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A NEW CHAPTER FOR RICE BREEDING

JULY 2023

TIAST Group, originating from China has been in existence for over 30 years and has extended its services to West Africa with the sole purpose of adding value to the agriculture value chain and promoting the worth of the agricultural industry in Ghana. Through localization and standardization, we are devoted to adding value to the agricultural chain and boosting the agriculture industry's worth in all African countries. Our business scope includes designing, manufacturing, installation and maintenance of agricultural processing machinery. These machines are designed to process a variety of agricultural goods, including tubers like cassava and sweet potato, etc. rubber processing, fibre extraction and processing from sisal and pineapple leaf, and agricultural machinery for planting, harvesting, and other tasks. We also provide financial leasing for our agricultural processing factories through our partnership with Banks which supports up to 70-80% of the total cost of the entire project. This lease is spread out in a 5-year term of payment which is convenient after the project starts running.

TIAST Group ensures offtake services of all processed goods to the international market at competitive international market prices. This solves the problem of the unavailability of a ready market and promotes ready sales at the best rate. We have also secured a huge international market demand for most of the products that will be processed for ready export. These products will command competitive prices on the world market and will subsequently gain considerable market traction. TIAST facilitates the training of local employees and personnel on how to operate and maintain these machines through its localization scheme. We have technical staff on hand who are willing to train locals to operate these processing units. We are justifiably proud to be the market leaders in the agricultural industrialization space in Ghana and the sub-region. We are also proud of our footprint in Ghana and the impact we are making in the agricultural space. This life-changing opportunity is provided by TIAST Group for everyone interested in boosting agricultural value and promoting the value chain.

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OUR AGRICULTURAL INDUSTRIALIZATION AGENDA IS AIMED AT PARTNERING WITH FARMERS AND INTERESTED PARTIES TO ADD VALUE TO THE AGRICULTURAL VALUE CHAIN.

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Empowering smallholder farmers is a step in the right direction

By Prince Opoku Dogbey

In today's world, where the population is growing and resources are becoming scarce, the role of smallholder farmers in agricultural development has never been more crucial. These unsung heroes, tending to their modest plots of land with determination and resilience, are the backbone of food production in many regions.

However, they often face numerous challenges that hinder their full potential. It is time to recognize their significance and empower them to transform the agricultural landscape.
Smallholder farmers are the lifeblood of rural communities, cultivating diverse crops and ensuring food security at the local level. Yet, they confront limited access to resources, including land, credit, and modern technology.

Empowering smallholder farmers begins with investing in their knowledge and skills. Providing access to education and training programs equips them with modern agricultural practices, sustainable farming techniques, and efficient resource management. By promoting entrepreneurship and fostering innovation, we can help them adapt to changing climates and market demands, enabling long-term viability and growth.

Moreover, access to finance is essential for smallholder farmers to expand their operations and invest in necessary inputs. Establishing microcredit schemes and improving financial services tailored to their needs can fuel their productivity and improve their livelihoods.

Collaboration and partnership are key to the success of empowering smallholder farmers. Governments, non-governmental organizations, and private entities must join forces to create an enabling environment. By working together, we can establish inclusive value chains that provide fair prices, reduce post-harvest losses, and improve access to local and international markets.

By providing them with the tools, knowledge, and opportunities they need, we can create a vibrant and inclusive agricultural sector that feeds the world and ensures a prosperous future for all.

"Gov't must build robust market linkages, supporting farmer cooperatives, and facilitating knowledge exchange platforms."

Celeriac

By Prince Opoku Dogbey

Celeriac, scientifically known as Apium graveolens var. rapaceum, is a root vegetable that belongs to the celery family. It is believed to have originated in the Mediterranean region and has been cultivated for centuries. Celeriac is valued for its flavorful and aromatic qualities, making it a popular ingredient in various cuisines around the world.

Description

Celeriac has a distinct appearance with a knobby and bulbous root, similar to a turnip or a celery root. It is characterized by a rough, tan-colored outer skin that encloses a creamy white flesh underneath. The root has a firm texture and emits a subtle, celery-like aroma. The plant itself produces green, celery-like stalks and leaves, although it is primarily grown for its root.

Health Benefits

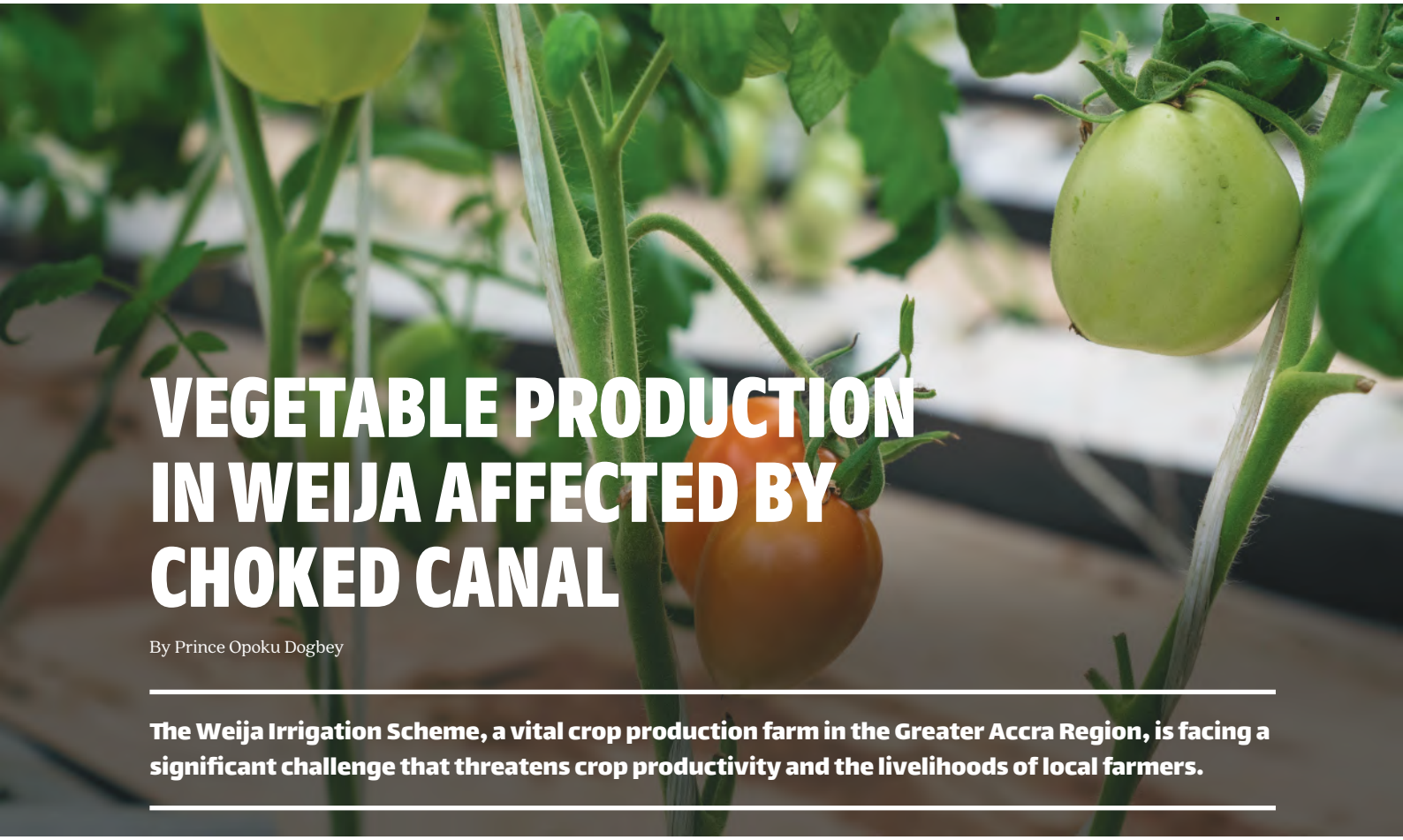
Nutrient-Rich: Celeriac is a nutrient powerhouse, rich in essential vitamins and minerals such as vitamin C, potassium, phosphorus, and vitamin K. These nutrients play a vital role in supporting overall health and wellbeing.

