Accelerating Ghana's Food System Transformation

Diagnostic and Landscaping Analysis by the Food System Transformative Integrated Policy (FS-TIP) Initiative

AUGUST 2021

Food System Transformative Integrated Policy

Goal: Sustainable, healthy diets for all

A future state in which every human being has consistent access to a nutritious, high-quality diet that promotes human and planetary health, supports child development, prevents disease, and conserves biosphere resources.

- FS-TIP supports governments in Africa that demonstrate robust integrative leadership and capacity in the **development and implementation of an ambitious policy agenda** aimed at achieving sustainable, healthy diets for all their citizens
- Support by FS-TIP includes **building a fact base foundation** that is user-centric in its design, developing a tailored food system transformation strategy, and providing implementation support
- FS-TIP works with stakeholders to develop policies that are **transformative**, resulting in a step change in food systems performance, and **integrated**, factoring in the dependencies and trade-offs across food systems
- FS-TIP has a **long-term, inter-generational perspective**, building on momentum of the Food Systems Summit, but has its focus beyond, building a durable platform for transformation, policy development, capacity building, innovation and investment in support of the SDGs

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Ghana | Diagnostic & Landscaping Analysis

Executive Summary| Ghana's food system (I/III)

Based on Diagnostic and Landscaping Analysis it becomes clear that Ghana has made great stride in improving in its food system in the past decades

- Since the 2019 Biennial Review, Ghana is on track to achieve the Malabo commitments by 2025
- Previous policies have been successful in combatting some of the previous challenges the country faced in the food system, such as (extreme) food insecurity and high levels of undernutrition; now challenges has however also developed which require coordinated and integrated policies
- A wide range of stakeholders is already involved in discussions on Ghana's food system and the momentum around the UN Food Systems Summit (UN FSS) can be seen as a great starting point or catalysator for a more integrated dialogue

Ghana's Food System can be described as largely informal & expanding and plays an important role in the country's economy, yet faces several challenges

- **There are large nutritional discrepancies between the different regions of the country**
  - **Tremendous progress has been made by decreasing undernourishment to 6.5%** (below the world average of 8.9%); there remains a need to continue to work and address effects such a stunting (19% of children under 5) and nutrient deficiencies especially in the Northern Region
  - **Overweight and obesity** has increased to 29.3% due to growing urbanization and availability of unhealthy foods
- **Ghana's food environment and consumer behaviors are unique and changing rapidly**
  - **High urbanization** with 57% of population living in urban areas, leading to an increasing purchasing power and access to unhealthy foods and drinks
  - **High fish consumption** especially in the south, accounting for more than 50% of the population's animal protein intake
  - **High consumption of energy-dense but nutrient-poor diets**
- **Agriculture accounts for ~19% GDP, and provides employment for 44% of the population, with food supply chains requiring further improvement**
  - **Insufficient production of nutrient-rich crops** due to a focus on staple crops (e.g., cassava, yams, maize), resulting in low production, affordability and availability of nutrient-rich foods (e.g., leafy greens, fruits) and dependency on imports of foods such as rice and wheat
  - **Processing of crops has been increasing**, especially for cocoa, palm oil, cashew, rubber and cassava but further investment is required
  - **Infrastructure for transportation, storage, and distribution could be improved** and is increasingly important to supply urban centers; Currently there is >20% food loss and there has been limited focus on infrastructure development within the farm and beyond the farmgate
- **External drivers** play a role in slowing down the development of the food system
  - **Ghana is highly vulnerable to the effects of climate change** (increased temperature, floods, droughts), especially in the northern region which is highly dependent on agriculture as a primary source of livelihood
  - Although **GHG emissions from agriculture are below the world average** (9.73 MtCO2e vs. 30.10), deforestation and illegal mining activities should be monitored to further stagnate climate change and biodiversity loss in the futur

Executive Summary| Ghana's food system (II/III)

Various sector plans such as those for Agriculture and Health are addressing challenges in food systems with some strengths and gaps

- **Strong coverage of the food supply chain, including storage and distribution and the utilization of science technology and innovation**, however gaps exist on **addressing influencing consumer behavior on consumption patterns driven by unhealthy food consumption in urban areas and socio-cultural context in rural areas**
- Limited focus on the use of **sustainable agriculture practices and ensuring affordability of nutritious foods**

Within the current policy landscape, we see opportunities for more alignment on trade-offs and potential synergies of Ghana's key challenges

- **Increasing production vs. sustainable management of resources:** availing generalized input subsidies to increase production with limited training on application may result in improper application and wasted resources
- **Mining and oil activity expansion vs. safety measures:** limited measures and enforcement to reduce illegal mining activity resulting in leaching of minerals into soil or water bodies reducing agricultural land that is safe for cultivation and contaminating waters used for fishing
- **Linking activities and programs at different levels of the value chain:** Although there are multiple programs aimed at improving productivity, processing and access to market, there is opportunity to take a systems approach with these solutions to ensure end-to-end integration

Policy making processes in Ghana are guided by the National Development Planning Commission (NDPC) and aim to include a range of voices

- **NDPC is the supra-ministerial body responsible for planning and coordination of policy development:** Since 2016, its mandate is to ensure policy making guidelines are followed across all government entities to achieve national development goals
- **National priorities show substantial change over time:** Newly elected governments introduce new policies and strategies that may reflect different priorities than those of previous governments and are informed by the political manifesto on which they were elected
- **Inclusive stakeholder participation is ensured along the process, but final decision making-power on policies lies with parliament**

Executive Summary| Ghana's food system (III/III)

There is opportunity to explore bottom-up scaling of successful projects and processes to ensure nation-wide impact

- **Bottom-up program that have proven successful could be scaled more effectively** in order to scale impact, e.g., WFP has been running a program to provide better market access to farmers (e.g., food processors) and has introduced by-laws on specific challenges such as weights and measures; they aim to scale to other districts once success has been proven, though this is not always easy
- **Issues repeatedly brought up by food systems actors** on the ground should be addressed faster to avoid stakeholder consultation processes becoming ineffective and frustration due to a lack of progress
- **Coordination and communication between stakeholders should be done more effectively :** stronger inter-ministerial collaboration **to take advantage of synergies** as well as better communication (using local dialects) is needed to ensure policy benefits are understood by all

The diagnosis and landscaping analysis and national FS dialogues highlighted the need to design and implement transformative and integrated policies and programs. In order to move from diagnosis to action a set of guiding materials which cover the following steps were prepared:

- Prioritize set of food system challenges
- Set ambition and formulate policy to address priority challenges
- Design governance, coordination and delivery models for locally-led food system transformation

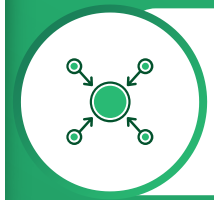
(for see detailed section click here)

The diagnostic analysis is guided by 7 principles…

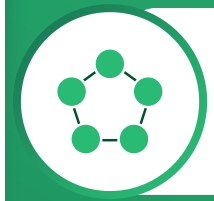
1. Designed with the policy-maker in mind: Presenting an interface that is concise, compelling and intuitive
2. Outcome-oriented: Linking indicators that reflect food system outcomes to the drivers that policy-makers can influence to realize transformation
3. Anchored in existing structures: Building on existing resources and structures with strong buy-in, such as the CAADP biennial review report, and adding new elements only where required
4. Aligned to existing food systems frameworks: Connecting to UN FSS Action Tracks for its outcome-orientation, and covering all components of the food system (as per HLPE framework)
5. Enabling more detailed views in future: Structuring analyses to be able to show disaggregated views of indicators in future phases
6. Tailored to Africa and country context: Adapting indicators to the countries' context, leveraging local data sources and reflecting local ambitions (co-developing where non-existent)
7. Built upon a strong data-foundation: Leveraging the best data (quantitative) and insights (qualitative) available and identifying gaps where they exist

… and has 4 main objectives

Share a comprehensive, concise, and compelling diagnosis of the current food system in Ghana



Contribute and inform the FSS in-country dialogues



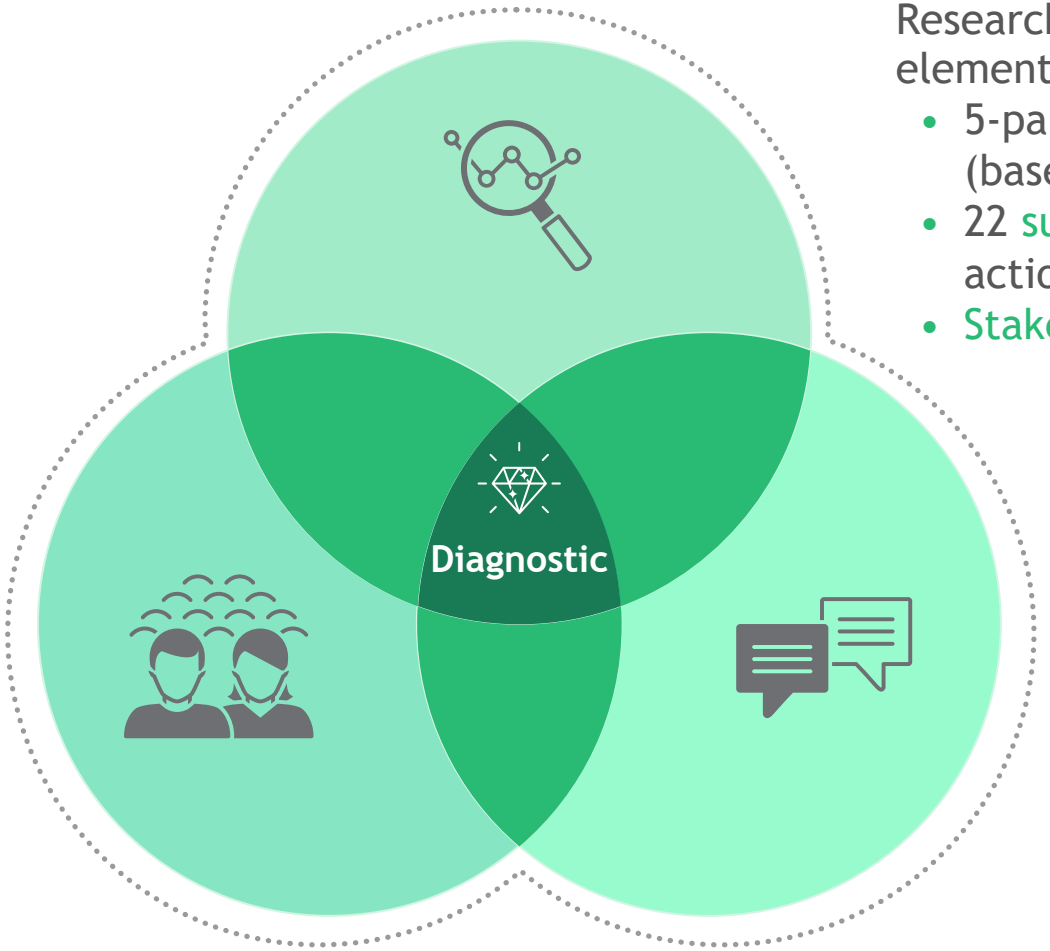
Create an ongoing diagnostic and monitoring approach to inform policy making and food systems transformation

Get feedback from food system stakeholders to improve this diagnostic

This diagnostic analysis was informed by extensive research and feedback from key stakeholders in Ghana's food system

Research on Ghana's key food system elements:

- 5-part framework on food systems (based on the HLPE framework)
- 22 supra-indicators across the 5 UN FSS action tracks and 50+ key indicators
- Stakeholder and Policy landscaping



Feedback from various local experts and stakeholders across Ghana's food system e.g. Ministry of Health, NDPC, WFP, EPA, Ministry of Food and Agriculture

Emerging insights from the national, regional and district Food Systems Summit Dialogues to articulate food systems transformation gaps and potential ways to address them

1. See appendix for institutions engaged and please reach out to authors of this document for a detailed list of experts and stakeholders

Identification of main food systems challenges and potential game changing solutions| An iterative process with stakeholders and experts

Country's performance on supra- and key indicators and review of existing policies

Insights from UN FSS Dialogues and potential game changing solutions identified

Input from in-country experts on challenges and potential game changing solutions

Interviews with stakeholders on challenges and potential game changing solutions

Initial selection of main food systems challenges and potential game changing solutions

Validation with in-country stakeholders *(ongoing)*

Validated selection of main food systems challenges and potential game changing solutions

current status

Detailed analyses and modelling of potential game changing solutions & alignment with stakeholders *(Phase 2)*

Prioritized food systems challenges as the basis for policy and program design post FS Summit

Notes: List of potential games changers non-exhaustive

Synthesis of Ghana's food system challenges & potential game changing solutions

	Diet quality & nutrition security	Consumption of unhealthy foods	Environmental resilience	Infrastructure capacity	Discrepancies between regions
Priority challenges	Low production levels, affordability and demand for nutrient-dense foods among population; limited diversity of crops makes country dependent on imports of certain expensive crops	Urbanization at ~57% and rising incomes, as well as poor food environments are leading to increased consumption of unhealthy foods, resulting in higher obesity and NCD prevalence	High vulnerability to climate change in North & Southern coastal area; heavy deforestation and illegal mining contributing to climate change and biodiversity loss. Select crops highly vulnerable to climate change	Low use of technology, poor infrastructure, lack of processing capacity, is leading to a 20% food loss, increasing the costs for farmers and prices for consumers and limiting the ability to supply the entire country or trade	Northern regions suffering from lower productivity and a difficult climate, resulting in low availability & affordability of foods, causing higher levels of malnutrition and income inequalities compared to other regions
Potential game changing interventions	• Strengthen end-to-end planning for nutrition-sensitive production (incl. seeds, input subsidies, etc.) • Expand the district market network • Strengthen strategies to address consumer behaviors (incl. food composition tables) • Diversify school meals	• Improve the food environment through consumer-focused campaigns, marketing restrictions and updating labeling rules • Incentivize production of nutritious healthy foods, e.g., via subsidized inputs • Ensure 'true/fair' pricing of foods (incl. taxation)	• Strengthen the community-based monitoring projects against illegal logging • Promote solar-powered irrigation systems • Launch agroforestry programs • Promote indigenous and nutritious, yet neglected foods	• Do end-to-end planning of infrastructure projects (incl. prioritization, setting up PPPs and conducting up-front modelling) • Incentivize credit extension for infrastructure projects	• Strengthen input provision to farmers (incl. irrigation, insurance, extension services) • Invest in agro-processing facilities and stronger supply chains to improve market access • Scale up Livelihood Empowerment Against Poverty program

Diet quality & nutrition security | Key challenges and how they can be addressed

Why should this be a priority for Ghana?

Description of the priority area

- Ghana has made important strides to decrease **food insecurity** to 21%
- Yet only ~48% of adults have a **diet that adheres to the food-base dietary guidelines** (1) and net food supply is not enough to meet needs of a healthy diet, resulting in **macro and micronutrient deficits e.g., protein, iron, zinc, B12** (2)
- A healthy diet is unaffordable for ~65% of people (6)
- Focus has been on **raising productivity of staple crops**, additional steps are needed to strengthen **markets and growing demand** for more nutrient-rich foods

Benefits of addressing the challenge

By ensuring access to adequate, diverse diets, Ghana can **improve quality of life,** increase overall **health, wellbeing and productivity** of its population, and **reduce the dependency on imports** of certain crops

What challenges need to be overcome to address this?

Trade-offs to consider

- While increased local consumption of more nutritious foods would be good for health and well-being of citizens, it would leave less room for export & reduce income from trade
- Increased ASF[4] consumption would increase diet diversity but also increase emissions and negatively affect the environment

Policy opportunities

- Current policies encourage production of bio-fortified crops but no interventions to improve affordability, availability and demand for more nutritious foods

Implementation challenges

- Policies for supply and demand creation for healthy food not executed in coordination
- Growing population with changing diets and changing food preferences
- Higher prices of healthy diets
- Limited research on how to effectively change consumer behavior

How and by whom can this be done?

MOFA to strengthen their sector plan, incorporate end-to-end planning for nutrition-sensitive production:

- Selecting high-nutrient seed varieties
- Strengthening input subsidy for vegetables and fruits
- Encouraging production of nutrient rich indigenous foods and small livestock rearing

MOFA & MOF to investigate district markets' network expansion, to increase availability & affordability of nutrient rich-foods and market access through value-added agro-business

MOH / FDA to consider strengthening strategies for better consumption:

- Establishing food composition tables & FBDG[2]
- Creating sensitization campaigns on nutrition, indigenous foods using understandable dialect

MOGCSP to potentially diversify meals for GSFP[3]

1. Findings from national dialogues; 2. FBDG – Food-based dietary guidelines 3. GSFP - Ghana School Feeding Program; ASF – Animal sources food # Supra-indicator addressed

Consumption of unhealthy foods | Key challenges and how they can be addressed

Why should this be a priority for Ghana?

Description of the priority area

- Ghana made progress in restricting marketing of breastmilk substitutes and is developing FBDG[1] but the current food environment, **high urbanization at 57%** with increased incomes, contribute to the consumption of unhealthy foods
- **Poor food environment policies** (9), **high costs of a healthy diet** (6) and limited import control[1] contribute to a high consumption of non-nutritious foods
- Both **adult and child obesity are rising**, with an overall adult overweight & obesity rate of ~29% and an even **higher prevalence in urban areas** (4)
- This results in **significant NCD prevalence** with 94.400 NCD deaths in 2016 and risk of premature death between 30-70 years at 21%

Benefits of addressing the challenge

By developing stronger food environment policies, Ghana can **stabilize or reduce its rates of overweight & obesity** and achieve the ambition of 0% increase in the rate, which would result in stabilizing or decreasing the **incidence of NCDs** and a **healthier and more nourished population**

What challenges need to be overcome to address this?

Trade-offs to consider

- While increasing the price and reducing the availability of unhealthy foods would reduce negative health effects, the increase in prices and demand for more nutritious foods might make diets more expensive at an individual/household level

Policy opportunities

- Existing labeling guidelines do not require nutrition information
- Marketing restrictions are limited
- Current policies focus on mitigating NCDs instead of preventing them
- Strengthening import restrictions on unhealthy foods

Implementation challenges

- Limited knowledge of the importance of nutritious diets and the risks of processed & unhealthy foods
- Low nutrition literacy and ability to read nutrition labels
- Low affordability and availability of healthy foods

How and by whom can this be done?

MOH to potentially improve food environment

- Strengthening Health Sector Plan
- Launching campaigns to promote the consumption of (indigenous) healthy foods and physical activity, including through (social media) campaigns for the youth
- Making the benefits of a healthy diets more visible

MOFA & MOH to consider

- Exploring taxation/import tax (ban) of unhealthy foods
- Defining and implementing clear marketing restrictions of unhealthy foods and drinks
- Updating Ghana's General Labelling Rules with mandatory nutrition information and FBDG[1]

MOFA & MOF to explore

- Subsidizing inputs for nutrient rich foods
- Ensuring true pricing of food

1. Findings from national dialogues; 2.FBDG - Food Based Dietary Guidelines

(#) Supra-indicator addressed

Environmental resilience | Key challenges and how they can be addressed

Why should this be a priority for Ghana?

