Field Day in Chilanga at Mt Makulu Research Station, Mrs Nalumango said the future of farming in Zambia was bright as milestones achieved by research institutes such as ZARI cannot be over emphasised.

“Under the Comprehensive Agricultural Transformation Support Program (CATSP), which your government has embarked on, agricultural research and development is expected to play a key role in the transformative agenda of the sector,” she disclosed. The Vice President called upon scientists to keep up with the good work they were doing in order to fight the various agricultural challenges faced by the farming community in the sector.

Mrs. Nalumango emphasised the importance of research and development in enhancing agricultural productivity and called for support from the farming community and private sector in sustaining effective service delivery. She expressed gratitude to development partner institutions for their support and highlighted the importance of field days in promoting climate smart agricultural practices. “Without adequate investment in appropriate agricultural research and development, there can be no improvement in crop productivity and production. We call on the private sector to complement government in the research efforts being undertaken by ZARI,” she noted.

Mrs. Nalumango concluded by encouraging youths to take advantage of the various government grants and loans available for venturing into agriculture. She stated that youths were well positioned for success in this area because they were enlightened and capable of creating their own employment opportunities.

Agriculture Minister, Reuben Mtollo Phiri, stated that scientific and technological advances were essential for the prosperity and growth of the agriculture sector. He noted that his Ministry was fully aware of the challenges faced during the 2023/2024 farming season, describing it as one of the most severe droughts the country has experienced in the past 40 years.



Agriculture Minister Reuben Mtollo Phiri addresses the 2024 NRFD

The Minister, however, reassured the nation that the government is implementing interventions to mitigate the current crisis, emphasising that it is being addressed with the urgency it deserves.

“I am aware of the severe impact of the ongoing drought in the country, which has resulted in widespread crop failure and has affected millions of people across multiple provinces. We commend the government for implementing a multifaceted emergency response plan aimed at safeguarding livelihoods and the environment,” he remarked.

GOVERNMENT URGES COLLABORATION FOR CLIMATE SMART AGRICULTURE: INSIGHTS FROM VICE PRESIDENT OF THE REPUBLIC OF ZAMBIA, LUSAKA PROVINCE MINISTER AND AGRICULTURE MINISTER

The Minister further urged researchers to respond to the call for innovative solutions to address the impact of climate change on agriculture, emphasising the critical role of research in safeguarding food security and promoting sustainable development. “As a research institution, ZARI must broaden its research endeavors, particularly in fields such as irrigation and mechanisation, to boost agricultural productivity and resilience. It is imperative to prioritise the development of solutions for climate adaptation and mitigation,” he emphasised.



Speaking at the same event, Lusaka Province Minister, Honourable Sheal Mulyata, expressed her satisfaction with the event as it reflected a shared commitment to harnessing the power of research for the greater good of the country.

Honorable Mulyata indicated that such events provided an opportunity for the country to leverage the collective expertise and resources to address national challenges and create opportunities for growth and prosperity. She called upon various stakeholders, including government agencies and the private sector, to unlock new opportunities for Zambia's growth and prosperity.

“Government’s commitment to research as a driver of sustainable development and prosperity. The role of research in finding solutions to longstanding challenges, harnessing natural resources, and improving citizens’ quality of life cannot be overstated,” she underscored. Minister Mulyata stressed the significance of utilizing research to tackle challenges such as drought and build resilience in the agricultural sector.

She commended government’s efforts in fostering a culture of research and innovation, highlighting the role of technology in transforming the agricultural sector and improving livelihoods as outlined in the 8th National Development Plan (8NDP).



Meanwhile, Mr. Charlie Siatwinda, a farmer, highlighted the vital role of farmers in sustaining the country’s food and nutritional security, underscoring that agricultural research must be supported to help farmers achieve their full potential. He emphasized that supporting researchers directly benefits farmers and consequently, the entire nation.

He encouraged the utilization of various climate-smart farming methods, both traditional and modern, to ensure food security.

Mr. Siatwinda thanked the Vice President for attending the event and expressed hope that the field day would inspire participants to strive for excellence in their farming endeavors.

GALLERY: ACTIVITIES DURING THE EVENT



ZAMBIA'S AGROECOLOGICAL REGIONS

Zambia's agricultural landscape is diverse, encompassing three (3) main agroecological zones, each with distinct characteristics that influence agricultural productivity and practices. These zones are delineated based on factors such as rainfall patterns, soil fertility and growing seasons, providing valuable insights for farmers and policymakers alike.

Region I: Semi-Arid Region

Region I spans across the Southern, Eastern and Western parts of Zambia. This region is characterized by mean annual rainfall ranging from 600 to 800 millimeters. The growing season in Region I is relatively short, lasting between 80 and 120 days. Farming activities occur in this region, albeit with a greater reliance on drought-resistant crops and water conservation practices.

