

Guardians of the Argan Forest

A Regenerative Roadmap and Practical Guide for Cooperative Legacy Building



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Acknowledgment of Cooperative Voices

This guide would not have been possible without the trust, insights, and generous collaboration of the cooperative members, managers, and leaders who welcomed me into their daily lives.

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Abstract

This study presents a participatory diagnostic of three Moroccan argan oil cooperatives—Tighanimine, Timgharine, and Bio.IDG, conducted through ethnobotanical fieldwork, structured surveys, interviews, and direct observation. While the cooperatives differ in maturity, geography, and operational capacity, they face shared challenges in governance, transparency, youth engagement, and ecological resilience.

Using a mixed-methods approach, the research assessed eleven key performance indicators (KPIs), including member participation, production quality, traceability, financial equity, and regenerative practices. The findings highlight both persistent vulnerabilities such as leadership succession gaps and limited market access and deeply rooted strengths in traditional knowledge, loyalty, and cultural cohesion.

In response, this guide introduces The Cooperative Legacy Blueprint, a regenerative planning model designed to support cooperatives in aligning operational systems with cultural values, ecological care, and long-term leadership sustainability. It offers a three-step pathway:

- **Practical Field Guide** with action-oriented tools for internal strengthening.
- **Peer-Based Learning Initiative** for cooperative-to-cooperative knowledge exchange;
- **Legacy Implementation & Intergenerational Planning Model** for visioning, succession, and intergenerational resilience.

The Cooperative Legacy Blueprint is not a fixed formula. It is a participatory process that empowers cooperatives to articulate who they are, preserve what matters, and build structures that carry their legacy forward with clarity and purpose.

This work contributes a scalable model for biocultural enterprise development that treats legacy, ecology, and enterprise not as separate domains, but as interdependent pillars of regeneration.

At its core, this guide invites cooperatives to shape not just business plans, but living legacies that honor the forest, the people, and the future they sustain.

Chapter 1. Preface

This guide begins not with a technique, but with a truth:

The cooperatives who produce argan oil are not simply economic entities. They are living communities embedded in a landscape of story, soil, and struggle. In the southwest of Morocco, beneath the bright yellow and green fruit tightly hanging from the ancient argan trees, women have cultivated knowledge that cannot be measured only in yield or income. Their work is not just labor. It is lineage. It is hands knowing by touch alone when the fruit is ready, when the soil needs resting, when a single tree's yield can predict the health of an entire season.

The Amazigh people have long understood that survival comes not from domination, but from reciprocity. The argan forest is not a resource to be extracted. It is a relative to be tended. And cooperatives, at their best, are more than businesses. They are cultural vessels, guardians of place, and seedbeds of resilience.

As I walked alongside cooperative members on the road to their respective cooperative, I observed their daily rhythms, listening to their concerns, and witnessing their quiet innovations. I realized that what is at stake is not just productivity, but legacy. Not just building scale, but continuity. Not just systems, but stories.

This preface offers no formulas. Instead, it extends an invitation:

To read the following pages not only as a guide, but as a map that charts both the visible and invisible patterns that sustain a cooperative across generations.

If we are to build truly regenerative economies, we must begin by restoring our relationships:

With land,
With each other,
And with the ancestral knowledge that taught us how to live well, long before the language of development arrived.

This is not about going back. It is about going deeper and broader.

By integrating traditional Amazigh knowledge with modern ecological science, these cooperatives are fostering a unique model of sustainable agriculture that balances environmental preservation with socio-economic growth. This synergy ensures that the future of the argan forest remains as rich and diverse as its past.

Chapter 2. Executive Summary

From Fieldwork to Framework: A Roadmap to Regeneration and Legacy

2.0 Introduction

This project, conducted in collaboration with Global Diversity Foundation (GDF), set out to assess and strengthen best practices within Morocco's argan cooperatives. Combining ethnobotanical research focused on the argan tree ecosystem with socioeconomic analysis, the goal was to uncover business operational strengths, surface systemic vulnerabilities, and define a regenerative roadmap to support cooperative sustainability, cultural preservation, and ecological stewardship.

Recognizing the vital role cooperatives play in sustaining both local livelihoods and the biodiversity of Morocco's endangered argan forests, the study used a participatory, mixed-methods approach. Structured surveys, ethnographic observation, and cooperative interviews were employed to explore and assess primary performance areas within an argan cooperative: member engagement, governance, financial literacy, communication, quality control, traceability, environmental stewardship, marketing, and succession planning.

2.1 What I Set Out to Do

The original goal was practical: to create a field-tested, culturally sensitive guide that could help cooperatives strengthen their internal business operations, meet market demands, and adapt to global pressures while building upon and deepening their ancestral roots.

2.1.1 How the Research Was Conducted

The study focused on three Moroccan cooperatives at different stages of maturity:

- **Cooperative Tighanimine (Advanced)**
- **Argan Timgharine (Emerging)**
- **Cooperative Bio Idaougilil - Bio.IDG (Start-Up)**

For the purposes of this study, cooperative maturity was categorized as follows:

- **Advanced:** A cooperative with more than ten years of operation, established quality control systems, and international sales experience.
- **Emerging:** A cooperative with foundational structures in place, some market presence, but needing further development in areas such as quality control, traceability, and governance.
- **Start-Up:** A newly formed cooperative still establishing basic operations, internal organization, and market entry strategies.

Across 2 months of survey preparation and four weeks of immersive fieldwork, structured member and manager surveys, interviews, direct observations, interviews, direct observations, and participatory meetings with members and managers were conducted to assess operational procedures and challenges and surface innovative practices that could be shared across cooperatives.

2.2 Top Discoveries from the Field

Each cooperative demonstrated remarkable resilience, determination, creativity, and a deep commitment to both cultural and ecological stewardship. Across diverse contexts, cooperative members showed strength in traditional practices, innovative adaptation to modern demands, and a steadfast spirit of collective work.

At the same time, several persistent vulnerabilities surfaced during the field study that, if unaddressed, could threaten their short-term and long-term sustainability:

Outdated Business Models: Operations are largely reactive, with limited strategic planning or reserve building to buffer against market fluctuations.

Limited Marketing Capacity: Cooperatives face challenges connecting directly with ethical buyers or differentiating their products in competitive international markets.

Youth Disengagement and Succession Risk: Younger generations are increasingly seeking opportunities outside of traditional cooperative work, creating future leadership gaps.

Certification Costs vs. Return: High certification costs often do not translate into higher product prices, while middlemen continue to dominate supply chains.

Supply Chain Fragmentation: Direct sales are rare; intermediaries capture much of the value intended for cooperatives.

Ecological Decline: Climate change, soil degradation, and external pollution pressures are visibly impacting argan tree vitality and yields.

Undefined Legacy: Beyond technical challenges, there is a deeper risk—the gradual erosion of cultural transmission, ancestral knowledge, and ecological guardianship.

2.3 What Cooperatives Can Do Now

Despite these challenges, the research uncovered an immediate and promising solution: **Peer Learning.** Each cooperative demonstrated distinct strengths that others could benefit from through cooperative-to-cooperative knowledge sharing.

2.3.1 Immediate recommendations include:

1. Business Model Development
2. Launching a Cooperative Business Certification Program (focused on financial literacy and strategic planning)
3. Hosting marketing and direct-trade workshops to bypass intermediaries
4. Creating value-added product labs (e.g., biochar from argan husk waste)
5. Integrating traceability tools (QR codes, blockchain) to improve transparency and brand trust
6. Organizing reforestation and soil regeneration training
7. Educating international buyers on regenerative sourcing and the true cost of ethical argan oil

2.4 What This Guide Is Now

In practical terms, this guide is designed to serve a dual purpose. For cooperative members, it offers actionable tools that can be implemented in everyday operations. For NGOs, funders, and researchers, it presents a field-tested planning model that can be scaled, adapted, and applied across other biocultural regions. This dual design ensures the guide is grounded in local realities while contributing to broader conversations in regenerative development.

This technical guide lays the foundation for what may ultimately evolve into the Cooperative Legacy Blueprint™, a future participatory planning tool inspired by the findings of this field study and designed to deepen intergenerational resilience.

To enhance its practical use, a Legacy Companion Card is included:

- A tear-out, one-page tool for cooperative meetings and wall displays
- Featuring five guiding questions for intergenerational reflection
- Offering a mini checklist to support ongoing visioning and cultural continuity
- This ensures that the insights in this guide do not collect dust but rather, spark regular dialogue and action toward resilience.

As this work evolves, it holds the potential to become more than a field-tested tool. With further refinement and collective stewardship, this regenerative planning guide could one day serve as a living precedent for Earth-aligned cooperative law, where legacy, ecology, and enterprise are not treated as separate goals, but as one interconnected system. This vision honors not only the survival of cooperatives but their capacity to regenerate culture, community, and land in unison.

2.5 The Roadmap to Legacy

Ultimately, while day to day business improvements is critical, the future of Morocco's argan cooperatives hinges on something deeper: defining, documenting, and transmitting their cultural, ecological, and intergenerational legacy.

True legacy is not just about profits or certifications. It is about ensuring that the cooperative's story, its relationship to the land, its stewardship of tradition, and its regenerative potential lives on through future generations.

The roadmap laid out here calls on cooperatives to move beyond survival and toward regenerative leadership, honoring the past, empowering the present, and protecting the future.

Chapter 3. Purpose and Legacy of Work

Laying the Groundwork for Resilient Operations and Regenerative Futures

3.0 Purpose and Vision of the Guide

This guide was developed as part of my ethnobotany research fellowship with Global Diversity Foundation (GDF) to assess and strengthen the internal operations of argan cooperatives in Morocco. The original intent was to measure key performance indicators (KPIs) via a survey, the quantifiable business metrics that reflect a cooperatives' organizational health, productivity and efficiency as it relates to engagement, production, and traceability. These indicators were chosen because they represent the technical foundation upon which cooperative resilience must be built.

However, as fieldwork progressed, it became clear that a technical manual alone would not be enough. Measuring governance structures, financial workflows, or oil quality control tells us where cooperative stands, but it does not show us where it is going for true sustainability. Nor does it capture the deeper knowledge systems, cultural responsibilities, and ecological stewardship that cooperatives carry.

The survey process helped surface these gaps. Cooperative members spoke not only about production goals and certification, but also about:

- Loss of ancestral knowledge
- Youth disengagement
- Ecological stress and soil degradation

These were not data points. They were signals. And they pointed toward a larger truth: cooperative sustainability cannot be built on systems alone, because it must be rooted in legacy.

Thus, while this guide fulfills its original goal, which is to provide the best practice guide for cooperative operations, it also opens a doorway to something deeper. The findings laid the groundwork for a new tool: The Cooperative Legacy Blueprint™.

The Cooperative Legacy Blueprint is introduced in **Chapter 9** as a new system designed to help cooperatives:

- Reconnect with their origin stories and values
- Assess risks and resilience beyond numbers
- Envision their intergenerational future
- Map their cultural, ecological, and business legacies

3.1 Context and Foundation

The legacy of Morocco's argan cooperatives is not only measured in liters of oil but in roots they protect, the traditions they carry, and the futures they shape. This guide is designed as a comprehensive and field-tested resource for cooperatives producing argan oil and other local products in Morocco. Its purpose is to capture, document, and share best practices that cooperatives at any stage of development can adopt to improve their operations, strengthen their internal systems, and grow sustainably while honoring their cultural and ecological foundations.

Morocco's cooperatives sit at the heart of a global industry, but their deeper role is local and enduring: they protect the endangered argan forest, support women and families, and preserve knowledge passed down across generations. Yet each cooperative faces distinct challenges depending on its maturity, structure, and local context. This guide responds to those realities with tailored insight for:

- Advanced Cooperatives: Refining systems, enhancing efficiency, and preparing to scale internationally
- Emerging Cooperatives: Building core departments like quality control and marketing
- Start-Up Cooperatives: Establishing foundational structures, roles, and practices for sustainable development

3.2 For Whom This Practical Guide Is Intended

This guide is written for cooperative leaders, board members, trainers, development practitioners, and anyone involved in supporting the sustainability and success of argan cooperatives. It is especially suited for those working in the argan oil sector but may also be adapted for use in cooperatives producing other goods. Each cooperative, whether newly formed or long-established can use this guide as a diagnostic, a strategy tool, or a catalyst for reflection.

3.3 Approach and Values

The methodology behind this guide was rooted in respect for cooperative autonomy, cultural knowledge, and environmental context. It values:

- Clear traceability and transparent internal processes
- Culturally embedded knowledge and traditional harvesting rhythms
- Ecological integrity and climate resilience
- Collective ownership and inclusive leadership

3.4 Structure of the Guide

3.4.1 Technical Diagnostic / Business Performance Metrics

This section (Chapters 1–8) presents the technical backbone of the study: a diagnostic assessment of key business performance indicators (KPIs) across the three partner cooperatives, resulting in the development of targeted Best Practices to strengthen cooperative resilience.

It begins with an Executive Summary and Preface outlining the purpose of the work, followed by a Methodology and Fieldwork Overview detailing how data was gathered through surveys, observations, and interviews.

The core of the diagnostic (Chapter 6) presents Survey Insights organized across eleven (11) critical performance areas essential to cooperative success:

- 6.1 Member Engagement & Responsibilities
- 6.2 Management and Governance
- 6.3 Financial Transparency
- 6.4 Traditional Values and Cultural Practices
- 6.5 Sustainability, Regenerative Knowledge & Environmental Stewardship
- 6.6 Traditional and Mechanical Production, Techniques & Yield Optimization
- 6.7 Quality Control
- 6.8 Certifications
- 6.9 Traceability
- 6.10 Training & Education
- 6.11 Marketing & Sales

In addition, secondary areas such as market exploitation (middleman), social and community support, health and safety practices, and future goals in global markets were observed and discussed where relevant.

For each KPI area, findings are supported by data visuals such as pie charts, field observations, and targeted best practice recommendations. Some performance indicators were further examined through interconnected subdomains to capture a deeper and more nuanced understanding of cooperative performance.

This technical guide offers a detailed, data-driven view of cooperative strengths, challenges, and opportunities for growth. It highlights practical opportunities to strengthen operational resilience, deepen cultural transmission, and expand ethical market access, while also emphasizing the interconnectedness of business systems, governance, ecological stewardship, and leadership succession.

At the same time, the analysis identifies risks if cooperatives fail to adapt including reduced member participation, financial vulnerability, leadership gaps, and the erosion of cultural and ecological legacy.

To support immediate cooperative development, an Action Checklist is included, outlining key areas for reflection and action.

Building on the technical assessment, this section also transitions into broader reflections on cooperative resilience. Chapter 7, *Legacy in Action: Sustaining Culture, Ecology, and Enterprise*, highlights the living practices that connect cooperatives to their ancestral and ecological roots. Chapter 8, *The Path Forward for Argan Cooperatives*, outlines strategic opportunities for safeguarding legacy, adapting to change, and building long-term regenerative success.

3.4.2 The Cooperative Legacy Blueprint

A new section (Chapter 9) introduces **The Cooperative Legacy Blueprint**, an evolving roadmap and regenerative planning tool designed to help cooperatives define their legacy with intention. Unlike generic frameworks, the Cooperative Legacy Blueprint integrates cultural continuity, ecological stewardship, and operational resilience, offering a structured yet adaptable approach for long-term cooperative planning.

Through guided workshops, reflection tools, and participatory exercises, The Cooperative Legacy Blueprint helps cooperatives:

- Define core values, traditions, and practices worth preserving
- Map their contributions to community and environment
- Identify opportunities for intergenerational knowledge transfer
- Set goals that align business success with cultural continuity

Note: This Blueprint emerged from the field insights of this study and represents a prototype for future development. It is not yet a finalized system, but a proposed direction for further co-creation, piloting, and validation with interested cooperatives and institutional partners.

3.5 How to Use This Guide

This guide is organized into two complementary sections:

Chapters 1–8 provide a complete technical diagnostic based on key performance indicators, field observations, and cooperative interviews. Each chapter offers analysis, embedded best practices, key takeaways, and actionable checklists to support cooperative growth and resilience.

Chapter 9 introduces The Cooperative Legacy Blueprint, a regenerative planning tool designed to help cooperatives co-create their future while safeguarding their ecological and cultural legacies.

Together, these two sections aim to support cooperatives not only in strengthening current operations but also in building regenerative, legacy-driven futures.

Chapter 4. The Argan Landscape: Ecological, Cultural, and Economic Dimensions

Understanding the Roots of Resilience: How Forest, Culture, and Community Sustain Each Other

4.0 Introduction

Before we examine the methodology used to evaluate cooperative performance, it's essential to understand the broader ecosystem in which these cooperatives operate. The argan landscape is more than a setting. It is a living system shaped by cultural memory, ecological relationships, and global market forces. To fully grasp the significance of the data that follows, we must first explore the interconnected layers that define this ecosystem: the forest itself, the women's cooperative movement that sustains it, and the global pressures that influence its future.

This chapter offers that foundation. It maps the context as ecological, social, and economic, within which performance must be measured, and legacy must be protected.

Throughout this guide, the term 'argan forest' refers to the unique ecosystem dominated by *Argania spinosa* L. trees, a living landscape shaped by both natural forces and Amazigh stewardship.

4.1 The Argan Biocultural Landscape

A Living Landscape Shaped by Nature and Knowledge

The argan forest is more than a natural resource. It is a living biocultural landscape where ecological resilience and human heritage are deeply intertwined. Long before cooperatives existed, Amazigh communities shaped this forest through seasonal rhythms, ancestral land care, and reciprocal knowledge. Understanding this relationship offers critical insight into how today's cooperatives have emerged, not as new inventions, but as a continuation of long-standing cultural stewardship.

Note: Throughout this guide, the term 'argan forest' refers to the unique ecosystem dominated by *Argania spinosa* trees, a living biocultural landscape shaped by both natural forces and Amazigh stewardship.

4.1.1 From Deep Time to Present: The Ancient Roots of the Argan Forest

The argan forest of Morocco (Figure 1 is a rare, ancient ecosystem, home to *Argania spinosa*, a species dating back around 80 million years¹. Once widespread, the tree's range contracted dramatically during past climate shifts, leaving Morocco's Souss Valley as its final stronghold². Today, this landscape, as shown in (Fig. 1), is shaped by Atlantic winds and mountain barriers³ which continues to sustain the argan tree, alongside the enduring stewardship of Amazigh communities. For centuries, these communities have practiced an integrated agro-sylvo-pastoral system⁴, combining farming, forestry, and seasonal grazing to maintain soil fertility, biodiversity, and ecological balance.

Figure 1. Argan Biocultural Landscape in Imsouane, Morocco. (Photo: Andrea Worthoff, February 2025)

Even the region's famous tree-climbing goats as in **(Fig.2)**, play a role in natural regeneration, dispersing argan kernels and seeds as in **(Fig.3)** across the landscape⁵.

Figure 2. Argan Biocultural Landscape, Essouaria, Morocco. (Photo: Andrea Worthoff, February, 2023)

Figure 3. Argan Timgharine Cooperative, Imsouane, Morocco. (Photo: Andrea Worthoff, February, 2025)

Argan trees survive in Morocco's demanding soils: alkaline, low in nitrogen, yet rich in minerals like calcium and silica. Their deep roots tap groundwater, granting them impressive drought tolerance.

However, the landscape is fragile. Beyond the protective reach of the tree's canopy, soil fertility declines sharply. Scientific studies show steep drops in soil organic carbon (SOC) and nitrogen levels away from the trunk, leaving vast intertree areas barren⁶. Wind erosion, harsh sun exposure, and overgrazing accelerate this decline, while the absence of understory plants like weeds signals ecological distress. Now, with climate change intensifying these challenges, rising temperatures, prolonged droughts, and erratic rainfall further strain the trees and disrupt regeneration cycles.

4.1.2 Shifting Seasons: Climate Threats to the Argan Biocultural Landscape

The map below situates the cooperatives studied, Tighanimine, Timgharine, and Bio.IDG, within the southwestern corridor of the Arganeraie Biosphere Reserve. This region, which spans from the coastal zone of Imsouane inland toward Agadir and Taroudant, represents one of the most climate-sensitive and ecologically stressed zones within the reserve.

The significance of this location is not simply geographic, it is ecological, cultural, and existential. The region faces intensifying risks from desertification, reduced rainfall, rising temperatures, and declining biodiversity. These shifts threaten not only the productivity of the argan forest but also its ability to sustain the local communities and traditional knowledge systems that depend on it.

This climate vulnerability aligns with what Benhsain and Salhi (2023) describe as the ecological fragility of the rural domain of the GBA, where anthropogenic pressure and governance gaps impede sustainable progress. While agroecological initiatives and cooperatives like the ones studied do contribute to sustainable development goals at the local level, they remain largely unintegrated into a broader, climate-resilient territorial strategy, a challenge echoed throughout the UNESCO paper.

Without intentional coordination between local cooperatives and the larger biosphere governance framework, this misalignment places the long-term legacy of the argan ecosystem at risk. Therefore, the placement of these cooperatives on this map is central to understanding where the frontlines of both opportunity and vulnerability now lie in the context of climate change. As climate risks increase, so too does the need for collective territorial regeneration. The cooperatives in this region can and must be repositioned as central actors in that transformation. The next chapter explores how regenerative governance and legacy mapping can respond to this call.

