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Synthesis Report of the Nigeria Zero Hunger Strategic Review



Synthesis Report of the Nigeria Zero Hunger Strategic Review

Final report

Published by the International Institute of Tropical Agriculture
(IITA) Ibadan, Nigeria

The International Institute of Tropical Agriculture (IITA) is a not-for-profit institution that generates agricultural innovations to meet Africa's most pressing challenges of hunger, malnutrition, poverty, and natural resource degradation. Working with various partners across sub-Saharan Africa, we improve livelihoods, enhance food and nutrition security, increase employment, and preserve natural resource integrity. IITA is a member of CGIAR, a global agriculture research partnership for a food secure future.

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Correct citation: Synthesis Report of the Nigeria Zero Hunger Strategic Review. 60 pp.

Printed in Nigeria by IITA

Cover photo: Shasha tomato market, Ibadan, Nigeria.

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Executive Summary

The Federal Republic of Nigeria is committed to achieving the 2030 Agenda for Sustainable Development as well as measuring and monitoring progress towards the goals and targets that Heads of State and Government collectively agreed at the Special Summit of the United Nations held in September 2015. Sustainable Development Goal (SDG) 2 emphasizes the prominence of food security and nutrition in the Agenda, calling on member states to “End hunger, achieve food security and improved nutrition, and promote sustainable agriculture” by 2030. The principal targets of SDG 2 are ending hunger and ensuring access to safe, nutritious, and sufficient food; ending all forms of malnutrition; doubling the productivity and incomes of small-scale food producers; ensuring sustainable food production systems and implementing resilient agricultural practices; and maintaining the genetic diversity of seeds, plants, and animals. Supplemental measures to promote the achievement of the targets include increasing investment, correcting and preventing trade restrictions and distortions, and ensuring the proper functioning of food commodity markets.

The Nigeria Zero Hunger Strategic Review sought to articulate what Nigeria must do to achieve SDG 2 (zero hunger) by 2030 through an open and consultative process. Chief Olusegun Obasanjo, former President of the Federal Republic of Nigeria, convened and chaired the multi-stakeholder review work, which was organized around nine subcommittees.¹ Through research and consultation, the subcommittees established subject-specific baselines that fostered joint understanding of the challenges and gaps in the national response to food and nutrition insecurity; contributed to consensus on priority actions required to achieve zero hunger in Nigeria by 2030; and led to the development of a road map for tracking progress on the implementation of the review’s recommendations.

Arranged along the targets of SDG 2, this Synthesis Report of the Nigeria Zero Hunger Strategic Review summarizes the findings and recommendations of the subcommittees, and in some instances complements these with recently available information.

End hunger and ensure access by all people (SDG 2.1) – Nigeria has made good progress over the past 25 years, reducing by nearly half the proportion of people suffering from hunger. However, this progress has been slowed or even reversed during the past decade. Nearly 13 million Nigerians still suffer from hunger, with wide disparities across geopolitical zones and between urban and rural areas. These unfavorable trends are due in part to limited gains in food security and nutrition relative to rapid population growth. The high prevalence of hunger in rural areas is associated with low agricultural growth, poor road infrastructure, limited access to safe water, sanitation, and hygiene, and inadequate health and education services. Furthermore and since 2014, the insurgency in the Northeast of the country (i.e., Borno, Yobe, and Adamawa states) has displaced 2.6 million people, including 700,000 who have taken refuge in neighboring countries. The conflict has added pressure to a fragile resource environment and increased the food and nutrition insecurity of vulnerable women and children.

¹The subcommittees are: (1) Strategic Assessment (including review and syntheses); (2) Research, Innovation, Interventions and Extensions; (3) Resource Mobilization (including availability and accessibility at the local, national, and global levels); (4) Producer Needs (including land, finance, gender, youth, markets, knowledge, and climate change adaptation); (5) Infrastructure – Hard and Soft (including physical, health and demography, education, institutional, information communication technologies, and social protection); (6) Legislation (including enabling environment); (7) Commodities, Processing, Nutrition, Marketing, and Export (including local content, and emphases on food loss/waste and postharvest loss); (8) Capacity Building, Training, and Skill Acquisition; and (9) Implementation, Partnership, and Monitoring and Evaluation.

Addressing the humanitarian crisis in Northeast Nigeria is the Government's most immediate hunger priority. The Ministry of Budget and National Planning (MBNP) is now leading an Inter-Ministerial Task Force coordinating the response at the federal level with ministries, United Nations' agencies, donors, and non-governmental organizations to deliver urgent food assistance to the most vulnerable people. Continued efforts must be made by all parties to meet the immediate humanitarian needs of households and communities that have been affected by the conflict through enhanced partnership between the National Emergency Management Agency (NEMA), State Emergency Management Agencies (SEMA), and humanitarian organizations; address the root causes of the increasingly protracted crisis; and integrate humanitarian and development assistance. The Northeast requires a holistic solution comprising the cessation of hostility, peace-building, rehabilitation, reconstruction, and social and economic development which would be undertaken in a partnership between local and international institutions and agencies. Special attention would need to be given to reclaiming an important resource like Lake Chad which now covers only 10% of the area that it covered in 1925.

To end hunger and ensure access to safe, nutritious, and sufficient food for all Nigerians all year round, with an emphasis on the most vulnerable segments of the Nigerian population including those who are conflict affected, social protection and safety nets need to be expanded to address challenges from hunger. Recommendations that include the completion and adoption of the draft National Social Protection Policy prepared by the National Planning Commission; implementation of plans to establish home-grown school feeding programs across all 36 States of the Federation; and commencement of the Nigerian National Social Investment Program are critical to attaining this SDG 2 target.

End all forms of malnutrition (SDG 2.2) – Gains against undernutrition since 1991 have stalled, especially in the prevention of stunting among children. One-third of children aged 5 years and under (over 10 million) suffer from stunting, another 25% are underweight, and 15% of infants have low birthweight.² In the Northern states, stunting affects nearly 55% of children, and child malnutrition is four times higher than in the South. Poor maternal nutrition and practices for feeding infants and young children, lack of access to nutritious food, and inadequate health services are the underlying causes of child malnutrition. Anemia affects 50% of women of reproductive age and nearly three-quarters of the children under 5. Micronutrient deficiencies are also prevalent.

Longer term challenges for improving food and nutrition security are detailed in the *National Policy on Food and Nutrition in Nigeria* (NPFN) of the MBNP and the Federal Ministry of Health's *National Strategic Plan of Action for Nutrition (2014–2019)*. Priorities in these frameworks include major scaling-up for stunting prevention, and the targeting of pregnant and lactating women and children through the 1000 day window of opportunity from conception to when the child is 2 years. However, the range of nutrition-specific and nutrition-sensitive interventions implemented in Nigeria is not on a scale that is necessary and appropriate, relative to the magnitude of the problem. More efforts are needed to promote, protect, and support breastfeeding;

²Nigeria has the highest population of stunted children under 5 in sub-Saharan Africa, and the second highest in the world (after India); 37% are stunted and 19% severely stunted.

promote adequate complementary feeding by healthy and better informed mothers; undertake micronutrient supplementation, food fortification and deworming; treat children with moderate and severe acute malnutrition; and offer school feeding programs with balanced meals to younger children at little or no cost.

Reducing chronic undernutrition requires integrated, multi-sectoral actions to address underlying causes across the lifecycle. The scope of integrated multi-sectoral programs must be expanded to include interventions to improve household food security. One approach would be to assist with the development of safety nets that provide access to nutritious foods for poor and vulnerable women and their families, including school feeding and cash transfers, and to promote food/agriculture diversification that focuses on products such as bio-fortified cassava and orange-fleshed sweet potato that have been introduced by the International Institute of Tropical Agriculture (IITA), and soybean. Another approach is the integration of direct nutrition interventions to the Primary Health Care Under One Roof (PHCUOR) initiative of the Federal Government through integrated service delivery.

It appears that the agricultural sector has the downstream potential (i.e., in the processing subsector) to produce low-cost, fortified blended foods using locally grown, raw produce through partnerships with the private sector. The health sector needs to scale up nutrition-specific interventions which have been proven to have high impact and to be cost effective. The capacity of the private sector is such that it could be harnessed to meet not only the needs of the local market but also that of the West African region and possibly beyond. But there is a clear need for providing technical guidance and assistance to (a) private sector companies in building quality control and assurance systems and in taking measures to meet international standards for fortified blended food, and (b) national and sub-national Government regulators to augment their capacity for monitoring and enforcing production/processing standards.

Double the agricultural productivity and incomes of small-scale food producers (SDG 2.3) - Over the past quarter decade, agricultural production has varied widely. Food production stagnated before 1986, increased steadily to 2006, and then declined. Agricultural production improved greatly during the structural adjustment period, in part as a response to a surge of Government investment in agriculture and infrastructure that peaked by 2002. Production growth continued to improve in subsequent years, but at a slower rate compared with the average annual rate of growth of the population. Growth across subsectors remains erratic.

Smallholder agricultural producers constitute the vast majority of rural dwellers, farming on one to five hectares of land, on average, that too often fail to produce surpluses, and being so deeply trapped in poverty that they alone do not possess the capacity to eliminate the triad of hunger, food insecurity, and malnutrition. Their food value chains are largely undeveloped. For example, current storage capacity is approximately 300,000 tonnes whereas the annual output of maize alone is 7 million tonnes. As a result, smallholders suffer from high postharvest losses which can be as much as 50% for vegetables and fruits, 30% for tubers and roots, and 20% for grains. Extension services in rural areas are weak, resulting in inadequate access to information on improved technologies for agricultural production, processing, and other rural enterprises; and gender inequality persists, marginalizing women in terms of economic participation, political empowerment as well as issues of health and survival.

Nigeria's fast-growing population and high rate of urbanization have created a food deficit of 56 million tonnes that presents opportunities for market-oriented smallholders. The total population of approximately 182 million people (2015), with 48% living in urban settlements, is expected to double by 2040. Urban demand for food is expanding in terms of expected quality and range of products; this also offers excellent opportunities not only for increasing food production but also for adding value to agricultural produce and thus earning more income.

Closing the food deficit will require the modernization of smallholder agriculture production, including through increased public and private sector investments in irrigation and farmer training to improve yields and expand production areas; more sustainable management of agricultural resources that include the land; and better use of genetic plant and animal resources. In particular, production and processing gains in yam, cassava, potato (both sweet and Irish), maize, and rice are needed to meet the growing urban demand for food. The expanded production of cocoa, cashew, and ginger for export and domestic consumption would raise the incomes of small-scale food producers, also of orange-fleshed sweet potato, traditional green vegetables, and tomato which can improve diets and support nutrition interventions.

Ensure sustainable food production systems and implement resilient agricultural practices (SDG 2.4) – The increased occurrence of natural and man-made disasters across Nigeria, exacerbated by the poor coping and adaptation strategies of farmers and vulnerable populations, exposes rural producers to hazards in terms of the destruction of farmland, premature harvesting, and displacement. Available evidence shows that in the last decade, short-duration climatic oscillations have made it difficult for rural producers to plan crop calendars, which affects farmers' productivity.

Modernization of agriculture and more sustainable management of agricultural resources are the key to achieving zero hunger. Improved targeting of production inputs, including seeds, mineral and organic fertilizers, soil conditioners, pesticides and herbicides, is needed across all commodities; and Integrated Soil Fertility Management (ISFM) and Integrated Pest Management (IPM), two production approaches in which Nigerian institutions have strong capacities, will be necessary. Facilities for irrigated rice, maize, banana, ginger, green vegetables, and tomato require expanded irrigation systems and efficient use of available dams to reach production targets; and both horticultural and nursery production systems also require a reliable, high-quality water supply. Coordinated efforts by the Federal Ministry of Water Resources, River Basin Development Authorities, different State irrigation projects, and the irrigation schemes of the private sector are critical.

Equally important are improvements in disaster prevention and emergency response which are now coordinated by NEMA and SEMAs. Nigeria's plans to join the sovereign risk pool provided through the African Union's African Risk Capacity, and to obtain coverage from mid-2018 onwards, will ensure that these institutions have access to fast-disbursing financing to activate contingency plans for early mitigation of impacts from drought or flooding. There is a need for military and paramilitary special training to achieve the capability and equipment to address and cope with emergencies and disasters.

Maintain the genetic diversity of seeds, cultivated plants, and farmed and domesticated animals and their related wild species (SDG 2.5) – Improved quality and availability of crop seeds and

expansion of vegetative and nursery propagation systems are important aspects of sustainable agriculture, also the broadening of dietary diversity among both rural and urban populations. Improved varieties for rice, maize, and soybean have been developed but incentives are needed to reinforce seed systems through commercial channels. Seed-planted crops (hybrid tomato, green vegetables, sesame, and tree crops) require research and genetic improvement before being commercialized as breeder, foundation, and certified seeds. There is a need for seed and propagation systems for crops that specifically improve and diversify diets.

The following cross-cutting actions will have to be prioritized to improve the enabling food and nutrition security sector environment and to ensure that the SDG 2 target-specific recommendations, when implemented, achieve the desired objectives.

1. *Multi-stakeholder coordination must be improved* - Current policy frameworks are as diverse as jurisdictional authorities and mandates for various aspects of food security and nutrition. Further complicating this situation and rendering multi-sectoral strategic collaboration challenging and collective action difficult, is the absence of adequate coordinating mechanisms for food security and nutrition policy, strategy, and programming.

Recognizing this void, stakeholders participating in the Strategic Review have recommended creation of the *Nigeria Zero Hunger Forum*. The overall goal of the Forum would be to contribute to the achievement of Zero Hunger in Nigeria by 2025. It would be chaired by Chief Olusegun Obasanjo, former President of the Federal Republic of Nigeria, and membership would comprise Chairs of the nine Subcommittees of the Zero Hunger Strategic Review as well as Governors of pilot states. The specific roles of the Forum would be to: (a) follow up and monitor implementation of actions identified in the Nigeria Zero Hunger road map; (b) promote the alignment of Government policies, plans, and programs and the plans and programs of development partners with the priority actions and recommendations of the Nigeria Zero Hunger Strategic Review; (c) establish and oversee a platform for sharing information and knowledge related to topics in Zero Hunger; (d) advocate appropriate policy and related changes to enable progress towards Zero Hunger; (e) assist with land availability and preparation and resource mobilization to support Zero Hunger implementation in pilot states beginning with Sokoto, Ebonyi, Benue, and Ogun in the first two years, adding two more states per zone at the start of Year 3, and then including the rest of the 36 states at the beginning of Year 5, with each pilot state having a minimum of two crops and one type of livestock as their focal commodities; and (f) create public awareness on the importance of food and nutrition security as a national security and survival imperative. Technical partners supporting the work of the Forum were identified as the IITA, AfDB, WFP, FAO, UNICEF and IFAD.

2. *Better economic planning and coherent policies are required* for several reasons. Better economic planning is needed to complete the establishment of trade corridors, processing zones, and industrial parks and to re-establish the national food reserve program. The Abuja Commodity Exchange must be revitalized in a way that ensures producers are treated fairly. The achievement of Zero Hunger requires a more inclusive society based upon better opportunities to acquire land for farming, and expanding the skills and credit opportunities of the youth, women, and the disadvantaged. Incentives are also required for pastoralists to lead more sedentary, less economically disruptive lifestyles.

Policy coherence is needed to ensure that low tariffs, which already are encouraging dumping,

do not continue to make investment in production and agro processing unattractive. As a matter of urgency, the support of the Federal Government should strive to create a level playing field in this area. For example, the levy imposed on rice importation should be expanded to include a levy on the importation of all types of corn starch, cassava starch, liquid glucose, groundnut oil, juice concentrates, and other finished products derived from agroprocessing. This will encourage import substitution, save scarce foreign exchange, and incentivize investment in agro processing and related enterprises.

3. *Governmental and interinstitutional reforms are needed* to guarantee food and nutrition security as a basic right of all Nigerians, and to ensure that rural development projects are conducted in an entirely professional manner. Federal and State activities must also work better with the private sector and external development interests. Universities, Colleges of Agriculture, and vocational training schools have an important role in educating highly qualified, better rounded graduates that find decent employment or start viable agribusinesses. It is further recommended that the capacity development needs of various stakeholders be strategically addressed as this may cover a wide range of educational and training activities not only for public institutions but also for the private sector, including health workers, extension workers, farmers, and civil society actors. Capacities must be strengthened in terms of project monitoring, research for development, farm advisory services, tertiary and higher education, in-service training, and along agribusiness networks and value chains.
4. *Project and administrative operations must be improved* by ensuring continuity within institutions responsible for food security and nutrition programs. Highest priority must be assigned to the development of Public-Private Partnerships and full participation of local stakeholders. Finally, the management and interpretation of national agricultural databases must be upgraded so that timely and accurate feedback on the impacts of the actions identified during the Zero Hunger Strategic Review and in the Green Alternative Policy are available to planners and project managers so that shortcomings in ongoing programs may be corrected and better ones designed in the future.
5. *Adequate financial resources must be mobilized* - Despite a long series of official strategies and policies, the Government's financial support for increased agricultural production and nutrition interventions has varied over the years, failing to adequately address hunger-related problems of underweight, malnutrition, and mortality, especially among children. Spending by Government on agriculture, health, education, and social protection remains low while critical health, education, and water and sanitation services do not provide required coverage for populations in need. The absorptive (i.e., implementation and resource use) capacity of Government is often low and this has caused many projects to be unable to use the funding allocated to them. While many sources of funds for improving agriculture and providing greater social protection among the poor are available in Nigeria (i.e., loans from Developmental Banks, financial aid from donor agencies, budgetary provisions of the Federal and the State Governments, resources mobilized through debt relief and interest rebates), there is a need to combine the efforts of Government and commercial financial institutions to ensure favorable impact. Innovative finance mechanisms should be facilitated with incentives provided for commercial and microfinance banks to develop better relations with small-scale farmers, women, and the youth; more effective and direct utilization of incentive funds by the Central

Bank of Nigeria must be put in place; and large, family-operated enterprises must be enabled to have access to capital markets through the Nigerian Stock Exchange.

