The Revolutionary Government of Zanzibar
Ministry of Agriculture, Irrigation, Natural-resources and Livestock

ZANZIBAR AGRICULTURAL SECTOR TRANSFORMATION FRAMEWORK 2025-2035

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FOREWORD

It is important to remember that agriculture continues to be the backbone of Zanzibar, as it provides a living for a significant portion of the Zanzibar population. Over the past ten years, the agricultural sector has contributed 28% of the GDP on average, directly and indirectly employing nearly 70% of the people. Restructuring the agricultural sector is therefore compulsory in order to promote growth, increase incomes, lessen hunger, and above all maintain linkage with the service industries like light industry, tourism and trade.

The framework is supported by four key result areas: Intensified and competitive value chains, strengthened climate resilience and sustainable natural resource management, expanded rural infrastructure, and enhanced enabling environment for agricultural transformation. Most importantly, the framework is designed to bring about a paradigm change from subsistence to commercialization restructuring, making it impossible to exclude local private sector involvement. Gender equality, youth and women's empowerment, and leaving no sector of society behind are the program's guiding principles, which uptake the philosophy of inclusion and sustainability.

Finally, I am very glad to see that this document has all the necessary components of sustainable development in a concise and well-written manner. The ministry is committed through this framework to protect the environment and offer required support to all related stakeholders. The agricultural sector will surely and greatly contribute to the goals of VISION 2050 under the roadmap of this framework.

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ABBREVIATIONS AND ACRONYMS

AfCFTA	-	African Continental Free Trade Area
ANGOZA	-	Association of Non-Governmental Organization Zanzibar
ASLM	-	Agriculture Sector Line Ministries
ASDP-L	-	Agricultural Sector Development Programme Livestock
ASSP	-	Agricultural Services Support Programme
CAADP	-	Comprehensive Africa Agriculture Development Programme
CBO	-	Community Based Organizations
CDP	-	Clove Development Programme
CoFMA	-	Community Forest Management A
DADO	-	District Agriculture Development Officer
DADP	-	District Agriculture Development Plan
EAC	-	East African Community
EPZ	-	Economic Processing Zones
ERPP	-	Expanding Rice Production Project
FAO	-	Food and Agriculture of Organization of the United Nations
FFS	-	Farmer Field School
GDP	-	Gross Domestic Product
HBS	-	Household Budget Survey
ICT	-	Information and Communication Technology
IGAs	-	Income Generating Activities
IP	-	Irrigation Programme
LGA	-	Local Government Authority
LULC	-	Land Use and Land Cover
M&E	-	Monitoring and Evaluation
MAINL	-	Ministry of Agriculture, Irrigation, Natural Resources and Livestock
MDAs	-	Ministries, Departments and Agencies
MFI	-	Micro Finance Institutions
MIVARF	-	Marketing Infrastructure, Value Addition and Rural Finance Programme
NGOs	-	Non-Governmental Organization
NRSFST	-	National Roadmap to Sustainable Food Systems Transformation
OCGS	-	Office of the Chief Government Statistician
PPP	-	Public Private Partnership
RADO	-	Regional Agriculture Development Officer
RAIP	-	Regional Agriculture Investment Plan
RALG	-	Regional Administration and Local Government
RGoZ	-	Revolutionary Government of Zanzibar
SACCOS	-	Savings and Credit Co-Operative Society
SADC	-	Southern African Development Community
SDGs	-	Sustainable Development Goals
TV	-	Television

TZS	-	Tanzania Shillings
URT	-	United Republic of Tanzania
USD	-	United States Dollars
VICOBA	-	Village Community Bank
VPO2	-	Second Vice President Office
ZADEP	-	Zanzibar Development Plan 2021 – 2026
ZASTF	-	Zanzibar Agriculture Sector Transformation Framework
ZDV	-	Zanzibar Development Vision
ZIPA	-	Zanzibar Investment Promotion Authority
ZNCC	-	Zanzibar National Chamber of Commerce
ZPC	-	Zanzibar Port Corporation
ZSSF	-	Zanzibar Social Security Fund
ZWBS	-	Zanzibar Woody Biomass Survey
ZYEAP	-	Zanzibar Youth Employment and Action Plan

EXECUTIVE SUMMARY

Agriculture sector is a vital segment in the Zanzibar economy as nearly 40% of the population are directly engaged in the sector. From 2015 to 2024, the sector contributed between 20.8% and 27.1% of the total GDP. The crop sub-sector was leading in terms of relative sub-sector; which ranged between 7.4% to 9.7%. From 2019, the livestock sub-sector recorded a higher contribution of 12.9% to the Agriculture GDP, surpassing the crop sub-sector. Based on various sector reviews and assessments, the Zanzibar GDP grew at an average rate of 6%, while agricultural GDP grew at the rate of less than 3%, far below the Vision 2050 aspirations of transforming smallholder agriculture and increasing agricultural sector growth to 10%. Similarly, this growth rate is far below the CAADP anticipated growth rate of 6%, a requirement for agriculture to make significant contribution to poverty reduction. Nevertheless, the Revolutionary Government of Zanzibar is committed to increase the budget in the agricultural sector as evidenced by the general increase in the nominal sector budget from 48.174 billion TZS in 2015/16 to 128.107 billion TZS in 2024/25, but actual expenditure to the sector has not increased consistently over time. The budget allocated to the sector over one decade averaged 3.3%, far below the CAADP aspirations. Moreover, recurrent expenditure accounted for more than 95% of the government expenditure to the sector with very small proportion spent on development activities in the sector. The development partners pledged budget increased substantially from 8.1 billion TZS in 2014/15 to 63.49 billion TZS in 2024/25. Information on the financial investments of the non-state actors in agriculture in Zanzibar show fluctuation of private sector annual invested capital overtime, with increased investments from 0.6 million US dollars in 2014 to 20.6 million US dollars in 2015.

Agricultural sector is yet to fully reap the benefit of demographic dividend by engaging youth and women in high-end value segments of agribusiness and ensure comprehensive inclusiveness and social protection for vulnerable groups. It is in this regard that a number of global and regional development initiatives have put emphasis on agricultural transformation. Among these initiatives include Sustainable Development Goals 2030, Africa Agenda 2063, Regional Agriculture Investment Plan (RAIP) 2017 -2022, Zanzibar Development Vision (ZDV) 2050, Zanzibar Development Plan (ZADEP) 2021 – 2026, and National Roadmap to Sustainable Food Systems Transformation (NRSFST) 2021-2030. The Zanzibar Agricultural Sector Transformation Framework (ZASTF) has been formulated to guide concrete and focused planning in the country and in alignment with these initiatives. The transformation of the agriculture sector is the primary driver of economic growth in countries that have moved towards middle-income status.

Socioeconomic development of Zanzibar premised on many global and regional sustainable development initiatives, which are propelled by value addition, agro-industrialization and trade benefitting from the abundance of natural resources, a young and growing labour force, and a rising middle-class income, in addition to the projected surge in urbanization, regional and global trade. Like many other African countries, Zanzibar continues to struggle translating these potentials into economic viable ventures in terms of poverty reduction, food and

nutrition security and overall shared socioeconomic prosperity. The challenges are multifaceted involving issues relating to policy and institutional frameworks, land tenure and utilization systems, weak supporting infrastructure, capacity gaps and other technology-related gaps rendering agribusinesses unprofitable, and thus uncompetitive. Despite challenges and constraints, the agricultural sector provides great opportunities of moving Zanzibar ahead and developing it into productive islands that bring social benefits to the people. Particular opportunities have a multiplier effect on economic growth and social well-being. Zanzibar faces exciting opportunities for development of its economy and society. In turn, these opportunities provide the privilege of moving Zanzibar ahead and developing it into productive islands that bring social benefits to the people. Particular opportunities for social and economic growth include essential development of productive sectors such as agriculture, manufacturing and services that bear the potential for a multiplier effect on economic growth and social well-being.

A range of initiatives and programmes were initiated and implemented by the agricultural sector in Zanzibar, including the Marketing Infrastructure, Value Addition and Rural Finance Programme (MIVARF), Agricultural Service Support Programme (ASSP), Agricultural Sector Development Programme Livestock (ASDP-L), Expanding Rice Production Project (ERPP), Irrigation Programme (IP), Clove Development Programme (CDP), Support to the Aquaculture Sub-sector in Zanzibar, Food Security and Nutrition Programme, and Agricultural Research Programmes. These initiatives and programmes have drawn lessons and recommendations; among them are the need for more resources to be allocated and disbursed to improve the agriculture sector's performance, good policy incentives to attract local private sector investments to leverage government support in agricultural value chains. Others are low adoption of improved agricultural, livestock, and natural resources technologies as farmers are often relying on advice from agricultural experts for their choices of agricultural, livestock, and natural resources technologies; thus, successful projects require adequate funding.

The Zanzibar agricultural transformation is premised on taking advantage of these opportunities to steer a swift paradigm shift. This transformation is seeking for high value niche markets while improving the production capacity to match with the rising demands. The programme is intended to contribute specifically to the twin “engines” of Vision 2050, namely tourism and light industries and also build on other national development frameworks. ZASTF works towards multiple goals – in terms of contributing to elimination of extreme hunger, nutrition, poverty, and increased prosperity. This will be achieved in a country-owned process and in partnership with various alliances including farmers, agribusiness, private sector actors, civil society, exploiting the local, regional and global comparative advantages and opportunities for food self-sufficiency, value addition and competitiveness.

Zanzibar is promoting youth engagement in agribusiness and other socio-economic sectors to reduce unemployment gap. The Zanzibar Youth Employment and Action Plan of 2013 (ZYEAP), has been formulated to ensure stable macroeconomic environment with increasing employment opportunities for young women and men targeting streamlining of macro-

economic policies, education and vocational training, and agri-entrepreneurship and sustainable micro enterprise development. Likewise, increasing engagement of women's participation in agricultural value chains can lead to significant improvements in production, productivity, processing, marketing and value addition for sustainable livelihood. The ZASTF has a dedicated focus on guiding how the youth and women will participate in sector opportunities. According to the Demographic and Health Survey (2022), the poverty level is prominent in both rural and urban areas due to low use of resources, inadequate employment opportunities and insufficient Income Generating Activities (IGAs). This situation is clearly affecting the ability and flexibility of households to achieve an adequate level of consumption.

The approach in this ZASTF provides an over-turn gesture of what exactly the role of Ministry and a set of other players in making agricultural engagement real success. It is a paradigm shift that has to be put to task and tested and prove to the public that the real success in agriculture comes from farming individuals, firms and companies that are aimed at sustenance or business. If this is clearly understood, it will make a huge impact in defining roles and responsibilities of proper players to realize potentials of agriculture sector undertakings. The roles of Ministry are of multiple tiers starting with an overseer in terms of formulation of policies, enactment of laws and regulations, provision of guidance as the core function. Other role is organizing and line-up all players and assign proper duties and areas of concentration. The Ministry likewise is obliged to provide support in technical and innovation that will assist farmers correctly to engage in agricultural activities. The proper assigning of roles will determine where things go wrong and who is responsible for what particular failure and in which way and eventually apply corrective measures to overcome the failure and bring about success in the responsibility chain for betterment of the sector.

ZASTF conceives transformation as a set of permanent "game-changer" projects that require significant amounts of dialogue, strategic alignment, stakeholder coordination, financing, effective implementation and tracking and evaluation, as a basis for scaling up. In order to undertake the proposed projects articulated in this framework, agriculture sector stakeholders need effective mechanisms and appropriate support to develop and deliver the planned investments and initiatives, with well-defined and appropriate roles of public and private sectors. In the quest for sector transformation, prioritized public resources will be directed towards promoting production intensification to capitalize on and upscale achievements from relevant previous interventions. This will be built from lessons learned through implementation of various projects and programs. Particular focus will be placed on investment component of interventions that have shown high productivity potentials in crops, livestock and fisheries. Upon production diversification, the emphases will be on development of higher-value products to catch up with the growing share of expanding tourist, export markets, and reclaim Zanzibar's lost glory as a leader in cloves, fruits and spices. This national framework will be coordinated by a sector-wide steering committee and implemented through embracing integration of "blue" and "green" economy principles.

The framework envisions a modernised and diversified agriculture focusing on technology-driven development, mechanization, commercialization and food security, with a mission of engaging entirely all value-chain actors in agricultural development interventions. The overall objective being transforming the agricultural sector from subsistence to resiliently commercial oriented sector to drive tourism, light industry growth and rural transformation: hinged on transforming service delivery mechanisms of the agriculture sector; intensifying agricultural livelihood potential for farming households; establishing agricultural centres of excellence to provide technical and logistical support along the value chains; enhancing supply potential of agricultural products to cater for readily available markets; engaging women and youths in commercial agriculture initiatives; organising roles, responsibilities and functions of public and private actors in the agricultural sector development; and capitalizing on agricultural research and development. Previously, through various programs and other initiatives some progress was made in promoting agricultural marketing and value chain development. In realizing full potential of the Value Chain Approach, there are additional issues with regard to specific Commodity Value Chain implementation. ZASTF proposes a commercialization strategy and integrated program that is expected to produce fundamental changes in the structure and functions of the agricultural sector. Commodity value chain will be developed by the private sector to harness the various stages from production, processing and marketing/distribution systems of key commodities, including value addition. The commodity value chain will be categorised into subsectors including food crops, livestock products and by-products, fisheries, marine products, products from natural resources (forestry), spice crops, fruits, vegetables and oil crops.

The investment on this framework requires a total of 726.5 billion (USD 322.9 million) to cover on-going projects and new investments for the ten years' period. The cost of new investments is TZS 167.54 billion (USD 74.46 million) and the cost of on-going projects is TZS 559.0 billion (USD 248.5 million). Based on the overall investment cost, the Revolutionary Government of Zanzibar will finance 25%, development partners 70% and private sector 5% of the planned budget. Because of the transformative nature of ZASTF, financing is a major driver of the programme success. A package of financing instruments including public and private sector funding has been developed to finance the capital costs of the transformation. The various instruments are mutually enabling across the result areas. Currently, financing of agriculture sector in Zanzibar follows the national budgeting and financial flow regime as coordinated by the planning commission. Private sector influence and investment is just beginning to trickle. Public sector is expected to provide the enabling environment in which private sector activities can flourish by for instance enacting policies to correct market constraints and promoting inclusive opportunities in agriculture value chain. All financial arrangements are based on budget guidelines under the President's Office - Finance and Planning (PO- FP). A programme-based budget is in use at all levels.

This Framework has a role to work with a wide spectrum of actors that include public and private sectors, academia and research institutions, civil society institutions, District Councils,

and National Government Agencies. Their functions are well articulated. The coordination and institutional arrangements for the programmes is trusted on the existing government structures. At the national level the Second Vice President's Office will coordinate implementation supported by ASLM, with the MAINL (Planning Dept.) providing the technical secretariat. The implementation modalities will be aligned to the country context and priorities but borrow from CAADP/AUC national investment plan implementation guidelines. Greater weight will be given to direct financial commitments for various aspects of the programme. Any indirect financial commitments must align resource allocation with priorities within the programme. Specific committees will lead delivery, including a Program Management Unit to ensure timely and effective coordination.

Agriculture sector in Zanzibar has multiple actors and operates at multiple levels. At the national level, key decision makers within the ZPC are responsible for achieving national vision and international protocol (Vision 2050, ZADEP 2021/2026, SDGs, CAADP among others). The MAINL is the implementing ministry for agriculture sector programmes supported by various ASLMs. Current participating ASLMs are Ministries responsible for Agriculture, Land, Water, Energy, Trade, Industries, Finance, Empowerment, Women, Youth, Education, Construction, Communication, Governance and Transport. The implementation modalities will be aligned to the country context and priorities but borrow from CAADP national investment plan implementation guidelines.

A clearly defined and public structured M&E systems are in place to inform all sector stakeholders on the expectations for performance indicators. ICT technologies will be deployed to improve efficiency of data collection and reporting and to increase the delivery and analysis of information from the field. The Delivery unit and M&E secretariat of the ZPC will apply an M&E framework and instrument template very early in the programme. The framework describes the pathway for information flow, the responsible parties in its execution, the timeframe, the analysis method in relation to the objectives of the process and the mechanism for response to the conditions that it reveals. ZASTF implementation will remain CAADP compliant to ensure opportunities of agriculture and its positive contribution to economic transformation of Zanzibar is realized, tracked and reported. The review and reporting process will largely be a national affair but reports will be shared with mainland Tanzania for further aggregation and submission to the AUC. The inclusive nature of the process and a standard CAADP methodological approach will be used to collect and analyse data and develop reports at different levels. The process complements and aligns to the national M&E processes. ZASTF will adopt a risk management framework that allows assessment of both the likelihood and consequence or impact of identified risks. On the basis of these two a level of risk is assignment which dictates the mitigation measure to be adopted.

PART 1: INTRODUCTION

1.1. Background

Agriculture is a fundamental economic sector for many countries in the world. Apart from production of food resources, agriculture has been the main source of raw materials for industrial production. Given the land size of Zanzibar, agriculture is mainly small scale implemented by subsistence farmers, though there is a huge potential to go commercial through medium-scale farmers. Zanzibar comprises of three economic sectors, namely (i) Agriculture (Crop, livestock, forestry and fisheries); (ii) Industry; and (iii) Services. The agriculture sector is the second leading and continues to be the important economic sector in Zanzibar as it supports the livelihoods of about 70% of the population and 40% is directly engaged in this sector (Table 1).