Antioxidant Properties: Celeriac contains antioxidants like vitamin C and phytonutrients, which help combat free radicals and reduce oxidative stress in the body. Antioxidants are known to have potential anti-inflammatory and disease-fighting properties.

Digestive Health: The high fiber content in celeriac promotes healthy digestion and helps prevent constipation. It supports regular bowel movements and contributes to a healthy gut microbiome.

Immune Support: The vitamin C content in celeriac strengthens the immune system, helping the body fight off infections and diseases. It also aids in collagen production, which is essential for maintaining healthy skin, bones, and blood vessels.

Celeriac is a versatile vegetable that can be enjoyed in various culinary preparations. It can be peeled, sliced, and added to salads, soups, stews, or roasted as a side dish.



VEGETABLE PRODUCTION IN WEIJA AFFECTED BY CHOKED CANAL

By Prince Opoku Dogbey

The Weija Irrigation Scheme, a vital crop production farm in the Greater Accra Region, is facing a significant challenge that threatens crop productivity and the livelihoods of local farmers.

The canal that supplies water to the scheme has become severely choked, impeding the flow of water and causing detrimental effects on agricultural activities.

Recognizing the gravity of the situation, local farmers are urgently calling for government support to address this crisis and restore the functionality of the scheme.

During a recent visit by the Ghana Irrigation Development Authority (GIDA) to the scheme on June 22, 2023, farmers expressed their concerns and highlighted the financial burden they face in addressing the choked canal.

Alhassan Issa Tei Agbo, a farmer on the scheme, explained that whenever it rains, the canal becomes filled with sand dragged from the nearby mountain.

To mitigate the issue, farmers contribute funds to hire tractors for desilting the canal.

"We pay GHS 6,000 daily for 10 days for the machinery, accompanied with a lowbed trailer of GHS 4,000 to transport the machinery.

"We end up paying GHS 60,000 and a GHS 4,000 transportation to the canal site," he said.

Another farmer emphasized the need for tractors to facilitate land preparation and appealed to the government and developmental partners for subsidized inputs such as fertilizers and seeds.

The Weija Irrigation Scheme Manager, Alice Walker lauded the efforts of farmers in attending to the choked canal when needed.

According to her, farmers on the scheme export vegetables to neighboring countries, underscoring their significance in the agricultural sector.

The collaboration between government agencies, local authorities, and farmers will be vital in restoring the Weija Irrigation Scheme and securing a sustainable future for agricultural activities in the region.

ITC Launches Jokkalante Market Platform in Gambia

By Prince Opoku Dogbey

The International Trade Centre (ITC) in partnership with the Ministry of Trade, Industry, Regional Integration and Employment has launched the Jokkalante Market Platform.

The platform, which is backed by the Enhanced Integrated Framework (EIF), offers a variety of features to boost collaboration and market links in the country's horticultural industry.
It is also to connect farmers, buyers and transporters to transform agricultural trade in the country for efficiency and growth in the agricultural value chain.

Additionally, it provides a wide range of features that enable easy cooperation and increase productivity.
Farmers, buyers, and service providers can simply interact and transact with one another by visiting the website or using WhatsApp to access the platform.

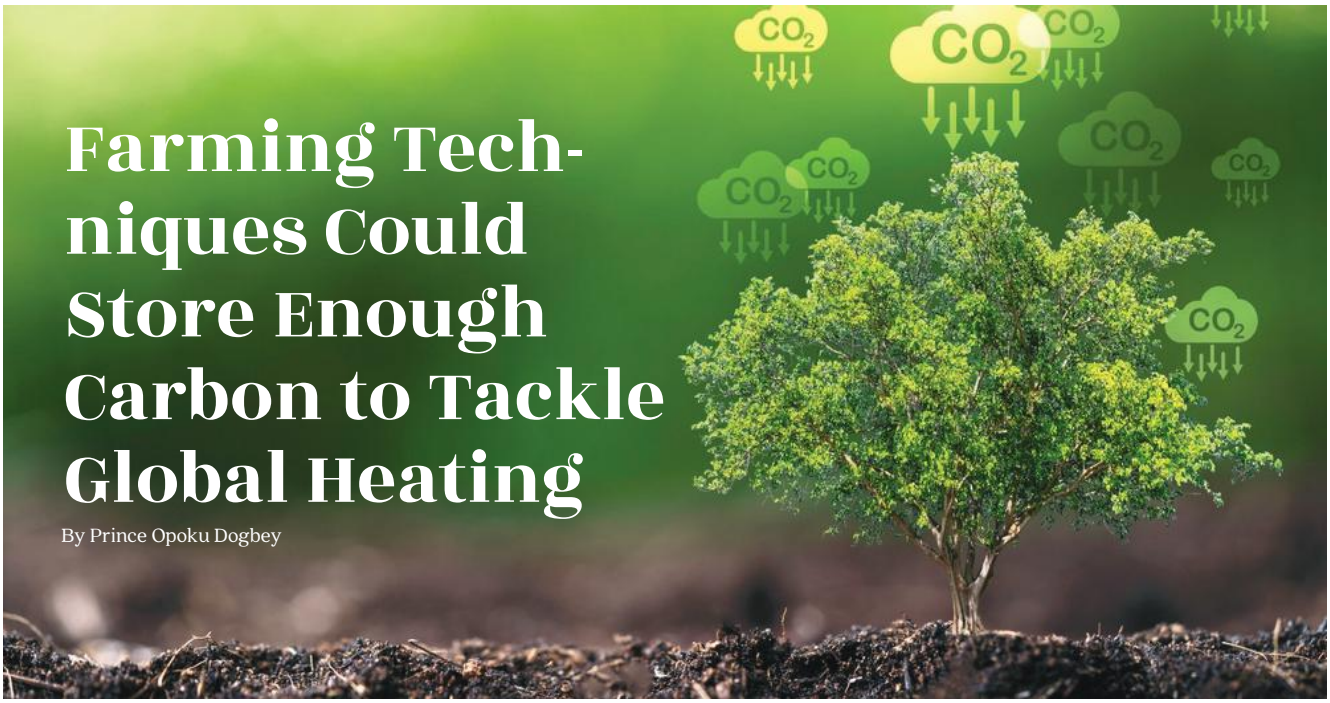
“E-commerce is an increasingly important aspect of today's economy. It offers opportunities to overcome traditional obstacles to trade, including the costs associated with physical distance.

