

Brain Re-Engineering Concept & Reimagination: Strategy for Promoting Ethics, Values & Inclusivity in Food Chain Security

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Abstract

It is projected that the demand for food will surge by 70%, which aligns with rapid population growth. Research findings from a UN study indicates that about 9.9% of global population still goes hungry, so the thought of feeding almost 10 billion persons is still anticipated as daunting. With environmental changes hard to predict, we must turn to innovation in agriculture technology. Their importance in tackling this issue cannot be over emphasized. Hence, the concept of brain re-engineering and reimagination which underscores it as a prospective strategy for enhancing nations through women empowerment, youth engagement, among other areas on food chain security initiatives when practiced ethically, valuably and inclusively, in order to unlock transformation in an economy. It emphasizes on harnessing the potential of the women and youths by redirecting their energy and innovative capabilities towards modernized food chain practices which much have some touch of inclusivity, ethics and value. Through this, it aims to foster a generation of leaders in food chains to drive the needed transformation as it were.

Keywords: Brain Re-Engineering (BRECR), Food Chain Security, Women Empowerment, Youth Engagement, Value, Ethics, Inclusivity

Introduction

Throughout the evolution of technology, agriculture has remained remarkable (Climate Change Committee, 2023). Conversely, food chain security encompasses food availability in a geographic location, as well as the capability of the inhabitants within that region to access, utilize and source sufficient food for a period of time (Agbugba *et al.*, 2023a). Food chain security is only a snap-shot of one week food consumption at either risk of micronutrient deficiencies or likely to have severe food access issues. It neither captures seasonal changes, quantify food gaps, capture intra household food consumption nor show how food consumption has changed as a result of crisis, as it were. I must underscore that the

remarkable advancements witnessed in food chain security serves as evidence of the significant progress and breakthroughs taking place in our contemporary world during the industrial revolution (IR) era. The interdependency of the industrial and agrarian revolutions has consistently been evident, explaining why economies with stagnant agricultural sectors often struggle to experience industrial growth and development (Plecher, 2020). Throughout history, transformative changes have played a favourable role, and the industrial revolution stands out as a monumental global transformation. Undoubtedly, it has made a lasting impact on the socio-economic and developmental advancements of our modern

world. The Industrial Revolution (IR) represents a significant period in history where the use of machines in factories superseded manual labour. Over the course of the past two centuries, the IR has brought about profound transformations, rivaling the impact of the Neolithic Revolution. Occurring approximately 12,000 years ago, the Neolithic Revolution marked a transition from a nomadic lifestyle dependent on hunting and gathering to one characterized by settled agricultural practices and the use of polished stone tools. This shift enabled the development of permanent settlements and played a crucial role in supporting larger populations.

Relationship between Ethics, Value and Inclusivity in Food Chain Security

Feeding the world ethically implies securing all-round access to safe and nutritious food for enhancing human welfare and hunger alleviation (United Nations, 2023). For others, it is securing food of adequate aggregates and high standards for a healthy and decent life. With this in mind, there are three main ideas to understand:

- a) We must underscore that unethical behaviour work in consonance with the crux of mortality.
- b) It is not herculean for employees to exhibit unethical behaviour.
- c) Context plays a huge part in fashioning the actions, habits and behaviours of the masses.

In recent years, a discernible paradigm shift has been underway, one that heralds a burgeoning recognition of the pivotal role played by different genders in promoting ethics, values and inclusivity in food chain security (Hendriks et al., 2023). Acknowledging their indomitable spirit and invaluable contributions to food production and supply chains, there has been a palpable impetus towards fostering gender inclusivity

and empowerment within the agricultural domain. It is against this backdrop that this paper seeks to unravel the intricacies of agribusiness management, offering a nuanced understanding of the strategies that underpin its efficacy while simultaneously propelling the cause of gender empowerment forward.

Brain Re-Engineering Concept and Reimagination (BRECR): An Unveiling?

BRECR focuses on addressing the mindset issues of individuals and proffers a workable model to revive grappling economies through food chain security (Agbugba, 2023b). This is particularly important in the current age of heightened ecological concerns and climate change issues, where sustainable agriculture is a crucial topic (Ngigi & Muange, 2022). As the global population continues to grow, the scarcity of land and water poses a significant threat to human existence (Apeh et al., 2023). We must reckon that start-ups and technology in food chain security are ardently proceeding with steps to mitigate the bottlenecks. It is crucial to admit that advancements in machinery have revolutionized the scope, momentum, and productivity of automation or farming device (Onomu et al., 2020). This, in turn, enables more efficient cultivation of various inputs and variables on productive lands.