Table 1: Agriculture sector contribution to GDP compared to other sectors (2015– 2024)

	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Agriculture, forestry and fishing	22.1	21.9	21.5	20.8	21.2	22.8	27.1	25.9	24.9	24.3
Industry	18.4	19.2	19.5	17.5	18.1	19.6	19.0	19.4	20.8	20.2
Services	49.8	48.7	48.7	51.3	50.7	47.8	45.3	46.3	46.6	46.8

***Source*: *Zanzibar Statistical Abstracts* (2024)**

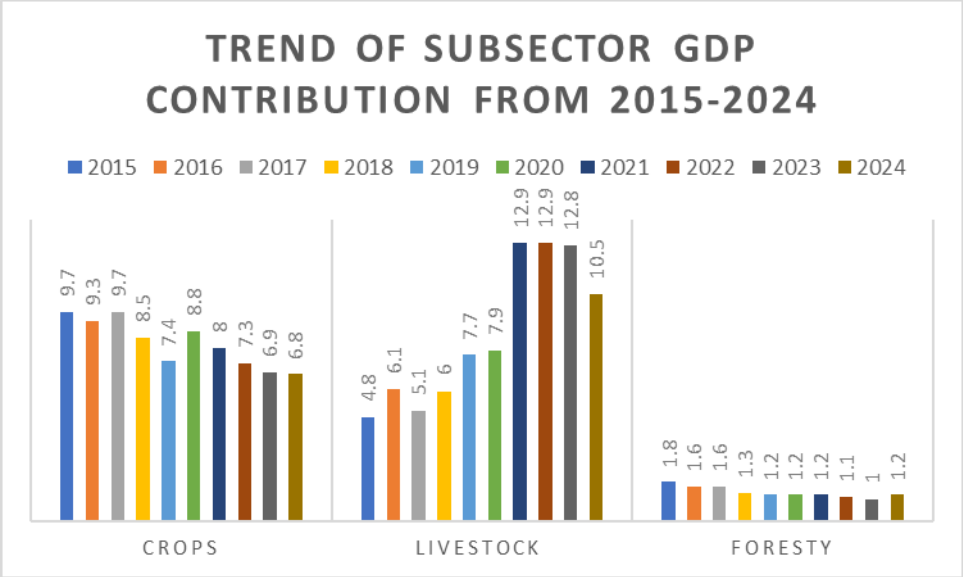

Figure 1: Trend of Sub-sectors GDP Contribution (2015 – 2024)

***Source*: *Zanzibar Statistics Abstract* (2024)**

From the year 2015 to 2024, the sector contribution to GDP ranges between 20.8% and 27.1% of the total GDP, whereby the crop sub-sector was leading in terms of relative sub-sectors, from 2019 to 2024 it ranged between 7.4% to 9.7%. However, from 2019 onward, the livestock sub-sector recorded higher contribution of 12.9% of the Agriculture GDP surpassing the crop sub-sector (Figure 1).

1.2. Agricultural Sector Performance

Based on various sector reviews and assessments, the Zanzibar GDP grew at an average rate of 6%, while agricultural GDP grew at the rate of less than 3%. This growth is far below the Vision 2050 aspirations of transforming smallholder agriculture and increase growth of the agricultural sector to 10%. Similarly, this growth rate is far below the CAADP anticipated growth rate of 6%, a requirement for agriculture to make significant contribution to poverty reduction. Although the crops and livestock sub-sectors had the highest contribution to AgGDP but they are exhibiting fluctuations in both production and productivity possibly due to inadequate and unreliable rainfall coupled with low use of improved seed, fertilizer and irrigation.

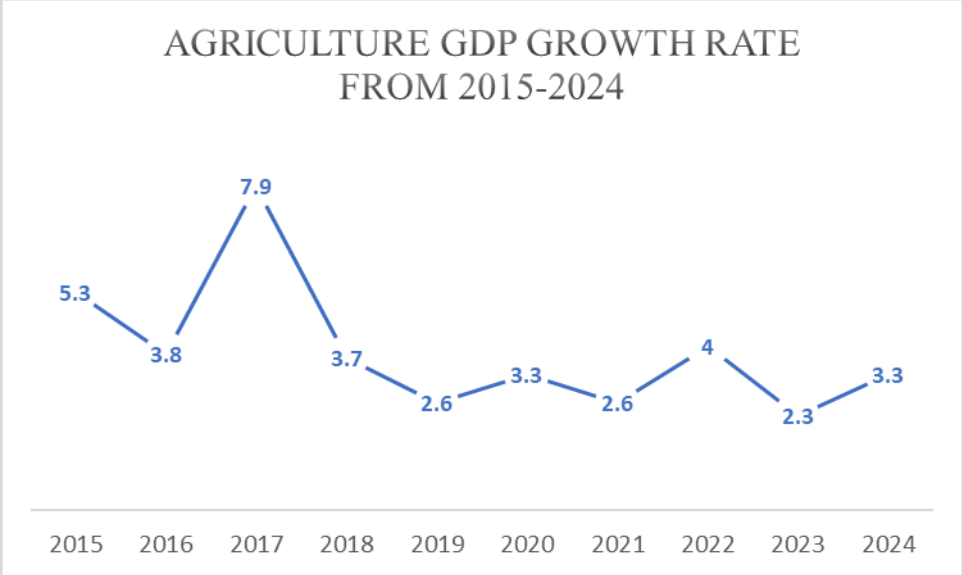

Figure2: Gross Domestic Product (GDP) growth rate from the agriculture, forestry, and fishing sector in Zanzibar from 2015-2024

Sources: OCGS –Zanzibar Statistical Abstract 2024

1.3. Agricultural Sector Public Expenditure

Based on various sector reviews and assessments, the Revolutionary Government of Zanzibar is committed to increasing spending in the agricultural sector as evidenced by the general increase in the nominal sector budget from 48.174 billion TZS in 2015/16 to 128.107 billion TZS in 2024/25. The reviews and assessments indicate that the actual expenditure to the sector increased sharply from 10 billion TZS in 2013/14 to 32.74 billion in 2023/24. Moreover, despite the commitment made by Maputo Declaration to allocate at least 10% of the total annual budget to the agricultural sector, the target has not been met. The budget allocated to the sector during the review period averaged 3.3%, which is far below the Maputo Declaration 10% target. Moreover, recurrent expenditure accounted for more than 95% of the government expenditure to the sector with very small proportion spent on development activities in the sector. The development partners pledged budget increased substantially from 8.1 billion TZS in 2014/15 to 63.49 billion TZS in 2024/25. Information on the financial

investments of the non-state actors in agriculture in Zanzibar was only available for private sector companies that were registered through ZIPA. Data from ZIPA show an increasing trend of private sector annual invested capital overtime. During the review period, private sector investments increased from 0.6 million US dollars in 2014 to 450 million US dollars in 2019 and then 812 million US dollar in 2024. However, ZIPA recorded the highest investment of 1.965 billion US dollar in 2022 and 1.854 billion US dollar in 2023.

1.4. Frameworks for Agricultural Development

The transformation of the agriculture sector is the primary driver of economic growth in countries that have moved towards middle-income status. Frameworks for target-based sustainable development in general and agricultural transformation in particular are in place at the global, regional, national, and sub-national levels. This section summarises the frameworks that Zanzibar is committed to at various levels as well as those that impact the country's overall development planning.

Socioeconomic development of Zanzibar premised on many global and regional sustainable development frameworks, which are propelled by value addition, agro-industrialization and trade benefitting from the abundance of natural resources, a young and growing labour force, and a rising middle-class income, in addition to the projected surge in urbanization, regional and global trade. Like many other African countries, Zanzibar continues to struggle translating these potentials into economic viable ventures in terms of poverty reduction, food and nutrition security and overall shared socioeconomic prosperity. The challenges are multifaceted involving issues relating to policy and institutional frameworks, land tenure and utilization systems, weak supporting infrastructure, capacity gaps and other technology-related gaps rendering agribusinesses unprofitable, and thus uncompetitive.

Agricultural sector is yet to fully reap the benefit of demographic dividend by engaging youth and women in high-end value segments of agribusiness and ensure comprehensive inclusiveness and social protection for vulnerable groups. It is in this regard that a number of global and regional development initiatives have put emphasis on agricultural transformation. Among these initiatives include Sustainable Development Goals 2030, Africa Agenda 2063, Regional Agriculture Investment Plan (RAIP) 2017 -2022, Zanzibar Development Vision (ZDV) 2050, Zanzibar Development Plan (ZADEP) 2021 – 2026, and National Roadmap to Sustainable Food Systems Transformation (NRSFST) 2021-2030. The Zanzibar Agricultural Sector Transformation Framework (ZASTF) has been formulated to guide concrete and focused planning in the country and in alignment with these initiatives.

1.5. Agricultural Sector Context in Zanzibar

Zanzibar faces exciting opportunities for development of its economy and society. In turn, these opportunities provide the privilege of moving Zanzibar ahead and

developing it into productive islands that bring social benefits to the people. Particular opportunities for social and economic growth include essential development of productive sectors such as agriculture, manufacturing and services that bear the potential for a multiplier effect on economic growth and social well-being.

The ZASTF process adopted a broader view of the agricultural sector as it is not the domain of only the Ministry responsible for Agriculture. The sector is holistically viewed as multi-agency and multi-stakeholder formation. The agricultural sector includes (i) crops, livestock, forestry and fisheries resources; (ii) production, trade, processing, marketing and other value chain components; (iii) spans across different ministries and agencies; and (iv) NGOs, farmers and their organizations, private sector enterprises and Civil Society Organisations.

1.5.1. Production and Productivity

Annual crop production is being practiced in either one or two seasons per year, depending on the rainfall pattern. Agricultural households may cultivate in either the main rainy season (Masika) or the short rainy season (Vuli) or both seasons. The total area covers is 184,350 ha where the annual crops covers 125,086 ha (67.9 %) which is the largest area covered with crops while permanent or perennial crops occupied 59,264 ha (32.1%). The main annual crops produced in Zanzibar presented by considering different crop groups namely cereals, roots and tubers, pulses, oil seeds and nuts, fruits and vegetables crops. The area under irrigation is very limited and is mainly for rice irrigation where only 1,928 ha, which is about 23% of the total irrigation potential areas of about 8,521 ha (Zanzibar Irrigation Master Plan 2009) is actively in use.

For the year 2024, the total area planted with major food crops, fruits and vegetables was 104,667.8 acres that produced 382,929.2 tons. Whereby 81,402.9 acres (77.8%) was planted with major food crops and the remaining 23,264.9 acres (22.2%) planted with fruits and vegetables. From the total production (382,929.2 tons), the production of major food crops were 302,885 tons (79.1%) and 80,044.2 tons (20.9%) are fruits and vegetables. (OCGS –Zanzibar Statistical Abstract 2024).

Recently, the fruits and vegetables was observed to be fast growing horticultural sub-sector. The most common vegetables grown include tomatoes, eggplants, green peppers, okra, chilies, watermelon, cucumbers, spinach (Amaranth), Chinese cabbage and onions. The total area under fruits and vegetable cultivation is 23,264.9 acres with the annual production of 80,044.2 tons (Zanzibar Statistical Abstract, 2024). The yield of fruits and vegetables ranges between 5 – 7 tonnes/ha which is far below the potential yield of 25-40 tonnes/ha. Value chain studies indicate that 50% of vegetables and fruit supplied to tourist hotels and restaurants are imported (Zanzibar Horticulture Strategy, 2023).

The main export crops produced in Zanzibar are cloves and seaweeds. The quantity of cloves purchased in 2024 was 1,167.4 tons worth TZS 17,250.7 million, this shows a decrease of 56% as compared with the purchase made in year 2023, whereby the quantity purchased was valued at TZS 37,980.6 million. The total production for seaweeds in 2024 was 19,716 tons worth TZS 16,144.6 million, thus the production of seaweed increased by 18.4% compared to 16,652.9 tons produced in 2023.

The livestock sub-sector plays a significant role in the economy of agricultural households in Zanzibar as it provides best source of animal protein, food security, cash income, manure for crops and vegetable production, draught animal power, and other socio – economic functions. The main types of livestock raised in Zanzibar are cattle, goats, sheep, chicken, and other birds including ducks and turkeys; and other livestock. Livestock products produced include milk and eggs, hides and skins. The National Sample Census of Agriculture 2019/20, reported that the livestock sub-sector contributed 7.9% to the National Gross Domestic Product and grew by 8.2%. During the 2019/20 agricultural year, out of the total agricultural households reported, 64,459 households equivalent to 35.8% of the total agricultural households were involved in livestock rearing. By 2020, the number of households raising cattle were 55,925, goats 18,480 and sheep 192. Poultry were reared by 103,382 households and other livestock were raised by 7,639 households. The average herd size of cattle per household in smallholder farmers was 5 heads. Out of the total 55,925 cattle keeping households, 95% reared 1 to 10 heads per household, 3% of the households reared 11 to 15 heads and there were few households (2%) which reared more than 15 heads.

There were three main types of cattle raised in Zanzibar during 2019/20 namely; indigenous cattle, improved dairy cattle and improved beef cattle. A total of 270,707 cattle was raised, out of which, indigenous cattle had the highest number of 239,554 heads (88.5%), followed by dairy cattle (29,572 heads; 10.9%), and beef cattle (1,580 heads; 0.6%). The number of households in Zanzibar engaged in goat rearing is 18,480 households which kept 111,623 goats, whereby Smallholder farmers raised 111,429 goats and large-scale farms raised 194 goats. The results show that, the average number of goats per household was 6 goats. Most of the households (96%) raised 1 to 14 goats. The rest of households (4%) raised more than 15 goats. The number of chickens reported is 3,764,184, of which 3,705,505 chicken are from smallholder farmers and 58,679 chicken are from large-scale farms. From the total chicken owned by Smallholder farmers indigenous chicken accounted for 1,508,540 birds (40.7 %), Layers (2,116,994 birds; 57.1 %) and Broiler (79,971 birds; 2.2 %). Out of the total households keeping chicken, majority of the households (93 percent) kept chicken from a range of 1 to 49 flock size, and few households (7 percent) raised more than 49 chicken.

Zanzibar forest resources are classified in five major groups: (1) conservation areas; (2) forest plantations; (3) rubber plantations; (4) mangrove forests; and (5) community forest management areas. The forest and woody resources play an important role in the daily livelihood of the people of Zanzibar. They are very important sources of energy for cooking, building timber, tourism, fodder, water catchments, shelters for wildlife and estuaries for fish breeding areas. The native forest area in Zanzibar is 86,182 ha; 71,068 ha in Unguja and 15,114 ha in Pemba. Intermediate coral rag vegetation is the biggest land use and land cover (LULC) class in Unguja with 35,057 ha and 22.1 percent share of the land area and in Pemba the mixture of trees and agricultural crops LULC class is largest with an area of 22,482 ha and 22.2% of the land area.

Due to ever-increasing demands of forest products in Zanzibar, forest resources are facing severe exploitation pressure. The 2013 Zanzibar Woody Biomass Survey (ZWBS) observed a number of issues that reveal weaknesses in the existing forestry policy, including inadequate financing of forestry activities and enormous pressure on forest resources due to increased population that depend upon forest for domestic energy and building materials. This pressure has direct implication on biomass energy: The total wood volume decreased from 10.3m^3 million to 8.6m^3 million. Wood volume per capita declined from 12.1m^3/capita to 6.59m^3/capita. The coral rag forests and agro forestry-mixed woody vegetation, which are the main sources of biomass energy, have declined making way for unplanned settlements. Mangrove growing stock has substantially declined from 40.97m^3/ha to 18.9m^3/ha in Unguja and 39.86m^3/ha to 38.3m^3/ha in Pemba. Zanzibar is facing a growing deforestation and forest degradation at a mean annual rate of 1.2%. This implies that, Zanzibar runs short of 854,537m^3/annum of wood resources. Domestic wood supply remains at 485,532m^3/annum, while the domestic wood demand grows as much as 1,340,069m^3/annum. The national energy balance sheet indicates that wood biomass contributes about 95% of cooking energy; the rest 5% is contributed by electricity, gas and paraffin. This indicates that, the trend of deforestation and forest degradation is likely to rise in the next decade.

The conservation areas are managed for conservation of species and ecosystem. No extraction or minimal extraction is allowed. Forest plantations have been established for the purposes of solving the wood need and demand of Zanzibar. Rubber plantations have been established for the sole purpose of producing rubber latex in 1977 as another cash crop apart from coconut and cloves. Mangroves forests have a combined total area of 16,000 hectares mostly found in Pemba. The last category is community forest managed areas. Currently there are 67 community forest management areas (CoFMAs), in which communities enter into agreement with Forest Administrator to manage forest resources close to their areas.

1.5.2. Agricultural Marketing

1.5.2.1. Market knowledge and Infrastructure

Farmers, fisherman, and livestock keepers in Zanzibar have insufficient awareness of internal and external marketing options, and they are typically detached from the premium markets. In the aspect of market information services, agricultural information is collected, analysed, and disseminated ad hoc. Furthermore, information collected is frequently restricted in breadth and geographic coverage, with relatively inadequate mechanisms for information sharing and feedback. Again, the media, which is critical for information distribution and public education, are largely urban-based and hence have slim coverage over agricultural development.

Perishable goods such as fish, milk, fruits, and vegetables require efficient storage facilities to ensure their supply chain longevity. Inadequate cold storage and processing facilities lead to significant product waste. Crop storage in Zanzibar is often using native facilities like baskets (polo and pakacha) and gunny sacks. These storage facilities do not guarantee high quality or extended shelf life. Wholesalers in central marketplaces keep their products in heated stores until they are sold. Fruits and vegetables have an estimated average post-harvest lifetime of two to three days in some places, up to two weeks when refrigerated. Hotels and restaurants also keep certain items on hand to ensure their clients' satisfaction.