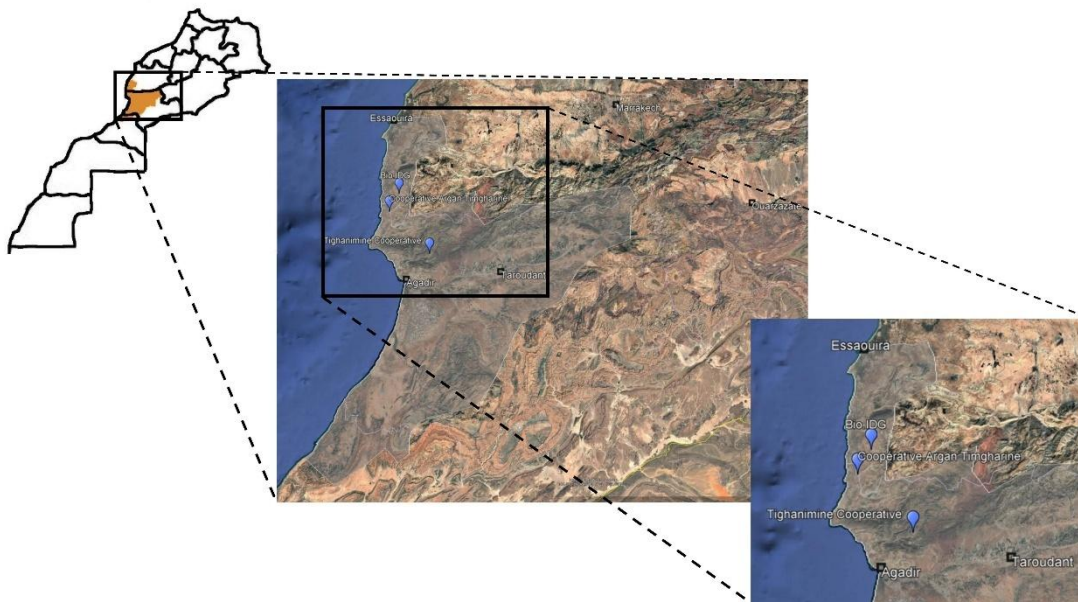


Figure 4. Geographic Locations of Argan Cooperatives within a Climate-Stressed Corridor of the Arganeraie Biosphere. This map displays the cooperative locations—Tighanimine, Timgharine, and Bio.IDG, situated along Morocco’s southwestern corridor. While not a vulnerability index itself, this region is among the most ecologically and climatically at-risk zones within the Arganeraie, facing compounded threats from drought, desertification, and ecosystem degradation.

While this map does not depict climate vulnerability metrics per se, the geographic placement of these cooperatives within a highly stressed ecological zone underscores the urgency of localized climate resilience strategies.

*"Abrid n tmeddit yettwawal deg ugharas n tazmert."
 ("The path of life is drawn through the fields of patience".)*

The vitality of the argan forest underpins not only the region's ecological stability but also the cultural identity, food security, and livelihoods of the communities that have depended on it for generations. As tree health deteriorates and yields decline, so too does the foundation of rural resilience and cooperative survival.

Yet the people of this landscape, especially the women are not powerless in the face of change. Through planting near sheltered groves, enriching degraded soils, managing grazing pressures, and reviving traditional ecological knowledge, they are responding to this crisis not only as harvesters, but as stewards of legacy.

These community-driven actions form the roots of what would later become the argan cooperatives: local efforts transformed into organized movements.

What began as local resilience efforts rooted in land, memory, and maternal knowledge, would ultimately give rise to a revolutionary movement: the women-led argan cooperatives.

Out of these acts of stewardship, something remarkable began to take shape, not just seasonal caretaking, but organized movements rooted in land and led by women.

4.2 How the Argan Ecosystem Gave Rise to Women-Led Cooperatives

The Forest That Formed a Movement

For centuries, the argan forest has stood as a resilient ecosystem uniquely adapted to Morocco's arid and semi-arid landscapes. Its deep-rooted trees stabilize fragile soils, support pollinators, and shelter biodiversity in some of the most vulnerable regions of North Africa.

But beyond its ecological value, the argan tree has long shaped the livelihoods and lifeways of Amazigh communities, especially women. Generations of women have passed down knowledge of when to harvest, how to sun-dry the fruit, and how to hand-extract the oil. This was never just a product. It was a practice of care, an act of reciprocity between people and place.



Figure 5. A member from ArganTimgharine Cooperative manually cracking argan nuts using traditional stone tools as part of the oil preparation process. (Photo: Andrea Worthoff, February, 2025)

The traditional knowledge passed from mother to daughter of when to harvest, how to sun-dry the fruit, and how to extract the oil. These formed the backbone of daily life and seasonal rhythms. Argan was never just a product. It was a practice of care, an act of reciprocity between people and place.

4.2.1 The Rise of Women-Led Cooperatives

To understand the origins of today's women-led argan cooperatives, we must return to a pivotal moment when environmental pressures and social inequalities converged, compelling local communities, especially women, to reclaim their ancestral role as stewards of the argan forest and their economic future.

The idea of women-led cooperatives did not arise by accident. It emerged at a critical intersection of ecological strain and social marginalization in southwestern Morocco. By the late 1980s and early 1990s, as the global beauty and gastronomy industries discovered the exceptional properties of argan oil, international demand surged rapidly, far outpacing the traditional, small-scale production capacity of local communities.

In the late 1990's global interest in argan oil's cosmetic and nutritional properties surged. As demand grew, so did the risk of exploitation. What had once been a community-based tradition was being overtaken by commercial forces—pushing aside the very women who had safeguarded it for generations.

In response, a quiet revolution began.

With the support of local NGOs, researchers, and international development programs, Amazigh women began organizing into cooperatives. These collectives formalized ancestral knowledge into economic structures—protecting traditions while opening doors to income, education, and community influence.

Women-led cooperatives were not simply producers of oil. They became:

- Guardians of cultural memory
- Stewards of the forest
- Leaders in regenerative enterprise

They reclaimed their roles not just as harvesters, but as business owners, quality experts, and negotiators in global markets.

4.2.2 Key Milestones

- **Late 1980s–1990s:** Global demand for argan oil surges; women remain excluded from profits.
- **Early 1990s:** NGOs recognize the dual crisis of desertification and social inequity.
- **1996:** Tifaout Cooperative established in Tamarar.
- **1998:** UNESCO designates the Arganeraie as a Biosphere Reserve.
- **Early 2000s:** Cooperative growth accelerates, with training in quality control and export logistics.
- **2010s onward:** Cooperatives gain global recognition for environmental and women's empowerment impacts.

4.2.3 From Power to Marginalization

Sensing opportunity, both foreign buyers and local middlemen stepped in to control the growing argan oil trade. They purchased raw oil from individual harvesters at deeply undervalued prices, often without providing fair compensation, and resold it at significant markups in Europe and North America. Profits soared for intermediaries, while local producers were left with shrinking incomes and little bargaining power.

What had long been a subsistence-level production system, where rural women cracked the nuts by hand, roasted the kernels, and slowly extracted the oil using ancestral methods, was being overtaken by commercial forces. These forces marginalized the very people who had sustained the argan forest for generations.

4.2.4 Reclaiming Power and Place

Faced with exploitation and escalating environmental degradation, rural Moroccan women began to organize. With the support of local NGOs, academic researchers, and early development initiatives, they formed cooperatives not only to improve their livelihoods but also to safeguard the forest that sustains their communities. The cooperative model responded to both economic injustice and environmental urgency — allowing women to reclaim agency over their ancestral knowledge, increase their incomes, and ensure the survival of the argan ecosystem.

This rush to profit had pushed aside the Amazigh women who carried the knowledge and labor of producing argan oil. At the same time, it placed immense strain on the argan forest. Without protections or fair bargaining power, local harvesters saw their incomes decline, while the rapid commercialization of argan oil turned a traditional, community-based practice into an exploitative supply chain.

The emergence of women-led cooperatives directly countered these pressures. With training and resources provided by NGOs, research institutions, and international development agencies, these cooperatives empowered women to move beyond the role of raw material suppliers. They became business owners, quality experts, and negotiators in the international marketplace, reclaiming both economic power and ecological stewardship over their ancestral lands.

4.2.5 From Marginalization to Regeneration

The rise of cooperatives directly challenged extractive market dynamics that once degraded both forest and community. With proper training and access to markets, cooperatives proved that regeneration was not only possible, but it was also profitable.

By linking ecological preservation with women's empowerment, cooperatives created a living model of resilience, where land, culture, and livelihood thrive together.

4.2.6 A Shared Threat

Today, the argan forest and the women's cooperatives face a dual crisis.

- Environmental pressures including prolonged drought, water scarcity, and unsustainable harvesting, threaten the forest's long-term survival.
- Market forces, favoring volume, efficiency, and intermediaries, undermine the integrity of cooperative models.

The risk is clear: what began as a regenerative, community-centered practice is being pulled into extractive systems that devalue quality, erase cultural knowledge, and marginalize women once again.

4.2.7 Can the Argan Forest and Cooperatives Cohabitate?

The future of argan oil and the people and places who sustain it depends on an urgent truth: The forest and the cooperatives are not separate systems. They are one.

Ecological health and economic justice are intertwined. One cannot thrive without the other.

4.2.8 A Regenerative Path Forward

To ensure the future of both forest and cooperative, a new model must emerge, one that reconnects soil, story, and society.

This includes:

- Recognizing cooperatives as land stewards, not just producers.
- Protecting ancestral methods as ecological technologies.
- Supporting intergenerational knowledge transfer, especially among youth.
- Designing markets that reward soil health, biodiversity, and cultural authenticity.
- Investing in cooperative-led regeneration that centers women as agents of ecological and economic transformation.

This is the true power of the argan cooperative model:

The cooperative model addressed these crises by equipping women with the tools and resources to manage production and profit directly from the sale of argan oil. It not only provided economic independence for women but also fostered social mobility and gender equality within their communities. Cooperatives became shared spaces for collaboration, pooling resources, and increasing collective bargaining power to ensure fair wages and sustained access to ethical markets.

Not only to produce oil, but to cultivate a living economy, where soil, story, and society thrive together.

The history of these cooperatives is a living testament to the resilience and determination of Amazigh women, who have led the charge in preserving their environment and cultural traditions while paving the way for future generations to benefit from the enduring heritage of the argan tree.

4.2.9 The Risk of Doing Nothing

The Argan cooperatives were born out of necessity and responses to exploitation, to deforestation, and to exclusion. But today, they face a different kind of danger, stagnation. As drought deepens, middlemen tighten their grip, and younger generations drift away, the risk is no longer only external. It is internal. It is the risk of doing nothing.

If action is delayed, the forest weakens, knowledge fades, and outside forces shape the future. Without strong planning, leadership development, and renewed ties to the land, cooperatives risk losing the power that once made them a force for change. But there is another path.

What this chapter has shown is that the argan forest and the cooperative movement are inseparable. One cannot survive without the other. The forest needs stewards. The stewards need vision. That vision lives in legacy. And legacy, if left unshaped, is at risk of being lost.

The choice ahead is not just between action and inaction. It is between regeneration and erosion. Between honoring what was inherited, or letting it vanish.

Reflective Question:

How can we fully understand the future of these cooperatives without also examining the global forces that continue to shape the argan industry today?

4.3 The Argan Industry Global Footprint

From Local Legacy to Global Demand: What's at Stake for Cooperatives

The argan forest may be rooted in Morocco's soil, but the oil it produces has become a global commodity that is powering beauty empires, wellness trends, and premium food brands across continents. The forest is local. The demand is global.

But as this industry explodes in value, one question remains: will the women and cooperatives who steward the trees rise with the market or be left behind?

The argan forest and its cooperatives do not exist in isolation. They are part of a global industry experiencing rapid growth, and rising tension. While the market thrives, many cooperatives remain at risk of being sidelined, underpaid, or overexploited. To chart a regenerative future, we must understand the scale of the global opportunity and what's at stake for the communities who make it possible.

4.3.1 The Argan Oil Market: Global Growth and Local Realities

As shown in **(Fig. 6)**, in 2022, the global argan oil market was valued at approximately USD 299.45 million, and it is projected to grow at a compound annual growth rate (CAGR) of 11.4%, potentially reaching USD 712.5 million by 2030.⁸

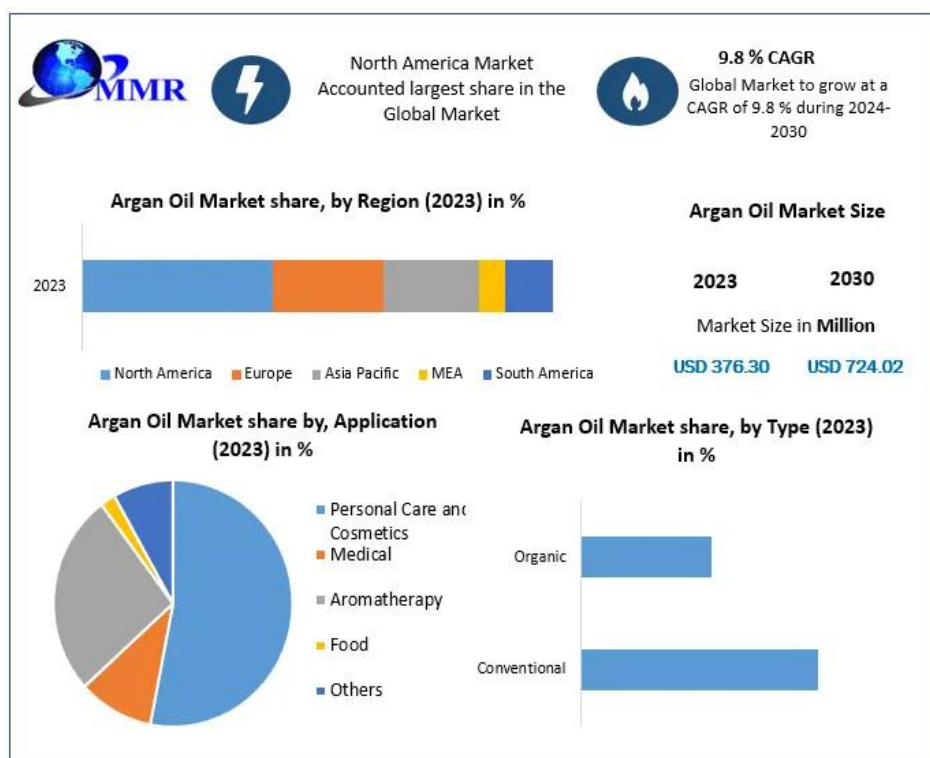


Figure 6. Argan Oil Market Overview (2023). Share by Region, Application, and Type. Source: Maximize Market Research, Argan Oil Market Report 2024-2030.

Today, most of that value is captured outside Morocco, even though it remains the world's only source of authentic argan oil. The country produces an estimated 4,000 tons annually, with 75% exported to global markets.⁹

One-third of all sales go to North America, where demand is rising in clean beauty, luxury skincare, and natural food markets. European, Asian, and Middle Eastern markets are also growing with consumers demanding traceable, ethical sourcing. Yet the cooperatives that produce the oil often remain invisible in this value chain.

That's a stark disconnect:

- A multi-million dollar industry
- Powered by local knowledge
- With only a fraction of that value returning to the communities who sustain it

Despite this global boom, only an estimated 2,000 workers are formally employed in argan oil cooperatives, supporting the livelihoods of 2 million people in Morocco's argan-producing regions. ¹⁰

If current trends continue, cooperatives risk becoming low-cost suppliers in a high-profit industry, a model that undermines long-term ecological resilience and intergenerational equity.

4.3.2 What This Means for the Chapters Ahead

The next sections of this guide provide a technical roadmap for cooperatives to strengthen internal operations, build negotiating power, and prepare to thrive in a changing market.

Because the stakes are high and getting higher each season. This isn't just about producing more oil. It's about securing a place in the future of the industry on their own terms.

The chapters that follow are not just about systems, they are about sovereignty.

Chapter 5: Survey Methodology and Fieldwork Overview

From Field to Framework: How Participatory Methods Built a Meaningful Cooperative Diagnostic

5.0 Introduction

This chapter outlines the methodological framework used to assess the internal operations and performance of three argan oil cooperatives in Morocco. The approach blends quantitative and qualitative methods to generate a holistic understanding of cooperative dynamics, member participation, operational strengths, and areas for improvement needed to determine a best practice.

The methodology for the Best Practices Survey was designed to be both participatory and culturally sensitive, following a three-step process. First, pre-visit surveys were distributed via email and WhatsApp to cooperative managers and members. They intended to collect preliminary insights to ensure that in-person visits would be focused and productive. The surveys were designed to be simple and accessible, using a mix of closed-ended and open-ended questions. Special attention was given to translation needs, making the survey available in Arabic, French and English to accommodate the linguistic diversity of the cooperatives and considering the varying levels of digital literacy, particularly in rural areas.

The second step involved on-site data collection, spending approximately one week with each cooperative to engage directly with management and members. During these visits, the pre-survey responses were reviewed in discussion-based sessions to validate and clarify the information provided. The surveys were retrieved in Google Forms including a combination of on-site interviews, handwritten notes, photographs and videos. To ensure ethical practice, informed consent was obtained from all participants. Data management protocols included consistent formatting for notes and organized labeling of files to streamline post-visit analysis. Cultural sensitivity was a priority, respecting participant comfort levels during all forms of documentation.

I wrote the Executive Summary before leaving Morocco and I shared it with the team upon returning to the USA.

The final step involved was post-visit analysis. Upon returning to the U.S., I analyzed the collected data, categorizing insights into actionable themes such as governance, production processes, marketing strategies, and social dynamics, just to name a few, revealed from the cooperatives.

5.1 Cooperative Selection:

The three cooperatives involved in this study were selected based on size and Geographic and cultural diversity:

5.1.1 Varying stages of organizational maturity

- Advanced
- Emerging
- Start-Up
- Willingness to engage in participatory research

5.1.2 Cooperatives:

- Tighanimine Cooperative (Taroudant Province)
- ArganTimgharine Cooperative (Imsouane Region)
- Bio.IDG Cooperative (Essaouira Region)

While Tighanimine and Timgharine were selected prior to the field visit, the third cooperative, Bio.IDG, was added during the visit to Timgharine due to its proximity, availability, and willingness to participate. This real-time addition allowed for a richer comparative perspective, especially between emerging and start-up cooperatives operating in the same geographic region.

Each cooperative offered a unique organizational structure, member composition, and operational model, allowing for comparative insights.

5.2 Data Collection Tools

The research employed a mixed-methods strategy to gather both numeric data and narrative insights. Key tools included:

5.2.1 Structured Surveys/Google Forms (3 languages, English, French, Arabic)

- Two versions were developed: one for members, one for managers
- Topics included governance, financial management, traceability, member participation, and intergenerational knowledge
- Surveys included Likert scales, multiple-choice, and open-ended questions

5.2.2 Semi-Structured Interviews (Translator assisted)

- Conducted with cooperative presidents, board members, and key staff
- Explored challenges, successes, and future vision
- Interviews helped clarify survey responses and surface unquantifiable dynamics

5.2.3 Direct Observation

- Time was spent at each cooperative during production and planning activities
- Notes were taken on cooperative flow, communication, and informal interactions
- This ethnographic element added vital context to survey findings

5.2.4 Performance Indicator Framework

- Based on business metrics, a set of eleven (11) Key Performance Indicators (KPIs) were used to structure the diagnostic
- These indicators aligned with technical areas such as production quality, leadership participation, financial literacy, and traceability systems

5.3 Data Organization & Analysis

All survey responses were anonymized and entered into a Google Form to identify patterns across cooperatives. Key analysis steps included:

- Thematic coding of qualitative answers
- Side-by-side comparison between member and manager perspectives
- Triangulation with field notes and observed practices

Where appropriate, insights were visualized using pie charts or bullet-style summaries. These graphics appear throughout the sections of Chapter 6, Performance Indicator sections.

5.3.1 Triangulation of Data Sources

To better understand cooperative strengths, challenges, and future opportunities, data collected through surveys, semi-structured interviews, and field observations were compared using a triangulated approach. Despite occasional limitations in dialogue, consistent patterns emerged across the cooperatives studied. The table below summarizes the key themes that surfaced through this multi-source analysis, providing a foundation for the performance indicators and best practices discussed in the following chapters.

Theme	Survey Insight	Interview Quote	Field Observation
Pride in Traditional Knowledge	High satisfaction ratings with traditional production methods.	"I learned this from my grandmother and I love it, but it is physically too much sometimes."	Observed use of hand-pressing and traditional stone mills.
Strong Member Loyalty to Cooperative	Members report high levels of trust and belonging.	"This place changed my life; I feel like I belong."	High turnout and respectful participation during cooperative visits.
Desire for Better Market Access	Concerns expressed about fair pricing and access to new markets.	"We do everything right, but we still don't get a fair price."	No business model, active sales strategies or market outreach in place.
Limited Youth Participation	Few young members responded to surveys; most were older.	"Our daughters don't want this life — they dream of using their degree from the university."	Few visibly young women present; most active members were over 35.
Manager & Member Communication Gaps	Managers reported clear communication, but some members asked for more updates.	"We always try to be transparent, but some members don't show up to meetings."	Leaders dominated discussions; some members remained quiet.
Cultural Shyness and Literacy Barriers	Several surveys were partially filled or left blank.	"I can't writing, but I can talk a little if it helps."	All members were respectful and extremely patient, but

hesitant to speak in
group settings.

5.3.2 Quantitative Overview and Response Distribution

To strengthen analytical credibility, a summary of survey participation and response patterns is provided here. Two distinct survey instruments were administered—one for cooperative **managers** and one for **members** to ensure that both leadership and general participant perspectives were captured. While the surveys covered overlapping themes, the question sets were tailored: the manager survey included more detailed operational and traceability questions, whereas the member survey focused on participation, communication, and satisfaction.

A total of **20 individuals** responded across the three cooperatives:

7 Cooperative Managers (Directors, Presidents, or Quality Leads)

13 General Members (diversity in age, participation level, and availability)

Demographic observations noted that:

85% of respondents were women

Most member respondents were over 35 years old, with limited youth participation

Surveys were written in Arabic, French, and English and were translated from Arabic to English by a GDF translator, Nihad, Assami and many but not all were orally translated into English for real-time transcription.

Response patterns by theme revealed the following:

Governance and Participation: All cooperatives confirmed equal voting rights, yet only one had a formal process for member-led agenda-setting during assemblies.

