ENDING HUNGER

Through South-South and Triangular Industrial Cooperation
As the global community grapples with the persistent challenge of hunger, South-South and Triangular Industrial Cooperation (SSTIC) presents a dynamic platform for innovative solutions and coordinated action. By leveraging industrial cooperation and shared developmental experiences, SSTIC can significantly contribute to the global goal of ending hunger.

Technically, SSTIC promotes the transfer, adaptation, and assimilation of advanced agricultural and food processing technologies. From precision farming techniques that optimize crop yields, to modern storage and preservation technologies that reduce post-harvest losses, SSTIC encourages the sharing and adoption of such technologies across nations.

In addition, SSTIC provides a platform for countries to exchange best practices in agricultural productivity, food security policies, and strategies for rural development. This includes knowledge on sustainable farming techniques, climate-smart agricultural practices, and efficient supply chain management. Through its capacity-building initiatives, SSTIC develops the technical skills of stakeholders across the food production and distribution chain, enhancing their ability to contribute to the goal of ending hunger.

SSTIC plays a crucial role in shaping policies and creating environments conducive to food security. It provides policy advice, promotes agricultural diversification, and facilitates the development of rural economies.

SSTIC supports countries in formulating and implementing sound agricultural and rural development policies, aimed at boosting agricultural productivity, enhancing market access for farmers, and fostering rural entrepreneurship. By offering economic models and tools for analysis, SSTIC assists countries in understanding the economic dynamics of hunger and in designing effective interventions.

Furthermore, by promoting agricultural diversification, SSTIC supports nations in enhancing the resilience of their agricultural sectors, reducing dependence on a limited number of crops, and improving nutritional diversity. This is complemented by SSTIC’s efforts to enhance value addition in agricultural products, creating new income opportunities for farmers and rural communities, and strengthening local food systems.

The following sections of this publication delve into four crucial domains: Agribusiness Development, Food Security and Food Safety, Agro-Industrial Parks, and Bioeconomy.

The Agribusiness Development section illustrates how SSTIC promotes the transfer and adaptation of advanced agricultural and food processing technologies, along with sharing best practices in agricultural productivity. This section expounds on SSTIC’s role in capacity-building initiatives, enhancing stakeholders’ technical skills across the food production and distribution chain.

Food Security and Food Safety section delves into SSTIC’s policy-shaping role, providing advice and facilitating environments conducive to food security, which includes boosting agricultural productivity and enhancing market access for farmers.

The third section, Agro-Industrial Parks, highlights SSTIC’s efforts in fostering agricultural diversification and rural entrepreneurship, essential for enhancing agricultural sector resilience and improving nutritional diversity.

Finally, the Bioeconomy section showcases UNIDO’s efforts to support value addition through SSTIC in agricultural products, creating new income opportunities and strengthening local food systems. Collectively, these sections aim to offer a detailed understanding of UNIDO’s multi-pronged approach to combating global hunger through SSTIC.
South-South and Triangular Industrial Cooperation (SSTIC) provides a robust framework for facilitating global development. Agribusiness, as a vital sector, can significantly benefit from this cooperation. Through SSTIC, UNIDO has the potential to stimulate agribusiness development in many ways. The following section will focus on the strategic interaction between SSTIC, UNIDO’s mission, and the development of the agribusiness sector.

**FACILITATION OF TECHNOLOGY TRANSFER AND ADAPTATION**

Agribusiness development is largely predicated on the adoption and utilization of advanced agricultural technologies. This includes precision farming methods, integrated pest management techniques, innovative irrigation systems, and technologies that facilitate value addition such as advanced processing and packaging methods. By leveraging SSTIC, UNIDO is encouraging the exchange and adaptation of these technologies among developing countries, enhancing productivity, reducing losses, and fostering innovation in agribusinesses.

**CAPACITY BUILDING AND SKILLS DEVELOPMENT**

Agribusinesses thrive in an enabling policy environment. As such, SSTIC is assisting countries in devising policies that promote agribusiness development. These might cover areas like access to credit, agribusiness-friendly tax policies, protection of farmers’ rights, and facilitation of market access. Furthermore, SSTIC can encourage the sharing of effective policy models among countries, fostering a supportive regulatory environment for agribusinesses.