Improvements in seeds, fertilizers, and irrigation systems have greatly contributed to helping farmers increase their yields in crops, livestock, agroforestry, and fisheries. Hence, the concept of BRECR which forebears on changing the wrong perception problem people, especially women and youths have about food chain security thereby underscoring it as a prospective strategy for enhancing their engagement in promoting good values, ethics, inclusiveness and inclusivity to build their innovativeness and entrepreneurship capacity in food chain security.

Gender Equality and Food Security

Global food insecurity and inadequate nutrition are exacerbated by gender inequalities, which influence the access to food and other resources for men and women in urban and rural communities. SDG 5 is focused on pursuing the main goal of real and

sustained gender equality in all aspects of women and girls' lives which includes:

- ❖ Ending gender disparities
- ❖ Eliminating violence against women and girls' lives
- ❖ Eliminating early and forced marriage
- ❖ Securing equal participation and opportunities.



Fig 1.0: Challenges of Food Security

Foresight Research & Gender Equality as Driver of Food Systems Transformation

Foresight research has yet to explore gender equality as an outcome and a driver of food system transformation fully. Foresight analysis can assess which food system investments and interventions are most effective at reducing gender inequities and increasing women's empowerment. Addressing structural inequalities, promoting inclusivity in decision-making, and challenging patriarchal norms can enhance gender equality, social inclusion, and women's empowerment in food system transformation.

Neglecting gender barriers when designing and disseminating food system innovations may exacerbate gender inequalities and limit women's empowerment. Gender equality, women's empowerment, and social inclusivity also drive food systems transformation, leading to improved welfare outcomes for all. FR examines how closing

gender gaps in livelihood opportunities, agricultural productivity, and resilience capacities can impact other food system outcomes, such as poverty reduction, food security, and nutrition. While data on gender inequities in food systems and women's empowerment have increased over the last 10 years, more sex-disaggregated data and impact evaluation studies are needed for rigorous foresight research on gender equality in agrifood systems.

Pillars of Brain Re-engineering (BRECR)

The brain re-engineering pillars hinges on awareness creation or education especially women, youngsters and youths on the knowledge and operational guidelines on values, ethics and inclusivity on FCS (Agbugba, 2023a). This is a paradigm shift that entails building of ideas and knowledge levels of youths in order to volunteer their willingness to change the negative or wrong

ideologies and mindset creativity to appropriate a correct or right perceptible. It also involves volunteering some advice to engaging in agriculture or agro-related

ventures entrepreneurially to employ technology solutions to drive a sustainable change.



Fig 2.0: Pillars of Brain Re-engineering. Source: Agbugba (2023)

As presented in Figure 2.0, the brain re-engineering (BRECR) pillars revolve around perception change, ideation and entrepreneurship, technology integration, sustainability and circular economy; and social equity in public policy. The institutions that can actualise this are institutions or platforms such as educational (formalised and non-formalised) institutions, and the social media.

willingness to drop them. This thought process must be frank, sincere and intentionally-approached in interchanging these wrong ideologies or perceptions about agriculture.

Ideation and Entrepreneurship: This can be addressed on a dual basis and entails formation of new ideas or concepts, as well as building or developing their entrepreneurship capacity as that would to a large extent promote ethics, values, and inclusivity. Having or showing initiative and resourcefulness is intended to be accompanied by expressing some good degree in being innovative which is all about being original, creative & introducing some new business ideas.



Perception Change: This involves identifying the wrong and unethical ideologies, values and mindset about food chain security and the



Fig 3.0: Process of Ideation

Technology Integration: This must be followed after Ideation and entrepreneurship and entails application of the knowledge of science to the practical aims of human life or, as it is sometimes phrased, to the change and manipulation of the human environment. In addition, training on different technological options, solutions and knowledge are not left out. Today's agriculture routinely utilises sophisticated technologies such as robots, temperature and moisture sensors, aerial images, as well as GPS technology. These advanced devices, precision agriculture and robotic systems allow businesses to be profitable, efficient, safer, and more environmentally friendly. We must reckon that trends in food tech are utilising ultramodern technologies such as artificial intelligence, internet of things, and blockchain to unlock transparency, dispense traceability and potentially structure systems to discharge inclusivity and transformation across the entire food supply and value chains. These technologies can further improve safety and quality of food, all things remaining equal.

Sustainability and Circular Economy: According to Agbugba (2023a), sustainability and circular economy resonates around promoting inclusivity, maintaining ethical behaviours, standards, intentionality, productivity, as well as consistence, coupled with the right value within a food chain. Every activity and practise between production, manufacturing, processing or value-addition, marketing or distribution from time to time and from season to season must factor in training and education; research and innovation; cross-sector collaboration; regenerative practices and nature-based solution; and also, transparency and traceability. Moreover, circular economy in the BRECR model identifies food-based initiatives to ensure a sustainable growth from farm to fork over time. With the circular economy, we can drive the optimization of

resources, reduce the consumption of raw materials, and recover waste by recycling or giving it a second life as a new product.