Description of the priority area

- Ghana has slightly **lower GHG emissions from food & consumption** than the African and world averages (7) however, emissions from agriculture are rising annually (10)
- Ghana is **vulnerable to global climate change** and is **not ready to combat climate change effects** (20)
- **Heavy deforestation** and **illegal mining** have been further contributing to climate change & **biodiversity and habitat loss** (13), with deforestation of primary forests increasing 60% between 2017 & 2018 (11)
- Key steps include addressing illegal activities

Benefits of addressing the challenge

By addressing the deforestation and illegal mining issues, Ghana can **stagnate the impacts of climate change**. This can further contribute to the **protection of biodiversity** both in forests & coastal areas and to the **food security** of populations living in areas with unpredictable climate while also **reducing production uncertainty**

What challenges need to be overcome to address this?

Trade-offs to consider

- Environmentally friendly agriculture techniques might be less productive, result in yields and less attractive produce, which in turn might be less profitable
- Preventing deforestation increases environmental resilience but limits growth of small landholdings and food supply

Policy opportunities

- Regulations in place against illegal mining and deforestation, but limited enforcement on the ground
- Limited guidelines on the application of fertilizers

Implementation challenges

- Risk of officials' misconduct makes it difficult to control deforestation and illegal mining
- Organic certifications not widely used
- Dense and rapidly growing population

How and by whom can this be done?

MLNR & MESTI to consider

- Empowering communities to adopt sustainable and legal mining activities
- Strengthening community-based monitoring & engaging the population to fight illegal logging
- Promoting solar-powered irrigation & processing equipment
- Launching agroforestry programs

MNLR , MESTI & MOFA to explore

- Scaling sensitization of sustainable resource management practices
- Developing understanding of soil, seasonal and climatic conditions through local training and utilizing technology (early warning system)
- Promoting production and sale of nutrient rich indigenous foods
- Implementing a more circular food system e.g., organic compose to reduce food loss

(#) Supra-indicator addressed

Infrastructure capacity | Key challenges and how they can be addressed

Why should this be a priority for Ghana?

Description of the priority area

- While Ghana has been improving overall production levels, supply chains suffer from **lack of adequate infrastructure** and **long transit times**
- **Discrepancies in prices** due to low access to infrastructure and markets by smallholder farmers, with a farmgate and wholesale price gap of 169% (15)
- **Food loss** ~20% with horticultural crops with losses ~20-35% (12) resulting in deficits in nutrient supply (2)
- These losses contribute to the agriculture environmental impact, which resulted in **agriculture emissions growing 32%** from 1990-2011 (10)
- Ghana needs to improve infrastructure in order to improve productivity and decrease losses

Benefits of addressing the challenge

By addressing the infrastructure capacity issue and improving the supply chains, Ghana can achieve the ambition of **reducing both food loss** and **gap between farmgate price & wholesale price** by 50% (from 2015) in 2025. This will enable a **lower environmental impact** and **production costs**

What challenges need to be overcome to address this?

Trade-offs to consider

- Lower food loss might in the short run result in surpluses which might turn into food waste and lower prices for farmers
- Higher public investment in infrastructure results in less investments in other critical issues

Policy opportunities

- Current policies address the need to increase financing & investment, but more focus is needed to assess how innovative risk assessments can help to resolve current shortages
- Limited rural electrification investment to enable cold storage

Implementation challenges

- High costs and long timelines for infrastructure projects
- Low adherence to technology and new methods by smallholder farmers

How and by whom can this be done?

MOTI, MOF & MOFA to plan end-to-end & stimulate demand and supply for infrastructure projects by:

- Analyzing costs, timelines, impacts and tradeoffs
- Selecting priority post harvest management projects
- Facilitating new infrastructure PPPs, private sector investment and ease of doing business
- Re-allocating resources to invest in select and prioritized projects
- Linking farmers to agro-processors

MOF to consider credit extension to build infrastructure

MOFA to explore ways to better communicate best practices in the supply chain and create awareness on existing programs that decrease costs

MOTI to leverage existing skills and infrastructure to develop agro-business

(#) Supra-indicator addressed

Discrepancies between regions | Key challenges and how they can be addressed

Why should this be a priority for Ghana?

Description of the priority area

- High discrepancies between northern rural areas and southern urban areas, with the north experiencing **large inequalities in livelihoods**
- **Higher food insecurity & stunting rates** in the north, with average stunning rates >20% (3)
- **Lower diet quality and supply of macro and micronutrients** in northern region, with lower consumption of fruits & vegetables (1, 2)
- **Higher costs of a healthy diet** in the north due to unpredictable rainfall patters (6) and **low purchasing power** due to income inequalities (14)
- Ghana needs to increase the focus in the northern & rural regions to improve livelihoods and inequalities

Benefits of addressing the challenge

By further developing food systems in the northern regions, Ghana can achieve the ambition of less than 5% undernourishment rate by 2025. The food systems development results in **more equitable livelihoods** across the country, **reduced income inequalities** and **healthier and nourished population**

What challenges need to be overcome to address this?

Trade-offs to consider

- Higher focus on the north might result in declining results in other regions
- Heavier production in the north to increase food availability might lead to higher impacts of climate change and increasing deforestation
- Increasing agro-processing in rural areas provides jobs but raises need for waste management infrastructure

Policy opportunities

- Social safety net in the lowest income bracket insufficiently addressed apart from the LEAP[1] and GSFP[2]

Implementation challenges

- Low knowledge about technology and more productive agriculture methods
- Low knowledge about irrigation methods & the effects of climate change
- Low availability of nutrient rich foods like fruits and vegetables in the north

How and by whom can this be done?

MOFA to consider

- Encouraging the use of irrigated agriculture & water storage
- Launching national agriculture insurance to protect against climate shocks
- Encouraging producers to produce more nutritious food
- Disseminating knowledge on nutrition
- Making agriculture attractive to youth and women by improving access to land, technology, finance and training

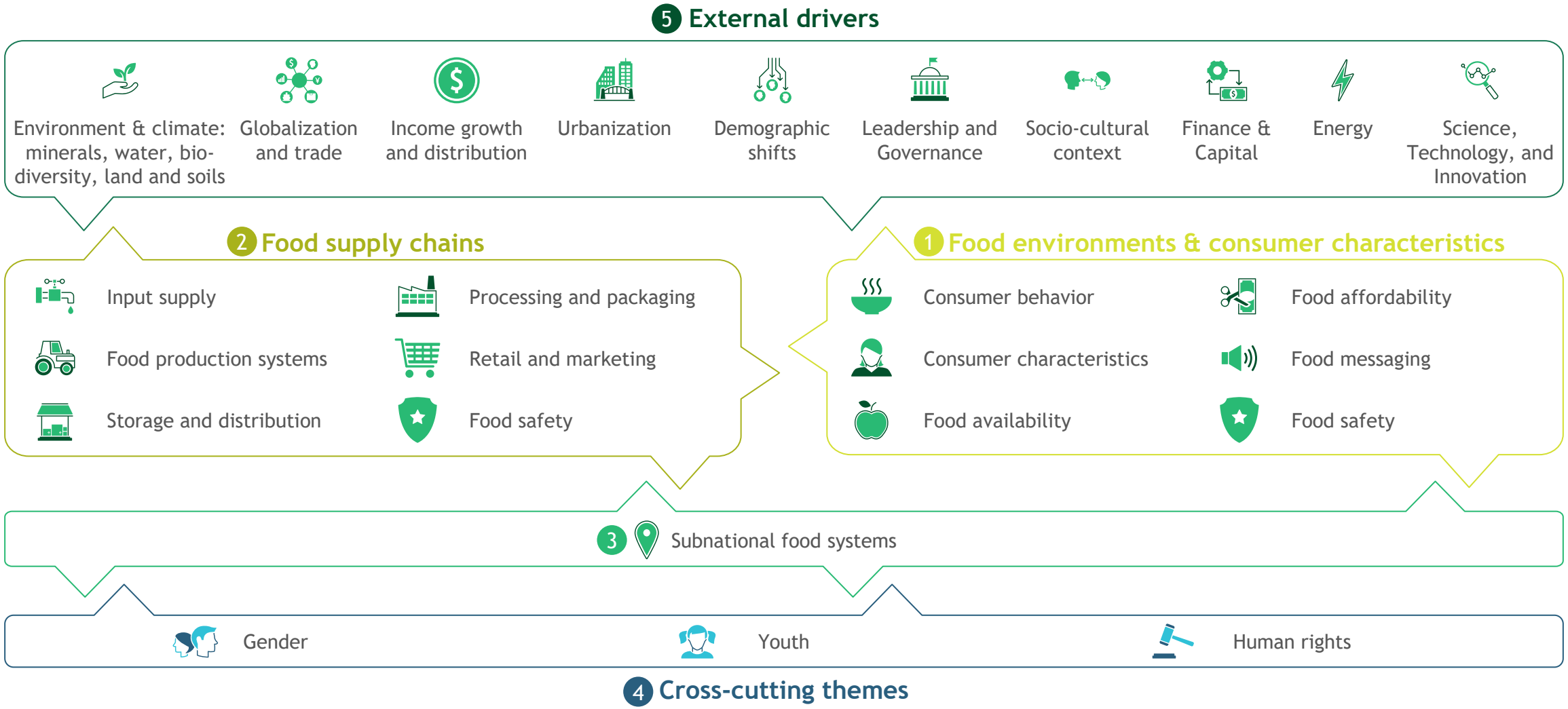
MOTI & MOT to look into improve agro-processing, supply chains & access to markets in the North while reducing trade barriers e.g. by providing incentives to processors to locate there

MOGCSP to explore scaling up LEAP[1] and GSFP[2] in northern regions to make them more nutrition sensitive and accelerate the creation of jobs in other sectors

1. LEAP – Livelihood Empowerment Against Poverty 2. GSFP - Ghana School Feeding Program

(#) Supra-indicator addressed

Diagnostic analysis| A 5-part framework to describe the food system



Source: Adapted from the Food Systems Dashboard, the Food systems Decision-Support Toolbox; HLPE; and FS-TIP research

High-level view| Food environments and consumer characteristics (I/III)

Consumer behavior	• The Ghanaian diet largely relies on starchy roots (cassava, yams), fruit (mostly plantain) and cereals (maize, rice). Starchy roots and cereals still supply almost 75% of the dietary energy and diversity of the diet remains low[1] • High fish intake, with accounting for more than 50% of the population's animal protein intake as compared to the world average of 17% • Rice and bread (wheat) are associated with an urban diet, with per capita consumption of rice in urban areas accounting for about 76% of total rice consumption • COVID-19 pandemic led to an increase in vegetable consumption and a decrease in fruit consumption as more than 90% of fruit for consumption is imported and the prices are higher than those practiced for vegetables[2] • Cocoa products like chocolate, pebbles and cocoa powder are consumed by many Ghanaians • Unhealthy eating practices are prevalent in urban areas. Energy-dense and nutrient-poor foods, fried foods, sweet foods, sugar sweetened beverages reported widespread consumption of unhealthy food/beverages. The lowest socio-economic groups in urban areas are more likely to consume unhealthy foods/beverages[3]
Consumer characteristics	• Consumption of fast food is seen in a positive light as it displays higher social status • Significant NCD prevalence with 94.400 NCD deaths in 2016 and risk of premature death between 30-70 years at 21% vs. 22% for Africa[4] • While consumers' spending power has increased drastically in the last 20 years, ~23% of the population was still living below the national poverty line by 2016, limiting the ability to purchase foods. Poverty is predominantly a rural problem, with ~40% of the rural population living below the national poverty line (GH¢1,314) vs. ~8% of the urban population[5] • Low nutrition literacy with few consumers reading nutrition labels when existent (especially on imported products). Among consumers who read labels, many are influenced by product price, time/convenience, and advertisements, rather than label/nutritional information, or ingredients[6] • Price is paramount when selecting food products, irrespective of quality and nutritional value[6]

1. FAO 2. Kasi Insight 3. Holdsworth, M., Pradeilles, R., Tandoh, A., Green, M., Wanjohi, M., Zotor, F., ... & Laar, A. (2020). Unhealthy eating practices of city-dwelling Africans in deprived neighbourhoods: Evidence for policy action from Ghana and Kenya. Global food security 4. World Health Organization 5. Ghana Statistical Service (GSS) (2018) 6. Booth et al 2021; Azila-Gbettor et al 2013; Darkwa 2014; Hayford et al 2015

High-level view| Food environments and consumer characteristics (II/III)

Food availability	• ~21% of households are food insecure. Poverty and food insecurity are largely rural problems[1] • The demand for food is increasing rapidly due to rapid population growth (2.3% per year from 2010-2019)[2]. Despite the population growth, the country is food self-sufficient in all the major staple crops except for rice, millet, and fruits and vegetables[3] • From 2014 to 2017, staple crops such as roots and tubers (cassava, yam, and cocoyam) recorded an average annual growth of ~5% in production levels resulting in surpluses[4] • In northern Ghana, the market week usually lasts 3-6 days. In urban centres markets typically operate every day • Growth in the presence of convenience stores, with a 36% share of total retail sales, and supermarkets with a 4% of total retail sales[5]
Food affordability	• A nutrient adequate diet costs ~126% of household food expenditure and is unaffordable for ~27% of the population[6] • A healthy diet costs 283% of household food expenditure, which is unaffordable for ~65% of the population[6] • Fluctuations in availability of food throughout the country affect affordability[3] • Families are also vulnerable to global price spikes for imported foods such as rice[3]

1. WFP 2. World Bank 3. Kasi Insight 4. Ghana Investing for Food and Jobs (IFJ) 2018 5. Ghana Retail Industry Market - 2019-2026 6. FAO 7. Laar, A. Barnes, A. Tandoh, A. Bash, K. Aryeetey, R. Mensah, K. Zotor, F. Vandevijvere, S. Holdsworth M. (2018). The Ghana Healthy Food Environment Policy Index (Food-EPI) Evidence Paper 8. FDA Guidelines 9. National NCDs Policy (2012)

High-level view| Food environments and consumer characteristics (III/III)

Food messaging	• Food-based dietary guidelines for Ghana are under development[6] by a multisectoral committee led by the Ministry of Food and Agriculture and the Ministry of Health, and are expected to be implemented in 2022 • Current labelling policy requires basic information (name of product and manufacturer, ingredient list, etc.) and detailed nutrition information is voluntary (except in instances where a nutrition or health claim is made)[7] • There are no policies being implemented to support the availability of healthy foods and to limit the availability of unhealthy foods in communities and in-stores • Efforts to restrict marketing of breastmilk substitutes have been in place since 2000, with the passage of the Ghana Breastfeeding Promotion Regulations • Guidelines are in place for advertisement of foods that were either locally manufactured/prepared or imported with specific requirements for Alcoholic Beverages and Energy Drinks[5] • The FDA requires that a product is registered before it can be advertised. During the registration they asses the safety, quality, labelling, and any claims made on the product. The advertisement script must then be approved by the FDA. The authority vets the scripts based on FDA's food advertisement guidelines[8] • The Ghana National NCDs Policy seeks to restrict commercial promotion/marketing of unhealthy foods in children settings.eg. preschools, schools[9]

1. WFP 2. World Bank 3. Kasi Insight 4. Ghana Investing for Food and Jobs (IFJ) 2018 5. Ghana Retail Industry Market - 2019-2026 6. FAO 7. Laar, A. Barnes, A. Tandoh, A. Bash, K. Aryeetey, R. Mensah, K. Zotor, F. Vandevijvere, S. Holdsworth M. (2018). The Ghana Healthy Food Environment Policy Index (Food-EPI) Evidence Paper 8. FDA Guidelines 9. National NCDs Policy (2012)

High-level view| Food supply chains (I/II)

Input supply	• In 2007, the government introduced subsidy and support programs on fertilizers & improved seeds, mechanization, and block farms targeting major crops including maize, rice, soybean, sorghum, tomato, and onions[1]
Food production systems	• The 5 main crops grown are Cassava (representing 45% of 2019's production and 15% of land planted in 2018), Yams (17%, 7%), Plantains (10%, 6%), Maize (6%, 15%) and Palm fruit (5%, 5%)[2] • Maize, rice and soybeans' production is being promoted by the government and several development partners • Some farmers produce crops mainly for consumption and sale in local markets, namely millet, sorghum, beans, groundnuts, cassava, yam, cocoyam, sweet potatoes, plantain, bananas and others • Domestic meat production of 168,291 metric tonnes in 2018, an increase of 17% since 2014[2] • Domestic fish production of 367,868 metric tonnes in 2018, a decrease of 1,7% since 2014[2] • Sharp increase in land brought into cultivation in the northeast, east central, and northwest regions of Ghana from 2015 to 2019[3]
Storage and distribution	• 20% of the country's food output is lost during the post-harvest process, notably during distribution due to handling and poor logistics infrastructure. Current interventions include dissemination of new technologies of harvesting & processing, mass training programmes[4] • A government owned company, The National Food Buffer Stock works with farmers to mop up excess produce • High cost of conventional storage solutions for smallholder farmers and high seasonal variability in food supply and prices make food expensive and perishable[5]

1. International Food Policy Research Institute 2. 2018 Facts and Figures – Ministry of Food and Agriculture 3. Land Monitoring Service 4. Postharvest losses and mitigating technologies: evidence from Upper East Region of Ghana 5. Ghana Investing for Food and Jobs (IFJ) 2018

High-level view| Food supply chains (II/II)

Processing and packaging	• Ghana's tree crops that are currently being processed include cocoa (occupying 27% of cultivated land), oil palm (5%), cashew (2%), and coconut, rubber, citrus and mango (less than 1% each)[1] • Government is working towards increasing cocoa processing to 50% of production, so that the country would no longer depend on the export of raw materials and capture more of the value[2] • The agricultural sector provides raw materials for the industrial transformation being pursued by the government[3] • The main constraints to the processing sector are the low production and productivity, high cost, poor quality of local raw materials, and poor standards for processing and packaging[4]
Retail and marketing	• Markets are largely informal (60% of food retail sector in Ghana consists of open-air markets)[5] • Significant presence of processed goods in retail shops, including milled rice, processed fruits and vegetables, and frozen meats[4] • Closure of some markets due to non-adherence of COVID-19 social distancing protocols led to disruption in food supply chains (including fish) and markets[6]
Food Safety	• Contamination and adulteration levels of food were very high in street food outlets in Ghana (2016), and poor hygiene practices are often adopted, increasing the risk of developing foodborne diseases[7] • FDA (Food and Drugs Authority) has the mandate to enforce policies, regulations, legislations relating to Food and Drugs • Food safety in Ghana shows substantial gaps and is lacking sufficient controls for both processed and unprocessed foods • Food safety research is highly concentrated in the urban areas and disproportionally focused on commercial food operations (especially street foods and microbiological safety) with limited information from other forms of food hazards[8]

1. 2018 Facts and Figures – Ministry of Food and Agriculture 2. Alternative Africa 3. Ghana Investing for Food and Jobs (IFJ) 2018 4. International Food Policy Research Institute 5. Ghana Retail Industry Market - 2019-2026 6. Ghana 2020 National Development Monitor 7. FAO 8. 1. Ababio and Lovatt