6. *The requisite infrastructure must be made available* - Three critical categories of infrastructure must be improved: physical infrastructure for rural economic growth, infrastructure related to social protection, and infrastructure devoted to the improvement of rural institutions. The sponsors of these projects must conduct close supervision of hard and soft infrastructure including ICT programs, minimize perturbation from frequent organizational changes, and combine actions better in a win-win manner.
7. *The National Agricultural Research System must be improved* as it is not effective in delivering its mandate. The various research institutes need to be restructured and refocused to make them more effective in delivering their mandate. The roles and responsibilities of the Agricultural Research Council of Nigeria (ARCN) need to be defined to have more authority directed towards improving the efficiency and effectiveness of the research institutes. For research to reach the end-users, there should be an effective research-extension linkage through the establishment of centers of agricultural research technology transfer at the local government level.

Achieving the recommendations of the Zero Hunger Strategic Review and the actions identified in its road map are critical to the well-being of Nigerians and the country's commitment to realizing the five targets of SDG 2. The road map addresses the current situation, what needs to be achieved, and what actions are required; and it provides a timeframe for action and states which key partnerships are needed. It should serve as a platform for collaborative action towards narrowing the divide between humanitarian assistance and development interventions.

Acknowledgement

The Federal Republic of Nigeria is committed to achieving the 2030 Agenda for Sustainable Development and to monitoring progress towards its goals and targets. Sustainable Development Goal 2 (SDG 2) calls upon member States to “*End hunger, achieve food security and improved nutrition, and promote sustainable agriculture*” by 2030. With the support of the Federal Government and partners, including the International Institute of Tropical Agriculture, World Food Programme, and the African Development Bank, I convened and led the Nigeria Zero Hunger Strategic Review to clearly articulate what we in Nigeria need to do to achieve SDG 2, while contributing to shared prosperity and wealth creation in our country.

The Zero Hunger Strategic Review was not an attempt to change any Government policies. As this Synthesis Report demonstrates, the initiative was undertaken to support and encourage Government to implement the policies, strategies, plans, and programs that have been formulated over many years, and to do so with a focus on achieving Sustainable Development Goal 2 by 2030, if not earlier. There has never been a shortage of good prescriptions and reports for reducing hunger in Nigeria but the implementation of these have been poor. This time around, and with the establishment of the Nigeria Zero Hunger Forum that will ensure that recommendations contained in this Synthesis Report and the individual Subcommittee Reports are implemented, we must do all we can so that this effort does not suffer the fate of previous endeavors.

The Nigeria Zero Hunger Strategic Review sought to: a) provide a comprehensive understanding of the food security and nutrition context of the Federal Republic of Nigeria, including strategies, policies, programs, institutional capacities, and resource flows into the sector; b) identify key development and humanitarian challenges the country faces in achieving the Zero Hunger aspirations of SDG 2; c) discuss the role of the private sector in achieving Zero Hunger, including food security and improved nutrition, and related national priorities; d) propose actionable areas where Federal, State, and Local Governments can make significant progress toward Zero Hunger; e) propose actionable areas where partners can better support the country to make significant progress toward zero hunger; and f) recommend milestones, key actions, and effective partnerships that would serve as a national road map to achieve SDG 2 in Nigeria.

The Review would not have been completed were it not for the untiring efforts, dedication, and commitment of a unique blend of diverse development partners, Federal and State Governments, legislatures, NGOs, and farmers who participated in deliberations and prepared appropriate reports. These varied actors, representing multiple sectors that are relevant to food and nutrition security in Nigeria, were organized into nine Subcommittees. This Synthesis Report describes the outcomes of their efforts, and I wish to thank the Chairpersons and Members of each of the Subcommittees.

I want to thank His Excellency Muhammadu Buhari, President of the Federal Republic of Nigeria, for endorsing the Nigeria Zero Hunger Strategic Review, and Ms Ertharin Cousin, Executive Director of the World Food Programme (WFP) for requesting that the Review be conducted. I want to also thank the African Development Bank (AfDB) for providing a majority of the funds, which financed the Review, and the WFP for its financial contribution as well. I am also grateful to

the many organizations that allocated staff time for meetings and the preparation of the individual Subcommittee reports; these include the International Fund for Agricultural Development (IFAD), the United States Agency for International Development (USAID), the Food and Agriculture Organization of the United Nations (FAO), the Delegation of the European Union to Nigeria, and the United Nations Children's Fund (UNICEF). Finally, and certainly not the least, I must express my deepest thanks and appreciation to the International Institute of Tropical Agriculture (IITA) for organizing the meetings, coordinating the writing of this report, and for acting as the Secretariat for the Forum.


Chief Olusegun Obasanjo
Former President of Nigeria

Date: 04 January 2017

Nigeria Zero Hunger Strategic Review Subcommittees

Subcommittee 1. Strategic Assessment. *Chairman:* Prof. Isaac Adewole, Hon. Min. of Health.
Members: Prof. Peter Okebukola, Ms Louise L. Setshwaelo, and Prof. Vincent E. Asor

Subcommittee 2. Research Results, Innovation and Interventions. *Chairman:* Dr Chiji Ojukwu.
Members: Mr U. G. Mohammed, Dr Ken Dashiell, Prof. E.I. Kucha, and Prof. B.Y. Abubakar

Subcommittee 3. Finances: Availability and accessibility at local, national and global levels. *Chairman:* Mr Tony Elumelu. *Members:* Ms Somachi Chris-Asoluka, Ms Maryamu Aminu, Mr. Ernest Ihedigbo, Dr Ousmane Dore, and H.E. E. Ijewere.

Subcommittee 4. Producers' Needs: Inputs, gender, markets, climate change adaptation, youth in agribusiness, skills acquisition, and social protection. *Chairman:* H.E. Dave Nwaze Umahi, Ebonyi State Governor. *Members:* Dr Eric Kelechi Igwe, Mr Steve Orogwu, Ms Atsuko Toda, H.E. Erelu Olusola Obada, and Mr Olaitan Y. Olaniran

Subcommittee 5. Infrastructure: Physical, social, institutional, ICT and social protection. *Chairman:* Prof. Gbolagade Ayoola. *Members:* Mohammed Sidi, Dr Ademola Oladipo, Dr A.B. Onimode, Mr Jens Hoegel, and H.E. Alhassan Nuhu (with the assistance of Dr. Ayodeji Taiwo).

Subcommittee 6. Legislation and Enabling Policy Environment. *Chairman:* Sen. Abdullahi Adamu. *Members:* Dr Ademola Oladipo, Ms Maryam Uwais, Mr Zainab Ahmed, and Hon. Monguno (with the assistance of Dr. Demola Ladipo)..

Subcommittee 7. Commodities, Processing, Nutrition, Marketing, and Export. *Chairman:* Chief Audu Ogbeh, Hon. Minister of Agriculture & Rural Development. *Members:* Ms Heather R. Akanni, Chief Ugwu Bartholomew, Mr Tunji Owoeye, Ms Salamatu Garba, Mr Olufemi Bolarin, and Mr Sani Dangote

Subcommittee 8. Capacity Building, Training and Skill Acquisition. *Chairman:* Prof. Olusola Oyewole. *Members:* Mr Abiodun Oladipo, Mr Oriyomi Ayeola, and Prof. Francis Otunta.

Subcommittee 9. Implementation, Partnership and M&E. *Chairman:* H.E. Aminu Tambuwal.
Members: Mr Sada Soli, Dr Alfred Dixon, Mr Fabian U.. Okoye, Prof. V.A. Adeyeye, Mr Matthew Burton, Mr Akin Ogunbiyi, and Mr Daniel Atsu.

Acronyms and Abbreviations

ACGSF	Agricultural Credit Guarantee Scheme Fund
ACSS	Agricultural Credit Support Scheme
ADPS	Agricultural Development Projects
ADSIM	Agricultural Data, Statistics, and Information Management
AEHCs	Agricultural Equipment Hiring Centers
AEHE	Agricultural Equipment Hiring Enterprise
AEPZs	Agricultural Enterprise Processing Zones
AfDB	African Development Bank
AFPAD	Agricultural and Food Policy Analysis Division
AGRA	Alliance for a Green Revolution in Africa
APMEU	Agricultural Projects Monitoring and Evaluating Unit
APP	Agricultural Promotion Policy
ARCN	Agricultural Research Council of Nigeria
ARTTC	Agricultural Research Technology Transfer Centers
ATA	Agricultural Transformation Agenda
BAT	British-American Tobacco
BOA	Bank of Agriculture
Bol	Bank of Industry
CAADP	Comprehensive Africa Agriculture Development Program
CACS	Commercial Agricultural Credit Scheme
CBN	Central Bank of Nigeria
CBOs	Community-Based Organizations
CBT	Community-Based Targeting
CCTs	Conditional Cash Transfers
CFAs	Cooperative Finance Agencies
CFS	Committee on World Food Security
CGS	Conditional Grant Scheme
CGS-LGA	Conditional Grant Scheme for Local Government Areas
CMD	Cassava Mosaic Disease
COPE	Care of the People
CRIN	Cocoa Research Institute of Nigeria
CSOs	Civil Society Organizations
CW	Community Warehouses
DFIs	Development Finance Institutions
DFRRI	Directorate of Food, Roads and Rural Infrastructure
DHS	Demographic and Health Survey
DPB	Deposit Money Banks
DRM	Domestic Resource Mobilization
FAAN	Federal Airport Authority of Nigeria
FACU	Federal Agricultural Coordinating Unit
FAO	Food and Agriculture Organization
FBOs	Faith-Based Organizations
FCAs	Federal Colleges of Agriculture
FDC	Federal Department of Cooperatives

FDRD	Federal Department of Rural Development
FERMA	Federal Roads Maintenance Agency
FIF	Farm & Infrastructure Foundation
FMARD	Federal Ministry of Agriculture and Rural Development
FME	Federal Ministry of Environment
FMWR	Federal Ministry of Water Resources
FRIN	Forestry Research Institute of Nigeria
GAC	Construction of Grain Aggregation Centres
GAP	Good Agricultural Practices
GES	Growth Enhancement Scheme
GESS	Growth Enhancement Support Scheme
GHI	Global Hunger Index
GHP	Good Handling Practices
GINA	Global database on the Implementation of Nutrition Action
GLASOD	Global Assessment of Soil Degradation
GR	Green Revolution
HQCF	High Quality Cassava Flour
HQSF	High Quality Sorghum Flour
IAEG-SDGs	Inter-Agency and Expert Group on SDG Indicators
IAR	Institute of Agricultural Research
IAR&T	Institute for Agricultural Research & Training
IAR4D	Integrated Agricultural Research for Development
IARCs	International Agricultural Research Centers
ICARDA	International Center for Agriculture Research in the Dry Areas
ICCO	International Cocoa Organization
ICRISAT	International Crops Research Institute for the Semi-Arid Tropics
IDPs	Internally Displaced Persons
IFAD	International Fund for Agricultural Development
IFPRI	International Food Policy Research Institute
IITA	International Institute of Tropical Agriculture
ILRI	International Livestock Research Institute
IMF	International Monetary Fund
MANR	Ministry of Agriculture and Natural Resources
MCHC	Maternal and Child Health Care
MCT	Multipurpose Community Tele-Centers
MDAs	Ministries, Departments and Agencies
MDBs	Multilateral Development Banks
MDG	International Monetary Fund, IMF
MFBs	Micro-Finance Banks
MFIIs	Micro-finance Institutions
MTPs	Management Training Plots
NACRDB	Nigerian Agricultural Cooperative and Rural Development Bank
NAERLS	National Agricultural Extension Research & Liaison Services
NAFPP	National Accelerated Food Production Programme
NAIPs	National Agricultural Investment Programmes
NALDA	National Agricultural Land Development Authority

NAPEP	National Poverty Eradication Programme
NAPRI	National Animal Production Research Institute
NAQAS	Nigerian Agricultural Question and Answer Service
NARES	National Agricultural and Extension System
NARIs	National Agricultural Research Institutes
NARP	National Agricultural Research Project
NARS	National Agricultural Research System
NBS	National Bureau of Statistics
NCA	National Council on Agriculture
NCRI	National Cereal Research Institute
NCRPs	Nationally Coordinated Agricultural Research Projects
NCS	National Council of States
NDE	National Directorate of Employment
NEEDS	National Economic Empowerment and Development Strategy
NEMA	National Emergency Management Agency
NEPA	Nigeria Electricity Power Authority
NEPAD	New Partnership for Africa's Development
NEPC	Nigeria Export Promotion Council
NFFR	National Institute for Freshwater Fisheries Research
NGOs	Non-Governmental Organizations
NHIS	National Health Insurance Scheme
NIFOR	Nigerian Institute for Oil Palm Research
NIHORT	National Horticultural Research Institute
NIOMR	Nigeria Institute of Oceanography & Marine Research
NPA	Nigerian Ports Authority
NPAFS	National Program for Agriculture and Food Security
NPFS	National Programme for Food Security
NPN	National Party of Nigeria
NRCRI	National Root Crops Research Institute
NSHDP	National Strategic Health Development Plan
NSPRI	Nigerian Stored Products Research Institute
NTC	Nigerian Tobacco Company
NTP	National Tax Policy
NTQI	National Trade Quality Infrastructure
NYSC	National Youth Service Corps
NVRI	National Veterinary Research Institute
NZHSR	Nigeria Zero Hunger Strategic Review
ODA	Official Development Assistance
OFN	Operation Feed the Nation
OFSP	Orange Fleshed Sweet Potato
OPEN	Overview of Public Expenditure in NEEDs
OPSs	Organized Private Sector
PHCUOR	Primary Health Care Under One Roof
PHCN	Power Holding Company of Nigeria
PIDA	Program for Infrastructure Development in Africa
PPP	Private-Public-Partnership

RBDAs	River Basin Development Authorities
REFILS	Research-Extension-Farmer-Inputs Linkage System
RIS	Rural Infrastructure Survey
RRIN	Rubber Research Institute of Nigeria
RTA	Rice Transformation Agenda
RUFIN	Rural Finance Institution Building Programme
SACS	Supervised Agricultural Credit Scheme
SAKSS	Nigerian Strategic Agricultural Knowledge Support System
SAP	Structural Adjustment Period
SAT-3	South Atlantic 3
SCPZs	Staple Crops Processing Zones
SDG 2	Zero Hunger Challenge programme
SDGs	Sustainable Development Goals
SEALS	Special Emergency Agricultural Loans Scheme
SG 2000	Sasakawa Global 2000
SGR	Strategic Grain Reserve
SHAP	Smallholder Agricultural Producers
SMEEIS	Small and Medium Enterprises Equity Investment Scheme
SPAT	Small Plot Adoption Technique
SSN	Social Safety Nets
SURE-P	Subsidy Re-Investment and Empowerment Programme
TAAT	Technologies for African Agricultural Transformation
THC	Mini-Tractor Hiring Centers
UNCT	United Nations Country Team
UNICEF	United Nations Children's Fund
UNSCN	United Nations Standing Committee on Nutrition
UPN	Unity Party of Nigeria
VPF	Virtual Poverty Fund
WAAPP	West Africa Agricultural Productivity Project
WFP	World Food Programme
WHO	World Health Organization
WUA	Water Users Associations

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Correct Citation

2016. Synthesis Report of the Nigeria Zero Hunger Strategic Review,
 His Excellency Chief Olusegun Obasanjo, Abeokuta, Ogun State, Nigeria

Chapter 1

Introduction

1.1 Background

The Federal Republic of Nigeria is fully committed to achieving the 2030 Agenda for Sustainable Development Goals (SDGs), and to measuring and monitoring progress towards the goals and targets that were collectively reached at the high-level Special Summit held in New York (September 2015). Sustainable Development Goal 2 (SDG 2), addresses the importance of food security and nutrition within the wider Agenda, and calls upon Member States to “*End hunger, achieve food security and improved nutrition, and promote sustainable agriculture*” by 2030. SDG 2 is one of 17 SDGs that are integrated and indivisible, global in nature, and universally applicable. At the same time they accommodate respective national realities, capacities, and levels of development, and respect national policies, priorities, and planning processes. These targets are aspirational and global, with each Government setting its own specific targets that are guided by global humanitarian, developmental and environmental perspectives, and take national circumstances into account.

1.2 Goal and Targets

The SDG 2 and its five principal and three supplemental targets are as follows.

SDG 2: End hunger, achieve food security and improved nutrition, and promote sustainable agriculture.