Region II: Central Zambia

Region II is divided into IIa and IIb. IIa encompasses much of Central Zambia, including parts of Southern, Eastern, and Lusaka provinces, whereas IIb covers the Western Province. Annual rainfall in Region II averages between 800 and 1000 millimeters, supporting a growing season of 100 to 140 days.

Region III: High-Rainfall Area

Region III spans a band across northern Zambia, encompassing the Northern, Muchinga, Luapula, Copperbelt, and North-western provinces, along with parts of the Central province. This region receives abundant precipitation, with annual rainfall exceeding 1000 millimeters. The growing season in Region III ranges from 120 to 150 days, providing favourable conditions for crop cultivation. However, excessive rainfall can also pose challenges such as waterlogging and soil erosion, requiring appropriate soil and water management practices.

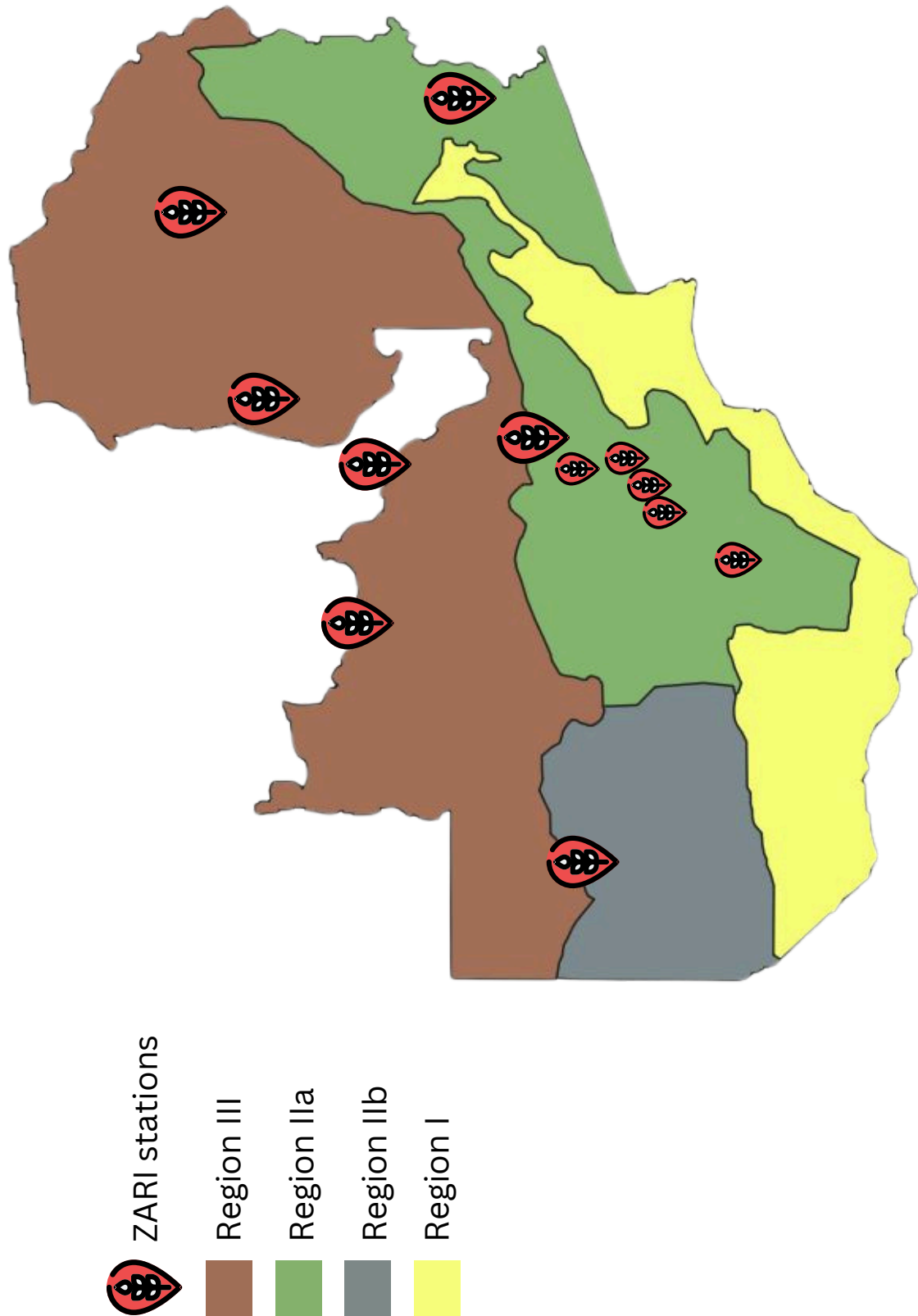


IMPACT OF CLIMATE CHANGE ON OUR AGRO-ECOLOGICAL REGIONS

Climate change has disrupted this historical pattern, leading to a noticeable migration of Region I characteristics into areas traditionally classified as Region II. This phenomenon can be attributed to shifting rainfall patterns, increased temperature variability and alterations in atmospheric circulation patterns—key hallmarks of climate change. As a result, regions once considered relatively stable for agriculture are now experiencing heightened climate risks, including prolonged dry spells, erratic rainfall and increased temperatures.



