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Staples Value Chain Project-NAFAKA VALUE CHAIN ASSESSMENT

July 29, 2011

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STAPLES VALUE CHAIN *NAFAKA* ACTIVITY VALUE CHAIN ASSESSMENT JULY 29, 2011

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AFSP	Accelerated Food Security Program	DIDF	District Irrigation Development Fund
AECF	Africa Enterprise Challenge Fund	EABC	East African Business Council
AU	African Union	EAC	East African Community
ACT	Agricultural Council of Tanzania	ETW	Entrepreneurship Training Workshop
AMCOS	Agricultural Marketing Cooperative Societies	EC	European Commission
ARI	Agricultural Research Institute	EU	European Union
ASDP	Agricultural Sector Development Programme	FIP	Farm Input Promotion
ASDS	Agricultural Sector Development Strategy	FBG	Farmer Business Group
ASLMs	Agricultural Sector Lead Ministries	FFS	Farmer Field School
ASA	Agricultural Seed Agency	FO	Farmers' Organisation
ASDP	Agriculture Sector Development Program	FaaB	Farming as a Business
ASLM	Agriculture Sector Lead Ministries	FaFB	Farming as Family Business
ASSP	Agriculture Sector Support Program	FBME	Federal Bank of Middle East
AGRA	Alliance for a Green Revolution in Africa	FSDT	Financial Sector Development Trust
AKIRIGO	Association of Kilombero High Quality Rice Growers	FGD	Focussed Group Discussion
ASEAN	Association of the South Eastern Nations	FAO	Food and Agriculture Organization
BoT	Bank of Tanzania	FDI	Foreign Direct Investment
BET	Board of External Trade	TICADIV	Fourth Tokyo International Conference on African Development
BRITA	Building Rural Income Through Associations	FTA	Free Trade Area
BDS	Business Development Services	GHI	Global Hunger Index
BRELA	Business Registration and Licensing Agency	GAP	Good Agronomy Practice
CAN	Calcium Ammonium Nitrate	GoT	Government of Tanzania
CGO- K	Cereal Growers Organization of Kongwa	GDP	Gross Domestic Product
COPA	Cereals and Other Produce Authority	Ha	Hectare
COPB	Cereals and Other Produce Board	HIMIC	High and Medium Income Consumers
CNFA	Citizen Network for Foreign Affairs	IWRM	Integrated Water Resource Management
CARD	Coalition of African Rice Development	ISO	International Organisation of Standardisation
CIP	Commodity Investment Plans	IRRI	International Rice Research Institute
COMESA	Common Market for Eastern and Southern Africa	ICS	Inventory Credit Scheme
CRDB	Community Rural Development Bank	JICA	Japan International Cooperation Agency
CAADP	Comprehensive Africa Agriculture Development Programme	KACE	Kenyan Agricultural Commodity Exchange
CFSV	Comprehensive Food Security and Vulnerability Analysis	KFT	Key Farmer Training
CF	Contract Farming – Outgrowers' Scheme	KATC	Kilimanjaro Agricultural Training Centre
CSB	Corn Soya Blend	Kg	Kilogram
CIF	Cost Insurance and Freight	KATRIN	Kilombero Agricultural Training and Research Institute
CSF	Critical Success Factors	KPL	Kilombero Plantations Limited
DSM	Dar es Salaam	KRCC	Korea Rural Community Cooperation
DRC	Democratic Republic of Congo	LGAs	Local Government Authorities
DPP	Department of Policy and Planning	LGA	Local Government Authority
DRD	Department of Research and Development	MMA	Match Maker Associates Limited
DAP	Di-Ammonium Phosphate	MTEF	Medium Term Expenditure Framework
DALDO	District Agriculture and Livestock Development Officer	MT	Metric Ton
DALDO	District Agriculture and Livestock Development Officer	MFI	Micro Finance Institutions
DADGs	District Agriculture Development Grants	MDGs	Millennium Development Goals
DADPs	District Agriculture Development Plans	MOANR	Ministry of Agriculture and Natural Resources – Zanzibar
DCDGs	District Capacity Development Grants	MAFSC	Ministry of Agriculture Food security and Cooperatives
DC	District Commissioner	MATI	Ministry of Agriculture Training Institute
DEBGs	District Extension Block Grants	MAFC	Ministry of Agriculture, Food Security and Cooperatives
DFT	District Facilitation Team	MoF	Ministry of Finance
DFTs	District Facilitation Teams	MITM	Ministry of Industry, Trade and Marketing

MeTL	Mohamed Enterprises Tanzania Limited	SHFS	Southern Highlands Food Systems
MVIWATA	Muungano wa Vikundi vya Wakulima Tanzania – (Farmer’s Network)	SIEM	Sub Sector Intervention Element Matrix
NAFCO	National Agriculture and Food Corporation	SRI	System of Rice Intensification
NBC	National Bank of Commerce	TFA	Tanganyika Farmers’ Association
NFRA	National Food Reserve Agency	TZ	Tanzania
NIDF	National Irrigation Development Fund	TC- SDIA	Tanzania – Japan Technical Cooperation in Supporting Service Delivery Systems of Irrigation
NIMP	National Irrigation Master Plan	TAFSIP	Tanzania Agricultural and Food Security Investment Plan
NMB	National Microfinance Bank	TAP	Tanzania Agriculture Partnership
NMC	National Milling Cooperation	TASP	Tanzania Agromerchant Strengthening Program
MVIWATA	National Network of Farmers’ Groups	TCE	Tanzania Commodity Exchange
NPGRG	National Plant Genetic Resource Centre	TDV	Tanzania Development Vision
NRDS	National Rice Development Strategy	TFDA	Tanzania Food and Drugs Authority
NSGRP	National Strategy for Growth and Reduction of Poverty	TFNC	Tanzania Food and Nutrition Centre
NERICA	New Rice for Africa	TAGRODE	Tanzania Grass-Root Development
NTB	Non Tariff Barriers	TIB	Tanzania Investment Bank
NGOs	Non-Governmental Organizations	TOSCI	Tanzania Official Seed Certification Institute
OLAM	Olam Tanzania Limited	TPSF	Tanzania Private Sector Foundation
PADEP	Participatory Agricultural Development and Empowerment Project	TARIPA	Tanzania Rice Partnership
PRA	Participatory Rural Appraisals	TASAF	Tanzania Social Action Fund
PMO	Prime Minister’s Office	TACE	Tanzanian Agricultural Commodity Exchange
PASS	Private Agricultural Sector Support Limited	TADB	Tanzanian Agricultural Development Bank
PMG	Producers’ Marketing Group	TAGMARK:CNFA	Tanzanian Agricultural Market Development Trust: Conference of National Foreign Agricultural Merchants
PRIDE	Promotion of Rural Initiative and Development Enterprises Limited	TAP	Tanzanian Agricultural Partnership
PPP	Public Private Partnership	TBS	Tanzanian Bureau of Standards
P4P	Purchase for Progress	TCCIA	Tanzanian Chamber of Commerce Industry and Agriculture
QDS	Quality Delivered Seeds	TFC	Tanzanian Fertilizers Company
QGL	Quality Group Limited	TIB	Tanzanian Investment Bank
KE	Republic of Kenya	TIC	Tanzanian Investment Centre
RGZ	Revolution Government of Zanzibar	TShs	Tanzanian Shillings
RTF	Rice Trust Fund	TZS	Tanzanian Shillings
NORGESVEL	Royal Norwegian Society for Development	TBT	Technical Barriers to Trade
RUBADA	Rufiji Basin Development Authority	TOR	Terms of Reference
RFSP	Rural Financing Support Programme	UPOV	The International Union for the Protection of New Varieties of Plant
RLDC	Rural Livelihood Development Company	ToT	Training of Trainers
RUDI	Rural urban Development Initiatives	UG	Uganda
RW	Rwanda	UWAWAKUDA	Umoja wa Wakulima wa Kilimo chan Umwagiliaji Dakawa
SPS	Sanitary and Phytosanitary	UAE	United Arab Emirates
SILC	Saving and Internal Lending Community	UK	United Kingdom
SACCOS	Savings and Credit Cooperative Societies	UNCTAD	United Nations Conference on Trade and Development
SGM	Simplified Gross Margins	US	United States
SGP	Simplified Gross Profit	USAID	United States Agency for International Development
SME	Small and Medium Enterprises	USD	United States Dollars
SELF	Small Entrepreneurs Loan Facility	USA	United States of America
SIDO	Small Industries Development Organization	VAT	Value Added Tax
SHF	Smallholder Farmer	VCD	Value Chain Development
SOM	Soil Organic Matter	WRS	Warehouse Receipt System
SUA	Sokoine University of Agriculture	WB	World Bank
SADC	Southern African Development Community	WFP	World Food Programme
SAGCOT	Southern Agricultural Growth Corridor of Tanzania	WSSD	World Summit on Sustainable Development
SHC	Southern Highland Company		

I. EXECUTIVE SUMMARY AND MAIN RECOMMENDATIONS

Rice

Key findings

- Increase in consumption (5.4% annually) exceeds annual population growth (2.88%).
- Tanzania total production in 2010 was about 900,000 metric tons (mt). However, the mainland and Zanzibar import respectively 8% and 85% of their consumption to cover domestic demand.
- The annual supply deficit in the EAC region is 3.3 million mt, which is met by imports.
- 90% of production is by smallholder farmers (SHFs), with production concentrated in Mbeya, Morogoro, Arusha, Iringa, Mwanza and Shinyanga regions.
- Productivity is very low (2mt/ha milled rice) compared to the Africa average (4mt/ha) and world average (4.5mt/ha)

Principal opportunities

- Potential to double productivity .
- Regional traders and SME millers could supply other critical services, e.g., inputs, extension, market information, equipment, etc.
- Large commercial investments are emerging (e.g., KPL).

Proposed strategies

1. Promote irrigation schemes as production-aggregation and service-delivery clusters through three initial entry points:
 - Kilombero Plantations Ltd -outgrower scheme.
 - SME Millers & Regional Traders - market linkages with Bakhresa Group.
 - Dakawa, Kolongoro and Sanjo- (e.g., TANRICE) - joint venture ownership model.
2. Promote market based approaches for upgrading the rice sub sector in Zanzibar.
3. Strengthen the capacity of critical service providers servicing above clusters.

Maize

Key findings

- Global increase in maize production and trade.
- Maize is strategically important for food security.
- Regional trade increased 35% between 1999 and 2008.
- National maize production was estimated at 3.65 million mt in 2007, with yields from 1.3 to 3 tons per acre.
- Maize trade driven by millers through independent agents.
- Export bans constrain investment in productivity and storage.

Principal opportunities

- Intensify product aggregation and production services.
- Support potential change drivers.

Proposed strategies

Promote clusters through:

1. Three dynamic integrated market channels with considerable growth potential: millers, institutional buyers and large traders.
2. Increasing producer options for financial services, improving farmer access to markets, credit/tractor/transport services, thereby stimulating demand for these services.
3. Inventory credit/warehouse receipts scheme model.
4. Block farms model.



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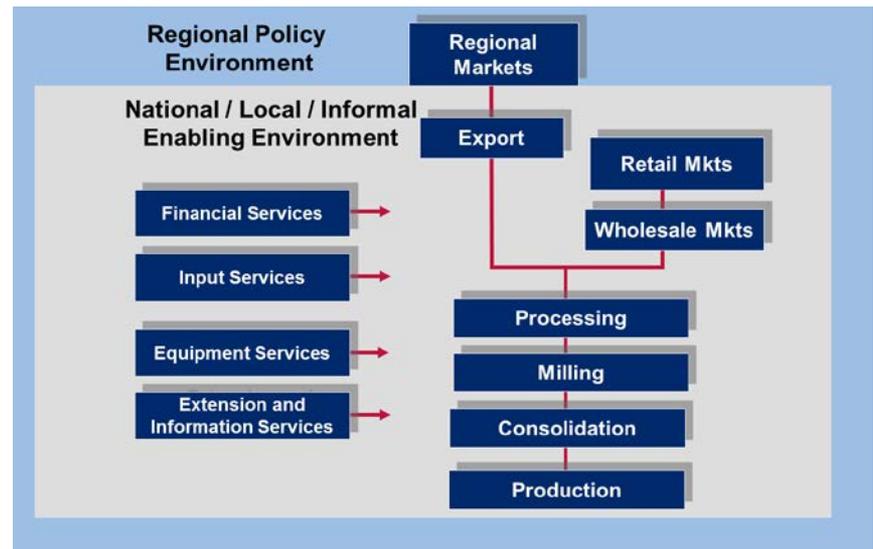
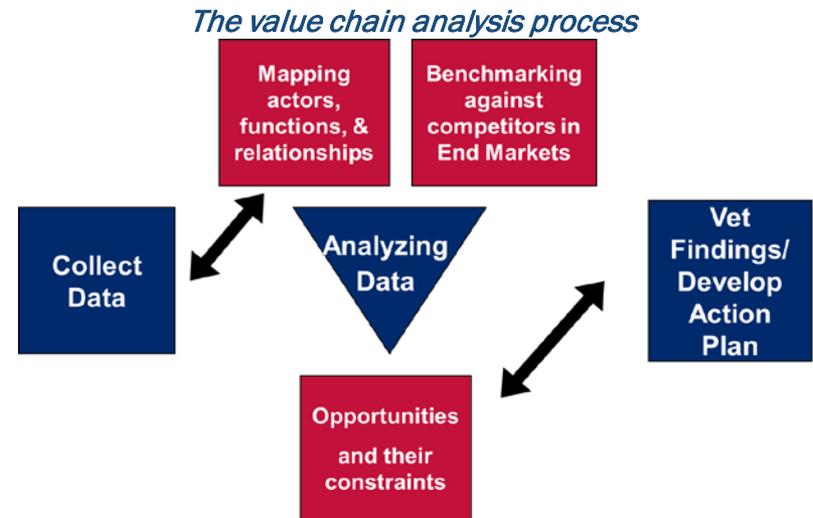
2. Introduction

2.1. INTRODUCTION: OBJECTIVES & METHODOLOGY OF THE VALUE CHAIN ASSESSMENT

OBJECTIVES:

- Identify and **map** key value chain actors in the Tanzanian rice and maize value chains, the functions they serve and the relationships (governance) among them.
- Identify **critical services** on which the performance of these value chains depend.
- Identify **opportunities** with the greatest potential to transform these value chains and the factors preventing private actors from taking advantage of them (**constraints**).
- Evaluate the scope and scale of these opportunities (**gross margin analysis**).
- **Benchmark** the Tanzanian rice and maize sectors against regional and international competitors to confirm areas where Tanzania can be more competitive.
- Posit a set of interventions (**action plan**) to overcome constraints and facilitate greater private sector investment.
- Propose Strategies to :
 - Optimize food security and nutrition impacts;
 - Ensure opportunities for value chain participants regardless of gender;
 - Mitigate negative environmental impacts from investments.

METHODOLOGY:



2.2 INTRODUCTION: MARKET DEVELOPMENT AND FOOD SECURITY

DEVELOPMENT OF THE RICE AND MAIZE VALUE CHAINS CAN ENHANCE FOOD SECURITY

Availability

- Significantly increased rice and maize productivity and total production.

Access

- Higher productivity results in lower prices and higher incomes for producers, increasing their capacity to source sufficient volumes of quality food.
- Investment in improved storage infrastructure helps ensure food is available when and where needed.

Utilization

- Lower food prices increase net disposable income of poor households, enabling them to diversify diets.
- Encouraging crop diversification and embedded value chains (e.g. poultry, vegetables) for rice and maize producers through support to agro-dealers) increases incomes and dietary diversity.

Sustainability

- Increased private sector investment in producing more food, of more varieties, when and where it is needed helps ensure sustainability.

MARKET-BASED APPROACHES SEEK TO:

- Create incentives for investment.
- Increase productivity.
- Increase efficiency.
- Lower consumer prices.
- Deliver food where and when it is needed.

FOOD SECURITY APPROACHES TO DEVELOPMENT SEEK TO ENSURE THAT:

- Food is **available** in quantity and quality required to meet food security needs.
- Food is **accessible** where and when required at affordable prices.
- **Utilization** of food meets and exceeds nutrient requirements (vitamins, protein and carbohydrates) for all individuals, but especially mothers and infants.
- **Sustainability** of food supply is enhanced when interventions are private-sector driven.

2.3. INTRODUCTION: THIS ASSESSMENT AS DISTINGUISHED FROM PREVIOUS ASSESSMENTS

DISTINGUISHING FEATURES OF THIS ASSESSMENT

Rice

- Focus on Kilombero and Mvomero districts and Zanzibar where production and other dynamics are unique.
- Assesses Zanzibar policy and regulatory framework.
- Addresses food security, nutrition, and gender- based constraints.
- Pinpoints investment opportunities, identifying strategic firms (change drivers) that will benefit producers and firms in the two districts in Morogoro and Zanzibar.
- Proposes business models for intervention in specific value chains in Morogoro, as well as a tailored intervention (developing services market) for the unique environment in Zanzibar.

Maize

- Focus on Kongwa and Kiteto Districts.
- Addresses specific production dynamics for Kongwa and Kiteto.
- Addresses food security, nutrition, and gender-based constraints.
- Pinpoints investment opportunities, identifying strategic actors that will benefit producers and firms in these two Districts
- Proposes business models of intervention in for Kongwa and Kiteto.