SDG 2 Targets

- 2.1 By 2030, end hunger and ensure access by all people, in particular the poor and people in vulnerable situations, including infants, to safe, nutritious, and sufficient food all year round.
- 2.2 By 2030, end all forms of malnutrition, including achieving by 2025, the internationally agreed targets on stunting and wasting in children under 5 years of age, and address the nutritional needs of adolescent girls, pregnant and lactating women, and older persons.
- 2.3 By 2030, double the agricultural productivity and incomes of small-scale food producers, in particular women, indigenous peoples, family farmers, pastoralists, and fishermen, including through secure and equal access to land, other productive resources and inputs, knowledge, financial services, markets, and opportunities for value addition and non-farm employment.
- 2.4 By 2030, ensure sustainable food production systems and implement resilient agricultural practices that increase productivity and production, that help maintain ecosystems, that strengthen capacity for adaptation to climate change, extreme weather, drought, flooding and other disasters, and that progressively improve land and soil quality.
- 2.5 By 2020, maintain the genetic diversity of seeds, cultivated plants, and farmed and domesticated animals and their related wild species, including through soundly managed and diversified seed and plant banks at the national, regional, and international levels, and promote access to and fair and equitable sharing of benefits arising from the utilization of genetic resources and associated traditional knowledge, as internationally agreed.

World leaders also identified three supplemental SDG 2 targets, and these are:

1. Increase investment, including through enhanced international cooperation, in rural infrastructure, agricultural research and extension services, technology development, and plant and livestock gene banks in order to enhance agricultural productive capacity in developing countries, in particular least developed countries.
2. Correct and prevent trade restrictions and distortions in world agricultural markets, including through the parallel elimination of all forms of agricultural export subsidies and all export measures with equivalent effect, in accordance with the mandate of the Doha Development Round.
3. Adopt measures to ensure the proper functioning of food commodity markets and their derivatives and facilitate timely access to market information, including on food reserves, in order to help limit extreme food price volatility.

1.3 The Nigeria Zero Hunger Strategic Review

With the support of the Federal Government and partners, including IITA, WFP, and AfDB, Chief Olusegun Obasanjo, former President of the Federal Republic of Nigeria led a Nigeria Zero Hunger Strategic Review that articulates what Nigeria must do to achieve SDG 2. In particular, the Review had the following objectives:

- Providing a comprehensive understanding of the food security and nutrition context of the Federal Republic of Nigeria, including strategies, policies, programs, institutional capacities, and resource flows into the sector.
- Identifying the key development and humanitarian challenges the country faces in achieving the zero hunger aspirations of SDG 2.
- Discussing the role of the private sector in achieving zero hunger, including food security and improved nutrition, and related national priorities.
- Proposing actionable areas where Federal, State, and Local Governments could make significant progress toward zero hunger.
- Proposing actionable areas where partners can better support the country to make significant progress toward zero hunger.
- Recommending key actions and partnerships as the milestones for a national road map to achieve the Zero Hunger Strategic Review.

A chronology of how the Nigeria Zero Hunger Strategic Review was initiated and completed in 2016 is as follows:

February 2016: H.E. Chief Olusegun Obasanjo, former President of the Federal Republic of Nigeria, and Ms Ertharin Cousin, Executive Director of the World Food Programme (WFP) discussed the need for a Zero Hunger Strategic Review in Nigeria.

29 February: H.E. Chief Obasanjo met with a WFP team led by Stanlake Samkange, Director of Policy and Programme, and including Dr J. Chris Toe, Senior Advisor for Country Strategic Planning and Femi Amure, Consultant at the WFP Nigeria Country Office in Abuja.

2 March: H.E. Chief Obasanjo met with representatives from WFP and IITA and informed them that IITA was to act as the main coordinating body and Secretariat under his direction and with strong support from WFP.

29 April: The inaugural meeting took place in IITA, Ibadan during which nine Subcommittees were formed. The nine subcommittees were: (1) Strategic Assessment including review and syntheses; (2) Research, Innovation, Interventions and Extensions; (3) Resource Mobilization (including availability and accessibility at the local, national, and global levels); (4) Producer Needs (including land, finance, gender, the youth, markets, knowledge, and climate change adaptation); (5) Infrastructure – Hard and Soft (including physical, health and demography, education, institutional, information communication technologies, and social protection); (6) Legislation (including enabling environment); (7) Commodities, Processing, Nutrition, Marketing, and Export (including local content, and emphases on food loss/waster and post-harvest loss); (8) Capacity Building, Training and Skill Acquisition; and (9) Implementation, Partnership, and Monitoring and Evaluation.

The terms of reference for each subcommittee were to: (a) analyze the current situation; (b) discuss challenges and gaps in the national response that have contributed to the current situation; (c) identify the priority actions that must be taken to address the gaps; (d) present key recommendations; and (e) prepare a road map to achieve priority actions, including cost, timing, responsible Government Institutions at the Federal and State levels, and roles of international, civil society, and private sector partners. The Zero Hunger Subcommittee Reports have been compiled and an electronic version of these can be obtained by contacting the Nigeria Zero Hunger Strategic Review Secretariat.

May - September: All Subcommittees submitted zero drafts of their reports to the Secretariat.

4 October: A second group meeting was held in Abuja to review the reports. It was agreed at the meeting that some of the subcommittees would update their reports and that a synthesis report should be produced. Subcommittees 1, 5, 6, 7, and 9 updated their reports after the second meeting.

16 November: The Draft Synthesis report was sent to all the subcommittees. Numerous suggestions were received and incorporated.

25 November: The revised draft was sent to all the subcommittees.

28 November: A third meeting of the subcommittees was held in Abuja where the revised draft synthesis was discussed and suggestions for improving the report were given. Based on these suggestions, the second revised report was produced and sent to all the subcommittees for their review.

15 December: After comments had been received, the third revised report was produced and sent to H.E. Chief Olusegun Obasanjo who then produced the final version of the “**SYNTHESIS REPORT OF THE NIGERIA ZERO HUNGER STRATEGIC REVIEW**.”

Chapter 2

The Hunger Situation

2.1 Setting

Home to over 182 million people, Nigeria is the most populated country in Africa and the seventh largest in the world. The annual growth rate of the population is approximately 2.7% and nearly half of the population is below the age of 14 years (UNFPA 2015 estimates). Nigeria is the 10th largest producer of crude oil in the world and the country achieved lower-middle income status in 2014. The gross domestic product (GDP) is estimated at US\$568.5 billion and gross national income (GNI) per capita at \$5,710. Seventy percent of the labor force works in agriculture, which contributes about 20% to GDP; the rapidly growing service sector contributes 54.6%; and the remaining share is derived from the industrial sector.

The country's human development indicators are poor. Persistent inequality (Gini-coefficient of 0.43) and poverty have an impact on more than half the population, most severely in the Northeast and Northwest zones. Around 110 million Nigerians, representing over 60% of the total population, live below the poverty line. Primary school enrolment rate is estimated at 70% for males and 60% for females (WHO Global Health Observatory 2013).

Since 2014, insurgency in Borno, Yobe, and Adamawa states has displaced 2.6 million people, including 700,000 who have taken refuge in neighboring countries. The conflict has added pressure to a fragile resource environment and increased the food and nutrition insecurity of vulnerable women and children. Nigeria is also subject to periodic droughts and floods; this has adversely impacted agricultural output and increased the vulnerability of populations, especially in rural areas.

Food security is the condition in which all people, at all times, have physical, social, and economic access to sufficient safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life (Committee on World Food Security 2012). The main indicators of food security include availability, access, stability and utilization. The major concern of most developing countries, including Nigeria, is that of chronic food insecurity as its human and economic costs are immense. Achievement of food security in any country is typically an insurance against hunger and malnutrition, both of which hinder economic development through degraded human resources (Davies 2009).

Both the market and policy drivers of food production rely on rural dwellers to produce food for the teeming urban population, and in so doing improve rural livelihood and generate employment. Smallholder agricultural producers constitute the vast majority of rural dwellers, operating farms that too often fail to produce surpluses for small- and medium-scale enterprises across rural Nigeria. In this way, strengthening smallholder farming systems results in higher productivity and growth of the national economy. Yet smallholders operate more at the subsistence level of production, with too little capacity to eliminate the triad of hunger, food insecurity, and malnutrition unless their operations are modernized and market conditions facilitated. Although total food production continues to rise in Nigeria, a noticeable reduction in gains has occurred over the past decade or so, and growth across sectors is erratic (Table 1).

Table 1. Average annual growth rate of agricultural production in Nigeria over five decades.

Interval	Aggregate	Crop	Cereals	Livestock	Fishery	Forestry
1970–1985	−0.70	−0.72	1.89	5.65	−2.0	1.6
1986–1993	3.31	9.69	4.60	1.30	3.4	2.6
1994–1998	4.05	4.11	1.99	4.11	3.6	1.5
1999–2002	18.39	1.79	−1.56	3.90	2.7	1.5
2003–2013	5.84	2.12	−1.46	2.48		

Sources of information: World Bank 2016; Central Bank of Nigeria 2006.

Indeed, Nigeria has a fast-growing population and high rate of urbanization, and market-oriented smallholders must feed these growing urban centers in large part. The total population of Nigeria as at 2015 is approximately 182 million people with almost half of the population (48%) living in urban settlements. There is an expectation that Nigeria's population will double by 2040, rendering the achievement of zero hunger critical to the country's future. Poverty is largely a rural phenomenon as 52% of people are poor and most producers have only from one to five hectares of land. Complicating this situation is the persistence of gender inequality where women constantly face marginalization in terms of political participation, economic empowerment, as well as health and survival issues. In contrast, the growing urban middle class is creating diversified market demand. Nigeria's middle class is 22% of its population and the demand for food is expanding in terms of the expected quality and range of products. This change in demand offers excellent important opportunities for increasing food production and adding value to the farmer's produce.

2.2 SDG 2 Target 2.1: End Hunger

Nigeria had progressed well over the past 25 years in reducing by nearly one-half the proportion of people suffering from hunger, but this progress has slowed or even reversed over the past decade (Table 2) to the extent that 12.9 million Nigerians today suffer from hunger (State of Food Insecurity in the World 2015). In 2015, Nigeria was attributed a Global Hunger Index (GHI) of 32.8 (IFPRI 2015a), which places the Federal Republic in the category of countries with a serious hunger problem. The index incorporates indicators such as the proportion of those undernourished in the population, prevalence of underweight in children, and mortality rate of children (IFPRI 2011) (Fig. 1).

FOOD SUPPLY



Figure 1. Trends in under-nourishment and available calories, fruits and vegetables in Nigeria over time.

In part, these unfavorable trends result from the failure of gains to keep pace with Nigeria's high rate of population growth. While the daily average energy supply has continued to rise, there remain unacceptable high numbers of hungry people (about 13 million). In addition, household food insecurity in the northern Sahel States of Nigeria remains a challenge, with household food stocks from farm production lasting no more than six months. The situation in the Northeast is exacerbated by ongoing insurgencies and accounts for difficulties in sustaining these otherwise promising trends. According to the Cadre Harmonisé report (August, 2016), the situation in Northern Nigeria deteriorated in 2016 owing to conflict, displacement, lack of food production, and limited access to food. Nearly 4.5 million individuals are in urgent need of humanitarian assistance in the States of Borno, Adamawa, and Yobe (Fig. 2). There are also major security concerns in several areas of the country caused by conflicts between pastoralists and farmers that need to be addressed and that are significantly reducing food production.

Cadre Harmonise analysis on acute Food and Nutrition Insecurity classification for the current situation : August - September 2016

Adamawa, Borno and Yobe States in Northern of Nigeria

CADRE HARMONISE

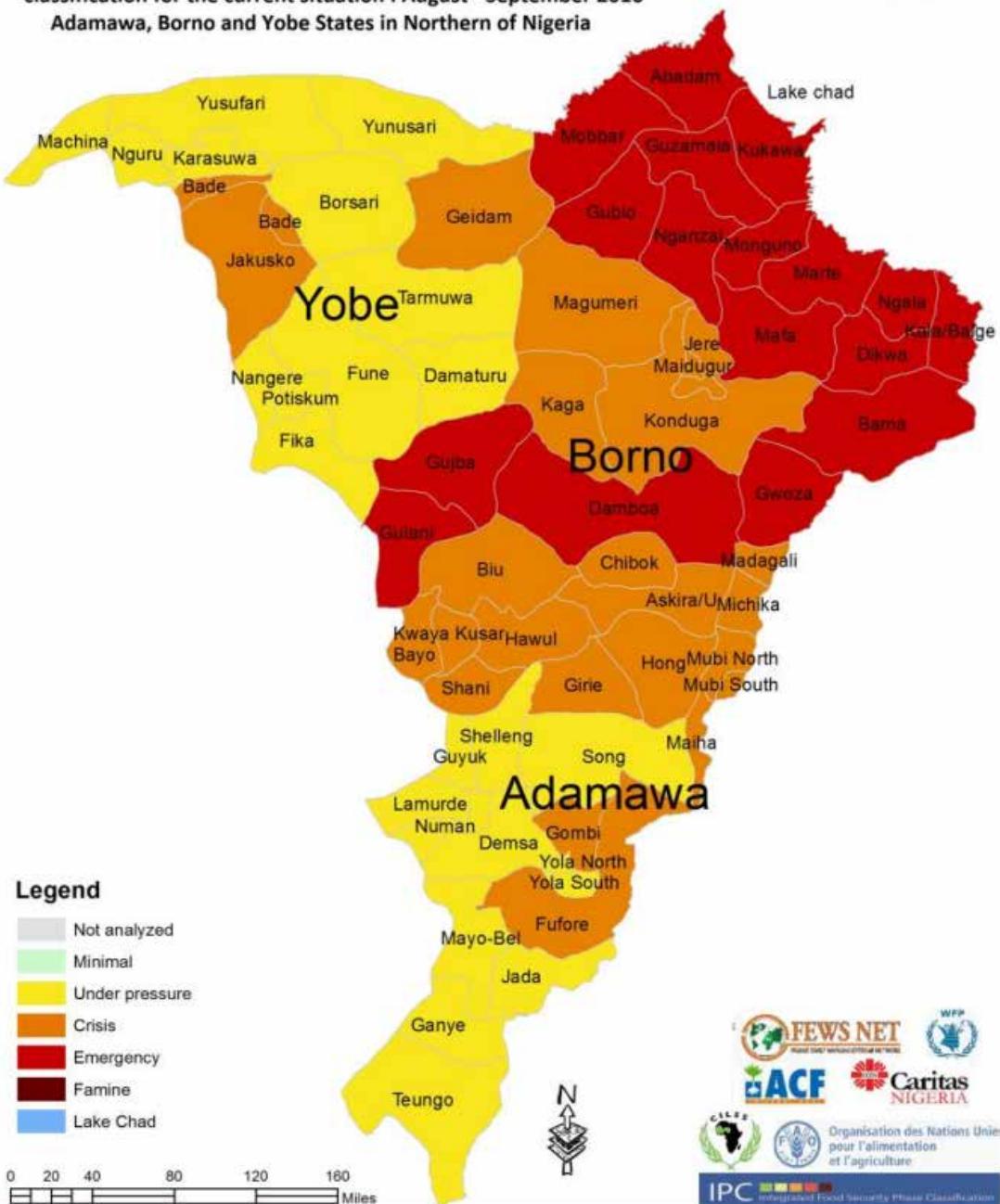


Figure 2. Food and nutrition insecurity classification: Adamawa, Borno, and Yobe.

Table 2. Key food security indicators in Nigeria over the past 25 years demonstrate substantial improvement but also promise scope for further gain.

Indicator	1990-1992	2000-2002	2014-2016
Dietary energy supply (kcal/capita/day)	2,434	2,605	2,665
Number of people undernourished (millions)	20.8	11.2	12.9
Prevalence of under-nourishment (%)	21.3	8.9	7.0
Stunting, children under 5 years (%)	43.8	39.7	36.4
Access to improved water sources (% of population)	47.6	56.5	64.0

Source of information: FAO 2015, WHO 2016: from Sub-committee 1 Report.

These findings clearly support the need for the Zero Hunger Strategic Review and its follow-up actions.

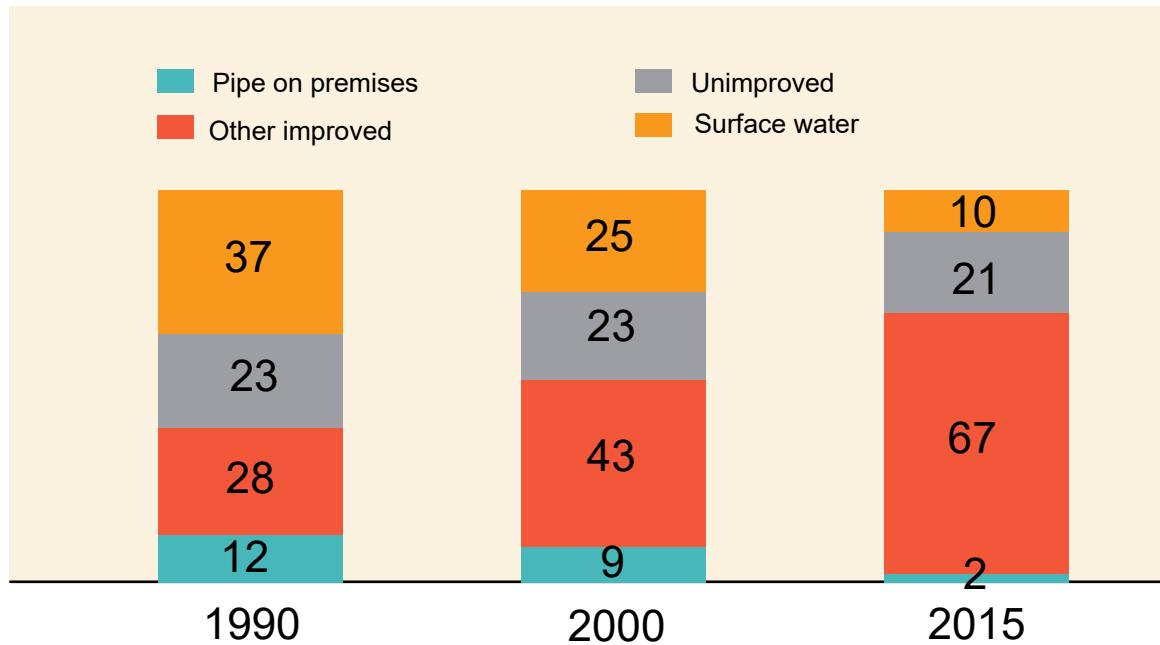
2.3 SDG 2 Target 2.2: End Malnutrition

No single subcommittee report focused solely upon nutrition in Nigeria; instead several committees examined nutrition from their specific perspectives. The key forms of malnutrition are stunting, wasting, and micronutrient deficiencies, and those most affected are mothers, infants, and children. Important trends on malnutrition and stunting in Nigeria appear in Table 2. While considerable gains had been made against under-nourishment since 1991, these achievements have largely stalled, particularly with regard to stunting among children. Over 10 million children representing 33% of all Nigerian children under five years suffer from stunting, 25% are underweight, and 15% of infants are born with low birthweight. The situation is worst in Northern Nigeria where stunting affects nearly 55% of all children and child malnutrition is four times higher than in the South. In addition, the conflict in the Northeast has also contributed to increased malnutrition. Almost 400,000 children in the four most affected States are severely malnourished. According to a United Nations joint food security and nutrition assessment conducted in Yobe State in July, 2016, malnutrition rates among children under 5 years exceed the WHO emergency thresholds, with prevalence higher than 15%.