President Hakainde Hichilema visits a sorghum field at the Zambia Agriculture Research Institute's Mt. Makulu Central Research Station, where UPL and Advanta Seeds in collaboration with ZARI are promoting the adoption of drought-tolerant seed varieties.



The regions present a challenge in developing new technologies and varieties, as these must align with the climatic and soil conditions of each specific region. However, ZARI is stationed throughout these regions to facilitate and coordinate research

TOUR OF STANDS BY DISTINGUISHED GUESTS



Vice President Mutale Nalumango Greets Delegates Upon Arrival at the 2024 NRFD

The pinnacle of the Field Day was the tour of stands led by Her Honour the Vice President of the Republic of Zambia, Mrs. W.K. Mutale Nalumango who was the Guest of Honour. The Vice President was accompanied by other esteemed dignitaries, including the Minister of Agriculture, Hon. Reuben Mtolo Phiri, MP, and Provincial Minister for Lusaka Province, Hon. Sheal Mulyata, MP. Alongside other officials and experts, the trio embarked on an insightful exploration, visiting each stand to witness firsthand the innovative technologies and practices showcased by the agricultural community.

Amidst the bustling displays and engaging conversations, the distinguished guests engaged with farmers, researchers, and industry leaders, exchanging invaluable insights and ideas. Their presence underscored the significance of collaboration and partnership in propelling Zambia's agriculture towards a prosperous future.

As the guests traversed from stand to stand, they were impressed by the ingenuity and dedication exhibited, expressing admiration for the transformative impact of research and innovation. Their visit served as a powerful testament to the collective endeavour and commitment of all stakeholders towards building a resilient and sustainable agricultural industry in Zambia.



MOUNT MAKULU DEMONSTRATION PLOT

Mount Makulu's demonstration plot stood out as a symbol of agricultural innovation and expertise. Offering a concise guide to some of the crops showcased, Mount Makulu provided invaluable insights into best practices and techniques for sustainable crop production.

Here is a brief overview of the crops featured:

BRIEF OVERVIEW OF THE CROPS FEATURED**BEANS
Machili**

Plant Type: Dwarf(Type I)
Spacing: 60 cm x 10 cm
Seed Rate: 60 kg/ha
Days to Flowering: 32 - 37 days
Days to Maturity: 85 - 90 days
Seed Colour: Cream and Red
Potential Yield: 1500 - 2000kg/ha

**BEANS
Lui**

Plant Type: Dwarf(Type I)
Spacing: 60 cm x 10 cm
Seed Rate: 60 kg/ha
Days to Flowering: 32 - 36 days
Days to Maturity: 85 - 90 days
Seed Colour: Dark Red mottled
Potential Yield: 1500 - 2000kg/ha

**BEANS
Lunsemfwe**

Plant Type: Dwarf(Type I)
Spacing: 60 cm x 10 cm
Seed Rate: 60 kg/ha
Days to Flowering: 32 - 37 days
Days to Maturity: 80 - 85 days
Seed Colour: Dark red mottled
Potential Yield: 1500 - 2000kg/ha

**BEANS
Lunga**

Plant Type: Bush(Type I)
Spacing: 60 cm x 10 cm
Seed Rate: 60 kg/ha
Days to Flowering: 34 - 36 days
Days to Maturity: 80 - 85 days
Seed Colour: Purple
Potential Yield: 1500 - 2000kg/ha

MOUNT MAKULU DEMONSTRATION PLOT

**BEANS**
Mbereshi

Plant Type:	Bush (Type)I
Spacing:	60 cm x 10 cm
Seed Rate:	60 kg/ha
Days to Flowering:	30 - 34
Days to Maturity:	80 -85 days
Seed Colour:	Dark red mottled
Potential Yield:	1500 - 2000kg/ha

**SUNFLOWER**
Record

Days to Maturity:	120 days
Yield Potential:	2 ton/Ha
Oil Content:	41%
Crude Oil Per 50 Kg:	15-20Litres
Grain Color:	All black
Cake per 50Kg:	25kg
Drought Tolerance	Very tolerant

**MAIZE**
GV635 (Drought Tolerant Maize Hybrid)

Unique Trait:	Drought tolerance
Cob size:	Big
Grain color:	White
Grain type:	Semi-flint
Lodging tolerance:	Very good
Potential Yield:	11t/ha
Medium Maturing Variety:	125-135days
Disease Tolerance:	Grey Leaf Spot, Turcicum leaf Blight, rust Maize Streak virus & cob rots