“This opens unprecedented opportunities for businesses to engage in cross-border trade. The Jokkalante Market Platform has been developed within The Gambia, taking into account the unique needs of our local context.", the Permanent Secretary at the Ministry of Trade of the Gambia explained.

He further added that, the platform is user-friendly which makes it easy to use and ensures the promotion and sale of local produce.

> **By simplifying to trade process, we empower farmers and contribute to the growth if the horticultural sector in The Gambia”.**

According to the ITC project manager, Milena Niehaus, initially access to horticultural products was difficult as the people had to go to neighbouring communities to get produce, but that has changed with the launch of the Jokkalante platform.



Farming Techniques Could Store Enough Carbon to Tackle Global Heating

By Prince Opoku Dogbey

New research indicates that making marginal improvements to agricultural soils worldwide could play a crucial role in keeping global heating within 1.5°C.

The study highlights the importance of farming techniques that enhance long-term fertility and yields, allowing for increased carbon storage in soils. Currently, these techniques are often overshadowed by intensive practices that involve excessive use of artificial fertilizers, leading to greenhouse gas emissions.

The research suggests that raising soil carbon levels by just 1% in half of the world's agricultural soils could absorb approximately 31 gigatonnes of carbon dioxide annually.

The findings were conducted by Jacqueline McGlade, former chief scientist at the UN Environment Programme, using data from Downforce Technologies.

McGlade emphasized that changing farming practices could make soils carbon negative, effectively absorbing carbon and reducing farming costs.

Although transitioning away from artificial fertilizers may pose short-term challenges for farmers, the research suggests that improved yields and healthier soils would follow after a two to three-year transition period.

Furthermore, the study estimates that restoring 40,000 hectares of degraded farmland in Kenya, supporting approximately 300,000 people, would cost around $1 million.

In addition to the environmental benefits, the data from Downforce Technologies could enable farmers to generate revenue by selling carbon credits based on the amount of carbon dioxide absorbed by their fields.

As approximately 40% of the world's farmland is currently degraded, understanding and implementing soil-based carbon storage methods is crucial for addressing climate change and achieving sustainability goals.

Carbon dioxide removal, encompassing various technologies and techniques that enhance carbon uptake and sequestration, has become increasingly significant as the world approaches the critical threshold of 1.5°C of global heating compared to pre-industrial levels.

"The study estimates that restoring 40,000 hectares of degraded farmland in Kenya, supporting approximately 300,000 people, would cost around $1 million."

Aquaponics: Boosting Food Production, Saving the Environment

By Jessica Meledi

Aquaponics is a type of farming system that combines aquaculture (farming of fish in a water environment) with hydroponics (growing plants with water instead of soil) in a closed-loop system. The animals provide nutrients in the form of broken-down excretions, which allow the plants to grow.

The increasing global population raises concerns about an insufficient food supply. Scientists are exploring alternative farming methods to reduce land impact and increase food production.

The idea of aquaponics is old. The first forms of aquaponics were used about 1,500 years ago in South China, Indonesia, and Thailand. The farmers there grew rice in paddy fields (flooded fields of arable land used for growing semiaquatic crops, most notably rice) that also had fish in them. The fish poop served as fertilizer for the growth of the rice plants. Over the years, scientists have rediscovered the potential of aquaponics and advanced it.

It provides sustainable pollution for agriculture that will reduce the use of natural resources. Aquaponics uses up to 90% less water than traditional agriculture, and the plants grow faster. Aquaponics also reduces pollutants coming from the use of tractors and field chemicals.

Aquaponics systems can be installed both outdoors and in indoor, greenhouse-like environments. Indoor systems can allow food to be produced throughout the year. This is a great advantage in areas where the climate is not favourable for agriculture.

The aquaponics system seems like the perfect solution to agriculture's problems. It can help communities where agriculture is insufficient to feed the population become less reliant on imports. The systems can also be located wherever it is most convenient, reducing supply chain length and thus food loss during transportation.

However, it has some flaws. For example, the system requires a large amount of energy to run, which may be a problem for many developing countries where resources are scarce. Solutions like direct solar energy supply are feasible but even more expensive. Other restrictive features include the need for precise water acidity balance, temperature regulation, algae growth, and chemical compound buildup control.

Aquaponics is an economical and resource-efficient alternative to traditional farming methods, saving 70% of all freshwater used by humans in agriculture. However, optimization is needed to reduce energy, expertise, and supervision requirements for the global food supply.

The Power of Rice Breeding Technology

By Prince Opoku Dogbey

Rice is one of the world's most important staple crops, feeding billions of people and supporting agricultural economies worldwide. To meet the ever-growing demand for rice and tackle challenges such as climate change and pests, scientists have been harnessing the power of rice breeding technology. This revolutionary approach is unlocking new possibilities in rice cultivation, improving yield, quality, and resilience.

Enhancing Yield and Productivity

Rice breeding technology aims to develop high-yielding rice varieties that can thrive in various environmental conditions. Through traditional breeding methods and advanced techniques like marker-assisted selection and genomic selection, scientists can identify desirable traits and breed them into new rice varieties. These traits may include disease resistance, tolerance to abiotic stresses like drought and salinity, and improved nutritional content. By focusing on yield potential, rice breeding technology plays a crucial role in addressing global food security concerns.

Adapting to Climate Change

Climate change poses significant challenges to rice production, including rising temperatures, changing rainfall patterns, and increased pest and disease pressure. Rice breeding technology enables the development of climate-smart rice varieties that can withstand these challenges. Scientists are incorporating traits for heat tolerance, water use efficiency, and pest and disease resistance into new rice varieties. This ensures that farmers have access to resilient crops that can thrive under changing climatic conditions, reducing yield losses and securing livelihoods.

Improving Grain Quality and Nutrition

Beyond yield, rice breeding technology also focuses on enhancing grain quality and nutritional content. Researchers are working on developing rice varieties with improved cooking quality, such as better texture and taste.
Additionally, efforts are underway to increase the nutritional value of rice by enhancing its vitamin and mineral content. Biofortified rice varieties enriched with essential nutrients like iron, zinc, and vitamin A have the potential to combat micronutrient deficiencies, contributing to better health outcomes, particularly in vulnerable populations.

What's your knowedge on drought mitigation?

By Jessica Meledi

Agriculture is an important contributor to the economic growth of countries, from promoting food security to providing jobs, among others. Looking at how important agriculture is to every country's economy, it is important to address issues that confront the agriculture sector and prevent it from fulfilling its full potential.

Drought is a complex natural phenomenon affecting agriculture, causing adverse plant responses, ranging from reduced yields to total crop failure, with varying intensity and duration.

Severe droughts significantly impact agriculture, affecting food production, security, famine, and economic performance, affecting all stakeholders.

Drought conditions can significantly impact agricultural production, with different crops and regions being affected in different ways. The lack of water can lead to reduced yields and, in some cases, total crop loss. This can cause farmers to experience economic losses, which can ripple through the entire economy. Specialty crops like vegetables, tree nuts, and medicinal herbs are especially vulnerable to drought conditions because they have a higher value per unit of land or water.

