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Market Systems Development Analysis Framework

Component	Core Value Chains
Name of Value Chain / Sub-Project	Fruit and Vegetable Value Chains
Link to Work Breakdown Structure – Task	2.2
Link to MEL – Indicator	1, 13, 15, 17
ARDS Task Lead Responsible	
Date Completed	2016

Summary: Background, Opportunity, System Issues, and Prioritized Constraints

BACKGROUND

Fill in a broad overview of the targeted market system

Ukraine has thousands of small fruit and vegetable producers with limited awareness of domestic and export market demands and inability to plan production activities — in terms of timing, variety, quality, and safety — aligned to those markets. 60 percent of sales occur in the shadow market, especially among smaller farm enterprises and private households. Meanwhile, large buyers (processor, wholesaler, exporter) are inclined to build vertically integrated enterprises that include production holdings to mitigate supply chain risks given the lack of stable supply. Logistics are oriented around truck transport with limited infrastructure for effective sorting, cooling, storage, and transport. Overall, there is distrust among market actors, hindering cooperation.

OPPORTUNITY

Outline key opportunities in the targeted market system

International and domestic market opportunities abound. In the domestic market, deflation of the Ukrainian hryvnia is prompting retailers and food processors to decrease fresh and processed fruit and vegetable imports and source them in Ukraine. Concurrently, high global demand for fresh and prepared fruit and vegetables has been spurred by consumer awareness of healthy lifestyle benefits and how fruit and vegetable consumption support health and nutrition. The global and domestic fruit and vegetable sector is comprised of products and supply chains that Ukraine has potential to compete in and can be divided into four segments:

1. Fresh products for immediate consumption and/or preparation
2. Fresh cut and/or cleaned products that are "ready-to-eat" or "ready-to-cook"
3. Semi-processed products that are intermediate products, e.g., juice concentrates
4. Processed products for direct or later consumption, i.e., frozen, dried, canned, bottled

SYSTEM ISSUES

Outline key system issues in the targeted market system

It is estimated that 10 percent of fruit is lost in production, with 20 to 30 percent more lost in the postharvest period. Vegetables fare worse: 50 to 60 percent are lost in postharvest, with 10 percent more at production. Produce that gets to market lacks traceability and tends to have low marketing appeal. Buyers and producers grapple with multiple interconnected constraints:

Production

- Planting of varieties and products not demanded by the market
- Improper use and handling of agro-chemicals (fertilizers, pesticides)
- Poor quality produce and lack of safety standards
- Small volumes and unstable supply for buyers

Postharvest handling

- Lack of proper packing and packaging
- Lack of HACCP systems
- Poor aggregation and logistics systems

Sales performance

- Small lots for purchase
- Limited access to finance along the entire supply chain
- Shadow market; middlemen make "unofficial" cash purchases lower than market price diverting production from formal sector buyers
- Limited value addition
- Poor branding and marketing
- Limited access to markets

PRIORITIZED CONSTRAINTS

Outline the constraints that will be targeted

ARDS' aim is to help small and medium fruit and vegetable farm enterprises access local and global markets and obtain fair prices for products. Private households are also supported through ARDS efforts given that they make up 60 to 70 percent of fruit and vegetable buyers' supply. ARDS, applying a facilitative approach through a market systems lens, enters the value chain at the buyer level with self-selecting fruit and vegetable industry innovators and early adopters of process and behavior changes. ARDS calls these buyers "champion firm" partners. Informed by champion firm needs and experience, supply chain actor capacities, analysis of where there is opportunity for impact, and project resources and remaining timeframe, ARDS has prioritized three system-level constraints that prevent the fruit and vegetable market system from working efficiently and inclusively:

- Lack of harvest control/productivity of the right product at the right quantity
- Lack of postharvest handling process technologies and systems to meet market demand
- Poor sales performance requiring enhancements by buyers and producers

Roadblocks to sector growth also require integration of supporting functions, like soil and product testing, input supply, finance, packing, packaging, freezing, and training. Concurrently ARDS supports government and sector associations move toward sector self-regulation. This requires government to set scientifically-based standards and requirements, trust the private sector, and authorize sector associations to conduct industry monitoring and self-regulation. Meanwhile, business associations will need to upgrade capacity, demonstrate real and broad membership, and show government regulatory bodies that they can successfully delegate functions.