**MAIZE**
GV673A (Pro-Vitamin A Maize Hybrid)

Unique Trait:	High in Provitamin A(9.8ppm)
Cob size:	Medium, long
Grain color:	White
Grain type:	Orange
Lodging tolerance:	Very good
Potential Yield:	11t/ha
Medium Maturing Variety:	125-135days
Disease Tolerance:	Grey Leaf Spot, Turcicum leaf Blight, rust Maize Streak virus & cob rots

MOUNT MAKULU DEMONSTRATION PLOT



MAIZE
GV 6076 (Fall Army Worm Tolerant Maize Hybrid Variety)

Unique Trait:	Drought tolerance
Cob size:	Big
Grain color:	White
Lodging tolerance:	Very good
Potential Yield:	12t/ha
Medium Maturing Variety:	128 days
Disease Tolerance:	Grey Leaf Spot, Turicum leaf Blight, rust Maize Streak virus & cob rots



SORGHUM
Lemon Yellow

Plant Type:	Grain, high in Beta-carotene A (Vit A)
Spacing:	75cm x 5cm
Seed Rate:	7kg/ha
Days to Flowering:	80-90 days
Days to Maturity:	100-110 days
Seed Colour:	Light yellow
Potential Yield:	4-6 t/ha



SORGHUM
Chisi (FSV-23-1)

Plant Type:	Dual-purpose forage sorghum
Spacing:	60cm x 5cm
Seed Rate:	16-20kg/ha
Days to Flowering:	60-70 days
Days to Maturity:	110 - 120 days
Seed Colour:	Brown
Potential Yield:	
1. Grain-	2-3t/ha
2. Biomass-	30-90 t/ha depending on maintenance
3. Juice-	30,000-90,000L/ha depending on maintenance



SORGHUM
ZSV 261

Plant Type:	Grain Sorghum
Spacing:	75cm x 5cm
Seed Rate:	7kg/ha
Days to Flowering:	90-110 days
Days to Maturity:	110-130 days
Seed Colour:	White
Potential Yield:	8-12 t/ha (with high maintenance)

MT. MAKULU DEMONSTRATION PLOT



Yield potential: 1.5 - 1.8t/ha

Days to maturity: 100- 110 days

Dual purpose use for grain and fodder

Adapted to the low and mid-altitude agro-ecologies



Yield potential: 2.5 - 3.0t/ha

Days to maturity: 120 - 130 days

Tolerant to rosette and leaf spots diseases

Highly stable across different environments



Yield potential: 3 - 3.4t/ha

Days to maturity: 110-115 days

Rows spaced: 20-25 cm apart

Plant seeds 4-5 cm deep and cover them



Yield potential: 1.5 - 1.8t/ha

Days to Maturity: 100- 110 days

Adapted to the low and mid-altitude agro-ecologies

First ever early maturing rosette resistant variety in Zambia

Groundnut Farming Tips

- Choose well-drained, loose soils. Plow and harrow the land, favoring ridge planting, especially in heavy soil.
- Plant only when soil moisture is enough. Sow seeds 5-6 cm deep, spaced at 60 cm x 10-15 cm on ridges, and 45 cm x 10 cm on rip lines.
- Apply NPK 11-22-21+5S+0.7Zn+0.5B fertilizer at 150 kg/ha within 14 days after planting, and 400 kg/ha of Calciprill or Gypsum at flowering
- Maintain weed-free fields throughout the season. Avoid weeding or walking through groundnut fields during peak flowering to pegging stage.
- Harvest when 70-80% of pods are mature with well-filled, brown interior shells. Ensuring soil is moist for optimal yield and grade. Shake off soil and orient pods towards the sun. Dry harvested pods immediately to 8-10% moisture, clean, and bag in sacks.

Wheat Farming Tips

- Use a hand drill or push-planter.
- Central Province: Plant between 25th December and 15th January.
- Mpika area: Early to mid-January.
- Mbala area: Mid to late-January.
- Basal Dressing: Apply 50 kg of 'C' fertilizer (or 'D' if 'C' is not available) per Lima broadcast at planting time and incorporate into soil immediately prior to planting.
- Top Dressing: Apply 25 kg of Urea (or 38 kg of Ammonium nitrate if Urea is not available) per Lima broadcast four to six weeks after planting.

SOCIAL MEDIA ENGAGEMENT

The event gained notable attention on Facebook, with participants sharing anticipation-building countdown posts, event visuals, and a live broadcast. This content generated high engagement through likes, shares, and comments, increasing the event's visibility and enhancing the overall success of its social media campaign.