**POLICY ADVICE AND INSTITUTIONAL SUPPORT**

As a strategic advisor, UNIDO can utilize SSTIC to provide sound policy advice and institutional support. By supporting countries in formulating and implementing robust agribusiness policies and regulations, UNIDO is helping to create an enabling environment for the growth and development of the agribusiness sector. Furthermore, it can foster institutional capacities to support research, innovation, and technological development in agribusiness.

**PROMOTION OF VALUE ADDITION AND AGRO-INDUSTRIALIZATION**

Through SSTIC, UNIDO can promote value addition and agro-industrialization. By providing technical assistance and support for infrastructure development, UNIDO can help countries move up the value chain, diversify their agricultural products, and develop agro-industries. This can create new income opportunities, boost economic growth, and foster rural development.

**ENHANCEMENT OF MARKET ACCESS AND REGIONAL INTEGRATION**

SSTIC can be a vehicle for UNIDO to facilitate market access and regional integration. By forging strong regional partnerships and networks, UNIDO is helping agribusinesses access new markets and investment opportunities. SSTIC can also be used as a tool to promote regional cooperation in areas such as agricultural research, policy harmonization, and trade facilitation, which can drive agribusiness growth and development.
FROM POTENTIAL TO PROSPERITY: Accelerating Youth Employment in African Agribusiness

CHALLENGES AND OPPORTUNITIES

Africa, the youngest continent in the world, boasts a population of over 600 million individuals aged under 24 years. This figure rises to a staggering 750 million when considering youth under 35 years old. Recognizing the potential of the continent’s youth, if properly supported, they could become the drivers of inclusive economic growth across Africa. However, the reality for most African youth is far from promising, as they often lack stable economic opportunities. Many are employed in the informal economy, working as contributing family workers, subsistence farmers, home-based micro-entrepreneurs, or unskilled laborers.

IMPROVING FOOD AND NUTRITION SECURITY

The Food and Agriculture Organization (FAO) and the United Nations Industrial Development Organization (UNIDO) have jointly developed this program in response to a specific call for accelerating efforts in creating job opportunities for African youth, particularly through agribusiness and entrepreneurship development. This call was issued during the 2018 Conference on Youth Employment in Agriculture, co-organized by the African Union, the Government of Rwanda, and FAO, with the theme "Youth Employment in Agriculture as a Solid Solution to Ending Hunger and Poverty in Africa: Engaging through Information and Communication Technologies (ICTs) and Entrepreneurship."

The program follows an integrated approach to create quality on- and off-farm employment and self-employment opportunities for African youth in agriculture and agribusiness. It emphasizes the pivotal role of agriculture in Africa’s development and highlights the continuous empowerment of African youth to drive this growth. The multi-level approach, encompassing continental, sub-regional, and national levels, underscores the need for concerted efforts between public institutions and the private sector in capacity development, resource access, improved coordination and linkages, as well as knowledge generation and dissemination.

This program aims to benefit young women and men in technical and vocational trainings related to agribusiness and transversal skills, enhancing their employability. Incubation and acceleration services will support youth-led businesses and SMEs, and financial and non-financial service providers will benefit from improved linkages and support systems. Strengthening national institutions and policies will foster competitiveness, while sub-regional and continental institutions will identify bottlenecks and design policies supporting youth employment and entrepreneurship.

SSTIC IMPACT

In addition to strengthening the collaboration between FAO and UNIDO, the OYA programme benefits from African Union Commission (AUC)’s Department of Rural Economy and Agriculture (DREA)’s strategic guidance and technical collaborations on knowledge tools such as the “Investment guidelines for Youth in Agrifood Systems in Africa”
Furthermore, the programme offers a South-South cooperation platform for its partner countries and African young men and women by organizing technical workshops, thematic events in relation to youth employment in agribusiness and business networking opportunities in collaboration with its partners. These partners include Business Club Africa, SensXAfrica, African Summit on Entrepreneurship and Innovation (ASENTI), African Diaspora Youth Forum in Europe (ADIFYE), Melanin Kapital etc.