Nigeria also experiences a high under-5 mortality rate, estimated at 117 per 1000 live births (UN Inter-agency Group for Child Mortality Estimation 2014), more than half of which is attributed to malnutrition (National Strategic Plan of Action for Nutrition). Poor maternal nutrition, practices for infant and young child feeding (IYCF), and lack of access to nutritious food and adequate health services are the underlying causes of child malnutrition. Additionally, anemia is widespread and affects about 50% of women of reproductive age and nearly three-quarters of children aged under 5 years (WHO 2015).

Micronutrient deficiencies are prevalent across Nigeria. Key indicators of nutrition and public health show both promising and alarming trends (Figs. 1 and 3). Supply of fruits and vegetables improved between 1991 and 2000 but declined afterwards. This level of intake is not far behind the recommended intake of 400 g per day (WHO 2016). Available calories from non-staple foods have stagnated, suggesting a lack of diversity in diets. The average dietary energy consumption is low (7%) and most of the energy supply (66%) is derived from cereals, roots, and tubers. The supply of piped improved drinking water has declined from its 12% coverage of 1990 to only 2% recently, in contrast with other improved water sources that have greatly improved. As regards to

sanitation, little improvement in open defecation and shared facilities is observed, remaining at around 25% coverage (data presented in the report of Subcommittee 1). In general, Government expenditure for social protection and public health remains inadequate, but recent trends are encouraging, and priority actions identified by the Zero Hunger Strategic Review must reinforce and accelerate these gains.



Source: WHO/UNICEF JMP 2015.

Figure 3. Coverage of improved drinking water availability in Nigeria over time.

2.4 SDG 2 Target 2.3: Double Productivity and Incomes of Small-scale Food Producers

Over the past quarter decade, Nigerian agricultural production has been subject to wide variations. Prior to 1986, food production in Nigeria was stagnated, but then increased steadily to 2006 (Table 1) and then the rate of gain diminished. Table 1 illustrates this low growth between 1970 and 1985, a period before Structural Adjustment. Following Structural Adjustment, agricultural production across all sectors greatly improved, in part attributable to Nigeria's return to democratic rule and the enormous investment by Government in agriculture and infrastructure, reaching a peak between 1999 and 2002. Afterwards this momentum continued, but to a slower extent, and production growth became compromised by continued population growth, causing the present threat of food insecurity to Nigeria today.

Rural producers suffer from high post-harvest losses which can be as much as 50% for vegetables and fruits, 30% for tubers and roots, and 20% for grains. The absence of post-harvest storage propels rural producers to sell the bulk of their produce at harvest. Current storage capacity in Nigeria is approximately 300,000 tonnes, which is grossly under capacity; output of maize alone is already 7 million tonnes.

Furthermore, in rural areas, extension services are weak. It is estimated that there is 1 extension worker per 25,000 farm households compared to the FAO best practice estimate of 1 worker to 500–1000 farm households. The weak extension service results in inadequate access to information on improved technologies for agricultural production, processing, and other rural enterprises.

Subcommittee 7 produced a wealth of information on 15 key agricultural commodities in Nigeria (Table 3). This information included current production, estimated short-term production targets, a calculated deficit and promising pathways to meet that target. The food deficit that must be met in Nigeria is about 56 million tonnes, with greatest gains required in yam, cassava, potato (both sweet and Irish), maize, and rice. One commodity not considered in Table 3 is the production of kenaf (jute) needed to produce 15 million reusable bags to transport crop harvests. There is no such bag production at present, but the plan of Subcommittee 7 would achieve 25% self-sufficiency and greatly reduce costs of importing woven polythene bags. Data research is in progress (data not presented).

Plans to increase tomato production require special attention. Nigeria recently suffered a nationwide shortage of tomato that lasted several months and drove prices up to excessive levels. This shortage is attributed to drought, disease outbreak, and spoilage along the supply chain, but ultimately it is related to insufficient intensification of production.

Table 3. Production, targets and current deficits of key commodities in Nigeria, and summarized strategies for meeting those deficits (based upon the report of Subcommittee 7).

Commodity	Production	Demand	Deficit	Comment
	----- million tons -----			
Cassava	42	54	12	Expand improved varieties and flour processing
Yam	40	60	20	Reduce post-harvest losses, improve propagation
Maize	10.5	15	4.5	Deploy improved seeds and best practice
Rice	5.3	7.2	1.9	Expand production within 11 River Basins
Plantain/Banana	3	6	3	Increase sucker production by 300 million/year
Tomato	1.7	2.4	0.7	Include import substitution of concentrates
Sweet potato	1.2	6	4.8	Better deploy vitamin A orange-fleshed varieties
Irish potato	0.9	8	7.1	Expand production within Jos Plateau
Soybean	0.8	2	1.2	Promote fertilizers and inoculants, better marketing
Shea nut	0.6	1.4	0.8	Shift from harvesting wild to domesticated stands
Ginger	0.3	0.6	0.3	Promote yellow varieties and value-added processing
Sesame	0.2	0.4	0.2	Need to formalize sector for oil production and export
Cocoa	0.19	0.35	0.16	Plant 2 million trees per year, increase value-addition
Cashew	0.17	0.25	0.08	Introduce Brazilian Jumbo varieties
Castor bean	0.004	0.016	0.012	Expand coverage by 15,000 hectares, add value, and export
Total	107	164	57	Reflecting a 35% deficit in current agricultural production

2.5 SDG 2 Target 2.4: Sustainable Food Systems and Resilient Agricultural Practices

Modernization of agriculture and more sustainable management of agricultural resources are the keys to attaining the SDG 2 targets in Nigeria. The need for more and better targeted production inputs is recognized across all commodities. These inputs that include better seeds (described below), mineral and organic fertilizers, soil conditioners, pesticides and herbicides are recognized, and in many cases specific products are matched to production systems. Improved management is presented within the context of Integrated Soil Fertility Management (ISFM) and Integrated Pest Management (IPM), two production approaches in which Nigerian Institutions have strong capacities. One production input currently in high demand is soybean seed inoculant and the NoduMax factory developed by IITA must be expanded and replicated to reach all 600,000 soybean producers in Northern Nigeria. This action will reduce requirements for imported and manufactured nitrogen fertilizers in rotational cereal-legume systems as well as increasing the supply and quality of the animal feeds their residues produce.

Development and expansion of irrigation systems and efficient use of available dams are also considered a priority for commodity development. This is particularly true for rice where it is proposed that irrigation facilities be established and expanded within eleven River Basins in 26 States across the country, leading to double cropping of rice on an additional 50,000 hectares per year. Obviously, such an effort requires coordinated effort by the Federal Ministry of Water Resources, and the River Basin Development Authorities, while cooperation between the different States irrigation schemes and private sector schemes will be critical. Other crops requiring irrigation systems include maize, banana, ginger, green vegetables, and tomato if production targets are to be reached. Both horticultural and nursery production systems also require a reliable, high quality water supply.

Finally, the current insurgency in Northern Nigeria has further destabilized the agricultural sector. The 2016 Government-led peace-building and recovery assessment recorded that three-quarters of the damage to assets, infrastructure, and social services in the Northeast is in Borno State (and within this, 35% is in the agricultural sector). Yobe State suffered 13% losses identified in the assessment, with damage to agricultural infrastructure representing 72%. Losses of assets reported include smallholder farms, irrigation and drainage systems, storage and other farm buildings, agricultural inputs and tools, and livestock. Beyond agriculture-specific assets, the assessment also reports significant damage to main, secondary, and tertiary roads and bridges that denies farmers access to markets.

The increased occurrence of natural and man-made disasters across Nigeria, exacerbated by farmers' poor coping and adaptation strategies, exposes rural producers to hazards in terms of the destruction of farmland, premature harvesting, and displacement.

Available evidence shows that in the last decades, short-duration climatic oscillations have exposed rural producers to the increased difficulty in planning crop calendars that affects farmers' productivity. In the South, smallholder farmers experience frequent flooding that destroys farm crops and sometimes also leads to displacement (e.g., in Ebonyi State). Similarly, farmers in the Middle-belt region experience losses in productivity due to flooding. Surveys conducted in Benue State known as the bread-basket of the nation show that farmers consider floods a major natural

disaster facing rural producers there. Man-made disasters in the central regions include conflicts between pastoralists and farmers, which lead to the destruction of crop areas and consequently to a reduction in productivity.

2.6 SDG 2 Target 2.5: Genetic Diversity

Expanding the genetic base available to land managers is an important aspect of modernized agriculture. This diversity falls into three broad areas; improved quality and availability of crop seeds, expansion of vegetative and nursery propagation systems, and broadening dietary diversity among both rural and urban populations. The report from Subcommittee 7 grouped its key crops into three categories; those related to achieving food self-sufficiency (e.g., cassava, rice, yam, maize, others), several cash crops for expanded export and domestic consumption (cocoa, cashew, ginger, others), and those specifically intended to improve diets as nutritional interventions (e.g., orange-fleshed sweet potato, traditional green vegetables, tomato). Some crops such as soybean and banana cut across all categories. The need for genetic conservation, crop improvement, grassroots dissemination, and commercial distribution varies among category, commodities, and geographical origin.

Improved varieties for rice, maize, and soybean in particular are available but under-utilized and incentives are needed to reinforce their seed systems through commercial channels. Some other crops that are planted as seeds require further research and genetic improvement, such as hybrid tomato, green vegetables, sesame, and tree crops (e.g., shea, cashew, castor) before becoming widely commercialized. Support for commercialized seed systems includes the development and supply of breeder's, foundation, and certified seeds. This need must not delay intensified and expanded production, however, as current varieties and management strategies are in place until these latest improved varieties become more widely available. The need for seeds and propagation systems for crops that specifically improve and diversify diets is recognised. Tomato and green vegetables alone require 25 and 28 tonnes of improved seeds per year for food security and nutritional targets to be met.

Chapter 3

National Response, Gaps, and Opportunities

3.1 Policy and Program Frameworks

A goal of all nations is to attain food and nutrition security. Similarly, Nigeria is duly committed to achieving food security, food safety, and adequate nutritional status for its citizens, and is implementing diverse policies and rural development programs in this regard. However, Nigeria's agricultural production has fluctuated over the decades which has contributed to hunger-related problems of wasting, malnutrition and mortality, particularly among children. Institutional response to malnutrition has proven slow compared with the pursuit of economic growth; and government spending on agriculture, health, and education remain insufficient and social protection in the critical areas of health, education, water, and sanitation is inadequate. Moreover, the absorptive capacities (i.e. implementation and resource use) of many Government entities are often low, causing many projects to be unable to use the funding allocated to them.

Nigeria is currently facing economic headwinds that have resulted in plummeting revenues and the inability to meet many of the socioeconomic needs of its citizens. To ensure economic revival and boost investment, the administration recently completed an Economic Recovery and Growth Strategy that, according to the Federal President's 2017 budget speech, will seek to optimize the use of local content and empower local businesses. Five key areas to be pursued in this respect are: a) fiscal, monetary and trade policy alignment to achieve greater macroeconomic stability; b) growth in the non-oil sector, especially in agriculture, manufacturing, solid minerals, and service; c) increased competitiveness through improvements in the business climate and driving of investments in the power and transport sectors; d) social programs to support the poor and the vulnerable under its Social Inclusion and Jobs initiative; and e) further improvements in governance and other enablers such as security, human capital development, and coordination with states.

Agriculture

The current enabling environment for agriculture is provided by the "Green Alternative: The Agriculture Promotion Policy (APP: 2016 to 2020). Its key Policy Thrusts are the following: a) Food as a human right; b) Agriculture as key to long-term economic growth; c) Prioritizing of specific crops, both for domestic food safety and security and for boosting export earnings; d) Assistance to agricultural growth through private sector-led business; e) Policy interventions that strengthen commodity value chains; f) Direction of market orientation through infrastructural improvement and commodity exchanges; g) Factoring of climate change and environmental sustainability into agricultural development; h) Enabling of participation and inclusiveness to maximize stakeholder participation; i) Building of policy integrity in terms of accountability, transparency and due process; j) Redirection of nutritional opportunities toward vulnerable groups and young children; and k) Recognition of agriculture's critical linkages with industry, the environment, power, and water sectors. APP started in 2016 with the new Federal Government and is already resolving major bottlenecks in food production and marketing; this is another area in which the recommendations of the Zero Hunger Strategic Review, once carried out, could be of value.

While the Zero Hunger Strategic Review was not undertaken along lines identical to these Green Alternative Priority Thrusts, the objectives of these initiatives are complementary and mutually-reinforcing. Both are built upon a series of proactive policy interventions including the Food Fortification Program (2008), Subsidy Re-Investment and Empowerment Program (2012), National Agricultural Investment Program (NAIPs), Growth Enhancement Support Scheme (2012), and the National Schools Agriculture Program (2014). At first these programs were consolidated within the Agricultural Transformation Agenda (2010-2014) that pursued and exceeded important targets in agricultural development (FMARD 2012; Olomola 2015). Over the four years of ATA, national food production rose by 21 million tonnes, food imports significantly declined, and the number of farm jobs rose by 3.6 million. Its strongest features carry over to the current agricultural policy framework. This sort of policy-driven success bodes well for both the impacts of the Green Alternative and this Zero Hunger Strategic Review.

Social Protection

The draft National Social Protection Policy (2015) of the National Planning Commission aims to: a) reduce poverty among the poor and people vulnerable to being poor; empower the poor and people vulnerable to economic shocks; b) advance human capital development to ensure a life of dignity; provide guiding principles for managing social protection projects and programs; c) promote social cohesion, equity and growth inclusiveness; d) ensure citizens have access to basic social services and infrastructure; e) enhance social welfare and improve food security and nutrition; f) support decent employment and sustainable livelihoods; g) protect individuals and households from shocks that can make them fall into extreme poverty; and h) foster synergy and coordination among all social protection intervention agencies.

Nutrition

One of the policy and strategic documents that is crucial to improving Nigeria's nutrition indicators is the National Policy on Food and Nutrition of 2016 which was produced by the Ministry of Budget and National Planning. The Policy commits the Federal Government to reducing hunger and malnutrition through a multi-sectoral and multi-disciplinary approach that includes various interventions at the community and national levels. The goal of the Policy is 'to attain optimal nutritional status for all Nigerians, with particular emphasis on the most vulnerable groups such as children, adolescents, women, elderly, and groups with special nutritional needs.' Among the 18 targets to be achieved by 2025 are the following: a) reduce the proportion of people who suffer hunger and malnutrition by 50%; b) reduce stunting rate among under-five children from 37% in 2013 to 18%; c) reduce the incidence of malnutrition among victims of emergencies by 50%; d) achieve universal access of all school children in the pre- and basic school classes to school-based feeding programmes; and e) increase access to potable water from 49% in 2013 to 70%.

The other framework is the National Strategic Plan of Action for Nutrition (2014–2019) of the Federal Ministry of Health. The Strategic Plan seeks to build upon the framework outlined in the National Food and Nutrition Policy, and articulates six specific objectives. These are: a) to promote the delivery of effective interventions that will ensure adequate nutrition to all Nigerians, especially vulnerable groups; b) to enhance capacity to deliver effective and appropriate nutrition interventions; c) to contribute to the control of diet related noncommunicable diseases; d) to promote and strengthen research, monitoring and evaluation; e) to promote and facilitate community participation for nutrition interventions; and f) to promote and strengthen

nutrition coordination and collaboration. Priority areas are maternal nutrition, infant and young child feeding, management of severe acute malnutrition in children under five, micronutrient deficiency control, diet related noncommunicable diseases and nutrition information systems.

Closely related to both of the policy and strategic frameworks, but also to social protection is the National Homegrown School Feeding Program which targets food security, nutrition, and poverty reduction in addition to educational outcomes. It seeks to “implement a sustainable school feeding program that will establish a safety net for the poor and eradicate malnutrition in school-aged children while stimulating the national agricultural economy.” (2016)

Many strategies, policies, and programs are in place but the challenge is to obtain their desired effects. Indeed, food security and nutrition issues have been treated much more directly in recent times but impacts from those efforts are reduced. This is because programs under both military administrations and democratic government were marred by corruption, lack of political will, poor management, incomplete coverage, and a deficient institutional framework. Institutional capacity to address needed social protection and agricultural growth remains weak. Funding has been largely from the Government in conjunction with foreign agencies but current economic challenges leave little fiscal space for program financing, particularly at state and local levels.