ACKNOWLEDGMENTS AND THANKS

The Technical Working Group for the 2024 NRFD extends its heartfelt gratitude to everyone who contributed to the success of this event. Your participation and dedication made the day both impactful and memorable.

We are particularly thankful to our esteemed guests for their unwavering support which inspires us to address challenges like the recent drought and to continue driving agricultural advancements in Zambia.

Our deepest appreciation also goes to the hardworking exhibitors, farmers, researchers, and volunteers. Your commitment to innovation and sustainability is the cornerstone of our progress.

**Mr. Allan Chilenga****Dr. Belinda Kaninga****Ms. Kabosha Lwinya****Mr. Freddy Munyati****Mr. Godwin Siagande****Mr. Michael Phiri****Mr. Michelo Michelo****Ms. Given Bwalya****Ms. Hildah Chimutingiza****Mr. Wasa Moongwa**

EXHIBITOR INFORMATION



<https://www.advantaseeds.com/>

Advanta is the world's leading seed company at the forefront of developing germplasms tailored to answer the need for climate-smart and high nutrition crops. Advanta focuses on innovation, value addition through natural solutions, and disease, pest, and herbicide resistance along with drought and salinity tolerance, while focusing upon bringing a localised need-specific germplasm. By creating seeds that make crops climate smart, salinity - tolerant and drought resilient, we are weatherproofing farm yields and the happiness of farmers especially in tropical and subtropical regions.



<http://amac.co.zm/>

AMAC SEED ZAMBIA LIMITED is an indigenous seed company registered on 21st May, 2021, under registration number 120210016436. At its inception, the company licensed medium hybrid maize varieties that were extensively tested by SCCI the regulating body in Zambia. To adhere to quality standards, the company engages international agriculture experts in the seed breeding industry to develop and test seed varieties that guarantee high productivity and are responsive to the climatic conditions prevalent in the Southern African region. Currently, the company has added legumes such as soybeans, cowpeas and groundnuts to the product portfolio.



<https://atszambia.com/about>

ATS Agrochemicals LTD is an Agricultural chemical company that deals in crop protection products. It also works closely with Klein karoo (k2) seed which deals in Maize, soybean, pasture and vegetable seeds. Our goal is to Proudly Serve and Support Farmers. We serve with passion, purpose and sustainably contributing to good agricultural practices. From sowing to harvest, ATS Agrochemicals provides complete crop protection solutions for farmers' pre and post-harvest needs.



<https://agritech-expo.com/exhibitors/>

Agro Mall, a Zambian Agribusiness Company owned by Chinese and Zambian nationals, supplies top notch agriculture machinery that includes tractors, irrigation equipment, harvesters, planters, ploughs, harrows, mixers, balers, grinders, maize shellers, oil extractors, agriculture accessories and farming inputs, among other farming equipment. Agro Mall's thrust is to mechanize all clusters of farmers by bringing quality but affordable equipment to the farmers' doorstep.



AMRA Life Agri Limited

AMRALIFE AGRI LIMITED is a Zambian based company, owned by a renowned and reputable international company engaged in development and marketing of biofertilizers on a global scale. The company was established with an ultimate objective of setting up an organic fertilizer manufacturing plant as well as carrying out other agricultural activities in Zambia. This company is registered with Patents and Companies Registration Agency, under the Companies Act N°10 of 2017



<https://www.bayer.com/en/za/sea-zambia>

In 2016, Bayer opened an office in Zambia to focus on the local agricultural sector through its Crop Science Division. Being relatively new in the country it's Bayer's plan to grow and become one of the leading agriculture-based service and product providers. Through a robust team and excellent management, the Crop Science division continues to make significant strides to meet the agricultural demands that the country requires.

EXHIBITOR INFORMATION



<https://bizbwana.com/orgs/buffalo-bicycles>

Buffalo Bicycles is an initiative of World Bicycle Relief. It is a leading commercial brand of bicycles with a bicycle assembly facility and a storage capacity of 5,000 bicycles. They offer complete reliability and comfort and are dedicated to providing access to independence and livelihoods. Buffalo Bicycles have been forensically lab tested to withstand the rough and tough terrains of the country. The rear rack/carrier has a carrying capacity of over 100kg, and a durable seat with twin springs for comfort. Bicycle colours include black, red and green.



<https://www.camco.cn/>

CAMCO Group was established on June 16, 1998, and is headquartered in Shanghai, China. It has nine subsidiaries in Zambia, Malawi, Kenya, Cameroon and Tanzania. After more than 20 years of development in Africa, there are currently more than 680 employees both in China and abroad of which 12% are Chinese employees. Accumulatively the company has invested more than USD 20 million in Africa. It is one of the largest Chinese trading companies in Africa.