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3. Food Security and Nutrition Issues

3.1. FOOD SECURITY AND NUTRITION ISSUES

FOOD SECURITY AND NUTRITION

RICE

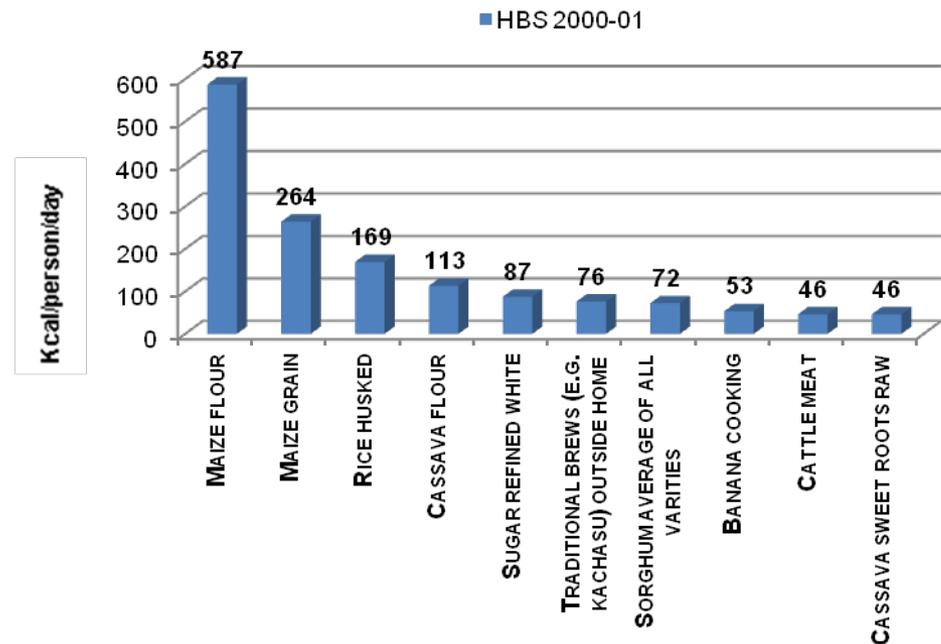
- 2nd largest contributor to household caloric consumption, after maize.
- Per capita consumption of maize decreased between 2001 and 2007, while that of rice increased over the same period.
- Per capita annual consumption of rice increased from 20.5 kg in 1998 to 25.4 kg in 2007.
- Rice is progressively becoming an important source of calories, (8% of total calorific intake).
- Potential to increase incomes and nutritional status from inter-cropping and rotation, i.e. horticulture and legumes, is high; however, deliberate promotion strategy is required.
- Rice is blended with other cereals and nuts to prepare highly nutritional mixes (e.g., nutrition-rich “Lishe” for infants and children), promoted by Tanzania Foods and Nutrition Centre (TFNC).

NOTABLES

- Tanzania is generally self-sufficient in maize.
- Nutritional insecurity is a bigger threat than caloric insecurity, especially among pregnant women and infants, though Tanzania suffers from both.
- Small holder productivity and income gains from rice, maize and complementary crops needs to be maximized.
- Capacity of agro dealers to deliver nutritional information, seeds, inputs and extension services for nutritional short season crops requires strengthening.

MAIZE

- Maize flour contributes 587 kcal (unit of energy) per person per day and maize flour 254 kcal per person per day.
- Annual consumption of maize is now estimated at 3.24 million mt.
- In 2010, maize provided around 43% of the recommended daily caloric intake and about 82 kg per capita per year.
- Tanzania’s Food Self Sufficiency Ratio was estimated to be 112% in 2007.
- Between 2006 and 2009, the average ratio of domestic consumption of maize to total food availability was 85.5%, implying a surplus of maize available after domestic consumption of 14.5%.
- Opportunities for support of fortification initiatives of WFP and others.



3.2 FOOD SECURITY AND NUTRITION (Illustrative for regional FtF strategy)

 **Tanzania**
Underweight: 17%
Wasting 4%
Stunting 44%

Malnutrition is most prevalent in young children (under-five) from the poorest and rural households, while Vitamin A and micronutrient deficiency is most common among children, and pregnant and lactating mothers.

Note:
 NAFKA will coordinate with *Market-Based Solutions* fortification initiatives.

Problem: Currently, 50% of children are stunted in East Africa FTF focus countries. Poor nutrition costs these countries as much as 6% of their potential GDP

Increase trade flows

- Support regional aflatoxin control initiatives
- Strengthen coordination of WFP, FFP & OFDA with regional producers & traders to significantly expand local purchase programs for chronically food insecure
- Conduct regional assessment to establish public and privately held strategic stocks of staple foods

Goal: Reduce food insecurity and malnutrition through increased availability and accessibility of staple and micronutrient dense foods

Support Strategic Partnerships

- Develop harmonized fortification and food safety standards and quality control
- Support R&D for nutrient-rich crops and social marketing to ensure consumer acceptability
- Support nutrition-sensitive value chains through regional standards development & dissemination

Support Regional Services

- Identify nutrition points of entry in regional value chains
- Address patent, quality control and cross border issues for manufacturing and supply chains for Ready to Use Therapeutic Foods (RUTF)
- Promote best practices for safe water-irrigation-watershed management



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4. Rice Value Chain Analysis

WORLD MARKET: IMPORTS AND EXPORTS

NOTABLES

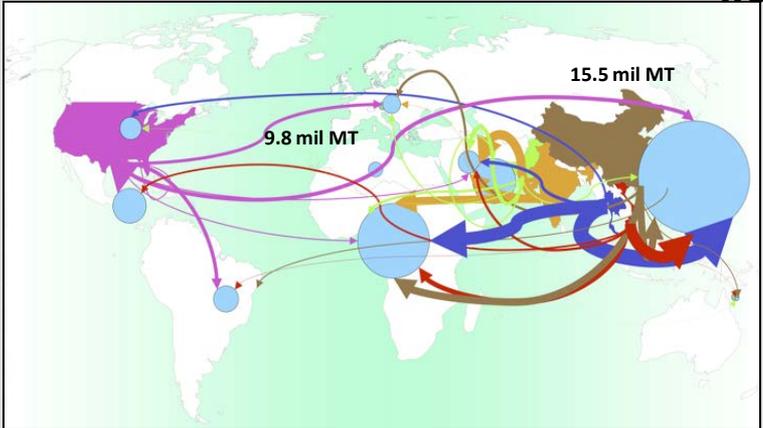
Principal Revisions to 2011 International Trade in Rice (million tonnes)

2011 IMPORTS				2011 EXPORTS			
	January f'cast	April f'cast	Revision		January f'cast	April f'cast	Revision
WORLD	31.4	31.8	+0.4	WORLD	31.4	31.8	+0.4
ASIA	15.1	15.5	+0.5	ASIA	24.4	24.7	+0.3
Bangladesh	0.7	F 1.2	F +0.5	Cambodia	1.6	F 1.4	F -0.2
China (Mainland)	0.5	F 0.4	F -0.1	China (Mainland)	1.0	F 0.7	F -0.3
China (Taiwan Prov.)	0.2	F 0.4	F +0.2	India	2.5	F 2.3	F -0.2
Korea DPR	0.4	F 0.2	F -0.2	Myanmar	0.8	F 0.4	F -0.4
Malaysia	0.9	F 1.1	F +0.3	Pakistan	1.8	F 2.7	F 0.9
Philippines	1.7	F 1.3	F -0.4	Viet Nam	6.5	F 7.1	F +0.6
AFRICA	9.8	9.8	-0.1	AFRICA	0.6	0.3	-0.3
Nigeria	2.0	F 1.9	F -0.1	Egypt	0.3	F 0.1	F -0.2
Cameroon	0.5	F 0.4	F -0.1	NORTH AMERICA	3.5	3.4	-0.1
				United States	3.5	G 3.4	G -0.1
				LATIN AMERICA & THE CARIBBEAN	2.5	2.6	+0.1
				Uruguay	0.7	F 0.9	F +0.2

- South East Asia remains both the largest exporter – and importer - in the world
- Prices are primarily determined within national borders; much of the rice is traded on a response-to -tender or on a negotiated government –to-government negotiated basis.
- The 2011 rice world harvest is estimated to climb to 720 million mt.
- Tanzania is not considered a significant player in the global rice picture .

G: Official Figure; F: FAO forecast/estimate.

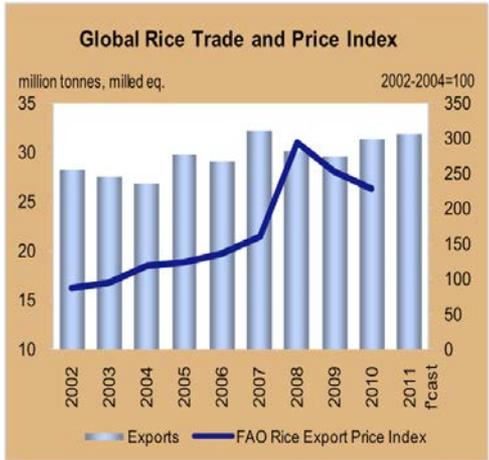
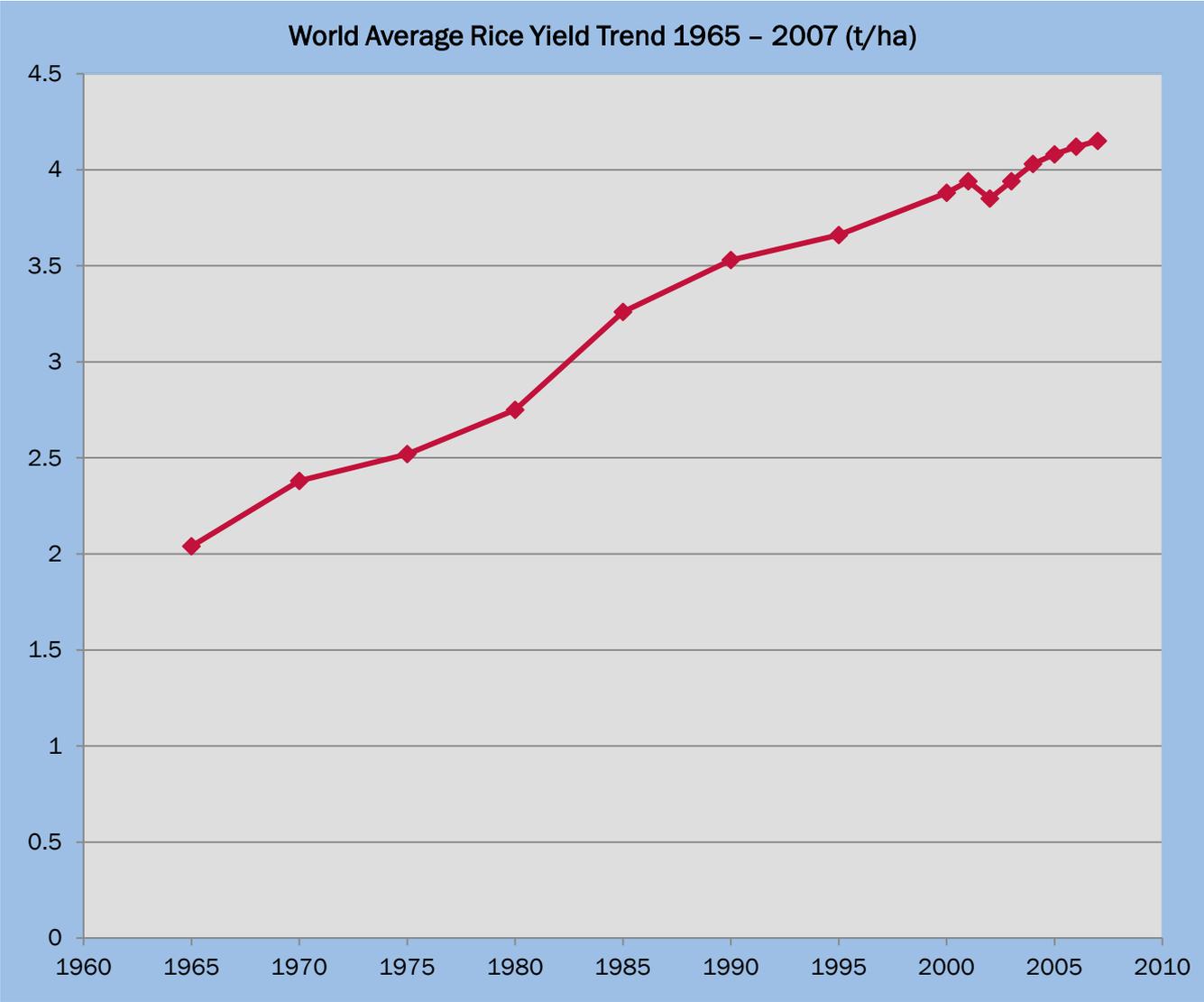
WORLD RICE FLOWS 2011



World import flows in 2011

- Asia will become a net importer of rice absorbing 15.5 million tons in 2011.
- Aggregate imports by African countries in 2011 are set to reach 9.8 million tons.
- Supply shortages in Cameroon and Mozambique are expected to result in higher imports of 400 000 and 380 000 tons respectively

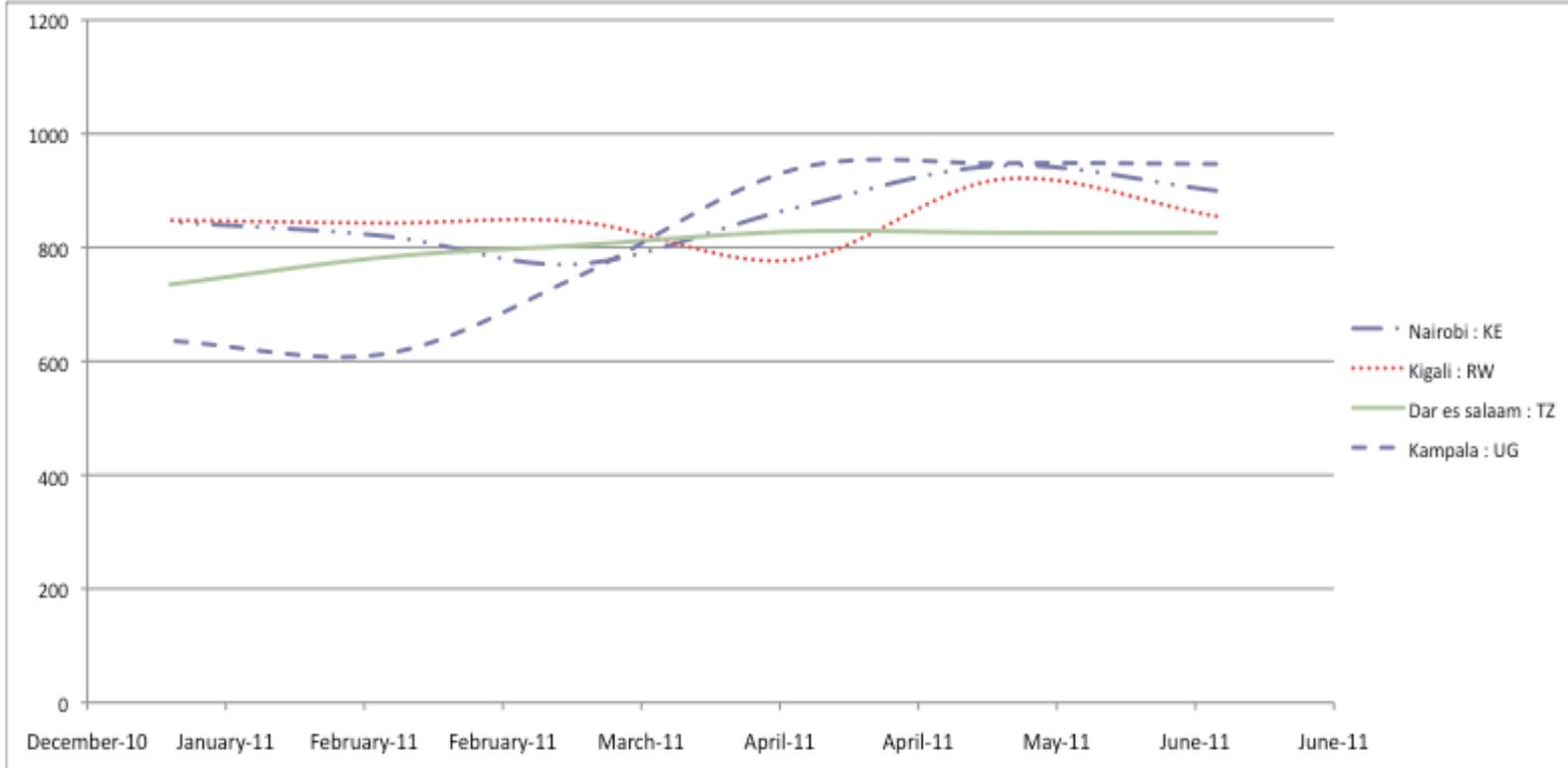
4.1.1: World Rice Market cont'd



Key Trends:

- 2011 world rice exports increased to 31.8 million tonnes in 2007 from 27 million tonnes in 2002.
- Thailand, Vietnam, Bangladesh, China, India and Indonesia are the largest producers .
- Prices increased steadily until 2008, then declined.
- World average rice yield has doubled from mere 2.0t/ha in 1965 to just over 4.0t/ha in 2007.

EASTERN AFRICA MAJOR MARKETS: RICE PRICES TRENDS (USD/T) – JANUARY – JUNE 2011



Source: RATIN market intelligence report June 2011

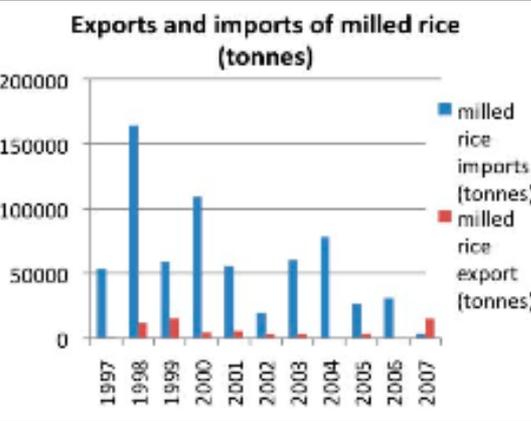
KEY TRENDS IN EASTERN AFRICA REGION

- Tanzania rice prices have remained stable since the beginning of the year; this is because Tanzania (specifically mainland) does not depend on imports while all its neighbors import substantial amounts to meet domestic demand.
- EAC regional demand for rice is growing at 6% per annum and the gap between demand and supply is estimated to be 3.3 million mt annually.
- Kenya and Mozambique import an estimated 2.5 to 3 million tons per annum.