Traceability and Quality Control: 2 out of 3 cooperatives (67%) could trace oil batches from source to sale; only one used partial digital tools for tracking.

Financial Transparency: While most managers reported tracking expenses, only one cooperative had documentation such as external audits or member-accessible budget records.

Environmental Stewardship: Two cooperatives engaged in informal composting or eco-friendly practices; none had standardized sustainability protocols.

Capacity Building and Planning: The majority of both managers and members expressed a desire for further training, especially in marketing, digital literacy, and youth engagement.

Though the dataset is not statistically generalizable, the insights gathered provide a robust descriptive baseline. Triangulated with qualitative interviews and direct observations, these results supported the cooperative-level diagnostic and offer a replicable methodology for future field studies in similar settings.

5.4 Ethical Considerations

This research was conducted in accordance with the International Society of Ethnobiology's and GDF's Code of Ethics, emphasizing:

- Free, prior, and informed consent
- Respect for local knowledge and values
- Non-extractive, reciprocal learning
- Ongoing communication with participants and field partners

All findings will be shared transparently with participating cooperatives and will be made accessible for their future use.

5.5 Limitations

While the findings offer a deep and grounded snapshot of cooperative function, the study was limited by:

- Time constraints (1 week per cooperative)
- Language translation challenges in some interview settings
- Seasonal factors influencing member availability (Ramadan)

Nonetheless, the dataset is sufficiently robust to identify key trends and offer meaningful recommendations for future action and support.

5.6 Purpose of Methodology

The methodology was designed not only to evaluate cooperatives from a technical lens, but to reflect their lived realities, aspirations, and limitations.

This dual lens, metrics and meaning, is what gives the findings both operational relevance and regenerative potential.

Chapter 6. Performance Metrics & Best Practices for Cooperative Growth

From Insights to Opportunities to Action

6.0 Introduction

This chapter presents key findings from a performance-based assessment of three argan cooperatives, based on structured surveys completed by both members and managers. The objective was to evaluate how each cooperative functions across a core set of Key Performance Indicators (KPIs), including member engagement, governance and leadership, financial systems, production processes, quality control, traceability, traditional knowledge, sustainability, marketing and branding, and training and education. This mixed-methods approach revealed both strengths and areas for improvement, leading to a set of best practices tailored to each performance domain.

Each KPI section includes:

- A contextual overview of why the domain matters for cooperative resilience
- Survey findings from both member and manager perspectives
- Key challenges and gaps in current systems
- Field-based insights into strengths and vulnerabilities
- Best practices from high-performing cooperatives
- Strategic opportunities for capacity-building and growth
- A practical Action Plan Checklist for implementation

These findings are not static benchmarks, they represent a living, evolving view of cooperative development. By combining performance metrics with the lived realities of cooperative life, this chapter aims to turn challenges into strategy and data into direction for regenerative, community-driven progress.

6.0.1 Reflecting on Internal Dynamics

While this guide emphasizes promising practices and positive dynamics, attention was also given to uncovering potential internal challenges such as leadership tensions, inequality, or power imbalances. However, during the three-week field study, no explicit conflicts or disputes were reported or observed. Cooperative members and managers consistently expressed solidarity, shared values, and mutual respect. The participants were calm and consistent with their responses. They may have been too timid to share anything disheartening, constructive, or negative. This may reflect genuine cohesion, but may also be influenced by cultural norms around discretion, social harmony, or the presence of an outsider during data collection. Future longitudinal studies or internally led dialogues could explore deeper layers of cooperative dynamics over time.

6.1 Member Engagement & Responsibilities

6.1.1 Context & Purpose

The success of an argan cooperative is deeply rooted in the active participation and engagement of its members. These individuals are responsible for the essential tasks of harvesting, processing, and ensuring the overall success of the cooperative. When members are engaged and committed to the cooperative's mission, it fosters a sense of ownership and contributes to the quality of the final product. Clearly defined roles and responsibilities are key to ensuring smooth operations and maintaining high standards. However, member engagement goes beyond simply fulfilling operational duties. It also involves active participation in governance, decision-making, and the future direction of the cooperative.

6.1.2 Subdomains

To capture the full picture, this performance indicator was evaluated through four interconnected subdomains.

Subdomains are specific focus areas within a broader key performance indicator (KPI).

They help break down complex performance categories into more detailed, measurable components. In the case of Member Engagement & Responsibilities, examining subdomains allows us to move beyond surface-level participation and better understand the different dimensions of how members contribute, lead, and grow within the cooperative.

The four subdomains for Member Engagement are:

- **Participation in Operations** – Are members actively involved in core harvesting and processing tasks?
- **Voice in Decision-Making** – Do members feel heard and included in cooperative direction?
- **Role Clarity and Responsibility** – Are expectations and responsibilities clearly communicated?
- **Leadership Development and Growth** – Are there clear pathways for members to grow beyond their current roles?

These subdomains are not isolated; rather, they weave together to create either a culture of ownership or one of disengagement.

6.1.3 Member and Manager Survey Summary

The survey results from February 2025 reveal a layered picture of engagement within the cooperatives. While operational participation is high, deeper involvement in leadership and strategy remains limited and, in some cases, misunderstood.

Survey results show that members are highly engaged in harvesting and processing tasks, with 92.3% reporting active involvement in daily operations (see Fig. 7), but participation declines in administrative and leadership roles in daily operational tasks.

Although no internal tensions were reported by members during fieldwork, it is important to acknowledge that differences in leadership styles, generational expectations, and informal hierarchies may still exist. Sustained cooperative resilience depends on maintaining open communication and addressing potential challenges as they arise.

6.1.3.1 Member Insights

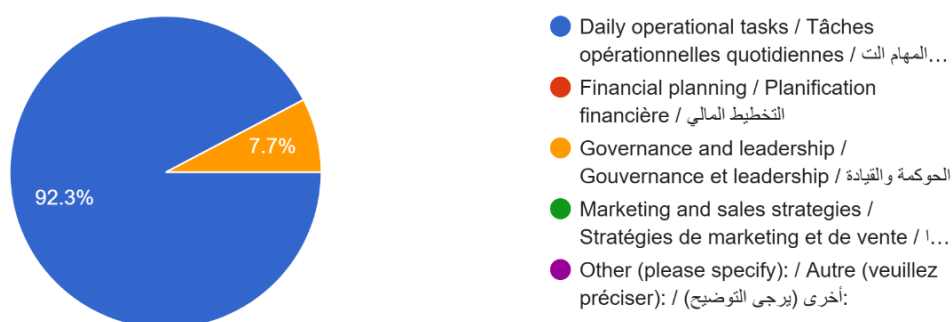


Figure 7. **Member Engagement by Task Type. Source: Best Practices Survey, Member, (February, 2025)**

But when members were asked if they feel their voice is heard in cooperative decisions, responses were divided: As shown in **(Fig.8)** below, approximately one-third strongly agreed that they feel heard, another third strongly disagreed, and the largest group

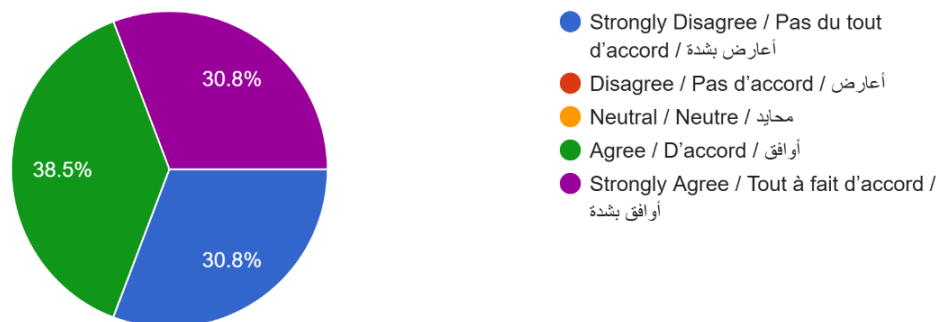


Figure 8. **Members Voice in Decision-Making, (Source: Best Practices Survey, Member, (February, 2025)**

And (38.5%) responded neutrally. This suggests not necessarily apathy, but uncertainty or a lack of clear opportunities for meaningful participation in leadership and strategic discussions.

Members also expressed a clear desire for greater involvement in shaping the cooperative's future, including product development, marketing strategies, and cooperative budgeting. Importantly, many indicated strong interest in personal and professional development, calling for opportunities to grow beyond their current roles.

However, limited literacy presents a significant challenge to deepening governance participation.

6.1.3.2 Manager Insights

Cooperative managers, on the other hand, as shown in (Fig. 9) perceive the level of member participation in decision-making, and overall, the results are quite positive:

- 57.1% of managers are Satisfied
- 42.9% of managers are Very Satisfied
- 0% reported Neutral, Dissatisfied, or Very Dissatisfied

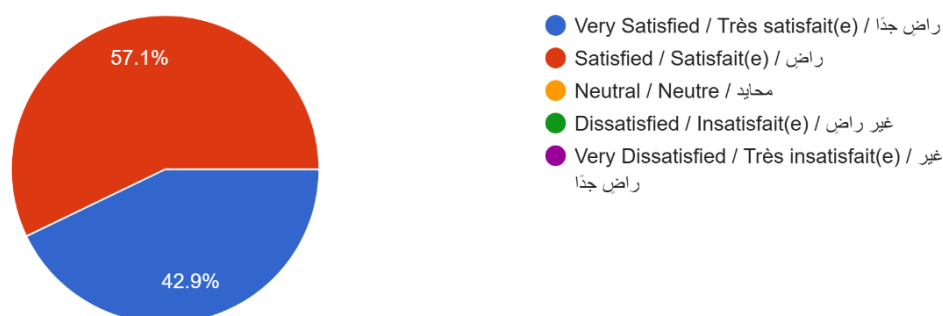


Figure 9. Manager Perceptions of Member Engagement. (Source: Best Practices, Survey, Manager, (February, 2025))

The data reveals a clear disconnect between managerial perceptions and member experiences of participation. While cooperative managers overwhelmingly report satisfaction with member engagement in decision-making (with 100% indicating they are satisfied or very satisfied), member responses present a more nuanced reality. Survey results show that many members remain uncertain or feel unheard regarding their role in shaping cooperative direction. This gap highlights the need for more inclusive communication structures, clearer opportunities for member input at strategic levels, and targeted support particularly for members facing literacy barriers to ensure meaningful engagement in cooperative governance.

6.1.4 Integrated Best Practices

To respond to the full scope of member engagement, best practices must address participation, voice, clarity, and growth simultaneously. High-performing cooperatives are already testing practical, replicable approaches:

Skill-Building & Literacy Workshops – Offer regular training in cooperative management, sustainable harvesting, financial literacy, and digital tools.

Mentorship Programs – Pair experienced members with new or younger participants to pass down traditional knowledge and build peer confidence.

Rotational Leadership Roles – Allow members to lead small initiatives or meetings, giving them experience without pressure.

Advisory Committees – Where literacy allows, form committees for marketing, pricing, or product feedback to give members a structured voice.

Communication Platforms – Use WhatsApp groups, bulletin boards, or community meetings to ensure transparency and alignment.

Fair Compensation Clarity – Host sessions explaining wage structures, Fair Trade premiums, and how profits are reinvested.

6.1.5 Key Takeaways

- Member participation in daily operations is strong; however, deeper engagement in leadership and decision-making remains limited.
- A significant perception gap exists between managers (who overwhelmingly report satisfaction) and members (who express mixed or uncertain feelings about their voice in cooperative direction).
- Structural barriers including limited literacy support and unclear opportunities for input hinder broader member engagement at the governance level.
- Strengthening inclusive communication practices, leadership development pathways, and strategic decision-making opportunities is essential to sustain cooperative ownership, resilience, and leadership succession.

6.1.6 Opportunities for Growth

- Co-create learning journeys with members to guide personal and professional development
- Make leadership a process, not a position by offering small stepping-stones
- Use visual tools to map out cooperative structure, wages, and roles
- Include youth or second-generation members in mentorship or advisory roles

6.1.7 Action Plan Checklist for Cooperatives

☐ **Establish Rotational Leadership Opportunities**

Offer rotating leadership roles to give members experience in cooperative decision-making.

☐ **Create Advisory Committees**

Where literacy levels permit, establish committees for member input on pricing, marketing, and strategy.

☐ **Offer Skill-Building Workshops**

Provide regular training on governance, sustainable harvesting, financial literacy, and digital skills.

☐ **Implement Peer Mentorship Programs**

Pair experienced members with new participants to encourage knowledge-sharing and collaboration.

☐ **Improve Communication Channels**

Use tools like WhatsApp groups, bulletin boards, and newsletters to ensure all members are informed.

☐ **Clarify Fair-Trade Benefits**

Host sessions to explain Fair Trade premiums, reinvestments, and how ethical practices benefit members.

☐ **Track Participation and Provide Feedback**

Monitor engagement and provide constructive feedback to encourage consistent participation.

6.1.8 Risks If Member Engagement Gaps Persist

If cooperatives do not address gaps in member engagement, several critical risks may emerge:

Reduced Member Participation: Members who feel unheard or disconnected may gradually disengage from operational and leadership responsibilities.

Leadership Burnout: Without active member support and leadership succession planning, cooperative management may become overburdened, leading to burnout and instability.

Weak Leadership Pipelines: Without developing new leadership pathways, cooperatives risk future governance crises as older leaders retire or step back.

Loss of Institutional Knowledge: Disengagement at the member level can result in a gradual erosion of traditional practices, cultural identity, and operational expertise critical to long-term cooperative resilience.

Proactively strengthening communication pathways, leadership development programs, and member participation structures will be critical to ensuring the cooperative's sustainable growth and legacy preservation.

Reflective Question:

How can the cooperative create more structured, inclusive opportunities for members to lead, contribute, and shape its future direction even in contexts where literacy or formal education barriers exist?

The next section explores **Governance & Leadership**, where decision-making power and transparency are examined more deeply.

6.2 Cooperative Management & Governance

6.2.1 Purpose and Context

Effective governance is not just about assigning leadership roles. It's about building trust, enabling inclusive decision-making, and ensuring cooperative structures work for everyone. Strong management provides support in daily operations, while good governance ensures that all members, regardless of literacy, confidence, or tenure, can participate meaningfully in decisions that affect their future.

In this KPI, I assessed governance through key themes such as leadership structure, member participation, transparency, communication practices, meeting efficiency, and operational support. The results show a cooperative community that is motivated and engaged, but also yearning for more structure, clarity, and shared leadership.

6.2.2 Member & Manager Survey Summary

The surveys showed that most cooperative members feel friendly and supportive toward one another, but important decisions are still made by just a few leaders. There's a big opportunity to include more members in decision-making, improve how information is shared, and help more people take on leadership roles. As the argan industry grows, cooperatives will need more than strong managers. They will need clear roles, better teamwork, and systems that help everyone participate and have a voice.

6.2.2.1 Leadership Tone vs. Governance Inclusion

Survey responses show variability in decision communication practices (see Fig. 11), with only 42.9% of managers reporting that decisions are 'Always' communicated to members."

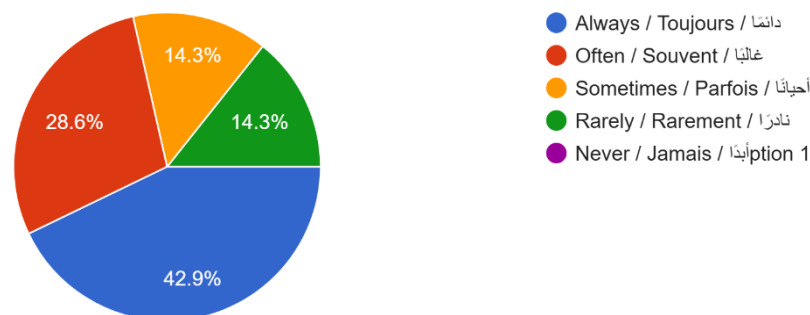


Figure 11. Manager Perceptions of Communication to Members. (Source: Manager Survey, February, 2025)

Member survey responses, though limited, reinforce these findings. Members highlighted personal respect and transformational support from cooperative leadership, citing examples such as gaining literacy skills and having open access to help. Meetings were identified as the primary communication method. However, member responses did not reflect deep involvement in strategic decision-making processes, suggesting that while leadership tone is supportive, governance inclusion opportunities remain limited.

6.2.3 Integrated Best Practices

To build stronger, more transparent governance systems, cooperatives can adopt field-tested strategies that address the root causes of disengagement and inefficiency:

6.2.3.1 Leadership & Participation

- Rotate meeting facilitators and note-takers to give more members leadership exposure
- Create advisory committees (e.g., pricing, production, financial planning) with literacy-appropriate tools
- Provide basic training in cooperative roles and responsibilities

6.2.3.2 Communication & Transparency

- Use WhatsApp, visual posters, and simple bulletins to share meeting summaries
- Translate financial updates into visual charts and diagrams to bridge literacy gaps
- Standardize meeting agendas, assign clear roles, and share notes promptly

6.2.3.3 Operational Support

- Apply for grants or funding to provide equipment and transportation for raw materials
- Offer regular check-ins to identify and resolve daily operational barriers
- Introduce rotating review sessions to identify bottlenecks in workflow and material delivery

6.2.3.4 Decision-Making Frameworks

- Adopt clear voting thresholds (e.g., 51% for standard decisions, 66% for major shifts)
- Introduce anonymous voting for sensitive topics
- Use suggestion boxes and breakout groups to ensure quieter voices are heard

6.2.4 Key Takeaways

- Member trust in cooperative leadership is high at a personal level, but current governance practices concentrate decision-making in a small group.
- Cooperatives are at a critical threshold where growth and sustainability require broader, structured participation.
- Members show a clear willingness to engage more deeply but need accessible systems to support their involvement.
- Transparent roles, visual decision-making tools, inclusive meetings, and consistent financial communication are essential to bridge the governance gap.
- Leadership must shift from symbolic encouragement to material support by investing in operational tools, transportation logistics, and participatory governance structures.

6.2.5 Opportunities for Strengthening Governance

Building on the existing foundations of strong operational participation and leadership respect, cooperatives have an opportunity to formalize governance practices, expand leadership pipelines, and build a more inclusive decision-making culture.

- Create simple advisory committees to support leadership transitions.
- Implement visual decision-mapping tools to make governance transparent.
- Invest in transport or meeting logistics to widen member participation.
- Pilot rotational leadership roles to build future leaders.
- Strengthen communication structures for reporting decisions back to members.

6.2.6 Action Plan Checklist for Cooperative Governance

- ☐ Rotate leadership roles to develop new voices
- ☐ Form advisory committees around pricing, production, and finance
- ☐ Create post-meeting summaries using WhatsApp, posters, or bulletins
- ☐ Hold quarterly financial reviews using visual charts
- ☐ Seek funding for equipment, transportation, and field support
- ☐ Introduce anonymous suggestion boxes and feedback systems
- ☐ Standardize meeting agendas, facilitators, and follow-ups

6.2.7 Risks if Governance Gaps Persist

When leadership is concentrated in a few individuals, cooperatives risk burnout, bottlenecks, and resentment. Without transparent financial systems, even the best intentions can be misinterpreted, eroding trust. If decision-making remains limited to dominant voices, members may disengage, silently walking away from their potential.

The result is stagnation: missed opportunities, unmet goals, and untapped talent. Strong governance is not a luxury, it is a safeguard for cooperative sustainability and a pathway for community empowerment.

Reflective Question

How can we make cooperative decisions and leadership so transparent and inclusive that every member, regardless of literacy or role, feels part of shaping our future?

The next section explores **Financial Management and Transparency**, where cooperative business acumen and communication, budgeting practices, and long-term planning are examined in greater depth.

6.3 Financial Management & Transparency

A Clear Plan to Grow Your Cooperative and Keep It Strong

6.3.1 Context and Purpose

Financial transparency is often cited as a pillar of cooperative success but it means very different things to different members. In many argan cooperatives, those responsible for harvesting and production may see finances as abstract or inaccessible, especially when literacy levels are low to none. Meanwhile, cooperative managers seek clarity around income, expenses, and investments to lead strategically and plan for the future.

This performance indicator was assessed across five key subdomains:

Business Model Development – Is there a clear, long-term plan for financial sustainability?

Financial Reporting & Communication – How are reports shared, and are they accessible to all members?

Member Participation in Financial Decisions – Do members engage in budgeting or profit allocation discussions?

Fair Compensation & Profit Sharing – Are wages and profit distribution models understood?

Financial Tools & Training – Are members and managers equipped to understand and manage cooperative finances?

Together, these subdomains define whether financial transparency is simply a reporting function, or a shared responsibility tied to inclusion, trust, and cooperative resilience.

6.3.2 Member and Manager Survey Summary

Survey responses revealed encouraging progress alongside critical gaps. All members confirmed that financial reports are shared at least annually, often including simplified summaries of income, expenses, and profits. However, 46.2% of members identified a lack of understanding as their biggest challenge, and 38.5% pointed to insufficient communication tools.

Most notably, the absence of a formal, long-term business model emerged as a shared concern. Without one, the cooperative is left to navigate seasonal fluctuations and market shifts without a roadmap.

“We haven’t redone our business model since 2005 when we originally created it. We cannot easily sustain our cooperative during off season. The price of argan continues too increase, (now it is \$70/liter) and we don’t have enough reserves.”

– Cooperative President

Members often rely on verbal updates or in-person meetings, and while many appreciate simplification efforts ("everyone seems to understand the bottom line"), they remain largely passive recipients of information. Very few report being invited into conversations around budgeting, reinvestment, or long-term financial planning.

“I am not as interested in financials on a day-to-day or even monthly basis. I just want to be paid for my raw material. I am more concerned about not having enough raw material so that I can make money.”