Social Equity in Public Policy: This conceptualises the description from an expression of impartiality, fairness, and justice for all people especially agripreneurs in social policy (Agbugba, 2023b). Social equity considers systemic inequalities to ensure everyone in a community has access to the same opportunities and outcomes (Agbugba, 2023a).

The key component of social equity in public policy revolves around social equity, impartiality, justice, inclusivity, public policy (both fiscal and monetary policies), community, government. This whole idea fosters equal privileges for key players, as well as practitioners in supply and value chains of food and agricultural systems such as equal rights to resources and government assistance such as subsidies, funding and agtech solutions. We must understand that social equity is about whether citizens of different social groups are treated equitably or fairly and whether they receive the same treatment (Agbugba, 2023c).

Truly, agriculture is often high tech and today's agriculture routinely uses sophisticated technologies such as robots, temperature and moisture sensors, aerial images, and GPS technology. Farmers and others use science and technology to collect data, analyse efficiency, monitor growth and quality, and more to save money and get better yields. In essence, advanced devices, precision agriculture and robotic systems allow agribusinesses to be more profitable, efficient, safer, and more environmentally friendly.

Why Youth Engagement in Food Chain Security: United Nations Perspective

By 2050, the demand for food will surge by 70%, which aligns with rapid population

growth. Research findings from a UN study indicates that about 9.9% of global population still goes hungry, so the thought of feeding almost 10 billion persons is still anticipated as daunting. With environmental changes hard to predict, we must turn to innovation in agriculture technology (HLPE, 2021). The role of youths and youngsters of Africa is really a concern as their perception towards farming and agribusiness is outdated and regarded as wrong (Agbugba 2020). Their importance in tackling this issue cannot be over emphasized. Hence, the concept of brain re-engineering and reimagination which forebears on changing the wrong perception problem youths have about agriculture thereby underscoring it as a prospective strategy for enhancing youth engagement in agriculture to build their entrepreneurship capacity. I reckon, from the findings of previous high level panel of experts (HLPE) studies about youths in driving transformation have shown that:

- ❖ Youths are on the front lines to build the food systems of the future, while also

bearing significant risks from climate change, social and economic inequities, and political marginalization.

- ❖ Food systems provide a wide spectrum of opportunities for the engagement & employment of young people across diverse global contexts, but these jobs do not always provide decent & meaningful work or adequate livelihoods.

In response, policies and initiatives to protect and strengthen youth engagement and employment in food systems need to be based on the pillars of rights, equity, agency and recognition. The redistribution of resources, knowledge, and opportunities for youth innovation and engagement in the development of context-specific employment and labour policies cannot only contribute to creating jobs for youth but can also directly support transitions to sustainable food systems. Figure 1 presents the 17 UN SDGs Agenda



Fig 4.0: The Seventeen (17) United Nations Sustainable Development Goals Agenda

From Figure 1, SDGs 2 aims at eradicating extreme hunger, attaining food chain security, as well as improved nutrition thereby promoting sustainable agricultural practices. In order to achieve this, it is pertinent to address the underlying structural bottlenecks touching on poverty, poor access to education, health-care, and employment,

climate change, water and resource scarcity, to mention a few.

Conceptualizing Food Chain Security (FCS)

FCS encompasses every aspect relating to food availability, as well as how individuals, people, communities or countries access food to food supply chain resilience, and also how much households spend on food. In order

words, FCS can be described as a nation's ability to sufficiently feed itself.