<https://www.zm.corteva.com/who-we-are/sustainability.html>

Corteva Agriscience is committed to advancing sustainable agriculture to enrich lives and our planet for generations to come. Corteva Agriscience™ is the only major agriscience company completely dedicated to agriculture. By combining the strengths of DuPont Pioneer, DuPont Crop Protection and Dow AgroSciences, we've harnessed agriculture's brightest minds and expertise gained over two centuries of scientific achievement.



<https://www.cabi.org/>

CABI has a history of over a century of scientific endeavour. Since its beginnings as an entomological committee in 1910, CABI has developed into a truly international development-led organization, supported by both a first-class publishing division and a solid scientific research base.

CABI's mission is to improve people's lives worldwide by providing information and applying expertise to solve problems in agriculture and the environment.



<https://www.ctdtzambia.com/>

Community Technology Development Trust (CTDT) is a not for profit making NGO registered in 2009 with the objective of contributing to the livelihoods of rural communities through interventions aimed at promoting biodiversity conservation and natural resources management in food production practices.



<https://cbz.org.zm/>

We are a statutory board under the Ministry of Agriculture and established under the Cotton Act No.21 of 2005 of the Laws of Zambia. This act empowers the Board to regulate the Cotton industry as it relates to the production and ginning of seed Cotton; to control the production and marketing of Cotton and to provide with or incidental to the foregoing.

EXHIBITOR INFORMATION



<https://www.cimmyt.org/about/>

CIMMYT is a cutting edge, non-profit, international organization dedicated to solving tomorrow's problems today.

It is entrusted with fostering improved quantity, quality, and dependability of production systems and basic cereals such as maize, wheat, triticale, sorghum, millets, and associated crops through applied agricultural science, particularly in the Global South, through building strong partnerships.

This combination enhances the livelihood trajectories and resilience of millions of resource-poor farmers, while working towards a more productive, inclusive, and resilient agrifood system within planetary boundaries.



<https://farmersafricazambia.com/>

Farmers Africa Zambia is a private limited company incorporated and registered under the Zambian company act No 10 of 2016. Since its inception in March 2016, the company has been a leading manufacturer, importer and distributor of first-class Veterinary drugs, Agrochemicals, equipment, Machinery and seeds. The company enjoys presence in all the 10 provinces of the country, offering a diverse array of animal and Agro products spanning across antibiotics, vaccines, feed ingredient additives, fertilizers, pesticides herbicides and is home to the household name of Akheri spray and powder.



<https://finecopglobal.com/>

Finecop Zambia Ltd, Incorporated in the year 2013, is an effective and efficient company involved in the sale's and distribution of Water Pumping Systems, Solar Pumping Systems, Solar Electrification and Power Backup Systems. Our products are employed in various applications like irrigation, domestic, civil construction, dewatering and waste water pumping and solar needs.



<https://www.etgworld.com/about-etg.html>

ETG has developed into a global player with a diverse portfolio of expertise across multiple industries, encompassing Agricultural inputs, logistics, merchandising and processing, supply chain optimization, digital transformation and energy.

Our passion lies in the upliftment of farming communities; an unhindered commitment since establishment. Our promoters identified three challenges that supply chains in Africa faced and created a globalized business model around solutions addressing these obstacles.



<https://feednatseed.com/>

FeedNat Agro Limited is an efficient producer and supplier of high-quality seeds of Maize, Soybean, Cowpea, Sorghum, Rice, Pearl Millet, Sunflower, Groundnuts, and Beans. Our core business is to enable easy access to Quality seed, Extension and Agronomic knowledge among smallholder farmers in order to improve farm households' incomes and contribute to poverty reduction.



https://web.facebook.com/GIZWaterEnergyZambia/?_rdc=1&_rdr

The Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH has been working in Zambia since 1966 and has maintained an office in the capital, Lusaka, since 1982.

GIZ focuses on three priority areas in the country:

1. Water and renewable energies
2. Good governance
3. Agriculture and food security

With its agriculture-related projects, GIZ works to improve food supply and increase rural income. It promotes a broader range of agricultural products, improved cultivation methods and agricultural processing.

EXHIBITOR INFORMATION



<https://goodnatureagro.com/>

Good Nature is a social enterprise that was established in 2014 as a for-profit organization. Our mission is to impact the lives of small-scale farmers in Africa positively. We achieve this by providing them with high-quality legume seed and commodities. Our ultimate goal is to help these farmers move from poverty and join the middle-class. Using human-centered design, we have developed an innovative and straightforward model that addresses the most pressing needs of small-scale farmers.



<https://enterprizeambia.org/call-4/growmore-technologies-limited/>

Growmore Technologies Limited ('Growmore') is a supplier of agricultural, industrial and irrigation equipment, established in 2018. The company has 53 employees and is headquartered in Kitwe with branches in Solwezi, Ndola and Lusaka.