3.2 Agricultural Legislation and the Policy-enabling Environment

Policymaking and law making are the opposite sides of the same coin, jointly creating the environment for implementing programmes of government and governing the behavior of people in specific sectors of the economy specifically and the society generally (Ayoola 2007).

Real challenges face agricultural legislation, including the slow pace of passing Bills into law which has been confounded by inadequate compliance by executive authorities with extant agricultural laws. Several agricultural Bills pending in the National Assembly are not progressing, including those relating to more effective regulation of fertilizers and seeds. Confusion surrounds the division between Federal and State responsibilities causing the Federal Government to overreach its authority, and forcing States to acquiesce in order to receive Federal funds. Another instance of non-compliance is the establishment of three existing Agricultural Universities as parastatals under FMARD, but these institutions continued to operate under the Federal Ministry of Education, which has led to distortion of their focus and generally a poor performance in their core mandates to the disadvantage of agriculture.

Some of the challenges that are facing the policy enabling environment of Nigeria, many of which are discussed in other parts of this report, are: a) Policy instability or inconsistencies on the part of FMARD at the micro- and macro- levels, and between the Federal Government and the states; b) Insufficient funding of agricultural programs and projects emanating from the frequent changes in or under-implemented policy shifts; c) Lack of capacity to absorb and utilize existing funds; d) The challenge of poor infrastructure in physical, social and institutional terms which makes private sector investments inefficient and unprofitable; e) The challenge of low technology of farm operations which makes agricultural operations difficult and non-remunerative to investors; and f) The challenge of little or no participation of critical stakeholders in the policy process for agricultural development, particularly of farmers' associations, other grassroots organizations, and professional NGOs in policy advocacy and brokerage.

Gaps in law-making and policymaking need to be filled to meet the targets set for SDG 2. Need exists to accelerate processing agricultural Bills into law, and to monitor or ensure administrative compliance by Government. In some cases subsidiary and renewal legislation is also delayed. Secondly, gaps exist in addressing the challenges of policy instability or inconsistencies, providing sufficient funds to implement approved agricultural programs and in meeting international commitments dealing with agriculture and the environment. Some important recent and on-going legislation relating to food security and agriculture, and their current status follow.

- Establishing the Nigeria Institute of Soil Science (2016). *Pending assent*.
- Agricultural Credit Guarantee Scheme Act. (2016, Senate Bill 17). *Report awaiting consolidation. Pending passage*.
- Federal Universities of Agriculture (2016, House Bill 528). *Consolidation within FMARD delayed. Law is in effect. Pending passage*.
- Nigeria Agricultural Quarantine Services Bill (2013, Senate Bill 81). *Pending passage*.
- Right to Food Bill. (House Bill 621; Senate Bill 549). *Pending passage*.
- Food Security Bill (2016, Senate Bill 71). *Pending passage*.
- Grazing reserve Bill. *Pending passage*.
- All the aspects of agriculture and farm production should be professionalized and institutionalized through appropriate legislation.

3.3 Resource Flows

Several sources are responsible for the financing of programs and projects tailored towards addressing food safety, security, and nutrition in Nigeria. These include loans and financial aid from donor agencies and the private sector including Banks, budgetary provisions of the Federal and the State Governments, resources mobilized through debt relief, savings from subsidy removal. Ugwuanyi (2014) noted that the economic burden of development programs is primarily borne by the Federal Government, followed by the State and Local Governments and lastly by the private sector. Opportunities of subsidy removal and debt relief grants helped allocations to the health sector increase from 5 to 8% over the previous five years (EU/FRN 2014) and this route may prove useful to the Zero Hunger Strategic Review road map as well. Despite these increased revenues, social sector expenditure over the same period remains low with average expenditure on education, health, and social protection at less than 15, 10, and 5%, respectively, suggesting administrative inefficiencies. Indeed, fiscal opportunities to improve upon resource flow is daunting considering the present economic situation, requiring strategic investment and donor strategies (AfDB 2015).

Successive Governments in Nigeria have focused on providing institutional credit to smallholder farmers across the country (Osabuohien et al. 2012). The first such attempt at the injection of financial capital into the agricultural sub-sector was made by the Federal Government in the 1962–1968 development plan with the provision of six million Naira for the development of agriculture (FMED 1981). Following this, Bank credits to the agricultural sector in nominal terms over the years increased from N230 million (then about \$233 million) in 1978 to over 262 billion Naira (\$2.23 billion) in 2005 (CBN 2012). This increase demonstrates the need for farmers to borrow money from lending institutions in order to modernize agriculture and boost production (Olawa and Olowa 2014).

The need to reduce dependency upon imports, as well as to relieve dependence on the oil sector for economic growth, Federal and State Governments must expand their efforts to promote agricultural development through the operations of agricultural credit schemes. Many such schemes are in place including the Agricultural Credit Guarantee Scheme Fund, the Special Emergency Agricultural Loans Scheme, the Supervised Agricultural Credit Scheme, the Small and Medium Enterprises Equity Investment Scheme, the Agricultural Credit Support Scheme, and the Commercial Agricultural Credit Scheme, but for the most part their loans are less available to poorer households lacking collateral or to other, less creditworthy parties. The recent Nigerian Incentive-based Risk-sharing System for Agricultural Lending (NIRSAL) encourages farmers to insure their farms against natural disaster and to borrow from Commercial Banks by guaranteeing loans by up to 60% but is not yet in full operation. The report of Subcommittee 3 describes 42 additional other bilateral projects that contribute to agriculture credit, suggesting that real opportunity exists for much wider agricultural finance to be able to reach the small-scale farming sector.

Unfortunately, experience gained from the implementation of these schemes suggest that while succeeding in increasing the level of funding to the agricultural sector, their impact is less than expected, and is marred by poor loan repayment, late and irregular disbursement of loans, diversion of funds to less risky sectors, and lower than expected profits (Osabuohien et al. 2012), suggesting inefficiencies in fund delivery and recovery. As a result, there is the need to examine on-going and future credit schemes for better service to agricultural lending schemes and to incorporate financial lessons into operations committed toward achieving Zero Hunger.

3.4. Infrastructure Improvement

It is acknowledged that infrastructure is the backbone for agriculture. Following the identification of challenges and gaps, the stage is now set to propose actions of public authorities required to address the issue of infrastructure improvement, and to take such actions toward the attainment of Zero Hunger. In particular, the need to revamp and revitalize the present stock of rural infrastructure is key to attaining the goal of NZH initiative, while the need for the systematic provision of new infrastructures for the accelerated growth of the rural food sector is crucial as well. Three critical areas of intervention for the Zero Hunger Initiative to support infrastructure development include 1) infrastructure for rural economy growth, 2) infrastructure for social protection, and 3) infrastructure for rural institution development. Specific recommendations for addressing these opportunities were forwarded.

The set of corresponding rural infrastructures required comprises: a) Rural physical infrastructures (hardware rural economic growth)—rural road network, rural water supply schemes, rural electrification, rural food storage schemes, rural service centres; b) Rural social infrastructures (software for social protection)—rural education (adult classes, pastoral schools, etc.); rural health schemes (primary health centers, maternity centres, dispensaries); rural water and sanitation schemes; and 3) Rural institutional infrastructures (prerequisites for rural institutional development)—farmers associations and credit societies, community development associations and cooperatives, commodity associations and marketing societies.

By and large, the sustained development of infrastructures, both in hardware and software terms represents the economic and social responsibilities of government. As espoused elsewhere

(Ayoola 2001), this in large measure owes to a number of factors which include: a) the lumpiness of the expenditures involved in providing infrastructure; b) the externalities associated with infrastructure that act as disincentives for private sector to participate fully in such projects; and c) the intergenerational effects of infrastructures which puts a burden of infrastructure maintenance on future leaders for the sustainability of infrastructural facilities.

3.5 Roles of the Private Sector

The critical role of the private sector is reflected across the entire road map for achieving zero hunger in Nigeria. Funding for private sector investment is the ultimate goal of the reports from Subcommittee 3 (Finances) and Subcommittee 4 (Producers' Needs). The private sector is also the intended beneficiary of Infrastructure Improvement (Subcommittee 5) and the enabling policy environment (Subcommittee 6). These aspects of support for private sector investment and expansion are reinforced within specific commodities and agro-industrial processes within the report of Subcommittee 7 described in fuller detail in this synthesis (Section 4.1).

3.6 Institutional Capacities

Nigeria has an extremely complex institutional environment with numerous independent and poorly coordinated Federal- and State-level Institutions (CAADP 2010), indicative of a weak institutional framework (Osabuohien et al. 2012). At the same time, programs and policies are overly-dominated by the public sector with limited roles assigned to the private sector and non-governmental stakeholders (Heidheus et al. 2012). Ironically, many of these Institutions exist to inform and train rural stakeholders in the different ways elaborated by Subcommittee 8, but lack the resources to do so. Conversely, numerous programs aimed at rural development are implemented with the technical and financial assistance of international agencies in ways difficult to factor into national and state planning, influencing both their legitimacy and sustainability (Heidhues et al. 2004; AfDB, 2015). Consequently, this has resulted in limited human capacity development in areas that must improve for the food and nutritional security of the country.

3.7 Coordination Mechanisms, Governance and Decentralization

Coordination of extension services

In the spirit of the Nigerian constitution, agricultural extension service is traditionally the responsibility of State Governments in their respective jurisdictions while the Federal Government is explicitly assigned the responsibility for "establishing institutions and bodies for agricultural studies" and "establishing institutions and bodies for agricultural promotion and financing". In this regard, the ascribed role of the Federal Government in agricultural extension is one of coordination and monitoring of the extension activities with a view to providing technical or financial backup support to the State Governments as constitutionally assigned.

Thus, public agricultural extension service delivery at the grassroots remains the responsibility of the States. They rely upon various Training and Visit extension systems, too often operating from insufficient resources. From a baseline of extension agent to farm family ratio of 1 agent to 3,000 families in the 1970s, support from the World Bank raised the ratio to 1:1,000. This was achieved through the direct recruitment of extension agents and the secondment of staff from the various States' Ministries of Agriculture. For the period that the assistance lasted, and supported

by a rigorous manpower development program, the extension service delivery could be described then as fairly effective. The termination of World Bank support marked a decline of extension staff strength and impact. Mechanisms must be found to revitalize agricultural extension at the State and Local levels, integrate it into farmer collective associations, and supplement it with alternative advisory mechanisms.

Coordination of NZH Implementation and Monitoring

The priority actions identified by the various Subcommittees should be properly coordinated to ensure their smooth implementation by Government and other actors involved. Towards this end, and in providing a direction to such coordination work, the set of challenges and gaps identified by the Implementation Subcommittee (Subcommittee 9) is pertinent upon which to anchor the activities of stakeholders during the implementation of Zero Hunger.

In line with their individual terms of reference, the Subcommittees categorized these challenges and gaps according to policy responses as highlighted in Table 4 below; these are 1) Policy and Institutional Framework for Zero Hunger Implementation; 2) Partnership for Zero Hunger Implementation; 3) Capacity Building for Zero Hunger Implementation; 4) Data and Knowledge Management for Zero Hunger Implementation; 5) Integration of Zero Hunger with Extant Policies and Programs of Government; and 6) Establishment of a multiple and specialized institutional structure for implementation (Departments, Research Institutes, River Basin Authorities, and Parastatals) including wide outreach, with offices in each of the 36 States of the Federation and the Federal Capital Territory (FCT) and human resources both at the Head Office and in the States.

Table 4. Implementation Challenges and Gaps in the National Response

Policy response	Challenges	Gaps
Policy and Institutional Framework for Implementation		
Explicit provision in the constitution for division of labor between Federal and State for policy implementation	Perennial non-compliance with constitutional provision by both Federal and State (Federal Government frequently overreaching the States coupled with complacency of States)	Absence of a compliance framework for constitutionality of agriculture in accountability to the people including penalties and sanctions for non-compliance
Coordination of the food security and nutrition sector	Multiple mandates and jurisdictions for planning and implementing food and nutrition security interventions	Ineffective Multistakeholder Platform
Establishment of a multiple and specialized institutional structure for implementation (Departments, Research Institutes, River Basin Authorities, and Parastatals); Wide outreach, with offices in each of the 36 States of the Federation and the Federal Capital Territory (FCT); human resources both at the Head Office and in the States	The effectiveness of the coordination, collaboration, and linkages between FMARD [as Government's lead institution for macro-agricultural policy] and other organizations involved in agriculture and the rural sector is weak and inadequate	Lack of coordination, inconsistencies of policy, regulations and taxes, poor human capacity development
Articulation and approval of clear policy direction (The Green Alternative)	Weak implementation of policy and strategies, untimely review of policy documents	Institutional partnerships and integration; inadequate budget

Partnership for Zero Hunger Implementation		
Partnership with donor community – bilateral and multilateral agencies	No alignment with private sector to ensure supply security that meets the needs of processors	Food processing/ packaging capacity under-utilization; inadequate infrastructure and financing
Partnership with NGOs – national/international	Misinformation	Feedback mechanisms; consultation; mutual accountability; funding
Public-Private Partnerships: Green Alliance; NABG	Corruption	Agricultural development financing; public infrastructure investments;
Partnership at continental and regional level	No home-grown solutions. Dominance of foreign partners	Lack of sustainability, lack of local capacity and local partner leadership
Capacity Building for Zero Hunger Program in Nigeria		
Research programs and policies.	Insufficient scientific research and training opportunities which may be short- or long-term diploma/certificate/degree training	Inadequate extension services and lack of consistent introduction of new innovations that will develop skilful manpower especially in the agricultural and mineral sectors
Institutional establishment and institutional linkages at all levels for youth and women empowerment.	Few training institutions and weak linkages between available institutions for capacity building	This results in inefficiency and inability for the various institution to provide the necessary training requirement for youth and women empowerment especially in the agro-allied sector
Establishment of training centers, programs and strong linkages between various training institutions training centers and programs.	Few training centers, programs and weak linkages between training centers and training institutions.	Ineffective human capacity building especially for rural dwellers, the youth and women, and our teeming graduates

Monitoring and Evaluation of the Zero Hunger Program

Presence of PP&C in FMARD	<p>Weak institutional linkages and integration with States and Local Government leading to lack of synergy in service provision</p> <ul style="list-style-type: none"> • Weak planning, monitoring and evaluation arrangements • Policy/strategy development non-participatory • Interdepartmental duplication of efforts • Direct involvement in input supply has not encouraged private sector initiative and hampered access. • Policy inconsistency • Frequent reconfiguration of program implementation institutional framework • Ineffectiveness in securing counterpart funding in line with financing agreements; weak institutional framework for policy coordination 	<p>Inadequate or lack of appreciation within the Government system of the critical link between research and development</p> <ul style="list-style-type: none"> • Lack of motivation for research staff and other professionals in the system, further aggravated by the near total collapse of research infrastructure • Lack of public awareness on quality assurance and standards for global acceptance • Largely supply-driven, non-participatory approach to research problem-identification and solution leading to low rates of adoption of emerging technologies • Research and development activities are often only tangentially related to specific technological needs of SMEs. • Inadequate financial resources • Inadequate active involvement of private sector operators, the youth and women and smallholder farmers
Presence of M&E Units in the structure of different projects	<p>Incapacity to be on the driver's seat during loan negotiations and other processes thus resulting in unnecessary delays in program loan effectiveness</p>	<ul style="list-style-type: none"> • Inadequate staffing, equipment and facilities • Immobility to do serious M&E work in the field

Data and Knowledge Management for Zero Hunger Implementation		
Presence of National Bureau of Statistics (NBS) and Central Bank of Nigeria (CBN) as sources of data	Weak linkages/Synergy with FMARD	Need to strengthen the linkage
Use of evidence for effective implementation of interventions	Absence of recent data on micronutrient deficiency in the country	Urgent need to conduct a National Food Consumption and Nutrition Survey
Presence of units in FMARD for data and knowledge management: IT Unit; Library Unit	<ul style="list-style-type: none"> • * Quasi non-existence of information, data gathering, data management, and data dissemination <p>*Weak capacity in terms of personnel, space and equipment</p>	Need to create adequate space for data management work, library and staff training
Integration of Zero Hunger with Extant Policies and Programs of Government		
Integration of various policies of the Federal Government. Existence of statutory bodies for aggregate policy coordination, e.g., Federal Executive Council (FEC)	Lack of motivation to take a position or intervene in Inter-Ministry or Inter-Agency delineation of roles in relation to program oversight management	Inter-Ministerial and Inter-Agency coordination; mutual cooperation and accountability; legislated penalties for non-compliance
Coordination of Federal and State policies - Existence of the National Council on Agriculture (NCA); National Council of States (NCS)	Weak institutional linkages and integration with States and Local Governments; administration leading to lack of synergy in service provision	Performance indicators and reward systems

Chapter 4

Priority Actions and Other Key Findings

4.1 Priority Actions by SDG 2 Target

End hunger and ensure access by all people (SDG 2.1)

The simultaneous occurrence of poverty, inequality; and instability situates Nigeria on the map of vulnerable nations, and calls into question the social responsibility of the Government. . To address the situation and thus ensure social protection for Nigerians suffering from protracted vulnerabilities such as food insecurity, ignorance, disease, as well as weather and other natural hazards or man-made disasters, the Government needs to invest in appropriate social infrastructures.