– Cooperative Member (Harvesting)

Managers acknowledged these concerns. They cited inconsistent communication rhythms and lack of digital tools as ongoing challenges. Both groups called for more frequent updates, clearer presentations, and accessible formats, like WhatsApp summaries, printed visuals, or live Q&A sessions.

“I work at the Cooperative as an employee and do many different things here. I would like to learn more about the financials more frequently.”

– Cooperative Member (Front Office Sales/Administrative)

6.3.3 Integrated Best Practices

The following Best Practices aim to move cooperatives beyond basic financial reporting toward an active, inclusive financial governance model. Emphasis is placed on increasing communication frequency, empowering members through financial education, and fostering collaborative planning structures that build ownership and transparency over time. To build financial transparency into a core strength, cooperatives can implement a set of scalable, inclusive practices:

6.3.3.1 Business Model & Resilience Planning

- Co-create a five-year business plan addressing off-season income and reserves
- Involve members in annual business model updates
- Benchmark against successful cooperatives like Timgharine for peer learning

6.3.3.2 Clear Communication & Reporting

- Standardize quarterly or semi-annual financial reports with simple charts and summaries
- Use WhatsApp, printed bulletins, or verbal updates for accessibility
- Host financial review sessions followed by Q&A

6.3.3.3 Engaged Member Participation

- Introduce participatory budgeting where members vote or prioritize investments
- Create financial advisory committees for input and oversight
- Offer anonymous feedback channels (e.g., suggestion boxes)

6.3.3.4 Fair Compensation & Profit Clarity

- Display a simple, visual payment and profit-sharing model in the cooperative house
- Hold profit-sharing assemblies to explain distributions
- Track member contributions and link them to performance-based incentives

6.3.3.5 Tools & Training

- Launch financial literacy workshops using practical, scenario-based training
- Use large posters or color-coded visuals to explain cooperative economics
- Pilot mobile tools or templates for tracking income and expenses

6.3.4 Key Takeaways

The financial management diagnostic revealed critical areas of progress and major gaps or cooperative sustainability. The following takeaways highlight the most urgent insights:

- The absence of a formal, sustainable business model leaves the cooperative vulnerable to seasonal fluctuations, market shifts, and financial instability.
- Financial transparency is improving, but communication remains limited by inconsistent reporting rhythms and low member financial literacy.
- Members primarily prioritize timely, fair payment for their raw material, with little expressed interest in broader financial governance or long-term budgeting discussions.
- Simplified annual financial reporting satisfies most members, but does not build active financial participation or strategic resilience.
- Managers recognize the need for more frequent updates, accessible formats (such as WhatsApp or visual summaries), and greater transparency to bridge emerging gaps between cooperative operations and member expectations.

6.3.5 Opportunities for Strengthening Financial Management

There is powerful momentum for transforming financial management from passive reporting into collaborative strategy. Cooperatives can:

- First and foremost, a formal, adaptable business model is urgently needed to guide future sustainability.
- Managers prepare financial reports, but members need better access and understanding.
- Communication requires more diverse, accessible formats beyond in-person meetings.
- Member participation in financial decision-making is limited because of lack of understanding, but crucial for trust.
- Payment structures and profit-sharing models may need clearer explanations.

6.3.6 Action Plan Checklist

☐ **Develop a Long-Term Business Model**

Create and regularly update a sustainable 5-year business plan that addresses off-season strategies, reserves, and market alignment.

☐ **Standardize Monthly Financial Reports**

Prepare clear, simplified financial summaries covering revenues, expenses, profits, and investments. Use visual aids and explain verbally during meetings.

☐ **Expand Communication Channels**

Share financial updates not just in meetings, but also via WhatsApp, bulletin boards, and verbal updates to ensure all members are informed.

☐ **Schedule Regular Financial Meetings**

Hold quarterly or semiannual financial review meetings to discuss cooperative performance, answer questions, and strengthen transparency.

☐ **Introduce Financial Literacy Training**

Offer simple, practical training on cooperative economics and financial basics to empower all members to engage meaningfully.

☐ **Establish Member Feedback Loop**

Implement feedback mechanisms like advisory committees or anonymous suggestion boxes for members to express financial concerns or ideas.

☐ **Ensure Fair Compensation & Profit Sharing**

Maintain transparent, equitable wage policies and profit distribution aligned with contribution and cooperative standards.

☐ **Plan for Seasonal Fluctuations**

Build financial reserves during harvest season to ensure stability during off-peak months.

☐ **Clarify Decision-Making Processes**

Ensure all financial decisions follow clear, democratic processes and are well-documented for accountability.

☐ **Seek External Funding & Partnerships**

Pursue grants, partnerships, or external funding to support operational improvements and member benefits.

6.3.7 Risks if Financial Transparency Gaps Persist

Without a business model, the cooperative risks becoming reactive, struggling through seasonal slumps without savings or strategy. Long-term sustainability depends on short-term clarity and shared ownership.

If financial literacy and participation remain limited, members may disengage, misunderstanding decisions and mistrusting leadership. This erodes cooperative cohesion and weakens resilience.

Reflective Question

How can we make our cooperative's financial health and decision-making so clear and participatory that every member, regardless of education or role, feels genuine ownership of our shared future?

The next section explores **Traditional Values and Cultural Practices**, where ancestral knowledge, cultural continuity, and the cooperative's deeper identity are brought into focus as pillars of long-term resilience.

6.4 Traditional Value and Cultural Practices

Blending Tradition with Innovation to Pass the Torch Forward

6.4.1 Context and Purpose

Argan cooperatives are more than economic entities. They are vessels of ancestral knowledge, women-led resilience, and cultural identity. But this legacy is at risk. As physical demands increase and younger generations pursue education or urban careers, the cooperative model faces a turning point: will these traditions be inherited or left behind?

This performance indicator was assessed across four subdomains:

Generational Knowledge Transfer – Are mentorship structures in place?

Youth Roles & Pathways – Are there modern roles beyond manual labor?

Education & Capacity Building – Are youth prepared to lead the next evolution?

Cultural Stewardship & Tourism – Are heritage and identity celebrated and sustained?

6.4.2 Member and Manager Survey Summary

In February 2025, structured surveys were conducted with members and managers across three cooperatives to assess how traditional knowledge, cultural practices, and youth engagement are perceived and integrated. Responses revealed the importance and shared concern about the physical strain of traditional methods and the urgency of engaging younger members through modern roles. There was strong consensus in favor of blending ancestral practices with innovation, especially in branding, education, and succession planning. This section distills the key themes that emerged and identifies actionable paths forward.

6.4.2.1 Key Findings

The most significant barrier identified is the physical difficulty of manual methods, which (61.5%) of members cited as a key challenge as shown in **(Fig 12)**. Time constraints due to increased demand (15.4%) and the lack of skilled members to continue traditions (15.4%) also emerged as concerns. These findings underscore the strenuous nature of traditional argan oil production and the risk of losing specialized knowledge as older members retire and younger generations pursue different paths.

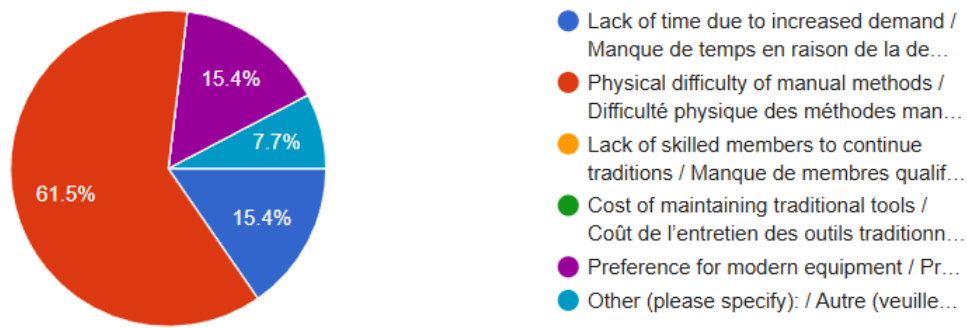


Figure 12. Member Perception about physical challenges of using manual methods of processing argan oil. (Source: Survey, February 2025)

Support for blending tradition with innovation: 69.2% of respondents believe in *balancing tradition with modern tools*, while only 7.7% think modern tech should replace traditional methods as seen in (**Fig. 13**). This suggests that most members support a hybrid model that respects tradition while embracing smart innovations.

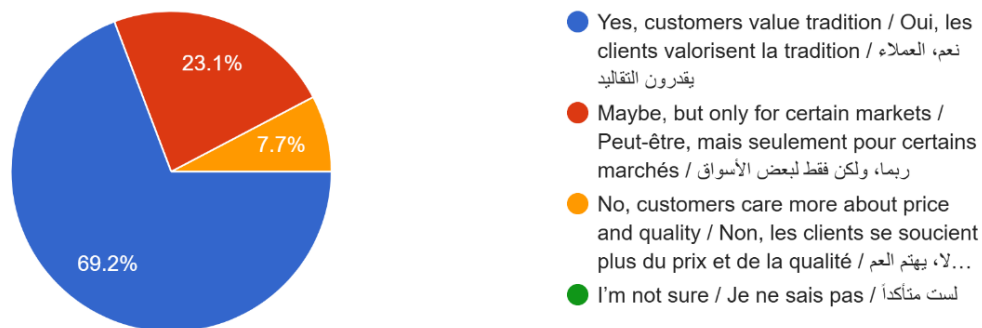


Figure 13. Member Perception about traditional vs. modern tools. (Source: Member Survey, February 2025)

Encouragingly, members recognize the value of integrating traditional knowledge into cooperative branding and marketing. As shown in Figure 14, 38.5% of respondents selected showcasing traditional production methods in marketing materials, while 30.8% favored incorporating traditional designs into packaging. These were the top responses, suggesting that even as hands-on participation in ancestral practices may decline, members still view cultural storytelling as a valuable market differentiator.

This affirms an important insight: traditional practices are not just heritage, they are a strategic asset.

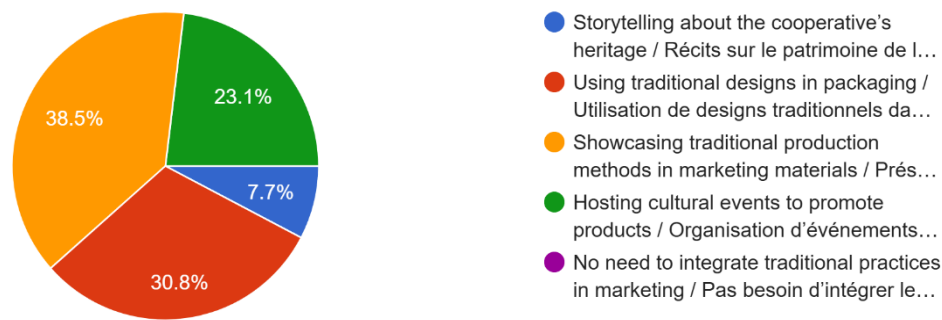


Figure 14. Member Perception about integrating traditional knowledge into marketing materials. (Source: Survey, February 2025)

This chart, (**Fig. 15**) illustrates that the vast majority of respondents (69.2%) believe a balance between traditional methods and modern tools is ideal for argan oil production. While 30.8% support a shift toward modern technology, no respondents chose to preserve traditions alone, suggesting a strong preference for adaptive, blended approaches over exclusivity. This supports the case for integrating heritage techniques within updated, efficient systems.

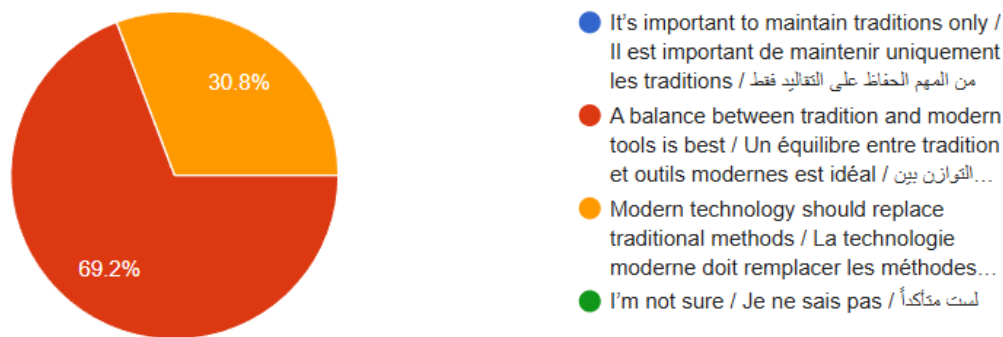


Figure 15. Member Perception about combining traditional with modern technology. (Source: Survey, February 2025)

The findings highlight both the urgency of this moment and the opportunity it brings: to regenerate the cooperative model through intergenerational design. These findings confirm that tradition alone will not sustain engagement. Modern roles, education, and storytelling must be part of a broader workforce development and succession strategy.

“We carry the future in our hands as we honor the past.” — Cooperative Member

6.4.3 Integrated Best Practices

To ensure continuity and spark innovation, cooperatives can implement these proven strategies:

6.4.3.1 Mentorship & Intergenerational Transfer

- Pair elder members with youth for skill-sharing
- Celebrate milestones in mentorship with cooperative gatherings
- Document traditional knowledge via video, storytelling, and archives

6.4.3.2 Youth Leadership & Modern Roles

- Launch *Innovation Labs* for product ideas, design, and storytelling
- Offer internships in e-commerce, branding, and sustainable development
- Empower young women to lead in packaging, social media, and market strategy

6.4.3.3 Education & Capacity Building

- Partner with universities for scholarships in agriculture, marketing, or cooperative business
- Host workshops on regenerative agriculture, tree stewardship, and argan ecology
- Invite guest speakers to connect global markets with local wisdom

6.4.3.4 Cultural Stewardship & Tourism

- Design cooperative tours highlighting production, heritage, and sustainability
- Organize cultural storytelling events that include elders and youth
- Use tourism as a tool for education, income generation, and youth pride

6.4.4 Key Takeaways

The survey findings and field observations around traditional knowledge revealed both strengths and vulnerabilities.

The following key takeaways summarize critical areas where cooperatives can protect, adapt, and regenerate cultural practices for future resilience:

- Members and managers value traditional argan knowledge, but modernization pressures and time constraints threaten its transmission.
- Few members report actively mentoring younger generations in traditional practices.
- Younger members increasingly prioritize formal education and modern employment, creating potential knowledge gaps.
- Physical demands and lack of updated techniques deter broader participation in traditional harvesting.

- New approaches, such as blending modern roles with traditional practices, will be critical to sustaining cultural knowledge.

“My daughter studies English at the university and wants to use her marketing learnings to help us grow our cooperative.”
— Cooperative Manger

- Members express a desire for a balance between tradition and technology to ease labor demands while preserving cultural meaning.
- Youth engagement depends on offering meaningful leadership roles beyond traditional manual labor.
- Partnerships with educational institutions and cultural tourism initiatives provide promising pathways to strengthen resilience.
- Sustaining the cooperative’s future will require preparing its next leaders while honoring those who came before.

6.4.5 Opportunities for Intergenerational Regeneration

The cooperative stands at a pivotal moment. As older members retire and younger generations seek new horizons, the need for a robust workforce development and succession strategy becomes critical.

There is clear potential to create a cooperative culture that honors tradition while embracing modernity. By investing in education, empowering youth leadership, and expanding roles beyond manual labor, cooperatives can build a resilient, future-ready community.

Cultural tourism and innovation labs offer dual benefits: they engage younger members creatively while generating new income streams. Mentorship programs safeguard traditional knowledge, ensuring it is passed down with care and pride.

- Create a succession system rooted in both soil and story
- Redefine participation beyond manual labor
- Use tourism and education as bridges between generations
- Build a cooperative culture where youth choose to stay and lead

This is legacy, redefined.

6.4.6 Action Plan Checklist

- ☐ Launch mentorship programs between elders and youth
- ☐ Create Innovation Labs for branding, storytelling, and product design
- ☐ Partner with schools/universities to offer scholarships and internships
- ☐ Document traditional knowledge via videos, books, or oral archives
- ☐ Design cultural tourism experiences with live demonstrations and storytelling
- ☐ Host regenerative agriculture workshops and youth leadership trainings
- ☐ Offer digital and creative roles for youth engagement
- ☐ Celebrate cooperative milestones to reinforce cultural pride

6.4.7 Risks if Succession is Not Addressed

Without a clear succession strategy, cooperatives risk losing the very knowledge that gives them meaning. As elders step back and younger generations look elsewhere, both tradition and operational resilience could fade. Legacy may become a memory, not a movement—unless intentional steps are taken to ensure it is passed forward with pride.

Reflective Question

How can we ensure that future generations not only inherit the cooperative, but feel inspired to lead it forward with pride and purpose?

The next section explores **Sustainability, Regenerative Knowledge, and Environmental Stewardship**, where cooperatives stand not just as producers, but as guardians of the argan forest — sustaining soil, culture, and climate resilience through traditional harvesting, ecological innovation, and intergenerational care.

6.5 Sustainability, Regenerative Knowledge & Environmental Stewardship

Protecting the Forest by Honoring The Wisdom in Our Hands

6.5.1 Context and Purpose

Argan cooperatives stand as guardians of both cultural heritage and ecological balance. The harvesting of argan fruit is not just a production step. It is a ritual, a regenerative act, and a direct connection to the health of the argan forest ecosystem.

This manual harvesting method is integral to the sustainability of the argan trees and ensures the long-term health of the forest. The cooperative's adherence to traditional, non-invasive harvesting techniques underscores their commitment to preserving both the ecological balance of the Argan forest and the cultural practices that have been passed down for generations. These harvesting methods align with the cooperative's broader goals of sustainable production and environmental stewardship.

Cooperatives must continue to use sustainable harvesting practices to ensure that enough nuts are left behind for natural regeneration. Implementing agroforestry systems such as integrating argan trees with other beneficial crops, improving soil fertility, prevents desertification, and increases biodiversity. Additionally, biochar soil amendments can enhance water retention and tree growth. Members should receive training on climate-adaptive harvesting techniques, erosion control, and sustainable tree planting programs.

This chapter explores how cooperatives can reinforce and build upon this regenerative knowledge to ensure soil health, tree vitality, and sustainable livelihoods for generations to come.

“The future of the argan tree is in our hands—literally.”

— Cooperative Member

6.5.2 Member and Manager Survey Summary

Overall, the survey reveals that both cooperative members and managers are strongly committed to sustainability, though their emphasis and perceived challenges differ. Members overwhelmingly prioritize sustainable harvesting of raw materials, especially argan (92.3%), as seen in **(Fig. 16)**, reflecting their close relationship with the land and daily involvement in harvesting practices.

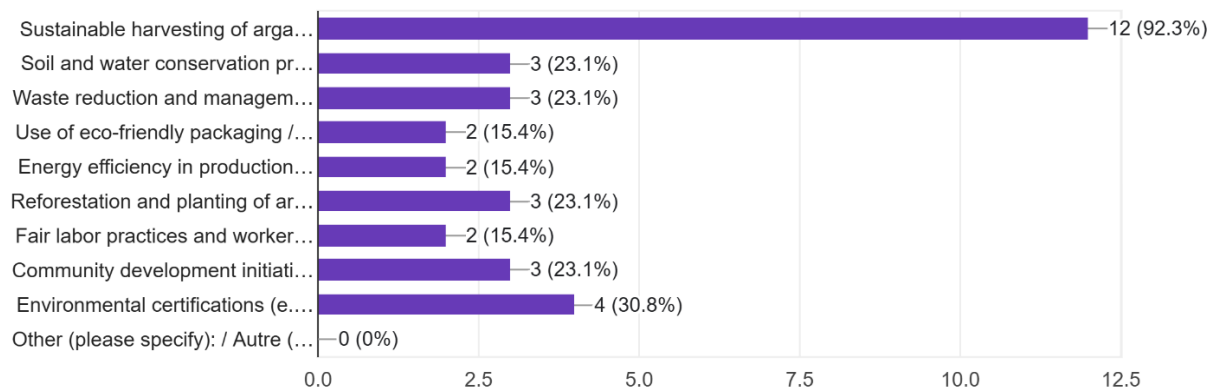


Figure 16. Member Focus on Sustainability Practices. (Source: Member Survey, February 2025)

Managers, on the other hand, emphasize broader goals such as resource conservation and community engagement (100%), while also taking on strategic responsibilities like waste management and environmental protection as seen in **(Fig. 17)** below.

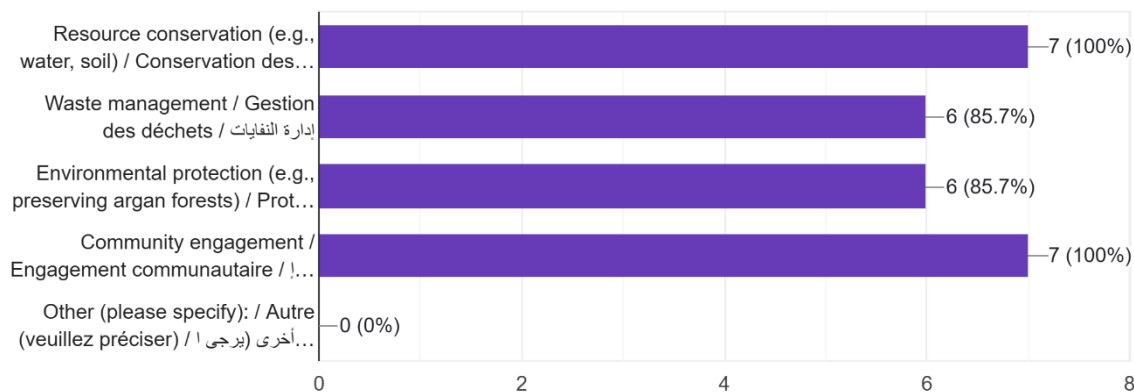


Figure 17. Manager's Focus on Sustainability (Source: Manager Survey, February 2025)

While 53.8% of members report challenges in sustaining these practices, often related to direct barriers like limited training, environmental pressures, and resource scarcity, only 28.6% of managers reported similar concerns.