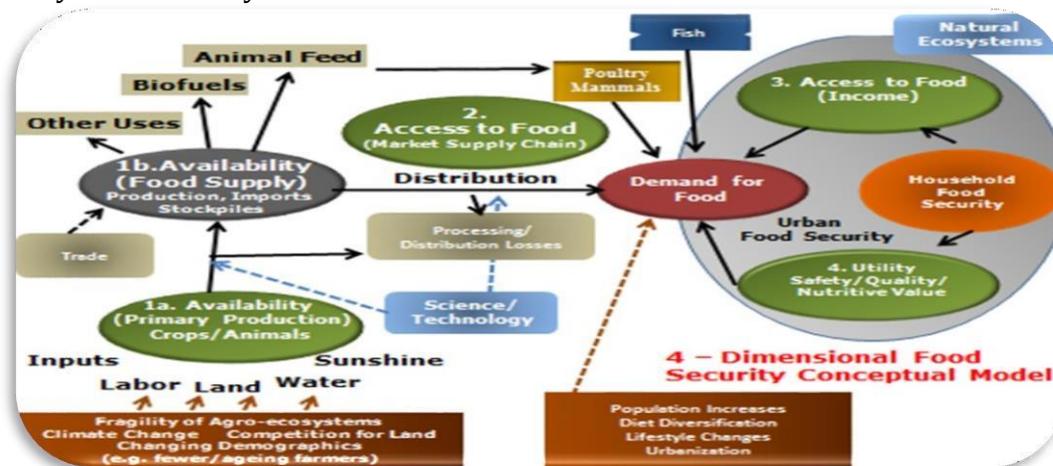


Figure 5.0: Understanding Food Security from the four (4) pillar dimension

Food Chain Security and Development

FCS is one of the proxies for measuring the progress of an economy (UN, 2020). This implies that economic development indices are incomplete without FCS. Africa's food

import bill hit US\$ 85 billion in 2021 and is expected to surpass US\$ 110 billion by 2025. Figure 6.0 presents a diagrammatic picture of attaining development through the crucible of food chain security.

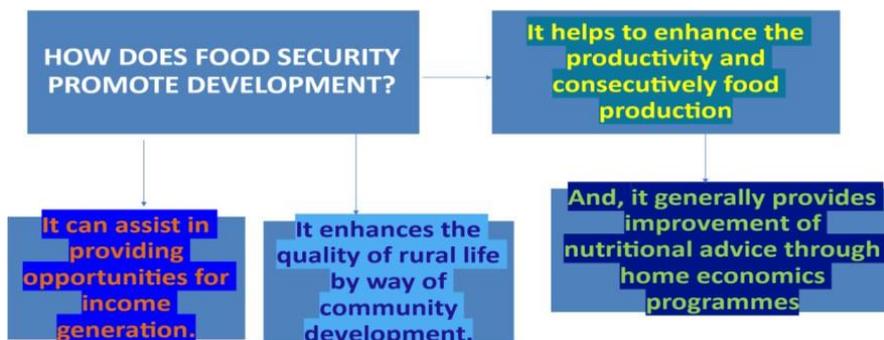


Figure 6.0: Food Chain Security: Towards promoting Development

As one of the indicators for measuring economic development, food security can be actualised simultaneously alongside the progress of an economy at a macro level. Globally, while many countries carry-out economic growth and development policies to unlock an economy through food security initiatives.

Youth Engagement in Food Chain Security

Research findings from a UN study indicates that about 9.9 of global population still goes hungry, so the thought of feeding almost 10 billion persons is still anticipated as daunting. With environmental changes hard to predict, we must turn to innovation in agriculture technology (Agbugba, 2023b). Youths need to take up business opportunities in agriculture

if African countries can ensure food security for the populace. Food Chain Security is potentially fortified to provide meaningful employment and help to ensure that the energies of young people are channeled appropriately.

African governments and development partners are urged to increase support for youth engagement in agriculture-related programmes as they could help in making the continent food secure. More local and more sustainable, the new face of African agriculture aims to ensure the continent's food security while guaranteeing the

competitiveness of exported products on the world market. By supporting local producers, agro-industrial players and investors have a vital, constructive and profitable role to play.

Food Systems Conceptualised

Food system is conceptualised to hinge on the compound nexus representing every activity encompassing food production, processing, distribution and consumption. They are composite grid that factors in all the inputs and outputs relating to food chain security (Agbugba, 2023).

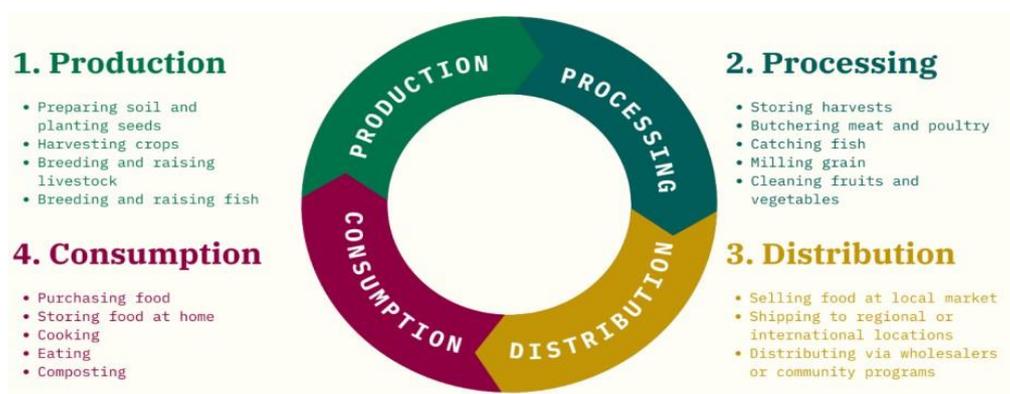


Fig 7.0: Diagrammatic Presentation of Food Systems

Industrial Revolution (IR) and its impact on Agriculture and Food Chain Security

FCS can interchangeably mean agriculture and its important role in ensuring food chain security cannot be over emphasised. Agriculture has never been left out in the various technological and scientific advances of man.