High-level view| Subnational food systems

Subnational food systems

- Ghana consists of 16 regions further divided into 261 local districts[1]
- North
  - The north is characterized by a very hot weather with dry winds (harmattan), and high plains
  - This region is suitable for staple crop production, especially rice, yam, and pulses and has markets organized 3-6 days per week
  - The rural northern population has a diet based on roots, tubers, and plantain
  - Agriculture is the primary source of livelihood and has been affected by unpredictable rainfall, which results in particularly high hunger and malnutrition (with identified iron and vitamin A deficits). More than 23% of children under 5 are stunning in the northern region
  - Poverty rate is high across the north, with the highest rate of 70.9% of population living below the national poverty line in the Upper West region[2]
  - Access to financial services remains a challenge in the north, especially in the Upper East region where only ~17% of the population has access to commercial banks[3]
- South
  - The south isn't as hot as the north, with a warm and dry southeast coast and hot and humid southwest. The region is composed mostly by a forested plateau with hilly ranges in the eastern border
  - The region produces fruits and cocoa, which is the main crop
  - The urban southern population's diet is based on rice, pasta, meat and fish
  - Stunning in southern regions varies but is less than 20%, however overnutrition is emerging, especially in urban areas
  - Poverty rate is lower in the south, with the lowest rate of 2.5% of population living below the national poverty line in the Greater Accra region[2]
  - Access to financial services is higher in the south, especially in Greater Accra region where ~70% of the population has access to commercial banks[3]

1. The Permanent Mission of Ghana to the UN 2. Ghana Living standards survey round 7 (GLSS 7) 3. GSS (2019)- Ghana Living Standard Survey Round 7 Report

High-level view| Cross cutting themes

Gender	• Over 51% of the population are women with a Gender Inequality Index (GII) coefficient of 0.54 as in 2017[1]
	• 64.6 score (out of 100) on the Gender Index of the Ibrahim Index of African Governance (IIAG). And while this score has decreased by 7.4 points since 2010, Ghana is still ranked 10th out of 54 African countries[2]
	  - Lower scores for laws on violence against women (25.0 out of 100) and political power & representation of women (54.1 out of 100)
	  - Higher scores for socioeconomic opportunity (75.0 out of 100), access to public services (83.9 out of 100) and equal civil liberties (85.0 out of 100)
	• Women play a very important role in agriculture however they are often found to be less productive than men in the agricultural sector

Youth	• Unemployment amongst people aged 15-24 years was 8.72%, which is almost twice as high as the total unemployment rate[3] • ~57% of Ghanaians are under 24 years of age[20] and the youth population (15-24 years) makes up 19% of the total population of Ghana[4] • A modernized agricultural sector with thriving private sector agribusinesses and incubation / innovation bubs as the opportunity to provide decent and rewarding careers in food systems for the youth[5]
Human Rights	• Freedom of speech is guaranteed by the 1992 Constitution and was further strengthened with the repeal of the Criminal Libel law in 2001 • The Constitution of Ghana does not explicitly guarantee the right to adequate food, however Ghana did become a State party to the International Covenant on Economic, Social and Cultural Rights (ICESCR), which recognizes the right to adequate food. The Optional Protocol (OP-ICESCR) was signed in 2009 but has not been ratified yet[6]

1. WFP 2. Ibrahim Index of African Governance (IIAG) 3. World Bank 4. Ghana Statistical Service 5. Ghana Investing for Food and Jobs (IFJ) 2018 6. FAO

High-level view| External drivers of the food system (I/III)

Environment and climate	• Agriculture is predominantly rain-fed and the climate is dominated by the inter tropical convergence zone and the hot, dry winds (harmattan) blowing from the Sahara
	• ~65% of land area is arable under permanent crops, and under permanent pastures[1] with hills on the easter boarder making agriculture more difficult in that area
	• Climate change expected to result in increased temperatures (up to 2.0°C by 2050 from 2018), intermittent floods, and dry spells with water stress[2]
	  - More intense rainfall is expected to increase erosion, while the overall decrease in rainfall could result in decreased water flow[2]
	  - The impact of increased temperatures on livestock production forced cattle herders to migrate from the north to the south
	  - Sea level rise is projected to inundate low-lying coastal areas and increase the salinity of estuaries and aquifers[1]
	• Unsustainable practices with impact on the environment include both legal and illegal surface mining ("galamsey"), and harmful use of pesticides, weedicides, and inorganic fertilizer[3]

Globalization and Trade	• Imports 20%[4] of its food • Food imports represented a value of ~5% of GDP in 2019 while exports accounted for ~7% of GDP[5] • The 2 main import foods crops in 2019 were rice (11% of food imports) and wheat (7% of food imports), while the main export crops were cocoa & by-products (67% of food exports) and cashew nuts (10% of food exports)[5] • Animal products are also a big part of food imports, as frozen fish accounted for 9% of food imports in 2019 and poultry meat accounted for 8%[5] • Imports were affected by the COVID-19 pandemic, which led to an enhanced preference for local food in the immediate and short term • Intraregional trade is hindered by transporting issues such as excessive numbers of control points and informal payments leading to overall low levels of trade • Ghana ranked 118th out of 190 countries in the 2020 Ease of Doing Business Index and 13th in Sub-Saharan Africa[1] • It is the largest recipient of FDI in West Africa ($3 billion in 2019 mostly oriented towards gas and minerals[6])

1. World Bank 2. Ghana Climate Change Profile – Government of the Netherlands 3. Mercury contamination of soil and water media from different illegal artisanal small-scale gold mining operations (galamsey) 4. Ghana 2020 National Development Monitor 5. OEC 6. World Investment Report 2019

High-level view| External drivers of the food system (II/III)

Income growth and distribution	• Ghana obtained lower middle-income status in 2010 when it recorded a gross national income per capita of $1,230 • Income is unevenly distributed (Gini Index 43/100); a slight increases from 42.3 in 2012 • Contribution of agriculture income to GDP was 18.5% in 2019[1], which has been declining (on average by 7% per year since 2016[1]), due to people moving from peasant agriculture to services, without passing through modern high-productivity agriculture[2] • Poor performance of the forestry/ logging (-1.7% growth) in 2019[1] • Agriculture provides employment for over 44% of the population mainly involved in production of crops, livestock, fishing or in processing and marketing of agricultural produce on a formal and informal basis[3]
Urbanization	• Large urban population, which increased from 53.42% in 2014 to 56.7% in 2019; urban population surpassed rural in 2009[4] • High population density of 130.82 people per sq. km of land vs. Africa average of 46.3 people per sq. km[4] • Migration towards Great Accra region from Upper east, west and Norther regions resulting in strain on resources, declining means of livelihood and reducing man power in those northern regions[11]
Demographic shifts	• Ghana has a population of ~32M (2019)[5] which is projected to increase to ~50-60M by 2050[6] . This growth is caused by a high fertility rate (3.89 births per woman) and efforts to minimize birth mortality • ~57% of Ghanaians are under 24 years of age[2] • Population increase resulting in new entrants into the labour market, arriving at an increasing rate over the next 30 years[7]
Leadership and Governance	• Ghana is a presidential republic with parliamentary system, an Executive President, a Parliamentary Legislature and a Judiciary[2]. • Elections are held every 4 years, with the latest in 2020 • Stable political environment with good security except in some isolated locations that experienced post-elections demonstrations in 2020[8] • Decentralized governance system with 6 Metropolitan, 111 municipal, and 143 district assemblies, along with complementary ~16,000 sub-districts[9] • Ghana knows more than 20 registered political parties[10] • Recent strong, visible, political support for addressing food insecurity, improving population's nutrition and food systems. Ghana's 40-year development plan has a strong emphasis on nutrition

1. Ghana Macroeconomic performance report 2019 – Ministry of finance 2. Ghana 2020 National Development Monitor 3. Ghana Investing for Food and Jobs (IFJ) 2018 4. Statista 5. World Population Review 6. Worldometers 7. Centre for the Study of Economies of Africa (CSEA) 8. WFP 9. Commonwealth Local Government Forum 10. CIA 11. Migration in Ghana 2010; Ghana Statistic Service 2014

High-level view| External drivers of the food system (III/III)

Socio-cultural Context	• Major ethnic groups include the Akan (47.5%), Dagbani (17%), Ewe (14%), Ga-Adangbe (7%), Gurma (6%), Guan (4%), Gurunsi (2.5%), and Bissa (1%)[1] • 4.3% of the population is Caucasian and 2.4% is Asian[2]
Finance & Capital	• Agricultural sector is largely informal, lacking the documentation and registered collateral required for loans • Issues include limited insurance for farming; inadequate start-up capital; lack of credit for agriculture; absence of innovative financing mechanism for lending[3] • While 58% of the population had access to formal financial services in 2018[4] , only 20% of people in agriculture have access to credit[5]
Energy	• Installed energy capacity stands at 4,399 MW, consisting of hydro 35.9%; thermal 63.6%; and solar 0.5%[6] • Projected need to procure an additional capacity of 225 MW by 2024 and an additional 200 MW by 2025 to preserve the security of supply[7] • ~84% of population has access to electricity (2019)[2] , which has been steadily increasing from 57% in 2012[2] • Rural areas lag behind urban areas in access to electricity (70% vs. 94%)[2]
Science and technology	• Ghana has 9 research and development centers under the Council for Scientific & Industrial Research (CSIR) that focus on agriculture related research, including the Animal Research Institute (ARI), the Crops Research Institute (CRI), the Soil Research Institute (SRI), the Oil Palm Research Institute (OPRI), the Food Research Institute (FRI), the Forestry Research Institute of Ghana (FORIG), the Plant Genetic Resources Research Institute (PGRRI), the Savanna Agricultural Research Institute (SARI), and the Water Research Institute (WRI)[8]. The Science, Technology and Policy Research Institute (STEPRI) also does research on agriculture • Ghana spends less than 1% of agricultural GDP in agriculture R&D and innovation systems[9] • Funding for research and technological development in the agriculture sector is however still limited and often not well coordinated • R&D in food and nutrition security is mostly donor-driven and thus donor tailored objectives dominate, with focus on maize, rice and soybean

1. World Population Review 2. CIA 3. Ghana Investing for Food and Jobs (IFJ) 2018 4. World Bank 5. Biennial Review data - Indicator PC2.4 6. USAID 7. International Trade Administration 8. CORAF 9. ReSAKSS (2021)

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Supra-indicators | Summary of performance of Ghana

Action Tracks		Supra-indicators	Ghana	World	Unit
Action Track 1	*Ensure access to safe and nutritious food for all*	1	**Diet quality:** Global Dietary Recommendations plus (GDR+)	13.8	N/A	Index (0-30)
		2	**Nutrient supply:** Net supply in country of key macro and micro nutrients as a share of total consumption requirements for a healthy diet	*Nutrient gaps (see deep-dive)*	N/A	N/A
		3	**Undernourishment:** % of population undernourished	6.5	8.9	Percent
		4	**Overweight & obesity:** % of population overweight or obese (adult population)	29.3	39.1	Percent
		5	**Food safety:** Food Systems Safety Index	86.7	75.3	Index (0-100)
Action Track 2	*Shift to sustainable consumption patterns*	6	**Affordability:** Cost of a healthy diet as a percent of household food expenditure	283	95	Percent
		7	**Sustainability of diets:** Per capita GHG emissions of food consumption	2298	2603	Kg CO2eq./person
		8	**Food waste:** Food waste index	127	121	Kg/capita/year
		9	**Food environment:** Composite index combining food environment policies	4	N/A	Index (0-14)
Action Track 3	*Boost nature-positive production*	10	**Emissions:** Green House Gas (GHG) emissions from agriculture	9.7	30.1	MtCO2e
		11	**Land:** Average % forest land being deforested for agriculture use over the past 3 years	1.42	0.17	Percent
		12	**Food loss:** % food loss across supply chain	20	5	Percent
		13	**Regeneration:** Biodiversity and habitat index	48.4	54.5	Percent
Action Track 4	*Advance equitable livelihoods*	14	**Income:** Gini coefficient (general, no data available for the Food System)	0.43	N/A	Coefficient (0-1)
		15	**Income:** Gap between farmgate price and wholesale price	169	N/A	Percent
		16	**Gender equity:** Women empowerment in agriculture index	0.711[1]	N/A	Index (0-100)
Action Track 5	*Build resilience to vulnerabilities, shocks and stress*	17	**Economic:** Household Resilience Capacity Index	N/A	N/A	Index
		18	**Risk distribution:** Proportion of men and women engaged in agriculture with access to macro and micro credit financial services	20%	N/A	Percent
		19	**Social:** Government social security budget as a % of total requirements to cover vulnerable social groups	57.17	N/A	Percent
		20	**Environmental:** ND-GAIN (Notre Dame Global Adaptation Initiative) Country Index	44.4	49.0	Index (0-100)
		21	**Production diversity:** % production from top 5 crops	82	N/A	Percent
Governance		22	**Governance**: Presence of food systems related governance bodies and mechanisms	6	N/A	Index (0-14)

1. 2014 data; for sources please refer to the appendix

Green Performance better than world average

Ghana | Initial View of Ghana's performance on supra indicators

Supra-indicator	Unit	Ghana	Africa	World	Country Ambition
1. Diet Quality: Food Global Dietary Recommendations plus (GDR+) *combines the GDR score with dietary diversity and presence of food groups required to meet food-base dietary guidelines*	**Index (0-30; 30=best)**	**13.8**	**N/A**	**N/A**	**TBD**

Commentary

~48% of adults have a diet that adheres to the food-base dietary guidelines for a healthy diet[1]. Households frequently consume foods with high content of added sugar & sodium (70%), salted dried fish (36%), and foods processed with salt (84%), sugar-sweetened non-alcoholic beverages and foods high in calories. There is low frequency of consumption of fruits or vegetables (about 3x per week)[2] . 91% of adults consume protein-rich food from animal sources[3] . Large differences between urban and rural areas exist, with rural areas consuming less fruits & vegetables and processed foods[1]

Drivers

- Affordability: average cost of a healthy diet is 283% of household expenditure (see supra-indicator on affordability), as an example the consumption of fruit declined during the COVID 19 pandemic due to increasing prices
- Food-based dietary guidelines are not yet in place, which leads to misconceptions about what constitutes a healthy and nutritious diet and increases consumption of unhealthy foods

Implications & Interventions

Low food consumption score and limited dietary diversity have negative impacts on population's health, well-being, and productivity. Potential interventions:

- Diversifying and making healthier meals for school feeding programs by removing any unhealthy foods and creating an overall healthier food environment
- Establishing food composition tables, food-based dietary guidelines, and subsequent nutrient profiling of foods and beverages, which can facilitate better labeling[4]
- Increasing knowledge on nutrition by informing consumers on appropriate combinations of available food (e.g., through nutrition sensitization campaigns, educational programs)

Ghana | Initial View of Ghana's performance on supra indicators

Supra-indicator	Unit	Ghana	Africa	World	Country Ambition
2. Nutrient supply: Net supply in country of key macro and micronutrients as a share of total consumption requirements for a healthy diet		*See details under commentary*			

Commentary

In-country food production supplies sufficient energy (~3652kcal/ person/day) to meet the needs of the population (2750kcal/person/day[1]). There are however gaps in the supply of certain macro and micro-nutrients (especially protein, calcium, iron, zinc, Vitamin B12 & A[1]).

Type of nutrient	Production Per day	Consumption per day	Recom. intake per day	Adequacy comment
Kilocalories (kcal)	3 651,9	2 031,6	2 750,0	Sufficient
Protein (g.)	(70,1)	54,7	50,0	Not sufficient
Calcium (mg.)	407,4	249,8	1 000,0	Not sufficient
Iron (mg.)	17,4	8,5	27,4	Not sufficient
Zinc (mg.)	11,6	7,0	14,0	Not sufficient
Folate (mcg.)	538,7	207,9	400,0	Sufficient
Vitamin B12 (mcg.)	(0,0)	1,2	2,4	Not sufficient
Vitamin A (mcg.)	(425,5)	893,1	600,0	Not sufficient

Drivers

- Local production of staple crops sufficient to meet energy demand in the country. This is a result of policies from previous and current governments (e.g., FASDEPs, METASIP, PFFJ)
- Imports of poultry and meat fill part of the dietary gaps, but imports tend to be expensive
- The commodity approach to food production has negative effective on dietary diversity and overall diet quality
- There are large discrepancies in supply of micro and macro-nutrients between urban and rural areas; with substantial nutrient gaps in rural areas

Implications & Interventions

There is a need to expand the focus beyond food security based on energy needs to include household access to macro and micronutrients (specially in rural areas)

- Encouraging producers and processors to increase production of nutrient rich foods for the domestic market
- Developing alternative animal and vegetal sources of proteins that can be produced in country
- Improving population's nutrition literacy – through food based dietary guidelines and other interventions so that food producers and consumers recognize the need to limit intake of nutrients of concern, and promote consumption of nutrients as protein, fiber, vitamins A, C & E, Calcium, Iron, Potassium and Magnesium; folate and zinc
- Perusing strategies to improve the traditional (local) food system rather than replacing it

As adequate food supply is established, success can be increased by running parallel efforts to improve access, distribution and consumption of diverse foods within the household

Note: Superscript refers to source on source page

Ghana | Initial View of Ghana's performance on supra indicators

Supra-indicator	Unit	Ghana	Africa	World	Country Ambition
3. Undernourishment: % of population undernourished	Percent (0-100; 0=best)	6.5	21.6	8.9	< 5% by 2025
4. Overweight & Obesity: % of population overweight or obese (adult population)	Percent (0-100; 0=best)	29.3	27.7	39.1	0% increase

3. Undernourishment: % of population undernourished

Commentary

Ghana made tremendous progress in food and nutrition security indicators, but malnutrition among children and women of reproductive age remains a problem

- School feeding programs are one of the drivers of progress, however suspension of schools due to pandemic will impact food security
- 19% of children (<5y) are stunted, 5% are wasted and 11% underweight[1]

Drivers

- Food insecurity in the North due to unpredictable rainfall patters and reductions
- Insufficient production of nutrient rich foods for a diverse diet for all

Implications & Interventions

Government aware of problem and defined future efforts including investment in food security & emergency preparedness programmes, and meeting relevant WHO targets (global nutrition targets of 2025). Potential interventions include strengthening these programmes:

- Increasing productivity and total production and improving food distribution
- Improving food distribution to vulnerable groups to enhance food and nutrition security status of poor and disadvantaged groups

4. Overweight & Obesity: % of population overweight or obese (adult population)

Commentary

Although Ghana obesity rates are lower than global rates, both adult and child obesity are rising

- 3% children (<5y) are overweight or obese (weight-for-height) with higher prevalence in urban areas (3.4%) than rural areas (1.9%)[2]
- 40% women (49% urban vs. 28% rural) and 16% of men (23% urban vs. 8% rural) are considered overweight or obese(BMI)[2]
- In urban areas the % is high with northern Ghana with the lowest %

Drivers

- Economic development and rapid urbanization that facilitates shifts in dietary patterns from traditional diets to energy-rich foods high in fat and sweeteners
- Unhealthy foods often more affordable
- Increased sedentary lifestyle

Implications & Interventions

Overweight and obesity are major risk factors for diet-related NCDs, contributing to overall burden of disease in country.