Though Droughts can't be stopped and are difficult to forecast, their impacts can, however, be mitigated through the adoption of a proactive, risk-based management approach aimed at increasing the resilience of a country's agriculture to cope with drought. Countries can create awareness of drought through designated research institutes and organisations. Events should be organised for policymakers, farmers, and other stakeholders in the agriculture sector to educate them.

Farmers who are directly impacted during agricultural droughts also need to adopt certain measures to prevent incurring losses during this period. Some of these measures include adjusting production strategies based on the predicted severity and duration of the drought. Planting crops that can withstand dry conditions, moving operations to regions where the climate is more conducive to agriculture, increasing irrigation efficiency, water conservation, and adapting soil moisture retention techniques.

Considering the challenges that drought can bring for the agricultural sector, farmers must stay ahead of the curve to mitigate these effects in order to mitigate the impact on food production and safeguard the economy.

REVIVING AFRICA'S COFFEE INDUSTRY

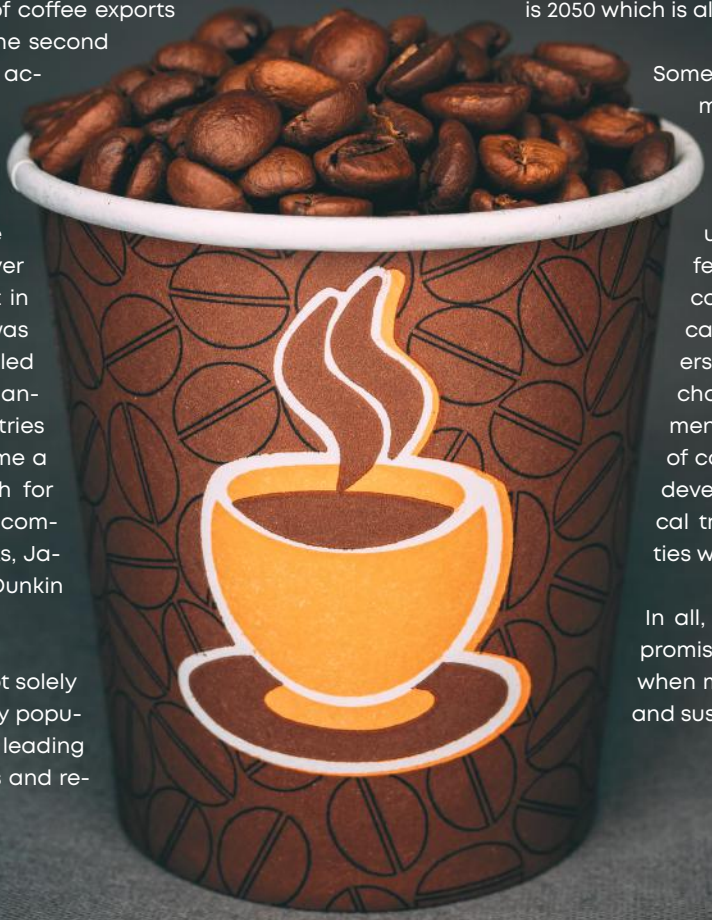
By Jessica Meledi

Coffee is already considered a daily necessity in most parts of the world and demand doesn't seem to be slowing down anytime soon as it's even predicted that, coffee consumption per year will reach 200 million bags by 2030.

East Africa is a prolific coffee producer out of the regions of Africa and worldwide, with a 7.5% possible market growth from 2019-2024, potentially ranking above South America. Ethiopia is Africa's leading coffee exporter, bagging around $ 1.2bn worth of coffee exports per year, while Uganda is the second largest with around $594.2m according to data from Statista.

Historically, Africa has focused on oil but with the drastic drop of oil prices over the years and a major shift in the global economy, it was forced to diversify. This has led to more resources been channeled into agricultural industries like coffee which has become a source of economic growth for Africa, birthing top coffee companies like Nestle, Starbucks, Jacobs Douwe Egberts and Dunkin brands.

Africa's coffee industry is not solely exporting, but is increasingly popular among the middle class, leading to urban coffee movements and refined beverages.



Overall African coffee production makes up 12% of the worldwide production of coffee beans. Vietnam, India and Indonesia are rapidly consuming more coffee, and even China has expressed interest in the African coffee industry. The African coffee industry faces weaknesses due to smaller farms, contributing only 12% of global production. Although coffee production earns the nation high export prices, coffee beans are not as profitable for farmers.

A study from early 2022 conducted states that climate may not be able to sustain the coffee bean crops by the time it is 2050 which is alarming.

Some steps must be taken to move Africa's coffee industry forward. First, governments must invest into research institutions that can be set up to study and improve coffee production in the various countries. After the findings can be passed on to farmers. Given the issue of climate change, a sustainable environment to ensure the production of coffee is a must. Africa has to develop its infrastructure for local trade to strengthen its trade ties with other countries.

In all, Africa's coffee industry is a promising investment especially when merged with social initiatives and sustainable farming.

Plant breeding

One of the key techniques used in plant breeding is hybridization, which involves crossing two different parent plants to create offspring with desirable traits.

Cashew nut seeds

Cashew nuts are a good source vitamins E, K, and B6, as well as minerals like copper, magnesium, and zinc which supports various bodily functions, such as immune function, bone health, and energy production.

Zhenjiang University, WACCI Partner to Make Ghana Rice Sufficient

By Prince Opoku Dogbey

The West Africa Centre for Crop Improvement (WACCI) at the University of Ghana has collaborated with Zhenjiang University in China to launch the China-Africa Partner Research Institute at the University of Ghana.

The aim of the project is to revolutionize rice breeding in Africa through intensive research with the ultimate aim of making Africa a rice sufficient continent.

The collaboration will see to the empowerment of researchers and students from both institutions through split-sight training and also to present an incredible opportunity to enhance contributions to the advancement of Ghana's rice industry.

Speaking to the media at the launching ceremony, the Executive Director of WACCI, Professor Eric Yirenkyi Danquah, said the collaboration is an opportunity for Ghana and the entire African continent to produce sufficient rice by discovering best-yielding rice varieties.

"The University of Ghana and Zhenjiang Universityin China have decided to partner to launch a collaborative project to work toward improving rice productivity in Ghana.

"Rice yields in Ghana are quite low and a number of farmers produce below 4 tons per hectare (ha), so we want to develop new rices for Ghana. We want rice that can give us about 10 tons per ha," he said.

Also, representing Zhenjiang University, Dr. Gouping Zhang, said the collaboration will help both sides and lead to the transfer of knowledge.

He indicated that through this research, Ghana should be able to produce more to feed the local market and still have enough to export to the international market.

He added that this partnership forms part of the cooperation between China and Ghana thus will facilitate development between both countries.

He was optimistic that students who will be involved in this research will be trained well in rice breeding by applying and leveraging technology.

Also speaking to the media, Mr. Pan Young, the Head of the Grains, Fruits and Vegetables Department at TIAST Group, an agricultural industrialization company assured that the company would provide all the necessary support needed to make this partnership a successful one.

> ***"The University of Ghana and Zhenjiang University in China have decided to partner to launch a collaborative project to work toward improving rice productivity in Ghana."***

"TIAST Group is here for commercialization and industrialization of agricultural produce like cassava and rice. With the launch of this program, we can solve a lot of problems in terms of providing different rice varieties," he said.