Poor handling and packaging causes agricultural goods to be damaged during transportation. Zanzibar has few commercial fruit or vegetable processing facilities, and fruit surpluses are processed in modest amounts by sun drying, juice extraction, and change into sauces, pickles, and preserves. It is estimated that investing in basic processing and preservation might save post-harvest losses by up to 60%. Small-scale fruit and vegetable producers receive little training, with a concentration on artisanal production for local markets. Marketing factors such as research, advertising, and branding are rarely taught in Zanzibar.

The Ministry must support the nexus between agriculture and tourism, with tourism hotels and restaurants sourcing their meals from locally produced agricultural goods. In this scenario, the Ministry will work with all institutions interested in boosting agriculture and tourism to overcome fundamental hurdles to the relationship between these two sectors.

1.5.2.2. Foreign Market

Zanzibar's principal export crops are cloves and seaweed. The amount of cloves purchased in 2022 was 4,734.1 tonnes at TZS 63,145.8 million, a 39.6% drop from the amount purchased in 2021, which was valued at TZS 102,030.9 million. In 2022, the total output of seaweeds was 12,593.7 tonnes valued at TZS 10,054.5 million. The

Government will strive to secure foreign market for locally produced fresh seasonal fruits and spices. To start with, the target export fruits will be pineapples and mangoes. One of the solutions proposed by the government is to develop a goods rebate plan to assist local exporters in establishing themselves in the overseas market.

1.5.3. Financial services

Financial services are essential for agricultural growth. Farmers require credits to acquire the inputs needed for increasing productivity. The low amount of capital investment is one of the key impediments to greater agricultural output and commercialisation. The majority of farmers and traders face institutional and family hurdles to loan access.

Commercial banks, microfinance institutions (MFIs), non-bank financial organisations such as the Zanzibar Social Security Fund (ZSSF), and cymbal (upatu) are all crucial to the agriculture sector. The most crucial deficit, particularly for MFIs and informal institutions, is lack of financial management skills.

1.5.4. Challenges and Past lessons

Based on various sector reviews and assessments, there are nine core challenges, which are impeding Zanzibar's agricultural sector performance and transformation[1]. These constraints are synthesized in Table 2.

In efforts to deal with these constraints, several programmes and initiatives have been implemented in line with the implementation of the Zanzibar Agricultural Transformation initiative 2010-2020. These programmes and initiatives include: The Marketing Infrastructure, Value Addition and Rural Finance Programme (MIVARF), the Agricultural Service Support Programme (ASSP) and Agricultural Sector Development Programme Livestock (ASDP-L), Expanding Rice Production Project (ERPP), Irrigation Programme (IP), Clove Development Programme (CDP), Support to the Aquaculture Sub-sector in Zanzibar, Food Security and Nutrition Programme, Agricultural Research Programmes (Cereals and Legumes, Roots and Tubers, Horticultural Crops, Cash Crops). The implementation of these projects and programmes offers the following lessons and recommendations:

Lessons

a) While issues related to agricultural development in Zanzibar require the attention of institutions beyond the Ministry of Agriculture, Natural Resources, Livestock and Fisheries there is weak institutional set-up to coordinate all players whose functions contribute to the development of the agricultural sector.

[1] Zanzibar Agricultural Transformation Initiatives (2018-2019). Planning Commission. Revolutionary Government of Zanzibar.

b) Improvement of agricultural statistics to adequately monitor the sector performance is necessary for planning and budgeting for the sector. The low capacity for M&E is likely to be the cause of the problems of availability of data in the agricultural sector in Zanzibar.

Table 2: Zanzibar Agricultural Sector Challenges

ISSUE	CHALLENGES
a) Agricultural Policy, Regulatory and Strategic Frameworks	Key policies have inadequacy in addressing marketing expansion, competitiveness, food security and sector transformation. There are gaps in budgeting, capacities, data limitations and coordination mechanisms.
b) Institutional Roles and Capacities of Key Stakeholder Groups	Inadequate agri-entrepreneurship skills, limited coordination and unclear roles and functions among public and private institutions. Limited technical organizational capacities and facilities to generate and use evidenced-based planning, implementation and sector dialogue; as well as low level of engagement of private sector in agriculture sector agenda.
c) Land and Natural Resource Management	Unsustainable water and land resource management, improper land use management practices including lack of Land Use Plan at district level; and Destruction of marine and forestry ecosystem.
d) Agricultural Infrastructures	Limited scope of coverage and low efficiency of production infrastructure; Limited on-farm and off-farm commodity handling and storage facilities; and low capacity of key actors to access electrification for agro-processing facilities
e) Sustainable Agricultural Food System	Limited knowledge and behavior on food loss and waste, limited availability and adoption of yield-increasing technologies and fragilities of food systems undermining the ability to meet the food demand of a burgeoning population.
f) Access and Quality of Rural Finance	Limited engagement of financial institutions in agricultural development with limited financial products which are relevant to culture and agribusiness requirements.
g) Agricultural Technology, research and innovations	Inadequate agricultural extension and research strategies, capacity and facilities, with limited on-farm agricultural research-extension linkage activities.
h) Agribusiness operation environment	Unfavorable market access and incentive limiting trade and capacity to produce high-quality commodities. Deficient marketing system (e.g., weights, standards, measures and erratic commodity price fluctuations); and limited Public-Private Partnership in agricultural development.
i) Performance of Cross cutting themes	Weak mainstreaming strategic cross-cutting themes in agricultural development (e.g., ICT, gender, youth, food security, climate change and vulnerable groups).

c) Improving the performance of the agriculture sector needs more resources to be allocated and disbursed to the sector. The poor performance of the sector mirrors

the level of material and financial resources allocated and disbursed to implement agricultural programmes and projects.

d) Although it is not a sufficient condition, policy incentives to attractive local private sector investments to leverage government support at various stages in the agricultural value chains especially in better farming techniques and technologies, practices, value addition and trading are a necessary condition for sustainable growth of the agricultural sector in Zanzibar.

e) Most crop farmers and livestock keepers are aware that the unreliable weather pattern (including inadequate and unreliable rainfall) affecting production over time is caused by climate change and they know that use of drought resistant crop varieties/livestock breeds and irrigation can reduce the impact of climate change although they do not know the appropriate drought varieties and they cannot afford the cost of irrigation infrastructure.

f) Dissemination of improved agricultural, livestock and natural resources technologies through development programmes and projects is necessary but not a sufficient condition for sustaining their adoption by smallholder farmers. There is low adoption of technologies in the agriculture and livestock sub-sectors despite technology dissemination efforts made by various programmes and projects in the past decade.

g) Access to markets for agricultural inputs and agricultural products are key to agricultural growth in Zanzibar. It is a fact that while increased production is often easy to achieve, sustaining high level of production depends on whether there are market available to encourage farmers to continue applying appropriate technologies. This is particularly important in the context of ever-increasing prices of inputs whose use is necessary for improved production.

h) Farmers know their problems and causes although they might not exactly know how to solve them because they do not know what technologies are available on the researchers' shelves and how these technologies can be appropriately applied to achieve the best results. Thus, their choices of agricultural, livestock, natural resources technologies often depend on advice from agricultural experts.

i) The Farmer Field School (FFS) approach was very effective in empowering farmers and disseminating technologies. It proved to be very instrumental in reaching Programme outcomes, impact and the outreach, as well as ensuring sustainability of programme benefits.

j) Using mobilized and facilitated district personnel of different disciplines to work as a team (like DFTs) proved to be important aspects of success.

k) Leadership commitment at district level has contributed greatly to projects achievements.

l) Mind-set and attitude change are the key elements to agricultural transformation.

Recommendations

a) Establish an effective mechanism to ensure all actors in the agricultural sector are involved in all stages of the policy process from formulation to implementation of the agricultural policies.

b) Establish a Coordination Framework for Agriculture Sector Development in Zanzibar.

c) Strengthen the recently developed M&E framework to adequately monitor the sector performance.

d) Gradually increase allocation and disbursement of public resources (funds) to the agricultural sector with a target of attaining the CAADP commitment of allocating at least 10% of the total annual budget to the agricultural sector.

e) Review all policies which do not provide incentives for the private sector to increase investment in the sector and leverage government funding.

f) Establishment and rehabilitation of irrigation infrastructure in order to increase the area under irrigation. This is crucial for lowering the yield/production risk associated with weather variability.

g) Increase funding to the Agricultural Research to enhance research on effects of climate change and adaptation and breeding for drought resistant crop varieties and livestock breeds.

h) Empower smallholder farmers financially to enhance the ability to access technologies disseminated by various programmes and projects. This can be achieved through credit guarantee schemes and promotion of VICOBA and SACCOS.

i) Strengthen the advisory and extension system in Zanzibar by recruiting less extension workers but extensively deploying technologies.

j) Promote the use of modern technologies to bridge the gap between conventional and modern agriculture towards increasing production and attaining business-oriented farming sense.

k) Improve market infrastructure in order to improve market access and producer prices. Good producer prices would provide a very huge motivation for farmers and other actors in the agricultural and livestock sub-sectors to increase the production of various crops and livestock products.

l) Attract more local private sector investments in value addition for agricultural products. This is crucial not only for ensuring that the Zanzibar economy limits

the exportation of unprocessed products and importation of processed agricultural products but also minimizing postharvest losses.

m) Empower smallholder farmers to increase their bargaining power. This can be done through the strengthening of producer cooperatives for various agricultural products. This is essential for increasing producer prices and also benefitting from bulky purchase of productivity enhancing agro-inputs.

1.5.5. Potential of Agricultural Sector

Zanzibar has a great potential for developing agriculture[2] due to its comparative advantage of having good soil and rainfall to support organic crop production as well as natural pastures for feeding livestock. The great diversity of marine macro flora and fauna species and a variety of forest resources provides unique opportunity for the islands to take it rightful position as leader in fulfilling the demand for key commodities both in domestic and export market. This is especially true for cloves, fruits and spices at the regional and global arena. Based on available information and "expert" judgement, the following opportunities are evident in Zanzibar for developing the agriculture sector:

a) Zanzibar has a comparative advantage in the organic production of cloves, tropical fruits, spices, livestock keeping and essential oils. This can be further enhanced by increasing farm productivity, value addition and improved marketing efficiency;

b) The expanding domestic (tourist) market for food, especially for livestock, marine and horticultural products is another opportunity for Zanzibar agriculture;

c) With expansion in the rapidly growing tourism industry and rise of high-income market segments, domestic demand for fish, meat, milk, and other high-protein products is likely to grow at a rapid pace. Similarly, strengthened regional integration offers opportunities for Zanzibar products within EAC, SADC and AfCFTA markets. Exploitation of these trading opportunities is vitally essential.;

d) Opportunities also exist for the production and export of cash crops; including fruits like mango, avocados and papaya; spices, sea weed and other marine products. A unique opportunity for women engagement in these economic activities is already being tapped;

e) The increasing consumer preference to natural food ingredients globally; and many agricultural products which were replaced by artificial compounds over

[2] RGoZ, Agriculture Sector Review, 2015. Planning Commission

the last fifty years are now making a comeback. Similarly, new uses – culinary, industrial, and medicinal – are constantly being found for herbs, honey (and by-products), and plant extracts. This is already reflecting in the changing nature of tourism demand for agricultural commodities;

f) Existence of plans for stimulating private investment, including agro-processing investments, through industrial parks and special economic zones. Zanzibar has great opportunity of having Amani Industrial Park; Fumba EPZ; Micheweni EPZ; Maruhubi Free port and; Airport Free Port. There are plans by the Government to establish similar micro-parks at Chamanangwe, Dunga and Nyamanzi;

g) Establishment of PPP Policy and PPP Unit within the Government to create conducive environment for private sector engagement in the agricultural sector;

h) On-going infrastructural improvement, including expansion and modernization of roads, ports facilities, and other physical and communication infrastructure for improved connectivity (e.g., electrification, marketing); and

i) Presence of alternative source of fuel for cooking (Petroleum Products-Butane, diesel fuel, fuel oil, gasoline, kerosene, Liquefied Petroleum Gas/Cooking gas and propane) and possibility of developing other clean energy sources (solar and wind) to support agricultural infrastructure.

The ZASTF is premised on taking advantage of these agricultural development potential and opportunities to stimulate market-driven sector transformation. Yet again, the country is keen on scanning the horizons for these and other emerging opportunities, looking for competitive high value niche markets while improving the hitherto limited production capacity to match the rising demand.

1.5.6. Youth in Agribusiness

In 2020/2021 youth population (15 -35yrs) constitute 75.7% of the total labour force, 48.2% are currently employed and 53.6% are under employed. Unemployment rate is 27.4% where female unemployment 40.6 % and male 15.4% (Integrated Labour Force Survey, 2020/2021). The proportion of the currently employed youth (15 – 35yrs) in the agriculture sector is 30% in 2020/2021. This implies that agriculture remains as leading sector for youth employment in the country.

The Country is promoting youth engagement in agribusiness and other sectors to reduce unemployment rates. The second generation for instance, the Zanzibar Youth Employment and Action Plan of 2013 (ZYEAP), has been formulated to ensure stable macroeconomic environment with increasing employment opportunities for young women and men. It targets streamlining of macro-economic policies, education and vocational training, and agri-entrepreneurship and sustainable micro enterprise

development. The government is promoting participation of youth in MDAs and other strategic development planning process. ZASTF has a dedicated focus on guiding how the youth will participate in sector opportunities.

1.5.7. Women Participation in Agriculture

Increasing engagement of women's participation in agricultural value chains can lead to significant improvements in production, productivity, processing, marketing and value addition, and sustainable livelihood. Productivity rises and supply chains are strengthened when women participate in production and marketing as well as benefit from agricultural sales. However, according to the HBS 2019/2020 men dominated all occupations, with women constituting 37.9% of the employed persons while 62.1% were men. Despite a higher proportion of men than women across all the occupation categories, it is worth noting that the difference between the proportion of men and women in the following occupations is very marginal – Technicians and associate professionals, Clerks, Service workers and shop sales workers, and elementary occupations.

1.5.8. Agricultural Digitalization

Smallholder farmers and other rural businesses can benefit greatly from digital technology because it connects them to suppliers and information, allows them to tap into workforce talent, build strategic partnerships, access support services like training, finance, and legal services, and, most importantly, reach markets and customers. Smartphones are now a popular way to access the internet, thanks to falling handset prices and innovations like pay-as-you-go.

However, the adoption of digital technology in rural setups might be difficult. Some areas of Zanzibar frequently lack infrastructure, especially basic IT infrastructure, network coverage is restricted, and 'digital literacy' is required for accessing digital technology. Again, the expenses of ICT infrastructure pose a significant issue in rural setups, where poverty rates are generally high. Nonetheless, the RGoZ has begun to use e-services in areas such as health and education; it is high time for agriculture to embrace digital agriculture.

1.5.9. Agro-mechanization

Agro-mechanization is critical for increasing land and labour productivity, but has historically received little consideration. Increased agricultural power supply to agriculture allows farm operations to be performed on time and at a lower cost. However, there are many challenges constraining the supply and availability of small scale agro-mechanization services smallholders in Zanzibar:

i. Affordability of mechanization (and other) inputs is often beyond the reach of the smallholder family.

ii. Low private investment for supply of agro-mechanization services.

iii. High price of agricultural machines and their associated spare parts.

iv. Small range of agro-mechanization services provided to farmers (mostly, ploughing, harrowing and rotavating).

v. Low coverage of the mechanization services supplied to farmers (mostly to rice and complementary crops).

vi. High cost associated with owning and operating agricultural machine

vii. Small land holding size that makes application of heavy-duty agricultural machines financially not feasible and technically inappropriate.

Nonetheless, agro-mechanization have a potential of meeting farmers' needs efficiently and effectively in terms of:

- improved farm productivity and reduced drudgery.
- contribute to the development of the agri-food system (from production, through harvesting and processing, to marketing operations).

Thus, the RGoZ must prioritize mechanization; The Revolutionary Government of Zanzibar must promote youth involvement in provision of agro-mechanization services by imparting them with skills they need to profitably engaged in small scale agro-mechanization at various segments of Value chain as services provider. This entail ***gradual*** government withdrawal from service provision while retaining the role of promoter and facilitator of agro-mechanization services in Zanzibar. This will involve addressing critical issues necessary to stimulate the interest and encourage the participation of youth in small scale agro-mechanization service provision as business enterprises.

1.5.10. Food and Nutrition Status

According to the Demographic and Health Survey (2022), the poverty level is prominent in both rural and urban areas (with an overall food poverty level of 13% and a basic needs poverty level of 49%) due to low resources, inadequate employment opportunities and Income Generating Activities (IGAs). This situation is clearly affecting the ability and flexibility of households to achieve an adequate level of consumption. The Nutritional status of children stands at 30% of children under age 5 are stunted, 3% are wasted, 12% are underweight, and 4% are overweight. Breastfeeding is at 64% of children under age 6 months are exclusively breastfed, 70% of children born in the 24 months, and 90% were exclusively breastfed for the first 2 days after birth. Complementary feeding explains as 19% of children age 6 - 23 months received meals with the minimum recommended diversity, 33% received meals at the minimum frequency, and 8% are fed a minimum acceptable diet. Nutritional status of women is at 2% of women age 20 - 49 are of short stature, 7%

are thin, and 36% are overweight or obese. Among young women age 15 - 19, 12% are of short stature, 18% are thin, and 12% are overweight or obese. Nutrition status of men is at 9% of men age 20 - 49 are thin and 17% are overweight or obese. Among young men age 15 - 19, 41% are thin and 3% are overweight or obese.