Finally, the SSTIC impact is encouraged at beneficiary level as many training and incubation programmes that the OYA programme has conducted involve beneficiaries from at least two partner countries to encourage know-how transfer between agripreneurs and access to potential regional markets.
FOOD SECURITY AND FOOD SAFETY

Countries in the Global South face several challenges regarding food safety. These include the lack of robust regulatory frameworks, inadequate infrastructure for food storage and processing, limited access to technology and knowledge, and insufficient human capital for managing food safety. Furthermore, the impact of climate change exacerbates these issues, increasing the vulnerability of food systems. By fostering the exchange of knowledge, technologies, and best practices among countries, SSTIC is aiding in the development of effective food safety regulations, and the implementation of innovative food storage and processing techniques. It can further contribute to human capital development through capacity-building initiatives, enhancing skills related to food safety management. In addition, SSTIC can support the creation of value chains that ensure a safe and steady supply of food from farm to fork, which is crucial for enhancing food security and food safety.

PROMOTION OF AGRI-FOOD TECHNOLOGICAL TRANSFER

To enhance food security, the infusion of sustainable agri-food technologies is crucial. This can encompass precision agriculture techniques, innovative irrigation systems, post-harvest loss reduction technologies, and food processing and preservation methods. Through SSTIC, UNIDO can facilitate the exchange and adaptation of these technologies among developing countries, enhancing agricultural productivity and food preservation, reducing food waste, and ultimately improving food security.

POLICY ADVICE AND REGULATORY FRAMEWORKS

The role of policy and regulation in creating conducive environments for food security and safety is paramount. UNIDO can leverage SSTIC to provide policy advice and support the development of regulatory frameworks. These can include policies for agricultural subsidies, minimum safety standards, food labeling, and emergency food reserves. Economically sound policies can enhance market efficiency, protect consumers, ensure fair trade practices, and increase the resilience of food systems against shocks, fostering food security and safety.

CAPACITY BUILDING AND KNOWLEDGE SHARING

To ensure food security and food safety, a diverse set of skills is required. These include sustainable farming techniques, supply chain management, food quality assurance, and risk assessment related to food contamination and diseases. By leveraging SSTIC, UNIDO can coordinate capacity-building initiatives to cultivate these skills, contributing to a safer, more efficient, and more resilient food system.

PROMOTION OF VALUE CHAINS AND MARKET ACCESS

SSTIC can support the development of value chains and enhance market access. By assisting in infrastructure development and promoting partnerships, UNIDO can facilitate the transition from subsistence farming to agribusiness. This transformation can increase income, improve resource allocation, and stabilize food supplies. Additionally, enhancing market access for smallholders can lead to more equitable income distribution, promoting economic resilience and food security.
SUSTAINABLE PRACTICES FOR GLOBAL MARKET ACCESS: Upgrading Ethiopia’s Livestock Value Chain

CHALLENGES AND OPPORTUNITIES
Livestock sector plays a crucial role for Ethiopia’s economy by contributing significantly to its national GDP and supporting the livelihoods of around 70% of rural households across the country. With one of the world’s largest livestock populations, the sector holds immense potential. However, the sector is hindered by multiple challenges throughout the value chains that restrict its growth and export potential.

IMPROVING FOOD AND NUTRITION SECURITY
In response to Ethiopia’s request for developing the sector, UNIDO has partnered with the government of China, leveraging the Global Development and South-South Cooperation Fund to provide technical assistance. The collaboration aims to strengthen South-South collaboration and experience sharing, benchmarking the livestock development experiences of selected Southern countries to draw best practices and applicable standards for Ethiopia’s context. The involvement of experts and institutions from both Ethiopia and China fosters structural transformation and poverty eradication by leveraging exports and shared experiences. At its core, this transformative endeavor seeks to unlock the potential of the sector and stimulate meat export markets. It strives to enhance the competitiveness of meat value chains and livestock industry in Ethiopia through targeted capacity building and technical interventions along the value chain. By attracting investments and promoting meat exports, the project aims to elevate the sector’s performance to new heights while ensuring food security and safety standards are met.