This discrepancy suggests that members experience the impact of sustainability challenges more immediately in terms of harvesting, whereas managers may be more focused on structural issues. As shown in **(Fig.18)**, Managers identified a strong need for funding, tools, and sustainability education, signaling that their ability to support long-term cooperative resilience hinges on improved access to financial resources and technical training. Together, the survey results highlight a shared commitment but underscore the importance of equipping managers with the knowledge and resources to effectively lead sustainability efforts effectively.

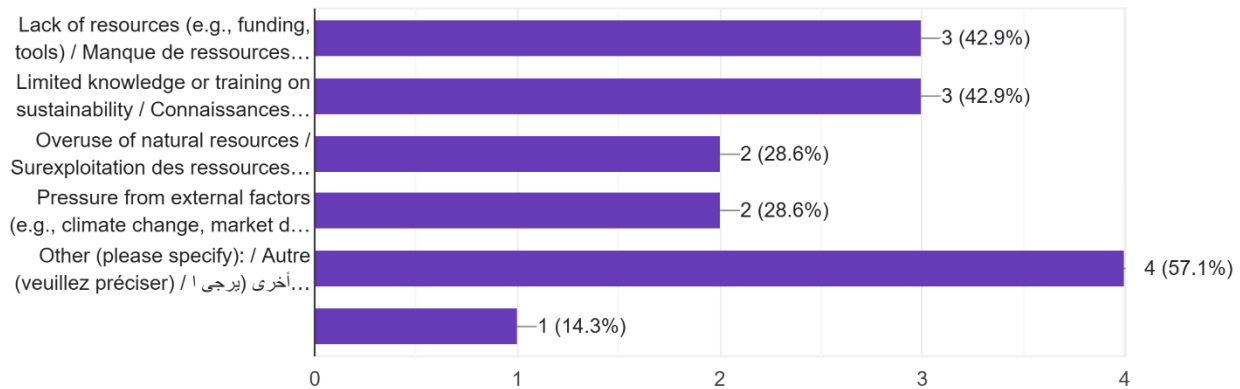


Figure 18. Manager's Focus on Sustainability (Source: Manager Survey, February 2025)

6.5.2.1 Sustainability Summary

Other key areas of focus include:

- Soil and water conservation, waste reduction, reforestation, and community development (each selected by 23.1% of respondents),
- Environmental certifications (30.8%), indicating an emerging interest in formal sustainability validation,
- Lower levels of engagement were seen in eco-friendly packaging, energy efficiency, and fair labor practices (15.4% each), suggesting potential areas for development.
- Challenges in maintaining Sustainability

A slight majority (53.8%) acknowledged facing challenges in upholding sustainable practices. The most cited barriers include:

- Limited knowledge or training on sustainability (46.2%), pointing to a critical capacity-building gap,
- Overuse of natural resources, external pressures, and lack of resources such as funding or tools (each cited by 30.8%)

Specific concerns such as attacks on trees and uncertainty around sustainability suggest a need for clearer communication and protection strategies.



Figure 18. Hotel Waste, Drarga, Morocco (Photo: Andrea Worthoff, February, 2025)

In summary, these findings highlight a strong baseline commitment to sustainability, particularly in argan harvesting, but also reveal systemic constraints related to training, resources, and environmental pressures. These insights offer valuable direction for targeted support, including technical education, funding access, and community engagement initiatives.

6.5.3.1 Understanding Terroir: How Land Stewardship Shapes Oil Quality

In regenerative agriculture, *terroir* reflects how soil, climate, biodiversity, and tradition imprint the character of an agricultural product. In argan oil, this translates to:

- Greater production of antioxidants (e.g., tocopherols)
- Enhanced levels of plant sterols and fatty acids
- Higher quality oil from trees grown in biodiverse, well-managed soils
- By stewarding the land, cooperatives protect the strength and resilience of the oil itself. Healthy soil leads to healthy oil and healthy oil sustains cooperative livelihoods.

6.5.4 Integrated Best Practices for Regenerative Stewardship

The cooperative's commitment to environmental stewardship is rooted in a long history of traditional harvesting and deep respect for the argan ecosystem. Survey results affirm that all members continue to harvest by hand, a technique that minimizes ecological disruption and preserves biodiversity. This method isn't just a production process. It's a reflection of the community's ancestral relationship with the land. For many members, this tradition represents pride, sustainability, and identity.

But the land is changing. Climate variability, reduced rainfall, soil degradation, and unpredictable seasons are introducing new stressors that threaten the health of the trees and the consistency of the harvest. Members acknowledge these pressures: nearly half cited weather and labor shortages as growing concerns. The challenges are no longer theoretical because they are being felt in the fields, in the harvests, and in the cooperative's ability to plan for the future.

Despite these pressures, members remain confident in the sustainability of their practices and are eager to build capacity for long-term regeneration. What's needed now is the transition from maintaining tradition to adapting that tradition for climate resilience. Members want practical training on land stewardship, climate-adaptive planning, and soil restoration. They are open to collaboration with environmental NGOs, universities, and agroforestry experts to build new capacities without abandoning their roots.

There is also a generational opportunity. While older members possess a lifetime of ecological knowledge, younger members, if engaged, can help translate this wisdom into action. Mentorship, documentation, and youth education are vital to ensure the transmission of regenerative techniques and a shared identity as *guardians of the forest*.

This chapter highlights that regenerative stewardship is not an abstract ideal, meaning, it is already present in daily cooperative life. What remains is to deepen that commitment, institutionalize it through cooperative action, and align it with modern tools for resilience. In doing so, cooperatives can elevate their ecological knowledge into a signature strength that enhances oil quality, protects their forest, and positions them as global leaders in sustainable production.

6.5.5 Key Takeaways

Survey responses and field observations highlight both the enduring strength and emerging vulnerabilities in cooperative sustainability practices. The following key takeaways outline critical priorities for regenerating ecological and cultural resilience:

- Hand-harvesting remains central to cooperative identity, supporting soil health, biodiversity, and terroir protection.
- Seasonal climate challenges require adaptive responses, including shared labor strategies and climate-aware harvest planning.
- Regenerative wisdom must be actively passed down through mentorship, youth education, and documentation efforts.
- Members express readiness to lead sustainability initiatives if equipped with appropriate tools, partnerships, and knowledge.
- Protecting terroir is not only a cultural act but a strategic investment in maintaining oil quality, authenticity, and future market value.

“When cooperatives protect their terroir, they are not only protecting the forest, they are also nurturing the richness of their harvest and the future value of their oil.”
— Cooperative Member

6.5.6 Opportunities: Sustainable Harvesting, Regenerative Practices & Terroir Stewardship

By deepening ecological awareness and investing in knowledge transfer, cooperatives can secure not just the survival of the argan forest, but its revival. The following opportunities offer immediate and long-term pathways for impact:

- Safeguard oil quality by investing in soil health, biodiversity, and sustainable tree care.
- Build community pride and cooperative resilience through environmental stewardship identity programs.
- Create elder-to-youth mentorship systems to ensure regenerative knowledge transfer across generations.
- Partner with agroforestry experts, universities, and NGOs to introduce adaptive soil, water, and biodiversity management techniques.
- Position cooperatives as global models of regenerative production through certification pathways and storytelling initiatives.

6.5.7 Action Plan Checklist for Regenerative Stewardship

- ☐ Conduct seasonal workshops on the ecological value of hand-harvesting
- ☐ Establish elder-to-youth mentorship programs for knowledge transfer
- ☐ Partner with NGOs and agroforestry experts for ecological support
- ☐ Archive practices through oral history and media documentation
- ☐ Develop visual tools and guides for regenerative practices
- ☐ Introduce cooperative labor-sharing during seasonal peaks
- ☐ Pilot composting, mulching, or other regenerative soil methods
- ☐ Host “Forest Stewardship Days” for hands-on community restoration

6.5.8 Risks if Regenerative Practices Are Not Strengthened

If regenerative knowledge is not actively reinforced, cooperatives risk losing more than just a set of practices, they risk losing the ecological foundation of their entire enterprise.

As older members retire, traditional knowledge may fade without proper documentation or mentorship. Climate shifts will continue to accelerate, and without adaptive strategies in place, harvests may decline due to drought stress, soil erosion, and disrupted fruiting cycles. The lack of investment in soil regeneration, biodiversity, and water retention will make trees increasingly vulnerable, reducing oil yields, quality, and long-term resilience.

Moreover, if terroir is not preserved through ecological care, the oil itself may lose the qualities that distinguish it in global markets: potency, richness, antioxidant content, and authenticity. Market trust, built on sustainability, tradition, and traceability—could erode if cooperatives are seen as falling behind in climate resilience or land stewardship.

The greatest risk, however, is identity erosion. If the connection between people, land, and oil is weakened, cooperatives may become producers of a commodity rather than stewards of a living landscape. Without proactive regenerative planning, the argan forest could shift from being a symbol of ecological harmony to a casualty of short-term extraction.

Reflective Question

How can we ensure that our harvesting practices today restore the land, preserve our terroir, and secure abundance for tomorrow?

6.6 Balancing Heritage and Modernization: The Future of Argan Processing

Keeping Ancestral Wisdom Alive While Meeting Today's Demands

6.6.1 Context and Purpose

The women of Morocco's argan cooperatives carry profound generational knowledge. Their traditional harvesting practices, waiting for the fruit to fall naturally, gathering by hand, respecting the ecosystem's rhythms are more than tasks; they are expressions of cultural identity and ecological stewardship. However, as labor becomes more physically demanding and younger generations seek urban opportunities, cooperatives face a pivotal question:

How can they preserve the ecological care and ancestral wisdom of traditional practices while easing the physical burden and meeting modern market demands?

This section presents a roadmap to balance tradition and innovation. Drawing from surveys and fieldwork, it outlines production realities, best practices, and strategic opportunities. It addresses the full lifecycle of argan oil production from harvesting to bottling and offers concrete guidance to help cooperatives future-proof operations while honoring their heritage.

6.6.2 Member and Manager Survey Summary

Data from both members and managers revealed a cooperative system navigating a delicate transition. While managers reported no current issues with equipment or training, member responses painted a more complex picture:

- Roughly 50% use manual extraction, 50% use mechanical, with a few using both.
- Many expressed satisfaction with efficiency but noted inconsistent oil yields.
- Challenges included limited access to modern tools, variable roasting techniques, and a need for better inventory planning.

Cooperatives continue to rely on manual harvesting methods, aligning with ecological values and cultural traditions. However, the physical burden of traditional oil extraction, particularly hand depulping and deshelling, has made it harder to engage younger members. Mechanical processes have become more common, but training and quality control remain inconsistent.

Roasting, a crucial step in culinary oil preparation, also varies across cooperatives. Some members perform this manually, while others use semi-mechanical techniques. There is strong interest in improving this step, as it directly affects the flavor, market value, and nutrient retention of the oil.

6.6.3 Integrated Best Practices for Traditional and Mechanical Production

6.6.3.1 Traditional Preparation Methods:

The Preparation Process for argan oil production is an essential aspect of ensuring the oil's quality and sustainability. Based on survey feedback, cooperatives have noted some successful practices that have improved product quality and efficiency, although specific examples were not provided in the responses. This points to a potential opportunity for greater knowledge sharing among cooperatives. Additionally, survey participants highlighted a need for better tools, resources, and specialized training, particularly in roasting techniques, to enhance the preparation process. This feedback indicates that there is room for improvement in the skill development of cooperatives to ensure they produce the highest quality oil.

- Manual harvesting of fallen fruit, never shaking trees.
- Natural sun-drying to preserve energy and authenticity.
- Hand de-pulping and deshelling to protect nut integrity.
- Hand-pressing to preserve oil nutrients and control quality.
- Cooperative-led storytelling, oral archiving, and video documentation to preserve knowledge.

The traditional preparation process of argan oil is a highly labor-intensive and time-consuming method that has been passed down through generations. It involves several steps: First, women manually collect argan fruits from the ground either on their own farmed land, or on that owned by the cooperative after they have naturally fallen from the tree, ensuring that the trees are not disturbed. The fruits, if they have fallen and are still green/yellow, are then sun-dried, which is an energy-efficient process that avoids the use of synthetic drying agents. After drying, the fruits are manually collected.

In summary, both traditional and mechanical preparation methods offer distinct advantages and challenges. The traditional method ensures high-quality, pure oil and supports sustainable practices, while the mechanical method offers greater efficiency and scalability. The key to advancing the argan oil industry lies in balancing these methods, ensuring that cooperatives are equipped with the tools and knowledge to maintain high standards of quality while also improving efficiency where possible.

After drying the raw argan fruit in their home, many women drop off their raw material at the cooperative and they then get paid for delivering the argan in a basket, by the kilo.

A cooperative member (a manager or an assigned member of the team) oversees taking inventory at the door. The member then bags, weighs and stores the raw material in a large bin.



Bagging



Weighing



Storing

Figure 20. Bagging, Weighing, and Storing of Raw Argan Fruit. (Source: Field Photography, Andrea Worthoff, February 2025)

Many members remain at the cooperative to continue the traditional methods of extracting argan oil.

The methods are as follows:

- **Hand De-pulping:**

After the fruits have dried, the outer pulp is removed manually by hand or using simple tools, separating the edible nut from the pulp. This method allows for careful handling of the fruit, ensuring that the nut remains intact and preserving its integrity. Hand de-pulping is an important step in maintaining the purity of the final oil, as it minimizes the risk of contamination from mechanical methods or harsh processes. This technique also avoids the need for chemical additives, staying true to the traditional, natural extraction process.

- **Deshelling:**

The seeds are manually extracted using traditional tools, preserving their quality and minimizing the risk of contamination. This method allows the cooperative members to ensure that only the highest-quality seeds are used in the oil extraction process, which is key to producing premium-grade oil.

- **Cultural Preservation:**

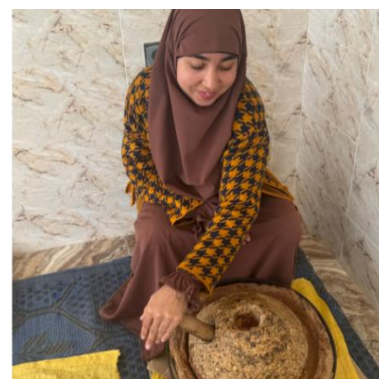
This method supports local economies, particularly women's cooperatives, and preserves ancestral knowledge, maintaining cultural heritage while promoting sustainability. By continuing to use traditional extraction methods, cooperatives help ensure that these practices are passed down to future generations, fostering a sense of pride and connection to the land.



Hand Depulping



Hand Deshelling



Hand Extracting

Figure 21. Depulping, Deshelling, and Hand Extracting of Raw Argan Fruit. (Source: Field Photography, Andrea Worthoff, February 2025)

Members have the option to complete traditional processing themselves or to transfer materials to cooperative management for mechanical pressing, depending on their physical ability, time constraints, and the cooperative's infrastructure.

6.6.3.2 Mechanical Preparation Methods:

- Cold-pressing to retain nutrients while improving volume.
- Controlled roasting at 90–120°C for culinary-grade oil.
- Filtering and decanting to ensure product clarity and purity.
- Bottling in clean, dark glass containers for light protection and consumer trust.

6.6.3.3 Infrastructure Improvements:

- Use of cooperative-owned storage rooms to protect raw materials from moisture and pests.
- Labeling for traceability, harvest dates, and processing method.
- Separate bins for edible, cosmetic, and waste material.

6.6.4 Production Yield & Inventory Management:

Production ranges from 50 to 150 liters/month depending on season and capacity. Survey findings highlight several challenges:

- Seasonal fluctuations (June–August peak period, low output in off-season).
- Lack of standardized weighing, storage, and intake processes.
- Inconsistent access to mechanical cold presses, filters, and roasting equipment.
- Loss of raw material during transport or improper drying.

6.6.4.1 Best Practices for Production Yield & Inventory Management

- Align harvest timing with peak fruit drop.
- Train members in efficient scheduling and storage.
- Use cooperative inventory logs and standardized intake protocols.
- Weigh, bag, and store incoming fruit using consistent systems.
- Avoid overheating during roasting to preserve tocopherols and sterols.

6.6.5 Key Takeaways

Survey findings and field observations reveal the delicate balance cooperatives must navigate between preserving traditional processing methods and embracing mechanical innovation. The following key takeaways highlight critical considerations for safeguarding quality, efficiency, and cultural legacy:

- Traditional hand-processing remains a vital symbol of heritage and continues to define cooperative authenticity.
- Mechanical processing is increasingly valued for improving yield, efficiency, and meeting growing market demand.
- Members value traditional techniques but recognize the physical limitations and labor intensity associated with them.
- Managers and members acknowledge the need for modern equipment, especially for scaling production without sacrificing oil quality.
- Infrastructure limitations (storage, weighing systems, processing space) are equally as critical as technique modernization for cooperative success.

6.6.6 Opportunities

By thoughtfully modernizing infrastructure and processing methods, cooperatives can strengthen both cultural identity and market competitiveness. The following opportunities can help cooperatives bridge traditional knowledge with adaptive innovation:

- Support the documentation and teaching of traditional hand-processing techniques to preserve legacy for future generations.
- Invest in selective mechanical innovations that improve efficiency while maintaining artisanal oil quality.
- Improve storage, weighing, and inventory management infrastructure to protect oil quality and reduce post-harvest loss.
- Develop hybrid production models that honor traditional methods while allowing scalable, climate-adaptive processing.
- Position cooperatives in the global market as leaders in artisanal and regenerative argan oil production.

Finally, cooperatives could conduct small-scale testing on oil yield, roasting temperature effects, moisture control, and filtration quality. Even basic monitoring can reveal patterns that lead to significant efficiency gains and improved product quality.

6.6.7 Action Plan List

- ☐ Evaluate current harvesting methods for sustainability and adherence to ancestral norms.
- ☐ Train members in roasting, depulping, filtering, and safe handling.
- ☐ Invest in cooperative-owned processing tools to reduce physical burden.
- ☐ Develop protocols for intake, weighing, and storage.
- ☐ Standardize roasting procedures across cooperative size and oil grade.
- ☐ Align production cycles with seasonal availability.
- ☐ Maintain daily traceability logs from harvest to bottle.
- ☐ Promote oral and visual knowledge transfer.
- ☐ Recognize senior members as mentors.
- ☐ Invite youth into modernization efforts, traceability systems, and storytelling roles.
- ☐ Document roasting, extraction, and decanting durations to reduce variability.
- ☐ Improve storage by using dark, ventilated rooms with pest protection.

6.6.8 Risks if Not Addressed

Failure to address processing vulnerabilities could result in significant long-term risks for cooperative sustainability. If traditional knowledge is lost without thoughtful documentation, future generations may lose essential artisanal practices that differentiate their oil in the global market. Overreliance on mechanical methods without maintaining careful quality control could compromise oil integrity, leading to lower market value, consumer trust erosion, and potential certification failures.

In particular, roasting is a critical step in oil flavor development and requires precise monitoring. Inconsistent roasting temperatures, whether through traditional or mechanical methods, risk producing oil that is overcooked, smoky, or nutritionally degraded. Without proper training and temperature control systems, cooperatives could unintentionally diminish the very characteristics that make their argan oil unique and valuable. Preserving quality at every stage of processing is not only a technical necessity but a cultural and economic imperative.

Reflective Question

How can we modernize our oil production without compromising the very traditions and stewardship practices that made Moroccan argan oil renowned in the first place?

The next section explores **Quality Control**, where the integrity of the oil, from harvest to final product is safeguarded through traditional knowledge, cooperative oversight, and evolving standards that ensure both authenticity and global market readiness.

6.7 Quality Control, The Ultimate Measure of Argan Authenticity

Why Quality is the Key to Trust, Certification, and Global Sales

6.7.1 Context and Purpose

Quality control (QC) is not just a technical step in argan oil production. It is definitive proof of a cooperative's integrity, craftsmanship, and readiness for global markets. For Moroccan cooperatives, ensuring premium quality is essential not only for customer trust but also for market access, especially in export destinations like Europe and the United States, where regulatory bodies enforce strict standards on purity, safety, and traceability.

While advanced lab testing remains out of reach for many due to equipment costs, foundational quality control practices are already within grasp. Testing for peroxide value, free fatty acid levels, and ensuring moisture control and hygienic storage are critical steps that ensure oil stability, safety, and taste. These metrics, recognized by global certification bodies like Ecocert, USDA Organic, and EU regulators, define market readiness.

In most cooperatives, a trained manager or technician oversees these processes, but the involvement and awareness of all members is key. Education around oil chemistry, health benefits, and quality parameters not only supports internal capacity but also empowers members to advocate for their product as both traditional and scientifically superior. With the right training, cooperatives can independently pass export inspections, reduce reliance on intermediaries, and tell a more compelling story to health-conscious buyers.

However, many cooperatives still lack access to sophisticated lab equipment, particularly for culinary oils where precision testing is critical for certification and export. While cooperatives rely heavily on visual inspections and third-party audits, limited access to moisture testing tools, weight measurement devices, and advanced analytical equipment hampers their ability to fully control product consistency.

The future of argan oil cooperatives depends not just on preserving tradition, but on achieving technical excellence that meets global standards. Investments in laboratory capacity, ongoing education, and third-party verification will not only strengthen consumer trust but also position cooperatives as leaders in premium argan oil production. By viewing quality control not just as a hurdle to certification, but as a living legacy of care, hands-on, precise, and rooted in ancestral rhythms, cooperatives can forge a path where tradition and technical excellence sustain each other.