Potential interventions:

- Strengthening guidelines on food marketing & messaging
- Targeted campaigns for individuals & households focusing on both overweight/obesity & undernutrition, promoting healthy diets and physical activity for urban & peri-urban populations
- Making the benefits of affordable healthy food visible and revealing the costs of damage to the envir. and human health
- Implementing policies that make unhealthy foods less affordable and less attractive while making healthy foods attractive and affordable
- Ensuring true pricing of food so that affordable and healthy food is accessible to all

Note: Superscript refers to source on source page

Ghana | Initial View of Ghana's performance on supra indicators

Supra-indicator	Unit	Ghana	Africa	World	Country Ambition
5. Food safety: Food Systems Safety Index [8]	Index (0-100; 100=best)	86.67	54.7	75.3	TBD

Commentary

FDA (Food and Drugs Authority) – an agency of the MOH has the mandate to enforce policies, regulations, legislations relating to Food and Drugs (including unhealthy drinks and alcohol). The FDA applies the following regulatory strategies

- Food registration (not applicable to street vended foods)
- Inspections and licensing of food facilities (currently not applied to street foods but pilot program ongoing)
- Market Surveillance
- Advertisement monitoring

Overall, food safety in Ghana shows substantial gaps and is lacking sufficient controls for both processed and unprocessed foods. Food safety research is highly concentrated in the urban areas and disproportionally focused on commercial food operations (especially street foods and microbiological safety) with limited information from other forms of food hazards[1]

- Low food hygiene
- Food adulteration & contamination and environmental sanitation
- Aflatoxins are common in maize production[2]

Drivers

- Widespread informality driven by cumbersome licensing procedure
- Inadequate funding to increase coverage of interventions and limited resources to effectively inspect and monitor
- Contamination and adulteration levels of food are high in street food outlets, and poor hygiene practices were often adopted, increasing the risk of developing foodborne diseases[3]
- Unavailability and lack of capacity of laboratories for testing
- Poor storage and distribution handling and infrastructure, resulting in high amounts of food loss

Implications & Interventions

The resulting high levels of food loss, food waste, and the increasing burden of disease (e.g., liver cancer associated with aflatoxins) have economic and health costs to the population

Possible policy interventions could focus on the following:

- Implementing and updating regulatory framework on food safety and ensure dissemination and implementation
- Raising consciousness of the public health impacts of aflatoxin
- Strengthening the organic certification
- Conducting regular surveys to strengthen public education and enable consumers to make informed and safer food choices (e.g., conduct surveys and create a database on salt or sugar content of street foods)
- Strengthening the Healthy Street Food Incentives (HSFI) and implementing the WHO Global Strategy for Diet, Physical Activity and Health
  - Better collaborating with Environmental Health Officers to develop and maintain a database of street food and motivating street food vendors to register in a public database
  - Enhancing legislation on mandatory nutrition labelling of food including street vended food
  - Stimulating the demand for fruits and vegetables
  - Enhancing legislation on mandatory nutrition labelling of food including Street vended food
  - Developing a resource-efficient food monitoring and inspection system

Note: Superscript refers to source on source page

Ghana | Initial View of Ghana's performance on supra indicators

Supra-indicator	Unit	Ghana	Africa	World	Country Ambition
6. Affordability: Cost of a healthy diet as a percent of average household food expenditure (%)	**Percent (0-100; <50=best)**	**283%**	**167%**	**95%**	**TBD**
	Commentary Given that the average costs of a healthy diet are 283% of household food expenditure, this means that it is out of reach for up to 65%[1] of the population (depending on the region) **Drivers** • Production of rice, poultry and meat below consumption levels with imports relied on to fill the gap, which tend to be too expensive for a large share of the population • Poor storage and distribution handling and infrastructure, resulting in high amounts of food loss • Unpredictable rainfall in the northern region, resulting availability fluctuations			**Implications & Interventions** Due to the high costs of nutritious foods, the bulk of households' food expenditure is dedicated to bread & cereals (19% of budget) and fish & sea foods (16% of budget)[2]. Need to bring down costs by: • Reducing trade barriers (both tariff and non-tariff) • Investing in improved processing, storage and logistics infrastructure to reduce food loss, extend produce shelf-life and reduce transportation costs	
7. Sustainability of diets: Per capita GHG emissions of food consumption[5]	**Kg CO2eq./person**	**2298**	**2780**	**2603**	**TBD**
	Commentary Ghana has slightly lower GHG emissions from food consumption than the African and world averages **Drivers** • Low production of livestock (poultry and meat), which tend to have higher environment impact, in processing, storage & transportation • Relatively high levels of food waste, which if lowered could reduce emissions			**Implications & Interventions** As Ghana continues to grown its GDP, and consumptions patterns change, the environmental impact of food consumption might increase if no interventions are made. To slow down or even reduce emissions, Ghana can consider to: • Continue investing in production of sustainable animal-based food alternatives as sources of protein • Reducing food waste by encouraging households and producers to adopt more efficient storage and cooling systems	

Note: Superscript refers to source on source page

Ghana | Initial View of Ghana's performance on supra indicators

Supra-indicator	Unit	Ghana	Africa	World	Country Ambition
8. Food waste: Food waste index	Kg/per capita/year	127.3	N/A	121.0	TBD
9. Food environment: Composite index combining food environment policies	Index(0-14; 14=best)	4	N/A	N/A	TBD

8. Food waste: Food waste index

Commentary

Per capita, Ghana annually wastes ~ 5% more food than the world average

Drivers

- Growth in production of staple crops such as roots and tubers, which resulted in surpluses
- Increasing penetration of retail and food service outlets where it is typical to have high levels of food waste than at home
- Increasing urbanization and purchasing power

Implications & Interventions

With already high levels of urbanization and food waste, and an expected further increase of the urban population, incomes, and demand for formal retail and food outlets, food waste is likely to further increase in the future.

Mitigation priorities should include:

- Investing in food waste aggregation and valorisation, an even stronger opportunity as large processors increase capacity
- Improving agricultural productivity by using organic waste
- Investing in standards to require retail institutions to keep food wastage levels low

9. Food environment: Composite index combining food environment policies

Commentary

There is awareness and political will regarding the need for food policies, however progress in achieving the global targets has been slow. The gaps relating to absence of policies, and where policies exist, lack of implementation to promote healthy food environment are partly due to Ghana's health service delivery system challenges and priorities. Effective restriction of marketing of breastmilk alternatives, however marketing of other unhealthy foods not in place[1]

Drivers

- Reduced action on food prices, food retail, food provision and unhealthy food (salt, sodium, fatty acids) promotion to children[1]
- Limited action to establish ingredient lists/nutrient declarations
- Limited efforts to protect regulatory capacities regarding nutrition[1]
- Lack of effective support to enforce system of enacted policies[1]
- Limited government funded research on food environments and NCD control

Implications

Food environment not regulated in such a way as to strongly encourage consumption of healthy foods and discourage consumption of non-healthy foods, which can contribute to unhealthy diets, which increase chances of malnutrition, overweight and obesity and prevalence of NCDs.
Interventions could be focused in:

- Passing legislation to regulate the adv. of foods and drinks with nutrients of concern in child-laden settings & the media
- Creating a food labelling policy to support nutrition advocacy
- Implementing a requirement for caterers involved in School Feeding Programmes to pass a training course on healthy meal planning
- Providing sufficient funds for nationally-relevant research on nutrition and NCDs

Note: Superscript refers to source on source page

Ghana | Initial View of Ghana's performance on supra indicators

Supra-indicator	Unit	Ghana	Africa	World	Country Ambition
10. Emissions: Green House Gas (GHG) emissions from agriculture[1]	MtCO2e	9.73	19.00	30.10	TBD
11. Land: Average % forest land being deforested for agriculture use over the past 3 years	Percent (0-100; 0=best)	1.42	N/A	0.17	TBD

10. Emissions: Green House Gas (GHG) emissions from agriculture[1]

Commentary

GHG emission related to agriculture lower than Africa and World but rising annually, with agriculture emissions growing 32% from 1990-2011[1]

Drivers

- Rise in the number of livestock and frequent burning of biomass
- Land clearing
- Indiscriminate use of fertilizer (application at wrong time, in incorrect quantities) due to free/subsidized availability of this input

Implications & Interventions

Long-term sustainability within the food system must be considered as reduction/destruction of the carbon sink will contribute to more unpredictable seasons affecting production

To boost efficient, nature positive production, pathways include:

- Availing the right types of fertilizer, in good time, with messaging on correct usage for each season and region
- Including indicators to monitor implementation of policy actions for agriculture emission reduction
- Implementing legislative reforms to clarify land tenure and regulate the timber and mining sectors[1]
- Improving wood harvesting practices[1]
- Resourcing local government bodies and communities to bid for more REDD+ and Clean Development Mechanism projects
- Strengthening institutional capacity to improve forest govern.

11. Land: Average % forest land being deforested for agriculture use over the past 3 years

Commentary

Forest area decreased 1,953,000 hectares from 1990 to 2018[2]. Deforestation of primary forests increased 60% between 2017 and 2018. Most of this occurred in the country's protected areas, including its forest reserves. Ministry of Lands and Natural Resources' attempts at intervention had limited success[3]

Drivers

- Logging and illegal activities in forest reserves is common practice[3]
- Community-based monitoring project has helped curtail illegal logging in some reserves, but additional buy-in from other communities is needed to scale up its results[3]
- Increase in land brought into cultivation & expansion of cocoa farms[3]
- Bush fires, set to clear land and aided by the dry harmattan season, have consumed large swaths of forest[3]

Implications & Interventions

Deforestation leading to loss of biodiversity, which contributes to the world-wide increase in temperature

Need for better monitoring in forests:

- Engaging members of the public, particularly those living around the reserves, to fight illegal logging
- Increasing number of Forestry Commission officials and monitoring mechanisms
- Increasing awareness and need for afforestation programs and campaigns
- Promoting agroforestry
- Training farmers on conservation agriculture and agroforestry

Note: Superscript refers to source on source page

Ghana | Initial View of Ghana's performance on supra indicators

Supra-indicator	Unit	Ghana	Africa	World	Country Ambition
12. Food loss: % food loss across supply chain	Percent (0-100; 0=best)	20%	N/A	5%	-50% by 2025

Commentary

Food loss is much higher than world average, especially horticultural crops for which losses are ~20-35% (mostly for mangoes and tomatoes)[1]

Drivers

- Fruit fly presence and poor fruit handling practices[1]
- Limited access to on-farm power and poor water quality[1]
- Lack of cold chain facilities, inadequate transportation and long transit time[1]
- Limited knowledge of production potential, available varieties, and post-harvest practices[1]

Implications & Interventions

Ghana is not capturing the full economic and livelihood benefits from increased agricultural productivity due to food loss. In addition to discouraging the production of nutrient-rich perishable foods, high food loss lowers dietary diversity. Food loss also puts an unnecessary burden on the environment, as resources are used an emissions occur to produce foods that never reach the consumer.

Possible next step actions:

- Exploring scale up of models that reduce farm-based post-harvest activities
- Investing in transportation and logistics system e.g., cold chain vehicles, feeder roads to lower costs of aggregation
- Introducing new, affordable on-farm storage & handling technologies to farmers as well as training on early warning systems, monitoring & management of pests
- Introducing programs to disseminate knowledge about best practices in the supply chain

13. Regeneration: Biodiversity and habitat index	Percent(0-100; 100=best)	48.4	57.6	54.5	TBD

Commentary

Ranked 99 globally out of 180 countries

Drivers

- Deforestation for agriculture, mining & logging
- Introduction of plant species replaced indigenous land races, which were crops used by local farmers for long periods, in a subtle way
- Farming practices including slash and burn
- Charcoal burning and bush burning
- Excessive use of pesticides which kills pollinators (e.g., bees)

Implications & Interventions

Without registering and preserving biodiversity, Ghana risks a reduction in diversity of food, and an overall less resilient food system. Interventions include:

- Managing forest reserves and creating protected areas with clear monitoring mechanisms
- Articulating biodiversity goals
- Devising and applying nature-based solutions such as agroforestry and payments for ecosystem services

Note: Superscript refers to source on source page

Ghana | Initial View of Ghana's performance on supra indicators

Supra-indicator	Unit	Ghana	Africa	World	Country Ambition
14. Income: Gini index	Index (0-1)	0.43	N/A	N/A	TBD
15. Income: Gap between farmgate price and wholesale price	Percent (0-100; 0=best)	169	124	N/A	-50% by 2025

14. Income: Gini index

Commentary

High income inequality across the country, however the magnitude is higher in urban areas.

Drivers

- High urbanization
- Lack of income-generating opportunities outside farming in rural areas
- Limited bargaining power for farmers, while aggregators with access to better infrastructure dictate the prices

Implications & Interventions

Costs of living have been rising and smallholders are struggling to keep up.

Potential interventions that need to be assessed to provide farmers with more security include:

- Insurance to protect smallholder farmers against shocks
- Investing in processing to increase value add and distribution to agricultural workers
- Accelerating creation of jobs in other sectors, allowing people to graduate from subsistence farming
- Directing poverty reduction strategies towards specific income components[1]
- Formalizing the informal sectors of the economy to increase the number of workers who are wage earners[1]

15. Income: Gap between farmgate price and wholesale price

Commentary

Farmgate prices are usually lower than market retail prices and only allow for a profit if smallholder farmers sell higher quantities. Due to low productivity and quantities available, small revenues are made when selling at farmgate[2]

Drivers

- Low yields and limited market information, limit the participation and decision-making power of small-holder farmers[2]
- Choice of market determined by age of the farmer, yields of the crops, membership of farmer organization and prices of the crops[2]
- Limited power of smallholder farmers in setting the price, high dependency on aggregator
- Seasonality impacting gap as farmgate prices are lower than other selling points during harvesting[3]

Implications & Interventions

Individual farmers attract low produce prices and are exposed to price volatility

Potential interventions:

- Improving storage facilities so smallholder farms can store their produce in harvest periods when there is excess production and sell during the lean seasons when prices are higher
- Creating policies that enhance productivity of smallholders[2]
- Providing market information[2]
- Exploring the impact on prices as well as the effect of price control policies on farmer incomes

Note: Superscript refers to source on source page

Ghana | Initial View of Ghana's performance on supra indicators

Supra-indicator	Unit	Ghana	Africa	World	Country Ambition
16. Gender equity: Women empowerment in agriculture index	Index(0-1; 1=best)	0.711	N/A	N/A	TBD

Commentary

Women play a key role in the agricultural sector and spend considerable amount of time planting, weeding, ridging, and harvesting, while simultaneously doing their household chores. However, women are often found to be less productive than men in the agricultural sector due to discriminating factors

Drivers

- Women face unfair accessibility to finance
- Women face land, property, business and labour rights' issues
- Women lack strong and influential networks

Implications & Interventions

Inclusion of women is a priority for all stakeholders and backed by high levels of political will and progressive policies. Fighting against gender bias in agriculture is crucial to sustaining economic growth and ensuring food security

There is need to strengthen the capacity across institutions to mainstream gender-responsiveness in all programming by:

- Ensuring inclusive and adequate budgeting levels for gender mainstreaming across key policies and institutions
- Developing gender-responsive reporting and accountability mechanisms, especially around levels of representation in agriculture value chains
- Developing a deeper understanding of gender issues among practitioners followed by commitments to action
- Developing a long-term vision of supporting food systems to become more efficient, equitable, and inclusive of women smallholder farmers, in the national response to food and nutrition security
- Going beyond reach and benefits of technologies to empowerment to sustain the role women play in agricultural development

Note: Superscript refers to source on source page

Ghana | Initial View of Ghana's performance on supra indicators

Supra-indicator	Unit	Ghana	Africa	World	Country Ambition
17. Economic: Household Resilience Capacity Index	Index	N/A	N/A	N/A	TBD
18. Risk distribution: Proportion of men and women engaged in agriculture with access to macro and micro credit financial services	Percent (0-100; 100=best)	20%	33%	N/A	100% by 2025

17. Economic: Household Resilience Capacity Index

Commentary

Low household resilience

Drivers

- Increasing poverty among disadvantaged food crop farmers due to neoliberal policies[1]

Implications & Interventions

Future food security depends on investments decisions made today for tackling climate change, conserving water and energy, developing and adopting new seeds, renewed investments in irrigation, shoring up domestic food production, reforming international trade, and diversification of food production

Specific potential interventions include:

- Adopting practices that protect vulnerable people for diversification of income sources, ensuring the existence of livelihood systems
- Dealing forcefully with the critical issues in food production and food security, including population growth, widespread poverty and income disparity, climate change, water scarcity, land degradation and energy and food price inflation

18. Risk distribution: Proportion of men and women engaged in agriculture with access to macro and micro credit financial services

Commentary

Overall access of people in agriculture is low in Ghana at 20%. Lower financial inclusion of women persists, with 8% of women in agriculture with access to credit, compared to 26% of men. Women have equal opportunity to obtain formal credit as the requirements do not discriminate against the sexes, however they have less capacity to apply

Drivers

- Women access to credit is obstructed by cultural norms, relegating them to the background and giving opportunities for men to act as guarantors. When credit application becomes successful, men prefer to exercise control[12]
- Ability to use agricultural credit is linked to women's educational level, social class and ability to break away from restrictive socio- cultural norms and expectations[2]

Implications & Interventions

There is a need to address discrepancies between women and men's access to credit and financial services. Potential interventions include:

- Educating women on access to credit and existing mechanisms for guarantors
- Creating specific credit programs targeted at women

Note: Superscript refers to source on source page

Ghana | Initial View of Ghana's performance on supra indicators

Supra-indicator	Unit	Ghana	Africa	World	Country Ambition
19. Social: Government social security budget as a % of total requirements to cover vulnerable social groups	Index(0-100; 100=best)	57.17	N/A	N/A	100% by 2025
20. Environmental: ND-GAIN (Notre Dame Global Adaptation Initiative) Country Index3 (summarizes a country's climate change vulnerability and its readiness to improve resilience)	Index(0-100; 100=best)	44.4	39.0	49.0	TBD

Commentary

Ghana made significant investments in social protection. However, relatively high rates of economic growth have not benefited the population equally, resulting in persistently high levels of poverty in particular the rural savannah and coastal regions

There has been an increase in the number of activities, projects and programmes related to social protection, such as the National Health Insurance Scheme, the Livelihood Empowerment Against Poverty programme, the School Feeding Programme, and the free maternal health care programme. This has also resulted in duplications and a fragmentation of the social protection system[1]

Drivers

- Existing programmes leave significant coverage gaps

Implications & Interventions

Need to address existing programmes coverage gaps in order to cover vulnerable social groups

Some interventions might include

- Increasing access to formal social security and social insurance for all Ghanaians[1]
- Intensifying the implementation of the national social protection strategy[1]
- Reviewing the overall national social protection framework, through improving the coordination amongst its various programmes and policies to ensure overall policy coherence and efficiency[1]

Commentary

Ghana is highly vulnerable to global climate change (ranked 112th for climate vulnerability) & is not ready to combat climate change effects (ranked 119th for readiness out of 181 countries)[1]

Drivers

- Increasing uncertainty about rainfall events; predicted possible changes in rain patterns. Northern region more vulnerable to intermittent floods, and dry spells with water stress
- Desertification and loss of arable land for agricultural production[1]
- Outbreaks of crop/livestock pests/diseases due to high temperatures and/or standing water[2]

Implications & Interventions

Possible worsening of water availability requires strategies to build adaptive capacity in food systems.