Growmore supplies both commercial farmers and smallholder farmers with a range of equipment, providing after-sales support and maintenance services to its customers.



<http://www.icipe.org/>

The International Centre of Insect Physiology and Ecology (icipe), stands as the enduring legacy of the late internationally renowned Kenyan scientist, Prof. Thomas Risley Odhiambo.

icipe's mission is to help alleviate poverty, ensure food security and improve the overall health status of peoples of the tropics, by developing and extending management tools and strategies for harmful and useful arthropods, while preserving the natural resource base through research and capacity building.



<https://greenfieldcommoditiesltd.com/>

Greenfield Commodities Limited was incorporated to supply and distribute fertilizers, provide pest control management, and deliver various farm products in the agricultural sector.



<https://www.honda.com.zm/>

Honda's success in the global marketplace is the result of our continued investment in each of the markets in which we participate. Since its inception in June 2000 as a wholly owned subsidiary of the Honda Motor Company, Honda has become a major player in South Africa, meeting our customer's needs with a range of Automobiles, Motorcycles and Power Products. Initially concentrating on the local South African market, the company is now responsible for a significant part of the African Continent, with offices in South Africa, Kenya as well as a dealer network stretching throughout the SADC region.



<https://kageziseeds.com/>

Kagezi Seed Company Limited is a Zambia Agricultural Company contributing to value chain development in the agriculture seed industry. Our seeds have burgeoned the lives of farmers. Farmers put their faith on quality products, and we are well positioned to deliver seed that have high yield and are drought tolerant produced in a green and sustainable way.

EXHIBITOR INFORMATION



<https://enterprisezambia.org/project-portfolio-call-4/kamano-seed-company-limited/>

Kamano Seed is an indigenous Zambian Seed business and is registered with SCCI, a regulatory wing of the Ministry of Agriculture that supervises the production and distribution of seed in Zambia. It has been operating since 2004. Kamano's focus is on the production and supply of climate-smart resilient seed products. Kamano works with smallholder farmers at the village level, particularly women and youths, through training in agro-business, seed supply, as well as out-grower schemes which have dedicated field officers to offer agronomy advice.



<https://ncz.co.zm/>

Nitrogen Chemicals of Zambia Limited is a state-owned enterprise with the Government of the Republic of Zambia as its shareholder through the Industrial Development Corporation (IDC). It was established in September 1967 and was commissioned on May 27, 1970 by the first Republican President Dr. K. D. Kaunda. The main aim of establishing the company was to manufacture Ammonium Nitrate for further processing into explosives for the mining industry and for fertilizer use, the plant was later expanded to increase fertilizer production in support of Government efforts to promote agriculture.



✓ Your wise choice

<https://www.picz.co.zm/>

With over 30 years of insurance experience, Professional Insurance Corporation Zambia PLC is the leading General Insurance Company in Zambia. Our vision is to be a world class provider of quality insurance. Our mission is to consistently exceed the expectations of our customers. The Corporation has maintained an A+ Credit Rating for 12 years running. Our speedy settlement of claims remains the cornerstone and the basis upon which we retain the confidence and trust of our Customers.



<https://www.facebook.com/profile.php?id=100083128482666>

Kariba Seed Company Ltd is a Zambian registered seed company established in 2020.

The aim of the company is reaching more farmers throughout Zambia. The policy by the company is to employ more women, helping the Zambian Government reduce unemployment.



<https://www.omnia.co.za/>

A diversified group of companies, delivering specialist solutions in agriculture, mining and chemicals. The Omnia Group comprises a balanced and diversified range of complementary chemical services businesses with a broad geographic spread. The Group extracts operational synergies and efficiencies across its businesses. It has been in business since 1953 and is listed in the Chemicals sector of the Johannesburg Securities Exchange.

Omnia's Agriculture division, Omnia Nutriology, is the market leader in southern Africa and comprises Omnia Fertilizer and Omnia Specialties.



<https://www.psmfc.co.zm/>

The Public Service Micro Finance Company is wholly owned by the Zambian Government and is mandated to provide affordable loans and other innovative financial solutions to the public service workers across the country. The company was established in March 2013 and currently has one office in Lusaka.

The establishment of the company was premised on the fact that most of public service workers faced challenges in accessing finances from the conventional banking sector and Micro Finance institutions that normally charge high lending rates.

The company has entered into strategic partnerships with NATSAVE and other relevant government institutions to enhance service delivery to public service workers serving in the remote parts of Zambia.

EXHIBITOR INFORMATION

**PRUDENTIAL**

<https://www.prudentialplc.com/en>

Prudential plc provides life and health insurance and asset management to 18 million customers across 24 markets in Asia and Africa.