Interestingly, agriculture has never been left out in the various technological and scientific advances of man. How far the agriculture sector has come in development and production is a proof to the excellent progress and breakthrough recorded in our modern world realised in these evolving times of industrial revolution (IR). Industrial and agrarian revolutions always go hand-in-hand,

and that is the reason why economies in which agriculture is more or less static does not show industrial progress or development. History has always been in favour of earthmoving changes and one of such transformations in the globe came in the guise of IR. Truly, it left a lasting footprint in the socio-economic and developmental strides of the modern world.

IR can be described as the period of time during which work began to be done more by machines in factories than by hand. Over the past 2 centuries, IR transformed the world most profoundly in human history since the neolithic revolution. The neolithic revolution about 12, 000 years ago (i.e. the first agricultural revolution when people began to farm and used polished stone tools, which was

succeeded by the Bronze Age) is the period from a lifestyle of hunting and gathering to one of agriculture and settlement, thereby making an increasingly larger population possible.

Historical Facts & the Fourth Industrial Revolution (4IR)

History has always been in favour of earthmoving transformations and one of such transformations in the globe came in the guise

of industrial revolution (IR). Truly, it left a lasting footprint in the socio-economic and developmental strides of the modern world. IR can be described as the period of time during which work began to be done more by machines in factories than by hand. IR was made possible by the change in new agricultural revolution. Second revolution era was when people learned how to farm and domesticate animals.

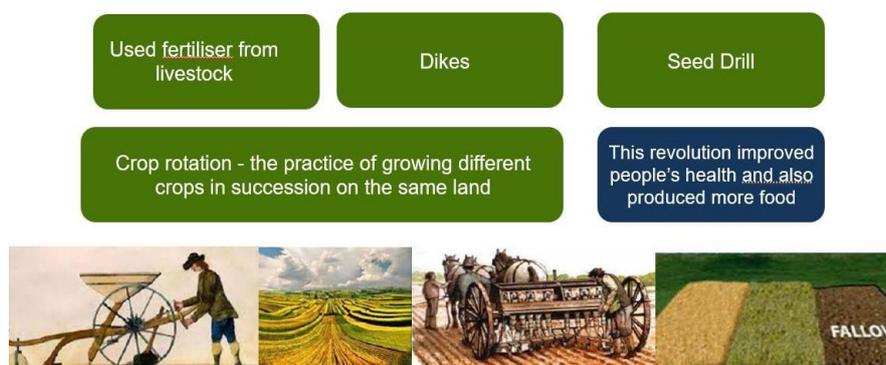


Fig 8.0: Food Chain Security and Industrial Revolution

Truly, the Dutch led the way in agricultural revolution and their approach centred on combining smaller fields into larger ones to make better use of the land and used fertilizer from livestock to renew the soil. From Fig 8.0, FCS is connected to agricultural revolution.

Industrial Revolutions and Agriculture: Focus on 4IR

Agricultural production has been attributed to physical factors such as soil quality, water availability, and climate. However, the current need is to drive economic transformation by embracing the new dimensions of technology. Brain re-engineering seizes this opportunity, to leverage on the advancements of the fourth industrial revolution (4IR) and technologies such as artificial intelligence (AI), blockchain, internet of things (IoTs), agricultural drones,

and other innovative solutions operating in the realm of cyberspace.

Throughout history, technological innovations have significantly influenced the agriculture sector. An array of cutting-edge solutions that revolutionize farming practices is typical about 4IR (Karunathilakeet al., 2023). Examples include bee vectoring technologies, precision agriculture, indoor vertical farming, livestock farming technologies, laser scarecrows, farm automation, real-time kinematic (RTK) technology, mini-chromosome technology, farm management software, and water management technologies. From the invention of the plough to GPS-driven precision farming equipment, humans have constantly developed new approaches to enhance farming efficiency and productivity.