Mitigation approaches could focus on:

- Improving water resources conservation, accessibility, availability and quality[1]
- Raising awareness on climate change and potential consequences[1]
- Promoting agricultural biodiversity, crops and animals adapted to climatic change[1]
- Monitoring and assessment of risk vulnerability, paired with timely risk information sharing

Note: Superscript refers to source on source page

Ghana | Initial View of Ghana's performance on supra indicators

Supra-indicator	Unit	Ghana	Africa	World	Country Ambition
21. Production diversity: % production from top 5 crops	Percent (0-100; <50=best)	82%	N/A	N/A	TBD

Commentary
Top 5 production crops in the country in 2019 were cassava, yams, plantains, maize and palm tree fruit, with cassava accounting for ~45% of total production

Drivers
- Economic growth and urbanization are shifting the agriculture sector towards commercial farming that emphasizes increased outputs and undermines farm diversity[1]
- Farm households often specialize in the production of a few profitable crops or livestock, thus reducing on-farm production diversity[1]

Implications & Interventions
High dependency on limited set of crops for a large share of the food consumed in the country can be risky in the face of external shocks, such as extreme weather events or trade disruptions.
As agriculture is characterized by a low level of diversification, this makes farmers more vulnerable to crop failure. Potential interventions include
- Creating awareness that diverse intercropping patterns contribute to higher yields and income while improving soil fertility and pest management[1]
- Increasing diversity of foods produced to increase resilience of the country, while also harnessing the positive health effects

Governance

Supra-indicator	Unit	Ghana	Africa	World	Country Ambition
22. Governance: Presence of food systems related governance bodies and mechanisms	Index (0-14; 14 best)	6	N/A	N/A	TBD

Commentary
Willingness to look at food systems in a holistic way but governance structures still need to be put into place

Drivers
- No explicit long-term goals on food systems' transformation
- No framework in place to look into food systems' transformation
- No permanent supra-ministerial body for food systems' transformation with strong mandate and dedicated resources with required capabilities
- Support at the highest government level for food systems' transformation

Implications & Interventions
A formalized process to engage and include stakeholders in policy making and implementation is in place, however there is a need to strengthen food systems' mechanisms.
Potential interventions include:
- Dedicating a minimum of 10% of public expenditure on agriculture (as committed in the Malabo declaration)
- Defining long-term goals on food systems' transformation and a framework to achieve them
- Setting-up a supra-ministerial body for food systems' transformation with adequate resources

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The Policy and stakeholder landscaping focuses on the most important strategies, potential opportunities, trade-offs and implications

What is covered in this policy and stakeholder landscape

- Most relevant declarations, policies & strategies and stakeholders related to food systems
- Most important gaps and trade-offs in policies based on qualitative diagnostic
- Most important stakeholders related to food systems

What is not covered in this policy and stakeholder landscape

- An exhaustive analysis of all policy, strategy and stakeholders' documents
- Exhaustive analysis of all challenges and gaps in food systems policies
- All key stakeholders across the food system

Policy mapping conducted using framework sub-components…

External drivers - Environment & Climate, minerals, water, bio-diversity, land and soils; globalization and trade; income growth and distribution; urbanization, demographic shift; leadership and governance; socio-cultural context; finance; energy; science technology and innovation

Food supply chains – Input supply, food production systems, storage and distribution, processing and packaging and retail and marketing

Food environment - Food availability, food affordability, food messaging, consumer characteristics

Consumer behaviour - food acquisition, preparation, meal practices and storage

Cross-cutting themes - Gender, youth, human rights

Outcomes

- **Nutrition, diet and health**
- **Livelihoods**
- **Environment**

… which is assessed by corresponding component coverage

Sub-component adequately covered and as expected

Sub-component only partially addressed

Substantial part of sub-component not addressed

Hierarchy of policies in Ghana

The Ghana Vision 2057 that outlines directional ambitions was developed however given the impact of political changes on implementation, mid-term guides overall policy making and implementation.

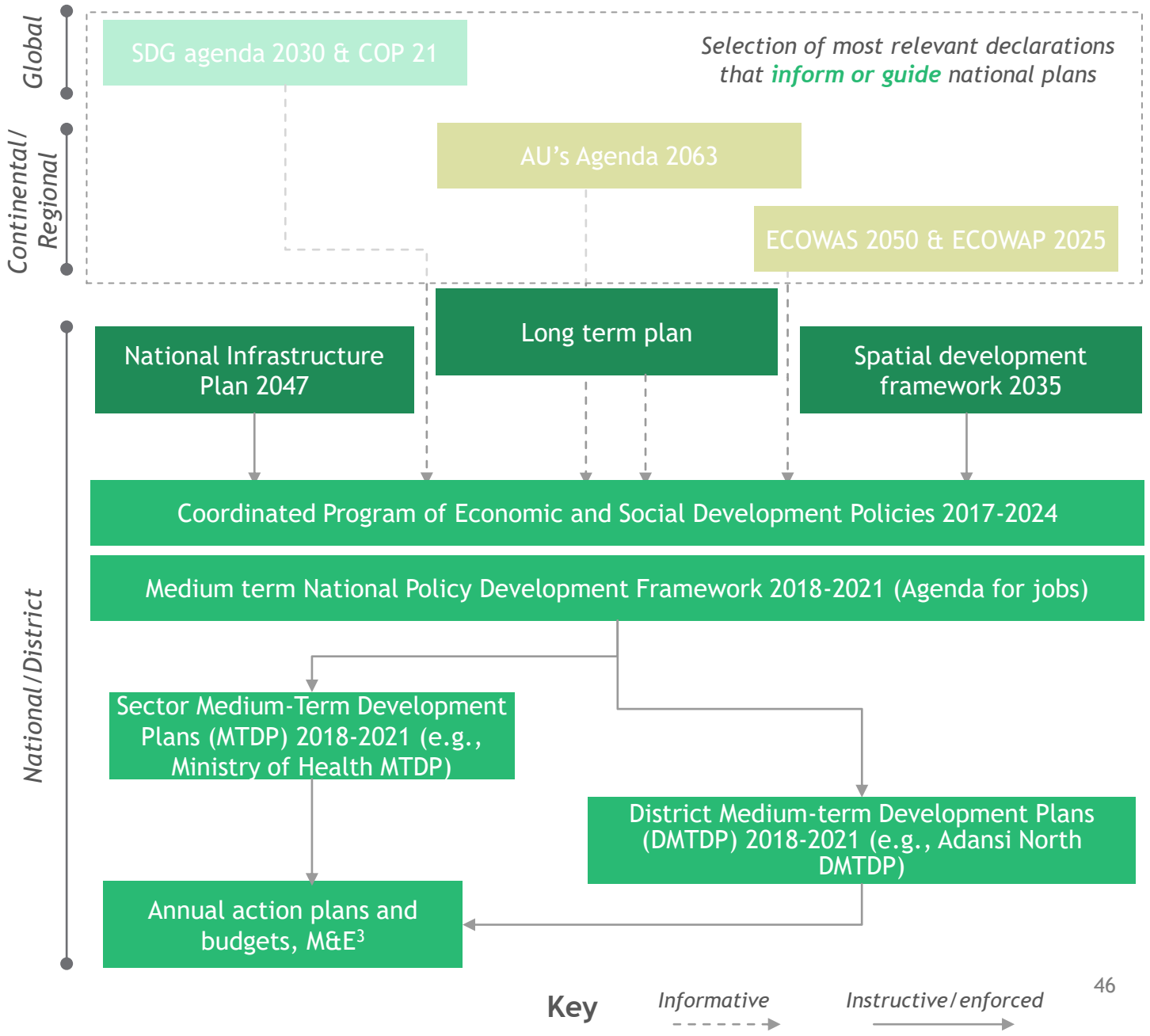
Within two years after assuming office, presidents are mandated to develop their medium-term vision in the Coordinated Program of Economic and Social Development (CPESDP)

The CPESDP is operationalized by the development of a 4-yr Medium term National Policy Development Framework, which is also guided by the SDGs[1], AU's Agenda 2063, ECOWAS[2] Vision 2050 and the Paris accord

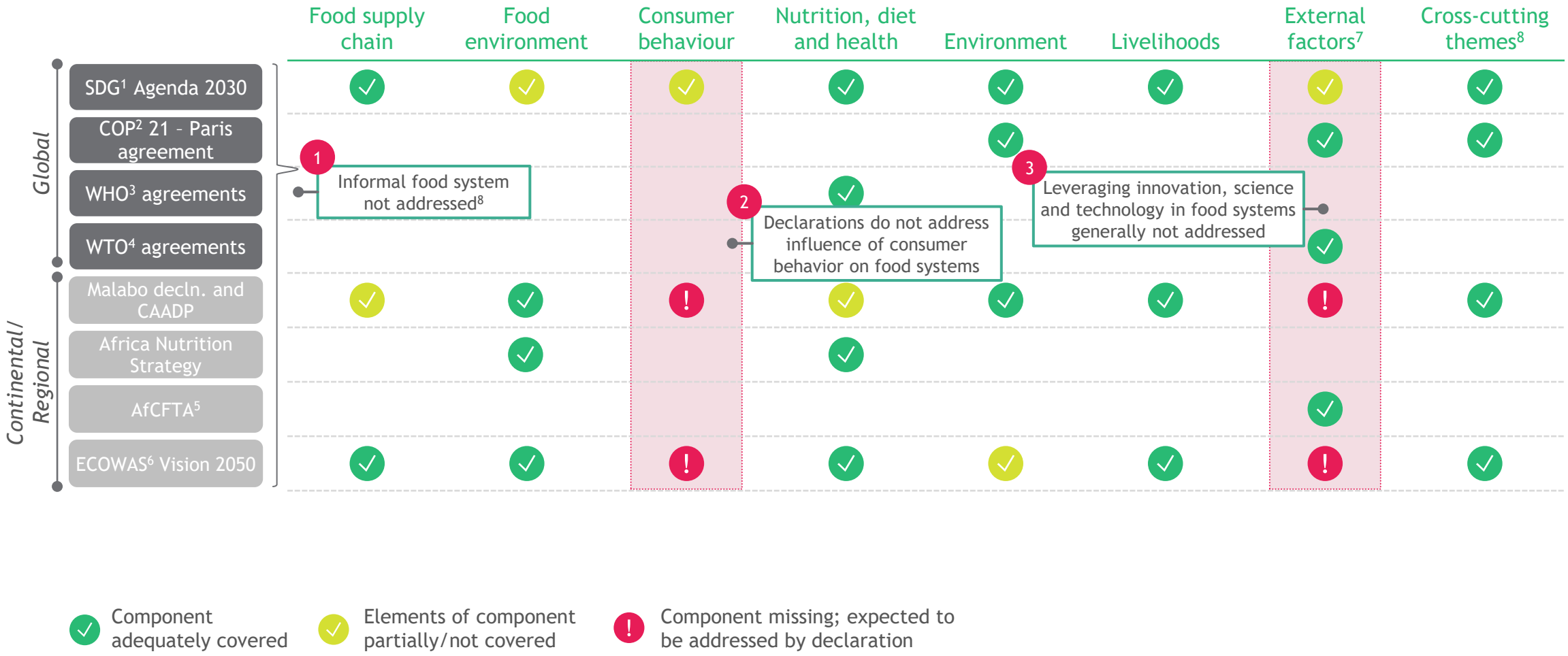
This Medium-term National Policy Development Framework acts as the guiding framework for the sector and district plans; which are then translated into 4-year rolling composite action plans which lay out the implementation of actions and associate budget for projects. This is finally translated into annual action plans and budgets

While the implementation of policies is decentralized at the district level, each sector can also implement projects in collaboration with the districts

1. SDG – Sustainable Development Goals; 2. Economic Community of West African States; 3. Monitoring & Evaluation

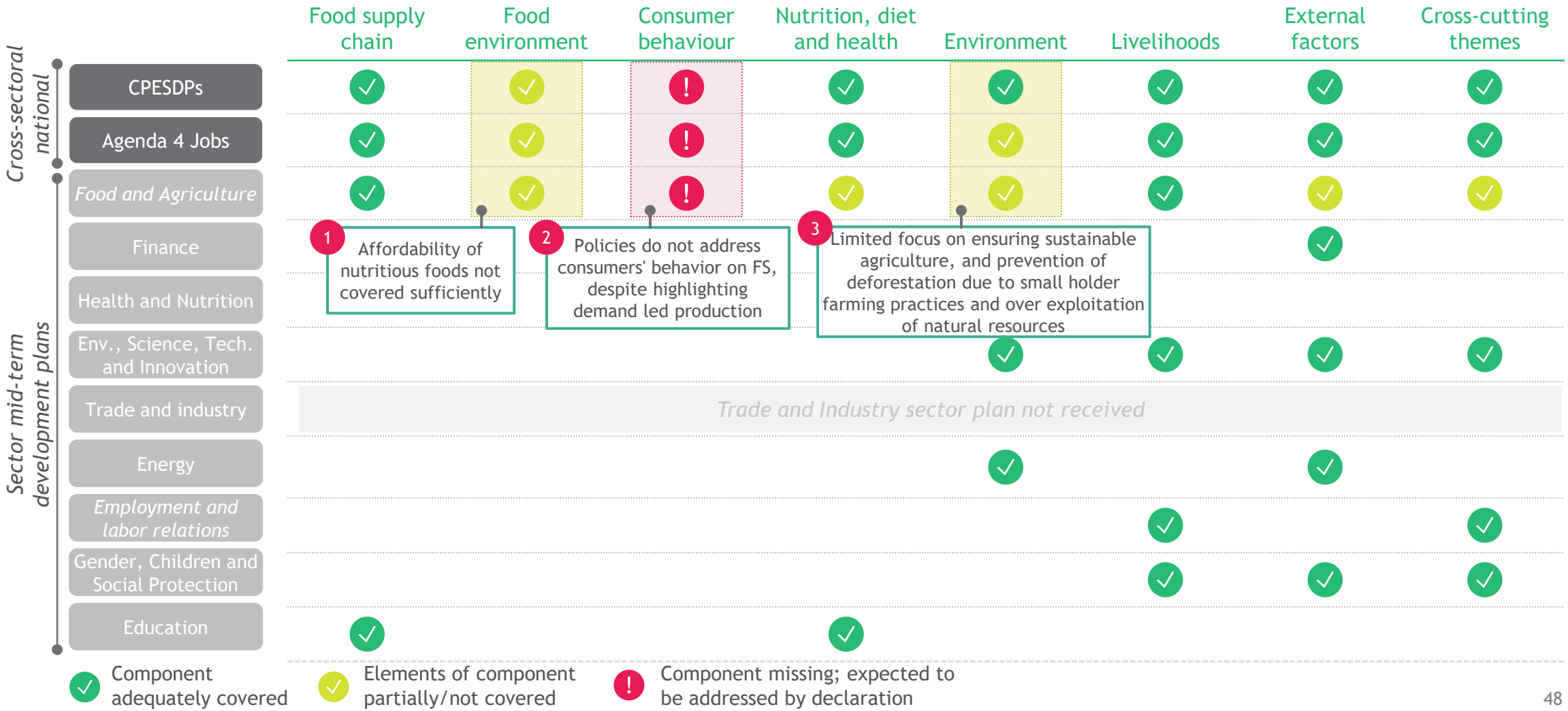


Global and regional declarations touch upon many parts of the food system, but three main gaps exist



1. Sustainable Development Goals 2. Conference of Parties; 3. World Health Organization; 4. World Trade Organization 5. African Continental Free Trade Area; 6. Economic Community of West African States; 7. External factors based on qualitative framework developed. 8. Includes gender, human rights and youth. 8: Includes pop-up stalls, informal markets and traders etc.47

While national strategies have a strong focus on supply chains and livelihood, there are some specific elements that are not sufficiently covered



Probable changes required in national policies and strategies when implementing potential game changing solutions

Diet quality and nutrition security

Low production, affordability and demand for nutrient dense foods

Food & Agriculture
- Strengthen end-to-end planning for nutrition sensitive production

Trade & Industry
- Expand the district market network

Health & Nutrition
- Strengthen strategies to address consumer behavior

Gender, Children & Soc. Prot.
- Diversify school meals

Trade vs. Agric./Health
- Increased local consumption of healthy foods vs export income
- Increased ASF[3] consumption vs. GHG[4] and negative env. impact

Consumption of unhealthy foods

Urbanization at ~57%, poor food environments resulting in higher obesity and NCD prevalence

Food & Agriculture
- Subsidize inputs for nutrient rich foods
- Ensure true pricing of food
- Invest in agro-processing for nutrient rich foods

Health and Nutrition
- Launch campaigns to promote the consumption of healthy food
- Define marketing restrictions of unhealthy foods and drinks
- Update Ghana's General Labelling Rules with mandatory nutrition information and FBDG[2]
- Explore taxation/import tax (ban) of unhealthy foods

Health vs. Trade & Ind.
- Increased taxes on processed foods vs employment and affordability of diet

Environmental resilience

Heavy deforestation and mining contributing to climate change and bio-diversity loss

Food & Agriculture
- Launch agroforestry programs
- Promote solar-powered irrigation
- Implement circular food system

Land & Nat. Resources
- Empower communities to adopt sustainable & legal mining
- Strengthen community-based monitoring of illegal logging

Env. Science Innov. & Tech
- Develop understanding of local climatic and soil conditions
- Scale sensitization of sust. resource management practices

Env. vs Agric.
- Sust. farming practices vs. productive intensive farming
- Prevention of deforestation vs. small holder farm incomes

Infrastructure capacity

20% food loss, impacting food availability, increasing consumer prices and limiting trade potential

Food & Agriculture
- Link farmers to agro-processors
- Explore ways to communicate supply chain best practices

Trade & Industry, and Finance
- Stimulate demand and supply for infrastructure projects
- Select priority post harvest management projects
- Facilitate new infrastructure PPPs, private sector investment and ease of doing business
- Re-allocate resources to invest in select and prioritized projects

Finance
- Higher public investment in infrastructure results in less investments in other critical issues

Discrepancies between regions

Income inequality and malnutrition in North, due to lower productivity, harsh climate

Food & Agriculture
- Strengthen input provision to farmers
- Invest in agro-processing and stronger supply chains to improve market access

Trade & Industry
- Invest in agro-processing facilities and stronger supply chains to improve market access

Gender, Children & Soc. Prot.
- Scale up Livelihood Empowerment Against Poverty program

Finance
- Higher public investment in infrastructure results in less investments in other critical issues

Key MTDP[1] *Change to make*

Key MTDP[1] *Trade-off's*

1. Medium Term Development Plan; 2. Food Based Dietary Guidelines; 3. ASF – Animal Sourced Foods; 4. Green House Gases

We looked at the key challenges of Ghana's food system to identify policy gaps, opportunities and potential overlaps (I/II)