1.6. The Transformation Call – 'Farming for All'

According to Zanzibar Development Vision 2050, 'A spatial vision for the future Zanzibar by 2050 is to structural transformation of Zanzibar's productive capabilities through economic modernization and diversification with a focus on export oriented and technology –driven development, translating national comparative advantage to competitive advantage, characterized by openness, macroeconomic stability, high saving and investment rates, market allocation, pragmatic leadership and strong private sector engagement as growth enablers'.

Agriculture is a life-long engagement that is based on individuals, firms or groups of people in order to sustain livelihood or engaging in businesses for the purpose of improving their living standards. For the past 60 years it has been wrongly understood that the Government through ministry of agriculture has the mandate to engage directly in agricultural farming and showcase results that were expected by most people and be credited for successful undertaking. This perception is totally wrongly and has brought about many claims and criticisms to employees in the ministry responsible for agriculture due to the failure of showcasing vivid lessons learned of what was expected of them.

The new approach proposed in this ZASTF provides an over-turn gesture of what exactly the role of Ministry and a set of other players in making agricultural engagement real success. It is a paradigm shift that has to be put to task and tested and prove to the public that the real success in agriculture comes from farming individuals, firms and companies that are aimed at sustenance or business. If this is clearly understood, it will make a huge impact in defining roles and responsibilities of proper players to realize potentials of agriculture sector undertakings. The roles of Ministry are of multiple tiers starting with an overseer in terms of formulation of policies, enactment of laws and regulations, provision of guidance as the core function. Other role is organizing and line-up all players and assign proper duties and areas of concentration. The Ministry likewise is obliged to provide support in technical and innovation that will assist farmers correctly engage in agricultural activities. The proper assigning of roles will determine where we go wrong and who is responsible for what particular failure and in which way and apply corrective measures to overcome the failure and bring about success in the responsibility chain for betterment of the sector.

ZASTF conceives transformation as a set of permanent "game-changer" projects that require significant amounts of dialogue, strategic alignment, stakeholder coordination,

financing, effective implementation and tracking and evaluation, as a basis for scaling up. In order to undertake the proposed projects articulated in this programme, agriculture sector stakeholders need effective mechanisms and appropriate support to develop and deliver the planned investments and initiatives, with well-defined and appropriate roles of public and private sectors (Figure 3).

Despite considerable challenges, the agricultural sector in Zanzibar has the potential of tremendous growth thereby making significant contribution to socio-economic transformation of the island through overall GDP, food security, job creation, poverty reduction, and sustainable use of natural resources. With focused strategy and sound and sustainable support, over time the sector is poised for achieving transformation.

It will be critical and essential to uphold all the following elements of transformation:

i. A clear strategy and priorities for implementing the transformation: Defining the priorities of the transformation based on Zanzibar's comparative and competitive advantages and accessible market opportunities;

ii. An investment and agri-entrepreneurship pipeline Private sector-driven Investment opportunities across value chains that drive food security, productivity, profits, competitiveness and job-creation; accelerating the growth of populations of entrepreneurs, innovators and investors;

iii. Catalytic financing and risk management: Mechanisms that will fund the solutions and mitigate risks to ensure sustained agriculture investment from large and small private sector players (local and foreign);

iv. Enabling hard and soft infrastructure directives and investments: Physical infrastructure, policy, regulations, and human and institutional capacity that are critical enablers for the transformation;

v. Leadership and Stakeholder Alignment – Sector transformation will be led by senior policy shapers, with active participation and engagement of the private sector and civil society at a senior executive level. Champions will be required including senior government leaders (the president, cabinet, minister, principal secretaries and directors) to drive implementation as aligned to ZADEP 2021-2026. Investment by Non-State Actors will also be critical to success of the program. ZASTF has a built-in joint ownership and commitment to the regional and international frameworks; and

vi. Robust mechanisms and institutions for efficient and effective coordination, delivery and implementation: An empowered multi-stakeholder approach for designing, managing, monitoring and evaluating delivery and implementation of ZASTF, in a phased manner, and scaling up the successful elements. A strong coordination mechanism will be a requirement.

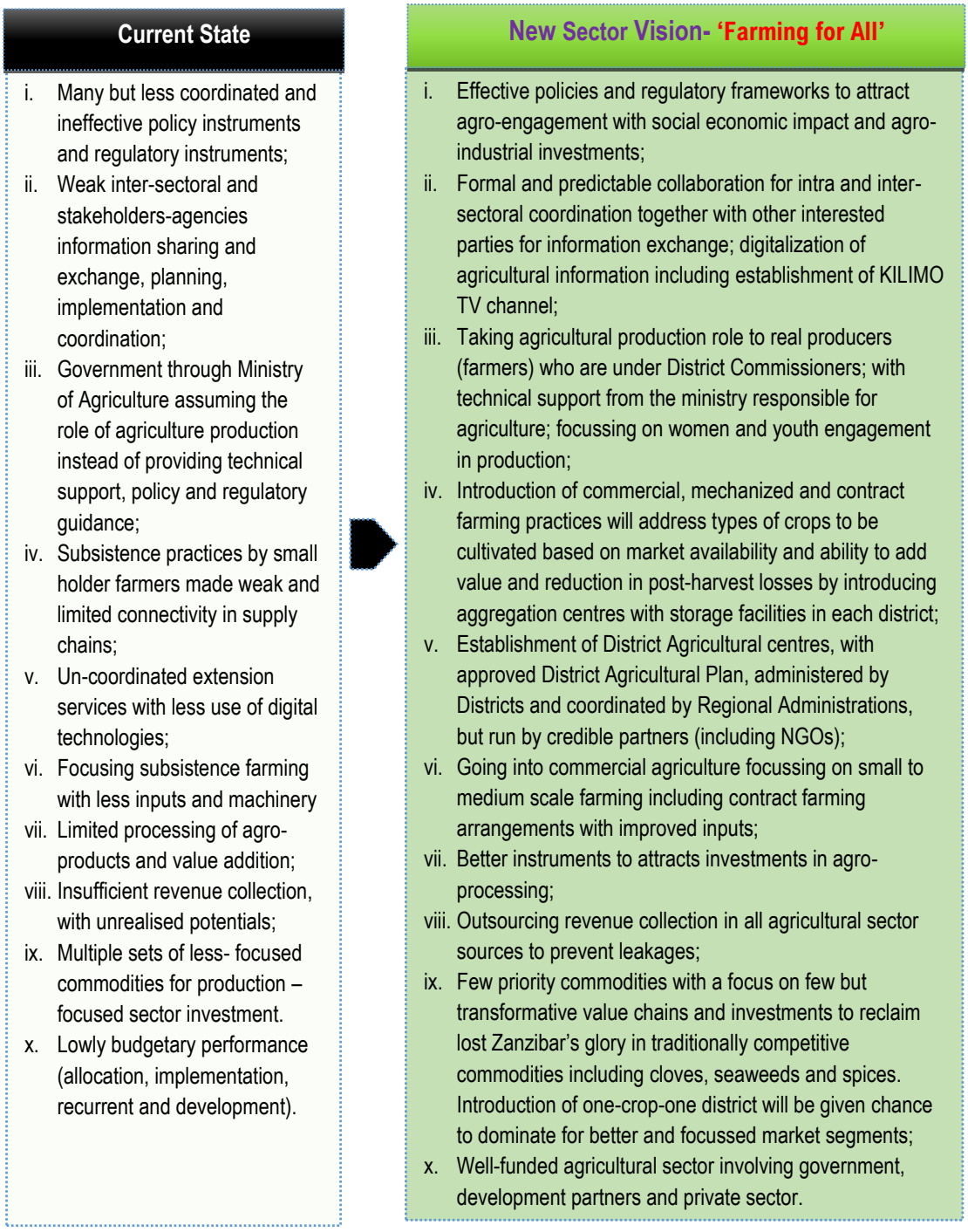

Figure 3: Transformation call

In the quest for sector transformation, prioritized public resources will be directed towards promoting production intensification to capitalize on and upscale achievements from relevant previous interventions. This will be built from lessons learned through implementation of various projects and programs. Particular focus will be placed on investment component of interventions that have shown high productivity potentials in crops, livestock and fisheries. On production diversification, the emphases will be on development of higher-value products to catch up the growing share of expanding tourist, export markets, and reclaim Zanzibar's lost glory

as a leader in cloves, fruits and spices. This national framework will be coordinated by a sector-wide steering committee and implemented through embracing integration of "blue" and "green" economy principles.

Overall, the implementation will be oriented towards the following principles:

i. Country ownership;
ii. Development results and value addition;
iii. Partnerships;
iv. Organic-oriented principles;
v. Replicating, mechanizing, advancing and taking to scale, relevant initiatives and innovations which enhance the results of core programs through District Agricultural centres;
vi. A reorientation away from treating agriculture as a 'way of life' or social welfare system to a sustainable business, which also will offer a livelihood future to women and youth;
vii. Programming and implementation is to be done in a business "unusual" modality; and
viii. Leveraging the private sector (including NGOs) and framing a transformation agenda that is public-sector enabled and private-sector led.

1.7. Value Chain Approach

Building on the successful lessons from other developing countries, especially island economies (such as Maldives, Seychelles and Mauritius), ZASTF has adopted an agricultural transformation approach to ensure this programme truly realizes agribusiness orientation for the sector. To this end, agriculture value chain approach has been integrated in the programme design.

ZASTF has established agriculture and food value principles to guide implementation of this programme. Already the agriculture sector for Zanzibar has embraced value chain approach, although in the incipient stages of operationalization and implementation. Currently, the focus of the sector development is production and productivity. For transformation to occur successfully, a focus should be put on the demand side through enabling appropriate actor roles and investments in Agriculture Food Systems (AFS). This will enable Zanzibar to address the challenges of production and market mismatch in terms of quality, volumes and investments.

The interventions in ZASTF are designed to improve the efficiency and equity of the value chain, and thereby maximise the benefits to key actors. The strategies to be mainstreamed in this respect to enable sector transformation include:

i. Chain upgrading as in applying and mechanizing existing skills in a new chain, for example, moving from small-scale mixed farming to commercial farming.

ii. Functional upgrading involving changing the mix of functions performed, for example, dairy farmers adding a milk collection and primary processing (chilling) function and shortening the chain of intermediaries.

iii. Horizontal coordination involving development of relationships among actors within functional 'nodes', for example, formation of new horticulture traders' associations and strengthening of sea weed women groups

iv. Process and product upgrading involving improving chain efficiency and product quality, for instance expanding irrigation to rice paddies and invest in high value crops and climate smart agriculture.

v. Upgrading of the enabling environment by making reforms to policy, law, institutions, supporting organisations, to assess productive assets such as land and provision of credit services including for women and youth in smallholder groups and revision of labour laws for employees in the agro-industrial park

vi. Upgrading of the irrigation infrastructures, water saving technologies and rain water harvesting techniques

vii. Vertical coordination by developing relationships among actors between nodes, for example, contract farming to connect to industry, hotels and agro-industrial parks.

The above strategies are geared towards maximizing benefits of value chain approach and the sector wide approach and ensuring adequate participation of men, youth and women at every stage of agriculture transformation.

PART 2: ZASTF FRAMEWORK

The ZASTF works towards multiple goals – in terms of contributing to elimination of extreme hunger, nutrition, poverty, and increased prosperity. This is to be achieved in a country-owned strategies and in partnership with various alliances including farmers, agribusiness, and civil society, exploiting local, regional and global comparative advantages and opportunities for food self-sufficiency, value addition and competitiveness.

2.1. Vision

A modernised and diversified agriculture focusing on technology-driven development, mechanization, commercialization and food security.

2.2. Mission

Engaging entirely value-chain actors in agricultural development interventions

2.3. Overall Objective

Transforming the agricultural sector from subsistence to resiliently commercial oriented sector to drive tourism, light industry growth and rural transformation.

2.4. Specific objectives:

i. Transform service delivery mechanisms of the agriculture sector;
ii. Intensify agricultural livelihood potential for farming households;
iii. Establish agricultural centres of excellence to provide technical and logistical support along the value chains;
iv. Enhance supply potential of agricultural products to cater for readily available markets;
v. Engage women and youths in commercial agriculture initiatives;
vi. Organise roles, responsibilities and functions of public and private actors in the agricultural sector development; and
vii. Capitalize on agricultural research and development.

Key Result Areas
Result Area 1: Enhanced Enabling "Environment" for Agricultural Transformation.
Result Area 2: Strengthened Climate Resilience and Sustainable Agriculture Technologies
Result Area 3: Expanded Strategic Rural Infrastructure.
Result Area 4: Intensified and Competitive Commercialized Value Chains.

2.5. Priority Areas of Interventions and Theory of Change

To achieve the above objectives and key policy-driven impacts, the ZASTF theory of change and supporting results framework was designed to provide a conceptual and

strategic roadmap. It aims to sharpen: the key outcomes needed to generate the expected impacts; the priority outputs which will generate the envisioned outcomes; and the priority activities which can generate the required outputs. The theory of change and emerging results framework also provides the framework/basis for deriving 4 key result areas (RAs) and their supporting outcomes and prioritized outputs (Figure 4 and 5). The activities for each output were identified and prioritized through an elaborate analytical and multi-stakeholder process during the preparation of ZASTF.

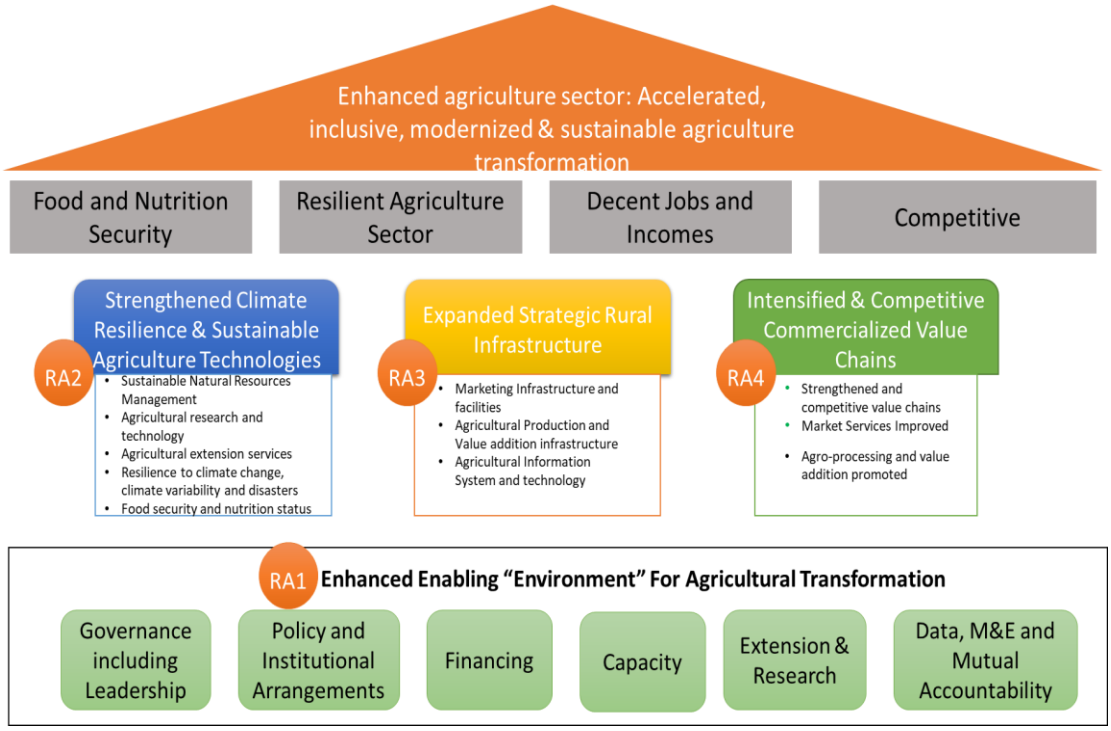

Figure 4: ZASTF Theory of Change

***Source*:** Developed during ZASTF formulation sessions by Thematic Working Groups (2018)

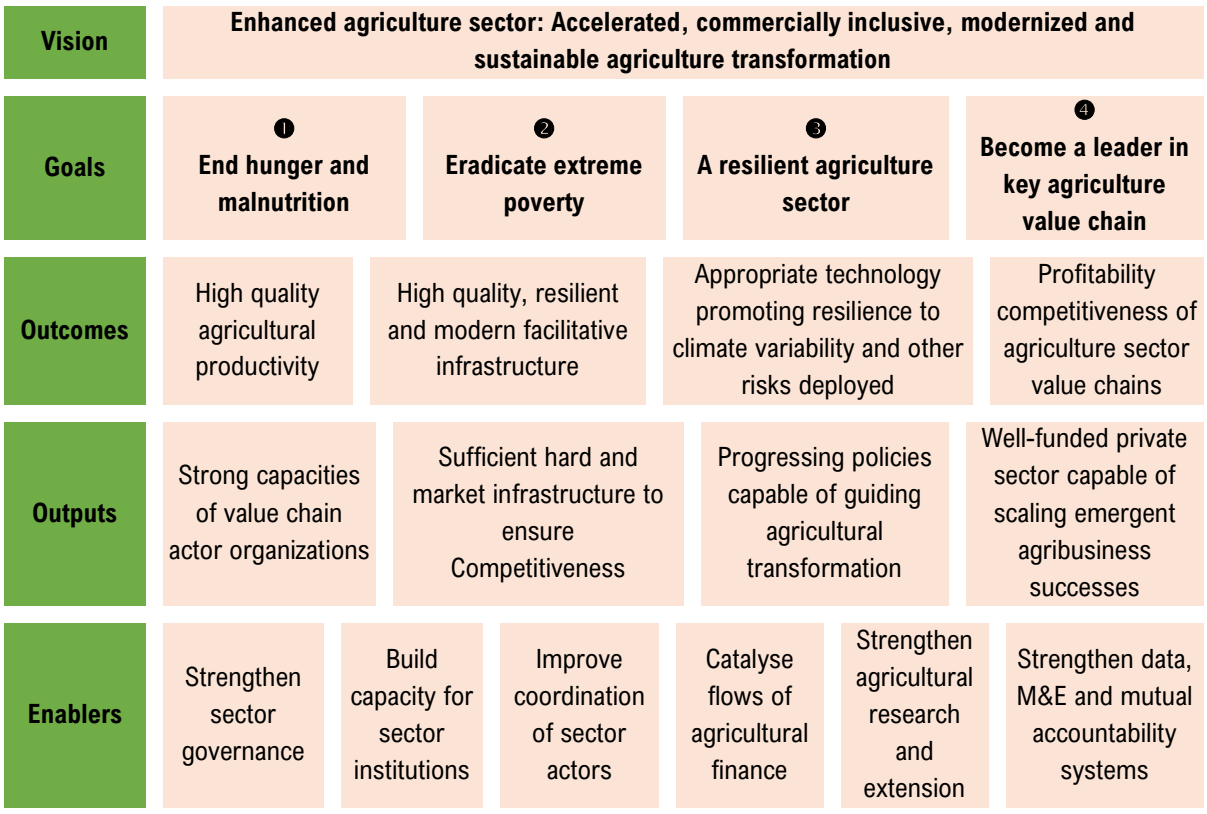

Figure 5: Supporting Results Framework

***Source*:** Developed during ZASTF formulation sessions by Thematic Working Groups (2018)

Targets and Indicators for Agricultural Transformation

a) Intensified and diversified production and productivity of high-quality crops, livestock, fisheries, aquaculture as well as marine and forestry products, focusing initially on labour intensive production and subsequently developing capacity in capital-intensive means of production;