“Quality control isn’t just about taste and smell—it’s about pride in our craft and our place in the global market.” — Cooperative Manager

6.7.2 Member and Manager Survey Summary

Among the cooperatives surveyed, 85.7% confirmed they have some form of quality control in place, and the responsibility typically rests with a member of management. In the best examples, this role is held by individuals with chemistry backgrounds or advanced training, enabling accurate monitoring of oil purity, moisture content, and compliance with international standards. But as shown in **(Fig. 19)**, 42.9% use quality control measures frequently and 42.9% said they use quality control measures occasionally. Together, these findings highlight a critical truth: while most cooperatives have quality control mechanisms in place, their frequency, consistency, and scientific rigor vary widely. This inconsistency puts cooperatives at risk of reputational damage, market rejection, and missed opportunities for premium pricing. Strengthening internal quality systems through training, investment in tools, and routine protocols is not just about meeting standards; it’s about protecting the cooperative’s value, credibility, and long-term competitiveness in a discerning global market.

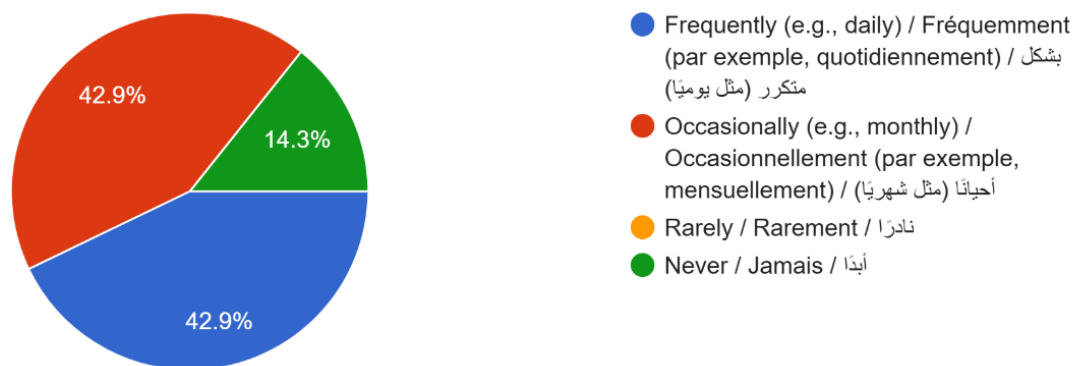


Figure 19. Frequency of Quality Control Measures Reported by Cooperative Managers. Source: Best Practices Survey, Manager, (February, 2025)

6.7.3 Best Practices For Quality Control

Best practices for quality control in argan cooperatives involve consistent monitoring and testing of the oil's quality at various stages of production. It's essential for cooperatives to establish clear protocols for the harvesting, processing, and storage of argan nuts to ensure the oil remains fresh and pure. Additionally, cooperatives should regularly conduct chemical testing to assess acidity levels and peroxide values, which are crucial indicators of oil quality and freshness. Many companies will require lab analysis with every batch. Incorporating standard operating procedures (SOPs) for each phase of production can help maintain product consistency. Providing training to members on best practices in harvesting and processing, as well as introducing quality audits and certifications, will improve accountability and the cooperative's ability to meet international standards.

6.7.3.1 Major Quality Control Testing Values:

- **Peroxide Value (PV):** Measure the peroxide value to assess the level of oxidation in the oil. The PV should be kept below 10 meq/kg for high-quality oil. Reference: Codex Alimentarius (FAO/WHO) guidelines for edible oils and ISO 6885.
- **Free Fatty Acids (FFA):** Test for FFA levels to ensure that the oil is not showing signs of hydrolytic rancidity. Ideal FFA values should be **less than 0.5%**. Reference: Moroccan Norme NM 08.5.090 and ISO 660.
- **Anisidine Value (AV):** This value should be kept as low as possible (preferably under 10) to avoid rancidity and off-flavors in the oil. Reference: ISO 6885 and AOCS (American Oil Chemists' Society) testing standards.



Figure 20. Argan Oil Laboratory Equipment Used for Quality Testing. Source: Photo by Andrea Worthoff, February 2025

6.7.3.2 Storage and Packaging:

- Store the oil in clean, dark glass containers to protect it from light and oxygen exposure, both of which can accelerate oxidation. Ensure that containers are sealed tightly to maintain freshness.

6.7.4 International Quality Control Requirements

By following these simple yet effective quality control measures, cooperatives can ensure the production of high-quality argan oil that meets both local and international standards. This process emphasizes sustainable practices, fair labor practices, and environmental responsibility, aligning with the cooperative's social mission while producing an oil that is both beneficial for skin health and well-received by global markets.

These steps and documents are crucial for ensuring that culinary argan oil complies with U.S. import regulations and can be successfully marketed and sold within the country.

When exporting culinary argan oil to the USA, there are specific requirements and paperwork that must be provided to ensure compliance with regulations set by the **Food and Drug Administration (FDA)** and other relevant agencies. Following is a summary of the paperwork and steps required for culinary argan oil to enter the USA.

6.7.5 Considerations for Exporting Culinary Argan Oil:

- **Packaging Requirements:** The packaging of culinary argan oil should comply with the FDA's labeling regulations, which include the inclusion of the product name, ingredients, net weight, manufacturer's name, and country of origin.
- **Customs Duties:** Duties and taxes may apply when importing culinary argan oil into the USA, depending on the tariff classification. You can consult a customs broker for guidance on tariffs applicable to argan oil imports.

6.7.6 Key Takeaways

Survey insights and field observations reveal that consistent quality control practices are essential not only for meeting export standards but also for protecting the cooperative's long-term credibility and market value. The following key takeaways summarize critical priorities for strengthening quality assurance systems:

- While many cooperatives have basic quality control procedures in place, usage is inconsistent and often limited to sensory checks rather than full chemical analysis.
- Manager surveys reveal strong awareness of international standards, but access to reliable lab testing and calibration equipment remains a major gap.
- Quality control is deeply tied to storytelling, certification eligibility, and brand differentiation in global markets.
- Failure to monitor oxidation markers, moisture levels, and free fatty acids risks degrading oil quality, undermining member income and cooperative reputation.
- Building local testing capacity and developing terroir-based claims can strengthen cooperative sovereignty and reduce dependency on outside certifiers.

6.7.7 Opportunities: Quality Control

There is an extraordinary opportunity for cooperatives to elevate their position in premium markets by formalizing quality control systems. With targeted support to acquire essential lab tools such as peroxide value testing kits, moisture analyzers, and UV spectrophotometers, cooperatives can take ownership of quality assurance rather than relying solely on third-party labs.

Beyond Sensory Testing: Nutritional Framing

Education on antioxidant content, essential fatty acids, and comparisons with oils like olive or avocado can help cooperatives market their oil not only as traditional but also as a modern nutritional powerhouse. This dual identity appeals strongly to health-conscious, values-driven consumers.

On-Site Mini Labs & Youth Science Engagement

Introducing mobile lab stations using smartphone-compatible spectrometry or colorimetric strips could democratize oil testing and encourage youth engagement in agro-science, building future capacity and community resilience.

Microbiome-Linked Quality Assurance

Emerging research suggests the soil microbiome may influence the oil's antioxidant profile. Cooperatives engaging in regenerative soil practices could use this connection as a unique differentiator, highlighting how healthy soil contributes to high-quality oil.

Quality Differentiation by Oil Profile

Not all argan oil is equal. Cooperatives could explore categorizing batches by terroir, tree age, or fatty acid profile, offering “early-harvest antioxidant-rich” or “high-gamma-tocopherol reserve” editions that mirror fine olive oil practices.

Consumer Transparency Through Trace-to-Trust Tools

Using QR codes that link to certificates of analysis, harvest details, or short cooperative videos could deepen buyer trust and storytelling impact, especially in export markets where transparency builds brand loyalty.

Market Leadership Through Verified Regeneration

If cooperatives align their quality claims with proof of regenerative practices—such as improved soil health or biodiversity impact, they could command higher prices and redefine the meaning of premium in the argan sector.

Conclusion

By embedding scientific rigor, traceability, and regenerative framing into their quality systems, cooperatives can move from compliance to leadership—building long-term trust while reinforcing their ancestral connection to the land.

6.7.7.1 Key Suggestions:

- Invest in essential testing equipment and in-house lab capacity to reduce reliance on external labs.
- Educate cooperatives on the health and nutritional profile of argan oil to compete with premium oils globally.
- Develop batch traceability systems and prioritize advanced training for quality control leaders.

6.7.8 Quality Control & Export Readiness Checklist

☐ **Designate a Quality Control Lead**

Assign a trained manager or staff member to oversee SOPs, audits, and export compliance.

- Ensure their role includes audit readiness and lab coordination.

☐ **Develop and Maintain Standard Operating Procedures (SOPs)**

Create step-by-step guides for every phase from harvest to bottling.

- Include testing, traceability, storage, and export steps.

☐ **Implement Routine Laboratory Testing**

Ensure product quality meets international standards.

- $PV < 10 \text{ meq/kg}$ | $FFA < 0.5\%$ | $AV < 10$ | $\text{Moisture} < 0.2\%$
- Optional: K232/K270, pesticide residue

☐ **Perform Visual Inspection Protocols**

Daily checks for color, clarity, and absence of sediment.

- Watch for signs of spoilage or contamination.

☐ **Calibrate Weight and Volume for Bottling**

Accurate fill volumes protect consumer trust.

- Use calibrated scales and keep batch records.

☐ **Ensure Proper Storage Conditions**

Preserve oil quality post-extraction.

- Use amber glass; store $< 20^{\circ}\text{C}$
- Check seals, temp, and humidity regularly

☐ **Maintain Batch Traceability System**

Track each lot from field to bottle.

- Assign batch codes with harvest/test/bottle dates
- QC Lead sign-off + cooperative stamp

☐ **Secure Third-Party Certifications & Audits**

Expand market access and consumer trust.

- Maintain USDA Organic, Ecocert, Fair Trade
- Prepare annually for audits

☐ **Strengthen Manager Training and Staff Education**

Empower your team with knowledge.

- Train managers on lab data and export standards
- Hold monthly staff briefings on PV, FFA, moisture levels

☐ **Partner with Accredited Laboratories**

Work with certified labs for quality and export compliance.

- Establish reliable lab partnerships
- Secure Certificates of Analysis (COAs)

6.7.9 The Risk of Not Investing in Quality Control

Failure to invest in quality control poses serious risks to cooperative sustainability, member income, and market reputation.

Without consistent monitoring of oil quality, cooperatives may face the following vulnerabilities:

- Increased rejection rates in domestic and export markets due to inconsistent chemical markers (oxidation levels, free fatty acid content, impurities).
- Decreased market trust and brand credibility if cooperatives cannot consistently verify oil authenticity or terroir claims.
- Missed opportunities for premium pricing and certification access because oil batches fail to meet international standards.
- Erosion of member confidence if quality failures lead to lower payouts, lost contracts, or reputational damage.
- Loss of cultural pride and legacy if traditional stewardship is not tied to measurable product excellence.
- Sustaining a cooperative's future will depend not only on harvesting traditions but also on the ability to demonstrate — scientifically and credibly — the integrity of its oil.

Reflective Question

How can our cooperative pass down traditional oil knowledge while building internal systems that ensure consistently high quality so that future generations inherit not just a product, but a reputation?

The next section explores **Traceability**, where transparent sourcing and recordkeeping allow cooperatives to show consumers exactly where and how their products are grown, harvested, and crafted — connecting people to place, process, and purpose.

6.8 Traceability – Building Trust Through Transparency

How Traceability Builds Trust, Tells Your Story, and Opens New Markets

6.8.1 Purpose and Context

Traceability is the new future. It is a narrative tool that connects consumers directly to the land, labor, and legacy behind every bottle of argan oil. In today's global economy, especially in the United States and European Union, consumers expect full transparency into the origins, production methods, nutritional value, and ethical practices behind the products they purchase. This demand is even stronger in the natural beauty and culinary sectors, where authenticity and health benefits drive buying decisions.

For argan oil cooperatives, a robust traceability system goes far beyond basic compliance. It offers the chance to tell the complete story of the oil: from the biodiversity of Morocco's argan forests to the skilled hands of women harvesters and the cooperative managers safeguarding quality and authenticity. While technical traceability is often handled by leadership or dedicated staff, building a cooperative-wide culture of transparency empowers everyone to meet rising consumer expectations and market demands.

By integrating tools like QR codes, blockchain verification, and detailed origin reports, cooperatives can elevate their credibility, attract ethical buyers, and secure a premium position in the global marketplace. Interactive maps, transparent data-sharing, and verified batch histories foster emotional consumer connections, while immutable blockchain records protect the authenticity of every shipment. Verified reporting of nutritional value, regenerative harvesting practices, and environmental stewardship provides brands and consumers the proof they increasingly demand.

Ultimately, traceability is not just about tracking, it is about storytelling. It is about bringing to life the regenerative practices, cultural pride, and cooperative integrity behind each drop of oil. For women-led cooperatives, embracing full transparency creates a path toward higher prices, stronger brand relationships, and global recognition for their craftsmanship and commitment.

“Traceability is more than data—it’s our story, our proof, and our promise.”

— Cooperative Manager

6.8.2 Member and Manager Survey Summary

The survey responses as seen in **(Fig.20)** revealed that while 57.1% of cooperatives currently have some form of traceability system in place, many still rely on basic, paper-based methods. Most tracking focuses on harvesting locations, batch processing, and final sale destinations, with less emphasis on capturing detailed quality control data. Managers, rather than members, handle these processes, 57% said they had a need for improved tools and training to strengthen traceability practices. The main challenges cited include lack of appropriate technology, high implementation costs, and limited training. These gaps present an opportunity to transition from manual records to more advanced digital systems, building stronger transparency and compliance with export standards.

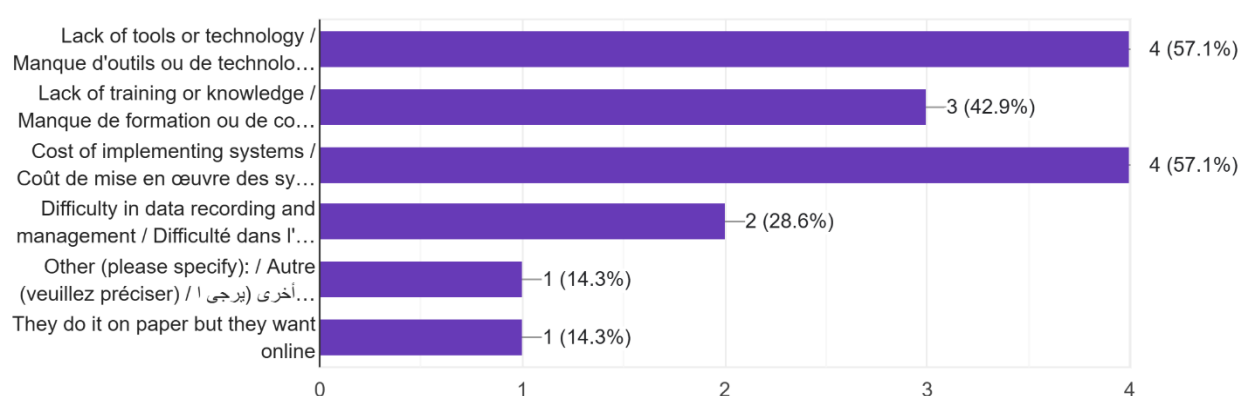


Figure 20. Barriers to Implementing Traceability Systems; Source: Best Practices Survey, Manager, (February, 2025)

6.8.3 Best Practices

Implement traceability systems (QR codes, digital lot tracking, and sustainability reports) to create consumer trust and premium product positioning.

For argan cooperatives, implementing traceability is not only about regulatory compliance, but also about reinforcing the story of authenticity and stewardship that consumers seek. While current systems are mostly manual and manager-led, there is a clear path forward. By adopting structured batch logs, introducing basic digital tools, and training staff in data entry and reporting, cooperatives can build a reliable foundation. Starting with simple Excel-based tracking or physical batch logs, and then gradually layering in QR codes or digital lot tracking for exports, will enhance transparency without overwhelming resources. Additionally, integrating quality control records into traceability systems ensures full visibility from harvest to bottle, strengthening both internal accountability and consumer trust.

- Start with simple, paper or spreadsheet-based batch tracking to capture harvest dates, batch numbers, and processing details.
- Train cooperative managers on maintaining accurate traceability records and linking them with quality control documentation.
- As capacity grows, introduce digital systems (such as QR codes and online batch records) to increase transparency for export partners.
- Integrate traceability systems with quality control checkpoints for complete visibility from field to final packaging.

6.8.4 Key Takeaways

Traceability is no longer optional and is rapidly becoming a non-negotiable standard for global trade, particularly in premium beauty and culinary markets. While traceability processes within cooperatives are still in the early stages, they offer one of the greatest opportunities for building trust with consumers and buyers alike. By connecting harvest data, processing details, and quality control records, cooperatives can create a transparent chain of custody that elevates their products in the eyes of both regulators and conscious consumers. Simple tools like batch logs and QR codes are effective first steps, while digital verification and sustainability reporting can position cooperatives as leaders in ethical sourcing. Key Takeaways include:

- Traceability is a growing requirement for premium buyers and certifications.
- Simple systems like batch logs and QR codes are powerful first steps.
- Linking traceability with quality control builds stronger credibility.
- Transparency enhances cooperative storytelling and market appeal.

6.8.5 Opportunities—Building Trust Through Transparency

While many cooperatives already track some elements of production, like harvest dates and batch numbers, the opportunity lies in evolving from basic systems to transparent, verifiable supply chains. By gradually upgrading traceability tools, cooperatives can meet growing demands from premium buyers and regulators who now expect proof of ethical sourcing. This evolution does not need to happen all at once, starting with improved internal records builds the habit of accountability. Moving to digital batch tracking and QR code systems will unlock export advantages and create marketing opportunities that set cooperatives apart. Importantly, traceability can also serve as a protection mechanism against supply chain fraud and external exploitation, ensuring that the cooperative retains ownership of its story from soil to sale.

- Transition from manual tracking to digital systems for greater transparency and export readiness.
- Use traceability as a brand strength to attract ethical beauty brands and health-conscious consumers.

- Build safeguards against fraudulent claims by securing traceability ownership at the cooperative level.

6.8.6 Action Plan: Telling Your Story Through Traceability

- ☐ **Establish Batch-Level Recordkeeping**
 - Track harvest dates, batch numbers, and processing details in a simple spreadsheet or logbook.
 - Use cooperative stamps or manager signatures for verification.
- ☐ **Introduce Digital Traceability Tools**
 - Transition from manual records to digital lot tracking for improved export compliance.
 - Explore affordable apps or basic QR code generators as a first step.
- ☐ **Implement QR Codes for Consumer Transparency**
 - Generate QR codes linking to product origin details, batch numbers, and cooperative information.
 - Attach QR codes to labels and export packaging to build consumer trust.
- ☐ **Develop Sustainability Reports for Buyers**
 - Prepare short, clear reports that document harvesting practices, community benefits, and environmental efforts.
 - Update reports annually for export partners and certification bodies.
- ☐ **Partner with Digital Verification Platforms (Optional Advanced Step)**
 - For premium positioning, explore blockchain platforms to secure the integrity of harvest, processing, and export data.
 - Seek collaborations with NGOs or tech providers for training.
- ☐ **Train Managers on Traceability Compliance**
 - Conduct workshops on international traceability expectations and documentation requirements.
 - Clarify roles and responsibilities for maintaining accurate records.
- ☐ **Integrate Traceability with Quality Control**
 - Link batch records with quality control test results to ensure full chain-of-custody transparency.
 - Store all documentation centrally and back up regularly.
- ☐ **Prepare for Export Audits**
 - Maintain organized records to present during audits for USDA Organic, Fair Trade, or Ecocert certifications.
 - Archive traceability records for a minimum of two years.

□ **Communicate Traceability Value to Buyers**

- Include traceability achievements in marketing materials and export documentation.
- Highlight cooperative ownership of traceability to enhance market appeal.

6.8.7 The Risk of Losing Market Trust Without Traceability

While the opportunity for cooperatives to lead in ethical sourcing is clear, so too are the risks of falling behind. Without a functional traceability system in place, cooperatives may face:

Loss of Market Access: Export partners and certifying bodies are increasingly demanding traceability documentation. Without it, cooperatives risk being excluded from premium markets.

Supply Chain Exploitation: Intermediaries may claim false origins, rebrand oil, or obscure the cooperative's role — stripping producers of visibility and recognition.

Decreased Buyer Confidence: In an age of conscious consumerism, lack of transparency can erode trust and weaken the cooperative's value proposition.

Missed Storytelling Opportunities: Traceability isn't just technical. It's a powerful way to show the world the real people and practices behind each bottle of oil.

Cooperatives that do not invest in traceability today may find themselves unable to compete tomorrow. In contrast, those that start small, build internal habits of documentation, and grow their systems over time will be positioned as leaders in a new era of ethical, regenerative trade.

Reflective Question

How can we create simple, transparent systems that help buyers see not just our product, but where it was grown, how it was harvested, and who made it possible?

As traceability forms the backbone of product integrity, the next chapter turns to **Certification**, exploring how transparent sourcing practices can support formal recognition, elevate credibility, and open new doors in global markets.

6.9 Certification — Navigating Standards for Local and Global Market Access

How Certification Opens Doors—but Only if You Own the Process

6.9.1 Purpose and Context

In the competitive landscape of global trade, certifications serve as both a passport and a promise. For Moroccan argan cooperatives, certifications validate their commitment to quality, sustainability, and ethical practices, while opening doors to premium international markets. In countries such as the United States and those in the European Union, certifications are often prerequisites for export, especially for culinary oils and cosmetic applications.

However, certifications are not merely boxes to check. They are strategic tools. Certifications like USDA Organic, ECOCERT, Fair Trade, and ISO build buyer confidence and help position cooperatives as trusted, high-integrity suppliers. At their best, these designations allow cooperatives to differentiate themselves from mass-market, lower-quality oils, and appeal to consumers who demand verified ethical and environmental claims.