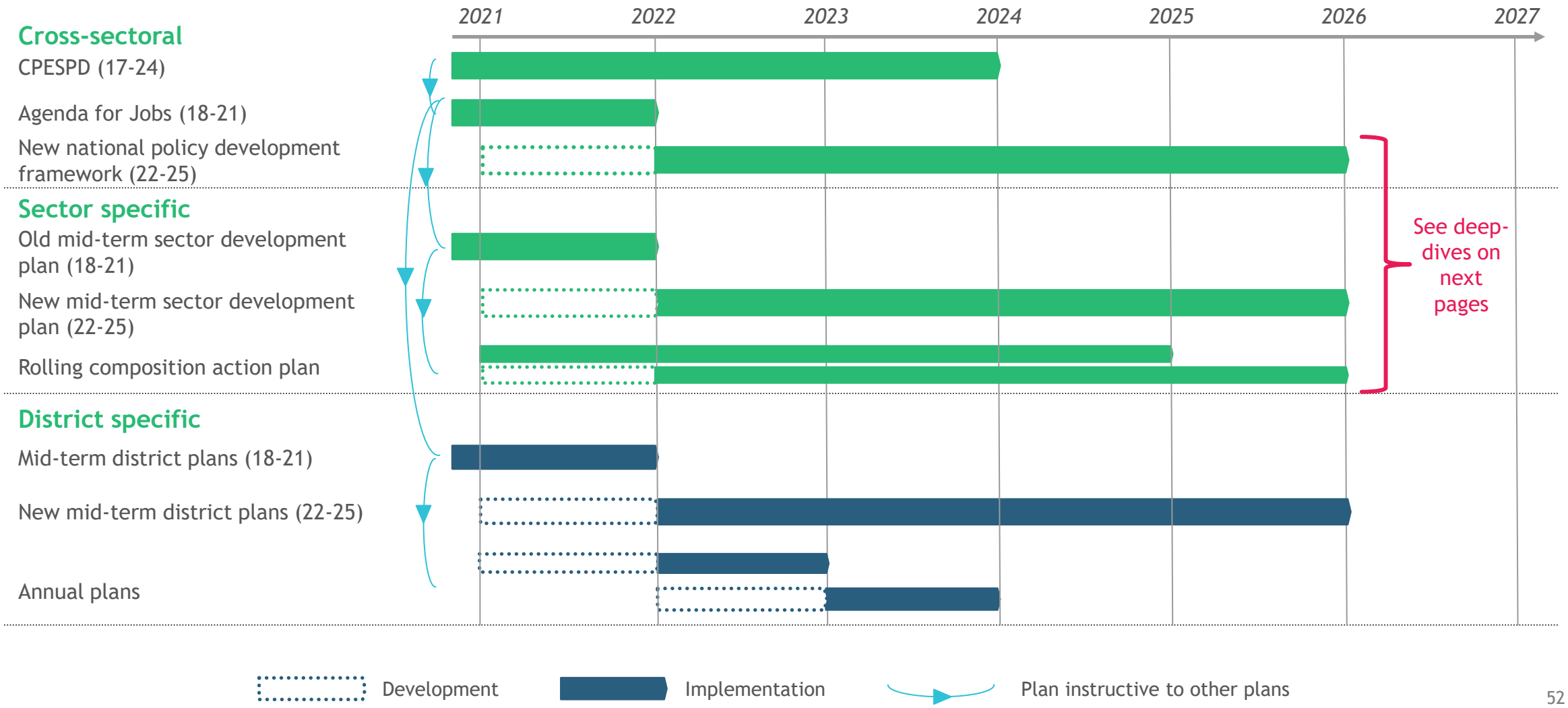
Key challenges in FS	Current policies related to challenge	Potential gaps or conflicting policies	Potential Implications
Diet quality & nutrition security: Low production levels, affordability and demand for nutrient-dense foods among population; limited diversity of crops makes country dependent on imports of certain expensive crops	• **Health:** Food fortification with micronutrients • **Agriculture :** Food-base dietary guidelines, promotion of production and consumption of bio-fortified crops • **Business development:** MSME vegetable production projects	• Limited attention to increase demand for more nutritious food and promoting the domestic production of those foods • Production and consumption of bio-fortified crops is encouraged – but no interventions to improve affordability and availability	• Explore opportunity to ramp up sensitization on nutrition sensitive trade and consumption • Create more district markets to increase diversity and availability of nutrient-rich foods • Tailor input subsidies to increase production of nutrient rich foods
Consumption of unhealthy foods Urbanization at ~57% and rising incomes, as well as poor food environments are leading to increased consumption of unhealthy foods, resulting in higher obesity and NCD prevalence	• **Agriculture :** Green house domes for vegetable production in urban areas • **Health :** Reduction in non-communicable disease and promotion of healthy lifestyle • **Trade:** Health guidelines on imported foods	• Limited sensitization on importance of nutritious diet, or risks of processed foods • Health interventions focused on mitigating NCD's as opposed to preventing them • Marketing restrictions of junk and carbonated beverages limited • Availability and affordability of healthy foods not sufficiently addressed • Front of package nutrient is not required	• Explore taxation of unhealthy foods whilst subsidizing inputs for nutrient rich foods • Explore marketing restrictions on unhealthy foods (especially to kids) • Create front of package food labeling policy to promote the consumption of nutritious foods
Discrepancies between regions Northern regions suffering from lower productivity and a difficult climate, resulting in low availability & affordability of foods, causing higher levels of malnutrition and income inequalities compared to other regions	• **Agriculture and Finance:** Credit guaranty schemes, digital financial solutions • **Agriculture:** R&D of climate resilient crop varieties • **Agriculture:** Investment in feeder roads • **Business development:** MSME vegetable production, capacity & skills development • **Education:** Training to increase value of produce	• Insufficient investment in infrastructure and access to markets to capitalize on underemployment • Market linkages for produce need to be strengthened • Social safety net in the lowest income bracket insufficiently addressed apart from the LEAP[1] and GSFP[2]	• Sensitize population on consumption of nutrient rich foods • Transition to irrigated agriculture with improved water storage • Enable production, consumption and export of agro-processed products • Explore scaling up of LEAP and school feeding programmes, link to agriculture to grow farmer incomes

We looked at the key challenges of Ghana's food system to identify policy gaps, opportunities and potential overlaps (II/II)

Key challenges in FS	Current policies related to challenge	Potential gaps or conflicting policies	Potential Implications
Infrastructure Capacity Low use of technology, poor infrastructure, lack of processing capacity, is leading to a 20% food loss, increasing the costs for farmers and prices for consumers and limiting the ability to supply the entire country or trade	• **Agriculture:** Post-harvest management such as storage, processing and packaging • **Agriculture and Finance:** Tax relief and incentives for agriculture related investments • **Energy:** Sustainable energy for small scale processing	• While policies mention the need to increase financing and investment, more focus is needed to assess how innovative risk assessments can help to resolve current shortages • Limited rural electrification investment to enable cold storage	• Explore re-allocation of resources to invest in storage & distribution • Explore means to incentivize credit extension to build infrastructure • Opportunity to leverage existing skills to build out agro-business
Environmental Resilience High vulnerability to climate change in North & Southern coastal area; heavy deforestation and illegal mining contributing to climate change and biodiversity loss. Select crops highly vulnerable to climate change	• **Agriculture:** Technology adoption to disseminate weather and price information • **Agriculture:** R&D of climate resilient crop varieties, investment in water storage and small and medium scale irrigation schemes • **Environment, Science, Technology and Innovation:** – Climate prediction technology/data to mitigate impact – Maintain forest cover at 21% • **Energy:** Sustainable energy for small scale processing and irrigation • **Trade:** Increase exports of ores and petroleum	• Enforcement of regulations against illegal mining activities not achieved, impacting adoption of sustainable land and resource management • While the Ministry of Lands and Natural Resources has regulations in place to combat deforestation, it is not sufficiently enforced on the ground • Limited guidelines on the application of fertilizer, also impacting sustainable resource management	• Empower communities to adopt sustainable and legal mining activities • Scale sensitization of sustainable resource management practices • Explore scaling-up of agroforestry programs (e.g., *fruit tree campaign*) • Potential to further develop localized understanding of soil, seasonal and climatic conditions in near real time • Promote solar-powered irrigation systems, processing equipment and hand-held implements • Leverage digital to provide e-extension services

1 LEAP – Livelihood Empowerment Against Poverty; GSFP - Ghana School Feeding Program

Mid-term review of national development policy framework current ongoing



National Policy Development Framework | Designed through a 3-step process, informing the sector and district level plans

1 Situational analysis

Identify gaps in previous framework

Annual progress tracking of previous National Policy Development Framework (i.e., Agenda for Jobs, 2018-21)

- How is was implemented, through sector and district plans
- Tracking of impact through indicators
- Understanding actions of stakeholders

2 New policy framework development

Develop new policy matrix

Institute 5 Cross-sectoral planning groups (inclusive stakeholder involvement) to:

- Incorporate passed policies and CPESPD into policy framework
- Develop priority areas across each of the 6 dimensions[1]
- Highlight issues addressed across 6 dimensions inc. cross-cutting issues
- State objectives, strategies and lead & collaborating agencies for each issue

3 Results framework development

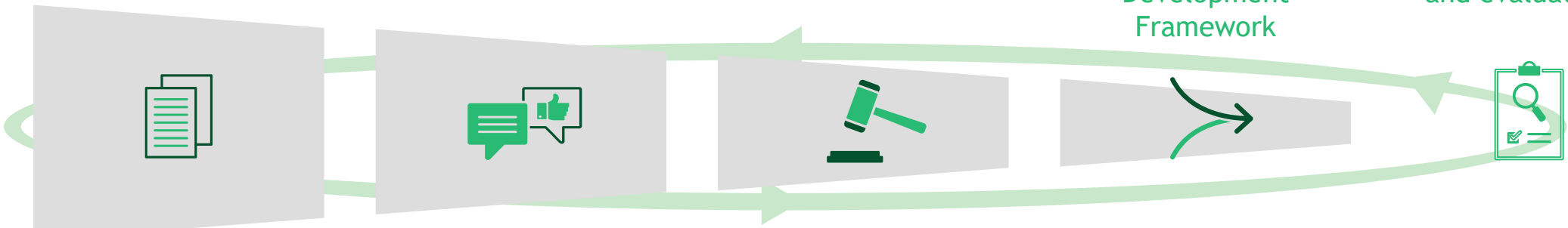
Identify indicators & targets to track progress

- Identify set of indicators to track progress for each focus area in each dimension
- Set goals for each indicator
- Assign agency responsible for collection of data at national and district level

Shared with sectors and districts for development of their plans

1. 6 dimensions include; Economic development; Social development; Environment, infrastructure and human settlements; Governance, corruption and public accountability; and Strengthening Ghana's role in international affairs

National Policy Development Framework| All new policies need to be tested against existing policies and incorporated into the framework



Policy initiation and intent	Technical assessment	Policy decision making	Incorporation in National Policy Development Framework	Implementation & monitoring and evaluation
President or Ministries, Departments and Agencies (MDAs), draft public policy based on identified issues	**Min. of Justice** advices on legal implication **NDPC** convenes all relevant stakeholders to discuss policy, check alignment with national & sector policies and other dev. frameworks. Shares feedback with MDAs to be incorporated	**Cabinet Approval** Cabinet confers with NDPC and AG to ensure policy meets legal frameworks and development objectives **Parliamentary Approval** Parliamentary sub-committees check technical details of policy and engage with stakeholders	As part of the development of the new national policy framework, any new policies that were passed by parliament **need to be incorporated** into framework before implemented in plans with an allocated budget	Once approved, the national development policy framework (which now includes all policies), is translated into sector and district plans with a budget and is implemented by MDAs who initiated process and collaborators
President, MDAs, MMDAs, in collaboration with research and development partners	NDPC, CSPG & technical working groups (all relevant stakeholders)	Parliament and Cabinet	NDPC	Lead – Initiator Collaborators: National institute of Statistics; Local govt, Private sector, dev. partners

Key stakeholders involved *(non-exhaustive)*

Deep-dive on next page

Deep dive | Policy initiation and intent process

Research & problem identification

Public institutes, identify issues necessitating formulation of policy. Issues emanate from

- Public concern
- Manifestos
- Govt. agenda etc.

Policy formulation

Identify and formulate policy options to address the issue(s). Consideration of economic, socio-cultural gender impacts etc. Optimal policy recommendation made

Lobby & input from civil society

Opinion forms as **industry associations, interest forums,** consulted to build consensus for recommended option, make stakeholders aware of role and try secure buy-in

Vision goals and resource mobilization

Define vision and objective to achieve intended results for recommended policy option.
Map out strategy to achieve resource mobilization

Implementation and M&E arrangements

Develop action plan and associated monitoring and evaluation plan

Stakeholders involved

- President
- Ministries, Departments & Agencies (MDAs)
- Research and development partners

- Policy formulation team (Minister, chief director, head of PPMED, finance, cost center and projects)

- CSO's
- Private sector,
- citizens,
- Farmer coop's
- Media

- Policy formulation team

- Policy formulation team

Sector and District plans| Formulation guided by the National Policy Development Framework and implemented through annual action plans

Carry out situational analysis of MDA[1]/MMDA[2]	Prioritize set of development issues	Develop projections, goals, objectives and strategies	Formulate composite action plans	Annual action plans and implementation
Outline of performance on development programs and financing in past implementing period including outcomes and impact indicators Narrative of existing situation and list of development issues	Develop prioritized list development issues and problems emanating from situational analysis considering • Severity and diversity of problem, intended benefit • Impact on economic multiplier effect • Linkage effect with meeting human needs & rights	Tailor projections, goals, objectives and strategies based on context e.g., district economic activity, demographic situation. Ensure these are in line with the National Policy Development Framework	Develop 4-year action plans which consist of • Action plan for each objective and strategy, detailing out activities for each strategy to be carried out over next 4 years (how long, executing lead and collaborating stakeholders) • Costing of each activity and resources requited • Plan needs to be approved by NDPC to prior to allocation of budget by ministry of finance	Translate composite plan into annual action plan, identify • Key activities to be conduced • Associated budget of activities • Indicators to be tracked for monitoring and evaluation of each activity which is associated with a strategy and objective

1. MDA – Ministry Department Agency – National level, in share of sector planning and implementation 2. Metropolitan, Municipal and District assemblies – in charge of district planning and implementation

Overview of key stakeholders in Ghana's food system (I/II)

Public sector	Intl community and dev org.	Private sector	Civil society and other	Academia	Media
Min. of Food and Agriculture	AGRA	The Association Of Ghana Industries	Ghana Agricultural And General Workers' Union	Center For Policy Analysis	Alliance Media Ghana
Min. of Health	FAO	Unilever Ghana Limited	Food Security Policy Advocacy Network	Cocoa Research Institute Of Ghana	Adom TV
Min. of Monitoring & Evaluation	GIZ	Food & Beverages Association Of Ghana	Ghana National Association Of Farmers And Fishermen	Faculty Of Agriculture Of Methodist University College Of Ghana	Peace FM
Min. of State at the Min. of Food and Agriculture	FCDO	Green-Gro Ltd	Ghana National Association Of Poultry Farmers	Faculty Of Agriculture Of The University For Development Studies	Goodnews FM
Min. of Trade and Industry	IMF	Agricare Ltd	National Fisheries Association Of Ghana	Forum For Agricultural Research In Africa	Hello FM
Min. of Local Govt	JICA	Agrimat Ltd	Peasant Farmers Association Of Ghana	University Of Ghana	Daily Graphic
Min. of Finance	World Bank	Ecobank Ghana	Ghana National Fishermen's Council	CSIR	
Min. of Environment, Science and Technolgoy	USAID	Shoprite	Ghana Tuna Association	University Of Ghana	
Min. of Gender, Children and Social protection	WFP	Yara Ghana	Ghana Trawler Association	Savannah Agricultural Research Institute	
Min. of Planning	Abantu For Development	GCB Bank Limited	National Inland Fishermen's Council	Ghana Center For Democratic Development	
National Development and Planning Commission	Agence Française De Développement	Nobac food processing	Ghana Rice Inter-Professional Body	International Water Managment Institute	
Environmental Protection Agency	Canadian International Development Agency	Nestle Ghana	National Farmers And Fishermen Award Winners Association-Ghana		
Min. of Education	Danish Development Agency	Homefoods processing	Ghana NCDA alliance		

Overview of key stakeholders in Ghana's food system (II/II)

Public sector	Intl community and dev org.	Private sector	Civil society and other	Academia	Media
Lands Commission	International Fund For Agricultural Development	Eden Tree company	Ghana Agricultural Producers And Traders Organization	IFPRI	
Forestry Commission	Trade Aid Integrated	Blessed child foods	Apex Farmers Organization Of Ghana	Science And Technology Policy Research Institute	
Environmental Protection Agency	U.S. Department Of Agriculture	Blue Skies holding ltd	Hunger Alliance Ghana	Japan International Research Center For Agricultural Sciences	
Food and Drug Authority	Action Aid Ghana	Quin Organics	Cocoa Marketing Company Ghana Ltd	IFDC	
Min. of Sanitation And Water Resources	UNICEF		Federation Of Association Of Ghanaian Exporters	LITA	
Min. of transport	John Agyekum Kufuor (Jak) Foundation		The Alliance Of Cocoa Producing Countries	University Of Health And Allied Sciences	
Min. of roads and highways			Urbanet		
Ghana Export promotion authority			Ghana Trade And Livelihoods Coalition		
Ghana cocoa board			Ghana Cocoa Coffee Sheanut Farmers Association		
Ghana Standards Authority			Ghana Agricultural Associations Business Information Centre		
			Central & Western Fishmongers Improvement Association		

Main stakeholders relevant to main food systems challenges (I/II)

Key challenges in FS	Relevant supra-indicators related to FS challenge	Stakeholders[1] more actively involved	Key decision maker(s)[2]	Stakeholders that could be more actively involved
Diet quality & nutrition security: Low production levels, affordability and demand for nutrient-dense foods among population; limited diversity of crops makes country dependent on imports of certain expensive crops	1 Diet Quality – Food consumption score 2 Nutrient supply 4 Overweight and Obesity 6 Affordability 21 Production diversity	• *Min. of Food and Agriculture* • *Min. of trade and industry* • *Min. of Health* • *Min. of local govt., dec. and rural development* • *Min. of Gender, Children and Social Protection*	*Dr. O. Akoto – Minister Min. Food & Agriculture* *A. Kyerematen - Minister Min. of Trade & Industry* *K. Agyemang-Manu – Minister Min of Health*	• *Ghana Health Services* • *Min. of Education* • *Ghana Education Service*
Consumption of unhealthy foods: Urbanization at ~57% and rising incomes, as well as poor food environments are leading to increased consumption of unhealthy foods, resulting in higher obesity and NCD prevalence	4 Overweight and Obesity 6 Affordability 9 Food environment	• *Min. of Youth and Sports* • *Min. of Education* • *Min. of Health* • *Min. of Local Govt., dec. and Rural Development* • *Min. of Finance*	*D. Botwe – Minister Min. Of Local Govt and rural dev.* *A. Kyerematen - Minister Min. of Trade & Industry* *K. Agyemang-Manu – Minister Min of Health*	• *Media* • *Private sector companies* • *NGOs/CSOs (grass root movements to educate citizenry)* • *Min. of information*
Infrastructure Capacity Low use of technology, poor infrastructure, lack of processing capacity, is leading to a 20% food loss, increasing the costs for farmers and prices for consumers and limiting the ability to supply the entire country or trade	8 Food loss 12 Food waste 15 Income – Gap between farmgate and retail price	• *Min. of Trade and Industry* • *Min. of Finance* • *Min. of Business development* • *Min. of Food and Agriculture* • *Min. of local govt., dec. and rural development*	*Dr. O. Akoto – Minister Min. Food & Agriculture* *D. Botwe – Minister Min. Of Local Govt and rural dev.* *A. Kyerematen - Minister Min. of Trade & Industry*	• *Private sector* • *Social enterprise/NGOs (link value chain partners to each other and work more closely together)*

Main stakeholders relevant to main food systems challenges (II/II)