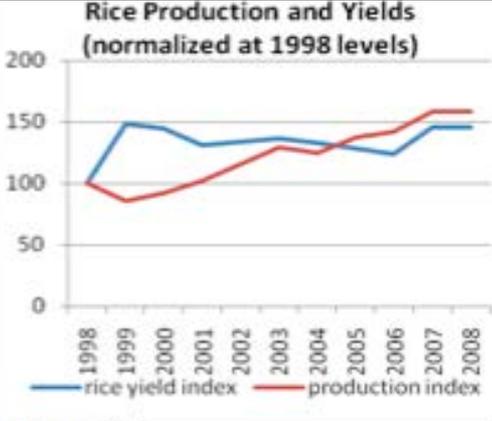
4.1: RICE MARKET IN PERSPECTIVE

4.1.3: National Rice Market

TANZANIA: PRODUCTION, PRODUCTIVITY, EXPORT IMPORT TRENDS



Source: FAO

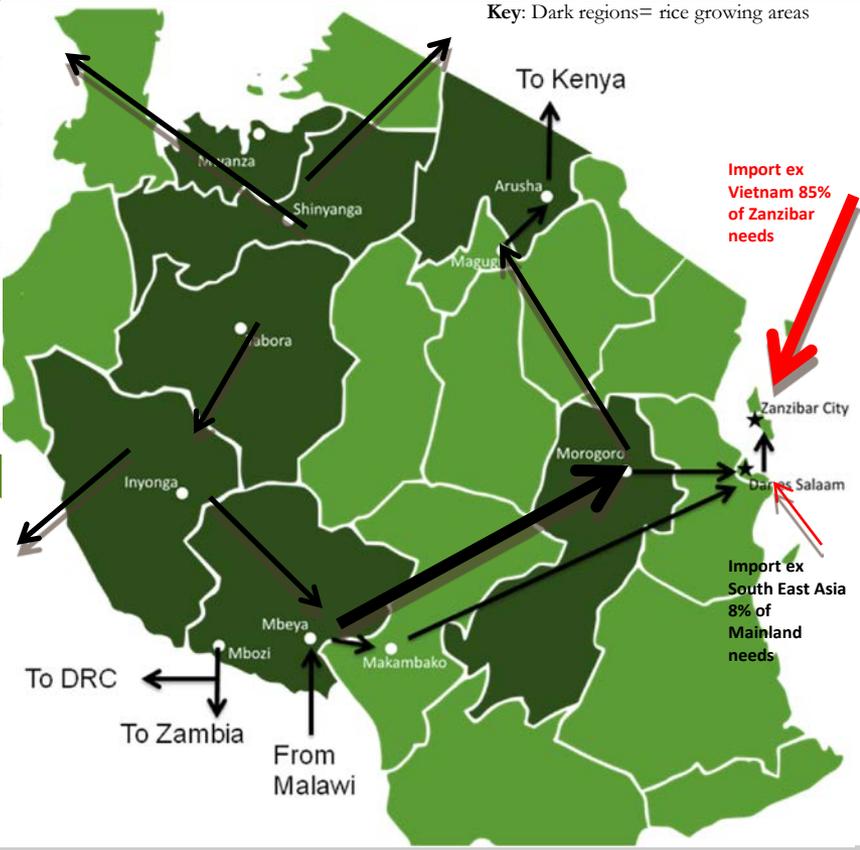


Source: FAO

KEY TRENDS IN TANZANIA

- #2 staple food crop.
- Production increased 54% from 530,000 to 818,000 tons (milled) from 1998-2008.
- Production growth driven by increased acreage ,not productivity.
- Paddy rice yields have remained nearly constant at 1.6 - 1.8 tons per hectare.
- Tanzania mainland annual imports average 8% of its needs (80,000 tons), whereas Zanzibar imports an annual average 85% of its needs (60,000 tons). These imports are mainly from South East Asia including Pakistan, India and Vietnam.
- Tanzania is the largest rice producer in the East Africa region.

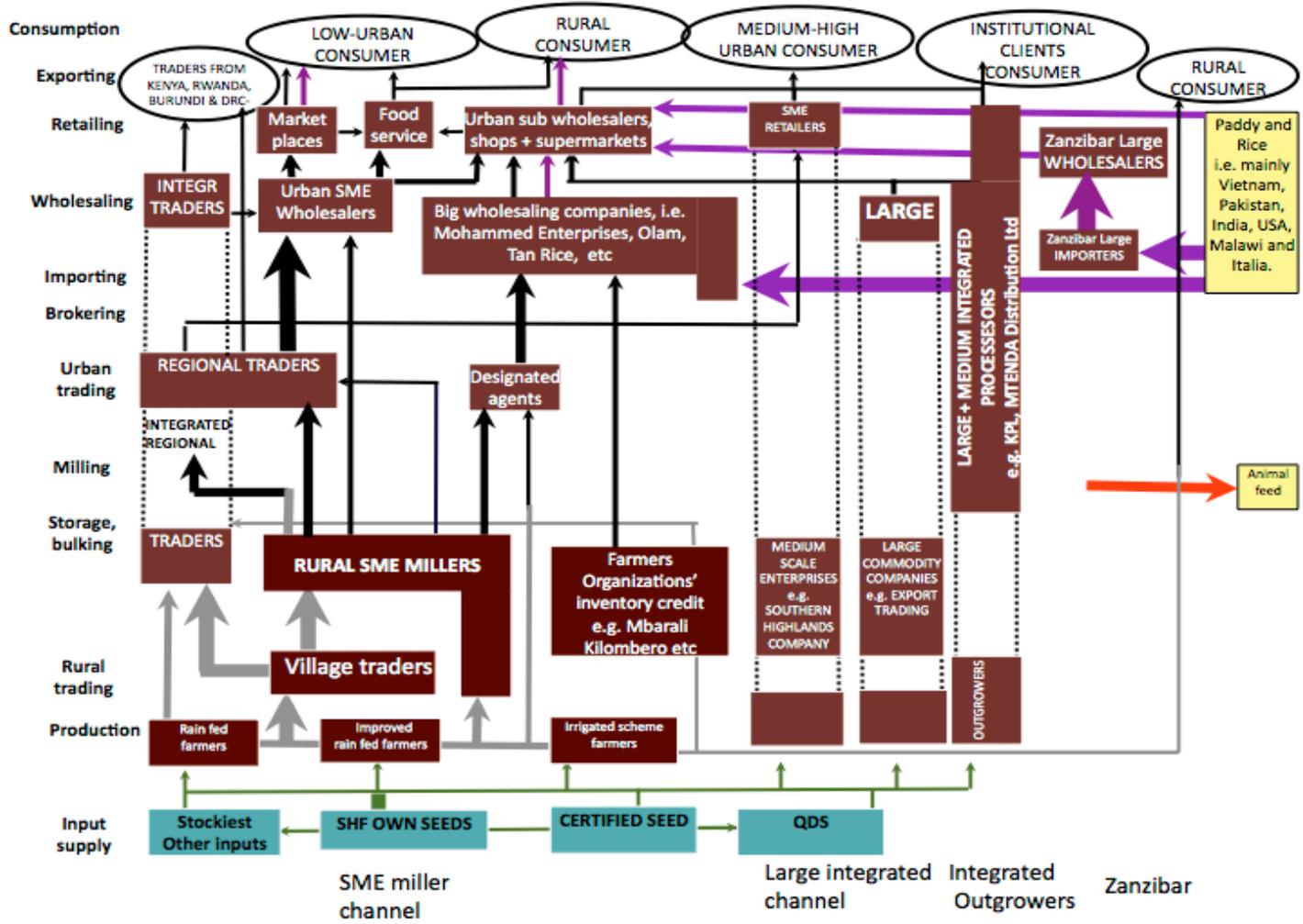
RICE PRODUCTION AND FLOWS IN TANZANIA



NOTABLES

- Huge potential for growth to cater to the growing local and regional demand.
- Consumption in Tanzania is growing at 5.4% annually, which exceeds population growth (2.88%).
- Consumer rice prices are not translated to high farm gate prices.
- **Productivity constraints** include planting delays, inadequate use of Good Agricultural Practices (GAP), insufficient supply of high-quality seeds, low soil fertility and soil organic matter (SOM), poor water management, and inappropriate pest and disease management.
- **Inefficient and long supply chains** result in high transaction costs.
- **Uncertain commercial policy environment**, i.e., (i) export bans; (ii) import tariffs and non-tariff barriers; (iii) consumer price controls in Zanzibar; (iv) producer taxation and subsidies; and (v) unclear role of newly formed Cereals and Other Produce Board

4.2 RICE VALUE CHAIN ANALYSIS AND DEVELOPMENT 4.2.1 Rice Subsector Map



KEY DYNAMICS OF RICE IN TANZANIA

- Smallholder subsistence farmers (SHF) comprise about 90% of all producers.
- Outgrower schemes in revived irrigation areas link large farmers, providing services to - and collecting product from - small holders.
- SME millers and regional traders command over 90% of rice traded in major urban centers in Tanzania.
- Development initiatives organized producer groups to store, stock and speculate on forward price risk through an inventory credit scheme.
- Vibrant clusters of SME wholesalers dominate rice trade in most cities.
- Zanzibar imports about 50,000 tonnes annually of non-aromatic rice mainly from Vietnam, comprising about 80% of its consumption demand. Mainland imports on average less than 10% of its needs

NOTABLES

- Greatest potential for growth: SME miller-driven channel and the emerging integrated outgrowers scheme.
- Annual production is 900,000 mt paddy (2010).
- Profitability at farm level is positive when producers are able to store for at least 4 months .
- Water availability and management is one of many farm management factors influencing productivity and production.
- Seed availability combined with appropriate mix of inputs are major constraints to increased production .

4.2 RICE VALUE CHAIN ANALYSIS AND DEVELOPMENT

4.2.2 Critical Services – Input, Equipment, Extension and Information Services

INPUT AND EQUIPMENT SERVICES

Basic Services

- **Tractors and power tillers** available for hire or purchase through producer groups; heavy equipment has limited availability given lack of critical mass of demand, but light equipment is more readily available to smallholders.
- Limited availability and accessibility of equipment for harvesting and threshing.

Opportunities

- Agriculture window at TIB offers organized farmers soft loans to procure agricultural production and processing equipment and machinery.
- Potential models of attracting critical mass of service providers closer to farmers and traders, e.g. Israel (Tendaji Model), South Africa, etc.

Potential Change drivers

- Developing clusters around critical mass of rice producers (**irrigation schemes and organized improved rain-fed rice producers**) facilitates pulling of critical services into the clusters.
- Facilitate formation, strengthening and capacity building of regional traders and SME millers organizations.
- Facilitate linkage of SME millers to financial institutions to access loans to procure modern processing equipment.

EXTENSION AND INFORMATION SERVICES

Basic Services

- District and village based extension officers support producers.

Opportunities

- Expanding MPESA.
- SMS and FM radio-based extension services (**TBC, RFA and Abood Radio and TV**).
- Expanded use of FM radio fairs and demonstrations to disseminate GAP.
- Linkages with think tanks at KATRIN, SUA, Cholima Dakawa ARI and **KATC/JICA Key Farmer Training (KFT)**.
- MITM and MVIWATA have developed MIS but with limited adoption.

Potential Change Drivers

- Improve access to comprehensive extension packages for rice producers.
- Roll out concept of JICA “Farmer to Farmer” extension model.
- Roll out FaFB/FaaB already undertaken by FAO-SHFS.
- TAP is piloting MIS which could be adopted by NAFAKA.

4.2 Rice Value Chain Analysis and Development 4.2.2 Critical Services – Financial Services

FINANCIAL SERVICES

Basic Services

Between input suppliers – farmers – traders

- Cash transfers limited to transaction via SACCOS and responding commercial banks. CRDB Bank works more with SACCOS but other banks are developing interest in wholesaling loans to SACCOS including NMB, TIB
- Most SACCOS, both in Morogoro and Zanzibar, underperform with some resulting in bad debts for banks due to poor management and lack of contractual rice trading systems. This makes it difficult to recover loans even when sales are made, e.g. Dakawa SACCOS in Mvomero and Mtwango village in Unguja.
- Emerging SACCOS with innovative models, e.g., through ICS, avoid cash handling by farmers which is proving to be a successful approach (TPAWU SACCOS in Kilombero).

Between traders (regional traders – wholesalers – retailers)

- Small-scale traders have limited access to bank services, but most can access short term loans from MFIs

Opportunities

- Inventory Credit Scheme (ICS) has been attempted, though there are still challenges in adopting it for the rice marketing system because it is limited by lack of commodity exchange structure.
- Some MFIs are moving into seasonal agricultural loans ,e.g., PRIDE, BRAC.
- Crop (weather-based indexing) insurance has been piloted with good lessons learned from the Kenya Cooperative Bank.
- Longer term investment loans are available, such as the TIB agriculture window, offering subsidized interest rates.
- All three mobile phone giants have mobile money transfer services – Vodacom (M-Pesa); Airtel (ZAP), Tigo (Tigo-Pesa)

Potential Change Drivers / Partners

- SAGCOT Catalyst Fund.
- Financial Sector Deepening Trust Tanzania- Bank.
- National Microfinance Bank (49% shareholder is Rabo bank).
- CRDB Bank + PASS Guarantee Fund.
- District Irrigation Development Fund (DIDF).
- PRIDE and BRAC.

4.2 RICE VALUE CHAIN ANALYSIS AND DEVELOPMENT

4.2.3 Geographical distribution of service providers to farms and firms in NAFKA project area.

FINANCIAL SERVICES

Basic Services

Between input suppliers – farmers - traders

- TIB – based in Dar es Salaam but caters to clients beyond Dar es Salaam.
- Country-wide, NMB has the largest penetration to the district town centers.
- CRDB has second largest penetration after NMB.
- SACCOS have mushroomed everywhere but with limited efficiency and effectiveness to support smallholder farmers.
- TPAWU SACCOS in Kilombero has opened branches within the district and its business model could be replicated in NAFKA focus areas.

Between traders (regional traders – wholesalers – retailers)

- Most MFIs have branches in rural and urban centers – the most prominent being PRIDE Tanzania, BRAC, FINCA, SEDA, etc.
- Most cell phone companies now employ money-transfer facilities with country-wide coverage, i.e., Airtel (ZAP); Vodacom (M-Pesa); TIGO (TIGO-Pesa).
- SAGCOT Catalytic Fund: Pwani, Morogoro, Iringa, Mbeya and Rukwa.
- Financial Sector Deepening Trust supports innovation in financial services products targeting SMEs – coverage country-wide.
- District Irrigation Development Fund (DIDF) serves all districts in Tanzania.

INPUT AND EQUIPMENT SERVICES

Equipment and machinery suppliers are mostly based in Dar es Salaam but are attempting to attract customers country-wide:

1. Tendaji
2. SUMA JKT
3. Quality Group – also using its facility in Dakawa

EXTENSION AND INFORMATION SERVICES

Extension officers

- District and village-based extension officers in all districts.
- Government (MAFC) attempting to double its coverage over the next five years.

Training

- Knowledge think tanks at KATRIN, SUA, Cholima Dakawa ARI and KATC/JICA Key Farmer Training (KFT) with potential to reach NAFKA focus areas.
- FaaB already undertaken by **FAO-SHFS** in Southern Highlands.

Information services

- MITM and MVIWATA have developed MIS but with limited adoption.
- TAP is piloting MIS.
- Mobile messaging companies that can play a role in extension are based in Dar es Salaam.
- FM radio stations, which can be inexpensive extension service provider, are based both inside and outside NAFKA target districts.

**Strengthening the performance of farms and agribusiness firms in the NAFKA area will occasionally require collaboration with firms based in other districts and regions.*

4.3 GENDER CONSIDERATIONS

GENDER CONSIDERATIONS IN RICE SUB SECTOR

NAFAKA's will identify the degree to which the ability of men and women to take advantage of profitable opportunities with acceptable risks is limited by gender-based constraints and will posit strategies to mitigate or eliminate these constraints.

- *More thorough gender analysis for benchmarking purposes is needed.*
- *Technology and upgrading:* Although women comprise the largest proportion of the labor force in rice production in Tanzania, women have less direct access to technologies for rice production, harvesting and post-harvest handling which could reduce their workload.
- *Access to finance and business development services:* This is a major constraint for men and women at all levels of the value chain, but women have a better record of timely repayment. Extracting lessons learned from the success of women's MFI groups can be used to expand services to include larger numbers of men and women.
- *Governance:* There has been a remarkable increase in the active participation by women in leadership and decision-making structures in the chain. Female role models are emerging in all aspects along the value chain.
- *Gender relations in households and communities* are deeply rooted in cultural and religious beliefs and values, though culture is dynamic and constantly changing. When rice production is at a subsistence level, which is often the case in Zanzibar, women take full control of the decision-making process. The situation changes with commercialization when men take more interest in the potential income accrued from the harvest. This can create tension between food security and marketing for cash income. NAFKA will work closely with value chain actors and traditional leaders to mitigate the consequences of increased commercialization of small holder rice production.



4.4 TANZANIA ENABLING ENVIRONMENT

4.4.2 Development Partners

ONGOING AND UPCOMING PROJECTS FOCUSING ON RICE IN TANZANIA DEVELOPMENT PARTNER RICE ACTIVITIES IN NAFKA AREA

Title	DP
Technical Cooperation for Kilimanjaro Agricultural Engineer Training Center Project II	JICA
Kibokana Irrigation Rehabilitation Project	Japan
Agricultural Sector Development Program (ASDP)	Common Basket
Technical Cooperation for Formulation and Training of the DADP Guidelines on Irrigation Scheme Development	JICA
Technical Cooperation for Supporting Service Delivery Systems of Irrigated Agriculture (TanRice)	JICA
Coastal Rural Support Program (Tanzania): Rice Intervention	Aga Khan
Improving Rice Varieties through Mutation Breeding and Biotechnology in Zanzibar	FAO
Rehabilitation of Irrigation Infrastructure in Zanzibar	KOICA
Genetic enhancement to increase productivity in rice through breeding for resistance to RYMV disease in Tanzania	Rockefeller
Agriculture Sector Development Project (additional financing to DIDF) under GFCRP	World Bank
Accelerated Food Security Project under GFCRP	World Bank
Technical cooperation for Irrigation Scheme Development and Capacity Development under DADP (pipeline)	JICA
Japan PHRD Grant to support Rice Production in Africa	World Bank
East African Agricultural Productivity Program (Regional Centre of Excellence)	World Bank
Improving the lives of 36,000 rice producers in Shinyanga Tanzania	OXFAM TASU
Increased Agricultural Growth and Expand the Staple Food Supply	USAID/FTF
Undergraduate training on Civil Engineering at Arusha Technical College	JICA
Soft loan from India to purchase tractors and power tillers (US\$ 40 million loan).	India

SAGCOT – Developing Southern Agriculture Growth Corridor (Morogoro in NAFKA areas, also Iringa, Mbeya, Rukwa).