b) Investment in appropriate high quality and facilitative inputs, technologies, research and capacity development to produce quality products for exports and local markets, including tourism, in line with the green and blue economies, focusing on nutrition-sensitive agriculture to achieve high food and nutritional security;

c) A thriving, competitive private sector of agribusinesses, reinforced by effective farmer organisations, focused on improving and expanding production, marketing, value addition and regular access to market information for export and domestic markets;

d) Climate-smart agriculture that builds climate resilience by incorporating appropriate financing strategies, risk management measures and agricultural insurance for agricultural value-chain actors;

e) Enhanced agricultural extension services that equip agricultural value-chain actors with appropriate technologies in crop and livestock husbandry practices, aquaculture, marine and natural resource management; and

f) Robust policies and legislation with strong institutions, adequate capacities, financing and coordination for agricultural transformation, reinforced by considerations of sustainability and climate change resilience in the development of agricultural plans.

Table 3: Key Performance Indicators

Indicator	Baseline	Target 2030	Target 2040	Target 2050
1. Proportion of households that are food secured	48.9	62	75	90
2. Direct employment in agricultural sector	40	45	35	29
3. Proportion of primary agricultural imported	n/a	40	33	26
4. Proportion of food produced domestically	37.9	60	80	87
5. Annual cash crop production (tons)	11,505	19,300	27,800	35,300
6. Proportion of total livestock product produced domestically	n/a	TBD	TBD	TBD
7. Total volume of forestry product produced	41.803	45,200	50.700	55.000

Source: *Vision 2050 (2019)*

2.6. Transformation Map

This transformation framework intends to bring positive changes in the following five main areas:

a. Production Area: This is the most important area that the framework puts heavy emphasis as three sub areas are considered. The sub areas include:

   i. Land: availability, ownership and utilization as well as notarized access to youth, productive communities as well as people with special needs in agro-related activities.

   ii. Acquisition and use of appropriate technologies: including inputs, production techniques (greenhouses), irrigation infrastructures, processing facilities and macro-micro mechanization.

   iii. Capital availability: involving development of 'intervention plan' toward accessing capital intensive technologies, financing mechanisms and resources mobilization strategies.

b. Markets and Marketing: local and international including special markets for value added products.

c. Value addition: to include processing facilities, promotion, packaging, incubation and training.

d. Logistics/ supporting facilities: to include administration support, storage and grading facilities, training, transportation and communication, trade-fair and promotion facilities.

e. Manpower: Consideration of mindset changes, engagement and absorption of available youth manpower potential:

2.7. Implementation Framework

This transformation plan is about bringing paradigm shift from the notion that the government, through the ministry of agriculture, is responsible for farming; and that true farmers are just spectators. The plan corrects this notion and intends to put every actor in the agriculture spectrum on their right places (Table 4). The plan recognizes five main categories of actors at different levels as follows:

Table 4: Roles and Responsibilities of Key Stakeholders

Key Player	Key Roles
Regional Administration	▪ Overall coordination and technical backstopping related to agricultural related sector of crop production, natural resources management, livestock management and environmental protection; ▪ Monitoring and evaluation to track district performance; and ▪ Provide suggestion on means of performance improvement.
District Administration	▪ Strategic implementation of agricultural initiatives; ▪ The bridge between operators/implementers and the Central government; ▪ The hub of all agricultural technical basket (technologies and extension services); ▪ Coordinating all extension agents, from both private and public sectors; ▪ Managing and maintaining the 'District Agricultural Centres'; ▪ Serve as a point of technological experimentation and field learning for farmers.
Ministry responsible for Agriculture	▪ Overseeing implementation of agricultural related policies, laws, regulations, programs and plans; ▪ Overall organizers of sector management; ▪ Providing technical support to implementers at above and below the spectrum; ▪ Facilitate support in programs/initiatives development.
Implementers/operators	▪ Project implementers/operators linking farmers and other value chain actors; ▪ Managing 'District agricultural Centres' on behalf of the District administrations;

	▪ Developing and delivering extension messages, marketing information and technologies to farmers; ▪ The bridge between farmers and the district administration.
Farmers and other Value Chain Actors	▪ Important segment of the spectrum – true farmers, value chain actors; ▪ Include individuals, groups, associations, organisations and companies; ▪ The intended target to be improved in terms of agriculture production and productivity.

2.8. Framework for Prioritization, Target Commodity Value Chains and Interventions for Success

Over the 5-year period, the programmes will involve implementing transformative projects in a broad range of 20 commodity value chains as tabulated in Table 5. The document adopts a sector-wide approach to ensure sound priorities in the allocation of scarce public funds for the overall agricultural sector. The investment priorities chosen are to be clearly reflected in the medium-term expenditures, annual action plans (AAPs) and annual budgetary plans (ABP) and allocations, during the implementation of the proposed ZASTF. As a national plan for agriculture sector development, ZASTF presents a set of programmes and projects with timelines and locations designed for enhancing impacts, a national scope analysis and comparison of the expected impacts of candidate programme and project needs. Commitments have been made by relevant key actors in Zanzibar to ensure progressive improvements in compliance with the agreed criteria for each year of the formulation and implementation of ZADEP and annual budget for the agricultural sector.

Table 5: Priority value chain commodities as per Programme Phases

No.	Value chain category	Commodity value chain		
		1st Phase (4years)	2nd Phase (3years)	3rd Phase (3 years)
1.	Food crops (4)	Rice, Cassava, Banana, Sweet potato	Rice, Cassava	-
2.	Dairy and poultry (2)	Dairy, Poultry	Dairy, Poultry	Dairy, Poultry
3.	Forest resources (1)	Bee products	Bee products	Bee products
4.	Fruit (5)	Pineapple, Mangoes, Water melon, pawpaw, lime, rambutan	Mango	
5.	Spice (6)	Clove, Hot pepper, Lemon grass	Vanilla, Black pepper, ginger, cinnamon, saffron	
6.	Vegetable (3))	Tomatoes, sweet pepper, leaf vegetables	Tomatoes, sweet pepper	Leafy vegetables
7.	Oil Crop (2)	Palms (Coconut,)	(Coconut, Sunflowers)	(Coconut, Sunflowers, Soya)

The government will promote investments to increase farmers' productivity and profits for key crops, natural resource assets (especially forestry) and livestock as a first priority towards increasing opportunities for commercialization within the frame of sustainable utilization of natural resources and climate resilience. Targeted value chains are food crops, dairy, poultry, forest resources, spice, fruit and vegetable value chains. Food crops include rice, cassava, banana and sweet potato. Crops targeted for commercialization, internal markets specially to supply the tourism industry and eventual export market competitiveness are cloves, spices and horticultural crops. The livestock value chains will involve dairy and poultry and will specifically concentrate on animal feeds production and promotion of value addition in animal products and by-products.

Under natural resources, ZASTF will focus on sustainable management of ecosystems including forests and mangroves as well as value addition in wood, and non-wood forest products such as bee honey. Other priority interventions will include expansion of research and development, coordination of extension services, irrigation, water for livestock, pasture development, mechanization and improved access to crop/livestock/inputs to enhance efforts to increase productivity and competitiveness across the sector.

ZASTF has prioritized other investments to improve the capacity of institutions and supportive rural infrastructure (roads, electricity, facilities) to expand markets and ensure efficient value chain support services for transforming the sector, driven by the private sector. Special flagship project on establishing an agro-industrial park will concentrate these investments at a dedicated peri-urban facility/zone with both backward and forward linkages using a Public Private Partnership Approach (PPP). Programme also includes specific interventions to improve food security and nutritional status of households and to enhance the resilience of rural livelihood systems to climate change and other risks. Special attention will be given to coordination of institutional processes, policy effectiveness and increased catalytic funding by the government to attract more private investments and donor support.

2.9. Development of Commodity Value Chain

Previously through various programs and other initiatives some progress was made in promoting agricultural marketing and value chain development. In realizing full potential of the Value Chain Approach, there are additional issues with regard to specific Commodity Value Chain implementation including design and implementation flaws such as; (i) insufficient value chain diagnostic and mapping at local, regional and national levels; (ii) weak implementation capacities in both the public and private sector; (iii) supply constraints (iv) Failure to integrate various models of agriculture value chain financing and (v) limited internalization of past experiences, especially for market access and market information as well issues of consultations on appropriateness and sustainability of the value chain technologies and plants.

ZASTF proposes a commercialization strategy and integrated program that is expected to produce fundamental changes in the structure and functions of the agricultural sector including:

- Improved farmer access to improved and coordinated extension services, and agricultural inputs;
- Improved value chain financing;
- Improved infrastructures and communications;
- Increased amount of quality agricultural produce entering in the domestic and export market channels;
- Increased supply of raw materials to the industrial sector; and
- Strengthened farmer organizations.

The higher levels of commercial activity are also expected to enlarge opportunities for rural non-farm business enterprises and both farm and non-farm employment, including for women and youth.

The approach addresses the issues faced at each stage towards commercializing and professionalizing value chain characteristics and overall performance. Focus is put on smallholder producers and improving their role and relationships within the value chain(s) that they belong to. Particular attention will be given to the development of the institutional capacity of smallholder organizations to negotiate and manage new marketing arrangements with other value chain actors especially the industry and tourism sector investors.

Commodity value chain will be developed by the private sector to harness the various stages from production, processing and marketing/distribution systems of key commodities, including value addition. The commodity value chain will be categorised into subsector including food crops, livestock products and by-products, fisheries, marine products, products from natural resources (forestry), spice crops, fruits, vegetables and oil crops.

2.9.1 Food Crops Value Chain

a. The Government's policy objective is to increase food self-sufficiency and exploit opportunities for private sector investments through creation of conducive environment for production, processing and marketing of food crops; where rice, cassava, sweat potatoes and banana are the main priority crops to be covered under this programme. In the 10 years' period of implementation, the programme will cost a total amount of TZS 181.4 billion, including TZS 153.7 billion from on-going projects and TZS 27.7 billion for new programme interventions.

b. The Programme will support the improvement and development of high yielding varieties and planting materials that are resistant against drought, pests and

diseases, promote adoption of improved crop husbandry practices for maintenance of soil fertility, promote processing and value addition and organize production into viable commercial units for market linkages mitigating effects of climate change through appropriate irrigation practices. Proposed packages to reach the potential yields includes: production and dissemination of quality and healthy planting materials to small-scale farmers.

c. Rice is the most preferred food crop in Zanzibar. However, the area under rice cultivation is currently 11,646 ha of which 8,521 ha is potential for irrigation. With the target to increase the share of locally produced rice in domestic market, the Programme will develop 300 ha irrigation schemes in Cheju B' Unguja as per irrigation Master Plan (2003) under the funding by, RGoZ, and Exim Bank of Korea. Similarly, Tanzania Food System Resilience Programme supported by the World Bank will rehabilitate a total of 433.9 ha within Bumbwisudi, Mtwango, Mwera, Kibokwa Irrigation Schemes in Unguja and Makombeni, Weni, Saninga and Kinyakuzi Irrigation Schemes for Pemba.

d. The Programme will also establish smart subsidy system for farm inputs, insurance scheme, and processing equipment. The target set for the coming ten years is to reach yield potential of 4 tons/ha for rain fed rice and 15 tons/ha for irrigated rice. This will increase production of milled rice from 46,471.9 tons to 146,565 tons per year. During year 2022 rice was planted on area of 29,086 ha (irrigated and rain-fed) with the production of 27,947 tons (Statistical Abstract 2022). To enhance the efficiency of rice production the focus is on supporting and empowering the smallholder farmers to form groups and associations that will create larger and more viable commercial production units. The involvement of the private sector in large scale paddy production is encouraged through contract farming to these commercial units.

e. Cassava is the most dominant food crop grown in Zanzibar and a staple for the majority of people living in rural areas. Total area under cassava cultivation is about 34,000 ha (11,840 ha in Unguja and 22,160 ha in Pemba). Based on economic survey (2022) cassava was planted on area of about 13,800 ha with the production of 194,520 tons. The main constraints in cassava production include depleted soil fertility, poor yielding varieties and planting materials that are also susceptible to pests and diseases, high post-harvest losses and limited options for processing and utilisation. Within the coming ten years, the Programme plans to enhance productivity from 14 tons/ha to 20 tons/ha.

f. Banana is an essential staple crop ranked at the third position in terms of consumer preference after rice and cassava and is an important source of trade and income especially with smallholder farmers. It is grown in all agro ecological zones of Zanzibar, although it does well in the plantation and 'deep soiled' areas of both islands. Total area under cultivation is 13,570 ha (6,580 ha in Unguja,

and 6,990 ha in Pemba). Based economic survey (2022) banana was planted on area of 2,434.2 ha with the production of 52,339 tons. The average attainable yield of banana is currently 21.5 tonnes per hectare far below the potential yield of 45 tons/ha. This has been contributed by a number of factors including poor management practices, diseases, declining of soil fertility, nematodes and other pests. Most of the varieties grown by smallholder farmers are of low production potential. The target by 2030 is to produce 330,000 tons.

2.9.2 Livestock Value Chain

Within 10 years of the implementation the programme will cover a total cost of **TZS 24.8 billion**, including **TZS 3.7 billion** from on-going projects and a total of **TZS 21.1 billion** from new programme interventions.

Dairy Value Chain Development

Zanzibar dairy subsector is important for rural development, poverty reduction and food and nutrition security. It offers a pathway out of poverty for the large number of households keeping livestock, and for those who provide services and value addition throughout the supply chain. The dairy subsector remains the largest and most valuable in the livestock sector in Zanzibar, which accounts for 12% of agricultural GDP and is fast growing. The Government and development partners continue to put emphasis in dairy development with significant investments in the industry aimed at transforming it from subsistence orientation to a business-oriented, modern sector through farmer cooperatives and value addition approach. With the per capita consumption of 200 litres, annual demand for dairy milk is 300 million litres; whereas current production is estimated at 8,644,920 litres per annum, which is 2.88% of the local requirements.

According to National Sample Census of Agriculture, 2019/20 the total cow's milk production reported in Zanzibar is 36,710,092 litres. Out of those 36,450,637 litres were from smallholder farmers and 17,834,076 litres from large scale farmers. Whereas the total goat milk production is 114,420 litres (112,800 from smallholder farmers and 1,620 from large scale farms). The average milk production per cow per day for indigenous cattle is 3 litres in Zanzibar during wet and dry season. For improved cattle, the average milk production per cow per day is 9 and 7 litres during wet and dry season respectively. The results show that, 39.8% of the total cattle keeping households in Zanzibar reported to produce milk.

In Zanzibar, Kaskazini Unguja region had the highest production of milk (11,671,080 litres; 32%), followed by Kusini Unguja (10,986,916 litres; 30.1%) and the least production was reported in Kusini Pemba (2,809,505 litres; 7.7%). The highest milk price per litre was TZS 2,139 in Mjini-Magharibi during wet season and TZS 2,093 during dry season. The lowest price was TZS 1,148 in Kusini Pemba during wet season and TZS 1,156 during dry season.

Given the expansion of tourism sector, the dairy industry has a potential to expand production to meet the current deficit in milk and dairy products. The target on milk production at 2030 is to produce 15,250,000 litres annually. This will be attained through well targeted interventions in the areas of feed and veterinary services, value addition and complementary policy changes that would result in a significant increase in dairy production. The number of crossbred milking cows will be increased to 4,000 and per cow milk production raised to 12.5 litres per cow/day.