Central to the project is its multi-stakeholder partnership approach, which unites efforts from the public and private sectors to enhance the competitiveness of meat production in Ethiopia. The project has cooperated with Ministry of Agriculture of Ethiopia (MoA), the General Administration of Customs of China (GACC), Ethiopian Agricultural Authority (EAA), Livestock Development Institute (LDI), as well as Addis Ababa University-College of Veterinary Medicine and Agriculture (AAU-CVMA), among others, in capacity building of technical experts and institutions. This sustainable management approach, supported by long-term collaborations, ensures equitable access to project benefits for beneficiaries, while gender considerations are interwoven into research and capacity-building activities.
The project is underpinned by local ownership, with the Ministry of Agriculture of Ethiopia and Ethiopian Agricultural Authority taking on the responsibility of sustaining capacity-building endeavors beyond the project period. By encouraging inclusive and sustainable industrial development, the project connects various stakeholders working in the livestock sector, including women and youth.

The lessons learned from implementing this transformative livestock project hold the potential to be replicated and adapted in other Developing and Least Developed Countries, where livestock plays pivotal roles in national development, creating a positive ripple effect in the global livestock sector. The project also strengthens local institutions by improving their ability to coordinate activities along the livestock value chain, and contributes to the structural transformation and poverty elimination, with efforts and experiences from experts and institutions of both Ethiopia and China. This project showcases the sustained efforts in Ethiopia’s livestock sector contributing to UNIDO’s ambition to end hunger and ensure food security for all.
AGRO-INDUSTRIAL PARKS

As a platform for international cooperation, SSTIC offers significant potential to catalyze the development of agro-industrial parks (AIPs). SSTIC can effectively expedite the creation and expansion of these parks, stimulating economic growth and enhancing sustainable agricultural practices. Developing countries often face similar challenges and constraints when it comes to establishing and managing AIPs. They also frequently innovate and adapt unique solutions tailored to their local circumstances. SSTIC provides an ideal platform for these countries to exchange knowledge about these unique strategies and solutions, fostering mutual learning and adaptation. UNIDO, through its facilitative role in SSTIC, can assist in documenting and disseminating best practices and lessons learned from successful AIP models in one developing country to others. This can involve insights on effective policy frameworks, innovative technology applications, efficient park management practices, sustainable environmental strategies, and strategies to attract investment.

FACILITATION OF AGRO-TECHNOLOGICAL TRANSFER AND ADAPTATION

The development and expansion of AIPs are contingent on the infusion of appropriate and efficient technologies. These may encompass precision farming techniques, energy-efficient processing machinery, post-harvest loss reduction technologies, and waste-to-energy systems. Through SSTIC, UNIDO can orchestrate the exchange and adaptation of these technologies among developing countries, enhancing productivity, improving resource-use efficiency, and facilitating the growth of AIPs in an environmentally sustainable manner.

POLICY AND INSTITUTIONAL SUPPORT FOR AIP DEVELOPMENT

Robust policy frameworks and institutional mechanisms are critical to the establishment and growth of AIPs. SSTIC, under the guidance of UNIDO, can assist countries in devising policies that incentivize investment in AIPs, promote sustainable industrial practices, and protect farmers’ rights. In addition, SSTIC can stimulate the sharing of effective policy models and institutional strategies, contributing to a conducive environment for AIPs.

CAPACITY BUILDING FOR AGRO-INDUSTRIAL MANAGEMENT

The successful operation of AIPs requires a pool of skilled manpower proficient in areas such as agro-industrial management, quality assurance, sustainable farming practices, and agri-business entrepreneurship. UNIDO can leverage SSTIC to coordinate capacity-building programs aimed at enhancing these skills, consequently improving operational efficiency, fostering innovation, and contributing to the success of AIPs.