Yet, a hidden reality exists: certifications are often closely tied to the middleman system. Middlemen frequently use certifications as leverage to control pricing and market access. They handle the audits, own the certificates, and then charge cooperatives fees or reduce prices, claiming to cover "certification costs." As a result, cooperatives bear the financial burden of maintaining multiple certifications while losing negotiation power and direct buyer relationships. Without internal quality systems and traceability, cooperatives risk being locked into expensive cycles of external dependence, where certification benefits flow disproportionately to intermediaries rather than the producers themselves.

This chapter explores how cooperatives can make smart, strategic choices — focusing on essential certifications for market access while gradually building internal verification systems that reduce dependency on middlemen and third-party certifiers over time. By doing so, cooperatives reclaim their narrative, control their margins, and strengthen their standing in premium markets.

"Certification is our passport to the world. But it is also our responsibility to understand, maintain, and own our standards." — Cooperative Manager

6.9.2 Member and Manager Survey Summary

Managers across the surveyed cooperatives consistently recognize the strategic importance of certifications, with 100% of cooperatives currently holding at least one certification. The most common is Organic Certification (100%), followed by local or national certifications (71.4%), Fair Trade Certification (57.1%), and ISO Certification (28.6%).

Interestingly, when looking at future goals, 100% of managers indicated they are aiming to achieve ISO certification, showing a strong desire to strengthen their systems, particularly around quality and international management standards.

However, the journey toward certification is not without hurdles. As seen in **(Fig 21)**, managers unanimously reported high costs (100%) as the primary barrier to obtaining and maintaining certifications. This is compounded by challenges with complex documentation and processes (57.1%), and lack of knowledge or training (28.6%), which indicates a gap in accessible resources and technical support. A smaller proportion also noted difficulty maintaining compliance (14.3%) and limited access to certifying bodies (14.3%), emphasizing the need for more cooperative-friendly pathways to certification.

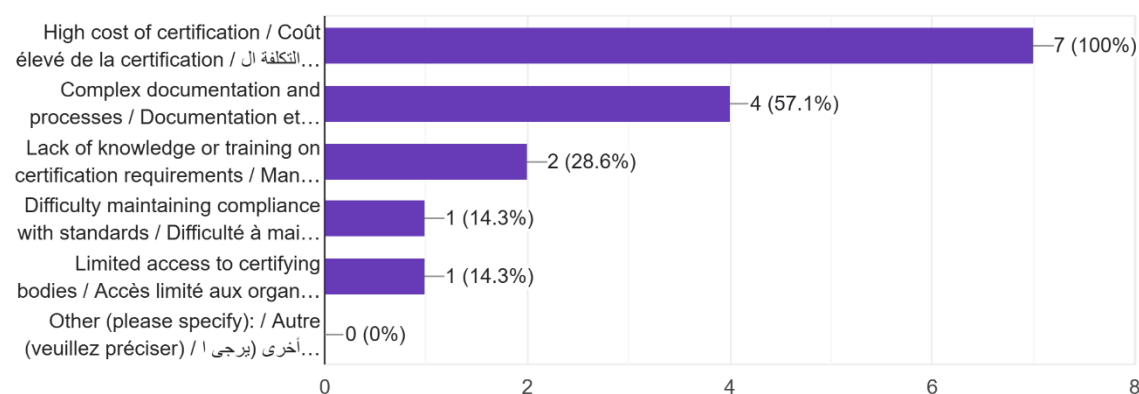


Figure 21. Barriers to Achieving Certification: Source: Cooperative Manager Survey (2025)

Notably, while managers are deeply engaged in these processes, the burden of certification management often rests solely on their shoulders. This highlights the opportunity for targeted training and cooperative-wide understanding of certification benefits, especially given that certifications are central to international market access but heavily reliant on external systems and middlemen.

6.9.3 Various Certifications

Argan cooperatives may seek a variety of certifications to ensure that their products meet international quality standards, align with ethical practices, and increase their marketability. These certifications are often used to communicate the cooperative's commitment to sustainability, fairness, and quality. Here are some of the key certifications required:

1. Fair Trade Certification:

- Ensures that cooperatives provide fair wages to workers, particularly women, and that they comply with ethical labor practices.
- Emphasizes transparency, community development, and environmental protection.

2. USDA Organic Certification:

- Certifies that the argan oil is produced without the use of synthetic chemicals or fertilizers.
- Ensures that the cooperative practices organic farming methods, supporting environmental sustainability and consumer trust.

3. ECOCERT Certification:

- A global certification body for organic and sustainable products.
- Certifies that products meet stringent environmental standards and that processing methods are eco-friendly.

4. ISO Certifications:

- Includes ISO 9001 (Quality Management) and ISO 14001 (Environmental Management).
- Ensures that cooperatives meet international standards in product quality, management processes, and environmental impact.

5. ECOCERT Fair Trade Certification:

- Focus on ensuring fair working conditions for cooperatives and fair trade for argan oil producers.
- Certifies products for international export while guaranteeing sustainable and ethical production practices.

6. Fair Wild Certification:

- For wild-harvested products, ensuring the harvesting methods do not harm the ecosystem.

- Verifies that wild harvesting practices are sustainable, preserving both biodiversity and ecosystem integrity.

These certifications help cooperatives reach international markets, particularly those in Europe and North America, where consumers often seek organic and ethically sourced products.

Many cooperatives pay for multiple certifications (USDA Organic, ECOCERT, Fair Trade, etc.), yet these do not always result in increased revenue. Instead of accumulating expensive certifications, cooperatives should focus on building a cooperative-led verification system that maintains transparency and educates buyers about their sustainable, ethical practices without reliance on third-party certifiers. Establishing internal quality control protocols, regular product testing, and batch tracking systems ensure

6.9.4 Key Takeaways

Certifications open markets, but they must serve the cooperative, not control it. Instead of accumulating costly labels, cooperatives should strategically choose certifications that align with their growth stage and market goals. Building internal quality systems and traceability reduces dependence on intermediaries and strengthens direct buyer relationships. Key Takeaways include:

- Prioritize certifications that match your cooperative's target markets and development stage.
- Build internal quality and traceability systems to support certification requirements.
- Use certifications to gain access but focus on direct buyer relationships for long-term independence.
- Avoid over-reliance on middlemen who manage or "own" certification on behalf of cooperatives.

6.9.5 Opportunities —Navigating Standards for Local and Global Market Access

Certification opens new doors for cooperatives, but rising costs and administrative complexity create pressure. By prioritizing ISO certification and improving internal capacity, cooperatives can ensure long-term competitiveness while reducing financial strain.

Additionally, strengthening buyer relationships through transparent communication and internal verification systems builds trust without over-relying on external auditors. Embracing a cooperative-led model empowers teams to manage documentation, prepare for audits, and track renewal schedules efficiently.

- Pursue ISO certification for international recognition.
- Leverage internal tools for record-keeping and audit preparation.
- Train managers and build capacity to handle certification processes confidently.
- Use the certification journey as a marketing tool, reinforcing the cooperative's story of quality and ethics.

6.9.6 Certification Planning Checklist

☐ **Clarify Sales Market Goals**

- Confirm if the cooperative is selling bulk oil or branded oil.
- Identify target sales regions: Morocco local market / EU / USA / Asia / Middle East / Other.

☐ **Assess Current Certification Status**

- List current certifications (if any): USDA Organic, Ecocert, Fair Trade, etc.
- Identify gaps between current status and desired market requirements.
- Use the *Certification Planning Table* as a reference.

☐ **Determine Certification Priorities by Stage**

- Startup: Focus on Ecocert Organic or Fair Trade.
- Emerging: Add ISO 9001 and/or USDA Organic.
- Advanced: Consider FairWild, Cosmos, Halal, or others based on export strategy.

☐ **Get Cost Estimates & Budget Approval**

- Research local certification body pricing.
- Estimate total costs: audit, training, documentation.
- Include hidden costs: translators, prep hours, site inspections.
- Align with cooperative financial capacity.

☐ **Select Certification Body**

- Contact accredited certifiers (Ecocert, NOP, or local options).
- Request quotes and clarify timelines.
- Set up a certification audit calendar.

☐ **Prepare Documentation**

- Assemble operational records and production logs.
- Prepare traceability, batch, and quality control records.
- Coordinate with the Quality Control Lead.

☐ **Implement Training**

- Hold a session for managers and members on:
 - What certifications mean
 - How to maintain compliance
 - The role of documentation and audits

☐ **Schedule Internal Pre-Audit**

- Use the Cooperative Audit Checklist for a self-assessment.
- Identify and close gaps before the official audit.

☐ **Coordinate the Certification Audit**

- Schedule the audit with the certifier.
- Ensure key staff are trained and present.
- Prepare a documentation binder and site walk-through plan.

☐ **Post-Audit Action Plan**

- Respond to any non-conformities.
- Submit corrections within the specified deadline.
- Begin prepping for surveillance or follow-up audits.

☐ **Communicate Certification Status**

- Update cooperative brochures and product labels.
- Notify buyers, partners, and platforms.
- Include certification seals in export documentation.

☐ **Maintain and Renew Certifications**

- Budget for renewals and annual audits.
- Conduct twice-yearly internal reviews.
- Track changing requirements and plan for updates.

6.9.7 The Risk If Certification Gaps Continue

When certification is managed externally, often by intermediaries or buyers, cooperatives risk losing ownership over the very credentials that validate their work. Without internal control of certification files, renewal timelines, and audit preparation, cooperatives become dependent on outside actors for market access. This not only weakens their bargaining power but also jeopardizes long-term brand integrity and sustainability. If cooperatives are not equipped to manage certification internally, they may find themselves compliant on paper, but powerless in practice.

Reflective Question:

What would change if we held not just the product, but the proof of its origin, quality, and story in our own hands?

Traceability connects stories to systems, but sustaining it requires skill, clarity, and shared responsibility. In the following section, we turn to the heart of cooperative capacity: **Training and Education**, where knowledge becomes action and growth becomes possible from the inside out.

6.10 Training and Education — Building Cooperative Capacity From the Inside-Out

Equipping cooperatives with the tools and knowledge to lead their own growth—from marketing and finance to governance and innovation.

6.10.1 Purpose and Context

For organ cooperatives to succeed in a competitive and evolving global market, technical knowledge and management skills are as essential as product quality. While harvesting and production have been passed down through generations, the modern cooperative faces new challenges: certifications, traceability, financial management, branding, and direct market access all require ongoing education and capacity-building. Training and education are not simply support activities, they are the foundation for independence, resilience, and future growth.

Survey findings reveal that while some cooperatives are making efforts to provide training, gaps in frequency, resources, and content remain. These gaps impact leadership effectiveness, marketing confidence, and overall decision-making capacity. Without consistent skill development, cooperatives risk plateauing in their growth—remaining dependent on intermediaries and struggling to seize new opportunities.

By addressing these deficits, cooperatives can build stronger internal leadership, improve strategic planning, and increase their ability to engage directly with markets. A well-trained team enhances not only operational efficiency but also the credibility needed to secure premium buyer relationships.

“When we invest in our own skills, we invest in our future independence.”

— Cooperative Manager

6.10.1 Survey Summary

Survey responses from cooperative managers provide a clear snapshot of current training efforts and limitations:

57.1% of cooperatives currently offer some form of training for management.

However, **0%** report delivering regular or even occasional sessions.

28.6% rated their current training programs between levels 2 and 3 on a scale of 1–5. No manager gave a high rating.

When asked which skill areas needed the most support:

- **100%** selected marketing and branding.
- **57.1%** noted financial management.
- **42.9%** chose leadership and decision-making.
- **28.6%** cited communication/conflict resolution and technical production skills.

6.10.2 Top barriers to training:

- **71.4%** cited lack of funding.
- **57.1%** indicated limited access to trainers and resources.
- **28.6%** mentioned time constraints.

None cited lack of interest or engagement, indicating strong motivation if given the right tools.

While feedback was limited, the data confirms that structured training is both needed and wanted.

6.10.2 Key Takeaways

Training and education are the foundation of cooperative resilience and growth. While members are motivated, cooperatives face real barriers such as funding shortages, limited trainer access, and lack of structured programs. Prioritizing internal skill-building is essential to strengthening leadership, reducing dependency, and seizing market opportunities. Key Takeaways include:

- Structured, recurring training programs are critical for cooperative success.
- Marketing and branding are the top skill gaps, followed by finance and leadership.
- Training investment reduces reliance on intermediaries and consultants.
- Peer-trainers and seasonal schedules can help overcome resource constraints.

6.10.3 Opportunities: Strengthening Capacity from Within

The data reveals a major opportunity: build sustainable training ecosystems inside cooperatives. Strengthening expertise in marketing, finance, leadership, and production will enable cooperatives to manage certifications, access new markets, and grow more independently. Opportunities include:

- Designating internal peer-trainers to maintain knowledge continuity.
- Aligning training calendars with cooperative seasonal cycles.
- Partnering with NGOs, technical schools, and experts for specialized topics.
- Offering culturally aligned trainings, including cooperative storytelling and youth-driven marketing skills.

6.10.4 Action Plan: Training and Education for Cooperative Growth

☐ **Conduct a Training Needs Assessment**

- Identify specific knowledge gaps for managers and members.

☐ **Build a Seasonal Training Calendar**

- Align sessions with cooperative rhythms and available time.

☐ **Develop Peer-Learning Programs**

- Assign internal mentors or cooperative leaders to share skills.

☐ **Partner with External Trainers**

- Invite experts for support in branding, finance, and cooperative law.

☐ **Prioritize High-Impact Topics**

- Focus on marketing, financial literacy, leadership, certification, and creative innovation.

☐ **Create Simple Toolkits and Materials**

- Prepare guides that are visual, multilingual, and easy to use.

☐ **Evaluate Training Effectiveness**

- Collect feedback and adapt content to real cooperative needs.

☐ **Secure Funding for Programs**

- Explore donor support, partner sponsorship, or buyer co-investment.

☐ **Integrate Education into Strategic Plans**

- Make training a standing part of annual cooperative objectives.

☐ **Track Progress and Celebrate Growth**

- Measure change in leadership confidence, decision-making, and outcomes.

6.10.5 The Risk of Not Doing Training or Education

When training is rare, inconsistent or out of reach, cooperatives risk getting stuck. Without regular chances to learn and grow, both members and managers may find it hard to keep up with changing buyer expectations, new rules for certification, or techniques for protecting the land. If no one is teaching basic skills like language, budgeting, leadership, or how to use digital tools, poor decisions can follow and with them, missed opportunities. Most importantly, when learning doesn't happen across generations, the deep knowledge passed from elders to youth begins to fade. Without that transfer, the heart of the cooperative, its identity, strength, and future starts to weaken.

Reflective Question

"How can we build a culture of learning inside our cooperative so that knowledge doesn't just come and go, but grows stronger with every season and every generation?"

With internal systems taking shape, cooperatives must now turn outward toward the marketplace. The next section explores **Marketing and Sales** and how brand visibility, marketing confidence, and direct-to-consumer strategies can transform production power into economic resilience.

6.11 Marketing, Sales, and Brand Visibility

Building Presence and Power in Local and Global Markets

6.11.1 Purpose and Context

For Moroccan argan cooperatives, marketing is often the missing link between hard-earned production and fair financial return. While these cooperatives produce high-quality oil, many struggle to build visibility, communicate their unique story, and reach premium buyers, both in Morocco and globally. Direct market access and strong brand identity are critical for moving beyond reliance on middlemen and low-margin sales.

Investment in branding, storytelling, and digital marketing is essential to building a recognizable identity that highlights cultural heritage, product authenticity, and sustainable practices. Moving beyond bulk oil sales into value-added products like skincare formulations, soaps, and culinary oils, significantly increases revenue potential. E-commerce platforms such as Shopify, Amazon, and dedicated social media channels empower cooperatives to reach global buyers directly while retaining control over pricing and customer relationships.

When marketing is viewed as a long-term capacity-building effort (rather than an afterthought), cooperatives can build visibility, trust, and brand loyalty, the cornerstones of financial independence.

“Marketing is not just about selling oil. It’s about telling our story, so the world understands the value of our hands and our heritage.”— Cooperative Manager

6.11.2 Survey Summary

The marketing survey revealed that while Moroccan argan cooperatives are active in local and national sales, they face major challenges in building scalable marketing systems. Despite strong motivation, managers rated their marketing and sales performance as weak. Most rely on grassroots methods—local fairs, word of mouth, and basic social media—with limited digital strategy, brand development, or international outreach. Although many cooperatives have basic brand assets, few are leveraging them effectively to build market visibility. Major barriers such as limited budgets, weak online presence, lack of marketing expertise, and difficulty accessing global buyers persist. No best practices were identified among the surveyed cooperatives, confirming the urgent need for structured marketing capacity-building. Targeted training, investment in digital skills, brand storytelling, and value-added product development represent critical opportunities for future growth.

6.11.2.1 Survey Highlights:

- 100% of managers rated their sales performance as weak despite local and national presence.
- 85.7% cited limited marketing budgets as a major barrier.
- 71.4% reported difficulty reaching international markets.
- 57.1% identified weak online presence and lack of marketing expertise.
- No cooperatives demonstrated formal best practices in marketing or brand management.

6.11.2.1 Sales Reach

All managers reported that their cooperatives sell products locally and nationally within Morocco (100%), and 42.9% confirmed international sales. However, as seen in **(Fig. 22)** despite this market presence, 100% of managers rated their sales performance as weak, highlighting an urgent need for stronger strategies.

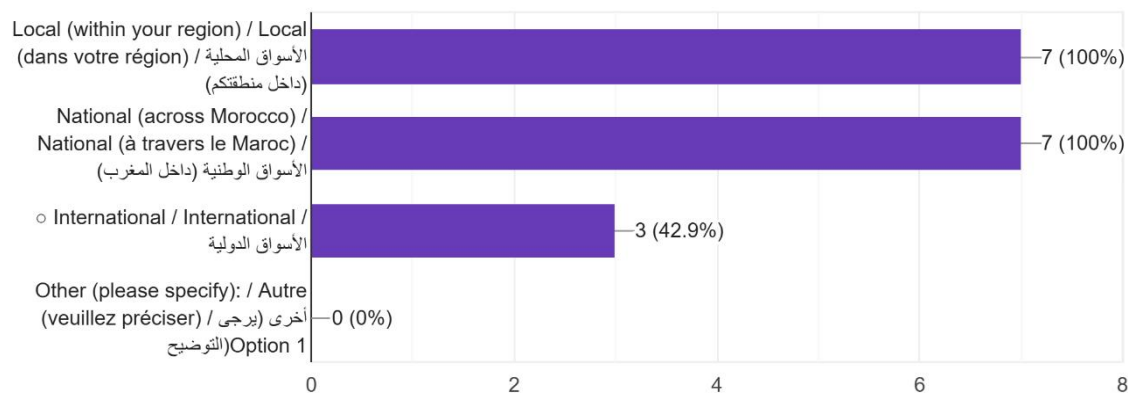


Figure 22. Marketing, Sales, and Branding Challenges Reported by Cooperatives. Source: Cooperative Manager Survey, February 2025.

6.11.2.2 Marketing Strategy

While all managers indicated they have a marketing strategy, these strategies remain grassroots and largely informal. Most cooperatives rely heavily on word of mouth, local fairs, and social media, with limited expansion into formal partnerships or scalable marketing channels. As seen in Fig. 23, they need help with partnerships and distributors.

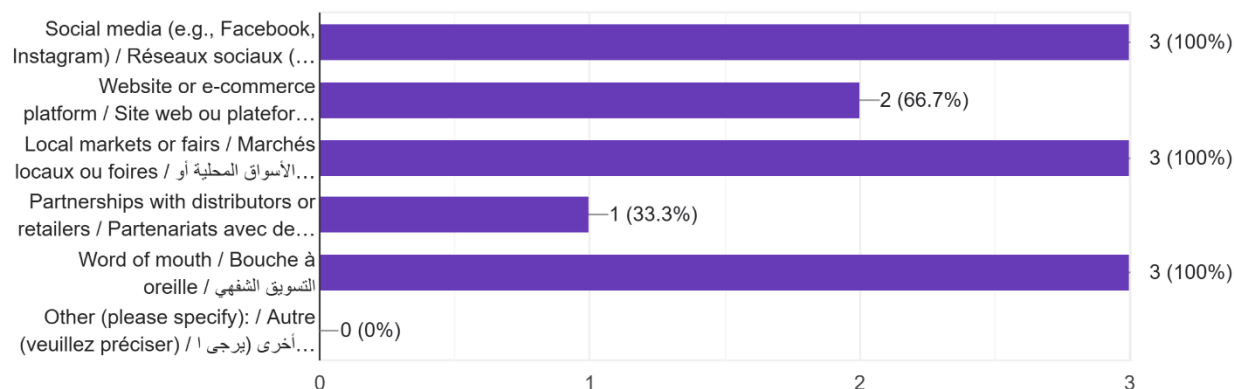


Figure 23. Marketing, Sales, and Branding Challenges Reported by Cooperatives. Source: Cooperative Manager Survey, February 2025.

6.11.2.3 Branding Challenges

Although 85.7% reported having a defined brand identity (logo, tagline, messaging), 71.4% of managers admitted they face significant challenges in building or promoting that brand effectively. This signals a gap between having basic brand assets and knowing how to leverage them consistently across markets.

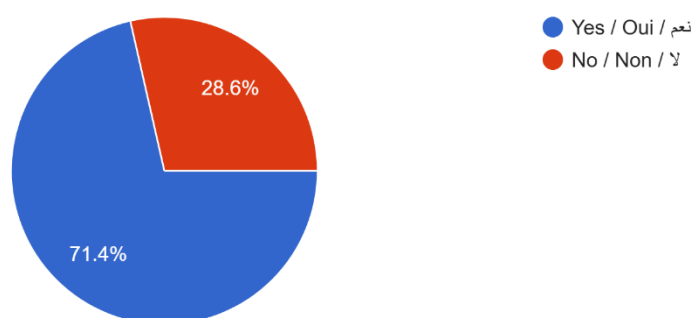


Figure 24. Marketing, Sales, and Branding Challenges Reported by Cooperatives. Source: Cooperative Manager Survey, February 2025.