- Promote PPP investments in rice.

USAID

- NAFKA.
- Market-based Solutions.
- COMPETE – rice milling machine and inventory credit scheme (ICS).
- CNFA/TAGMARK – TASP.
- Other FtF initiatives (policy, research and training, etc.).

NORVES VEL

- BRITA – supporting rice farmer organizations in inventory credit scheme (ICS).

FAO – SHFS

- Policy working group, structured marketing of cereals, development of robust agribusiness models (feasibility studies, business plans, strategic plans, outgrower schemes and contract farming designs, etc.).

JICA

- TANRICE: Strengthening service delivery of government institutions in rice cultivation (KATC, MAFC, 4ARIs, MATI); Key Farmer Training (with KATC, MATI Ilonga) and Zanzibar.
- ASDP Coordinator, National Facilitation Team.
- National Rice Development Strategy (NRDS).
- DADPs planning support and irrigation project; National Irrigation Master Plan 2002; support irrigation 7 zonal offices
- Monitoring and Evaluation: National Household Survey (NHS); National Census in Agriculture; Agriculture Routine Data System (ARDS).

RUBADA/TIC

- Promote FDIs in rice farming in Rufiji basin (land banks).

NOTABLES

Tanzania National Rice Development Strategy (NRDS) offers framework for coordinating interventions; Increased government budget allocation from 2.9% in 2000/01 to 7.4% in 2010/11; Increased interest and commitment by development partners and private sector to develop the rice sector in Tanzania

4.4 TANZANIA ENABLING ENVIRONMENT 4.4.1 Legal and Regulatory Framework

POLICIES AND ENABLING ENVIRONMENT AFFECTING THE RICE SECTOR

Tariffs -- imports went down in 2005 after tariff, but the price of rice skyrocketed. Good for farmers, but not good for consumers.

- EAC common external tariff is set at 75% which, however, applied differently by member countries.
- In Tanzania, Mainland and Zanzibar apply different official tariff rates of 75% and 12.5% respectively; however these are not applied consistently; effective import duty rates in the mainland are between 9% - 22%.

Non-tariff trade barriers

- Seasonal restrictions and informal export bans in Tanzania affect investment decisions; even when the bans are lifted there are numerous unclear export procedures and controls which increase transaction costs.
- Consumer price controls: Zanzibar government regulates the price structure for imported rice.

Land Tenure

- Land reforms and formalization (MKURABITA) provide opportunities for land titling which can be used as collateral.
- Fragmented land for block farming, particularly for rain-fed rice farming, inhibits productivity and efficiency.
- On Zanzibar, average smallholder plot size is 0.1ha/farmer; seriously inhibiting efficiencies and profitability.

Business enabling environment

- TIC and RUBADA are developing land banks, surveying and developing basic infrastructure such as an office building structure on 5,000ha at Ngalemila Farm in Mlimba ward in Kilombero district.
- The business-enabling environment in Tanzania (time required to register a business, securing with construction permits, trading across borders, corruption, bureaucracy, etc.) has improved in recent years but not quickly enough to incentivize private investment.
- Government has removed duties and VAT on imported farming equipment such as tractors and power tillers, and producer groups can purchase the same at subsidized prices.
- Government is the main service provider for critical services (inputs, extension, production equipment) on Zanzibar and provides a 50% subsidy, which effectively excludes private sector service provision.

YEAR	TARIFF %	IMPORTS '000 MT	WHOLESALE TSHS/KG	DUTY/CIF %
1998	25	83	303	18
1999	25	176	339	22
2000	25	191	389	22
2001	25	134	338	21
2002	25	77	292	18
2003	25	183	372	21
2004	25	137	514	19
2005	75	50	521	14
2006	75	50	730	21
2007	75	43	662	18
2008	75	49	890	14
2009	75	40	1,057	9

Source: Imports—TRA customs data; Prices—MAFC

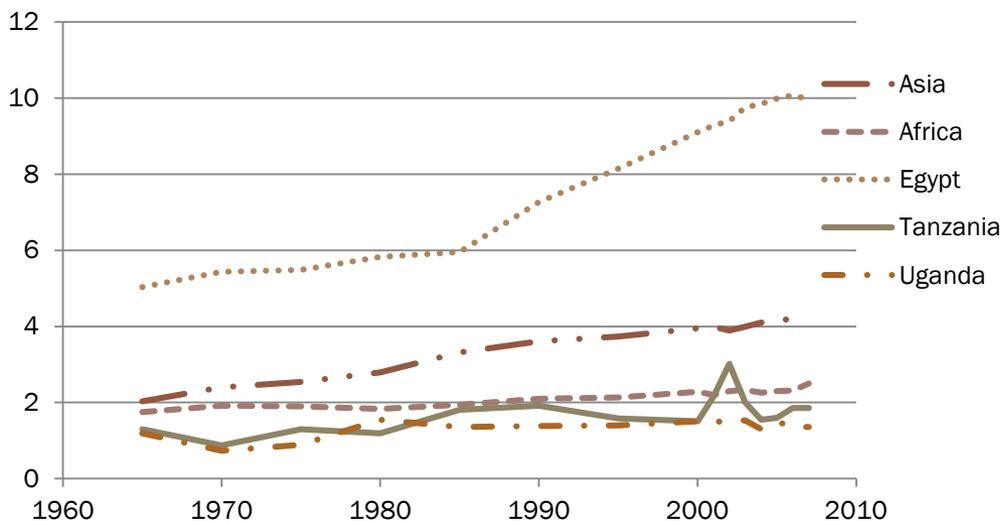
NOTABLES

- Ongoing policy and regulatory reforms of the agricultural sector offer opportunities for private sector engagement to influence reforms for improving enabling environment; for example, Kilimo Kwanza Thrust and operating through SAGCOT/TARIPA and TAFSIP are entry points for improving the rice sub-sector.
- Average imports into Tanzania between 1998 – 2004, when the tariff was 25%, were about 140,000mt/yr. This is compared to 2005, when the new tariff of 75% was introduced, resulting in reduction of import volume to 46,000MT/yr, or 65%.

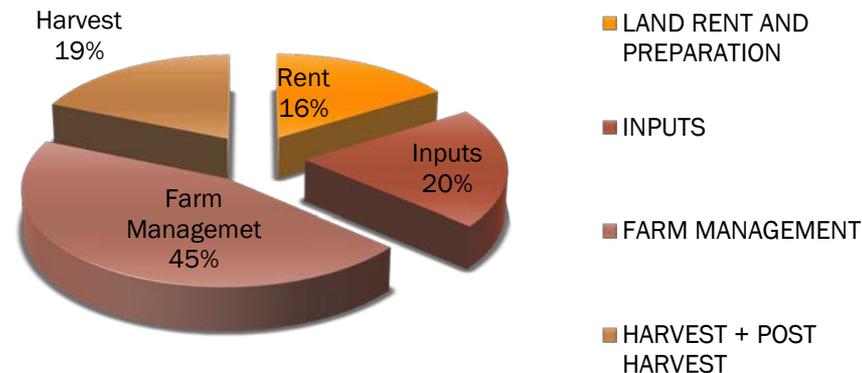
4.5 Benchmarking Competitiveness of the Rice Sub-sector

4.5.1 Productivity, profitability and cost drivers

PRODUCTIVITY – MILLED RICE YIELD (T/HA)



TYPICAL SMALLHOLDER RICE FARMERS – COST DRIVERS (%)



Dakawa SHF Irrigation scheme (2011)

RICE SMALLHOLDER FARMER YIELDS

- Tanzanian rice productivity has stagnated for 5 decades.
- Egypt is the only African country with exceptional improvement in rice yields.
- Although Uganda is lagging slightly behind Tanzania, the average Tanzania milled rice yield is still half (2.0t/ha) of Africa's average (4t/ha).
- In 2011, KPL/ICRISAT piloted the System of Rice Intensification (SRI) for rain-fed smallholder rice farmers, doubling their paddy yield from 2t/ha to 4t/ha of milled rice.

RICE SMALLHOLDER FARMERS PROFITABILITY

- Profitability at the farm level is positive when producers store for at least 4 months.
- MMA study (2008) in Shinyanga established that minimum viable farm size for low land rice farming is between 4-6ha for households where farm income contributes to at least 60% of household expenditures.
- Demand for quality seed and inputs far exceeds supply.
- Low levels of mechanization by small holder farmers limit profitability and drive post-harvest losses.
- Productivity on small holder irrigation schemes lags behind rain-fed ones, suggesting an adverse selection problem with these schemes.

4.5 Benchmarking Competitiveness of the Rice Sub-Sector

4.5.2 Productivity, profitability and cost drivers

RICE TRADERS PROFITABILITY AND COST DRIVERS

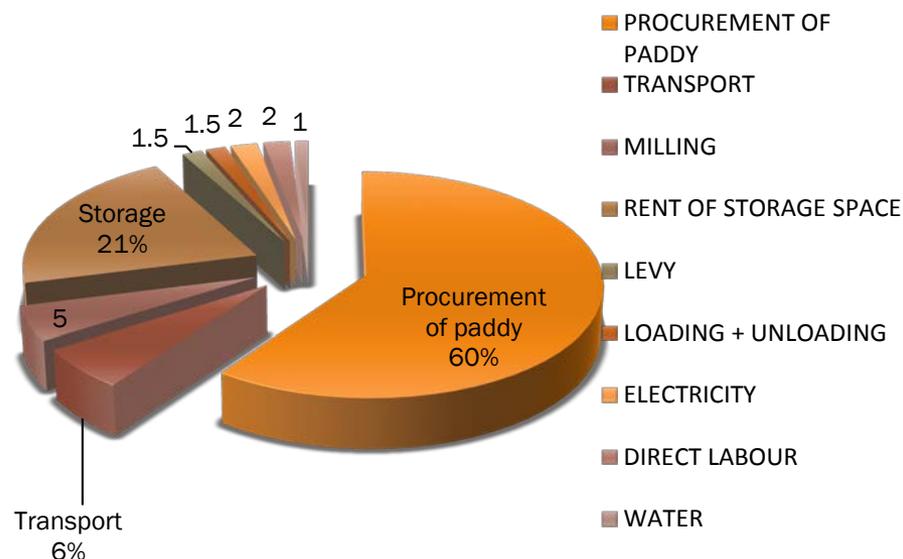
- Rice traders tend to have higher gross margins than producers due to better access to markets and market price information.
- The main cost drivers of rice traders include procurement of paddy (60%), rental charges for storage space (21%), milling (5%), transport (6%).
- Chief challenge of traders is accessing working capital; however, due to their shorter turnaround period they have better access to finance than farmers
- Price fluctuations are influenced by quality, variety, distance from the source and time of the year
- There are no quality control or standards for rice in Tanzania, which perpetuates tendency of traders to mix and label consumer-preferred brands to any consignment.
- Enforcement of standards of weights and measures is dysfunctional, particularly at the farm-gate level.

RICE TRADERS HAVE POSITIVE GROSS MARGINS

	DIRECT COSTS (TZS)	SALES (TZS)	SGP (TZS)	SGM (%)
Kilombero trader/miller Costs/sales per bag (100 kg): Kilombero - Mbeya/Ifakara	53111	70000 (wholesale)	16889	25%
Rural traders Association Mbozi Costs/sales per bag (100 kg): Mbozi farms - town Mbozi	48000	60000 (retail)	12000	20%
Rural Women Traders – Usa River, Meru Costs/sales per bag (100 kg)	56,900	64000 (retail)	7100	11 %
Regional traders Costs/sales per bag (100 kg): Mbarali – Mbeya	41050	48000 (wholesale)	6950	14%
Integrated trader Mbeya Costs/sales per bag (100 kg): Kyela - Mbeya – DSM	65500	70000 (wholesale)	4500	6%
DSM trader Costs/sales per bag (100 kg): Mbeya - DSM	95150	130000 (wholesale)	34850	27%
Miller – Morogoro Milling costs/sales per bag (100 kg)	331100	400000	68900	17%
Miller – Mufindi Milling costs/sales per bag (100 kg)	81520	110000	18480	20%
Rural retailer rural Sales per (100 kg) bag	50000	120000	70000	58%
Retailer urban (DSM Sales per (100 kg) bag	108000	115000	7000	6%
Food services rural - For one (chicken) meal	2175	3000	825	27.5%

Source: Rice Value Chain Analysis – TAP (2010)

RICE TRADERS – COST DRIVERS (%)



Source: Rice value chain analysis – TAP (2010)

4.5 BENCHMARKING COMPETITIVENESS OF THE RICE SUB-SECTOR

4.5.3 Competitive Analysis – Porter's Cluster Diamond

TANZANIA RICE – PORTER'S COMPETITIVE ANALYSIS DIAMOND

HOW TO BECOME MORE COMPETITIVE

Context strategy and rivalry

Positive

- + Tanzania rice is (semi) aromatic and is understood (unique) in the local and regional market
- + Smallholder participation and emerging competition from large commercial farms with Outgrowers' schemes

Negative

- Limited influence of the world rice price (high local production costs and low yields affecting smallholder producers)
- Tariff and nontariff barriers in the East African countries

Demand conditions

Positive

- + Tanzania is still net importer for rice, which is indication that demand is large than supply. Zanzibar imports almost 85% of its domestic rice needs
- + Unmet demand in other EAC countries and beyond
- + Emerging Tripartite Free Trade Area (FTA) between EAC, SADC and COMESA

Negative

- Low domestic per capita consumption of locally produced aromatic rice among low income consumers due to high price
- Mixing of varieties by some traders erode consumer confidence
- Zanzibar has reduced rice import tax to 12.5% and the government is fixing prices
- Other East African countries tendencies to seek tariff waivers in order to import cheap rice from Asia

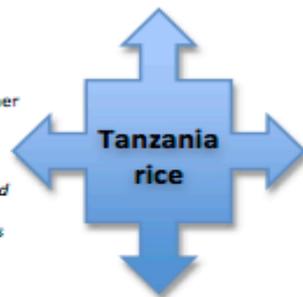
Factor conditions

Positive

- + Good growing conditions (rainfall, altitude, area suitable for irrigation)
- + Improved road infrastructure to connect with other East African countries

Negative

- Some farmers do not adhere to good farm management practices – hence low productivity and production
- Most rice farmers rely on rain fed farming and this influence yield during spells of droughts
- Poor feeder roads and high fuel price reduce price competitiveness



Related and supporting industries

Positive

- + Mobile phone companies enhanced their networks' outreach
- + Emerging inventory credit schemes with donors, Banks and SACCOS interested to support rice producers and traders
- + World class rice research institutes (KATRIN, IRRI, AfricaRice)

Negative

- Limited business models to offer efficient technical and financial support of smallholder producers to boost productivity and production
- Underutilised large modern milling facilities in the country (White elephants)
- Limited value addition prior to marketing and exporting (lack of branding, varied quality, lack of traceability, per boiled, brown rice)

1. Tanzania's rice value chain has considerable potential if it can increase economies of scale at multiple levels of the value chain, increase productivity and transaction efficiencies along the supply chain.
2. Like many rice producing areas in Tanzania, most of the rice production area in Mvomero is under upland/low land rain fed ecologies. As such, improved rain-fed rice farming with minimum infrastructure costs could result in increased yields and volumes.
3. Zanzibar rice production could be sufficient to eliminate the need for imports given a more friendly local production and investment policy environment.
4. Tanzania could capitalize on the rich technical knowledge base in KATRIN, IRRI, Africa Rice, MATI Ilonga and Cholima ARI as well as adaptive research aimed at improving yield and reducing pests and diseases.
5. There is opportunity to build on tested business models such as **inventory credit, warehouse receipts, cluster formation, outgrower networks and value chain financing mechanisms (SACCOS, MFIs, Commercial Banks, etc.)** to develop a robust rice sector.