He further explained that this partnership would put Ghana on the map when it comes to rice exports.

A senior lecturer at the Department of Crop Science in the University of Ghana, Dr. Seloame Tatu Nyaku said, "This initiative is timely. The good aspect of this is that the partnership has a research component, so students can be trained on the current technologies in the various disciplines like agronomy, plant breeding and genetics and there could be exchange and transfer of knowledge."

CELERIAC AND POTATO MASH

By Mavis Essaba Mensah

The Celeriac and Potato Mash Platter is a delightful and comforting dish that combines the earthy flavors of celeriac and potatoes. Here's how to create a delicious platter with this creamy and flavorful mash as the star:

INGREDIENTS:

- 1 large celeriac root
- 4 medium-sized potatoes
- 4 tablespoons butter
- 1/2 cup milk or cream
- Salt and pepper, to taste
- Fresh herbs for garnish (optional)

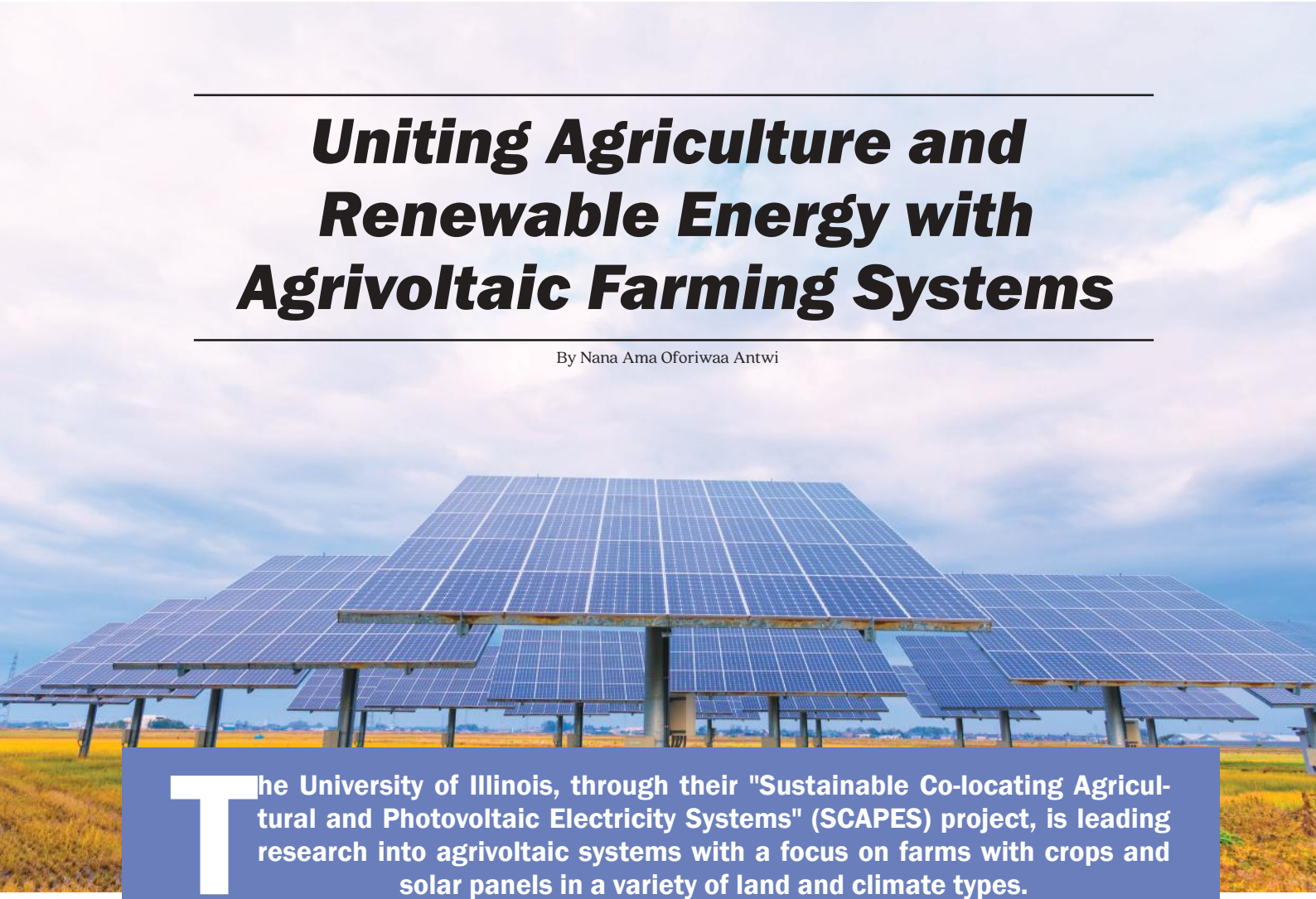
Enjoy the creamy, velvety texture and the harmonious blend of flavors that the celeriac and potato mash brings to your plate.

INSTRUCTIONS:

- Peel the celeriac root and potatoes, and cut them into equal-sized chunks.
- Place the celeriac and potatoes in a large pot of salted water and bring it to a boil. Cook until they are fork-tender.
- Drain the cooked celeriac and potatoes, then return them to the pot.
- Add butter, milk (or cream), salt, and pepper to taste. Using a potato masher or a hand mixer, mash the mixture until creamy and well combined. Adjust the consistency by adding more milk or cream if desired.
- Transfer the celeriac and potato mash to a serving platter, shaping it into a mound or smoothing it out with a spoon.
- Garnish the platter with fresh herbs, such as chopped parsley or chives, for an added pop of color and flavor.
- Serve the celeriac and potato mash platter as a side dish alongside roasted meats, grilled fish, or as a vegetarian main course. It pairs well with steamed vegetables or a crisp green salad.

Uniting Agriculture and Renewable Energy with Agrivoltaic Farming Systems

By Nana Ama Oforiwaa Antwi



The University of Illinois, through their "Sustainable Co-locating Agricultural and Photovoltaic Electricity Systems" (SCAPES) project, is leading research into agrivoltaic systems with a focus on farms with crops and solar panels in a variety of land and climate types.

The project consists of research, education, and extension activities at the University of Arizona, Colorado State University, the University of Illinois at Chicago, and the National Renewable Energy Laboratory.

The National Program Leader of the Project, Steven J. Thomson, expressed his delight, saying, "We are very happy to fund this collaborative project. Co-locating photovoltaic systems within productive pasture and cropland not only provides potential economic benefit but could go a long way toward mitigating barriers to acceptance of photovoltaics for agriculture, as this synergy is a sustainable solution that does not compete for land.

The project is also supported by NIFA's Sustainable Agriculture Systems program, and it aims at bringing people from multiple disciplines together to indulge in moving the country towards the use of more agri-voltaic in the United States.

The SCAPES project is working to provide a comprehensive analysis of the potential of agrivoltaics. Its goal is to maintain or increase crop yield; increase the combined (food and electricity) productivity of land; and diversify and increase farm profitability with diverse crops (row crops, forage, and specialty crops) across three biophysically diverse regions in the U.S.: rainfed Illinois, dryland Colorado, and irrigated Arizona.