The Programme proposes the following interventions to the dairy sector:

a) Feed improvement, including pasture and forage, and of concentrate feed production and marketing through the construction of commercial animal feed plants; and the enhancement of existing forage seed quality control laboratories through supporting the Research Institution; and the provision of equipment and training;

b) Support animal health through control and prevention campaigns for East Coast fever, contagious bovine pleuropneumonia, foot-and-mouth disease and brucellosis; enhance the capacity of veterinary centres and diagnostic laboratories with respect to surveillance and diagnosis; and construct and rehabilitate dip tanks;

c) Improve cattle breed by strengthening existing national artificial insemination centres; establishing a new semen production centre in Pemba, bull centres and crossbred heifer multiplication farms; purchasing crossbred heifers for under-resourced dairy farmers; building the capacity of artificial insemination technicians; and acquiring new liquid nitrogen plants;

d) Build capacity of Research Institutions to undertake research on breed improvement, feed, health, marketing, and value chain and dairy extension services;

e) Improve milk marketing and processing to support the construction of ultra-high temperature (UHT) and powder milk processing plants; establishment of dairy cooperatives in high potential areas through the provision of training, awareness raising, equipment and facilities; establishment of milk collection/ chilling centres; establishing the Zanzibar Dairy Board, milk quality and safety control laboratory, and school milk feeding programs; and

f) Provide more effective extension services to support production, processing and marketing of quality milk.

Poultry Value Chain

The poultry business in Zanzibar is growing but is largely based on imported poultry meat and eggs. Cheaper and better-quality imports from the USA and Brazil is flooding the local market. This is linked to Zanzibar's weak production and processing

infrastructures as well as challenges of meeting international standards and stable supply required by the hotel industry.

Over the past decade the Zanzibar poultry sector has faced stiff competition from imported poultry meat and the decreasing profitability of egg production. The high cost of feeds, that represent more than 60% of total production costs, and inefficiencies in input supply, markets and quality control have contributed to this situation. Yet demand for both products continue to rise. Through the Zanzibar Agriculture Sector Development Programme, competitiveness of the poultry industry will be maintained through increased performance in domestic production and productivity, value-addition and input supply.

The number of inspected and slaughtered cattle for the year 2022 was 27,326 heads which marks an increase of 5.4% compared with 2021. Different trend has been observed for inspected and slaughtered goats of which the number was decreased to 4,416 heads from 7,447 heads in 2021. Contrary, the number of inspected and slaughter chicken increased by 50.6% from 751,073 birds in 2021 to 1,130,891 birds in 2022. The target on chicken meat production at 2030 is to produce 24,850 tons annually; where through targeted actors along the value chain, the number of broilers will be increased to 12,424.093, and yield potential per chicken raised from 1.5 to 2.5 kg.

Apart from production of broilers in chicken meat, investment will also be intensified in the stocking of chicken layers for increased production of eggs. Statistical data (2022) indicate that a total of 223,778,300 from smallholder farmers in Zanzibar and the average price per egg was TZS 365.

This annual demand for eggs, which is 14,687,616 egg trays. To fill this the gap, domestic production of eggs will be improved through timely availability of good quality chicks, improved extension services, and health provision services. The target at 2030 is to boost production levels to 15,246,660 egg trays annually. The programme foresees gradual build-up to stock 1,524,666 good quality layers with laying potential of 10 trays/chicken/year. The package along the value chain will take into consideration on designing the collection processes, grading (quality control), and packing facilities.

ZASTF has programmed to enhance the poultry value chain through a range of interventions including to:

a) Improve poultry feed production and marketing through the construction of commercial animal feed plants; and the enhancement of existing animal feed production centres;

b) Establish poultry hatchery to improve access and timely availability of quality chicks;

c) Build capacity of poultry value chain actors through training, access to credit and inputs and promoting strategic investments and private-public partnerships;

d) Increase the trade of poultry products including eggs and poultry meat by improving product quality, increasing production efficiency, and improving market linkages; and

e) Support poultry health provision through control and prevention of Gumboro and Newcastle Disease and other poultry diseases.

2.9.3 Forest Resources Value Chain

The 10 years of the programme implementation will cover a total cost of TZS 15.1 billion, including TZS 11.5 billion from on-going projects and a total of TZS 3.6 billion of new programme interventions. Beekeeping industry plays a significant role to improve livelihoods of the communities and promotion of ecosystem conservation and management. Besides, Zanzibar's honey is famous all over the world and fetches a high demand because of its natural organic nature. Due to an increasing concern from consumers for organic food products, it is expected that the demand for Zanzibar produced honey blends will increase in the future. So far, apart from honey, all the remaining hive products including beeswax, propolis, royal jelly and, pollen grain, bee venom are neither produced nor developed by beekeeping actors. This is mainly due to limited technologies and low investments geared towards diversifying to other hive products. Whatever the scale of beekeeping, all these products command high prices on the market, and are worth harvesting, processing, storage and marketing.

According to Agriculture Census of 2019/20 Zanzibar produced a total of 10,958 litres of honey (9,765 from sting bee and 1,193 from stingless bees) during agricultural year. Honey production from stingless bees was only reported in Kusini Pemba (1,126 litres; 94.4%) and Kusini Unguja (1,19367 litres; 5.6100%) regions. On the other hand, production of honey from stinging bees was reported in Kusini Unguja region (4,180 litres; 42.8%), Kaskazini Pemba (2,826.0 liters; 28.9%) and Kusini Pemba (2,759 liters; 28.3%). Zanzibar current production is 15.0 tons/year of honey (MAINL, 2023) which represents 60% of the production potential of 25t/year. Despite the comparative advantage in terms of unique environment/forest potential for production of natural honey, and increased demand in local and external markets, attained production levels are still below the current annual demand of 40,000 tons per year. To further develop the beekeeping industry, the Programme has set the honey production and other bee products target of 35,000 tons/year at year 2034.

The programme will support development of fully fledged honey bee products value chain through a business approach to beekeeping at producer's level with specific emphasis on quality and traceability. Furthermore, the programme will gradually develop other hive products to capture the export niche markets that require standard

and systems compliancy. ZASTF has planned to enhance the bee products Value Chain through a range of interventions including to:

a) Improving quality of honey to suit local and international markets through training on –bee products harvesting, handling and processing; developing beekeeping educational and promotional materials for advocacy and awareness creation;

b) Build capacity through advocating for loan systems to beekeeping tools and equipment, establish and update baseline data for beekeeping and increase investment in beekeeping;

c) Adopt appropriate technologies on honey production and provide supporting services for beekeeping;

d) Establishment of bee reserve to improve the production of bee products and secure bee habitats;

e) Implementation of bee- Api-tourism and Api-therapy in some protected areas example Jozan- Chwaka bay National Park and Biosphere Reserve;

f) Ecotourism is another growing segment of the tourism industry in Zanzibar, with tourists visiting protected areas including Jozani-Chwaka Bay National Park, which is a home to the rare red colobus monkey. According to the ZCT (2021), ecotourism accounted for 1.4% of the total tourist arrivals in 2019.

The government has also created a favourable business environment for investors by reducing taxes and offering incentives to Ecotourism-related businesses. Also, the number of attractions will increase through increase number of environmentally friendly investment in protected areas as guided through Zanzibar ecotourism investment guideline.

2.9.4 Spice Value Chain

In the 10 years of the programme implementation ZASTF will cover a total cost of **TZS 295.2 billion,** including **TZS 282.6 billion** from on-going projects and a total of **TZS 12.6 billion** of new programme interventions.

Spices are aromatic substances of plant origin, obtained from root, flower, fruit, seed, leaf or bark. Many spices have additional commercial uses, for example, as ingredients of medicines, religious ritual, cosmetics or perfumes, soaps as well as vegetable. In general, the climatic condition of Zanzibar is conducive for spice production. Clove, despite fluctuation of the world market prices, still dominates the agricultural sector and accounts for more than 70% of export earnings and employs more than 60% of the labour force. Traditional spices include chillies, black pepper, cinnamon, cardamom, vanilla, ginger, turmeric, nutmeg and lemon grass of which its production originates from small holder farming using mixed cropping of different combinations of food and tree crops.

The extraction of essential oils adds significant value to spices. Records show that Zanzibar started exporting essential oils as early as 1930s and have continued to secure its share of the world market for her main products of clove stem oil and clove bud oils. The construction of a modern essential oil distillery facility by ZSTC at Wawi, Pemba in 1982 boosted the production and export of clove stem oil, clove bud oil, cinnamon oil, *Eucalyptus citriodora* oil (perfumes) and *Eucalyptus camadulensis* oil (medicines).

According to a report by spice dealers and exporters in Zanzibar, the spices industry has been growing at an average of 10% per year in values since 1997. Actual export value of spices grew from $6.2 million in 1997 to $11.0 million in 2001. With some policy improvements, mobilization of farmers coupled with improvements in marketing information and systems export value of spices can grow by 15% - 20% per annum in the coming 5-15 years. The world market of spices and herbs is valued at $2.3 billion but for 1995 to 1999 available supply on the global market was only 500,000 tons per year.

Marketing of spices is mainly done by three entities, namely, (a) organic companies (i.e. TAZOP and Zanzibar Aromatic Ltd) (b) conventional companies (i.e. ZSTC and MADAWA Ltd.), and various small-scale traders. The organic companies are privately owned foreign-based companies that export their produce to the EU market – specifically Switzerland and Germany. ZSTC is public owned and by law is the sole dealer of clove and clove products in Zanzibar. It exports cloves and clove oils to the Gulf States, India, Singapore and Pakistan.

The spice subsector has been increasingly becoming an important tourism product which is popularly marketed as Spice Tour and confined mostly to Urban West Region. Given the importance of spice as a source of livelihood and foreign exchange earnings. The spice production has a great potential for preventing agricultural land from encroachment. The evidence has shown that, land covered by spice farm are less likely to be converted to other uses as compared to land covered by other crops. In many respects; the spice sub sector certainly deserves adequate attentions from both public and private sector so as to fully exploit the existing potential of the spice in employment creation and poverty reduction in Zanzibar. Thus the effort should also be made to promote spice production not only as agricultural products but also as an important tourism product in Zanzibar destination. Currently, it is believed that the value of spice as tourism product is much higher than as agricultural products.

In its first three years of ZASTF implementation, the programme has selected cloves, chillies and essential oils as the priority crops. Recent clove production data show that 4,734.10 tons, produced (Statistical Abstract, 2022). However, according to CCM election Manifesto of 2020/2025 clove demand is 10,000 tons/year.

As for chillies, the current average yield of 3.7 tons/ha is below the yield potential of 5.5 tons/ha; but also, annual harvests are below the annual demand of 4 tons/year. The target by 2030 is to facilitate farmers to raise the production levels to 10,000 tons/year for cloves, and 7 tons/year for chillies through adoption of good agricultural practices that will include initiatives to promote production and productivity, enhance quality, and maintain higher priced grades. In the context of essential oils, Zanzibar currently extracts only 73.063 tons/year from eight spice varieties, but it is required to meet the market demand of 2,305 tons annually. The target is to produce 1,305 tons annually, which will represent a significant increase in the supply of essential oils from 3.2% (2019) to 56.6% of the annual market demand by 2030.

In developing the spice value chain, ZASTF will intervene in the following areas:

a) Promote spice tourism in Unguja and Pemba Islands by supporting preparation information kits that will ensure consistency and uniformity of information given to visitors.

b) Promote and regulates spice tours by establishing the standards of spice farms.

c) Promote regenerative agriculture and spice organic farming; through adoption of Integrated Production and Pest Management (IPPM) and ISPM practices through Famer Field Schools (FFS);

d) Provision of infrastructures and technologies for breeding and plant propagation;

e) Increase farmers' knowledge on the importance of spices and selection of clean and healthy planting materials;

f) Conduct a national campaign on replanting and replacing the clove trees and other spice plantations;

g) Increase investment in research and promote networking with other research institutions;

h) Develop and implement quality control and assurance system for value added products;

i) Promote formation of strong associations of agro-processing entrepreneurs;

j) Support establishment of agro-processing facilities and infrastructures by offering some incentives mechanism for private investment; and

k) Establishment of well branded products and sources of export quality packaging.

2.9.5 Horticulture Value Chain (Fruits and Vegetables)

In the 10 years of the programme implementation, the plan will cover a total cost of **TZS 22.3 billion,** including **TZS 13.9 billion** from on-going projects and a total of **TZS 8.4 billion** of new programme interventions.

Growth in the horticultural sub-sector presents many opportunities for growing rural and urban economies and currently contributed significantly to food security, nutrition improvements and economic growth. Rapid change and market dynamics often set back small producers and business firm. Small producers and business firm are frequently getting rid of markets for failure to understand market dynamics and changes, for the reasons of their inability to meet new production, sanitary and quality standards. Thus, dedicated efforts on research and development initiatives are urgently required and should focus on integrating producers and firm into the growing horticultural market place to contribute alleviating poverty, economic growth and enhancing the quality of life.

The chief fruits produced in Zanzibar among them are water melon, pine apple, mango, pawpaw, jack fruit, bungo, guava and other fruits like passion fruit and citrus fruits like oranges. At present, cultivation is largely for domestic consumption, and little is left over for export. The total area under fruits and vegetable cultivation is at 7,076.64 hectares (Unguja 4,916.36 ha and Pemba 2,160.28 ha) (Zanzibar Statistical Abstract, 2022). The average yield of fruits and vegetables is about 5 – 7 tonnes/ha for all common vegetables which is far below the potential yield levels that are recorded in Tanzania (ASDP II, 2018/27) which is 15 tonnes/ha. The total annual production of fruits and vegetables in Zanzibar is 66,303.8 tons. (Zanzibar Statistical Abstract, 2022). Consequently, most of the vegetables consumed are sourced outside Zanzibar. Recent value chain studies indicated that 50% of vegetables and fruits supplied to tourist hotels and restaurants are imported, mostly from mainland Tanzania (UWAMWIMA, 2020).

Experiences from recent development interventions such as TAHA, PDF, Agri-Connect, CSA, TAP, PSSL and TASAF have demonstrated that there is a considerable potential for increased local production of vegetables to meet domestic demands for vegetable products. The envisaged potential yield levels for most vegetables are in the range between 25 tons/ha. During 10 years of implementation the programme will develop 10ha of irrigation infrastructure through Tanzania Food System Resilience Programme.

With regard to Horticultural Industry, the programme commits the following interventions to guide the development of the industry in Zanzibar:

a) Enhance capacity through integrating horticulture farmers into the district planning process (DADPs);

b) Expand financial services to value chain actors including banking and insurance services targeted at the needs of horticulture farmers;

c) Improve business environment for horticultural industry through developing incentive package for both on-farm and marketing activities, supporting and expanding contract farming models and ensuring contract farming legislation;

d) Support domestic, regional and international export market development through strengthening horticultural fresh produce distribution networks;

e) Support the branding of Zanzibar horticultural products for regional and international markets;

f) Support the promotion of agro-processing activities in relation to targeted market including more protective and better designed packaging materials;

g) Expand access to affordable equipment and agriculture inputs through establishing public and private nurseries that are able to supply seedlings and planting materials of commercial value;

h) Promote the adoption of modern drip and micro – sprinkler irrigation practices and other on farm equipment; and

i) Ensure access to appropriate input subsidies to improve capacity across the value chain.

2.9.6 Oil crop Value Chain

In the 10 years' programme implementation, the plan will cover a total cost of **TZS 12.6 billion,** including **TZS 1.9 billion** from on-going projects and a total of **TZS 10.7 billion** of new programme interventions.

Coconuts Value Chain

Coconuts is the priority oil crop due to high demand for domestic and foreign market. The program will be responsible for the promotion and expansion of the production and productivity. The value addition of coconut will also focus on marketing and market access to the products to control importation and ultimately to increase exportation of prioritized oil and their product.

The program is focusing on increasing coconut production and productivity through enhancement of value chain approach by promoting good seeds and seedlings, production techniques and farming practice through the agricultural research institute and increase availability of East African tall variety for farmers. The East African Tall variety (EAT) is the predominant commonly grown in Zanzibar. It has a productive life of over 70 years, and starts bearing fruits after 5 to 7 years, depending on the management conditions.

Total area under coconut cultivation is 16,898 ha comprising of 3,332,421 coconut stems; of which 64% of coconut trees are in the high production age class and 11% in the aging class, that can be replaced by young ones to sustain the production (Zanzibar Woody Biomass Survey, 2013). Production figures indicate a significant rise

in the yields from 9,951.8 tons in 2018 to 25,347 tons in 2019 (MAINL). Despite this performance, annual production levels are below the annual demand of 81,908 tons. This is partly attributed by low yields of 1.5 tons/ha as compared to potential yields of 1.9 tons/ha. To supplement the demand gap, Zanzibar currently imports an average of 275 tons. Thus, the program targets to sustainably boost coconut production to 30,000 tons/year by 2030, through support in the formulation of coconuts legislation and implementation of strategies to revive the crop. The program will merge synergies with the recently-established special program for expansion of coconuts industry in the areas of research, extension and outreach services. In addition, public and private nurseries will be empowered to produce and supply 300,000 high quality seedlings annually through contract farming with farmers.

Sunflower value chain

Efforts will be made to promote sunflower cultivation, starting with 100 farmers (74 men, 26 women) who have been trained in the production, storage, use and processing sunflower oil. Moreover, 4 agricultural experts have been received practical training on sunflower value chain at the Tanzania Seed Quality Control Institute (TOSCI) - Morogoro. A total of six farms were established (2 for production and 4 for trainings purposes in the District Councils) both in Unguja and Pemba. A total of 2,902 kg of sunflowers were harvested and extracted 892 litres of edible oils worth TZS. 3,570,000 in the Bambi and Ole Dodeani sunflower oil refineries. The program aims to enhance training for farmers and agricultural professionals; to distribute quality seeds and increase investment in sunflower production within the value chain to enhance sunflower production and use.