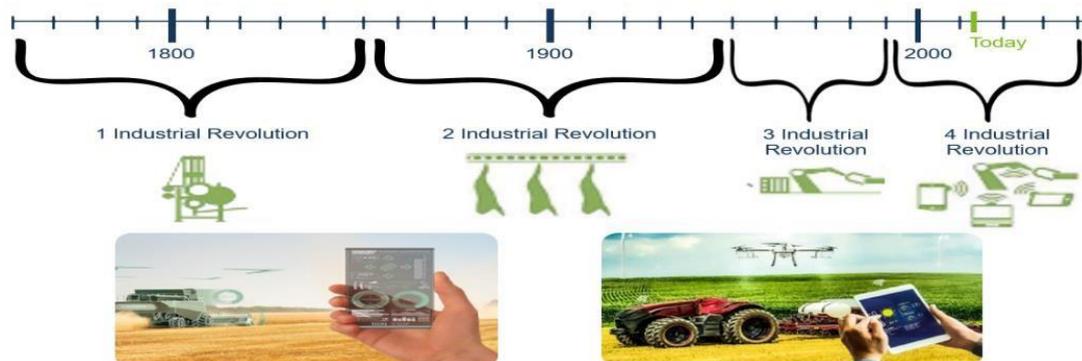


Fig 9.0: Industrial Revolutions Summarised

The fourth industrial revolution (4IR) is characterized by the convergence of the physical, digital, and biological worlds, resulting in a fusion of agricultural innovation systems (AIS) advancements (Ndungu & Signe, 2020). AIS encompasses the knowledge, technology, infrastructure, and cultural aspects that people have developed and are experimenting with sustainability in agriculture. Examples of AIS include

farmland surveillance drones, blockchain technology, artificial intelligence, Internet of Things (IoTs), automation, CRISPR and genetic editing (biotechnology and nanotechnology

Precision Agriculture (PA)

PA is an agricultural management approach that harnesses information technology to deliver precise and targeted care to crops and soil, optimizing their health and productivity.



Fig 10.0 Agriculture in Industry 4.0 Era

The key objectives of PA are to increase profitability, promote sustainability, and protect the environment. Through the integration of advanced technological solutions like chemicals and larger tractors, farmers can effectively manage larger land areas with reduced labour. Government policies often encourage farmers to expand

their operations, capitalizing on the benefits of economies of scale (Isukul et al., 2019).

Government's Role in Promoting Ethics, Values, Inclusivity and Sustainability in Food Systems (Policy Recommendations)

Agriculture in the EU is regulated under the Common Agricultural Policy (CAP). It is

believed that from 2020 to 2024 will result in EU investing over €15 billion on global food chain security. Interestingly, within the year 2021-2027, projections that the EU will support

food systems in about 60 member nations. The EU and member states provided that some guarantee of about €1 billion will redirect food chain security in the Sahel Region.



Fig 11.0: Farm-to-Fork Strategy

Since 1984 there have been several reforms to the CAP to make it more efficient, cheaper and sustainable. The CAP has gone from 73% of the EU budget in 1985 to 37% in 2017.

agreement. Secretary General of the United Nations called on each sector of an economy to remodel our world from 2020-2030 (United Nations, 2020). This attempt is structured to achieve this through government preparation, civic organisations as well as enterprises on their call to expedite sustainable options.

Decade of Action on Food Chain Security: UN SDGs Agenda

With just 6 years to go, an aspiring global endeavour is underway to fulfil the 2030



Fig 11.0: Translating Insecurity to a Security in the Food Sector

From Figure 11.0, a headway is currently playing out in many places but, overall, action to meet the goals is not yet advancing at the

momentum required. The following key players and institutions bridge the gap between insecurity and security of food:

emergency food assistance, soup kitchens, child nutrition, food production farms, farmers' markets, gardening, snap education, youth education and mentor/promoter.

It was recorded that 2020 ushered in a season of aspiring steps to dispatch the objectives by the year, 2030 through stimulation of speed in tackling the global bottlenecks stretching from poverty to inequity, climate change, and shutting the financial aperture.

Brain Re-Engineering Strategy as tool in Rebranding Agriculture for Youth Engagement: Strategy for Entrepreneurship Development and attainment of United Nations SDGs Agenda

The core focus of brain re engineering and reimagination is conceptualized and hinges on changing this perception problem of youths as it stands to provide a veritable strategy in transforming their lives and societies through their engagement in food security initiatives, agriculture or agribusiness sector.

Our population is growing, and increasing shortages of land and water pose a note worthy threat to the longevity of humans as we know it.

Gender Inclusivity and Food Security

Global food insecurity and inadequate nutrition are exacerbated by gender inequalities, which influence the access to food and other resources for men and women in urban and rural communities. SDG 5 is focused on pursuing the main goal of real and sustained gender equality in all aspects of women and girls' lives which includes:

- ❖ Ending gender disparities
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- ❖ Eliminating early and forced marriage
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Foresight Research & Gender Inclusivity as Driver of Food Systems Transformation

Foresight research has yet to explore gender equality as an outcome and a driver of food system transformation fully. Foresight analysis can assess which food system investments and interventions are most effective at reducing gender inequities and increasing women's empowerment.