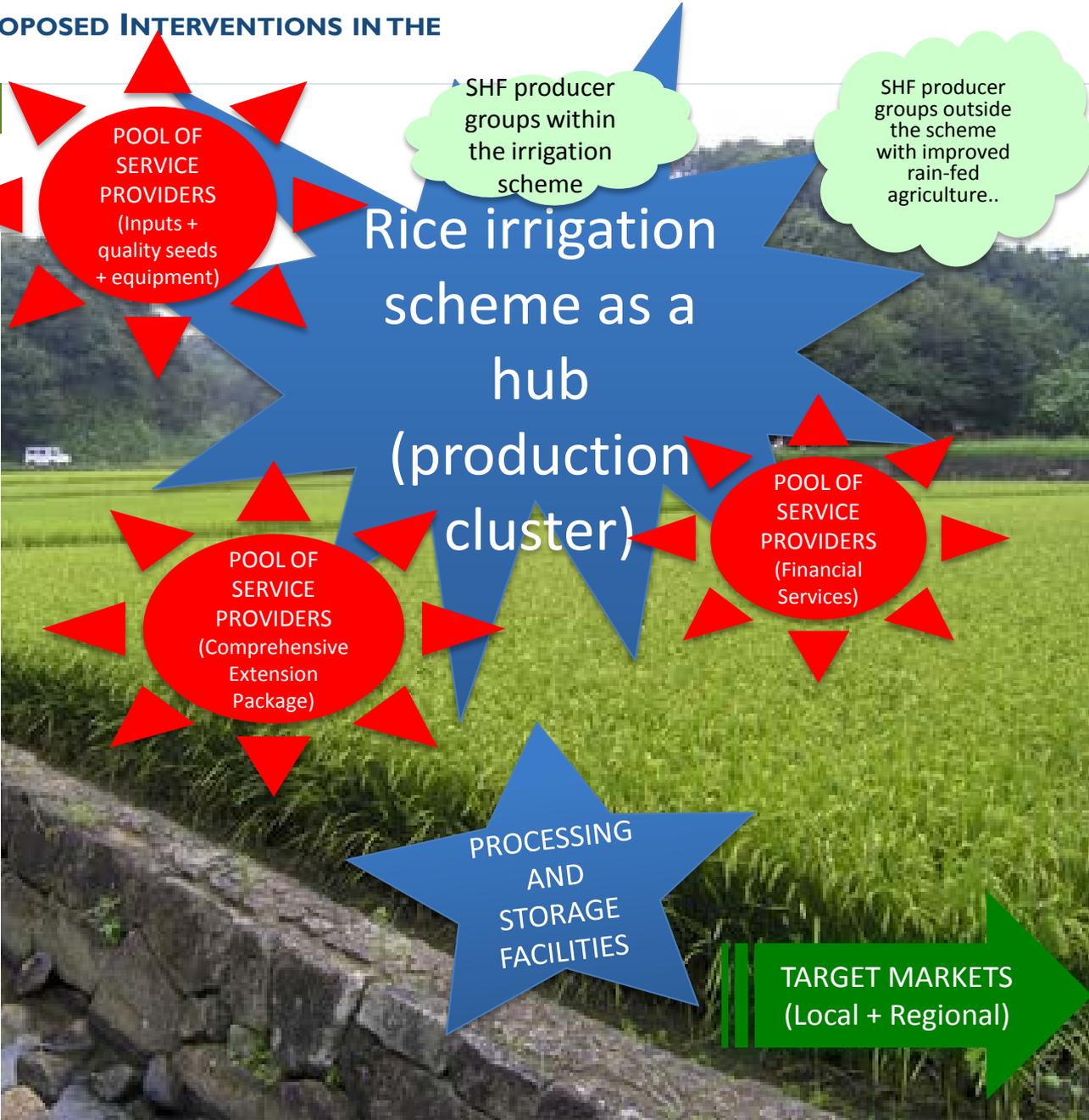
FEASIBLE TARGETS

1. Import substitution in Tanzania Mainland is possible through competitive local production and streamline tariffs and non tariff barriers
2. Current productivity and gross margins from irrigation scheme and rain fed are comparable and this implies access to water alone has not solved the problem of low yield; therefore, a comprehensive package of extension service is required to address six (6) key issues in farm management to increase yield from 2t/ha to 4.0t/ha

4.6 GENERIC BUSINESS MODEL OF PROPOSED INTERVENTIONS IN THE RICE SUB-SECTOR

KEY CHARACTERISTICS OF THE MODEL

- The model capitalizes on key intervention opportunities consistent with the focus of the USAID Feed the Future (FTF) program.
- Interventions focus on producer groups within rice irrigation rehabilitation scheme clusters, as per the national irrigation master plan; designed to mitigate climate change and dependency on rain-fed agriculture.
- The cluster concept builds a critical mass of producers who demand three key business services: (i) inputs, quality seeds and equipment; (ii) financial services; and (iii) comprehensive extension packages.
- The cluster encourages private sector-led large scale investment in efficient production practices, modern processing technologies and storage infrastructure.
- Smallholder rain-fed rice producers on the periphery of the cluster will benefit from the services and market opportunities as spill over effect. (??)
- In order to have vibrant service providers, NAFKA should engage in capacity building for service providers.
- Market positioning for rice is both local and regional, where Tanzania has a comparative and competitive advantage.
- This model has four entry points highlighted in the next section.
- Clear link with processing and storage facilities.



4.7 KEY ENTRY POINTS OF THE RICE SUB-SECTOR

4.7.1 KILOMBERO PLANTATIONS LIMITED – OUTGROWERS SCHEME : CONSOLIDATE & EXPAND



ACTORS	INPUTS SUPPLIERS	PRODUCERS	SME Millers+ Regional Traders	S.S.Bakhresa Company Ltd	WHOLESALERS+ RETAILERS
FUNCTIONS	Supply quality seeds, fertilizers, equipment and machines	Production and harvesting of good quality and quantity of paddy	Bulking, grading, cleaning and trading of paddy and rice	Processing, branding and marketing Dakawa rice	Sell branded rice
ISSUES	<ol style="list-style-type: none"> 1. Absence of stockists and agro dealers with all inputs and equipment 2. Input through subsidy is insufficient and stockist prices are prohibitively high 3. Limited availability of sufficient and competitive hiring cost of equipment and machine 	<ol style="list-style-type: none"> 1. Productivity and production is very low for both irrigation scheme and rain fed production systems 2. Inputs and production equipment costs are very high 3. Poor farm management skills 4. Limited access to financial services for inputs, farm management and marketing 	<ol style="list-style-type: none"> 1. SME millers are fragmented and with varied milling technologies and capacities 2. SME millers and regional traders mix different varieties and varied quality 3. of milled rice 4. Regional traders rely heavily on informal relationships with urban based large and SME wholesalers 	<ol style="list-style-type: none"> 1. Rice milling facility in Dar is idle due to inconsistent and limited supply. 2. Bakhresa core business is cereal milling and distribution 3. Lacking clear bankable business plan and supply chain design 	<ol style="list-style-type: none"> 1. Wholesalers and retailers trading rice of varied quality 2. Inconsistency in supply 3. Prohibitive price for medium+ low income consumers 4. Poor market place infrastructure
POTENTIAL INTERVENTIONS	<ol style="list-style-type: none"> 1. Explore ways of making availability and distribution of inputs and equipment is efficient and cost effective 2. Explore financial services models suitable for agro dealers and equipment suppliers 	<ol style="list-style-type: none"> 1. Facilitate farmers to access comprehensive extension package 2. Explore and adopt JICA/KATC- Key Farmer Training (KFT) farmer-to-farmer extension 3. Explore TPAWU SACCOS model and adapt before replicating in the project area 	<ol style="list-style-type: none"> 1. Identify cluster of SME millers and regional traders who can be formalised 2. Facilitate assessment of SME millers and regional traders' organisations 3. Facilitate development of strategic business plans for SME millers and regional traders 	<ol style="list-style-type: none"> 1. Facilitate Bakhresa to regain interest in branding Tanzanian rice 2. Facilitate undertaking business plan for Bakhresa linkages with SME millers and regional traders 	<ol style="list-style-type: none"> 1. Build on Bakhresa Group's existing distribution network in East and Southern Africa
POTENTIAL PARTNERS	CNFA-TASP (strengthen agro dealers); TFA (agro and equipment dealer); Tendaji (agro equipment and machine dealer); VARA (fertilizers); KickStart (agro equipment); Syngenta (inputs); ASA (quality seeds); FAO-SHFS (Developing reliable suppliers); TIB (agro equipment and machine financing)	JICA/KATC (Key Farmer Training); FAO-SHFS (IoT FaaB District Facilitation Teams); USAID Nafaka (FaFB); RLDC/MVIWATA (Mvomero); USAID (upgrading irrigation infrastructure)	FAO-SHFS/Nafaka /ICCIA (Feasibility and business planning, Traders' + SME millers' organisation and strengthening); IPSF- UNCIAD Facility (Entrepreneurship training workshop);	Nafaka/FAO-SHFS (engage with Bakhresa Group in business planning);	IPSF-UNCIAD Facility (Entrepreneurship training workshop);
NAFAKA role	Facilitate agro-dealer strengthening activities in conjunction. Develop PPPs with agro-input suppliers.	Facilitate FaaFB TOT and training	Facilitate feasibility and business planning, Traders'+ SME millers' organisational strengthening	Engage with Bakhresa Group in business p.lanning	Facilitate development of appropriate PPP market place infrastructure at wholesalers' level.

4.7 KEY ENTRY POINTS

4.7.2 SME MILLERS + REGIONAL TRADERS MARKET LINKAGES: BAKHRESA GROUP: PENETRATE EXPORT MKT



ACTORS	INPUTS SUPPLIERS	PRODUCERS	SME Millers+ Regional Traders	S.S.Bakhresa Company Ltd	WHOLESALERS+ RETAILERS
FUNCTIONS	Supply quality seeds, fertilizers, equipment and machines	Production and harvesting of good quality and quantity of paddy	Bulking, grading, cleaning and trading of paddy and rice	Processing, branding and marketing Dakawa rice	Sell branded rice
ISSUES	<ol style="list-style-type: none"> Absence of stockists and agro dealers with all inputs and equipment Input through subsidy is insufficient and stockist prices are prohibitively high Limited availability of sufficient and competitive hiring cost of equipment and machine 	<ol style="list-style-type: none"> Productivity and production is very low for both irrigation scheme and rain fed production systems Inputs and production equipment costs are very high Poor farm management skills Limited access to financial services for inputs, farm management and marketing 	<ol style="list-style-type: none"> SME millers are fragmented and with varied milling technologies and capacities SME millers and regional traders mix different varieties and varied quality of milled rice Regional traders rely heavily on informal relationships with urban based large and SME wholesalers 	<ol style="list-style-type: none"> Rice milling facility in Dar is idle due to inconsistent and limited supply. Bakhresa core business is cereal milling and distribution Lacking clear bankable business plan and supply chain design 	<ol style="list-style-type: none"> Wholesalers and retailers trading rice of varied quality Inconsistency in supply Prohibitive price for medium+ low income consumers Poor market place infrastructure
POTENTIAL INTERVENTIONS	<ol style="list-style-type: none"> Explore ways of making availability and distribution of inputs and equipment is efficient and cost effective Explore financial services models suitable for agro dealers and equipment suppliers 	<ol style="list-style-type: none"> Facilitate farmers to access comprehensive extension package Explore and adopt JICA/KATC- Key Farmer Training (KFT) farmer-to-farmer extension Explore TPAWU SACCOS model and adapt before replicating in the project area 	<ol style="list-style-type: none"> Identify cluster of SME millers and regional traders who can be formalised Facilitate assessment of SME millers and regional traders' organisations Facilitate development of strategic business plans for SME millers and regional traders 	<ol style="list-style-type: none"> Facilitate Bakhresa to regain interest in branding Tanzanian rice Facilitate undertaking business plan for Bakhresa linkages with SME millers and regional traders 	<ol style="list-style-type: none"> Build on Bakhresa Group's existing distribution network in East and Southern Africa
POTENTIAL PARTNERS	CNFA-TASP (strengthen agro dealers); TFA (agro and equipment dealer); Tendaji (agro equipment and machine dealer); VARA (fertilizers); KickStart (agro equipment); Syngenta (inputs); ASA (quality seeds); FAO-SHFS (Developing reliable suppliers); TIB (agro equipment and machine financing)	JICA/KATC (Key Farmer Training); FAO-SHFS (IoT FaaB District Facilitation Teams); USAID Nafaka (FaFB); RLDC/MVIWATA (Mvomero); USAID (upgrading irrigation infrastructure)	FAO-SHFS/Nafaka /ICCIA (Feasibility and business planning, Traders' + SME millers' organisation and strengthening); IPSF- UNCIAD Facility (Entrepreneurship training workshop);	Nafaka/FAO-SHFS (engage with Bakhresa Group in business planning);	IPSF-UNCIAD Facility (Entrepreneurship training workshop);
NAFAKA role	Facilitate agro-dealer strengthening activities in conjunction. Develop PPPs with agro-input suppliers.	Facilitate FaaFB TOT and training	Facilitate feasibility and business planning, Traders'+ SME millers' organisational strengthening	Engage with Bakhresa Group in business p.lanning	Facilitate development of appropriate PPP market place infrastructure at wholesalers' level.

4.7 KEY ENTRY POINTS

4.7.3 Dakawa Farmer-processor Linkages: Uwawakuda + Tanrice : Revive Idle Capacity & Promote Farmer Ownership Model



ACTORS	INPUTS SUPPLIER	PRODUCERS	UWAWAKUDA +Other FOs Dakawa	TAN RICE MILLS UNITED	WHOLESALERS+ RETAILERS
FUNCTIONS	Supply quality seeds, fertilizers, equipment and machines	Production and harvesting of good quality and quantity of paddy	Bulking, grading, cleaning and trading of paddy	Processing, branding and marketing Dakawa rice	Sell branded rice
ISSUES	<ol style="list-style-type: none"> Absence of stockists and agro dealers with all inputs and equipment Input through subsidy is insufficient and stockist prices are prohibitively high Limited availability of sufficient and competitive hiring cost of production and threshing equipment and machine 	<ol style="list-style-type: none"> Productivity and production is very low for both irrigation scheme and rain fed production systems Inputs and production equipment costs are very high Poor farm management skills Limited access to financial services for inputs, farm management and marketing 	<ol style="list-style-type: none"> UWAWAKUDA is weak and members are not undertaking collective marketing Other rice farmers in the vicinity of TANRICE facility are unorganised All farmers in Dakawa do not have established market linkages with regional traders and SME millers 	<ol style="list-style-type: none"> Rice milling facility is idle after attempts to operate in 2008 and 2009. Owner, Quality Group Limited (QGL) core business is automotive engineering and not cereal milling and distribution 	<ol style="list-style-type: none"> Wholesalers and retailers are trading rice of varied quality Inconsistency in supply Prices are prohibitive for medium and low income consumers Poor market place infrastructure
POTENTIAL INTERVENTIONS	<ol style="list-style-type: none"> Explore ways of making availability and distribution of inputs and equipment is efficient and cost effective Explore financial services models suitable for agro dealers and equipment suppliers e.g. supplier credit line, hire purchase, leasing, etc 	<ol style="list-style-type: none"> Facilitate farmers to access comprehensive extension package Explore and adopt JICA/KATC- Key Farmer Training (KFT) farmer-to-farmer extension Explore TPAWU SACCOS model and adapt before replicating in the project area 	<ol style="list-style-type: none"> Identify cluster of producers around TANRICE facility and Dakawa irrigation scheme (formally NAFCO) Facilitate assessment of UWAWAKUDA and other FOs in Dakawa Facilitate a strategy to develop and strengthen UWAWAKUDA and other FOs in Dakawa 	<ol style="list-style-type: none"> Facilitate QGL to gain interest in forming JV with FOs + other investors Facilitate undertaking feasibility study + business plan for formation of a joint venture (JV) 	
POTENTIAL PARTNERS	CNFA-TASP (strengthen agro dealers); TFA (agro and equipment dealer); Tendaji (agro equipment and machine dealer); VARA (fertilizers); KickStart (agro equipment); Syngenta (inputs); ASA (quality seeds); FAO-SHFS (Developing reliable suppliers); TIB (agro equipment and machine financing)	JICA/KATC (Key Farmer Training); FAO-SHFS (ToT FaaB District Facilitation Teams); USAID Nafaka (FaFB); RLDC/MVIWATA (Mvomero); USAID (upgrading irrigation infrastructure)	RUDI/MVIWATA (Farmer organisation and strengthening); TPSF-UNCTAD Facility (entrepreneurship training workshop)	FAO-SHFS (feasibility and business planning for JV);	FAO-SHFS (facilitate lobbying and advocacy forums); TPSF-UNCTAD Facility (Entrepreneurship training workshop);
NAFAKA role	Facilitate agro-dealer strengthening activities in conjunction. Develop PPPs with agro-input suppliers.	Facilitate offering FaaFB TOT and training	Facilitate producer association strengthening trainings and TOT	Engage with QGL to open up for JV arrangement+ facilitate feasibility and business planning process	Facilitate development of appropriate PPP market place infrastructure at wholesalers' level.

4.7 Key Entry Points: Rice Sub-sector

4.7.4 Sub Sector Market Based Solution: Zanzibar

UNIQUE SITUATION OF ZANZIBAR RICE SUB SECTOR

- Rice in Zanzibar is a major staple and is directly linked to food security. Government offers critical services at 50% subsidized rates and keeps consumer prices artificially low. Space for private sector participation is limited (market distortion).
- Government has developed a five-year plan (2011 -2015) to reduce import dependency through stimulation of local production, improvement of irrigation infrastructure and efficient supply of critical services. Zanzibar has 66,500ha of arable land - 21,300 ha is irrigable (8% utilized) , 45,000ha are rain fed; 19,500ha is underdeveloped.
- In order to promote a sustainable rice sub-sector on Zanzibar, interventions should target the entire sub-sector supply channels using market based approaches. NAFKA should focus on developing a market for services and facilitate dialogue between public and private sector actors.
- Potential partners to work with include RGZ, JICA, KOREAN EXIM BANK, TASAF, IFAD/MIVAB.
- **Government subsidies: market distortion. Private sector cannot compete.**

PROSPECTIVE INTERVENTIONS	IMPLEMENTER	DONOR
<p><u>Input supply</u></p> <p>Support government to enable private sector to offer a comprehensive agro-mechanization package through service centers (including facilitating credit, crop insurance, inventory credit, inputs and equipment hire/purchase). Explore ‘smart subsidy’ solutions that do not discourage private investment.</p>	<p>NAFAKA</p> <p>RGZ-MOANR</p>	<p>USAID</p> <p>RGZ</p> <p>TASAF</p>
<p><u>Productivity and production</u></p> <p>Support government efforts to commercialize smallholder rice farming.</p> <p>Facilitate promotion of FDI; emphasize development of irrigation infrastructure and improved rain fed rice farming.</p>	<p>NAFAKA</p> <p>JICA</p> <p>RGZ-MOANR</p>	<p>USAID</p> <p>JICA</p> <p>RGZ; KOREAN EXIM BANK</p>
<p><u>Promote rice processing industry</u></p> <p>Support government in the promotion of investments and investment avenues in modern medium scale processing (due to nature of rice farming areas) and promote outgrower schemes.</p>	<p>NAFAKA supports FtF <i>Market-based Solutions</i> processing activity.</p> <p>RGZ-MOANR-MITM</p> <p>ZIPA</p>	<p>USAID</p> <p>Commercial banks</p> <p>FDI</p>
<p><u>Enhance policy and regulatory framework</u></p> <p>Rationalize the RGZ subsidy program in order to avoid market distortion:</p>	<p>NAFAKA supports FtF Policy initiative</p>	<p>USAID</p>

4.8 Summary of the key entry points for the rice sub sector interventions



Vision

An efficient and competitive mixed small- and large-scale rice sector with average productivity gains of 100% for targeted producers within 5 years by:

- Promoting commercial rice farming through irrigation cluster model.
- Increasing use of mechanization, inputs and GAP.
- Ensuring timely and adequate financing for producers, service providers and traders
- Improve producer access to transparent markets.
- Facilitate strengthened relationships among value chain



Entry Points

1. Kilombero Plantations Ltd outgrower scheme cluster.
2. Market linkages between SME Millers & Regional Traders with Bakhresa Group.
3. Dakawa Farmers & Processor (TANRICE) joint venture ownership model.
4. Promote market-based approaches for upgrading the rice sub sector in Zanzibar.