Needs and Gaps: Sustainability Analysis Framework

Fill in key actors for the targeted market systems along the top of the table, then complete the analysis below

CURRENT PICTURE

Key Actors	**SMALL AND MEDIUM FARM ENTERPRISES AND PRIVATE HOUSEHOLDS**	**SERVICE PROVIDERS** (Micro, Small and Medium Enterprises, Associations/NGOs, Buyers, Entrepreneurs)	**BUYERS** (Processors, Wholesalers, Retail Networks, HoReCa, Exporters)
Who does what?	Produce and sell production to larger buyers (enterprises) and local buyers (households)	Provide services to small number of larger farm enterprises and buyers; low level of specialization; some buyer-linked village aggregators	Buy mostly from larger farm enterprises for processing, wholesale distribution, retail networks, and/or export; limited exports
Who pays?	Buyer-linked village aggregator, producer groups, or local market wholesaler; little contract farming or commercial financing	Services paid for by larger farm enterprises and buyers; some producer associations provide services to members	Pay for produce from farm enterprises, producer groups, village aggregators, some private households
Technology use	Outdated production technologies and practices with minimal or no use of safety and quality standards; often unaware of market requirements	Provide larger farm enterprises input supply, equipment, testing, postharvest handling, storage, aggregation, and market information services	Varies by buyer, general need to integrate required safety and quality standards in facilities and supply chains, many processors' production lines need upgrade
Market needs	Consistent safe and quality production of right variety/quality at quantity required	Buyer-linked services and training for small and medium farm enterprises and private households	Quality, safe products from certified facilities meeting Ukrainian and export requirements (HACCP, GLOBALG.A.P., organic, etc.)
Current impact	Products do not meet buyers' safety, quality, variety, and/or quantity	Needed services limited to larger farm enterprises; lack of services in	Low quality and limited availability of production, lack of safety and quality

	requirements; low profits and income; inability to invest in improvements and services	rural areas for smaller farm enterprises and private households	standards in supply chain; lower sales and income due to lack of production inputs and quality levels
Motivation	Income from small-scale production and significant shadow market sales (private households); production income (farm enterprises)	Lack of infrastructure in rural areas and no current market for services among smaller farm enterprises and private households	Vertical integration for consistent supplies; with growth, need supply; need safety and quality standards in facilities and next step is supply chain
System issues	Lack of harvest control/productivity of right product at right quantity; lack of postharvest handling process technologies and systems to meet market demand; and poor sales performance requiring enhancements by buyers and producers		

FUTURE PICTURE

Key Actors	**SMALL AND MEDIUM FARM ENTERPRISES AND PRIVATE HOUSEHOLDS**	**SERVICE PROVIDERS** (Micro, Small and Medium Enterprises, Associations/ NGOs, Buyers, Entrepreneurs)	**BUYERS** (Processors, Wholesalers, Retail Networks, HoReCa, Exporters)
Who will do what?	Adopt modern production technologies, practices, and standards based on market requirements and supported by buyers and buyer-linked services	Provide services to small farm enterprise and private households in rural areas based on buyer market requirements	Link with service providers or provide services for safe, high-quality products and postharvest processes; promote modern technologies, practices, standards in supply chain
Who will pay?	Producer if embedded in price; buyer (e.g. training provider, village aggregator) until producer income allows	Various services paid for by relevant actor, including producer association services to members	Various services paid for by relevant actor