In particular, partnerships with humanitarian organizations will be required to scale up assistance in the Northeast through the National Emergency Management Agency (NEMA) and State Emergency Management Agencies (SEMAS). Special training for military and paramilitary forces also would be needed to enhance their capabilities to address and cope with emergencies. Thus it is clear that in order to provide appropriate responses to the range of natural and man-made disasters across Nigeria, the Government's capacity in emergency management and disaster risk reduction at Federal, State, and Local levels need to be reinforced. Collaboration with partners will help to strengthen the response capacity in areas such as emergency needs assessment, data processing and geographic information systems (GIS), logistics, and emergency telecommunications.

But the Northeast also requires holistic and sustainable solutions, including the cessation of hostility, peace-building, rehabilitation, reconstruction, and social and economic development; this can be achieved only through partnerships between local and international institutions and agencies. A way forward in this direction is for an important resource like Lake Chad, which today covers only 10% of its 1925 area, to be reclaimed.

End all forms of malnutrition (SDG 2.2)

The findings of the Subcommittee reinforce the view that the keys to overcoming malnutrition among children include promotion, protection and support for breastfeeding by healthy, better informed mothers; promotion of adequate complementary feeding by better informed mothers; micronutrient supplementation and fortification; and deworming and treatment of children with moderate and severe acute malnutrition. School feeding programs that offer balanced meals to younger children at little or no cost, and improving the accessibility of locally available nutritious food products are also essential.

Double the agricultural productivity and incomes of small-scale food producers (SDG 2.3)

As shown in Table 5, the production area for Nigeria's 15 key commodities is 27 million hectares. It suggests that while most production gains will be through yield improvement and better farming practices, the expansion of cropping areas by an additional 4.5 million hectares will also be required if projected and current deficits are to be addressed. The latter would expand cropland by 17%, exclusive of other key commodities for which no data was available to Subcommittee

7. The largest production expansion would be of rice, for which new and expanded irrigation schemes are required in 11 River Basin; expansion of Irish potato production in the Jos Plateau; and greater effort to increase cassava output in order to meet agro-industrial processing demand. The promotion of urban agriculture would drive increased banana production while that of orange-fleshed sweet potato is likely to be achieved through vine distribution within existing cropland, better management, and farmer training. FMARD has developed a collaborative strategy to train over 500,000 farmers in improved crop management of rice, Irish potato, tomatoes and other vegetables, and banana/plantain (Table 5). Shea nut is mostly collected from the wild over a large area (Table 5) and FMARD offers a plan that is promoting greater domestication.

Table 5. Current and planned coverage of key commodities in Nigeria and expansion mechanisms (based upon the report of Subcommittee 7).

Commodity	Current	Planned	Increase	Main mechanism
----- million ha -----				
Cassava	3.1	4	0.9	Demand driven by increased processing
Rice	2	3.6	1.6	50,000 ha/year expansion in 26 States
Maize	14	14	0	Improve production from 3 to 5 t/ha
Yam	na	na	na	No coverage information
Sweet potato	0.2	0.24	0.04	Gains mostly from increasing yield by 19 t/ha
Irish potato	0.3	1.15	0.85	Backstop 40,000 farmers in Jos Plateau
Soybean	na	na	na	No coverage information
Cocoa	0.67	1.25	0.58	Mostly rehabilitation of overaged plantations
Cashew	0.37	0.47	0.1	Greater focus upon upgraded plantations
Vegetables	0.69	0.74	0.05	Support for 50,000 new vegetable farmers
Tomato	0.2	0.32	0.12	Train 160,000 new producers in 16 States
Plantain/Banana	0.25	0.45	0.2	Train 200,000 farmers, promote urban agriculture
Shea nut	5	5	0	Intensify production by 40%, distribute 10,000 seedlings
Castor bean	0.005	0.02	0.015	Shift to shorter duration, faster maturing varieties
Ginger	na	na	na	No coverage information
Sesame	0.25	0.25	0	No planned expansion, double yields to 1.6 t/ha
others	0	0.006	0.006	Planned for millet, cowpea, and other crops
Total	27.0	31.5	4.5	Expand cropland by 17%, not including yam & soybean

Irrigated greenhouse production of hybrid tomato varieties is viewed as the best solution to securing Nigeria's supply of tomato and other vegetables. Seeds of these hybrid vegetables must be produced in-country as the costs of imported seeds is excessive. This goal requires close collaboration with commercial seed companies.

Other aspects of the FMARD strategy that are relevant to the Zero Hunger Strategic Review are: 1) large-scale multiplication of vegetatively propagated crops such as cassava, yam, potato, banana, and ginger; 2) dissemination of banana and yam, using "mini-sett" technologies, and for bananas the provision of an additional 300 million suckers of improved varieties; and 3) dissemination of 2 million cocoa seedlings annually, introduction of improved cashew varieties 100,000 hectares, domestication of shea nut starting with a 10,000 seedling pilot plantation, and dissemination of the stronger tasting "yellow" ginger.

Table 6 provides information on the investment required to meet key commodities production deficits. According to the Subcommittee, a total investment of Naira 31 billion is needed to provide the 57 million tonnes needed to close the deficit described in Table 3. Wiping out the deficit thus represents an increase in a commodity supply of 53%, and this would need increased Government investment as well as leveraged commercial loans.

Table 6. Necessary investment to meet commodity production and expansion targets (based upon report of Subcommittee 7).

Commodity	Investment	Source	Strategy and planned FMARD actions
x million Naira			
Cassava	1,093	SC7	Mostly distribution of improved varieties
Rice	3,125	SC7	Leveraged investment in farm inputs for self-sufficiency
Maize	7,088	Estimated	Leveraged investment in farm inputs for self-sufficiency
Yam	903	Sc7	Mostly distribution of improved varieties
Sweet potato	1,543	Sc7	Mostly support to 18,500 farmers in 36 States
Irish potato	3,416	Sc7	Mostly support to 40,000 farmers in 10 States
Soybean	3,199	Estimated	Leveraged investment in farm inputs for +1.3 million tons
Kenaf	1,543	Sc7	Comprehensive investment in jute bag production
Cocoa	787	Estimated	Mostly leveraged production of improved cocoa seedlings
Cashew	1,023	Estimated	Leveraged investment in planned 100,000 ha expansion
Vegetables	283	Estimated	Improved seeds and training 50,000 farmers
Tomato	788	Estimated	Mostly leveraged investment in 50 tons of hybrid seeds
Plantain/Banana	2,925	Estimated	Training and leveraged investment in improved propagules
Shea nut	876	Sc7	Balanced investment in inputs, training, and post-harvest
Castor bean	142	Estimated	Leveraged expansion onto 20,000 ha
Ginger	912	Estimated	Leveraged investment in +300,000 tons/year
Sesame	1,152	Estimated	Leveraged investment on inputs for 250,000 ha
Total	30,798	Sum	
Double production	58,109	Calculated	Based on Naira 31 billion invested for +53% production

To ensure implementation of the FMARD strategy will require, among other things, that:

a) Institutions in charge of food security and nutrition programs be strengthened so that changes in Government will not lead to the discontinuance of an existing program; b) The private sector should be involved at all stages for effectiveness and sustainability; c) The option of Public - Private Partnerships (PPP) should be considered a priority within new program financing; d) Policies and programs should reflect local conditions and human, institutional, and financial resource capacities; e) Interagency and intergovernmental collaborations are needed for better coordination and monitoring of programs but this coordination must be conducted in an efficient, less redundant manner; f) Community-based associations and farmers' networks must be included in program actions to assure grassroots participation and assure more complete coverage; and g) All avenues of inefficiencies and leakages should be corrected through more effective monitoring and evaluation and prompt administrative action, where required.

Legislation

Achieving zero hunger will need enabling legislation. Food and nutritional security must be regarded as a constitutional right and legislated accordingly. The Private Member Bill placed before the National Assembly (both the Senate and House of Representatives) by the Farm & Infrastructure Foundation (FIF), which seeks the amendment of relevant sections of the constitution to guarantee the right to food and nutrition security in Nigeria, need to be passed. This Bill, having spanned the past two legislative sessions (2007–2011 and 2011–2015 sessions) is presently at the committee stage (second reading) in both chambers. Moreover, in line with the tenets of right to food, there should be implementable laws on standards for food and nutrition in Nigeria. A stabilized and more enabling policy environment for agricultural development must be established through legislation to ensure the sustainability of the environment.

A recursive policy programming approach that is similar to the six-yearly American "Farm Bill" is also needed. This works through the consolidation of different sector policies and their articulation into a single agricultural sector policy every six years, to be passed as a one internally consistent agricultural law for implementation during the period. Thus, by law, and given the present four-yearly election cycle for a new Government to emerge in the country, this approach would ensure that the new Government would have limited powers to introduce radical changes in the policy process for at least the first two years. Afterwards, at which time the Government would have settled down properly and implemented extant policies effectively, another Farm Bill will be due for articulation with minimum perturbation of the policy process for agricultural development. For this to work well, a strong role would need to be played by NGOs as partners of Government in policy advocacy, but also as watchdogs that would monitor public authorities to ensure compliance with laws.

Infrastructure

According to Idachaba, Ayoola et al (1995), several actions need to be taken to address Nigeria's current infrastructure deficit. These actions include the following:

- The sponsors of rural infrastructural projects must maintain a close link between planned and actual fund allocations and other aspects that determine their enduring commitment over the entire project life.

- There must be built-in stabilizers in the rural infrastructural strategy to limit the adverse effects of perturbation arising from frequent changes in organizations and personnel on the implementation of projects.
- Rural infrastructure strategy must ensure systematic planning, backed up by periodic infrastructure survey studies for the monitoring of stock and flow of infrastructure at Federal, State, and LGA levels, to generate enforceable guidelines that improve the implementation, performance, and impact of projects with special regard to their budgeting, tendering, labor utilization, cost control, and supervision.
- Appropriate responsibility-sharing formulas must be found to allocate resources among the different tiers of Government in the infrastructural development process and in the performance of roles for infrastructural provision between Government and the private sector.
- Agricultural infrastructure development must be weighed against other desirable economic opportunities with a view toward applying win-win policy interventions and beneficial trade-offs.
- Site-specific design of infrastructure projects is required to achieve targeted objectives within commodity value chains and across different administrative levels, but this does not preclude the opportunity to develop proven, cost-effective packages that are available to and benefit a wider cross-section of smallholders seeking to modernize their agricultural and agro-industrial processing. It is important that M&E reveals these opportunities.

Private sector in agriculture

Direct private sector involvement will be needed within each commodity value chain in the following manner:

- **Cassava:** Commercialize cuttings, expand flour and *garri* factories, increase exports
- **Rice:** Commercialize improved seeds, promote mechanization, improve milling capacities
- **Maize:** Commercialize improved seeds and expand production input supply
- **Yam:** Commercialize nurseries, improve storage, processing, and marketing facilities
- **Orange-fleshed sweet potato:** Improve availability of production inputs, utilization, and marketing channels
- **Irish potato:** Improve storage and transport channels, expand value-adding enterprises
- **Soybean:** Commercialize improved seeds and input supply, agro-industrialize products
- **Kenaf:** Develop private sector production of woven jute bags for domestic use
- **Cocoa:** Commercialize nurseries, expand and export higher value products
- **Cashew:** Expand local processing of fruit, export grade A nuts, link to pollinators (bees)
- **Vegetables:** Commercialize seed supply, strengthen marketing chains
- **Tomato:** Commercialize hybrid seeds, expand canned processing to reduce imports
- **Plantain/Banana:** Revitalize degrading plantations, develop urban production networks
- **Shea nut:** Improve local processing capacities, expand range of Shea-based products
- **Castor bean:** Expand range of oil derivative products for domestic use and export
- **Ginger:** Develop and popularize a fuller range of ginger-based domestic products
- **Sesame:** Major shift from bulking for low-grade export to value-adding oil extraction.

Other commodities that need more private sector investment include mushroom, oil palm, rubber, poultry, cattle (beef and dairy), goats, sheep, pigs, rabbits, grass cutters, snails, and crocodiles

4.2 Capacity development

Capacity development needs to achieve zero hunger in Nigeria must be strategically addressed by multiple stakeholders as they are varied and do cover a wide range of educational and training institutions. These needs are as follows:

- **Policy and project monitoring.** The ability of the country and its individual programs to collect and analyze performance data and to incorporate these into effective policy formulation must be strengthened.
- **Research for development.** Research breakthroughs need to be transferred into training content and enterprise opportunities. Strengthened agricultural research programs must extend their downstream reach to include direct beneficiaries. The interests of farmers and agribusiness must be considered within advanced degree training as well.

Extension and advisory services. Agricultural extension is the critical avenue for introducing modern farming technologies to poor rural households. Front-line agents must be provided with resources necessary to convince small-scale farmers to invest in proven technologies and market opportunities.

Tertiary and higher education. Agricultural universities, vocational schools, and technical colleges all have important roles in better educating the next generation of Nigeria's modernized agricultural work force. At the same time, these educators must strive to remain current and provide their graduates with sound agribusiness and agro-ecological perspectives.

Agribusiness and value chains. Training programs are not only for the youth or the disadvantaged. It is important to build an enabling environment for greater private sector investment by linking them to loan officers and commercial mentors to prospective investors and agribusiness start-up, and to escort new proven technologies to Nigeria's modernizing agriculturalists and land managers.

Resource Mobilization

Achieving zero hunger will require increased investment by the government, partners and the private sector. Some options for mobilizing additional resources are as follows: a) Facilitate and legislate alternative finance mechanisms including warehouse-receipt financing, commodity trade financing, equipment leasing, and crowd sourcing; b) Promote incentives for Commercial and Micro-finance Banks to develop appropriate financial products attractive to small-scale farmers, women, and the youth; c) Promote inclusive agribusiness development reform in the agricultural insurance sector through developing new products such as weather-indexed crop insurance, and allow private insurance companies to participate in Government-sponsored insurance programs; d) Work with Commercial Banks and large commodity buyers to strengthen "anchor lender" supply chain-based financing of smaller-scale producers, women, and the youth; e) Work with the Central Bank of Nigeria (CBN) on ensuring more effective and direct utilization of incentive funds and with NIRSAL to expand the innovative use of credit guarantees and interest rebates; and f) Work with the Nigerian Stock Exchange and large, family-operated enterprises to expand capital markets through shareholder investment, including the expansion of public offerings.

4.3 Partnerships

The policy and institutional environment for implementing Zero Hunger in Nigeria is in large part directed through the Green Alternative and its suite of Policy Thrusts. In this way, implementation of the Zero Hunger Strategic Review's road map falls not within a single agency or office but rather across the policy and institutional framework of existing agricultural and rural development actions in Nigeria. These actions operate at the Federal, State, and Local levels, requiring that effective coordination be in place. The Federal Government is responsible for conducting agricultural research and the promotion and financing of large-scale agricultural projects. The States lead in all areas of agricultural development and work closely with local interests to achieve their goals. Implementation must engage in structured partnerships with the Federal Government and all 36 States of the Federation including the Federal Capital Territory. Because many of the actions for Zero Hunger have strong agro-ecological implications, they may also be grouped among the nation's six geo-political zones; Southeast, Southwest, South-South, Northeast, Northwest, and North-Central.

A number of semi-autonomous agencies reinforce implementation at both the Federal and State levels. These agencies include Agricultural Research Council of Nigeria, Bank of Agriculture, National Agricultural Insurance Corporation, Nigeria Agricultural Quarantine Service Department, National Agency for Food and Drug Administration, and Consumer Protection Council, The mandate for policy decision-making in agriculture is assigned to the National Council on Agriculture through the actions of its many sectoral committees. Similar mechanisms of agricultural administration exist at the State level, whereby a State Ministry of Agriculture operates a number of departments and acts as an umbrella body for extra-ministerial agencies. There is necessarily a strong link between State-level operators and their respective rural institutions but this critical link is too often weak or non-existent. Finally, partnership with international institutions in trade, finance, and rural development is long-standing. The list of development partners in Nigeria's agriculture and rural development is quite long but four among them are especially worthy of note: the United Nations Food and Agriculture Organization, International Fund for Agricultural Development, African Development Bank, and The World Bank Group. The commencement of operations in Nigeria by the World Food Programme adds one more important actor. Strong partnership with these and others must continue if zero hunger is to be achieved.

Numerous opportunities exist to achieve zero hunger, but with them come responsibilities at several administrative levels and among stakeholders. These include efforts by the Federal, State and Local Government and commitment to and by a better organized private sector, farmers and their associations, and disadvantaged rural stakeholders as follows:

- The Federal Government of Nigeria is charged with increasing the country's research and project management capacities in order to facilitate the smooth and effective implementation of agricultural research programs. Efforts to increase agricultural production through more strategic budgetary allocation to partners, promotion of necessary inputs, and mobilization of financial services require greater attention. In particular, greater efforts are required in improving marketing channels and efficiencies in collaboration with State and Local Governments and to target women and the youth better as key agricultural operators.
- Low tariffs encourage dumping and make investment in production and agro processing unattractive. As a matter of urgency, the support of the Federal Government is required to create a level playing field. This will involve extension of the levy imposed on rice importation to include a levy on the importation of all types of corn starch, cassava starch, liquid glucose, groundnut oil, juice concentrates, and other finished products derived from agro processing.