Addressing structural inequalities, promoting inclusivity in decision-making, and challenging patriarchal norms can enhance gender equality, social inclusion, and women's empowerment in food system transformation. Neglecting gender barriers when designing and disseminating food system innovations may exacerbate gender inequalities and limit women's empowerment.

Gender equality, women's empowerment, and social inclusivity also drive food systems transformation, leading to improved welfare outcomes for all (Perkins, 2022). FR examines how closing gender gaps in livelihood opportunities, agricultural productivity, and resilience capacities can impact other food system outcomes, such as poverty reduction, food security, and nutrition.

While data on gender inequities in food systems and women's empowerment have increased over the last 10 years, more sex-disaggregated data and impact evaluation studies are needed for rigorous foresight research on gender equality in agrifood systems.

Fourth Industrial Revolution (4IR) and Precision Farming: Bridging the Gap

The fourth industrial revolution (4IR) is characterized by the blurring of boundaries between the physical, digital & biological worlds. It is a fusion of the advances in agricultural innovation systems (AIS) which explains about people, their knowledge, technology, infrastructure and cultures they have created or learned, who they work with,

what new ideas they are experimenting with. Examples of AIS are: agricultural drones, artificial intelligence, blockchain technology, Internet of things (IoT) and automation; Clustered Regularly Interspaced Short Palindromic Repeats (CRISPR) and genetic editing (Biotechnology & Nanotechnology).

Precision agriculture is an approach to farm management that uses IT to ensure that the crops and soil receive exactly what they need for optimum health and productivity. The goal of PA is to ensure profitability, sustainability & protection of the environment. Conclusively, new technology solutions, including chemicals and larger tractors, allowed farmers to work larger areas of land with less labour. Government policies encouraged farmers to scale up their operations. Farmers were also motivated by economies of scale-the economic advantage of producing larger numbers of products.

Identifying the latest teeming productive and prolific technology options in agriculture for youths are drones which are mainly employed in following ways: to monitor crops, spray fertilizers and pesticides. They are referred to as unmanned aerial vehicles.



Fig 12.0: Garden Design



Fig 13.0: Composting of Green Waste

This latest trend in agriculture and agricultural technology is revolutionizing the agriculture space by lessening the amount of labour required to propagate a crop.

Women Empowerment and Youth Engagement in Food Chain Security: What fascinates them?

Generally, the youths are fascinated by automation, and yearn to see a more-scientific and technologically-driven agriculture and that specifically factors in the use of robots, drones, and autonomous tractors to make farming more efficient.

Precision agriculture is not left out in the brain re-engineering concept and reimagination which involves applying irrigation, fertilizers and pesticides at variable rates, depending on crop needs, rather than uniformly applying them at set times, quantities and frequencies. Figures 12.0 to 26.0 presents diagrammatic presentations of sustainable agricultural practices which are invaluable strategies that promotes good ethical measures and inclusivity in both global south and global north economies, as it were.



Fig 14.0: Saving of Seeds



Fig 15.0: Celebration of Natives



Fig 16.0: Discouraging Herbicides Usage



Fig 17.0: Employing Beneficial Insects in getting rid of Pests



Fig 18.0: Mulching



Fig 19.0: Trench the Gas - Powered Lawn Mower



Fig 20.0: Plant Trees



Fig 21.0: Conserve Water Resources



Fig 22.0: Fertilize with Manure



Fig 23.0: Utilize Seaweeds



Fig 24.0: Fertilize with Manure



Fig 25.0: Employ Organic Fencing

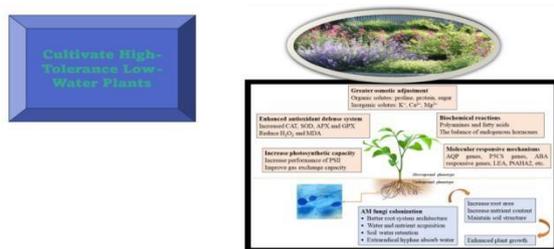


Fig 26.0: Cultivate High-Tolerance Low - Water Plants

Addressing the Perception Issues: Enabling Policy Options

Addressing the outdated perception and mindset issues towards food chain security is crucial for an active participation in the sector. This unique approach aims to leverage the power of the mind, talent, values, ethics and technology to drive sustainability and change the misconceptions surrounding inclusivity and inclusiveness in food chain security initiatives. The BRE strategy hinges on the 5 pillars which can provide a robust framework for promoting ethics, values and inclusivity in FCS which aligns with the United Nations' 17 Sustainable Development Goals.