Soybeans

The soybean Glycine max popularly known as soya is a legume native to East Asia. FAO has classified it as an oilseed (not a pulse). Soybean farming is a popular and profitable agricultural business in many parts of the world. The crop is mostly cultivated in countries with tropical and subtropical climates. As a human food, soya has been shown to be high in is flavones (anti-cancer compounds), lecithin, calcium, phosphorous and fibre; low in saturated fats; free of cholesterol; and is a cheap source of high-quality protein (40—50 percent) and oil (23 percent). It is therefore suitable as a fortifier of traditional staples as well as a nutritional supplement for certain vulnerable groups. In addition, soya is an almost ideal protein source for animal feed, especially for poultry.

At field level, soya is suitable as a nitrogen fixer, improves soil fertility and structure, and provides an excellent 'break crop' for cereal rotations. In Tanzania, its near-organic production also makes it suitable for niche markets. Required intervention:

- To promote soybean researching to get suitable varieties for Zanzibar

- To promote soybeans production as complementary crop, produced between paddy season to nourish and to supplement farmers' income
- To promote marketing of locally produced soybean (processing, branding etc.)

2.10. Programme Result Areas

Based on the above theory of change and results framework, the ZASTF has four main result areas aimed at contributing to the attainment of the Vision 2050 objectives (i.e., modernised and diversified agriculture focusing on technology-driven development, commercialization and food security). For each of the RAs, there are key components and equivalent programs. Therefore, Table 6 summarizes the key priority result areas with their overall objectives, which will also guide prioritized interventions.

Table 6: ZASTF Priority Result Areas, Objectives and High-level Outcomes

Result Area	Overall objectives	High Level Outcomes
A: Result Area 1: Enhanced enabling "environment" for agricultural transformation (7 Components/Programs).	To promote robust policies and legislations with strong institutions, adequate capacities, financing and coordination in place.	○ A1: Improved agriculture sector governance; ○ A2: Improved business environment through enhanced policy, financing, regulatory, and institutional frameworks; ○ A3: Empowered farmers and farmers' organization and cooperatives and stakeholder groups; ○ A4: Sector coordination improved; ○ A5: Agricultural Information System and technology up-scaled; ○ A6: Enhancing Agriculture Sector financing; and ○ A7: Institutional Support (PMU).
B: Result Area 2: Strengthened climate resilience and sustainable natural resources management (5 Components/Programs)	To have high quality agricultural production and technologies which promote resilience to climate change and other social economic shocks and risk.	○ B1: Natural resources sustainably managed to support agricultural development; ○ B2: Agriculture Technology and Research Improved; ○ B3: Improve agricultural extension services; ○ B4: Resilience for climate variability/change and natural disasters mainstreamed; and ○ B5: Improved food security and nutrition status.
C: Result Area 3: Expanded Rural Infrastructure (4 Components/Programs).	To ensure high quality and modern facilitative infrastructure support sustainable agricultural productivity and increased market efficiency and competitiveness.	○ C1: Infrastructure to foster production improved ○ C2. Infrastructure to facilitate export developed; ○ C3: Improved marketing infrastructure; and ○ C4: Agricultural production and value addition infrastructure and facilities improved.
D: Result Area 4: Intensified and Competitive and Commercialized Value Chains (2 Components/Programs).	To improve and expand marketing and promote value addition by a thriving competitive private sector and effective farmer organizations.	○ D1: Improve Market Services; and ○ D2: Support Development of Exclusive Economic Zones (EEZ).

PART 3: PROGRAMME, COST AND FINANCING IMPLEMENTATION

3.1. Programme Costs

An overall summary of the base development estimates for all the four result areas, ZASTF investment gives a total of **TZS 726.54 billion** (USD 322.91 million) to cover on-going projects and on new investments for the 10 years' period (Table 7). The cost of new investments will be **TZS 167.54 billion** (USD 74.46 million) and the cost of on-going projects is **TZS 559.00 billion** (USD 248.45 million). Based on the overall investment cost, the Revolutionary Government of Zanzibar would finance 25%, development partners 70% and private sector 5% of the programme budget. The overall budget does not cover any addition catalysed investments in new innovation businesses to be borne by investors and other emerging development partner support within the broader ZASTF framework. Table 8 summarizes the estimated investment cost.

Table 7: Overall Development Budget

SUMMARY	TOTAL PROGRAMME COST "000,000"				
Z-ASDP Result-Based Budget Estimates	TZS		726,540		
	USD		322.906		
	Year 1	Year 2	Year 3	Year 4 - 10	Total
RESULT AREA 1: ENHANCED ENABLING ENVIRONMENT					
A1: Improved agriculture sector governance	273	66	59	234	**631**
A2: Improved business environment through enhanced policy, financing, regulatory, and institutional frameworks	865	1,793	1,023	3,218	**6,898**
A3: Empowered farmers and farmers' organization and cooperatives and stakeholder groups	299	864	824	3,556	**5,543**
A4: Sector coordination improved	34	106	79	425	**644**
A5: Agricultural Information System and technology up-scaled	124	891	169	169	**1,352**
A6: Enhancing Agriculture Sector financing	32	264	246	1,273	**1,813**
A7: Institutional Support (PMU)	3,250	2,939	819	3,130	**10,138**
Sub-total of New Interventions	**4,877**	**6,923**	**3,219**	**12,005**	**27,024**
On-going projects	10,000	8,000	5,800	0	**23,800**
TOTAL RESULT AREA 1	**14,877**	**14,923**	**9,019**	**12,005**	**50,824**
RESULT AREA 2: STRENGTHENED RESILIENCE AND SUSTAINABLE NATURAL RESOURCE MANAGEMENT					
B1: Natural resources sustainably managed to support agricultural development	792	2,727	2,480	**4,814**	**10,813**
B2: Agriculture Technology and	1,364	2,451	2,199	**6,951**	**12,964**

Research Improved					
B3: Improve agricultural extension services	72	639	560	**2,279**	**3,549**
B4: Resilience for climate variability/ change and natural disasters mainstreamed	0	439	173	**477**	**1,089**
B5: Improved food security and nutrition status	528	861	783	**2,061**	**4,233**
Sub-total of New Interventions	**2,756**	**7,117**	**6,195**	**16,582**	**32,648**
On-going projects	11,200	9,000	7,000	0	27,200
TOTAL RESULT AREA 2	**13,956**	**16,117**	**13,195**	**16,582**	**59,848**
RESULT AREA 3: ENHANCED RURAL INFRASTRUCTURE					
C1: Infrastructure to facilitate export developed	0	781	563	41	**1,385**
C2: Improved marketing infrastructure	0	6,051	20,732	18,664	**45,447**
C3: Agricultural production and value addition infrastructure and facilities improved	23,625	3,524	12,578	14134	**53,861**
Sub-total of New Interventions	23,625	10,356	33,873	32,839	**100,693**
On-going projects	80,000	90,000	34,006	0	204,006
TOTAL RESULT AREA 3	**103,625**	**100,356**	**67,879**	**32,839**	**304,699**
RESULT AREA 4: INTENSIFIED AND COMPETITIVE VALUE CHAINS					
D1: Improving Marketing and value addition services	-	813	446	1,497	**2,756**
D2: Support Development of Exclusive Economic Zones (EEZ)	103	976	938	2,397	**4,413**
Sub-total of New Interventions	103	1,789	1,384	3,894	**7,169**
On-going projects	104,000	100,000	100,000	0	304,000
TOTAL RESULT AREA 4	**104,103**	**101,789**	**101,384**	**3,894**	**311,169**
TOTAL PROGRAMME COST	**236,561**	**233,185**	**191,477**	**65,320**	**726,540**

3.2. Financing Arrangements

Because of the transformative nature of ZASTF, financing is a major driver of the programme success. A package of financing instruments including public and private sector funding has been developed to finance the capital costs of the transformation. The various instruments are mutually enabling across the result areas. Currently, financing of agriculture sector in Zanzibar follows the national budgeting and financial flow regime as coordinated by the planning commission. The agriculture sector in Zanzibar is still largely public sector dominated. The budget cycle (Figure 6) illustrates the process of allocation and tracking.

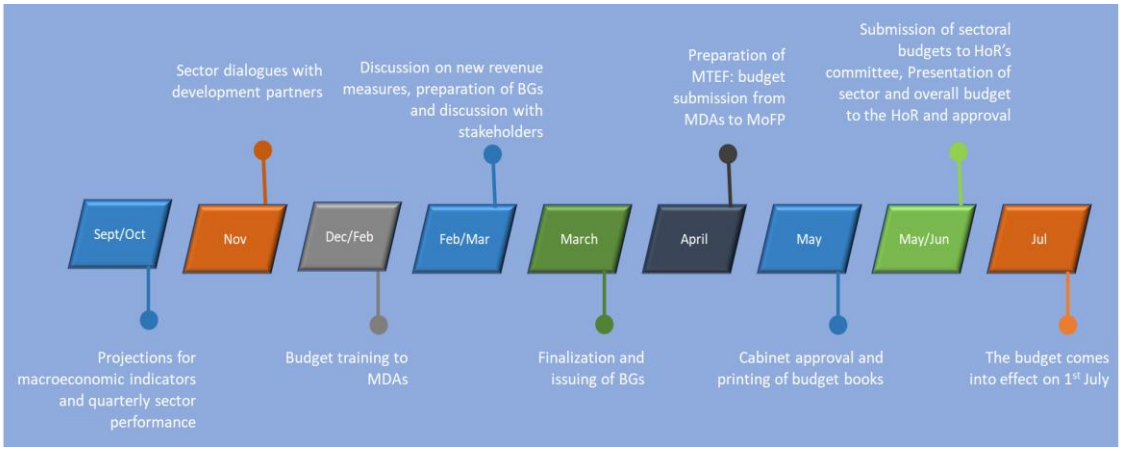

Figure 6: Budget cycle in Zanzibar. ***Source*****:** UNICEF (2017)

Private sector influence and investment is just beginning to trickle. Public sector is expected to provide the enabling environment in which private sector activities can flourish by for instance enacting policies to correct market constraints and promoting inclusive opportunities in agriculture value chain. All financial arrangements are based on budget guidelines under the President's Office - Finance and Planning (PO- FP). A programme-based budget is in use at all levels. The main programmes representing functions of the MAINL which include Agriculture, Irrigation, Natural Resource management, Livestock, and Coordination and Administration.

Each of the programmes has sub-programmes in which further budget allocation is directed in line with ceilings established by the Planning Commission and focusing on national priorities. Each Sub Program has targets and goals to achieve/accomplish the planned budget line. Each Ministry's allocation is further divided within their institutions. Each institution allocates its share according to assigned annual targets.

The agriculture sector funding arranged included both recurrent budget and capital budget. Recurrent budget is the full responsibility of the Government. Capital budget benefits from both public and development partner funding. To implement ZASTF, funds will be channelled through General Budget Support (GBS), basket fund, and direct financing arrangements. At national level, the MAINL will coordinate financing arrangements while at District level funding scheme will implement at their level. Approved annual plans and budgets will be submitted to the national budgetary authority for approval and disbursements.

Agriculture projects may also be funded through other mechanisms for ZASTF. In this regard, funds will flow through the exchequer system. Development partners can also directly fund the projects through off-budget financing (and aligned with ZASTF) which is never recorded in the government's agricultural expenditure accounts. RGoZ prefers to use the Basket Fund system for transparency and proper recording and coordination. Basket fund offers the funding arrangement as it is well integrated and expedient and avoids a fragmentation while reducing transaction costs. It also allows

for effective PPP arrangement in the funds flow systems. At the same time, it is recognized that some DPs may prefer providing Project support for selected programs of ZASTF, and it would be vital to ensure the content/intentions of the project support is aligned with the specific programs of ZASTF.

With this arrangement all funds for implementing ZASTF will be accounted for. The system is cascaded to the districts. Assumes a basket fund at national level (for Zanzibar) and at District level). However, M&E and capacity strengthening will be done at both national and local levels on financial flow systems and management. The clear reporting, planning and monitoring will enable all stakeholders to understand reasons and logic for contributing to the Basket Fund and the Aligned Project Modality.

PART 4. RESPONSIBILITIES OF KEY ACTORS, INSTITUTIONAL AND IMPLEMENTATION ARRANGEMENTS

4.1. Responsibilities of Key Actors:

This Programme has a role to work with a wide spectrum of actors that include public and private sectors, academia and research institutions, civil society institutions, District Councils, and National Government Agencies. The functions of each group are as follows:

4.1.1 Public Sector Organizations

The Ministry responsible for Agriculture, Irrigation, Natural Resources and Livestock (MAINL) is the leading institution to deliver on the implementation of the Programme. Given the complexity of the agricultural development in Zanzibar. the MAINL will responsible for providing policy guidance, technical support, innovation on agricultural initiatives as well as facilitating outsourcing for revenue collection. The ministry will be supported by the Agriculture Sector Lead Ministries (ASLMs), namely: the ministry responsible for Lands Housing Water and Energy; the ministry responsible for Trade and Industries; the ministry responsible for Finance and Planning; the ministry responsible for Labour Empowerment Elder Women and Children; the ministry responsible for Construction Communication and Transport; the Vice President's Office responsible for Environment and Disasters; the President's Office responsible for Regional Administration and Local Government (PO-RALG). The emphasis of the Agricultural Sector Lead Ministries shall be to provide the facilitative environment for the growth of private sector activities. Their roles shall include:

i. Providing and supervising the implementation of regulatory services for sector development;

ii. Monitoring the performance of private and public agricultural sector support services with the aim of improving their quality to ensure competitive markets;

iii. Formulating and reviewing sectoral policies and monitoring the overall performance of agricultural sector;

iv. Contributing to the development and promotion of improved agricultural practices;

v. Promoting private sector's role in primary production, processing, marketing and the provision of support services; and

vi. Promoting farmer organizations for empowering farmers, developing their advocacy and lobbying capacity and participating in service delivery and resource mobilization.

vii. Besides ASLMs, complementarity between the mandates of MAINL and other ministries of the central government is also crucial in linking the coordination mechanisms required for an effective policy implementation and management

of important cross-cutting domains that influence the sector. These include the ministry responsible for Health, the ministry responsible for Education and Vocational Training, and the ministry responsible for Tourism and Information, and the ministry responsible for Good Governance.

Specific functions of the public sector organizations are as follows:

a) Regional Administration: Shall be coordinating all agricultural activities in the region through respective Districts where the actual agricultural administration at district level will be done. The main beneficiaries are farmers who are under the Shehas and the main implementers of agricultural activities. The districts will manage the District Agricultural Centres where agricultural related NGOs will be operating providing necessary support related to crops, livestock, forestry, fisheries and environment to farmers.

b) The Second Vice President's Office (SVPO) shall be responsible for the coordination of government business including policies and the issues that cut across ministries and institutions. Specifically, for the agriculture sector, main functions include: (i) overseeing government's response to environmental issues that are relevant to the implementation of the policy; (ii) issues related to disaster management; and (iii) research coordination.

c) The ministry responsible for Finance and Planning shall be responsible for mobilizing resources for funding the agricultural sector from national sources as well as through both bilateral and multilateral support for the sector. Through fiscal policy, the ministry will rationalize, harmonize and monitor taxes in the agricultural sector, a critical factor in ensuring incentives for increased production, value addition and processing. The ministry shall also hasten the transformation process to increase productivity within the sector due to the involvement of the private sector in agriculture. The Ministry, in collaboration with ASLMs through the Zanzibar Investment Promotion Agency – ZIPA shall prepare investment incentives in the agricultural sector and encourage a favourable investment environment for attracting investors and bring about new technologies in the development of agriculture.

d) The ministry responsible for infrastructure development shall: (i) oversee improvements of the infrastructure like roads, which are critical enablers of the sector's development as they enable the smooth flow of goods and services; (ii) provide the necessary backstopping to LGAs for building and maintaining district and feeder roads; and (iii) oversee the construction and maintenance of trunk roads to facilitate crop input and output marketing.

e) The ministry responsible for Communication and Transport shall: (i) oversee the development and availability of appropriate ICT infrastructure and connectivity in rural areas; (ii) ensure an efficient transportation system to facilitate input and

output markets and to provide effective early warning information for weather forecast for farmers and other actors in the agricultural sector; and (iii) facilitate, in collaboration with its stakeholders, the availability of strategic storage facilities to enable proper storage and freight of perishable agricultural produce to domestic and export market.

f) The ministry responsible for Lands Housing Water and Energy shall: (i) facilitate land accessibility for agricultural investment; (ii) provide land adjudication, registration and issuance of title deeds for agriculture development; (iii) manage sustainable utilization of water resources and the provision of water rights for agriculture development; and (iv) oversee development of reliable, affordable, and environmentally sound alternative energy supplies at farm level. Government agricultural farms will be developed and equipped with irrigation facilities to support short term farming. Youth will be provided with the developed plots on land use approach for production purposes only. No ownership or land rights will be provided on these lands.

g) The ministry responsible for Labour Empowerment Elder Women and Children shall: (i) promote aspects of community empowerment and gender mainstreaming; (ii) coordinate activities of NGOs, some of which are active in the development of the agricultural sector; (iii) sensitize, attract and empower youths to undertake rural jobs and establish rural-based agribusiness so that they become farming entrepreneurs and to eventually minimize rural-urban migration among youths.

h) The ministry responsible for Education and Vocation Training shall facilitate the incorporation of agriculture and entrepreneurship skills into the curricula of all levels of academic and vocational education.

i) The ministry responsible for Health shall provide measures that ensure a healthy and productive agricultural workforce – including farmers and all others working in the sector -- through the provision of preventive and clinical services. In particular, the Ministry shall sensitize rural communities on good nutrition; control of diseases such as HIV/AIDS, malaria and waterborne diseases; and on such problems as alcoholism and drug abuse, which have a significant impact on agricultural production.

j) The ministry responsible for Good Governance shall dispense justice as the need arises to protect both life and property and as an arbitrator in disputes and conflicts. Respect for law and order is a fundamental condition for agricultural development.

k) The President's Office - Public Service Management shall hasten transformation of Public Service to a more performing, dynamic and transparent system.