INFRASTRUCTURE DEVELOPMENT AND INVESTMENT ATTRACTION

Infrastructure, a crucial determinant of AIP success, can encompass elements like processing facilities, storage units, logistics infrastructure, and waste management systems. UNIDO, through SSTIC, can support nations in planning and implementing these infrastructural projects. Additionally, UNIDO can utilize SSTIC to attract investment into AIPs, showcasing their potential for generating returns, creating jobs, and contributing to local economies.
Case Study

REVOLUTIONIZING AGRI-BUSINESS:
The Integrated Agro-Food Park Model

CHALLENGES AND OPPORTUNITIES
Governments often face challenges in creating a conducive business environment and building nationwide enabling infrastructure, primarily due to limited resources and scarce implementation capacity. As an alternative, they establish “special territories,” equipped with the necessary infrastructure, to create a favorable business environment by removing critical constraints that hinder investment flows. UNIDO adopts the concept of “industrial park” to refer to location-specific industrial policy instruments. UNIDO provides support throughout the life cycle of industrial park projects, focusing on various services. Agro-food park is one of UNIDO’s flagship initiatives to help promote investment in agroindustry by reducing initial investment costs, establishing supply chain linkages, and strengthening business services.

IMPROVING FOOD AND NUTRITION SECURITY
The primary rationale for implementing integrated agro-food parks (IAFPs) is to drive the structural transformation through supporting rural industrialization, as well the commercialization of the agricultural sector providing dedicated locations for firms to settle and develop. These parks aim to attract investment, create employment, and boost exports by overcoming constraints that hinder industrialization processes, such as limited access to infrastructure, technology, finance, and high production and transaction costs outside the parks.

The agro-food park is a fairly new model, and its development is a complex process due to its focus on a rural area development approach. It involves not only attracting firms to invest in the agro-processing hub but also supporting rural transformation activities to enhance raw material production and supply. In partnership with various institutions, including the African Development Bank (AfDB), Export-Import Bank of China, African Union Development Agency (AU-NEPAD), African Export-Import Bank, and Mahindra Consulting Engineers, UNIDO has developed Guidelines for Planning, Development and Management of Integrated Agro-Food Parks. It brings together valuable insights gained from pilot projects, along with international best practices in industrial park and agro-industrial development, to offer practical guidelines. These guidelines are intended to assist a wide range of stakeholders, such as park regulators, developers, operators, tenants, as well as other partners like multilateral development agencies and development finance institutions. The collaborative effort demonstrates the tremendous potential of IAFPs in fostering economic growth and advancing poverty reduction objectives.

SSTIC IMPACT
It is important to note that the guidelines are not rigidly prescriptive; rather, they provide considerations to be adapted according to local conditions and the dynamics of agricultural value chains. Practitioners may find these guidelines a valuable resource,

UNIDO remains committed to being a strong and dependable partner in supporting its Member States to plan and implement inclusive and sustainable industrial parks, including IAFPs, in developing countries and middle-income economies. In this regard, UNIDO regularly reviews and updates the guidelines to incorporate new developments and evolving trends in the global development and agro-industrial landscape, taking into account inputs from Member States and partners. Furthermore, UNIDO offers its services to assist decision-makers in effectively utilizing the guidelines by organizing international and regional forums, conferences, and technical workshops, establishing knowledge-exchange platforms, and providing training opportunities.
In the realm of sustainable economic development, the bioeconomy—concerned with the production of renewable biological resources and their conversion into food, feed, bio-based products and bioenergy—has emerged as a potent driver. The bioeconomy’s potential to reconcile agricultural productivity, resource conservation, climate mitigation, and socio-economic development is particularly significant for developing countries. However, realizing this potential demands an integrated and cooperative approach that leverages technological advancements, capacity building, policy refinement, and value chain enhancement. UNIDO, by utilizing the collaborative framework of SSTIC, can provide this essential support. With a pragmatic focus on elements such as bio-technological transfers, bio-entrepreneurship training, bio-resource management policies, and investment in bio-based value chains, this examination illustrates how UNIDO can leverage SSTIC to catalyze the development of the bioeconomy in the Global South.

**ENHANCEMENT OF BIO-TECHNOLOGICAL TRANSFER**

Key to the flourishing bioeconomy is the use and advancement of bio-technologies, which encompass processes such as biological waste treatment, enzyme technology and thermochemical conversion. SSTIC offers an efficient conduit for sharing these intricate technologies among developing countries. UNIDO can facilitate the exchange and adaptation of these technologies, thereby improving the conversion efficiency of bio-resources into valuable products, fostering bio-industrial innovation, and ensuring maximum economic utilization of bio-resources.