- The promotion of agricultural production requires a virile and effective extension service organized at the State level. This includes aligning agents and their farmer training efforts with the actions recommended by the Zero Hunger Strategic Review and the Green Alternative Policy Thrusts, equitable and gender-balanced extension delivery service, and the promotion of loan mechanisms directed toward smallholder farmers.
- Local Government Authorities are expected to progressively assume greater responsibilities with respect to the provision of an effective extension service, and mobilization of farmers for accelerated agricultural and rural development through the building of cooperative organizations, local institutions and communities, as well as infrastructure.
- Agricultural production, processing, storage, packaging, and marketing are essentially private sector activities. The roles of the private sector should be engaged via the Nigeria Agri-Business Group (NABG) and possibly the New Partnership for Africa's Development (NEPAD) to take advantage of an improving enabling environment provided by the public sector for new and more profitable investment. Specific actions include building entrepreneurial capacity to make agriculture a more attractive business pathway especially to the financial institutions with bias for agriculture; directing additional investment towards input manufacture and markets, crop and animal production, primary and secondary processing and marketing; and facilitating investment advisory support for potential entrepreneurs. Private sector and financial interests across Nigeria stand to profit greatly through the road map of the Zero Hunger Strategic Review and must recognize this opportunity better.
- Disadvantaged groups require incentives for zero hunger to be achieved, and they must actively pursue and capitalize upon these opportunities as they emerge. Need exists to develop and launch entrepreneurship platforms that create a pathway for the youth and women to enter the agribusiness economy and to facilitate investment opportunities for potential entrepreneurs. Too many studies of the disadvantaged result in no improvement of their condition. Greater dialogue is needed between farmers' groups and service providers to expand the pool of ideas available to Government bodies for meaningful institutional change.
- Nigeria's farmers themselves, including the poor, are charged with the greatest responsibilities towards achieving Zero Hunger. All of its strategic actions are ultimately directed toward their greater well-being, so smallholder farmers must actively seek to improve their farming operations, marketing efforts, and household activities. The Zero Hunger Strategic Review was undertaken on their behalf and zero hunger ultimately must be achieved by them!
- The local NGOs have a role to play in promoting agricultural best practices through policy advocacy and brokerage organizations. The Farm and Infrastructure Foundation (FIF) and National Agricultural Foundation should provide the lead in driving the advocacy component of implementation plans for Zero Hunger.

Chapter 5

Zero Hunger Road Map for Nigeria

5.1 The Zero Hunger Road Map and Zero Hunger Forum

The Zero Hunger Road Map in Table 7 summarizes the current situation, what needs to be achieved, what actions are required, a timeframe for action, and which key partners are required for each of the SDG 2 targets (i.e. End Hunger, End Malnutrition, Double Agricultural Productivity and Income, Develop Sustainable Food Systems and Resilient Agricultural Practices, and Ensure Genetic Diversity).

A *Nigeria Zero Hunger Forum* that has been formed by stakeholders participating in the Nigeria Zero Hunger Strategic Review will monitor and follow-up implementation of the priority actions and key recommendations of the exercise, and ensure that the Review contributes to the achievement of Zero Hunger in Nigeria by 2025. The *Nigeria Zero Hunger Forum* will be led and chaired by Chief Olusegun Obasanjo, former President of the Federal Republic of Nigeria and its membership will comprise the Chairs of Zero Hunger Strategic Review subcommittees and Governors of pilot States. Supporting technical partners are IITA, AfDB, WFP, FAO, UNICEF and IFAD.

The envisaged roles of the Forum are as follows: (a) follow up and monitor implementation of actions identified in the Nigeria Zero Hunger road map; (b) promote the alignment of Government policies, plans and programs and the plans and programs of development partners with the priority actions and recommendations of the Nigeria Zero Hunger Strategic Review; (c) establish and oversee a platform for sharing information and knowledge related to topics in Zero Hunger; (d) advocate appropriate policy and related changes to enable progress towards Zero Hunger; (e) assist with land availability and preparation and resource mobilization to support Zero Hunger implementation in pilot States beginning with Sokoto, Ebonyi, Benue, and Ogun in the first two years, adding two more States per zone at the start of Year 3, and then including the rest of the 36 States at the beginning of Year 5, with each pilot State having a minimum of two crops and one type of livestock as their focal commodities; and (f) create public awareness on the importance of food and nutrition security as a national security and survival imperative.

The Road Map constitutes the primary vehicle that will be used by the *Nigeria Zero Hunger Forum* to carry out its work, and it plans to discuss and add measurable indicators to the Road Map for determining progress toward the most important milestones. The Forum also intends, as it executes its responsibilities, to mainstream the Supplemental Targets dealing with investment, trade, and market support that are described in Section 1.2.

Table 7. Nigeria Zero Hunger Road Map (relating to deliverables within SDG 2)

Target 1. End hunger and ensure access by all people, in particular the poor and people in vulnerable situations, including infants, to safe, nutritious and sufficient food all year round (by 2030).				
Current Situation	Milestones (What needs to be achieved)	Priority Actions (what and how will they do it)	Time frame	Key Partners (who needs to help)
Too many Nigerians are hungry.	Food, food safety, and nutritional security identified as a basic human right. Policies integrated around that right.	Establish SDG 2 Coordination Office to enact the Zero Hunger Strategic Review. Draft amendment Bill to be reviewed, passed, and assented to by President in a timely manner.	2017	Federal Government of Nigeria and National Assembly; Farm & Infrastructure Foundation; National Agricultural Foundation of Nigeria, the private sector
Hunger persists among 12.9 million Nigerians and is increasing.	Stepwise decrease in the hungry by 2 million per year. Schedules for increased production of staple food crops met/ processing through irrigation and put Dams to use.	Identify clients for food relief and improved farming, and prioritize accordingly. Cereals, root crops, and livestock production returns to +4% per year.	2017 to 2024	FMARD, State, and Local Government, organized private sector
Food policies remain disjointed and non-enforced.	The Zero Hunger Strategic Review implemented as a guiding framework and linked to the Green Alternative Policy Trusts.	Critical agricultural policies enacted and backed by law. Agricultural and social protection policies linked to better benefit the poor.	2017 to 2020	Federal Government of Nigeria, State, and Local Government
4.4 million people are in need of urgent food assistance in the Northeast.	Emergency feeding and nutrition programs to support the work of NEMA, SEMAS and humanitarian organizations.	Scale up assistance in North-eastern Nigeria to reduce hunger; provide food and nutrition support through in-kind and cash-based transfers. Provide agricultural inputs to vulnerable households.	2017 to 2020	Federal Government of Nigeria, State, and Local Government, WFP, FAO and UNICEF
Inadequate social and economic development in the Northeast	Holistic solution designed and implemented	Cessation of hostility, peace-building, rehabilitation, reconstruction, and social and economic development	2017 to 2025	Federal Government of Nigeria, State, and Local Government, WFP, FAO, IFAD and UNICEF
Limited policy space	Appropriate policies and programmes implemented	Draft National Social Protection Policy adopted; Home-grown school feeding implemented in all 36 states; National Social Investment Program commenced. National Strategic Plan of Action for Nutrition implemented		Federal Government of Nigeria, State, and Local Government, WFP, FAO, IFAD and UNICEF
Inadequate protection from natural and man-made disasters.	Farmers use climate smart agriculture practices and establish grain silos for a food resource program. Lake Chad reclaimed	Increase the sensitivity of Government and provision of food and other life-saving items to people in protracted suffering, e.g., vulnerable groups, the internally displaced persons (IDPs), etc. Strengthen the technical capacity of Federal, State, and Local level emergency management agencies.	2018 to 2022	Federal Government of Nigeria, State, and Local Government, WFP, FAO and IFAD

Target 2 End all forms of malnutrition, including achieving, by 2025, the internationally agreed targets on stunting and wasting in children under 5 years of age, and address the nutritional needs of adolescent girls, pregnant and lactating women, and older persons (by 2030 at the latest).

Current Situation	Milestones	Priority Actions	Timeframe	Key Partners
Under-nourishment persists among 7% of Nigerians.	Stepwise improvement in household nutrition, food safety, processing and complete nutrition considered a human right.	Public Awareness of nutrition-sensitive agriculture advanced, include nutrition clause in the Food Rights constitutional amendment. Investment priorities for under-nutrition prevention and treatment established.	2018	Federal Government of Nigeria and National Assembly; Farm & Infrastructure Foundation; National Agricultural Foundation of Nigeria; WFP and UNICEF
Stunting continues to affect 33% of under 5 children	Stepwise reduction of child stunting achieved through promotion of breast-feeding and complementary feeding .. Strengthen infrastructure for rural social protection.	Identify action-level causes of stunting, implementation of the National Strategic Plan of Action for Nutrition, develop corrective nutritional supplements, establish community-based feeding programs, and treatment of moderate and severe malnutrition, micronutrient supplementation, food fortification and deworming .. Home-grown school feeding and local purchase safety nets also should be put into place.	2017-2024	FMARD and FMED, State, and Local Governments, NGOs, organized private sector (Farm & Infrastructure Foundation; National Agricultural Foundation of Nigeria); WFP and UNICEF
Vitamin A rich crops are available but underutilized.	Widespread adoption of Vitamin A (yellow) cassava, orange-fleshed sweet potato, and hybrid vegetables among producers and processors. Requisite private sector and government capacities built	Develop multiplication and dissemination programmes for improved nutrition crops. Vitamin A fortification in processed foods; technical assistance for private sector production of fortified foods; improved regulation of fortified food production and processing by government	2017-2020	FMARD, State, and Local Governments, NGOs, WFP and organized private sector
400,000 children are severely malnourished in the four States most affected by the conflict.	Address emergency malnutrition situation in Northeast Nigeria.	Manage acute and severe malnutrition with supplementary feeding, therapeutic feeding and stabilization centers; prevent acute malnutrition via infant and young child feeding, micronutrient supplements, and blanket supplementary feeding.	2017 to 2024	WFP, UNICEF, Federal, State, and Local Governments, private sector, WFP and UNICEF and other partners
2.5 million children with severe acute malnutrition and 4.5 million with moderate acute malnutrition in the country	Address acute malnutrition in the country	Manage acute and severe malnutrition with supplementary feeding, therapeutic feeding and stabilization centers; prevent acute malnutrition via infant and young child feeding, micronutrient supplements, and blanket supplementary feeding	2017 to 2024	WFP, UNICEF, FMOH, Federal, State, and Local Governments, private sector, WFP and UNICEF and other partners

Target 3. Double the agricultural productivity and incomes of small-scale food producers, in particular women, indigenous peoples, family farmers, pastoralists, and fishers, including through secure and equal access to land, other productive resources and inputs, knowledge, financial services, markets, and opportunities for value addition and non-farm employment (by 2030).

Current Situation	Milestones	Priority Actions	Timeframe	Key Partners
Large production deficits continue for key agricultural commodities	Agricultural production increased by 57 million tonnes per year, through improved dry-season farming. Yield targets and expansion areas for key agricultural targets met and exceeded. Nigeria becomes major exporter of processed cassava and other products.	Establish SDG 2 office to double agricultural productivity. Management recommendations formalized, farmers trained, production inputs better available through commercial channels, commercial credit and marketing channels improved.	2017 to 2024	All partners must strive to achieve this goal. NARIs
Large post-harvest losses continue for key agriculture commodities.	Post-harvest losses are reduced by 50% through the use of postharvest handling technologies.	Establish SDG 2 office to reduce post-harvest losses by 50%. Improper technologies determined, farmers and processor trained, and appropriate equipment and supplies made available through commercial channels, commercial credit, and marketing channels improved.	2019 to 2024	All partners must strive to achieve this goal. NARIs
Agricultural extension services are understaffed and insufficiently resourced.	Agent to client ratios decrease for the current 1:3000 to 1:1000 over the next decade. A next generation of agents trained and employed. Opportunities for farmers' associations and private sector extension established.	Federal-State-Local differences resolved, funding for extension services raised and additional agents trained or recruited and resourced, front-line client quotas established and enforced, farm liaison services diversified and better integrated.	2019 to 2024	FMARD, State, and Local Government, NGOs, Universities of Agriculture, other development partners
Small-scale farming sector remains under-productive and disorganized.	Double productivity on small-scale farms to meet household food needs and produce marketable exportable surpluses. Farmers' associations formed and registered, and aligned with improved agricultural extension. Greater participation by women and the youth in market-oriented agriculture.	A stronger extension network offers widespread training in crop management and marketing. Incentives designed for purchase of production inputs from commercial suppliers. Improved crop varieties systematically deployed. Small-scale farm and processing machinery adopted. Local farmer and commodity associations formed and facilitated.	2017 to 2030	FMARD, State, and Local Government, NGOs, Farmers' associations, other development partners, including FAO and WFP
Traditional export commodities are declining.	Meet production increase schedules for cashew, castor, cocoa, ginger, shea nut, sesame, and other traditional (and new) export commodities.	Production targets formalized, seedling nurseries commercialized, credit opportunities improved, quality standards enforced, and marketing channels improved, value added to traditional raw exports.	2017 to 2030	State Governments, National Agricultural Research Institutes, organized private sector
Traditional agricultural practices persist and opportunities for agricultural intensification are missed.	Stepwise schedule for modernized production of key agricultural commodities set and met. Farming systems diversified to include at least two cash crops per household.	Improved vegetative propagation systems expanded for cassava, yam, banana, sweet potato, potato, and ginger. Improved seed systems for maize, rice, soybean, hybrid vegetables, and others. Fertilizer blending and biofertilizer manufacturing expanded. Horticultural equipment/supplies commercialized.	2017 to 2030	FMARD, State Governments, National Agricultural Research Institutes, Central and Commercial Banks, organized private sector

Current Situation	Milestones	Priority Actions		Key Partners
		Timeframe		
Too much of Nigeria's potentially arable land remains under-utilized.	Cultivated lands increase by 4.5 million ha with greatest gains in rice, cassava, potato, cocoa, tomato, and vegetables. Lands converted to urban greenbelts.	Lands for agricultural expansion identified (e.g., 1.6 million ha of rice in 11 watersheds), incentives for expansion formulated, credit, input supply, and marketing conditions improved.	2017 to 2024	State and Local Governments, Ministry of Environment, Central and Commercial Banks, others
Negative coping by farmers in response to natural and man-made disasters.	Farmers use climate smart agriculture practices.	<ul style="list-style-type: none"> - Promote public-private partnerships between the financial institutions and rural producers to know their situational needs in the emergency. - Strengthen climate change mitigation and adaptation mechanisms. 	2019 to 2024	States and Local Governments, IITA with NARES, WFP, FAO and IFAD
Target 4. Ensure sustainable food production systems and implement resilient agricultural practices that increase productivity and production, that help maintain ecosystems, that strengthen capacity for adaptation to climate change, extreme weather, drought, flooding, and other disasters and that progressively improve land and soil quality (by 2030).				
Climate smart land use poorly understood and practiced.	Key policy instruments and incentives enacted in a timely manner. Climate-smart land management guidelines established and distributed at a state level. Two million farmers trained in climate smart practices.	Establish SDG 2 office to coordinate land quality actions. Land management guidelines formalized that counter threats of drought, episodic rainfall, flooding, and other extreme climate events. An improved monitoring and reporting system on climate change response is implemented.	2017 to 2020	Federal Ministry of Environment, State governments, NGOs, Advanced Research Institutes
Soil nutrient depletion and land degradation continues.	Training in Integrated Soil Fertility Management (ISFM) reaches 2 million farmers per year. Land quality indices established and monitored. Severely degraded lands are restored to production.	ISFM guidelines established. Fertilizer blends for specific crops and soils are manufactured and distributed. A Nigerian Soil Institute is established and linked to state-level actions. Comprehensive monitoring of land quality established.	2017 to 2024	FMARD, State governments, Agricultural Universities, Advanced Research Institutes, organized private sector
Bio-fertilizers and bio-pesticides remain under-utilized and the <i>Striga</i> parasite is not controlled.	Training in ISFM, Integrated Pest Management (IPM) and <i>Striga</i> elimination reaches 2 million farmers per year.	Extension systems formalize guidelines and frontline agents and farmers are trained. NoduMax inoculant production for soybean expanded four-fold. Afiasafe and IR maize distribution commercialized.	2017 to 2020	FMARD, Advanced Research Institutes, State Government, NGOs, and the organized private sector
Significant damage to agricultural sector due to conflict in Northeast Nigeria.	Rehabilitation of the agriculture sector in the Northeast.	Invest in priority assets including irrigation and drainage systems, improved storage facilities, rehabilitation of degraded lands and reforestation, improved market access by improving physical access through road infrastructure.	2019 to 2024	Federal, State, and Local Governments, FAO, IFAD, WFP and other partners
Small producers exposed to risks	Risk management instruments put into place	Nigeria joins the AU's African Risk Capacity		Federal, State, and Local Governments, and WFP
Inadequate disaster prevention and emergency response	Adequate disaster risk management regime implemented in all 36 states	NEMA, SEMAs, and military and paramilitary capacities enhanced in disaster risk management		Federal, State, and Local Governments, WFP and other partners

Target 5. Maintain the genetic diversity of seeds, cultivated plants, and farmed and domesticated animals and their related wild species, including through soundly managed and diversified seed and plant banks at the national, regional and international levels, and promote access to and fair and equitable sharing of benefits arising from the utilization of genetic resources and associated traditional knowledge, as internationally agreed (by 2020 or 2024).