We are headquartered in London and Hong Kong and are focused on four strategic regions: Greater China, ASEAN, India and Africa. We are served by around 68,000 average monthly active agents and more than 200 bank partners.

Our purpose is to be partners for every life and protectors for every future.



<https://www.sarozambia.com/about/>

SARO Agro Industrial Ltd, a Zambian owned company, is part of the SARO group of companies that commenced operations in 1987 with SARO Agri Equipment Ltd. The focus then was on the import and distribution of Agricultural Equipment for the Small-Scale Farming and Crop Processing sector and on pumps, Electric motors and Irrigation equipment. Over the time, the product range was expanded to meet the requirements of the commercial and Emerging Farming sector and the Water Utility/Municipal sector.



<https://www.starkeayres.com/about-us>

Founded in 1877, Starke Ayres is an expert vegetable, flower and lawn seed provider. We specialise in breeding our own seed varieties and source only the best available stock from our international suppliers. With our headquarters in Johannesburg, South Africa, we are the leading vegetable seed supplier in Africa and preferred international supplier of premium varieties of seed to the professional grower.



<https://www.rainbowagro.com/company-profile>

Rainbow Agro is a global leading crop protection company, was founded in Jinan, China, in 2005 by a group of entrepreneurs, and now it is one of the world's top eleven agrochemical companies.

We are a leading crop protection company that produces, distributes and markets crop protection products. With presence in more than 100 countries in the 5 continents, we face challenge due to the unique of each place, this force us to provide specific solutions for each customer, whether they are industrial companies, dealers, or farmers



<https://seedcogroup.com/>

Seed Co is a Pan African Seed Company business that develops, breeds and supplies certified seed species with a focus on hybrid maize, wheat, soya bean, beans, rice, potatoes, sorghum, cotton, and vegetables. We pride ourselves on our ability to develop seed solutions ideal to the different ecological zones of Africa through our robust research and development program. Seed Co is the leading certified seed company authorised to market seed varieties developed by itself, government and other associated seed breeders in over fifteen (15) African countries



<https://www.stewardsglobe.com/>

Stewards Globe Limited is an emerging seed company producing improved seed varieties cereals and legumes distributed under the AFRISEED Brand. The chief tenet behind our company is using local and regional materials and talent to develop and commercialise locally and regionally adaptable, flavourful seed varieties for access by Zambian farmers and those outside Zambia.

EXHIBITOR INFORMATION



<https://www.synergy.co.zm/>

Synergy Seeds Zambia is a leading R & D, Breeding, Production, Distribution and Marketing Seed Company offering our growers a wide spectrum of seed products.

We have the right seed for both local and export markets and carry the newest maize hybrids, wheat and soya bean varieties to keep you at the top of the yield curve.



<https://unitedcapitalfertilizer.com/>

United Capital Fertilizer Zambia Company Limited ("UCF" or "the company"), located in Chilanga District, Zambia, is a vertically integrated fertilizer enterprise with capacity to supply up to 800,000 metric tons per year of Urea, DAP, NPK and other customised blended fertilizers.

UCF was incorporated on 23rd August 2021 to spearhead the establishment, construction and operationalisation of the first ever mega ultra-modern fertilizer plant in Zambia. The construction of the factory was officially launched by Her Honour the Vice President of the Republic of Zambia, Mrs W.K. Mutale Nalumango, on 1st November 2021.



GOODSEED PURCHASED ZAMBIA

<https://zamseed.co.zm/>

Zambia Seed Company Limited (Zamseed) has been servicing the requirements of farmers in the sub-Sahara region since 1980. We focus on products that will enhance the profitability of the small-scale farmer and ensure food security for the household. Forty years of experience combined with focused research and development plus an intimate knowledge of our customers' requirements has enabled us to develop products specifically designed for this market segment.



AGRICULTURAL AND
COMMERCIAL SOCIETY
OF ZAMBIA

<https://www.acsz.co.zm/about-us>

The Agricultural & Commercial Cooperative Society of Zambia Limited (ACSZ) is a premier organization dedicated to promoting agricultural and commercial growth in Zambia. Our core business revolves around organizing and hosting exhibitions, with our flagship event being the annual show, a much-anticipated occasion that attracts participants and visitors from across the country and beyond.



Zambezi Seed Company Limited, established in 2018 and registered with the Patents and Company's Registration Office according to the Zambia Company Registration rules and regulations is a private seed multiplication and production company. It multiplies and produces the following:

- (1) Maize Seed; (Open Pollinated Variety - OPV)
- (2) Soya beans seed;
- (3) Groundnut seed and various legumes
- (4) Chemical fertilisers; Basal and Top dressing

Thank You to Our Partners

The Zambia Agriculture Research Institute Field would not have been possible without the generous support of our sponsors. We extend our sincere gratitude and appreciation to the following organizations:

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Researching Soils, Crops and
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