4.1.2 Private Sector Institutions

The policy has a role to create an enabling environment that would encourage private sector participation. The private sector plays a crucial and multifaceted role in driving agricultural development, moving beyond traditional farming to encompass the entire value chain. Some roles of the private sector will include: (i) implementing the policy, legislation, plans, regulation and strategies; (ii) promote investment in the sector; and (iii) participate in scientific research. Moreover, private sector will have the functions of supplying inputs and disseminating technology including seeds (Private companies - develop, produce, and distribute high-yielding, hybrid, and climate-resilient seeds - rice, vegetables, maize); fertilizers and agrochemicals (major players - manufacture, import, and distribute fertilizers, pesticides, and herbicides, improving access and quality); farm machinery and equipment (companies import, manufacture, and sell tractors, power tillers, irrigation pumps, harvesters, and other labor-saving technologies, promoting mechanization); and animal feed and health (private firms produce and distribute quality poultry, dairy, and aquaculture feed and veterinary medicines/vaccines).

Furthermore, private sector will be supporting provision of agricultural finance and insurance services through microfinance Institutions – MFIs (Provide crucial credit to smallholder farmers); commercial banks (offer larger loans for agribusinesses, machinery, and commercial farming through dedicated agricultural credit programs); mobile financial services -MFS (enable digital payments, savings, and credit access); as well as insurance (private insurers - often in partnership - offer crop and livestock insurance products, mitigating risks from climate shocks).

Another important functions of private sector under this framework are procurement, processing and value addition through commodity Trading (private traders and aggregators buy crops directly from farmers, providing market access); food processing (large companies process fruits, vegetables, dairy, poultry, fish, and grains into packaged foods, juices, snacks, etc., adding significant value, reducing post-harvest losses, and creating stable demand); cold storage and warehousing (private investment in cold chains - especially for potatoes, fruits, vegetables - and warehouses helps preserve produce and stabilize prices. Other functions include market linkages and retail where supermarkets and retail chains (growing chains, source directly from farmers/aggregators, offering better prices and quality standards); export (private companies drive exports of processed foods, frozen fish and vegetables); and e-commerce platforms (emerging platforms connect farmers/producers directly with consumers/retailers) will be employed.

Private sector will also be one of the implementing agencies in provision of technology and innovation (Agri-Tech) through digital platforms (startups offer mobile apps for market prices advisory services, input ordering, and financial inclusion); precision Agriculture (emerging use of sensors, data analytics, and IoT for better resource

management); and biotechnology (private research and development - especially in seeds - focuses on developing improved varieties). Contract farming and out-grower schemes shall include processors, exporters, and large agribusinesses often allowing contract farmers to produce specific crops/livestock, providing inputs, technical advice, and guaranteed buy-back, reducing farmer risk. Research and Development (R&D) will involve larger agribusinesses investment, particularly in seed technology, animal feed formulations, and processing techniques, complementing public research; with extension and advisory services allowing input companies and processors to provide technical training and advisory services to farmers on product usage and best practices to boost productivity and quality.

It is anticipated that Private Sector involvement will bring on positive impact on increased productivity and efficiency through better inputs, technology, and knowledge transfer; reduced post-harvest losses via processing and improved storage; enhanced market access and price stability over direct procurement, contracts, and retail chains; value addition and diversification by moving beyond raw commodities to processed goods and higher-value crops (horticulture, fisheries, livestock); job creation by enhancing input supply, processing, logistics, marketing, and retail; technology adoption and innovation through driving digital solutions and modern practices; and improved farmer income through better prices, lower input costs, and reduced risks (though challenges remain in ensuring fair shares).

In essence, the private sector is the engine driving agricultural modernization, market integration, value addition, and innovation, transforming the sector from subsistence farming towards a more commercial, resilient, and market-oriented system.

4.1.3 Civil Society Organizations

The policy has a role to work in partnership with NGOs, CBOs, Cooperatives, FFS, Groups on (i) formulation of legislation, regulations, guidelines and standards; (ii) ensure sustainable utilization of land and water resources; (iii) participate in data collection; (iv) pursue skills development in smart agriculture and (v) organize to access loans, credits to procure inputs, machine, tools, and (vi) providing support in managing the District Agricultural centers.

4.1.4 Development Partners

Development Partners have a role in joint planning, review meetings and identify support needs at country level. More specific the actors are expected to (i) advance agricultural research to enable innovation and technology transfer (ii) broaden supplementary use of ICT in extension supporting services (iii) broaden the scope and modality of subsidy (iv) restrain shipment and trans-boundary movement of plants materials (v) ascertain with quality of produced food to help protect the public health (vi) improve germplasm to generating superior crops (vii) intensify the use of farm power in the agricultural production (ix) improve the crop market value, employment and average farm income (x) build capacity of producers on risk management skills.

4.2. Implementation Arrangements

Agriculture sector in Zanzibar has multiple actors and operates at multiple levels (national, district and shehia). At the national level, key decision makers within the ZPC are responsible for achieving national vision and international protocol (Vision 2050, ZADEP 2021/2026, SDGs, CAADP among others). The MAINL is the implementing ministry for agriculture sector programmes supported by various ASLMs. Current participating ASLMs are Ministries responsible for Agriculture, Land, Water, Energy, Trade, Industries, Finance, Empowerment, Women, Youth, Education, Construction, Communication, Governance and Transport. The implementation modalities will be aligned to the country context and priorities but borrow from CAADP national investment plan implementation guidelines.

At district level, the District Commissioner shall be responsible for planning, designing, implementation and monitoring of programme interventions. Each district shall prepare and operationalize the District Agricultural Development Plan (DADP) and budget in conformity with the ZASTF.

At Shehia level, Shehia committee shall be responsible for implementation and monitoring of programme activities under supervision of the Sheha. Block Extension Officers (BEO) in liaison with subject matter specialists shall provide related services to the rural community through the District Agricultural centers.

PART 5: MONITORING AND EVALUATION

ZASTF implementation and performance in terms of driving the country's industrialization processes will be systematically tracked. The overall goal for integrating M&E in ZASTF implementation to strengthen and align monitoring capacity and systems in regards to create better data generation, monitoring mechanisms, review and support for policy making initiatives for sector development. Currently, the M&E system is clear and functioning at national level as supervised by the ZPC. At the sector levels M&E implementation is in formative stages with structures and reporting lines and guidelines in place but policies, strategies and plans need strengthening. At the district levels M&E is just getting introduced. However, there are capacity gaps for M&E at the district level. Currently, the following have been earmarked for improvement:

a) Surveys and surveillance effectiveness;
b) Functionality of databases;
c) Enhancement of practice of evaluation and research;
d) Data management, dissemination and use;
e) Adequacy of Equipment and software;
f) Human resource capacity and culture of performance/result-based M&E; and
g) Coordination of M&E processes.

5.1. ZASTF Monitoring and Evaluation System

A clearly defined and public structured M&E systems are in place from the beginning to inform all sector stakeholders on the expectations for performance indicators. ICT technologies will be deployed to improve efficiency of data collection and reporting and to increase the delivery and analysis of information from the field. The Delivery unit and M&E secretariat of the ZPC will apply an M&E framework and instrument template very early in the programme. The framework describes the pathway for information flow, the responsible parties in its execution, the timeframe, the analysis method in relation to the objectives of the process and the mechanism for response to the conditions that it reveals. The Results Framework (Annex II) will guide the measurement and impact assessment.

The purpose of the M&E component of ZASTF (elements of which complement data, M&E and mutual accountability aspects of *Result Area 1: Enhanced enabling environment for agricultural transformation"*). A framework is in place to be used in monitoring progress towards the successful implementation of ZASTF to support mutual, peer and progress reviews at the national, regional and district levels, and to provide a conceptual basis for impact assessment of agricultural sector development interventions.

The central focus of the framework and accompanying guidelines is the question of what to monitor, based on the ZASTF theory of change and result framework to show how the investments and outputs associated with any one intervention under any one result area interact with (i.e., affects and is affected by) the investments and outputs associated with the other result areas through complementarity or substitutability of investments (or through value addition, improvement of food security, improvement farmer incomes and overall competitiveness of commodities) to affect achievement of the overall ZASTF goals and objectives. Furthermore, the framework shows how the investment decision and realization of the various outputs and outcomes are influenced by several conditioning factors and risks such as governance, institutional dynamics and trade and macroeconomic policies. These factors are known to affect the performance of the agriculture sector and, consequently, on achieving the overall ZASTF goals and objectives, compared to investments and policies that directly target the agricultural sector. The data flow processes are summarized in Figure 7.

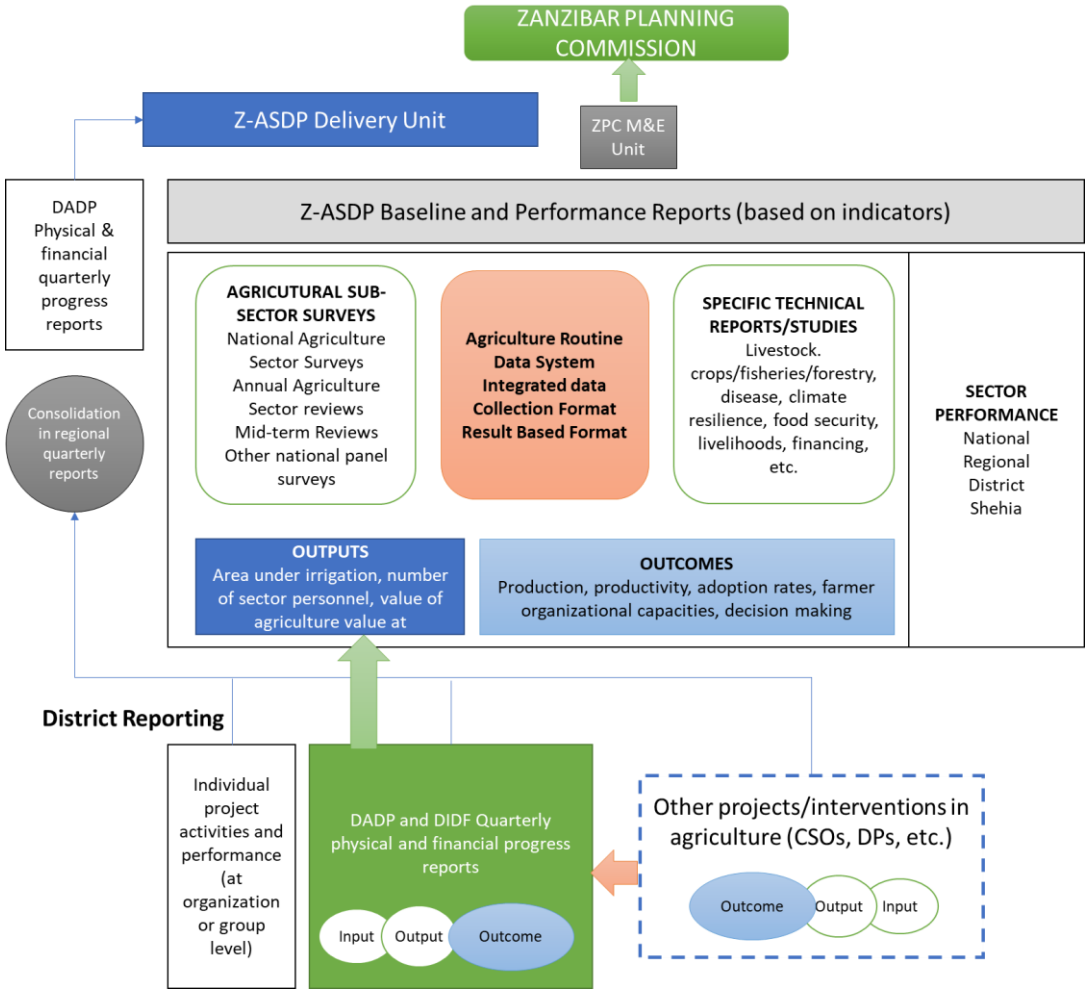

Figure 7: ZASTF Systems for sector data collection and performance reporting

5.2. The ZASTF National Forums as Local JSR Platforms

The agriculture forums to be convened annually will act as the Joint Sector Review platforms in which mutual review of progress, performance and challenges within ZASTF; and concrete dialogue on implementation priorities and processes will be conducted. The specific objectives of the forum will be to:

a) Facilitate a constructive dialogue and exchange among senior level representatives of stakeholders: government, development partners, the business sector, farmers and value chain actor organizations, research and academia, and civil society organisations;

b) Facilitate the coordination of efforts in dialogue, investment and implementation assistance, with a view to avoiding duplication and creating synergies;

c) Identify, when necessary, relevant activities, targets and indicators that a ZASTF actor needs to take forward and report on in the following forum;

d) Inform about development partner actions, options and commitments that are undertaken to support priority ZASTF efforts and investments;

e) Jointly review targets and priorities for each result area and follow up actions taken to foster efficiency and effectiveness as well as the mainstreaming of cross-cutting issues, such as climate change/environmental sustainability, youth agenda;

f) professional associations) on ZASTF implementation, as well as on the broader strategic issues facing the agricultural sector in Zanzibar;

g) Provide a forum for a mutual-review of progress and accountability in ZASTF implementation based on the overall programme M&E indicators.

h) Review lessons and good practices regarding the implementation of the programme to support the identification, design, and implementation of new commitments and to explore ways of securing the widest possible buy-in for ZASTF; and

i) Take stock of the types of investments and development partner assistance provided and ZASTF accomplishments achieved through the Basket Fund and other financing arrangements.

5.3. Biannual Reviews

ZASTF implementation will remain CAADP compliant to ensure opportunities of agriculture and its positive contribution to economic transformation of Zanzibar is realized, tracked and reported. Zanzibar agriculture sector actors will partner with key national and regional institutions to: (i) develop mechanisms that enhance capacity for knowledge and data generation and management to strengthen evidence based

planning and implementation; (ii) institutionalize a system for review that encourages good performance on achievement of progress made in implementing the provisions of Malabo Declaration including implementing biennial performance reporting; and (iii) conducting on a biennial basis, Agricultural Sector Review Process.

ZASTF review and reporting process will largely be a national affair but reports will be shared with mainland Tanzania for further aggregation and submission to the AUC. The inclusive nature of the process and a standard CAADP methodological approach will be used to collect and analyse data and develop reports at different levels. The process complements and aligns to the national M&E processes.

5.4. Programme Sustainability

ZASTF considers sustainability to mean multiple approaches to securing long-term impacts as follows:

a. Social sustainability: ZASTF considers the local context by including community needs and policy changes. It keeps the stakeholders informed about program progress, challenges, and successes, also fosters trust and collaboration. ZASTF takes into account the involvement of key stakeholders and leaders who would be champion of the program. Thus, their support is crucial for long-term success. Above all the program is designed to adapt any changing circumstances and will regularly assess and adjust strategies based on feedback and new information.

b. Programs and Services Integration: ZASTF embeds the program within existing local infrastructure and collaborating with other organizations and services to ensure long-term sustainability.

c. Strategic Partnerships: ZASTF is created to collaborate with various organizations, government agencies, and other stakeholders, this is made to guarantee ownership of the program.

d. Diverse Financial Opportunities: ZASTF explores various funding sources beyond public funds it includes diverse financial support to enhance sustainability.

e. Environmental sustainability: ZASTF considers forest protection and conservation, sustainable utilization of water resources including water harvesting techniques and water conservation. It also focuses on environmentally sound in food production systems and alternative energy supplies at farm level. ZASTF adopts smart agriculture technologies whereby crop water requirements, irrigation and potential evapotranspiration are priority for sustainable farming practices and in response to future climate change scenarios.

5.5. Risks and Risk Management

The RGoZ is aware of the uncertain environment in which the ZASTF will be implemented. This environment is expected to dynamically changes with risks and opportunities that may impact on successful execution of the projects and interventions for agricultural development. As part of development of this programme, a detailed risk charter will be developed with mitigation measures outlined. Risk management will be part and parcel of the projects designed with responsibilities assigned. The objective is to manage risks to minimise the exposure of ZASTF process, implementing partners and value chain beneficiaries to any event, or set of occurrences able to cause adverse effects, while concurrently maximising the efficiency and effectiveness of the ZASTF implementation in accordance with best practice.

RGoZ is committed to ensuring protection of the interest of the business environment and agriculture value chain actors, investors, development partners and the natural environment. Risk management will be an integral part of ZASTF implementation and M&E with the overall approach of balancing the control of risks and maximization of opportunities for benefits to investors. The ZASTF development partners will develop and integrated a framework to systematically identify, measure and manage risk in accordance. It will be the responsibility of every stakeholder to undertake risk assessments on a regular basis especially at the start of the programme implementation, at the onset of new projects, whenever a significant policy change is envisaged or done and at regular M&E intervals.

The potential risk categories include: Business or commercial and legal risks; Economic/Financial risks; Technology risks; Operational risks; Political risks; Programme Management risks; Human resource risks; Institutional risks; and Environment/Natural events.

ZASTF will adopt a risk management framework that allows assessment of both the likelihood and consequence or impact of identified risks. On the basis of these two a level of risk is assignment which dictates the mitigation measure to be adopted.