Current Situation	Milestones	Priority Actions	Timeframe	Key Partners
National gene banks of cultivated plants and related wild species are incomplete.	A national report on genetic diversity of cultivated plants and animals and their related wild relatives is released. Breeders and seed companies have direct access to more diverse germplasm (e.g.number of filled requests).	SDG 2 office established to coordinate genetic resources. Inventory gene bank collections. Assess efficacy and need for expansion. Assign responsibilities among contributing parties. Link assets to needs of commercial seed producers.	2017 to 2020	FMARD, FMEvt, National Agricultural Research Institutes, Advanced Research Institutes, others
Seed and management understanding of green vegetables remains limited.	Nutritional security targets are met. Increased diversity and improved quality of green vegetables marketed and consumed.	Inventory of traditional green vegetables and their seed system conducted, germplasm collected and assessed, best lines licensed to seed companies.	2017 to 2020	FMARD, National Agricultural Research Institutes and Universities
Many vegetable seeds, particularly hybrids, continue to be imported.	Hybrid seeds are available through commercial distribution networks. Reduced costs of hybrid seed. Improved quality of hybridized crops.	Crops for hybridization identified (e.g., maize and tomato), specific parents obtained, hybridization developed and licensed to seed companies.	2017 to 2024	FMARD, Advanced Research Institutes, the organized private sector
Supplemental Target 6. Increase investment, including through enhanced international cooperation, in rural infrastructure, agricultural research and extension services, technology development and plant and livestock gene banks to enhance agricultural production.				
Current Situation	Milestones	Priority Actions	Timeframe	Key Partners
Focused investment is needed to achieve the Zero Hunger Strategic Review.	Financial institutions are organized to address Zero Hunger Strategic Review, Naira 31 billion mobilized to address production deficits and planned expansion, Naira 58 billion mobilized to double agricultural production.	SDG 2 Coordination Office established to mobilize investment. Central Bank and NIRSAI organize commitment from Commercial Banks, mechanisms developed to lower interest rates and provide rebates to reliable borrowers.	2017 to 2030	Government of Nigeria, FMARD, NIRSAI, Central and Commercial Banks, the organized private sector, others
The youth are marginalized from economic mainstream and too often considered not creditworthy.	Initiate the ENABLE-Youth Program, train 37,000 of the youth in agribusiness that submit business plans and loan applications, NIRSAI consolidates risk sharing mechanism with commercial banks, loans of Naira 425 billion are provided to youth-led agribusiness.	Loan provided by AfDB, National Coordination Office, state-level trainers and private sector mentors established. Youth are recruited and trained, and assisted to prepare winning business plans. NIRSAI establishes a risk sharing loan mechanism with Commercial Banks. Loans awarded, agribusiness support mechanisms established, loans repaid.	2017 to 2022	FMARD, NIRSAI, State Governments, IITA, Universities of Agriculture, organized the private sector
Financial flows into Nigeria's agriculture remain low and uncommitted.	CBN, BANKS, MFBS, BOA, BOL and rural finance NGOs should be made more efficient in financing agriculture in Nigeria at reduced interest rate. UNDP, IFAD, USAID, etc., should be consistent and use Government recognised outfits for disbursement.	Farmers' groups and corporate bodies should be the channel of funding agriculture. There should be effective monitoring of NIRSAI program. There is need for capacity building for all participants in Nigeria's agricultural financing sector for effective implementation, single digit loans should be offered the farmers. Bank of Agriculture should target a certain population and offer loans to them.	2017-2030	FMARD, States Ministries of Agriculture FMF, International NGOs , etc

Rural service centers are absent or not functional.	Ensuring that rural service centers are made functional through the creation of a vibrant Local Government system and need to reduce extension staff – farmers' ratio.	Development and spread of extension services centers at the rural level using the youth as agents at the centers. Giving the youth grants as take-off.	2018-2036	States and Local Governments and Producers /Suppliers
Universities of Agriculture are not sufficiently focused on the sector.	The Federal Universities of Agriculture focus on the curriculum of Agriculture.	FMARD enforces the Agriculture Mandate of the Federal Universities of Agriculture	2020 to 2024	Federal Government and FMARD
The National Agricultural Research System is not effective in delivering their mandate.	The need to restructure and refocus NARS to make it more effective in delivering their mandate by making them a research managing council instead of a research coordinating council.	Establish roles and responsibilities of ARCN governance structure to exert more authority in NARS towards improving their efficiency and effectiveness. For research to reach the endusers, there should be effective research-extension linkage through the establishment of centers of agricultural research technology transfer at the local government levels man by the youth. States and the private sector should be interested in agricultural research by investing in it.	2017-2030	FGN, States , private partners, NGOs, etc.
Supplemental Target 7. Correct and prevent trade restrictions and distortions in world agricultural markets, including through the parallel elimination of all forms of agricultural export subsidies and all export measures with equivalent effect.				
Current Situation	Milestones	Priority Actions	Timeframe	Key Partners
Distorted trade policies disfavor agricultural growth.	Establish policies for self-sufficiency in key commodities (e.g., rice, soybean), and agro-industrialized export of others (e.g., cassava) through targeted control management system.	Enact and enforce key legislation. Formation of a multi-stakeholder alliance to sustain advocacy for achieving zero hunger.	2017 to 2024	Government of Nigeria, National Assembly, State Governments, others
Supplemental Target 8. Adopt measures to ensure the proper functioning of food commodity markets and their derivatives and facilitate timely access to market information, including on food reserves, to help limit extreme food price volatility.				
Current Situation	Milestones	Priority Actions	Timeframe	Key Partners
Food commodity markets are disorganized.	Enact legislation related to infrastructure for market development including better post-harvest handling and storage; revamped and revitalized an organized national market for food and other agricultural outputs, tapping on the benefits of the pre-existing marketing structure - Commodity Development and Marketing Companies, Abuja Commodity Exchange, and the impending Market Corporations.	Concentrate priority market actions on a limited scale to serve models for countrywide response, then expand. Lower dependency upon imported foods, both commercial and donor-driven.	2019 to 2024	Government of Nigeria, National Assembly, State Governments, WFP and others
Nigeria lacks food reserves to stabilize prices and address crises.	Food reserve requirements identified. Commodity reserves established. Emergency responses formulated. Responses monitored.	Office established to address disaster preparedness within SDG 2. Strategies developed to respond to specific food and nutrition insecurity shocks. Nigeria joins the AU Risk Capacity pool.	2019 to 2024	Government of Nigeria, FMARD, World Food Programme, NGOs and other partners

5.2 Monitoring, Evaluation and Related Needs for Implementation of the Zero Hunger Road Map

A process to Monitor and Evaluate (M&E) the implementation of Zero Hunger actions needs to be established. There is no absence of needed baseline data but the compilation and interpretation of this information over time requires greater attention. Such reporting must be based on regular and periodic visits, rigorous analysis of collected data, and widespread distribution of findings. Currently, there is weak capacity and commitment to M&E and institutional rigidities may limit the objectivity of its findings. In some cases, M&E departments are populated by professionals from disciplines other than agriculture, limiting their understanding of technical issues. These challenges to M&E must be corrected if the road map for the Zero Hunger Strategic Review is to be achieved because mid-course corrections must be based upon timely and accurate information. So too, weaknesses in the compilation, distribution, and interpretation of agricultural statistics require attention. How these responsibilities and improvements shall be assigned among Zero Hunger partners remains a major issue.

Table 8 summarizes special policy and institutional, partnership, capacity building, monitoring and evaluation, and data and knowledge management activities and priority actions for the effective implementation of the Zero Hunger Road Map.

Table 8. Action Plan and Recommendations for the Implementation of Zero Hunger in Nigeria.

Activities involved	Priority Actions
Policy and Institutional Realignment	Policy and Institutional Framework for Zero Hunger Implementation Realignment of the present Federal-State agricultural relationship in line with the constitution Sharpening the focus of FMARD for effective policy coordination and the establishment of linkages with other agencies at National and State level
Framework of policy coordination	
Identification of partners – financial partners; implementing partners; etc.	Partnership for Zero Hunger Implementation Production of a partnership commitment framework
Identification of training, research institution and their involvement at the implementation stage	Capacity Building for Zero Hunger Implementation Expand this institution for scientific research and training opportunities that may be short- or long-term diploma/certificate/ degree training
Introduction of policy, programs and training linkages between institutions and various centers for human empowerment	Create and strengthen the NYSC skills acquisition scheme for the youth and for women within the rural and urban areas through NDE, training consultants and various university training centers. In-service training for health and extension workers
Institutional strengthening	Monitoring and Evaluation of the Zero Hunger Program Strengthen P&PC Department of FMARD and similar State agencies.
	Data and Knowledge Management for Zero Hunger Implementation Strengthen the existing arrangement in agricultural data, statistics, and information management (ADSIM) led by NAERLS.
	Designate budgetary lines for the agency Adequate, appropriate, and timely release of funds Earmark other sources of funding ADSIM tasks to ensure sustainability
	Public, private sectors and donors/partners to support thematic needs or aspects of ADSIM
	Strengthen specialties and competencies of MDAs to ensure functional and sustainable ADSIM
	Identify key actors and improve their competencies along the ADSIM value chain, creation of a platform for effective interaction
	Provision and effective use of ICT, GPRS, and GIS-based instrumentation and equipment to enable the nation meet global standards in ADSIM
	Institutional assessment of capacity gaps and training needs and design and conduct of specialized training programs to fill identified gaps for both institutions and relevant personnel across the segments of the ADSIM value chain
	Create ADSIM platforms at Federal, State, and Local levels for sharing and comparing, and the generation of trends transcending these political strata and real-time series
	Ensure full compliance with global food safety, standards and procurement procedures, involvement of credible partners in establishing standards and practices, adoption of standard peer review mechanisms
	Strategize to expand the existing field data collection arrangement to cover the non-crop subsectors such as livestock, poultry, fishery, equipment, machinery, seeds, fingerlings, seedlings, agro-chemicals
	Constitute a working group on ADSIM with expanded roles and functions which reports to National Technical Committee on PRS under the NCA
	Integration of the multi-sectoral policies of the Federal Government
	Integration of Federal and State agricultural policies
	Facilitation of NCS and NCA

Chapter 6

Key Recommendations and Conclusions

6.1 Key Recommendations

Diverse stakeholders who participated in the Zero Hunger Strategic firmly believe that the goal of the SDG 2 remains achievable and the road map itself serves as a template for integrating collaborative action toward greater humanitarian, national, and global interests. Emanating from this unique Strategic Review are the following key recommendations which have been arranged by SDG 2 target, with those that are cross-cutting explicitly identified.

End hunger and ensure access by all people (SDG 2.1) – Continued efforts must be made by all parties to meet the immediate humanitarian needs of households and communities that have been affected by the conflict through enhanced partnership between the National Emergency Management Agency (NEMA), State Emergency Management Agencies (SEMA) and humanitarian organizations; address the root causes of the increasingly protracted crisis; and integrate humanitarian and development assistance. The Northeast requires a holistic solution comprising the cessation of hostility, peace-building, rehabilitation, reconstruction, and social and economic development which would be undertaken in a partnership between local and international institutions and agencies. Special attention would need to be given to reclaiming an important resource like Lake Chad which now covers only 10% of the area that it covered in 1925.

To end hunger and ensure access to safe, nutritious, and sufficient food for all Nigerians all year round, with emphasis on the most vulnerable segments of the Nigerian population including those who are conflict-affected, social protection and safety nets need to be expanded to address challenges from hunger. Recommendations that include the completion and adoption of the draft National Social Protection Policy prepared by the National Planning Commission; implementation of plans to establish home-grown school feeding programs across all 36 States of the Federation; and commencement of the Nigerian National Social Investment Program are critical to attaining this SDG 2 target.

End all forms of malnutrition (SDG 2.2) – The range of nutrition-specific and nutrition-sensitive interventions implemented in Nigeria is not at the scale that is necessary and appropriate, relative to the magnitude of the problem. These include promotion, protection and support for breastfeeding, promotion of adequate complementary feeding by healthy, better informed mothers, micronutrient supplementation and food fortification, deworming, treatment of children with moderate and severe acute malnutrition , and school feeding programs offering balanced meals to younger children at little or no cost. Reducing chronic undernutrition requires an integrated and multi-sectoral action to address the underlying causes across the lifecycle. The scope of integrated multi-sectoral programs must be expanded to include interventions to improve household food security. One approach would be to assist with the development of safety nets that provide access to nutritious foods for poor and vulnerable women and their families, including school feeding and cash transfers, and to promote food/agriculture diversification that focuses on products such as fortified cassava and orange-fleshed sweet potato that have been introduced

by the International Institute of Tropical Agriculture (IITA), and soybean. Another approach is the integration of direct nutrition interventions to the PHC under one roof initiative of the Federal Government through integrated service delivery

It appears that the agricultural sector has the downstream potential (i.e., in the processing subsector) to produce low-cost, fortified blended foods using locally grown raw produce through partnerships with the private sector. The health sector needs to scale up the nutrition specific interventions which have been proven to have high impact and cost effective .The capacity of the private sector is such that it could be harnessed to meet not only the needs of the local market but also that of the West African region and possibly beyond. There is a clear need for providing technical guidance and assistance to (a) private sector companies in building quality control and assurance systems and in taking measures to meet international standards for fortified blended food, and (b) national and sub-national Government regulators to augment their capacity for monitoring and enforcing production/processing standards.

Double the agricultural productivity and incomes of small-scale food producers (SDG 2.3) - Closing the food deficit will require the modernization of smallholder agriculture production, including through increased public and private sector investments in irrigation and farmer training to improve yields and expand production areas; more sustainable management of agricultural resources that include the land; and better use of genetic plant and animal resources. In particular, production and processing gains in yam, cassava, potato (both sweet and Irish), maize, and rice are needed to meet the growing urban demand for food. The expanded production of cocoa, cashew, and ginger for export and domestic consumption would raise the incomes of small-scale food producers, also of orange-fleshed sweet potato, traditional green vegetables, and tomato which can improve diets and support nutrition interventions.

Ensure sustainable food production systems and implement resilient agricultural practices (SDG 2.4) – Modernization of agriculture and more sustainable management of agricultural resources are the key to achieving zero hunger. Improved targeting of production inputs, including seeds, mineral and organic fertilizers, soil conditioners, pesticides and herbicides, is needed across all commodities; and Integrated Soil Fertility Management (ISFM) and Integrated Pest Management (IPM), two production approaches in which Nigerian institutions have strong capacities, will be necessary. Facilities for irrigated rice, maize, banana, ginger, green vegetables, and tomato require expanded irrigation systems and efficient use of available dams to reach production targets; and both horticultural and nursery production systems also require a reliable, high-quality water supply. Coordinated efforts by the Federal Ministry of Water Resources, River Basin Development Authorities, different State irrigation projects, and the irrigation schemes of the private sector are critical.

Equally important are improvements in disaster prevention and emergency response which are now coordinated by NEMA and SEMAs. Nigeria's plans to join the sovereign risk pool provided through the African Union's African Risk Capacity, and to obtain coverage from mid-2018 onwards, will ensure that these institutions have access to fast-disbursing financing to activate contingency plans for early mitigation of impacts from drought or flooding. There is a need for military and paramilitary special training to achieve the capability and equipment to address and cope with emergencies and disasters.

Maintain the genetic diversity of seeds, cultivated plants, and farmed and domesticated animals and their related wild species (SDG 2.5) – Improved quality and availability of crop seeds and

expansion of vegetative and nursery propagation systems are important aspects of sustainable agriculture, also the broadening of dietary diversity among both rural and urban populations. Improved varieties for rice, maize, and soybean have been developed but incentives are needed to reinforce seed systems through commercial channels. Seed-planted crops (hybrid tomato, green vegetables, sesame, and tree crops) require research and genetic improvement before being commercialized as breeder, foundation, and certified seeds. There is a need for seed and propagation systems for crops that specifically improve and diversify diets.

Several cross-cutting actions will have to be prioritized to improve the food and nutrition security sector environment and to ensure that the SDG 2 target-specific recommendations, when implemented, achieve the desired objectives. These include improved multi-stakeholder coordination, toward which creation of the *Nigeria Zero Hunger Forum* would make a significant contribution as well as the focus on pilot States beginning with Sokoto, Ebonyi, Benue, and Ogun in the first two years, adding two more States per zone at the start of Year 3, and then including all 36 States at the beginning of Year 5; better economic planning and policy coherence; Governmental and interinstitutional reforms to guarantee food and nutritional security for all Nigerians; and improvements in project and administrative operations to foster continuity within responsible institutions. Others are the mobilization of adequate financial resources; investing in requisite infrastructure; improving the National Agricultural Research System; and creating public awareness of the importance of food and nutrition security as a national security and survival imperative.

6.2 Conclusion

The Zero Hunger Strategic Review has identified what Nigeria needs to do to achieve zero hunger by 2030, if not earlier. Achieving zero hunger is critical to the well-being of Nigerians and the country's commitment to poverty reduction and shared prosperity. The Review was not undertaken to micromanage the individual policy actions of Government, but to ensure that the Government, working in partnership with the Nigeria Zero Hunger Forum, NGOs, the private sector and the international community fulfils its commitment to Nigerians and the global community.

Fulfilling this commitment will require remaining sharply focused on the five major SDG 2 targets, and redoubling efforts through timely implementation of the recently devised Green Alternative Policy Thrusts, National Policy on Food and Nutrition in Nigeria (NPFN) of the MBNP, the National Strategic Plan of Action for Nutrition (2014-2019), the draft National Social Protection Policy and the National Social Investment Program among others. These policy frameworks, along with the findings and recommendations of the Nigeria Zero Hunger Strategic Review and its road map, address Nigeria's obligations toward several international and regional programs.

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