Agrivoltaic farming systems involve the integration of solar PV with agricultural produce. This means crops are made to grow beneath solar panels. This farming concept was proposed in the 1980s but did not gain ground until the beginning of the new millennium.

A tribute to Agriculture

In fields of gold where crops are grown,
The farmer's love and care are shown.
Seeds are sown with hopes so high,

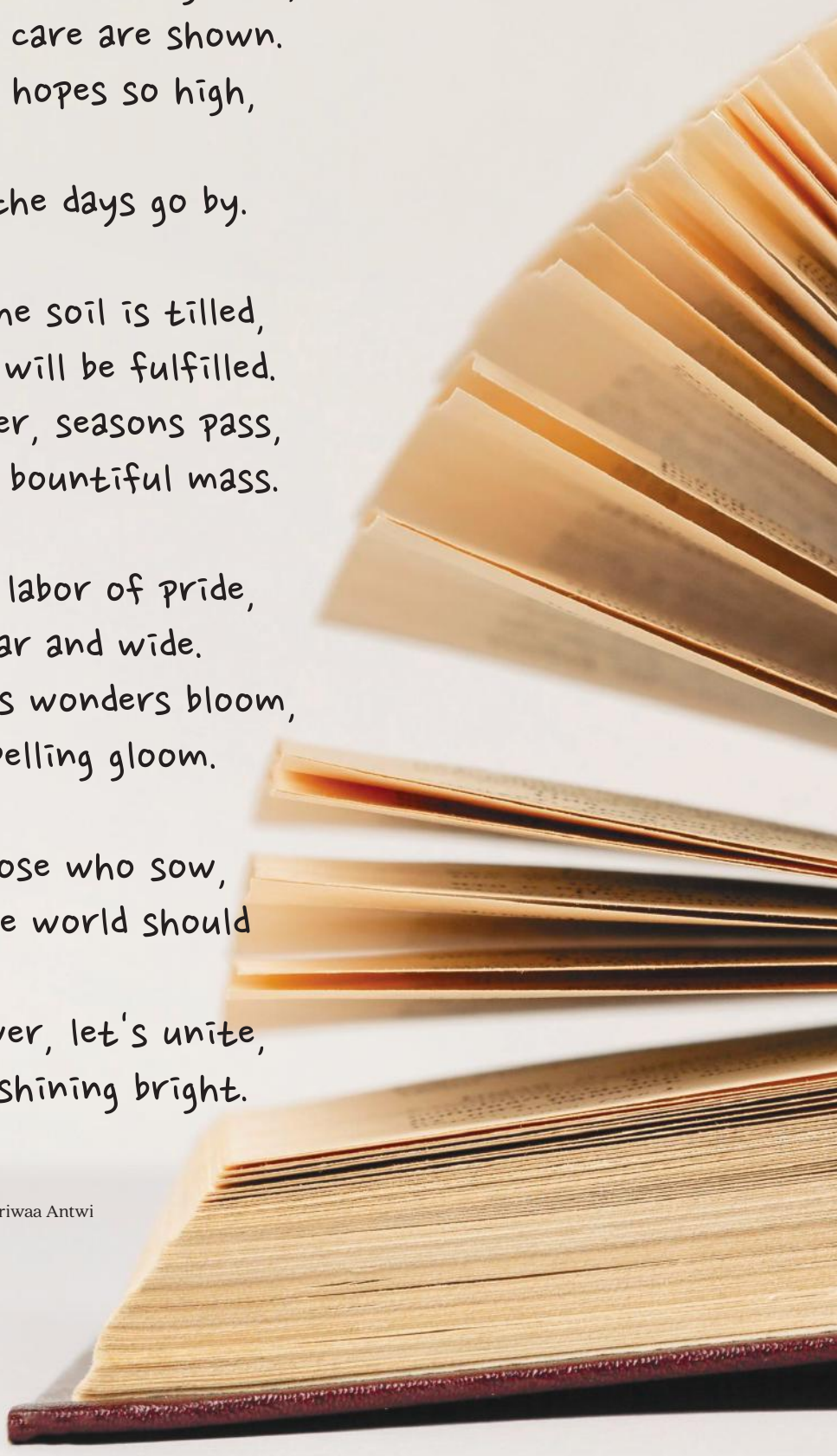
Nurturing them as the days go by.

With gentle hands, the soil is tilled,
Planting dreams that will be fulfilled.
From spring to summer, seasons pass,
Each brings growth, a bountiful mass.

The farmer's toil, a labor of pride,
Feeding nations far and wide.
In fields of green, life's wonders bloom,
Sustaining us, dispelling gloom.

So let us honor those who sow,
Their dedication, the world should know.
For agriculture's power, let's unite,
To ensure a future shining bright.

— Poem by Nana Ama Oforiwaa Antwi



The Importance of Investing in Irrigation Development in Ghana

By Prince Opoku Dogbey

Ghana's agricultural sector plays a vital role in the country's economy, providing employment, food security, and contributing to economic growth. However, to fully harness its agricultural potential, there is a critical need to prioritize and invest in irrigation development.

One of the key challenges facing Ghana's agricultural sector is the overreliance on rain-fed agriculture, making it vulnerable to climate change and seasonal fluctuations. By investing in irrigation development, Ghana can mitigate these risks and ensure a more reliable and consistent water supply for crop production throughout the year.

Investing in irrigation development has a direct impact on food security and rural livelihoods. With a stable water supply, farmers can diversify their crops and engage in year-round production. This not only ensures a steady food supply for the population but also creates opportunities for income generation, poverty reduction, and rural development. Irrigation schemes empower smallholder farmers, enabling them to become more self-sufficient and less dependent on external factors beyond their control.

Ghana possesses immense agricultural potential, with fertile soils and favorable climatic conditions. However, without adequate water resources and irrigation infrastructure, this potential remains largely untapped. Investing in irrigation development opens up new possibilities for crop diversification, commercial farming, and value chain development. It enables the cultivation of high-value cash crops, such as fruits, vegetables, and horticultural produce, which have a significant market demand both locally and internationally.

To drive irrigation development in Ghana, collaboration between the government, private sector, and development partners is crucial. Public-private partnerships can mobilize the necessary resources, expertise, and technology to establish and manage irrigation schemes effectively. By fostering sustainable partnerships, Ghana can attract investments, access innovative irrigation technologies, and develop the necessary infrastructure to maximize water resources for agricultural production.

Investing in irrigation development is a strategic move that can revolutionize Ghana's agricultural sector.

TODAY'S TIPS

Crop Rotation

Crop rotation is a fundamental practice in sustainable farming that involves systematically planting different crops in the same field over multiple growing seasons. This technique offers numerous benefits, including improved soil health, increased yields, and reduced pest and disease pressure. Here are some essential steps to implement crop rotation effectively:

Plan crop sequence: Begin by mapping out the crops you want to rotate and their specific growth requirements. Consider factors such as nutrient needs, soil preferences, and pest vulnerabilities. Aim for a diverse rotation that includes crops from different plant families to minimize disease and pest carryover.

Follow a schedule: Establish a rotation schedule that spans multiple years, typically three to five. Divide your field or growing area into sections and assign a specific crop or crop group to each section for each year. Avoid planting the same crop or related crops in the same section consecutively.

