



Technical University of Moldova

**MANAGEMENT
OF THE AGRI-FOOD VALUE CHAIN
IN THE SECTOR
OF PROCESSED VEGETABLES
(CANNING, FREEZING AND DRYING)**

Master's student:

Rodion Gudim (Mr.)

Academic supervisors:

Alina Stratila (Ms.)

Associate Professor, PhD;

Tatiana Novac (Ms.)

Associate Professor, PhD

Chisinau - 2026

**MINISTRY OF EDUCATION AND RESEARCH
OF THE REPUBLIC OF MOLDOVA**

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MBA Management in Agribusiness Microqualification Program

**Admitted to the defense
Professor Aurelia LITVIN**

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ANNOTATION

to the MBA Management in Agribusiness thesis “Management of the Agri-food value chain in the sector of processed vegetables (canning, freezing and drying)”.

developed by the Rodion Gudim

The master's thesis is structured and includes: an introduction, three chapters (including recommendations), conclusions, a bibliography, annexes. It comprises 47 pages of typewritten text, 11 tables, 10 figures, and 23 bibliographic references.

Keywords used in the thesis: value chain management, value, vegetables for processing, processed vegetables, industrial processing, contract farming, farmer, supply coordination, export markets, performance indicators.

The field of study of this thesis is value chain management in the industrial vegetable-processing sector of the Republic of Moldova, covering canning, freezing, and drying.

Purpose and objectives of the thesis. The overall aim of the thesis is to identify weaknesses in value chain management and formulate practical improvements for the sector. The objectives are to establish a theoretical framework, examine existing management models and constraints, analyze production and export dynamics, use Alfa Nistru SA as an empirical illustration, and develop coordinated management actions and performance indicators.

The scientific novelty and originality of the results obtained consist in developing an integrated explanation that connects management (governance), information use, and preservation-specific requirements with operational performance and value capture in Moldova's vegetable-processing industry; distinguishing operational performance, value creation, and the distribution of economic benefits; and proposing an Integrated Management Architecture and a sector-oriented KPI framework supported by production and export analysis and the Alfa Nistru SA case.

The theoretical importance of the work lies in systematizing approaches to value chain and supply chain management and applying them to canning, freezing, and drying. The work clarifies the links among governance, coordination, information flows, preservation-specific requirements, operational efficiency, value creation, and value capture.

Applicative value. The findings support coordinated sector-level measures involving processors, farmers, input suppliers, logistics providers, and buyers. The proposed measures include integrated procurement, timely contract farming, quality- and quantity-based pricing, rolling production and sales planning, shared logistics, irrigation and climate resilience, energy efficiency, digital traceability, product development, export-market diversification, and performance monitoring through value-chain KPIs.

ADNOTARE

la teza de MBA Management în agrobusiness “Managementul lanțului valoric agroalimentar în sectorul legumelor procesate (conservare, congelare și uscare)

elaborat de Rodion Gudîm

Teza de master este structurată și include: o introducere, trei capitole (inclusiv recomandări), concluzii, o bibliografie, anexe. Lucrarea cuprinde 47 de pagini de text dactilografiat, 11 tabele, 10 figuri și 23 referințe bibliografice.

Cuvinte cheie utilizate în teză: managementul lanțului valoric, valoare, legume pentru procesare, legume procesate, procesare industrială, agricultură pe bază de contract, fermier, coordonarea aprovizionării, piețe de export, indicatori de performanță.

Domeniul de studiu al prezentei teze îl constituie managementul lanțului valoric în sectorul industrial de prelucrare a legumelor din Republica Moldova, incluzând conservarea, congelarea și uscarea.

Scopul și obiectivele tezei: Scopul general a tezei este identificarea deficiențelor în gestionarea lanțului valoric și formularea unor îmbunătățiri practice pentru sector. Obiectivele vizează stabilirea unui cadru teoretic, examinarea modelelor de management și a constrângerilor existente, analizarea dinamicii producției și exporturilor, utilizarea companiei Alfa Nistru SA ca studiu de caz empiric, precum și elaborarea unor acțiuni de management coordonate și a unor indicatori de performanță.

Noutatea și originalitatea științifică a rezultatelor obținute constă în elaborarea unei explicații integrate care corelează managementul (guvernanța), utilizarea informațiilor și cerințele specifice de conservare cu performanța operațională și captarea valorii în industria de prelucrare a legumelor din Republica Moldova; diferențierea între performanța operațională, crearea de valoare și distribuția beneficiilor economice; precum și propunerea unei arhitecturi de management integrat și a unui cadru de indicatori-cheie de performanță (KPI) specific sectorului, fundamentate pe analiza producției și a exporturilor, precum și pe studiul de caz al companiei Alfa Nistru SA.