Technology use	Modern production technologies and practices based on buyer-driven safety and quality standards and market requirements	Promote and provide relevant technology and training; buyer-linked services and infrastructure that embed needed safety and quality standards	Upgrade facilities and supply chain to meet safety and quality standards; link with service providers or establish services to provide modern technology, infrastructure, training
Market needs	Consistent safe and quality production that is right variety/grade at quantity required	Buyer-linked financial, testing, input, aggregation, and training services for smaller producers	Quality, safe products from certified facilities meeting Ukraine and export requirements
Incentives/ Motivation	Increased income and sales through higher prices for quality production in larger volumes	Business expansion and new opportunities in rural areas linked to buyer-led supply chains	Increased income and sales from higher-quality products for Ukraine and export markets
System solutions	• Market quality standards • Smart agriculture: soil testing, fertilizer, and pesticide use • Market-required varieties and inputs access with capacity building: guidance materials, training, and demonstration • Correct varieties usage and production technologies uptake linked to contract • Bulk purchasing of inputs • Producer cooperation in sales	Buyer-linked services and training: • Market quality standards: GLOBALG.A.P • Smart agriculture: soil testing, fertilizer, and pesticide use • Market-required varieties and inputs access with capacity building: guidance materials, training, and demonstration • Correct varieties usage and production technologies uptake linked to contract	• Improved packing and packaging • HACCP management system • New or improved aggregation and logistics linked to contract • Bulk purchasing of inputs • Financial instruments: contracts, agri-receipts, etc. • New value-added products • Market linkages: branding and marketing, B2B events, exhibitions

System Partners

Identify crucial system partners to carry out these change

- Buyers / “champion firm” partners
- Micro, small, and medium intermediary and services provider enterprises
- Sector associations/NGOs
- Local leadership of CTCs and sector businesses

Strategic Framework

Fill in the project’s priority outcomes

GROWTH RESULTS: PRIORITY OUTCOMES		
Outcome 1: Productivity and harvest controls improved to meet market demand	**Outcome 2:** Postharvest handling process technologies and systems to meet market demand expanded	**Outcome 3:** Sales performance increased through enhancements by buyers and producers

SYSTEM CHANGES: BEHAVIORS AND PROCESSES

Fill in the behaviors and processes to target to create system change and achieve priority outcomes

Productivity and harvest controls improved to meet market demand

- Control fertilizer use based on new production innovations and technologies (small and medium farm enterprises and private households)
- Ensure proper pesticide controls (small and medium farm enterprises and private households)
- Apply good farm management business practices (small and medium farm enterprises and private households)
- Meet forward contract requirements, a practice that is increasing with ARDS support (small and medium farm enterprises and private households)
- Invest in win-win relationships with small and medium farm enterprises and private households to build trust and sustainable market linkages (buyers)
- Meet contract commitments, delivering on agreed on purchase price and volume (buyers)

Postharvest handling process technologies and systems to meet market demand expanded

- Apply improved postharvest handling practices for fresh, semi-, and fully processed products, depending on supply chain demands (small and medium farm enterprises and private households, buyers, intermediary and other service providers)

- Put in place improved storage and packaging (private households and small and medium farm enterprises, buyers, intermediary and other service providers)
- Invest in win-win relationships with small and medium farm enterprises and private households to build trust and sustainable market linkages (buyers, intermediary and other service providers)

Sales performance increased through enhancements by buyers and producers

- See value in and develop profitable services and relationships within fruit and vegetable supply chains actors (intermediary and other service providers)
- See evidence of increased profits for specific investment, technology practice uptake, and/or supply chain relationships (small and medium farm enterprises, private households, buyers)

SOLUTIONS/INTERVENTIONS

Fill in interventions to influence those behaviors and processes and create system change

Productivity and harvest controls improved to meet market demand

- Market quality standards: GLOBALG.A.P
- Smart agriculture: soil testing, proper fertilizer and pesticide use
- Market-required varieties and inputs access with capacity building: guidance materials, training, and demonstration
- Correct varieties usage and production technologies uptake linked to contract

Postharvest handling process technologies and systems to meet market demand expanded

- Improved packing and packaging
- HACCP management system
- New or improved aggregation and logistics linked to contract

Sales performance increased through enhancements by buyers and producers

- Bulk purchasing of agricultural inputs
- Financial instruments: contracts, agri-receipts, etc.
- Producer cooperation in sales
- New value-added products
- Market linkages: branding and marketing, B2B events, exhibitions