Incorporate cover crops: Integrate cover crops into your rotation plan. These are non-commercial crops grown primarily to improve soil fertility, prevent erosion, suppress weeds, and enhance organic matter content. Legumes like clover or vetch can fix nitrogen, benefiting subsequent crops.

Manage residue and pests: Properly manage crop residues and plant debris after harvest to reduce the risk of pests and diseases. Remove and dispose of any infected plant material promptly. Consider using cultural practices, such as tilling or crop residue incorporation, to disrupt pest life cycles.

Monitor and adapt: Regularly monitor the health and performance of your crops throughout the rotation cycle. Assess soil quality, nutrient levels, and any signs of pest or disease incidence. Make adjustments to your rotation plan as needed based on these observations.

Crop rotation is a sustainable farming practice that promotes soil health, reduces reliance on chemical inputs, and enhances overall farm productivity. By implementing a well-designed rotation plan, farmers can achieve long-term success while minimizing environmental impact.

The Need for Investments in Agriculture

By Prince Opoku Dogbey

Agriculture is the backbone of many economies worldwide, and Ghana is no exception. To ensure the sector's growth and sustainability, there is an urgent need for increased investments.

This article highlights the importance of investments in agriculture and the potential benefits it brings to farmers, the economy, and the overall development of Ghana.

Investments in agriculture have a direct impact on economic growth. By injecting capital into the sector, farmers can access modern farming technologies, quality inputs, and improved farming practices. This enhances productivity, increases yields, and drives agricultural output.

A thriving agricultural sector stimulates rural economies, creates employment opportunities, and contributes to overall economic development through increased export earnings and reduced food import dependency.

Investments in agriculture are crucial for ensuring food security. With a rapidly growing population, Ghana faces the challenge of meeting the increasing demand for food.
Strategic investments can support farmers in adopting sustainable farming methods, expanding cultivation areas, and enhancing crop diversity

> **"Investments in agriculture have a direct impact on economic growth. By injecting capital into the sector, farmers can access modern farming technologies, quality inputs, and improved farming practices.**

La déforestation en Chine dans l'intérêt de la sécurité alimentaire.

Par Yosua Domedjui

Pékin poursuit un programme autoritaire qui augmentera la production du blé, du maïs et du riz au détriment des arbres, des parcs et des arbres fruitiers. Le pays ne produit aujourd'hui que 65 % de la nourriture dont il a besoin, alors qu'il en produisait près de 93 % avant le début du siècle.

Depuis quelques mois, les cyclistes et les coureurs qui empruntent la fantastique piste cyclable de 100 kilomètres qui fait le tour de Chengdu, la capitale du Sichuan, dans le sud-ouest de la Chine, observent un spectacle étrange.

De nombreux paysans retraités, payés une misère, fouillent partout les terres environnantes. De même, les jardins sauvages qui font l'attrait de ce couloir vert sont détruits par les bulldozers et les arbres coupés.

Ce n'est pas que les promoteurs aient pris le contrôle des terres. Dans cette zone, de grandes étendues de maïs et de riz remplacent les bambous, les buissons et les fleurs naturelles. Sur un panneau, les "cinq interdictions" sont énumérées. D'abord, s'abstenir de toute opération de culture fruitière ou de plantation d'arbres.

Lutte pour la sécurité alimentaire en Afrique de l'Ouest

Par Yosua Domedjui

Les groupes intergouvernementaux conseillent aux États de la sous-région d'accélérer l'exécution des plans de réponse nationaux afin de mieux lutter contre l'insécurité alimentaire en Afrique de l'Ouest. Ces structures, composées d'ONG et d'organisations internationales, appellent également à un soutien accru aux 48 millions de personnes en situation d'insécurité alimentaire dans cette région du continent et au Sahel au cours des années 2023-2024.

Les organisations intergouvernementales travaillant en Afrique de l'Ouest estiment que les pays de la région du Liptako-Gourma (Burkina Faso, Mali et Niger), ainsi que ceux du bassin du lac Tchad et de la zone côtière, doivent faire l'objet d'une attention particulière à cet égard. Les initiatives visant à augmenter la production d'engrais dans des pays comme le Sénégal et le Nigeria ont été conseillées dans la lutte contre l'insécurité alimentaire en Afrique de l'Ouest.

Ces structures devraient être prises en considération car les efforts en cours pour éliminer les contraintes sur la transhumance du bétail et la libre circulation des produits agro-sylvo-pastoraux dans la sous-région peuvent également servir à alléger la pression sur les marchés et les prix tout en augmentant l'offre de nourriture.

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Ces structures devraient être prises en considération car les efforts en cours pour éliminer les contraintes sur la transhumance du bétail et la libre circulation des produits agro-sylvo-pastoraux dans la sous-région peuvent également servir à alléger la pression sur les marchés et les prix tout en augmentant l'offre de nourriture.

Ils cherchent également à tirer le meilleur parti de leur collaboration et à explorer des projets qui augmenteront le partage d'informations et la production de statistiques fiables sur la production agricole en Afrique de l'Ouest afin de mieux soutenir cette dynamique.

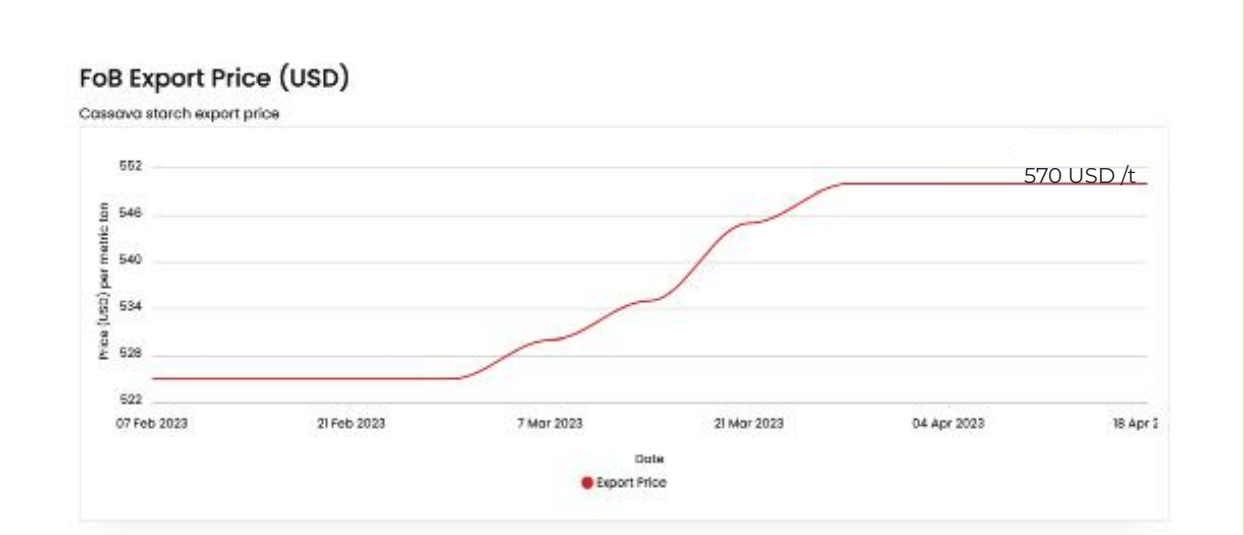
Ces suggestions permettraient de mieux réorienter les efforts de lutte contre l'insécurité alimentaire dans la sous-région, comme l'a souligné Ngoné Diop, directrice du bureau sous-régional de Cea pour l'Afrique de l'Ouest. Mme Diop a également saisi l'occasion pour inviter ces organismes internationaux à s'assurer que les recommandations formulées sont suivies d'effet. Elle a indiqué que la Cea resterait en contact avec les Etats afin de partager les meilleures stratégies de lutte contre l'insécurité alimentaire.