Principle Activities

- **Support packaging comprehensive extension services;** enhance efficient supply of inputs, quality seeds, equipment and machinery to producers as well as good farm management skills and technologies, develop service centers.
- **Strengthen policy and regulatory environment;** support FtF Policy initiative, participate in rolling out NRDS; dialogue with GoT on establishment of Cereals and Other Produce Authority; address tariff and non tariff barriers.
- **Linking Actors to financial institutions:** facilitate innovative financial services suitable for chain actors to form and strengthen SACCOS; appraise/strengthen financial service models suitable for replication, e.g. TPAWU SACCOS.
- **Strengthen capacity of relevant service providers:** assess capacity gaps and strategize ways of addressing these gaps.
- **Enhance market access and framework for structured trade:** initiatives that support growth from ICS to full-fledged WRS and commodity exchange.
- **Develop services market in Zanzibar:** support the RGZ to create favorable environment for private sector to take proactive role in offering critical business services to the rice sub sector;

Expected Outcomes

- **Robust private and public extension service.**
- **Increased use of improved inputs, GAP and mechanization.**
- **Increased capital flows from financial institutions to rice sector actors.**
- **Efficient and sustainable service provision to chain actors.**
- **Enhanced market access and framework for structured trade:** ICS successfully moved to fully fledged WRS and commodity exchange.
- **Increased access to market information by small holder farmers.**
- **Develop services market in Zanzibar:** gradually, but sustainably, the private sector is taking proactive role in offering critical business services to the rice sub sector so government subsidies can be significantly reduced.

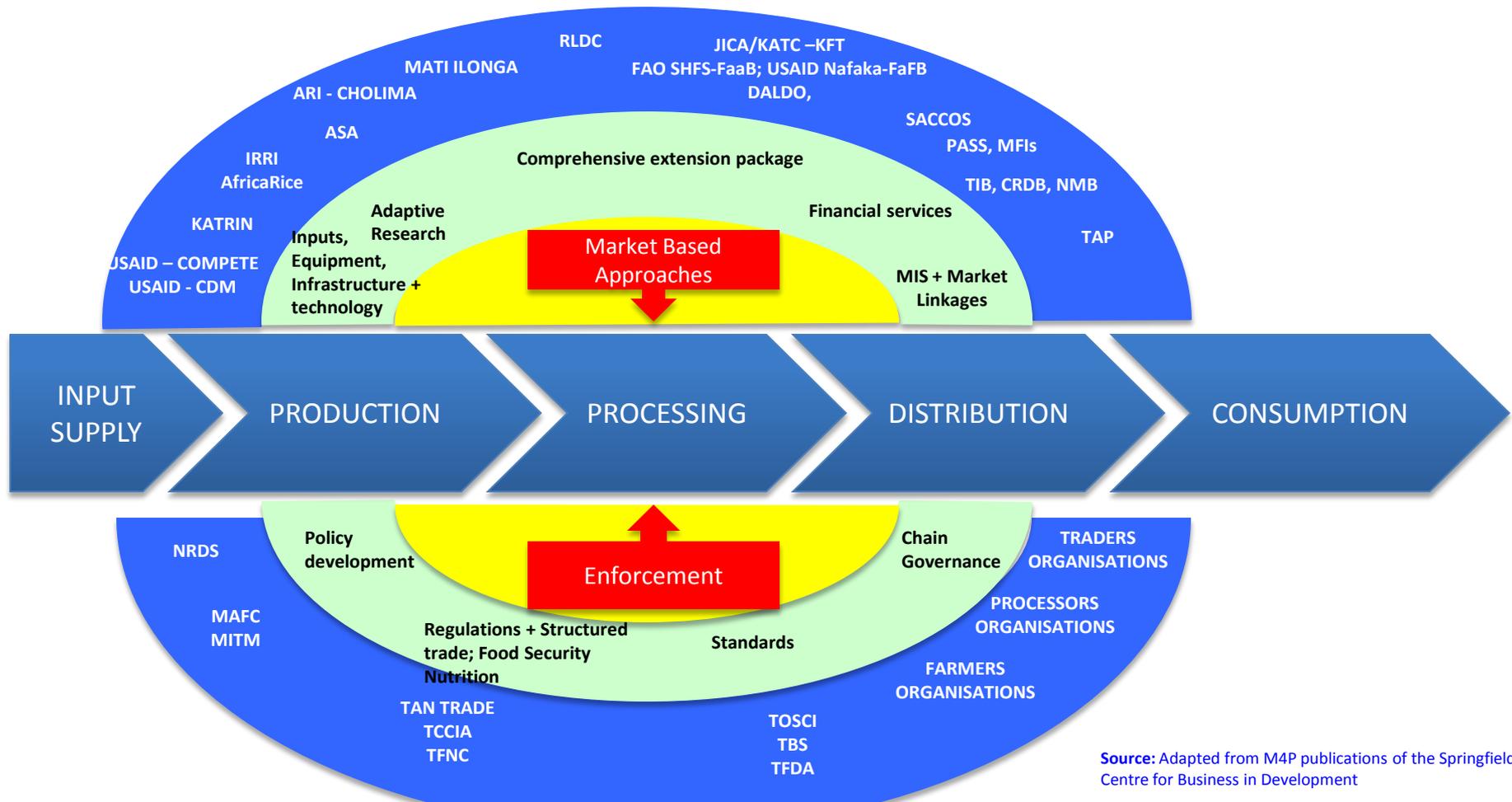


Results

- Yields increased.
- Imports substituted significantly.
- Tanzania rice penetrates regional market.
- Marked increase in availability and capacity of critical service providers.

4.9 Multi-stakeholder Engagement in the Rice sub-sector in Tanzania

This framework illustrates the complexity of market systems and set of actors and partners that could be engaged to support the systemic changes necessary to develop the rice sub-sector in Tanzania.



Source: Adapted from M4P publications of the Springfield Centre for Business in Development

INTERVENTION LOGIC DESCRIPTION

- Promote effective engagement of the private sector. Implementation requires multi-stakeholder participation, each providing core services within their mandate in accordance with market development principles. A strategic coordination role is crucial to avoiding duplication of effort and to create a synergistic effect. The challenge of FtF and NAFKA specifically is to design interventions that address not only market-based approaches but also enabling environment issues if not adequately addressed by other collaborators. The business model for rice value chain upgrading will require an implementation logic recognizing the systemic constraints.



USAID
FROM THE AMERICAN PEOPLE

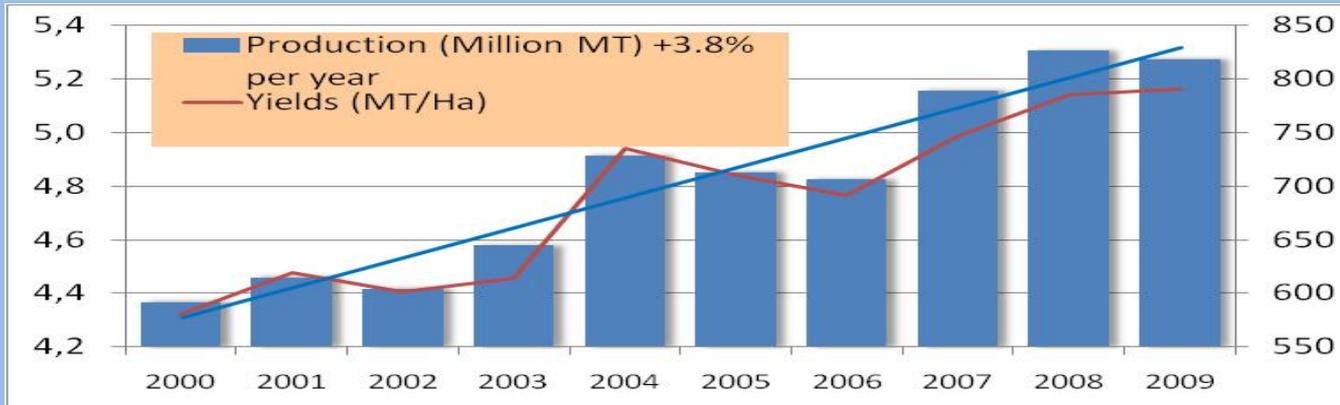
TANZANIA

5. MAIZE VALUE CHAIN ASSESSMENT

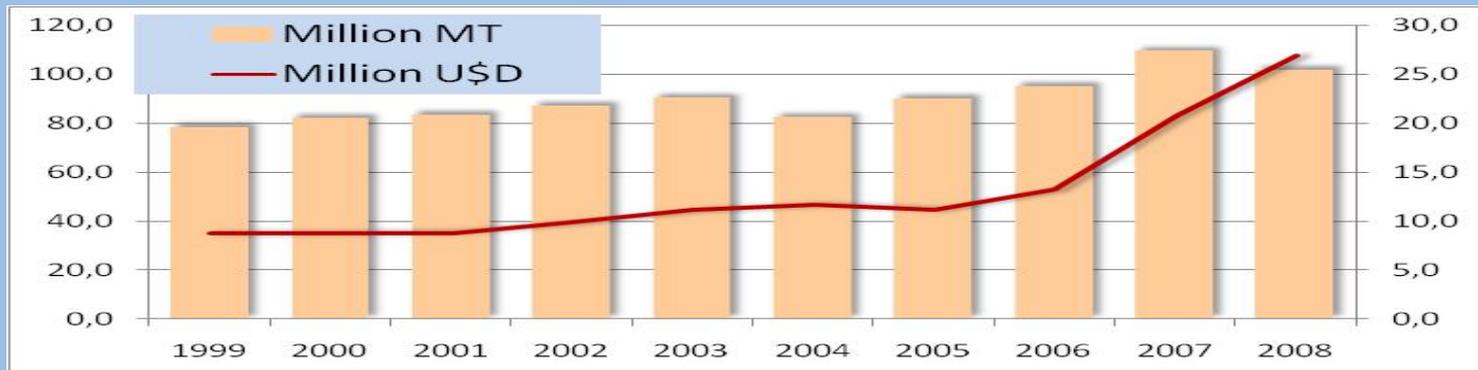
5.1 MAIZE MARKETS IN PERSPECTIVE

WORLD MARKET

- Over the period 2000 – 2009, global maize production has increased from 590 million mt to approximately 820 million mt (3.8% increase per year) over 159 million ha, with the average MT/Ha increasing from 4.25 to 5.15.
- This increasing of the production is due to an improvement of the yields.



In 2009, the key producers on the world market were the United States (42%), China (23%), Brazil (8%), Mexico (3%), Argentina (3%), and India (3%), comprising 82% of total traded volumes.

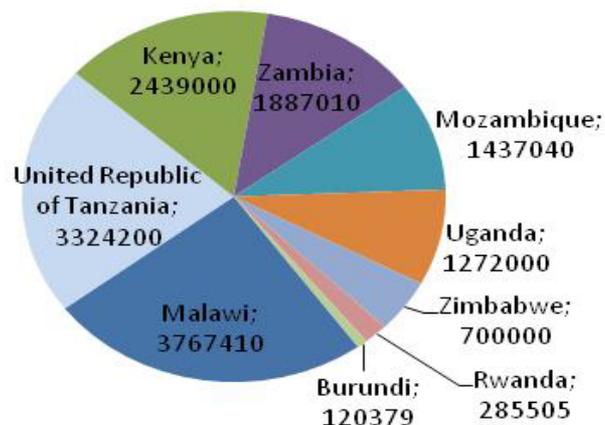


5.1 MAIZE MARKETS IN PERSPECTIVE

REGIONAL MARKETS

- In the countries constituting the regional market, the average yields over the period 2000/09 have ranged from 0.8 MT/ha (in Zimbabwe) up to 1.6 MT/ha in Kenya. The average yield over the period reached 1.3 MT/ha.
- In 2009, the total production had grown 29% (compared to 2000) for a total of 15.2 million MT produced.

Production of maize per Country (million MT) in 2008

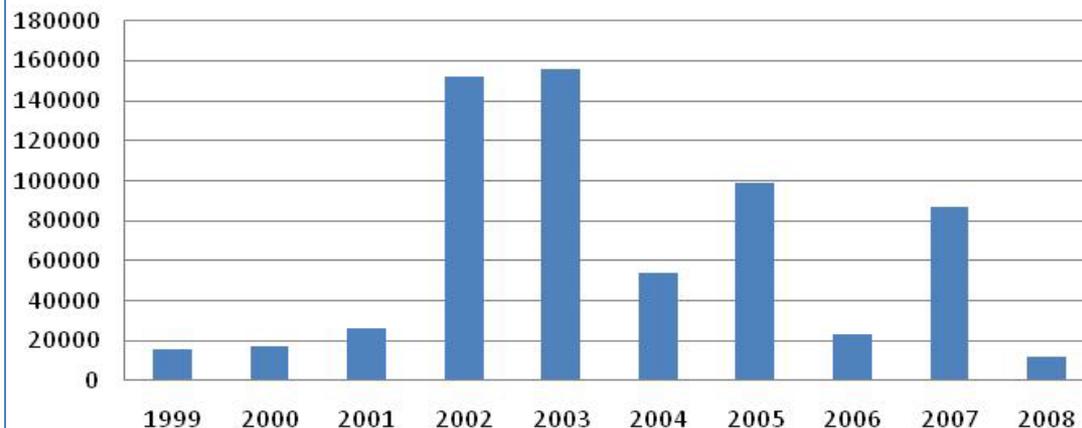


- Exports in the regional market have increased 35% between 1999 and 2008.
- With climatic changes, Kenya might become increasingly dependent on imports. Malawi became a net exporter. Zimbabwe and Mozambique might follow the same path. This creates opportunities for Tanzanian producers.

NATIONAL MARKETS

- Production increased 69% over the period (from 1.9 to 3.3 million MT) on area that increased from 845 mil ha (2001) to 3,462 mil ha in 2009.
- Over the period (2000/2009), maize yielded 1.6 MT/ha on average (minimum annual average of 0.8 MT/ha in 2003 and a maximum annual average of 3.1 MT/ha in 2001).
- Consumers prefer white flour obtained from hammer mills after removal of the germ (which contains most of the proteins and fat).
- Collusion between Kenyan traders against Tanzania, complications of the legal (trade licenses difficult to secure) and quality requirements and inability to comply with them are the main NTTF barriers:
- Tariff barriers: doubling of trade license costs (Tanzania and Kenya).

Exports of maize from Tanzania (MT/year)

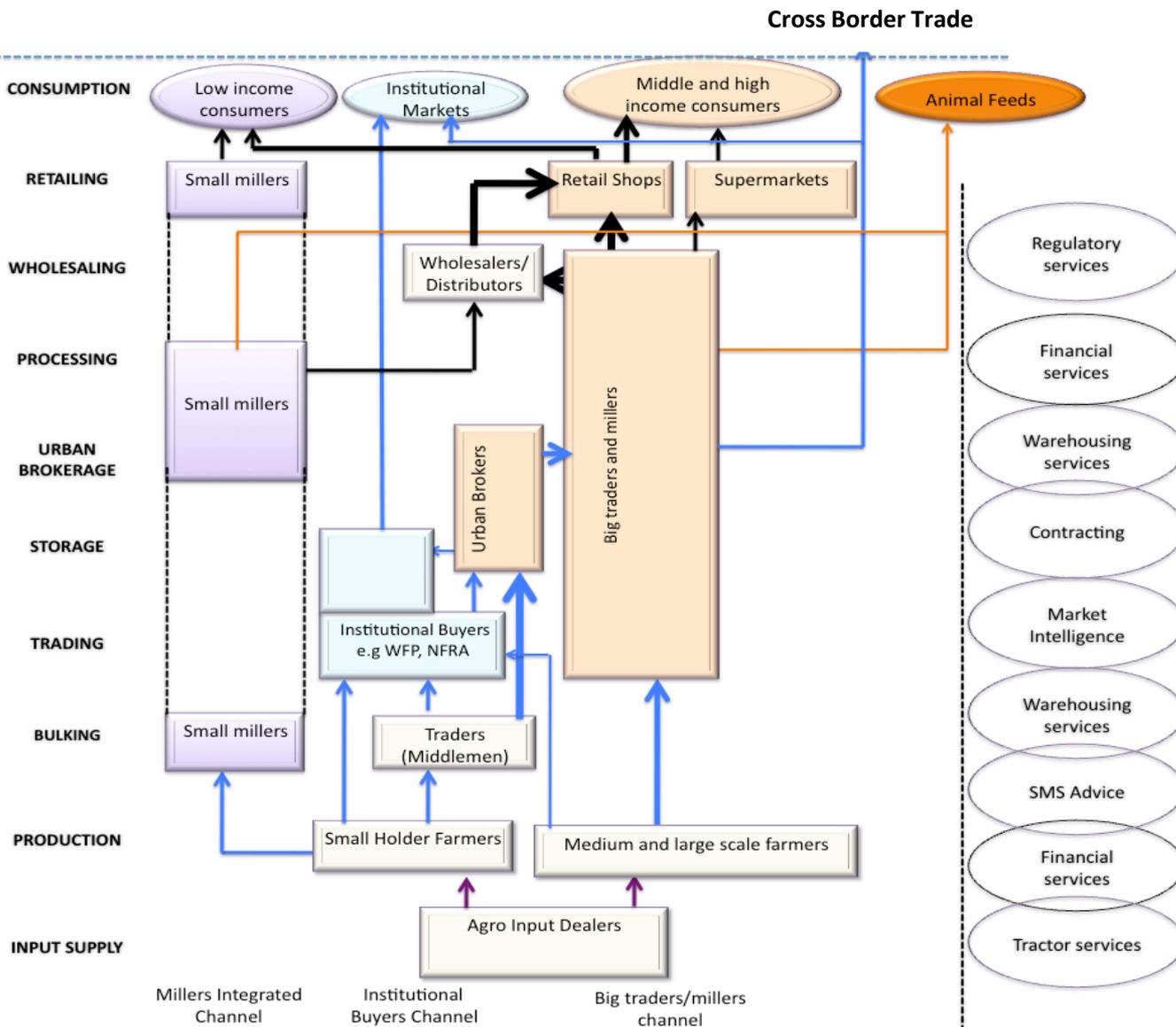


Key stakeholders include medium and large traders and buyers (millers, institutional actors), Government and warehouse operators.