Key challenges in FS	Relevant supra-indicators related to FS challenge	Stakeholders[1] more actively involved	Key decision maker(s)[2]	Stakeholders that could be more actively involved
Discrepancies between regions: Northern regions suffering from lower productivity and a difficult climate, resulting in low availability & affordability of foods, causing higher levels of malnutrition and income inequalities compared to other regions	1 Diet Quality 2 Nutrient Supply 3 Undernourishment 6 Affordability 17 Economic – household resilience capacity index 16 Gender equity 15 Income – Gap between farmgate and retail price & Gini coefficient 18 Risk distribution	• *Min. of local govt. and rural development* • *Min. of health* • *Min. of Gender, Children and Social Protection* • *Min. of employment and labour relations* • *Min. of Food and Agriculture*	*K. Agyemang-Manu – Minister Min of Health* *D. Botwe – Minister Min. Of Local Govt and rural dev.* *Dr. O. Akoto – Minister Min. Food & Agriculture*	• *Min. of information*
Environmental Resilience High vulnerability to climate change in North & Southern coastal area; heavy deforestation and illegal mining contributing to climate change and biodiversity loss. Select crops highly vulnerable to climate change	10 Emissions – GHG emissions from agriculture 11 Land 13 Regeneration – Biodiversity and habitat index 20 Environmental : ND-Gain	• *Min. of land and natural resources* • *Min. of Environment, Science Innovation and Technology* • *Min. of Food and Agriculture* • *Min. of Trade and Industry* • *Min. of local govt., dec. and rural development*	*Dr. K Afriyie -Minister Min. of Env, Sci & Tech.* *S. Jinapor – Minister Min. Of Lands and Natural Resources* *Dr. O. Akoto – Minister Min. Food & Agriculture* *A. Kyerematen - Minister Min. of Trade & Industry*	• *Min. of information* • *Media (raise awareness on sustainable practices)* • *Private sector players (commit to investment in local population)* • *CSOs*

With the Diagnostic and Landscaping analysis completed, it is time to think about "what comes next"

Food Systems Transformation

0 Engagement	1 Diagnostic analysis (April – Aug 2021)	2 Policy development	3 Policy implementation
National government • Integrative leadership and capacity • Political will and commitment	National government • Connection to relevant agencies • Access to data and relevant officials • Interaction with Food System Dialogues • National TIP structure	Development of policies, with engagement of: • Ministries and agencies • Legislature • Private sector • Civil society • Academia • Other stakeholders	Implementation of policies, with engagement of: • Ministries and agencies • Private sector • Civil society • Other stakeholders
• Country prioritization and selection • High-level government engagement	• Key food system challenges and opportunities, based on fact base • Key policy gaps, incoherencies, and opportunities • Key data and evidence gaps	• Process facilitation and coordination • Identify potential policies • Analyses, modelling and evidence generation & synthesis • On-demand expertise • M&E, learning, implementation research, cross-pollination	• Process facilitation and coordination • Analyses, modelling and evidence generation & synthesis • On-demand expertise • M&E, learning, implementation research, cross-pollination

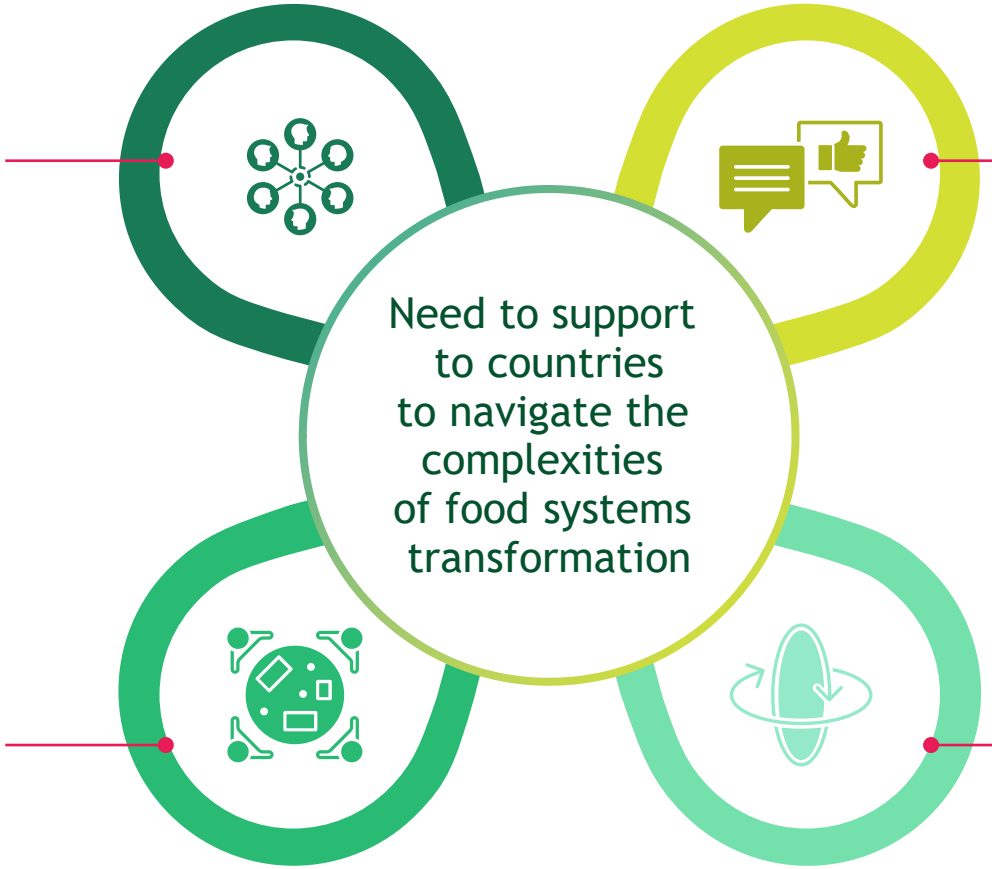
Sustainable healthy diets for all

UN Food Systems Summit
September

We believe that it is the time to harness the momentum of the UN Food Systems Summit towards accelerated food systems transformation

Countries increasingly realizing the need for **integrated policy and governance structures** that build on what works while addressing functional gaps

Ambitious commitments expected at the Summit: **a moment to move beyond visioning and analysis to planning for action and accelerating change**



Food system gaps and aspirational outcomes articulated at FSS Dialogues **bringing together a wide range of stakeholders**

Realization that **coalitions of diverse partners** are required for food systems transformation

To enable locally-led transformative and integrated action in the food system, there is a need for an integrator, facilitator and curator to provide support

Wide range of initiatives, resources and **complexities** coming at countries

Need for an **integrator, facilitator and curator** to help turn this complexity into transformative and integrated **action**

Publications and reports (academic publications, private and public sector reports, etc.)

Frameworks (CAADP, Food Systems Dashboard, FSS action tracks, HPLE, etc.)

CFS HLPE High Level Panel of Experts · FOOD SYSTEMS DASHBOARD · UNITED NATIONS FOOD SYSTEMS SUMMIT 2021

Data sources (FAO, UN, World Bank, WHO, FS Dashboard, ReSAKSS, WFP, etc.)

WFP World Food Programme

Targets and policies (SDGs, WHO 2025, Malabo Declaration, national strategies, etc.)

GLOBAL TARGETS 2025

Food systems complexity

Phase 1: Diagnostic & landscaping analysis

- Created a diagnostic tailored to the country's context and focused on implementation
- Identified existing data gaps & approaches to fill
- Brought together quantitative data analysis and qualitative policy & stakeholder mapping
- Built the foundation for local prioritization and ambition setting
- Created buy-in though our co-creative and iterative approach

Phase 2: Transformative and integrated policies

- Support local leadership to **integrate existing initiatives and resources** into a coherent and prioritized approach
- Facilitate country **ambition setting & prioritization**
- **Convene stakeholders** for an inclusive & integrated approach
- **Build local analytical capacity**

FS-TIP can help navigate complexity

Support governments to accelerate towards the vision of **sustainable healthy diets for all** starting with evidence-based policy design and implementation

Ministries of Agriculture, Health, Environment, Trade, Local Government, etc.

FS-TIP works to explicitly align objectives and policies across ministries to accelerate food systems transformation

Equitable livelihoods that deliver sustainable healthy diets for all

Ministry of Food and Agriculture

- Increased production of healthy foods
- Quality farmer extension training
- Access to inputs particularly for nutritious foods
- Enhanced smallholder incomes

Ministry of Health

- Healthy citizens; extended lifespans
- Non-communicable disease cost avoidance
- Reduction in stunting and wasting

Presidential Initiative with FS-TIP support integrating, aligning, coordinating

Ministry of Industry and Trade

- Increased value addition activities
- Development of a "good food" processing sector
- Linkages across the value chain

Ministry of Land and Natural Resources

- Protection & restoration of natural resources
- Management of water + land resources
- Building resilience against climate shocks and change

Enablers : Investment & innovation

Diet quality and nutrition security

Consumption of unhealthy foods

Environmental resilience

Infrastructure capacity

Discrepancies between regions

Harnessing the Food Systems Summit Dialogues & FS-TIP diagnostic analysis to prioritize challenges & policies

Three key actions to move from diagnostic to actions to realize country-owned food systems transformation

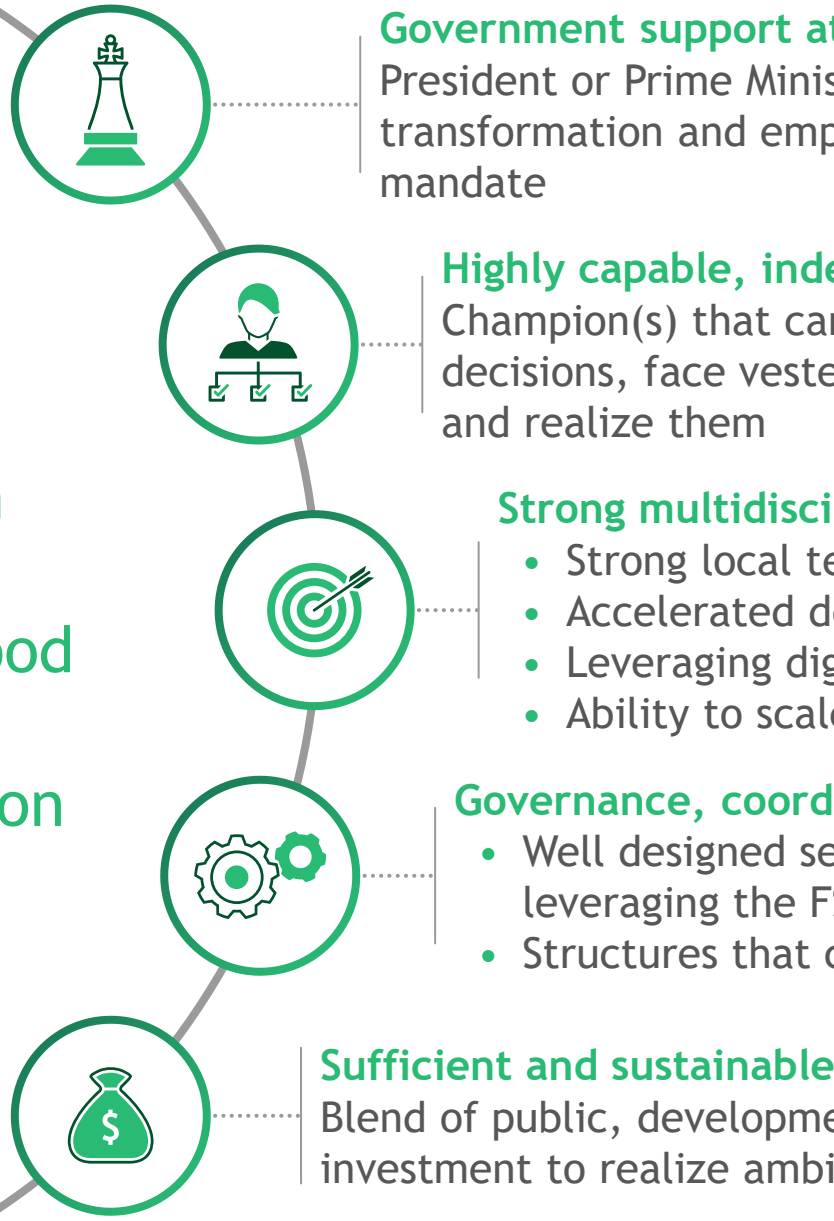
Prioritize set of food system challenges: Align stakeholders on the most urgent and important challenges and identify how they align with existing strategies and policies

Set ambition and formulate policy to address priority challenges:

- Convene the public, private, development, academic, and social sectors, as well as civil society and the media, to develop a national ambition and priorities for action
- Formulate the relevant policies, addressing interdependencies, synergies and trade-offs with robust analysis and evidence
- Outline the funding, programs, processes, and monitoring and evaluation mechanisms to address challenges

Design governance, coordination and delivery models for locally-led food system transformation: functions, processes, funding, capacity building and use of technology to drive efficiency and effectiveness

Required conditions in country for successful food systems transformation



Government support at the highest level

President or Prime Minister to support a national agenda for food systems transformation and empower the governance structure with the necessary mandate

Highly capable, independent and respected leadership

Champion(s) that can lead planning and delivery efforts, make tough decisions, face vested interests, and inspire others to set bold ambitions and realize them

Strong multidisciplinary local teams that can "over-deliver"

- Strong local team(s), with technical expertise to build capacity over time
- Accelerated delivery of programs at scale
- Leveraging digital technology to make and measure impact
- Ability to scale up and scale down required capabilities in an agile way

Governance, coordination and delivery models for a high-performance culture

- Well designed set of performance indicators and evaluation mechanisms, leveraging the FS-TIP 'scorecard/dashboard' as the baseline
- Structures that can adapt to changing realities and evolving insights

Sufficient and sustainable funding for intergenerational effort

Blend of public, development and private sector finance and investment to realize ambition over a 10+ year period

The in-country governance structure to drive food systems transformation should follow five design principles

Bold transformative agenda with a clear review process

Able to set bold ambitions for true food system transformation, with equally ambitious local capacity-building goals; accountable to national government via a formal review process

Integrate all components of the food system

Must work across all components of the food system to enable prioritization, coordination and integration of policies, leverage synergies and manage trade-offs

Connect stakeholders from local to regional to global levels

Ensures all voices are heard, siloes are broken and coordination takes place between stakeholders; brings subnational, national, regional, and global stakeholders together in an inclusive and meaningful way enriched by feedback to the stakeholders and public

Long-term commitment and strong, clear mandate to deliver

Needs long-term focus (10+ years); must have sufficient mandate to make tough decisions and deliver on ambition within its timeframe; must be able to survive government transitions

Able to attract funding and investment for implementation

Should attract funding and investment into food systems from public and private sector, locally and from abroad; will align interests behind shared priorities

From Diagnostic to Action | Four functions to realize food systems transformation

Executive function

- Coordinates and ensures delivery across different Ministries and Government agencies that are part of the FS policy environment
- Sets the priorities and ambitions for transformation
- Conducts analysis, designs policies and programs and supports implementation to realize ambitions
- Ensures development of capacities of local teams

Data custodian and progress reviewing function

- Provides the data-foundation for ambition setting and prioritization of actions, based on FS-TIP scorecard of supra- and key indicators
- Tracks progress towards the ambitions
- Enables performance comparisons across countries (in Africa) through the CAADP biennial review

Inclusive participation function

- Brings together voices of all food system stakeholders
- Breaks down siloes between actors and components of the food system
- Acts as a “checks and balances” mechanism to ensure policies are relevant and implementable
- Has an advisory, consultative or participatory role in decision-making

Thinking and advisory function

- Brings together academics, development partners and other stakeholders with expertise in food systems, that are not direct actors
- Develops evidence to inform policy design and implementation
- Continuously develops capacities of local teams

Coordination & budget function

- Ensures coordination between the different functions
- Develops budget for different functions
- Conducts fundraising and mobilizes resources (together with the executive function)

TBD if separate function or part of one of the other functions

Illustrative

Illustrative set of options for each function

Executive function	Select ministries in charge, coordinating in sector cluster	'Presidential Initiative' with technical and steering committees	New Food Systems Transformation Agency
Data custodian and progress reviewing function	CAADP indicators, ReSAKSS, biennial review with added FS elements	CAADP indicators, ReSAKSS, biennial review, supported by detailed FS-TIP scorecard	CAADP indicators, biennial review, FS-TIP dashboard as local version of the Food Systems Dashboard
Inclusive participation function	SUN Civil Society Network & SUN Business Network expanded to full food system view	Food Systems Summit Dialogues as transformed into a permanent forum	New network of food systems consultation "hubs"
Thinking and advisory function	National Development Planning Commission	Academic institutes connected into food systems platform	New Food systems Think Tank

There are different options for the exact set-up...

Functions can be built upon existing structures or might require new structures

- Existing structures to consider: SUN network, National Technical Working Groups, CAADP and Biennial Review, UN FSS Dialogues, etc.
- New structures can take inspiration from ATA, ATO, etc.