FCS is not merely a traditional or peripheral subject, but a primary sector that forms the bedrock for all other sectors to thrive. Recognizing this, the BRECR offer an innovative pathway to navigate the teeming bottlenecks faced by the global north and south nations (Agbugba, 2023).



Fig 27.0: Fostering enabling Policy and Institutions

From Figure 28.0, fostering enabling policy and institutions is essential in promoting ethics, values and inclusivity in FCS initiatives from the following ways which are: reshaping supply chains, food retail, marketing and procurement; innovative finance to leverage on public and private sector investments; climate-resilient and low-emission practices and technologies; digitally-enabled climate-informed services; and empowering farmer

and consumer organisations, women and youths.

It is pertinent to underscore that food which is one of life's priority needs is of great essence and a major driver to the functioning of industries, a generator of foreign exchange earnings, among other roles interconnected to it. BRE is believed to benefit educational programmes in setting exemplary precedence. By promoting the right ethics, values and inclusivity, a new generation of entrepreneurs in FCS can drive sustainable practices, thereby contributing to the global economy.

Food Systems Transformation: What's in the Policy Toolbox Research?

Policies have been described as the 'control knobs' that can be adjusted to achieve system change. Understanding which policies do, or could, influence food systems is therefore an important part of catalysing transformation. But information about food systems policy levers tends to be fragmented across different policy sectors or disciplines, with no overarching picture of the available options and their relationships to one another. This research, published in October 2021, generated a map of policy levers organised by food supply chain segment and developed a taxonomy of broad types of policy lever. Because of the importance of considering the overall coherence of the policy approach to food systems, the project also explored the relationship between different policy levers. The findings begin to document in one place what we know about how these different food systems policy levers impact on one another, or 'interact', and where particular mixes, or 'policy packages' of levers are being used in combination.

Rebranding Agriculture in Africa: Can this Work in Other Continents?

Young professionals have fresh ideas, a strong grasp of emerging trends and are up for the

challenge of trying new approaches to work with food security and nutrition. To mobilize greater innovation in the agricultural sector, insight from today's youth is needed; young people must be instrumental in creating their own future. Realizing this significance of youth role, several organizations are prioritizing the youth empowerment and involvement in agriculture, might it be research, academic or extension.

Brain Re-Engineering Concept: Youth-Focused action-based Solution

Gain multidisciplinary skills by becoming involved in setting-up an enterprise (learning and doing). It will increase, as well as ensure the likelihoods of entrepreneurial success in other areas.

Find out how the youths can gain leverage over game-changing technological solutions (not available to past generations), as well as gain the entrepreneurial skills to drive a sustainable change in the industry.

As soon as they set-up an enterprise, find out the interested players who will adopt and improve sustainable practices that can mitigate the effect of climate change in ways that drives values proposition and profitable business ventures.

Youths will stand a better chance when they gain market advantage in both developed and developing societies and will become successful operators/managers in the many professional areas that the agribusiness sector encompasses.

Brain Re-Engineering Concept: Young Professionals for Agricultural Development

To mention, Young Professionals for Agricultural Development (YPARD) has been always fostering young professionals through mentoring and inclusion of youth's views in policy making.

Some initiatives carried forward by an Indian research agency, a country branch of

YPARD, such as online and on-site mentoring to connect academics with farmers, information stall at food fair to advocate on importance of nutrition.

Also it is pertinent to advocate on Student Research Symposium to encourage them on agriculture and nutrition, etc. are worth explaining the role of youth towards food security and nutrition.

Conclusion

In conclusion, youth engagement in food chain security initiatives is essential and critical for growth and to strengthen local food systems, feeding communities and providing gainful employment opportunities for the world's booming youth population. Entrepreneurship in FCS offers a transformative opportunity to generate income, create jobs, and establish multiple sources of livelihood. The role of youths in digital agriculture is streamlined in such a way that automated workflows have become invaluable for teams in the agriculture industry. FCS and entrepreneurship not only generates decent work opportunities but also strengthens communities and drives inclusive economic growth. It is of great essence to bridge the gap to provide avenues for youth to embark on food chain security initiatives. One of the striking merits in unlocking BRECR at a young age is the opportunity to acquire valuable skills such as teamwork, networking, problem-solving, critical thinking, innovation, and self-discipline, cultivated through entrepreneurship, have far-reaching benefits. These values, skills, ethics contribute to improved performance in academics and become invaluable assets and make for inclusiveness, as well as inclusivity throughout life.

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