Change drivers include commercial buyers and processors, input suppliers (agro-chemicals and seed firms) and service providers (irrigation, mechanized labor), financial service providers and the East African Grain Council.

5.2 MAIZE VALUE CHAIN ANALYSIS AND DEVELOPMENT

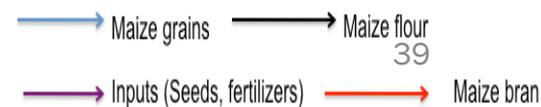
MAIZE VALUE CHAIN MAP



NOTABLES

- The small scale and fragmented nature of maize production obliges wholesalers to assemble volumes from many farms.
- Most assemblers make small margins and are well positioned to provide additional services to small scale farmers.
- Almost all processing is undertaken by small hammer mills. Most millers operate from their own premises but have limited capacity to store grain or flour.
- The larger traders are in a position to profit from seasonal price fluctuations and to minimize losses by virtue of their integrated structure. These advantages have given a small number of large traders a dominant position across the maize sub sector.
- The dominance by small mills creates challenges to the development of effective and widespread fortification programs.

Key SS map:



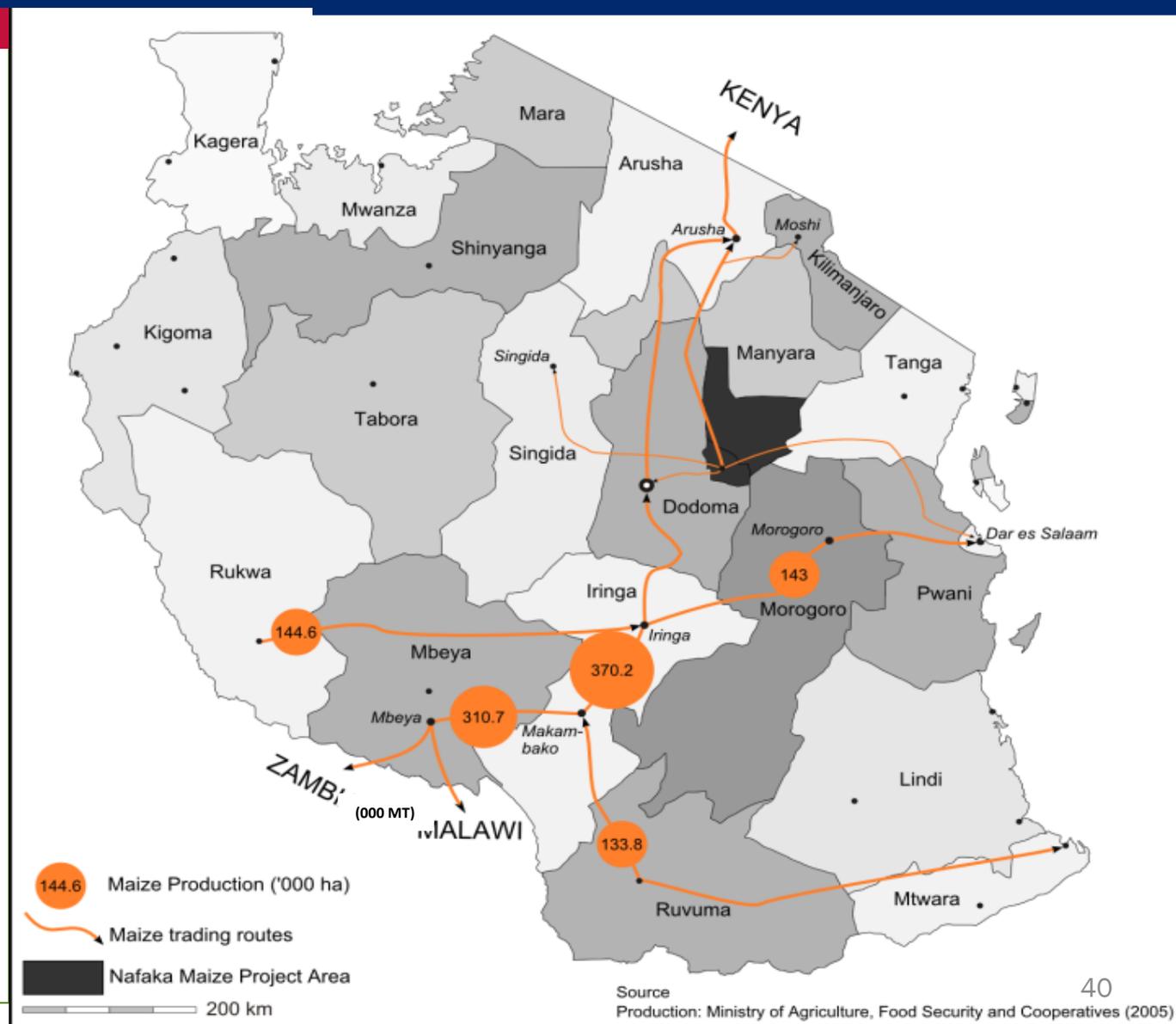
5.2 MAIZE VALUE CHAIN ANALYSIS AND DEVELOPMENT

Map of maize production and flow in Tanzania

GEOGRAPHICAL FLOWS

NOTABLES

- “The Big Four.” Most of the production (~30%) of maize in Tanzania comes from four regions (Rukwa, Mbeya, Ruvuma and Iringa) which feed institutional buyers (National Food Reserve Agency, WFP, etc., as well as the surrounding urban centers and Dar es Salaam, and the southern neighbouring regional markets (Zambia, Congo, etc.).
- **Kibaigwa** (Kongwa District) has become an important strategic hub in the central zone. Mainly it draws maize from Kiteto, Kongwa, Mvomero and Kilindi districts and channels it mostly to Dar es Salaam (70%). But it also plays an important role in exports to Kenya, Rwanda and Congo. It also imports (e.g. from Uganda in 2010).



5.2 MAIZE VALUE CHAIN ANALYSIS AND DEVELOPMENT

CRITICAL SERVICES AND ACTORS COVERAGE

Service	Actors, coverage and details	Opportunities	Potential Change drivers / Partners
Finance	<ul style="list-style-type: none"> •Cash transfers by banks and phone companies •Bank inventory financing with collateral management of large scale reputable traders' stocks (minimum facility \$1m). •MFI/SACCO financing of inventory credit for small farmer warehouses (very small scale, 300MT+). •Absence of credible track records by SMEs. •Traders provide small loans to farmers. •Smallholders and small scale traders have limited access to loans/savings and banking services. •Few legal entities of small-scale traders. •Poor credit risk analysis in the financial sector. •Domestic credit provided by banking sector. 	<ul style="list-style-type: none"> •Tanzanian Agricultural Bank (TAB) whose interest rates are lower than the commercial ones. •Mobile personal banking with savings services. •Warehouse receipt financing. •Financing products for building stores, purchasing, weighing and testing equipment. •Longer-term investment loans. 	<ul style="list-style-type: none"> •Tanzanian Agricultural Bank with lower interest rates. •Financial Sector Deepening Trust. •National Microfinance Bank (Rabobank is 49% shareholder). •CRDB Bank.
Input, Equipment and storage	<ul style="list-style-type: none"> •CNFA/TAGMARK support to existing and new agro-dealers and development of agro-dealers' networks. •Input suppliers assuming extension, soil testing and other services. •Agricultural service providers (mechanization, irrigation, etc.). 	<ul style="list-style-type: none"> •Exemption on import duties for agricultural equipment. •TIB window for wholesale loans to SACCOS at 5% and announced launching of the Tanzanian Agricultural Bank. •Entry of highly qualified inputs and service firms (Agro-Rain, Balton, Tendaji). •Construction and improvement of standard warehouses. 	<ul style="list-style-type: none"> •Access to funds to promote the use of these services (TIB, PASS). •Reduction of cost of energy, import duties and port services. •WRS (warehouse licensing board).
Extension and information	<ul style="list-style-type: none"> •Several fragmented but improvable Market Information Systems. •LACK of Marketing Intelligence Services. •POOR public extension and research services. •Farmers in severe need of education and technical assistance. 	<ul style="list-style-type: none"> •Expanded use of FFS, Exchange visits, fairs, FM radio, SMS based extension services and demos to disseminate GAP. •Private extension by actors vertically integrated (buyers, input suppliers, etc.). 	<ul style="list-style-type: none"> •Improvement of producer market integration with downstream actors for better access to information on prices and quality. •Development of producer entrepreneurial skill leading them to drive demand for services rather than being "passive users."

5.3 Gender Issues in the Maize Sector (Needs new photo)

NAFAKA's will identify the degree to which the ability of men and women can take advantage of profitable opportunities with acceptable risks. This is currently limited by gender-based constraints. NAFKA will develop strategies to mitigate or eliminate these constraints.

GENDER ASPECTS IN THE MAIZE SUB SECTOR

- *More thorough gender analysis for benchmarking purposes is needed.*
- *Decisions concerning production and sale of maize are generally made by consensus between men and women* and benefits from sale of maize accrues to all family members.
- *Trade in maize grains is controlled by men but retail trade in maize flour is dominated by women.* This has implications for issues of fortification as small scale millers dominate maize milling particularly in rural communities. NAFKA will coordinate closely with the USAID Market Based Solutions Project to introduce small scale fortification strategies with women millers.
- *Access to finance and business development services* is a constraint for men and women at all levels of the value chain, although women have a better record for timely repayment. Lessons learned from the success of women's MFI groups can be expanded to include larger numbers of men and women.
- *Gender relations in households and community* are deeply rooted in cultural and religious beliefs and values, although culture is dynamic and constantly changing. NAFKA will work closely with value chain actors and traditional community leaders to mitigate the consequences of increased commercialization of small holder maize production.

5.4 POLICIES AND ENABLING ENVIRONMENT AFFECTING THE MAIZE SECTOR

Trade Policies

- Export restrictions weaken incentives to invest in production, transport and storage.
- Distortion through direct involvement of the State in trade (e.g., Cereals & other Produce Board).

Tariffs

- 50% import duty during surplus years.

Non-tariff trade barriers

- Collusion between foreign traders (prevents Tanzanians from accessing markets).
- **Absence of commodity exchange services, trade insurance, etc.**
- Lack of transparency in quality standards and requirements, difficulty in securing trade and export licenses, corruption and lack of law enforcement.
- Long and unnecessary delays at borders and customs check points.

Land Tenure

- Land grabbing, fragmentation (successive generations) cause farmers to operate on farms so small that they are not viable as economic units,
- Difficulty in securing land titles (cost, delays, obstruction, etc.).
- Uneven, inconsistent access (some small farmers have to rent their plots).
- Even land ownership titles have limited period of validity, discouraging land ownership.

Business enabling environment

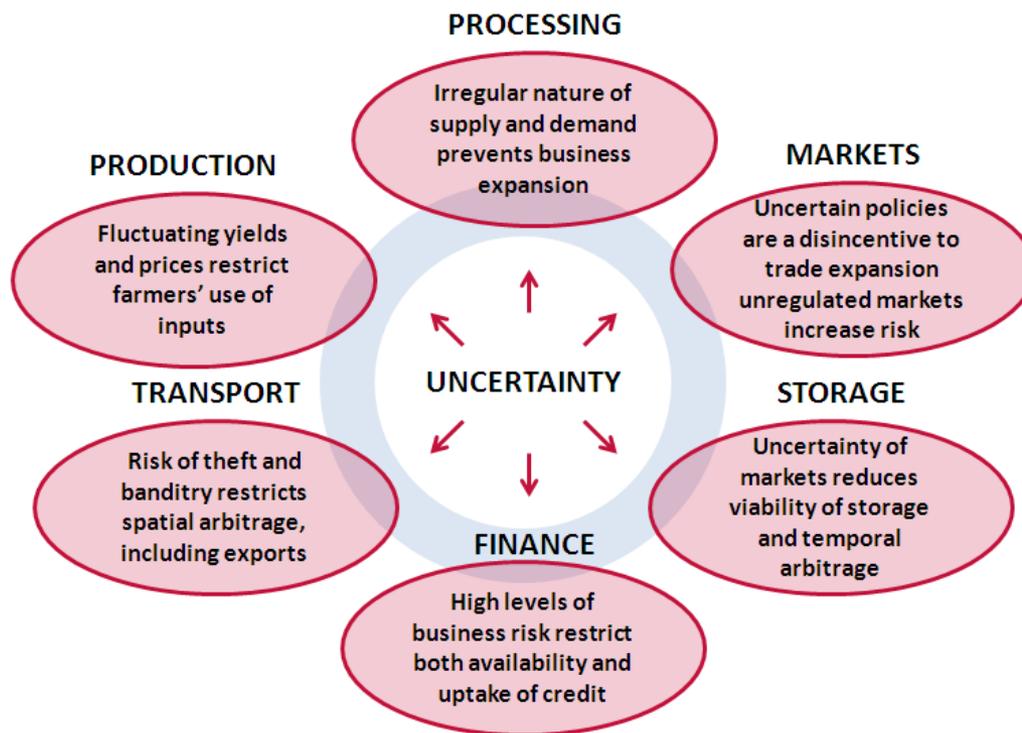
- Almost no privatization of services that farmers are accustomed to receiving at no charge.
- Long delays in registering a business.
- Duties and VAT on imported equipment.
- Tax holidays for investors needed.

5.4 POLICIES AND ENABLING ENVIRONMENT AFFECTING THE MAIZE SECTOR

Overarching problems of uncertainty and risk:

- Maize production in Tanzania is mostly rainfed with uncertain yields, variable production, and potentially dramatic fluctuations in price.
- The irregular nature of supply and demand for processed grains limits business expansion.
- Contracts are rare and poorly enforced; informal agreements are the norm. This means that most transactions are of the “see it to believe it” variety where both parties are present and witness the goods change hands. All other transactions involve a significant risk that one or both parties will renege on the deal.
- The major constraint to grain distribution lies in the cost of transport on feeder roads, which is estimated at Us\$0.17 per Mt per km

Policy and Regulatory Environment



Source: USAID / CiberClir

NOTABLES

- The biggest constraints as expressed by producers:
 - export ban as this is associated with lower prices and unpredictable price patterns. Illegal cross border trade with Kenya is rampant.
 - Poor application of standards for reliable weights and measures, leaving producers with the suspicion that nothing is done to prevent them from being cheated.

> A CASE OF FEEDING THE NEIGHBOUR WHEN YOU'RE STARVING?



Trucks with hundreds of tonnes of maize stop at Himo Police Station in Kilimanjaro Region after they were seized for attempting to transport the cereal to Kenya illegally. Their seizure follows reports that residents of Simanjiro District in Manyara are experiencing serious food shortages. PHOTO | DIONIS NYATO

5.4 POLICIES AND ENABLING ENVIRONMENT AFFECTING THE MAIZE SECTOR

Development partner activities impacting the Maize Sector

World Bank

- Finding of ASDP, DADPs, ASFP, DADGs and DCDGs

ACT / TAP

- Coordinate planning through Commodity Investment Plans.
- Lobbying for favorable policies.
- In partnership with FIPS, TAP provides inputs for extension training through demonstration lots, particularly in Kiteto District.
- Training for leaders of Kiperesa SACCOS to be able to manage Inventory Credit Systems (ICS).

Farm Input Promotion Africa

- Provides inputs for extension training through demonstration plots, particularly in Kiteto District.

MVIWATA

- Facilitates formation of producer groups, farmer group capacity building, lobbying and advocacy, and organizing farmer forums.

FAO – SHFS

- Training of District Facilitation Teams in FaaB
- Steering initiatives for establishing structured markets for farm produce and developing a Tanzania Commodity Exchange (TCE).
- Clusters and agribusiness development.

National Food Reserve Agency

- Buys and stores maize and redistributes to areas which are food insecure using a network of millers.

Yara Tanzania Limited

- Training of farmers and agro-dealers in agronomic practices and proper usage of inputs.
- Importer of fertilizers.

WFP-P4P

- Enhancing commercialization of smallholder farmers.
- Linking farmers to WFP market.
- In collaboration with RUDI, support capacity building of producer organizations .

Tendaji (who?)

- Developing farmer business models – block farms and profit centers

RUDI

- Undertakes organization development and capacity building for producer groups to enable them to undertake group marketing through Inventory Credit System.

CNFA/TAGMARK

- In partnership with TAP, training and certifying agro-input dealers across the country.