**ADVANCEMENT OF BIOECONOMIC POLICY AND REGULATION**

Creating an enabling environment for the bioeconomy necessitates robust policies and regulations. SSTIC, with UNIDO’s facilitation, can guide countries in crafting policies that ensure sustainable bio-resource use, incentivize bio-innovation, encourage bio-entrepreneurship, and govern bio-risk management. Additionally, SSTIC can stimulate the sharing of effective policy models between nations, contributing to a supportive global regulatory milieu for the bioeconomy.

**STRENGTHENING OF BIO-CAPACITY BUILDING**

Capacities for navigating the complex bioeconomic landscape need to be developed at various levels, from policy formulation to practical execution. This involves training in diverse areas such as genomics, bioinformatics, bioprocess engineering, sustainable bio-resource management, and industrial ecology. UNIDO can leverage SSTIC to coordinate such skill development initiatives, ultimately fostering a well-equipped workforce and informed policy environment essential for bioeconomic progression.

**CULTIVATION OF BIO-BASED VALUE CHAINS AND INVESTMENT**

Realizing a vibrant bioeconomy requires directed investment and the development of efficient, sustainable value chains. UNIDO, through SSTIC, can stimulate investment in bioeconomic sectors by highlighting their potential returns, societal benefits, and alignment with sustainability goals. Moreover, SSTIC can foster the establishment of value chains that span from sustainable bio-resource sourcing to marketing bio-based products. This can enhance income generation, boost employment, and strengthen economic resilience, all crucial to the thriving bioeconomy.
CHALLENGES AND OPPORTUNITIES

Côte d’Ivoire’s agro-food sector holds enormous potential for innovation, especially in the field of bio-energy technologies. Currently, most of crop residues are used as animal feed or simply disposed or burnt, while water effluent are not treated but thrown into rivers of water streams. To avoid pollution and add value to waste, the project will use a digester that converts waste into both biogas and compost. A subsequent step involves using a biogas generator to convert the biogas into electricity. The idea of creating public-private partnerships (PPPs), third-party financing, and alignment with national energy targets sets a practical direction for the future. This project unveils an innovative approach that heralds a new era of competitiveness and decarbonization in local economic sectors.

IMPROVING FOOD AND NUTRITION SECURITY

The agricultural sector in Côte d’Ivoire plays a significant role in the nation’s economy, contributing over 25% to GDP and 40% to export revenue. The National Agricultural Investment Programme (PNIA) aims to increase food security and promote the growth of processed products, focusing on cassava production. The project looks to utilize agricultural waste, specifically from cassava, for energy production, creating a techno-economic map to foster changes in rural areas. By focusing on environmental conservation and employment, the initiative supports the country’s move towards a greener and circular economy. The push towards food security ties into environmental conservation, creating a green economy where employment thrives and fossil fuels are forsaken.

SSTIC IMPACT

In the grand scheme of South-South and Triangular Industrial Cooperation (SSTIC), this project stands as a beacon of synergistic collaboration. The focus is on ensuring sustainable replication across the agricultural sector, notably the cassava and other sub-sectors. The objective is clear: to establish a web of partnerships that align with the larger goal of enhancing the cassava value chain. Technical expertise within UNIDO allowed to prove the feasibility of the model. Now the realization of pilot will create a proactive partnership on the ground, between public and private sector and between countries in the Global South, facilitating technology transfer from developing countries in which this technology has matured. The aim is a roadmap and pipeline of bankable projects, primed for the attention of environmental funding facilities. The energy solution, an integrated aspect of this progressive journey, acts as the catalyst for a sustainable circular economy model.
While the cassava industry in Côte d’Ivoire remains relatively small, the project has successfully proven the feasibility of a versatile model that can be adapted to different local agro-industrial landscapes and regulatory frameworks. However, the legal environment in Côte d’Ivoire presents significant challenges, making renewable energy production more complex than setting up a conventional generator. As the project seeks partnerships with public institutions to support replication in other SMEs, the focus now shifts to establishing a viable financial scheme and aligning with renewable energy policies. Through SSTIC’s proactive approach, the aim is to disseminate shared knowledge, technical expertise, and sustainable practices, potentially extending the model to other developing countries.