Importanța teoretică a lucrării constă în sistematizarea abordărilor privind gestionarea lanțului de valoare și a lanțului de aprovizionare, precum și în aplicarea acestora în procesele de conservare prin sterilizare, congelare și uscare. Lucrarea clarifică legăturile dintre guvernanță, coordonare, fluxurile de informații, cerințele specifice proceselor de conservare, eficiența operațională, crearea de valoare și captarea valorii.

Valoarea aplicativă. Rezultatele susțin măsuri coordonate la nivelul sectorului, care implică procesatori, fermieri, furnizori de inputuri, prestatori de servicii logistice și cumpărători. Măsurile propuse includ: achiziții integrate, contractare agricolă realizată în timp util, stabilirea prețurilor în funcție de calitate și cantitate, planificarea continuă a producției și vânzărilor, logistică partajată, irigații și reziliență climatică, eficiență energetică, trasabilitate digitală, dezvoltarea produselor, diversificarea piețelor de export și monitorizarea performanței prin intermediul unor indicatori-cheie de performanță (KPI) specifici lanțului valoric.

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Introduction

The thesis “Management of the Agri-food value chain in the sector of processed vegetables (canning, freezing and drying)” examines how coordination across the processed vegetable sector of the Republic of Moldova can support operational performance and economic value creation of all participants in the value chain such as: input suppliers, farmers, industrial processors, local distributors/export-import companies, local and foreign retail chains, HoReCa, other types of clients, and final consumers). Industrial processing extends the shelf life and marketability of vegetables and connects agricultural production with manufacturing, local consumption and export markets. Its effectiveness depends on aligning seasonal raw-material supply with preservation requirements, processing capacity and customer demand.

The central problem is incomplete coordination among vegetable’ growers/farmers, industrial processors, input suppliers, logistics providers and buyers (retail chains first of all). Fragmented supply, limited advance contracting, inconsistent quality specifications and weak information exchange undermine reliable procurement and production planning. These difficulties interact with energy costs, climate and water risks, labour shortages and working-capital pressure. Canning, freezing and drying share these constraints but differ in their requirements for seasonal throughput, cold-chain continuity and moisture management.

The main research question of this master’ thesis is: under what organisational and technological conditions can coordination across the value chain improve operational performance and economic value capture in Moldova’s vegetable-processing industry?

The overall aim is to identify weaknesses in value chain management and formulate practical improvements for the sector. The objectives are to establish a theoretical framework, examine existing management models and constraints, analyse production and export dynamics, use Alfa Nistru SA (Moldovan industrial vegetable processor (canning and deep freezing/IQF of vegetables)) as an empirical illustration, and develop coordinated management actions and performance indicators.

The research combines theoretical analysis, examination of empirical data and the development of practical proposals. Its methods include a structured critical narrative review, comparison of management approaches and international experience, descriptive analysis of statistical series, value chain mapping and an enterprise (Alfa Nistru SA) case study. The empirical materials comprise national production statistics and UN Comtrade export data for 2021–2025, together with organisational information and financial and employment indicators for Alfa Nistru SA for 2020–2025. The analysis distinguishes operational performance from

profitability and retained value. Combined enterprise accounts cannot isolate vegetable-specific profitability. Findings remain descriptive.

The thesis develops its argument through three interconnected chapters.

“CHAPTER 1. THEORETICAL FOUNDATIONS OF VALUE CHAIN MANAGEMENT IN VEGETABLE PROCESSING INDUSTRY” establishes the conceptual foundations, compares governance approaches and international experience, and formulates the research problem and methodological framework.

“CHAPTER 2. ANALYSIS OF PRACTICAL APPROACHES FOR MANAGEMENT OF THE AGRI-FOOD VALUE CHAIN IN THE SECTOR OF PROCESSED VEGETABLES (CANNING, FREEZING AND DRYING) IN REPUBLIC OF MOLDOVA” applies this framework to sector conditions, production and export trends, and the Alfa Nistru SA case. It identifies the practical constraints addressed in the following chapter.

“CHAPTER 3. RECOMMENDATIONS ON IMPROVING OF THE AGRI-FOOD VALUE CHAIN IN THE SECTOR OF PROCESSED VEGETABLES (CANNING, FREEZING AND DRYING) IN REPUBLIC OF MOLDOVA” translates the analysis into a proposed Integrated Management Architecture and a performance measurement framework. Recommendations connect input procurement and contract farming with production planning, traceability, logistics, resource efficiency and market development.

The CONCLUSIONS bring together the findings, practical implications and research limitations.

The results identify coordination across the entire value chain as a central management priority. Production recovery coexists with weaker export performance and uneven developments across product groups, indicating that increased output alone does not establish stronger competitiveness. The practical contribution is a framework linking supplier relationships and operational decisions with market requirements and measurable outcomes. Its proposed application across the sector should reflect differences in enterprise scale, preservation technology and available resources.

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