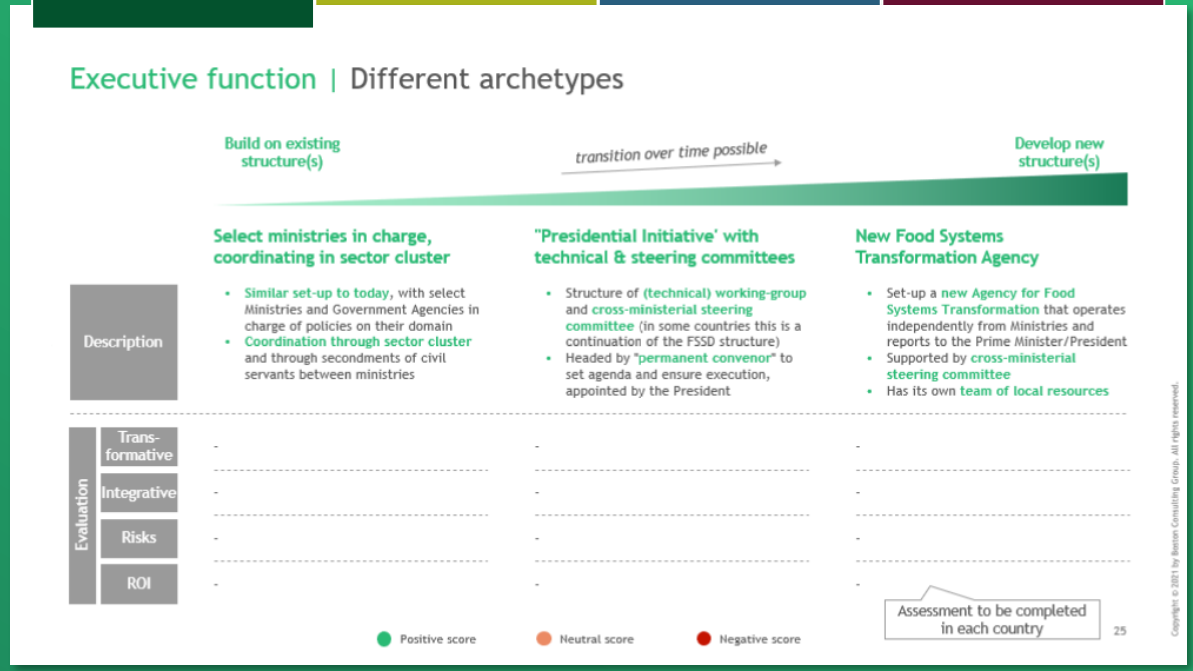
Two or more functions may be combined into a single organizational structure

Each set-up will be developed in-country against a set of criteria

- Ability to be transformative
- Ability to develop and implement integrated policies and programs
- Level of risk associated
- Return on investment
- Others

...which should be defined for each function by the country

Executive function | Data custodian & progress reviewing | Inclusive participation | Thinking and advisory



We want to thank the following people and organizations for their contributions and feedback (I/II)

Name	Title	Organization	Role in FS-TIP
Mary Mpereh	UN FSSD Convenor	NDPC/SUN	Local Leadership
Freeman Lawoe	UN FSSD Convenor support	NDPC	Local Leadership, support
Phyllis Parbey	UN FSSD Convenor support	NDPC	Local Leadership, support
Ismael Fofana	Director	AKADEMIYA2063	Country Manager
Charles Nornoo	Independent Consultant	TBI	TBI Advisor
Amos Laar	Curator UN FSSD, Professor	University of Ghana	Country Expert
Irene Egyir	Professor	University of Ghana	Country Expert
Felix Asante	Professor	University of Ghana	Country Expert
John Asafu	Senior Fellow	African Center for Economic Transformation	Country Expert
Jolien Paalman	Project Leader	BCG	Country team member
Suraj Shah	Consultant	BCG	Country team member
Deborah Araujo	Consultant	BCG	Country team member

We want to thank the following people and organizations for their contributions and feedback (II/II)

Name	Title	Organization	Role in FS-TIP
Jef Leroy	Senior researcher fellow	IFPRI	International Expert Panel
Alan de Brauw	Senior researcher fellow	IFPRI	
Claudia Ringler	Deputy Program Director	IFPRI	
Danielle Resnick	Senior researcher fellow	IFPRI	
Jemimah Njuki	Senior researcher fellow	IFPRI	
Namukolo Kovic	Senior researcher fellow	IFPRI	
David Spielman	Senior researcher fellow	IFPRI	
Mutinta Hambayi	Advisor	World Food Programme	
Daniel Njiwa	Head of Regional Food Trade & Resilience	AGRA	
Sheryl Hendriks	Associate Professor	University of Pretoria	
Robynne Anderson	Consultant/Researcher	Emerging Ag inc.	
Amos Laar	Professor	University of Ghana	
Jeroen Candel	Professor	Wageningen University of research	
Peiman Milani	Consultant	The Rockefeller foundation	Project Management Committee
Paul Thangata	Senior Policy Advisor	AGRA	
Lloyd Le Page	Senior Advisor	TBI	
Chris Mitchell, Jolien Paalman, Suraj Shah, Shirley Mujera	Various	BCG	
Elizabeth Kimani	Senior Research Scientist	APHRC	
Katrin Glatzel	Director	AKADEMIYA2063	

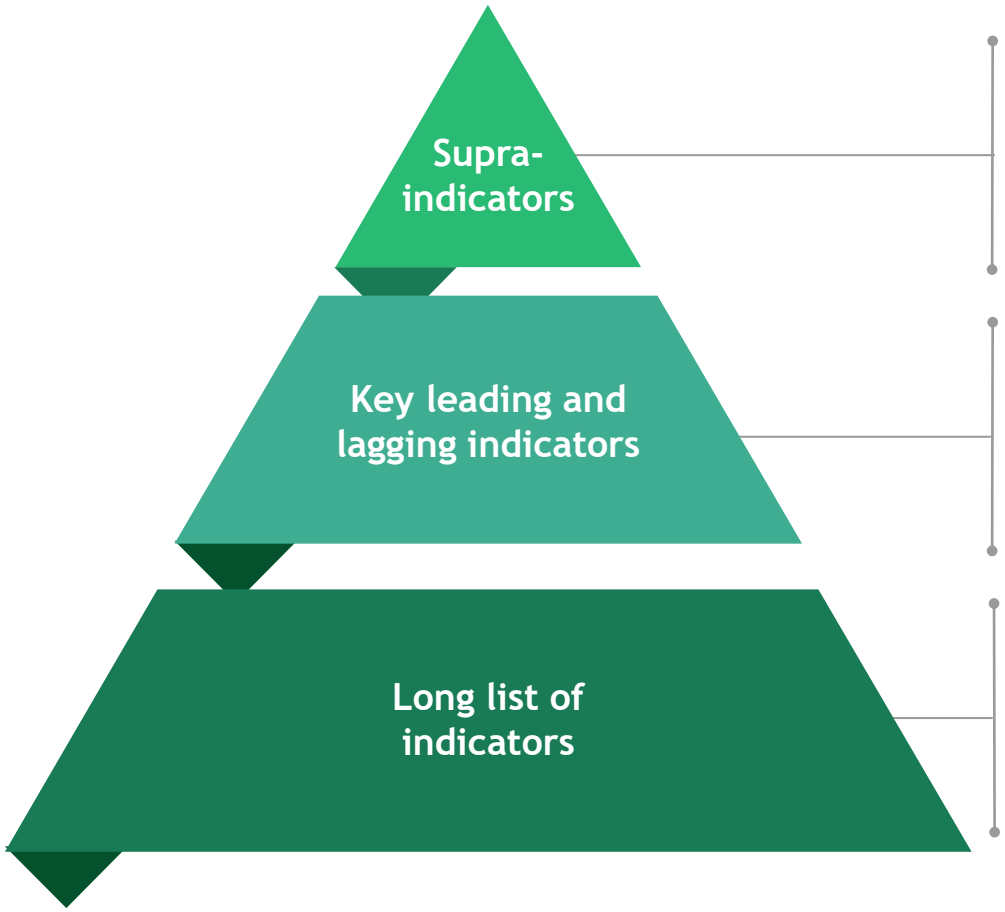
Non-exhaustive list of stakeholders consulted during the diagnostic analysis

Not exhaustive

Institutions	Roles within the Institution
National Development Planning Commission	Leadership and Graduates
Ministry of Food and Agriculture	Senior Government Officials (Chief Directors and Directors)
Ministry of Health	Senior Government Officials (Chief Directors and Directors)
Ministry of Finance	Senior Government Officials (Chief Directors and Directors)
Ministry of ICT	Senior Government Officials (Chief Directors and Directors)
Ministry of Fisheries and Aquaculture	Senior Government Officials (Chief Directors and Directors)
Council for Scientific and Industrial Research	Chief Research Scientist
Environmental Protection Agency	Directors
World Food Program (WFP)	Program Associate
University of Ghana	Professors
Kumasi Technical University	Professors
University of Health and Allied Sciences	Professors
University of Development Studies	Professors
Kwame Nkrumah University of Science and Technology	Professors
Alliance for a Green Revolution in Africa (AGRA)	Leadership

Please reach out to authors of this document for a detailed list of experts and stakeholders

Diagnostic framework| Quantitative assessment structured along 3 levels and linked to FSS Action Tracks



Quantitative framework

Identify 4-5 supra indicators per UN FSS action track that represent outcomes of food systems transformation, plus key cross-cutting topics such as governance, to enable easy assessment of the country's status and main areas of attention

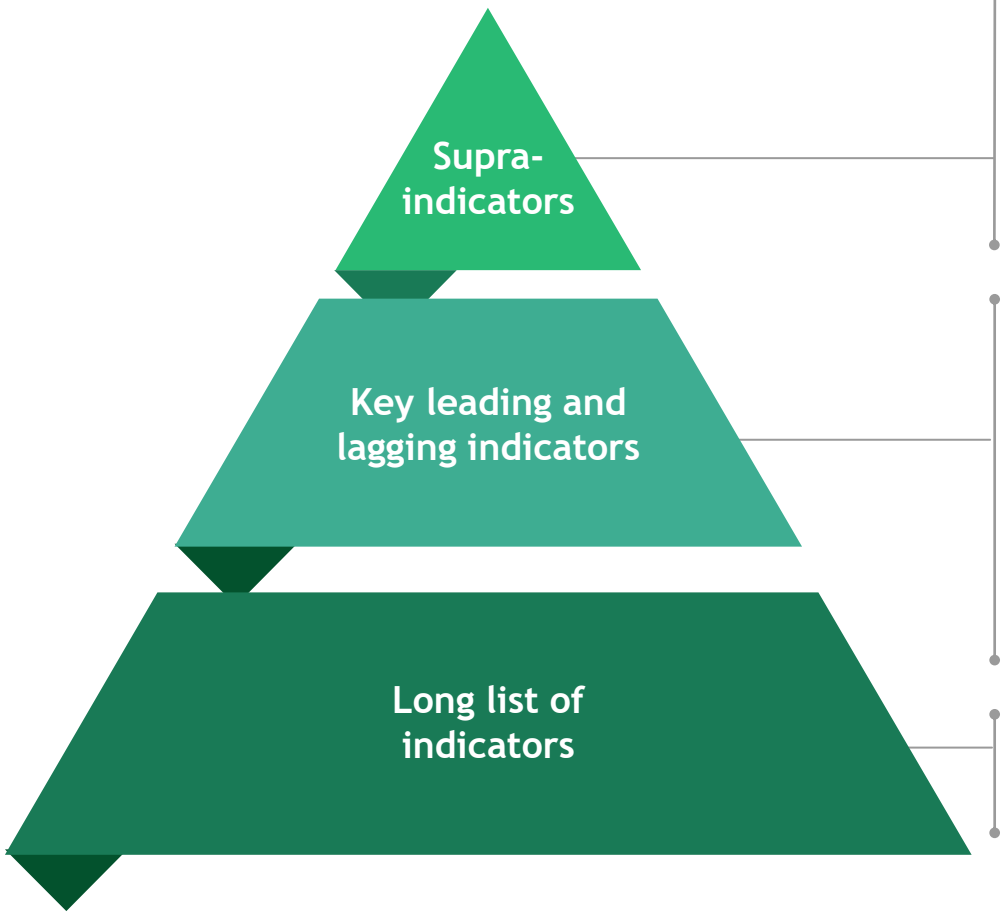
Prioritize ~40 to 50 key indicators across components of the food system and the UN FSS action tracks, to enable identification of main high-level drivers for good or bad performance on food system transformation

Leverage long list of detailed indicators across all components of the food system, that give the user a granular view of outcomes and drivers of food systems transformation

Qualitative view

Qualitative insights and commentary on each set of Action Track supra-indicators supplementing quantitative analysis

Diagnostic framework | Selection criteria to prioritize comprehensive and high-quality indicators



Criteria for identification of supra-indicators:

1. Representative of outcomes of food systems
2. Data is available, of good quality, has breadth, is frequently updated, and has buy-in
3. Strong history with ideally >15 years of past data
4. Together, they cover all key elements of food systems and point to key areas of attention
5. Most informative indicators for policy making and monitoring
6. Most relevant indicators to country/African continent

Criteria for prioritization of key indicators:

1. Acceptability & Quality - Data is available, of good quality, has breadth, is frequently updated, has stakeholder buy in
2. Strong history with ideally >15 years of past data
3. Specific with potential to decompose at sub-national level
4. Catalytic- Covers key places in food systems where transformation can be instigated
5. Output focused and sensitive to show results of (policy) changes
6. Contra-indicator: Sensitive to inform trade offs & synergies
7. Coverage: Together they are representative of all food systems components

Criteria for selection of long list indicators:

Leverage existing frameworks to create long-list of indicators: CAADP (as most tailored to African context), national indicators and datasets, Food Systems Dashboard, etc.

Supra-indicators| Data sources for supra-indicators data in Ghana

Action Tracks	Supra-indicators	Source	As at
Ensure access to safe and nutritious food for all	1 Diet quality: Food Consumption Score (FCS) in Rwanda and Malawi Diet Quality (GDR+) in Ghana	World Gallup Poll	2020
	2 Nutrient supply: Net supply in country of key macro and micro nutrients as a share of total consumption requirements for a healthy diet	National Survey	2020
	3 Undernourishment: Percent of population undernourished (%)	World Bank	2018
	4 Overweight & obesity: Percent of population overweight or obese (%)	WHO	2016
	5 Food safety: Africa Food Safety Index	WHO	2017
Shift to sustainable consumption patterns	6 Affordability: Cost of a healthy diet as a percent of household food expenditure (%)	FAO-SOFI	2020
	7 Sustainability of diets: Per capita GHG emissions of food consumption (Kg CO2eq./person)	WWF	2010
	8 Food waste: Food waste index	UNEP	2021
	9 Food environment: Composite index combining food environment policies	WHO NCD Monitor	2021
Boost nature-positive production	10 Emissions: Green House Gas (GHG) emissions from agriculture (MtCO2e)	Climate Watch	2018
	11 Land: Average forest land being deforested in hectares for agriculture use over the past 3 years (%)	World Bank, Forest Watch	2019
	12 Food loss: Percent food loss across supply chain (%)	National sources	TBD
	13 Regeneration: Biodiversity and habitat index	EPI	2019
Advance equitable livelihoods	14 Income: Gini coefficient (specific) based on incomes across the food system (under development)	National survey	No data
	15 Income: Gap between farmgate price and wholesale price (%)	CAADP Biennial Review	2018
	16 Gender equity: Women empowerment in agriculture index	IFPRI	2014
Build resilience to vulnerabilities, shocks and stress	17 Economic: Household Resilience Capacity Index	FAO	TBD
	18 Risk distribution: Proportion of men and women engaged in agriculture with access to finance	CAADP Biennial Review	2018
	19 Social: Government social security budget as a % of total requirements to cover vulnerable group (%)	CAADP Biennial Review	2018
	20 Environmental: ND-GAIN (Notre Dame Global Adaptation Initiative) Country Index	ND-GAIN	2018
	21 Production diversity: Percent of kilograms from top 5 crops produced (%)	FAO	2019
Governance	22 Governance: Food Systems Transformation Governance Index	National policies	2021

Please reach out to authors of this document to access the meta data

Supra-indicators | Ideal scores defined for the supra-indicators (I/II)

Action Tracks	Supra-indicators	Definition of supra-indicators	High	Low
Ensure access to safe and nutritious food for all	Diet quality: Food Consumption Score (FCS) in Rwanda and Malawi Diet Quality (GDR+) in Ghana	• Aggregates household-level data on the diversity and frequency of food groups consumed, weighting food groups according to the relative nutritional value	100 30	0 0
	Nutrient supply: Net supply in country of key macro and micro nutrients as a share of total consumption requirements for a healthy diet	• Net supply in country of key macro and micronutrients as a share of total consumption requirements for healthy diet	Varies by country	
	Undernourishment: Percent of population undernourished (%)	• Percentage of the population whose food intake is insufficient to meet dietary energy requirements	0	100
	Overweight & obesity: Percent of population overweight or obese (%)	• Abnormal or excessive fat accumulation that presents a risk to health	0	100
	Food safety: Africa Food Safety Index	• Combines three food safety indices; Food Safety Systems Index, Food Safety Health Index and Food Safety Trade Index	100	0
Shift to sustainable consumption patterns	Affordability: Cost of a healthy diet as a percent of household food expenditure (%)	• It is the cost of acquiring a healthy diet as a share of total household expenditure being spent on food	<50	>50
	Sustainability of diets: Per capita GHG emissions of food consumption (Kg CO2eq./person)	• Total of emissions arising along the entire food value chain from agricultural production to the end consumer	N/A	N/A
	Food waste: Food waste index	• Food that completes the food supply chain up to a final product but still doesn't get consumed because it is discarded, spoilt or expires. At retail and consumption stages	N/A	N/A
	Food environment: Composite index combining food environment policies	• Food environment policies that encourage consumption of sustainable and healthy diets	14	0
Boost nature-positive production	Emissions: Green House Gas (GHG) emissions from agriculture (MtCO2e)	• These are all emissions and removals occurring on 'managed land' and that are associated with the use of land for agriculture	N/A	N/A
	Land: Average forest land being deforested in hectares for agriculture use over the past 3 years (%)	• Implies permanent loss of forest cover from transformation into agricultural use.	0	100
	Food loss: Percent food loss across supply chain (%)	• Refers to food that gets spilled, spoilt or lost, or reduces in quality and value during supply chain before reaching final product. From production to distribution	0	100
	Regeneration: Biodiversity and habitat index	• Assesses countries' actions toward retaining natural ecosystems and protecting the full range of biodiversity	100	0

Supra-indicators| Ideal scores defined for the supra-indicators (II/II)

Action Tracks	Supra-indicators	Definition of supra-indicators	High	Low
Advance equitable livelihoods	Income: Gini coefficient (specific) based on incomes across the food system (under development)	• Highlight's income distribution among various players in the food systems. Zero indicates a perfectly equal distribution of income within the FS while 100 represents a perfect inequality when one person in a population receives all the income, while other people earn nothing	Varies by country	
	Income: Gap between farmgate price and wholesale price (%)	• Highlights the gap between farmgate price and retail price. Compares income to farmers vs prices paid by consumers. Better if narrow	0	TBD
	Gender equity: Women empowerment in agriculture index	• shows the degree to which women are empowered in their households and communities and the degree of inequality between women and men (who are married or in some other form of partnership) within the same household. Measures the empowerment, agency, and inclusion of women in the agriculture sector	1	0
Build resilience to vulnerabilities, shocks and stress	Economic: Household Resilience Capacity Index	• Estimates household resilience to food insecurity with a quantitative approach to establish a cause effect relationship between resilience and its critical determinants	TBD	TBD
	Risk distribution: Proportion of men and women engaged in agriculture with access to finance	• Access of micro and macro credit by people involved in the agriculture sector	100	0
	Social: Government social security budget as a % of total requirements to cover vulnerable group (%)	• The amount of money that the country allocates for preventive, protective, promotive or transformative assistance to farm individuals, households or communities	100	0
	Environmental: ND-GAIN (Notre Dame Global Adaptation Initiative) Country Index	• Summarizes a country's vulnerability to climate change and other global challenges in combination with its readiness to improve resilience	100	0
	Production diversity: Percent of kilograms from top 5 crops produced (%)	• The proportion of production occupied by the key foods produced in the country	<50	>50
Governance	Governance: Food Systems Transformation Governance Index	• Combines key components such as vision, ambition which are essential for food systems transformation	14	0

Summary list of Sources

Note: Number bubbles specify the supra-indicators whose slides are being referenced. e.g., Diet quality is supra-indicator 1

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Glossary

List of abbreviations

AGRA	Alliance for Green Revolution in Africa
APHRC	African Population & Health Research Centre
AU	African Union
BCG	Boston Consulting Group
CAADP	Comprehensive Africa Agriculture Development Programme
FAO	Food and Agriculture Organization of the United Nations
FASDEP	Food and Agriculture Sector Development Policy
FBDG	Food-Based Dietary Guidelines
FDA	Food and Drug Authority
FDI	Foreign Direct Investment
FSS	Food Systems Summit
FS-TIP	Food System Transformative Integrated Policy
GDP	Gross Domestic Product
GHG	Green House Gas
HLPE	High Level Panel of Experts on Food Security and Nutrition
IDRC	International Development Research Centre
IFPRI	International Food Policy Research Institute
MESTI	Ministry of Environment, Science, Technology & Innovation
METASIP	Medium Term Agriculture Sector Investment Plan
MLNR	Ministry of Land & Natural Resources
MOFA	Ministry of Food & Agriculture
MOF	Ministry of Finance & Economic Planning
MOGCSP	Ministry of Gender, Children and Social Protection
MOH	Ministry of Health
MOT	Ministry of Transport
MOTI	Ministry of Trade and Industry
NCD	Non-Communicable Diseases
ND-GAIN	Notre Dame Global Adaptation Initiative
PFFJ	Planting for Food and Jobs
SDGs	Sustainable Development Goals
UN	United Nations
WFP	World Food Programme
WHO	World Health Organization

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