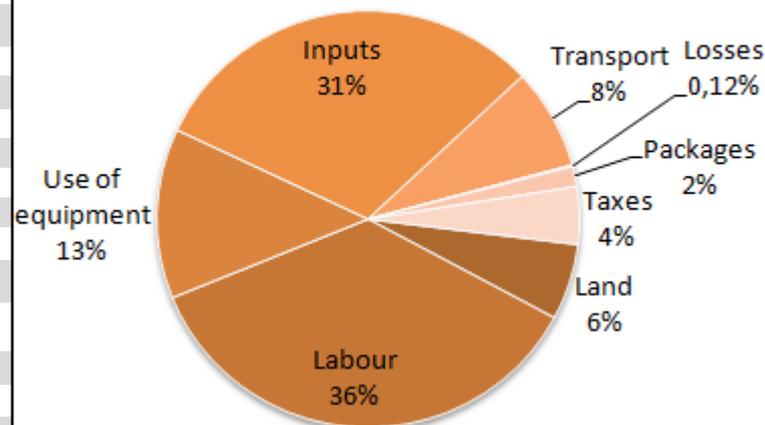
5.5 BENCHMARKING THE COMPETITIVENESS OF TANZANIAN'S MAIZE SUB SECTOR

PROFITABILITY, PRICE STRUCTURE AND COST DRIVERS

PARTIAL BUDGET ANALYSIS OF MAIZE IN TWO DIFFERENT SALE PERIODS IN KIBAIGWA

Technology	Traditional	Traditional	Improved	Improved
Price	Low	High	Low	High
Expected grain production (kg/ha)	773.50	773.50	4400.50	4400.50
Grain price (\$/kg)	0.19	0.31	0.19	0.31
Total Revenue (\$/ha)	149.29	241.33	849.30	1372.96
Seeds (\$/ha)	--	--	2.97	2.97
Fertilizer (\$/ha)	--	--	8.65	0.48
Tractor (\$/ha)	--	--	4.75	4.75
Weeding (\$/ha)	--	--	4.75	4.75
Harvest labor (\$/ha)	--	--	7.42	7.42
Storage cost for 3 months (\$/ha)	--	29.64	--	168.61
Fee paid by farmer at maize market (\$/ha)	--	0.01	--	0.06
Transportation (\$/ha)	--	31.50	--	179.23
Total variable costs (\$/ha)	0.00	61.15	28.52	368.27
Gross income (\$/ha)	149.29	241.33	849.30	1372.96
Net income (\$/ha)	149.29	180.18	820.77	1004.69
Marginal net benefit (\$/ha) from storage over traditional without storage	--	30.89	671.49	855.40
Marginal rate of return (\$/ha) from storage	--	104.23	--	507.32

Cost Drivers of farmers' profitability

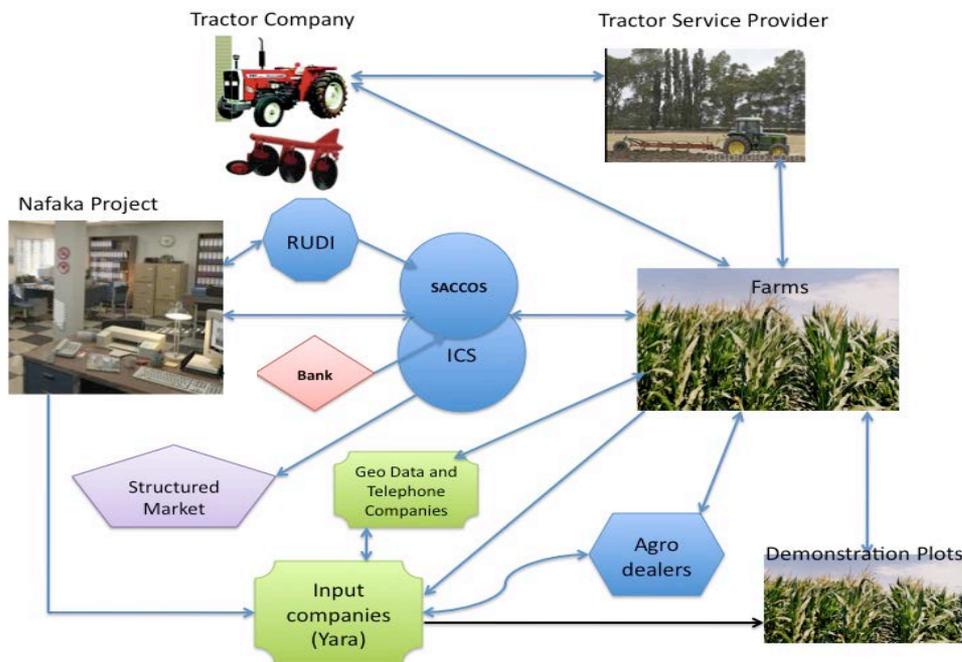


- Illustrates considerable potential to increase returns through storage at farm level.
- The rate of return from storage increases dramatically when the farmer employs improved technologies.

	Yields MT/acre	SGP (TZS/acre)	SGM	SGP/ManDay/TZS)
SHF – Manual (DODOMA - 10 acres rented, no fertilizers or improved seeds)	0.7	174,584	48%	2,865
SHF – Mechanized (DODOMA - 10 acres rented, with fertilizers and improved seeds)	1.89	425,763	43%	5 443
SHF – Mechanized / oxen (IRINGA - 10 acres fertilizers and improved seeds)	3.6	939,515	58%	9 900
LSF – Mechanized (100 acres owned, tractor, fertilizer)	2.3	666,437	51%	8,007
LSF – Mechanized (400 acres owned, « best practice » farmer)	4.65	1,045,000	37%	350,000

5.6 BUSINESS MODELS

5.6.1 BUSINESS MODEL I: SCATTERED PLOTS



ELEMENTS OF THE MODEL

Finance

- NAFKA facilitates access to seed capital.
- Loan guarantees (CRDB or NMB).
- Credit services from TIB/TAB.

Tractor service

- Create effective demand for tractor service by making credit accessible to farmers through SACCOS.
- Foster private sector investment in improved services (tractors, spare parts and servicing).

Input supply

- Balanced crop nutritional approach promoted by input suppliers and agro-dealers.
- Farmers empowered with location-specific input supply advice through SMS (mobile phones).

Market Linkages

- Link producer groups to structured markets through ICS.

Farmer Capacity Development

- Work with RUDI to develop and strengthen capacity of producer groups, particularly SACCOS.

MECHANISMS OF THE MODEL

NAFAKA

- Facilitates access to capital for input and tractor services.
- Collaborates with GeoData consultants, input suppliers and mobile phone companies to develop SMS-based location-specific input advice.
- Contracts RUDI to build and strengthen capacity of producer groups.

Banks and SACCOS

- Banks provide inventory financing (ICS) to purchase farmer produce.
- SACCOS recovers loans from farmer savings and/or sale of maize.

Farmers

- Farmers access input financing through the SACCOS.
- Sell maize to the ICS and receive 75% payment on delivery of maize and 25% after maize is sold to an institutional buyer.

Inventory Credit System (ICS)

- In close association with the SACCOS, buys and sells maize from farmers.

Institutional Buyers

- Guarantee to buy the crop at negotiated price and payment terms.

Tractor Services

- Agricom supplies spares and servicing to other tractor service providers and also provides tractor service for farmers.

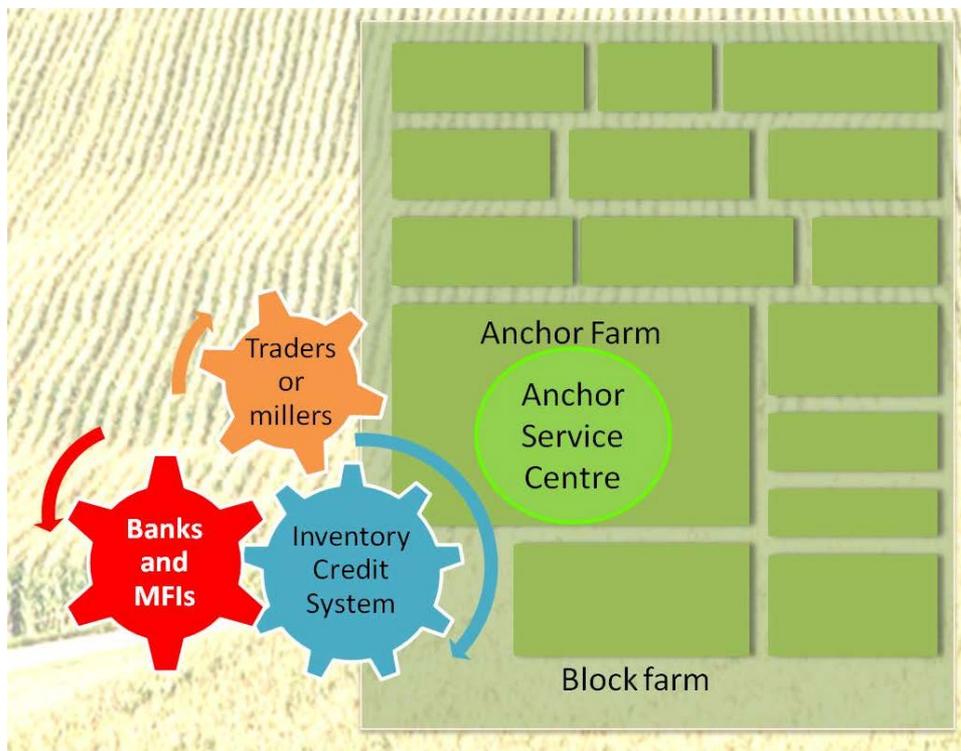
Input supply

- Input companies supply inputs through agro-dealers and provide extension services and technical advice thru demonstration plots.
- Conduct soil tests and feed in a GIS based system (built by Geo Data) and develop balance crop nutritional advice for each location

5.6.1. MAIZE SUB-SECTOR: KEY ENTRY POINTS FOR BUSINESS MODEL 1

INTERVENTIONS	IMPLEMENTER	FINANCIAL SUPPORT
<p><u>Develop a business plan for linkage program and sensitize/mobilize actors</u> Develop specific activities with key actors creating awareness of the program and solicit consensus and clear cut opportunities for collaborations.</p>	NAFAKA	USAID
<p><u>Develop a financing plan, assess eligible SACCOS and secure commitment from banks</u> Assess eligible SACCOS, secure commitments from financial institutions to finance SACCOS, finalize the financing plan.</p>	NAFAKA Financial institutions	Financial Institutions
<p><u>Assess capacity of producer organization; develop plans for capacity development of farmers</u> Identify partners to offer organizational and capacity strengthening services to participating producer groups.</p>	NAFAKA District (Local Government) Authorities	USAID, LGA
<p><u>Secure commitments from institutional buyers</u> Gather data on volumes, standards and terms under which buyers are willing to operate.</p>	NAFAKA Institutional buyers	USAID
<p><u>Undertake ICS development and warehouse support</u> Conduct survey of ICS initiatives to be supported, assess needs, undertake capacity development, develop scope of collaboration.</p>	NAFAKA Local Authorities Producer Organizations	USAID , DADPs,
<p><u>Develop location-specific input supply technical assistance for agro-dealers</u> Perform soil tests, develop specific information to be uploaded into GIS based system. Support input company linkages with agro-dealers and stimulate demand for services through demonstration plots.</p>	NAFAKA Yara Geo Data and mobile phone companies	USAID Yara,
<p><u>Conduct an assessment of tractor service providers and link them to Agricom and/or Balton</u> Perform soil tests, develop specific information to be upload into GIS based system. Support input companies linkages with agro dealers and stimulate demand for services through demonstration plots.</p>	NAFAKA LGA	USAID, Agricom, Balton

5.6.2 BUSINESS MODEL 2: BLOC FARM WITH A PROFIT CENTRE



ELEMENTS OF THE PROFIT CENTRES

Block Farm

- Area composed of **contiguous plots belonging** to different farmers with an agreement with the **Profit Center - Min.2,000 acres**.
- Infrastructure and working environment organized to allow to mechanize in a competitive and environmentally -friendly way.

Anchor Service Center

- Center managed by a highly qualified farmer.
- Hub with equipment adequate to serve the entire block (land preparation, fertilization, sowing, weeds/pest/disease control, harvest and post harvest management).

Market Outlet Trader or Miller

- **Buyer with optimal market intelligence able to acquire significant volumes.**

Storage: **Inventory Credit System**

- Actors with storage capacity and ability to manage a credit scheme utilizing crops as collateral.

Financial services: **Banks or MFIs**

- Institutions providing agricultural credit (varying payment schedules and interest rates).
- Crop insurance services.
- Crops as collateral.

MECHANISMS OF PROFIT CENTRES

Anchor farm/ Service Center

- Farmers contract the profit center to farm their plot with guaranteed yields and controlled costs.
- Farms clients' plots and trains them in best practices.
- Harvests, delivers production to ICS and addresses post-harvest issues.

Farmers

- Contract the Profit Center and accept conditions (farming, post-harvest, storage).
- Participate in the ICS scheme.

Buyers

- Guarantee to purchase crop at negotiated price and payment terms.

Banks and MFIs

- Finance the ICS, Profit Center and buyer working capital, and assume financial and climate risks
- Loan guarantees through the ICS.

Inventory Credit System

- Supervises the storage and guarantees the sound management of the maize as loan collateral.
- Provides Market Intelligence Services to producers.

5.6.3 KEY ENTRY POINTS FOR BUSINESS MODEL 2

POSSIBLE INTERVENTIONS	IMPLEMENTER	FINANCIAL SUPPORT
<p><u>Develop business plans (profit center and storage unit):</u> Assess investment costs, profitability of the operation and management requirements for the Profit Center and ICS, with particular attention to fairness of the plans to all involved parties.</p>	NAFAKA	USAID
<p><u>Develop financing plan and secure commitment</u> Contact and secure commitment from financial institutions. Finalize financing plan</p>	NAFAKA Financial Institutions	USAID
<p><u>Tender to identify company to administer the profit center</u> Prepare a tendering file and procedure. Administer tendering procedure. Contract the company to administer the profit center.</p>	District Authorities with assistance from NAFKA	USAID, TIB
<p><u>Obtain commitment from buyers</u> Secure information on prospective buyer requirements. Secure commitment statements.</p>	NAFAKA	USAID
<p><u>Sensitize and gain agreement of community residents and local authorities</u> Develop sensitization strategy (e.g. advantages of the process in terms of incomes, training, food security, etc.). Implement through contracted partners, or directly. Negotiate conditions of land utilization.</p>	NAFAKA Local Authorities Farmer Organizations	USAID , DADPs,
<p><u>Provide for the set up of ICS (storage facilities, training, etc.)</u> Tender, contract and train the Civil Work Company, the MFI and the company who will run the ICS, Supervise the process</p>	LGAs with NAFKA assistance. Consultant in Civil Works + MFI specialist	USAID, DADPs, TIB
<p><u>Contract the company to administer the profit center</u> Draft the contract, finalize the negotiation of the content, tender, contract,</p>	LGA with assistance from NAFKA	USAID
<p><u>Operate the block farm and monitor the output as well at the community reactions</u> Training of farmers on GAP, harvest, post harvest, ICS, market intelligence, payment schedules. Facilitate and monitor entire whole process, the collective assessments and periodic refinements.</p>	Profit Center Company with NAFKA support, MFI, Warehouse operator, LGA, Farmers' Organization	USAID

5.7 SUMMARY OF THE KEY ENTRY POINTS FOR MAIZE SUBSECTOR INTERVENTION



Vision	Principle Activities	Expected Outcomes	Results
<p>Doubling of maize productivity and reducing caloric and nutritional food insecurity in project districts by:</p> <ul style="list-style-type: none"> • Promoting a commercially- driven block farming model. • Increasing use of mechanization, inputs and relevant technical assistance. • Ensuring timely and adequate farmer input financing. • Improve farmer market integration through improved storage (ICS). • Stronger relationships among value chain actors. • Increase incomes and nutrient availability from dry season cropping. 	<ul style="list-style-type: none"> • Support input companies: At least 2 input companies are assisted with soil test sampling and developing GIS based balance crop nutritional approach. • Strengthen value chain: A profit center linked to a block farm is established and large scale institutional buyers are engaged in market linkages. • Promote Good Agricultural Practices (GAP) : Farmers have access by SMS to location -specific crop information. Demonstration plots are established by agro-dealers and input suppliers. The profit center trains farmers on modern and mechanized agricultural techniques. • Promote access to appropriate services: Block farms receive adequate services and SHF are organized in groups. • Linked Actors to financial institutions: SACCOS supported by NAFAKA and financed through banks are providing inputs loans to SHF. Also, banks are financing the ICS managed by block farm / profit center and SACCOS. Banks contribute to funding the cost of the Profit Centre /Bloc Farm. • Local Authorities sensitize the farmers to ensure their commitment to the initiative. 	<ul style="list-style-type: none"> • Support to develop crop specific input advice: 9 locations sample for soil test and 50% of Kongwa and Kitetu districts covered with GIS based system. • Strengthened value chain relationships: Large scale and institutional buyers procuring from 49,200 farmers either directly or through ICS / Profit Centre • Widespread adoption of Good Agricultural Practices: 49,200 farmers in Kongwa and Kitemo districts are applying location specific inputs. Over 2,000 farmers benefit from agricultural training. • Increased capital flows: TIB/TAB, NMB, CRDB have financed at least 3 ICS managed by SACCOS and Profit Centers. They have contributed to 80% of the investment cost of the Profit Center. • Increased Access to Tractor services; At least 25,000 farmers have access to mechanized land preparation through timely financial services. • Increase income; More than 50,000 farmers increase their returns by selling at better prices through the ICS . For the farmers involved in the block farm, additional increases are realized as yields double. 	<ul style="list-style-type: none"> • Increased area cultivated by tractors. • Increased area cultivated with inputs. • Increased yields. • Increased average prices paid to producers. • Increased value of maize produced.
<p>Entry Points</p> <p>Inventory Credit Scheme (ICS) to provide access to credit, inputs and market linkages to scattered farmers</p> <p>Anchor Service Centre to provide critical services for optimization of productivity and access to market for block farms</p>			

5.8 ASSUMPTIONS FOR THE KEY COMMERCIAL OPPORTUNITIES IN MAIZE

- The area cultivated (122,954 Ha) was obtained by adding area cultivated in Kiteto in THE 2010/2011 season (84,420 Ha) to ½ area cultivated in Kongwa (38,534 Ha) in the same period.
- The area cultivated by tractor is estimated to be 60% of area cultivated and area cultivated with other inputs is 40% of total area cultivated.
- The yields are assumed to average 2.5 tons/Ha for farmers using only inputs without mechanization, and 4.5 tons/ha for farmers using both inputs and mechanization. Considering areas cultivated under both categories, the total output could reach 455,000 MT
- Considering all efforts to improve producer integration into the maize value chain (with millers, large scale and institutions buyers), it is assumed that all farmers will manage to attract prices similar to those obtained by farmers involved in the WFP P4P program (~ 380 TZS/kg in 2011).
- As such, the value of this production could reach US\$ 113.7 million.
- The total number of farmers to benefit (49,181) is obtained by dividing total hectares cultivated (122,954) by average number of acres (2.5).



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