L'amélioration de la productivité agricole, notamment la production de semences agricoles, est l'une de ses nombreuses composantes. Selon M. Baldé, certains de ces projets visent également à prendre en compte les effets du changement climatique sur les cultures irriguées de la vallée du fleuve Sénégal jusqu'au Mali. À terme, 375 000 hectares de terres seront créés pour les cultures irriguées, a-t-il affirmé.

Market Analysis of Cassava Starch In Thailand

The market prices of cassava starch have reduced slightly over the last month. The price ranges from 500-550 US dollars/ton (3,627.80 yuan /ton). This week, the market price of cassava starch in Thailand's tapioca starch quotation is FOB (Bangkok) 495 US dollars/ton (3,788.46 yuan/ton). The starch prices in the domestic cassava starch market are stable. In Thailand, the raw material supply of fresh cassava is stable. The average starch leavening of cassava starch is between 24-28 percent. Thailand is relatively stable, the open factories remain high, and the starch output continues to increase. The speed of cassava starch clearance is still low, and the quotations of traders are slightly confused.

Thailand Cassava Starch price



Price Factors

Quality of cassava root: Factory owners demand cassava with high starch content for production. Higher starch content would receive a higher price than the lower one. The price WWWoffered by the collector is dependent on the quality of the cassava root, specifically, the starch content.

Cost of Labour: Total labour cost including farm labour for the cultivation and harvesting of cassava. The cost of labour during the harvesting period is high as compared to cultivation therefore the cost of harvesting directly affects pricing.

Harvest Yield: There is a high correlation between harvest yield and the price of cassava. The price of cassava is lower when there is a low yield. The lowest prices in June and July can be explained in a similar way but the opposite end. It is noted that the abundance of cassava roots drives the prices down.

Handling and Logistics: The storage and shipping costs from producing areas to importing countries are great determinants of cassava prices. When the shipping and transportation cost of cassava to consumers and industries are high, it affects the retail price of cassava. Cassava farmers bring their harvest to the collectors, where they are responsible for absorbing the cost of transportation from farm to collecting fields.

Harvesting time: The harvesting period is a great determinant for the price of cassava. The abundance and scarcity of cassava affect the price. The prices of fresh cassava roots often rise in November and December of every year as cassava is easily harvested during the rainy season. During the harvesting season, the prices are relatively high due to the limited supply.

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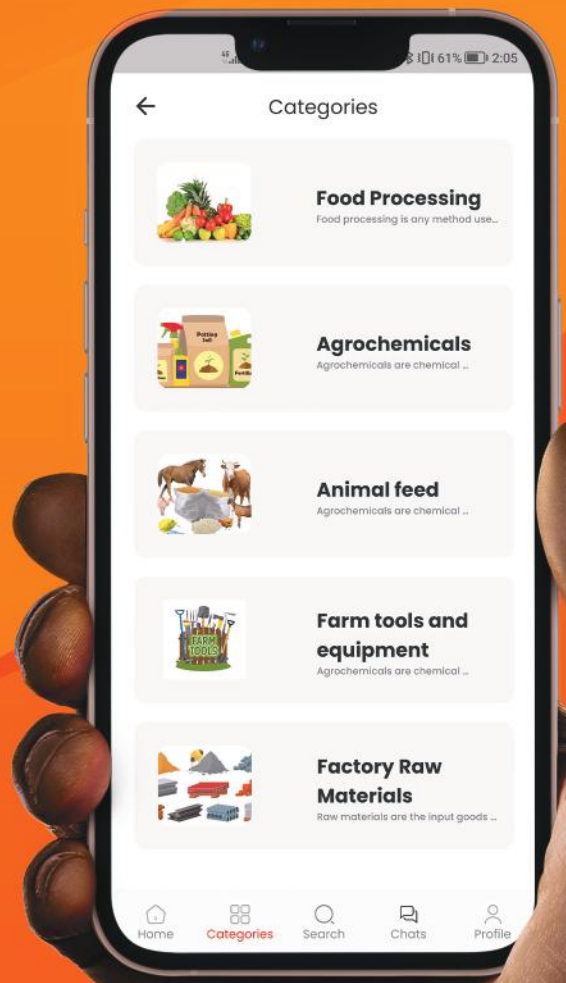

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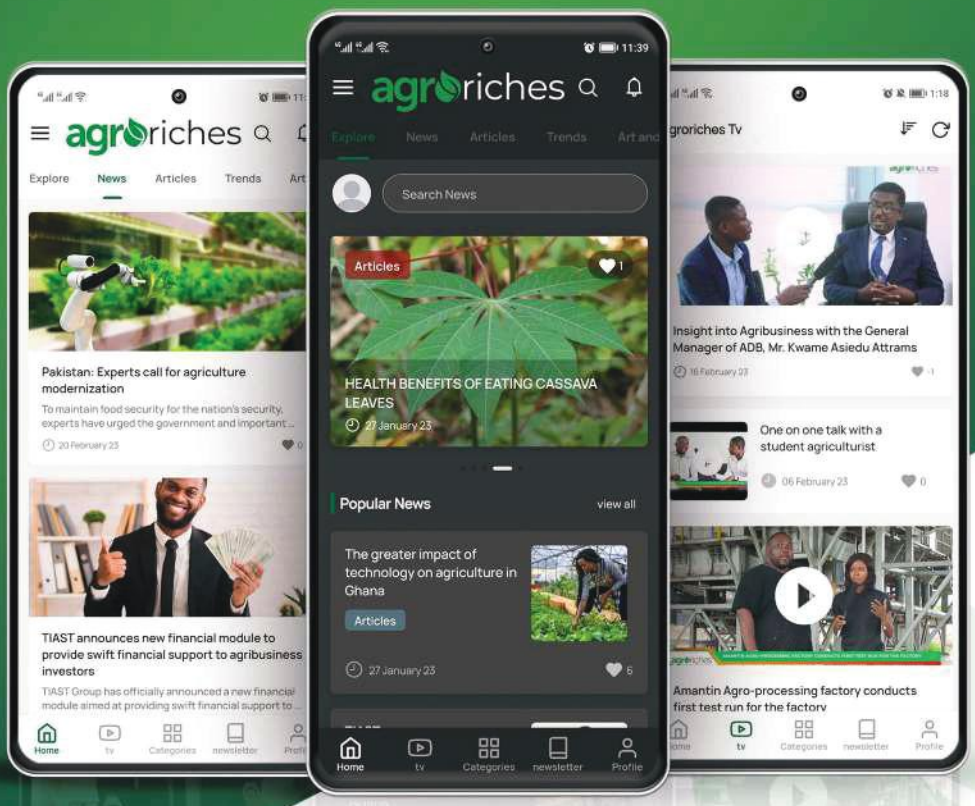

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