6.11.2.4 Key Obstacles Identified

- Limited marketing budgets (85.7%)
- Difficulty reaching international markets (71.4%)
- Lack of expertise in marketing and branding (57.1%)
- Weak online presence and limited staff sales training (57.1%)

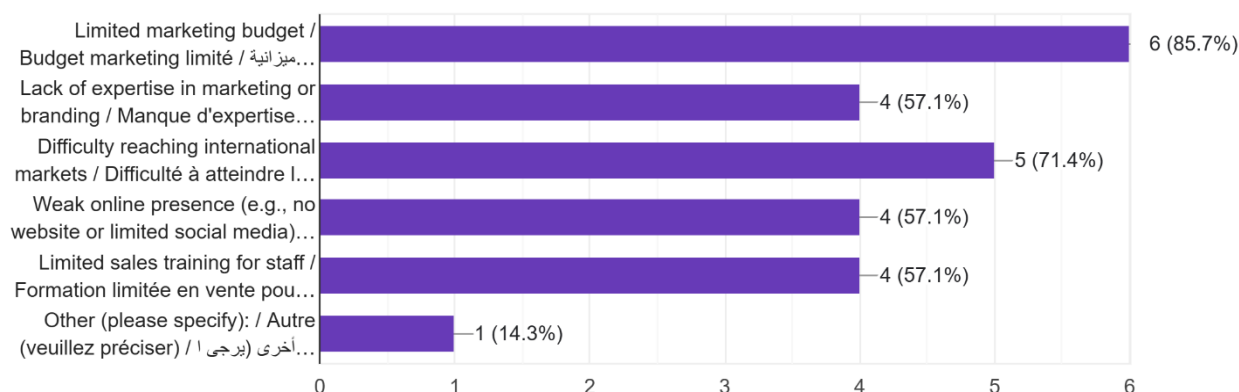


Figure 25. Marketing, Sales, and Branding Challenges Reported by Cooperatives. Source: Cooperative Manager Survey, February 2025.

“We have a client that has changed their formula and won’t be ordering as much argan oil from us as in years past. We need to make new cosmetics, so we don’t have to use as much argan oil.” — Cooperative President

6.11.2.5 Survey Summary Conclusion

These findings underscore a recurring theme: cooperatives are motivated and active in marketing but lack the structured support needed to scale. Managers expressed a shared desire for capacity-building in areas such as digital marketing, storytelling, and direct buyer engagement. There is a clear opportunity to transform basic marketing assets into powerful tools for cooperative growth and global visibility.

6.11.3 Best Practices:

No best practices were identified in current cooperative operations. However, clear pathways to improvement include:

- Build a strong brand identity that authentically tells the story of the cooperative, from the land to the hands behind the product.
- Use e-commerce and digital platforms to sell directly to global customers, bypassing middlemen and protecting pricing.

Expand into value-added argan-based products beyond raw oil to increase revenue streams and market differentiation.

6.11.4 Opportunities: Transforming Visibility into Sales

The path forward is promising. By investing in marketing capacity, cooperatives can strengthen their position in both local and international markets. Small, focused improvements, like developing a brand toolkit, improving packaging, and learning how to pitch to buyers, can immediately boost confidence and professionalism. As capacity grows, so too will the ability to engage larger markets and negotiate better pricing.

6.11.4.1 Key opportunities include:

- Train cooperative managers and staff in digital marketing, storytelling, and sales techniques.
- Develop clear sales materials, pricing sheets, and marketing templates.
- Strengthen online presence through targeted social media and e-commerce platforms.
- Create value-added product lines to diversify revenue and increase market appeal.
- Build strategic partnerships with ethical beauty brands, distributors, and retailers.

6.11.5 Key Takeaways

Marketing is not an optional luxury. It is essential to cooperative growth and financial independence. Without it, even the best-quality oil remains invisible in the market. Building marketing confidence, expanding reach, and crafting a clear brand story will help cooperatives move from reactive sales to proactive growth strategies.

- Even with local and national market presence, cooperatives need formal, scalable marketing strategies to improve sales outcomes.
- Branding must go beyond a logo: clear messaging, packaging, and storytelling are vital to stand out in a crowded market.
- Marketing must not rest solely on managers; engaging members builds cooperative-wide visibility and confidence.
- Direct sales channels (e-commerce, partnerships, trade fairs) strengthen buyer relationships and improve profitability.

6.11.6 Action Task List: Building a Strong Marketing and Sales Foundation

☐ **Clarify Your Target Markets**

- Identify if you are selling: local, national, or international (EU/USA/Asia/Middle East).
- Determine if you are selling: bulk oil, branded oil, or value-added products.

☐ **Build Your Brand Identity**

- Finalize cooperative logo, brand colors, and messaging.
- Create packaging and labeling guidelines that communicate quality and heritage.
- Develop basic photography assets of the cooperative, products, and team.

☐ **Develop a Cooperative Marketing Team**

- Assign roles: social media, photography, storytelling, market outreach.
- Train staff in basic marketing concepts and storytelling skills.

☐ **Strengthen Digital Presence**

- Set up or improve cooperative e-commerce platform (Shopify, Amazon, etc.).

- Create cooperative social media profiles and plan regular posts.
- Prepare basic marketing materials: price list, cooperative story, product specs.

☐ **Explore Value-Added Products**

- Research opportunities in soap, skincare, culinary oils, and wellness products.
- Conduct basic cost/benefit analysis for diversification.

☐ **Create Sales and Buyer Communication Templates**

- Develop a professional buyer outreach email.
- Draft an introductory pitch and pricing sheet tailored to different buyer types.

6.11.7 Risks of Staying Invisible

Without proactive marketing, cooperatives risk remaining invisible in a marketplace that rewards visibility, storytelling, and direct buyer engagement. Even the finest argan oil cannot compete without a clear brand identity and consistent outreach to consumers. Continued reliance on middlemen diminishes cooperative pricing power, erodes margins, and weakens financial independence. Without marketing, cooperatives miss critical opportunities to access premium markets, diversify revenue streams, and build global recognition for their cultural and artisanal heritage. Over time, lack of marketing investment also leads to internal stagnation, weakening member engagement, pride, and the cooperative's long-term resilience.

Key Risks Include:

- Loss of visibility in both local and international markets.
- Continued dependence on intermediaries for sales and pricing.
- Lower pricing power due to lack of brand differentiation.
- Missed opportunities to expand into value-added product markets.
- Weak online presence, reducing access to global consumers.
- Declining member motivation due to slow or stagnant sales growth.
- Erosion of cooperative identity, story, and market relevance over time.

Reflective Question

How can we move from renting our future to owning it, by building the systems, skills, and relationships that belong to us?

6.12 The Hidden Costs of the Middleman — Understanding Risks and Reclaiming Control

Breaking the Cycle of Dependency to Build Financial and Operational Sovereignty

6.12.1 Purpose and Context

In the argan oil industry, middlemen are often an invisible force shaping the destiny of cooperatives. They play a dominant role in the supply chain, controlling certifications, pricing, buyer relationships, and access to premium markets. For cooperatives, this dynamic can feel inevitable — yet it is neither natural nor unavoidable.

Middlemen position themselves as gatekeepers, offering a seemingly convenient path to market access and certification management. They often handle export paperwork, pay for certifications, arrange buyer introductions, and cover logistical costs upfront. But the hidden cost is far greater than cooperatives often realize. In exchange, middlemen claim ownership over certificates, dilute price negotiations, and position themselves as the essential link between producers and global buyers.

The result? Cooperatives remain dependent, locked into cycles of low-margin sales and limited growth, while the true value of their labor and legacy is captured elsewhere.

Yet there is a way forward. With growing demand for ethical sourcing and direct-trade relationships, cooperatives have new opportunities to reclaim their autonomy. By strengthening internal systems — including traceability, quality control, and cooperative-led certification management — they can build direct buyer relationships based on trust, transparency, and shared values.

“When you depend on the middleman, you rent your future. When you build direct relationships, you own it.” — Industry Expert

6.12.2 The Role of Middlemen in the Argan Industry

Certification Control: Middlemen often manage certifications and hold the official documentation, tying the cooperative to their services.

Price Negotiation: Middlemen set prices and often underpay cooperatives while marking up significantly to end buyers.

Market Access: Middlemen control relationships with international buyers, making it difficult for cooperatives to sell directly.

Packaging and Export Management: Middlemen handle logistics, labeling, and compliance — but retain control of profits and processes.

6.12.3 Risks of Middleman Dependency

Loss of Control: Cooperatives lose visibility over pricing and buyer contacts.

Reduced Profit Margins: Hidden fees and commissions reduce revenue.

Market Blind Spots: Intermediaries shield cooperatives from buyer feedback and trends.

Certification Leverage: When middlemen pay for certification, they own the rights — not the cooperative.

6.12.4 Opportunities for Cooperatives to Regain Control

Internal Certification Management: Build internal knowledge to manage certification files and renewals.

Direct Buyer Relationships: Attend trade shows, invest in social media, and communicate directly with brands.

Transparent Traceability: Use cooperative-led tracking tools to show product origin and ethical sourcing.

Cooperative-Owned Branding: Take control of labeling, packaging, and storytelling.

Shared Services Models: Partner with other cooperatives to share costs for export, lab testing, and certifications.

6.12.5 Key Takeaways

Middlemen have long positioned themselves as indispensable in the argan oil trade—but their dominance comes at a high cost. When cooperatives hand over control of certification, pricing, and buyer relationships, they sacrifice far more than profit margins: they surrender visibility, agency, and future bargaining power. Over time, dependency erodes not just financial independence, but cooperative identity itself. However, the future does not have to repeat the past. By investing in internal systems, reclaiming direct market access, and building strong storytelling and branding, cooperatives can transform from invisible suppliers into recognized global partners. Key Takeaways include:

- Middleman control over certifications, pricing, and buyer access locks cooperatives into low-margin, high-risk trade relationships.
- Reliance on intermediaries weakens cooperative visibility, negotiating power, and long-term resilience.
- Building cooperative-owned quality control, traceability, branding, and export capacity is essential for financial sovereignty.
- Direct trade relationships improve margins, buyer loyalty, and recognition of the cooperative's cultural and artisanal value.
- Reclaiming control is not just an operational task. It is a strategic act of ownership, dignity, and future-proofing.
- Middlemen have historically played a central role in managing certification and market access — but at a high cost to cooperative independence. When cooperatives rely on intermediaries, they lose agency over pricing, visibility, and identity.
- However, by strengthening internal systems such as quality control, traceability, and buyer outreach, cooperatives can build direct trade capacity and reclaim ownership of their story.
- Middlemen control access to buyers, pricing, and documentation — limiting long-term growth.
- Cooperatives that build their own infrastructure reduce dependency and increase profits.
- Direct trade relationships improve market resilience, margins, and pride in ownership.

6.12.6 Opportunities: From Dependency to Empowerment

The path away from dependency is already open. It begins with reclaiming the tools of trade and ownership. Cooperatives have a historic opportunity to shift from middleman reliance to direct empowerment by investing in certification management, brand storytelling, traceability, and collective market access. Every step taken to internalize skills and infrastructure strengthens cooperative resilience, improves profit margins, and secures a place at the global table on cooperative terms, not intermediary ones. Opportunities include:

- Take ownership of certification processes, ensuring cooperatives control their own compliance and export readiness.
- Build direct relationships with ethical brands, international distributors, and conscious consumers through trade shows, online platforms, and targeted outreach.
- Invest in traceability and transparent quality assurance systems that tell the full story from soil to skin.
- Develop strong cooperative-owned branding that highlights authenticity, cultural heritage, and environmental stewardship.
- Forge alliances with peer cooperatives to share shipping, certification, lab testing, and marketing infrastructure—scaling access while retaining ownership.

6.12.7 Action Plan Checklist: Reducing Middleman Dependency

- ☐ Map all current middleman relationships and contract terms
- ☐ Request full access to all certifications and renewal schedules
- ☐ Identify potential direct buyers and trade platforms
- ☐ Build internal systems for documentation, labeling, and export
- ☐ Attend trade fairs and international buyer events
- ☐ Create storytelling materials: photos, cooperative profile, short video
- ☐ Partner with peer cooperatives to share shipping and certification costs
- ☐ Track direct market feedback to adjust quality and brand positioning

6.12.8 The Hidden Risk of Renting Your Future

When cooperatives depend on middlemen to manage certifications, negotiate prices, and access markets, they trade short-term convenience for long-term vulnerability. Every time a middleman controls a buyer relationship, holds a certification, or sets a price, the cooperative surrenders part of its independence and bargaining power. Over time, this hidden dependency erodes more than just margins—it weakens the cooperative’s visibility, pride, and ability to shape its own future. Without direct control over market access, branding, and certification, cooperatives risk becoming invisible suppliers in a system that captures the true value of their labor elsewhere. Marketing power, brand identity, and financial sovereignty are lost—not because the cooperative lacks quality—but because it lacks ownership of its own narrative. Remaining dependent means renting the future, while direct action means reclaiming it.

Key Risks Include:

- Loss of ownership over pricing, buyer relationships, and certification documents.
- Vulnerability to sudden changes in middleman-controlled markets or buyer relationships.
- Permanently reduced margins and limited reinvestment capacity for cooperative growth.
- Weak cooperative identity and lower brand visibility in local and international markets.
- Diminished member motivation and pride as external actors capture the value created by the cooperative’s labor and legacy.

Reflective Question

How can we move from renting our future to owning it—by building the systems, skills, and relationships that belong to us?

Chapter 7. Legacy In Action: Sustaining Culture, Ecology, and Enterprise

Navigating Legacy and Innovation: Argan Cooperatives as Stewards of Culture, Ecology, and Future Resilience

7.0 Introduction

The true legacy of an argan cooperative is not measured solely by oil produced or profits earned, but by the preservation of ancestral knowledge, the empowerment of future generations, and the resilience of the argan ecosystem itself. However, legacy faces real risks. As younger generations move away from traditional roles, and as global market pressures increase, there is a danger that vital cultural practices could be lost. Mechanization, while improving efficiency, risks erasing the human stories behind each drop of oil. Certifications and market trends can also shift focus away from cooperative values toward external validation, fragmenting internal identity. Furthermore, without proper documentation, mentorship, and storytelling, the wisdom of elder harvesters and producers may disappear. The core concern for legacy is continuity, ensuring that cooperative values, traditional methods, and community bonds endure even as the cooperative modernizes and scales. Legacy requires intention: to record, to teach, and to celebrate the cooperative's unique place in Morocco's cultural and ecological landscape.

As cooperatives look to the future, it is essential to not only safeguard traditional practices and ecological stewardship, but also to ask bold questions that shape the next era of their development.

What does the cooperative model teach us about post-carbon rural economies?

In a world rapidly transitioning away from fossil fuels, how can cooperatives become leaders in climate resilience, regenerative agriculture, and diversified rural livelihoods?

What happens if the argan market becomes fully mechanized?

If traditional methods are displaced by industrial-scale mechanization, what are the risks to biodiversity, community cohesion, and cultural heritage? How can cooperatives advocate for a future that honors their knowledge while embracing smart, sustainable innovation?

How can soil health research shift the global narrative from argan as a luxury oil to argan as an ecological restoration model?

By connecting soil regeneration to oil quality and climate resilience, can cooperatives position their work not just in beauty and nutrition markets, but also as vital actors in global restoration economies?

These questions and the search for their answers, are what will define the future legacy of the argan cooperatives, ensuring that their work is not only preserved, but evolves to meet the needs of tomorrow.”

7.1 Key Takeaways

Legacy is created through deliberate choices that honor the past, sustain the present, and shape the future. For argan cooperatives, legacy is rooted in preserving cultural knowledge, protecting ecological systems, and strengthening cooperative resilience across generations. Without intentional action, vital traditions, ecosystems, and community bonds risk erosion. But with vision, documentation, mentorship, and regenerative leadership, cooperatives can ensure that their story continues to thrive long after today's members have passed the torch. Key Takeaways include:

- True cooperative legacy blends cultural preservation, ecological stewardship, and enterprise resilience.
- Inaction risks losing ancestral knowledge, biodiversity, soil health, and cooperative identity.
- Mechanization, if not balanced with tradition, threatens cultural erosion and loss of biodiversity.
- Soil health and ecological restoration are critical parts of the cooperative's future role in global sustainability movements.
- Legacy is secured through documentation, mentorship, intergenerational training, and regenerative practices—not by chance.
- Proactive leadership today seeds a future where cooperative stands as a living example of cultural pride, ecological healing, and economic empowerment.

Legacy is not something cooperatives inherit by default. It is something they must actively build, protect, and adapt to future realities.

7.1 Key Opportunities Include:

- **Ecological Regeneration:** Invest in soil health, tree stewardship, and biodiversity to position the cooperative as a leader in environmental restoration.
- **Intergenerational Knowledge Transfer:** Formalize mentorship programs to pass traditional practices, ecological wisdom, and cooperative values to younger generations.
- **Regenerative Business Models:** Diversify beyond raw oil sales into value-added products, ecotourism, and educational services that honor the land and people.
- **Cultural Storytelling:** Build cooperative-led branding and marketing rooted in authentic heritage, connecting consumers to the land, the people, and the journey behind the product.
- **Cooperative Governance Evolution:** Strengthen inclusive leadership models that balance tradition and innovation, ensuring the cooperative remains community-driven while adapting to modern markets.
- **Global Alliances:** Partner with other regenerative cooperatives, researchers, and sustainability movements to elevate the cooperative's visibility and impact in global restoration economies.

“Legacy is not a destination. It is a living journey.

The choices made today are to document, to test, to train, to share. They are the seeds of tomorrow's cooperative success. With the right guidance and commitment, your cooperative's legacy will not only survive but thrive on the global stage.”

—Andréa Worthoff

7.2 Cumulative Risks of Inaction

As cooperatives look to the future, it is essential to recognize that every decision carries consequences, not only for immediate operations, but for long-term ecological and cultural legacy. The following risks, if left unaddressed, pose significant threats to the future of the argan ecosystem, cooperative resilience, and rural livelihoods:

- **Governance Risks:** Without inclusive and transparent decision-making, cooperatives face fragmentation, disengagement, and weakened ability to adapt to market and climate changes.
- **Ecological Risks:** Unsustainable harvesting and neglect of soil regeneration can accelerate soil degradation, reduce biodiversity, and compromise the health of the argan forest.
- **Cultural Risks:** Loss of intergenerational knowledge threatens the continuity of traditional harvesting and processing practices, risking the erosion of cultural identity.
- **Quality & Traceability Risks:** Inconsistent processing methods and weak quality control systems jeopardize product integrity, leading to potential market exclusion and loss of trust.
- **Market Risks:** Over-reliance on intermediaries and failure to diversify market access limit growth potential and increase vulnerability to price fluctuations.
- **Legacy Risks:** Without intentional succession planning and ecosystem stewardship, cooperatives risk losing their role as custodians of a unique ecological and cultural heritage, leaving future generations without a sustainable foundation.

These risks are not inevitable. With proactive leadership, cooperative action, and regenerative strategies, cooperatives can transform these risks into opportunities for resilience, growth, and enduring legacy.

Reflective Question

How can our cooperative ensure that the knowledge, soil, culture, and community we nurture today will remain a living legacy for generations to come

Chapter 8. The Path Forward for Argan Cooperatives

Preserving the Past, Shaping the Future: Empowering Argan Cooperatives through Cultural Legacy and Sustainable Practices

8.0 Introduction

Argan cooperatives, particularly those led by Amazigh women in Morocco, face a unique blend of challenges and opportunities in terms of legacy. Their legacy is deeply rooted in the cultural, ecological, and socioeconomic history of the region. The argan tree (*Argania spinosa*) has supported local communities for centuries, providing food, medicine, and materials for cultural practices. However, the rapid growth of commercial production, climate change, and modern agricultural pressures have significantly impacted the sustainability of the argan forest and the way cooperatives operate.

The survival of argan cooperatives depends on their ability to adapt to market demands while staying rooted in ancestral traditions. By adopting direct-to-consumer sales models, regenerative harvesting practices, and innovative product diversification, cooperatives can break free from middlemen, increase profitability, and ensure the long-term health of the argan ecosystem. These best practices serve as a roadmap for a more resilient, ethical, and sustainable argan industry, one that honors the women who sustain it and the land that makes it possible.

8.1 Cultural Legacy Defined

Argan cooperatives are part of a long-standing tradition of sustainable land management and cultural practices that the Amazigh people have passed down through generations. The women-led cooperative model emerged in the 1990s as a response to the exclusion of Amazigh women from the economic benefits of the argan oil industry. This shift empowered women to gain economic independence, preserve their cultural heritage, and foster gender equality. However, maintaining this cultural legacy requires balancing modern market demands with the preservation of traditional practices.

- Organizing storytelling circles, where elders share folktales and ancestral knowledge about the argan forest and its significance.
- Recording these narratives through community-led projects, creating podcasts, video interviews, and guides that document the living history of the region.
- Partnering with local schools to ensure that children grow up understanding their heritage and the importance of sustainable land stewardship.

By celebrating their stories, cooperative members strengthen intergenerational bonds while demonstrating to the world that the value of argan oil extends far beyond skincare. It represents an entire way of life.

1. Ecological Legacy:

The argan forest, once much larger, faces significant threats from deforestation, desertification, and climate change. While the cooperatives have played a key role in the restoration and protection of the argan ecosystem, the ongoing struggle to maintain the forest's biodiversity continues to be a challenge. Over-harvesting and the increasing demand for argan oil globally further stress the sustainability of the forest. The legacy of environmental stewardship is tied to the cooperatives' ability to adopt regenerative practices and sustainable harvesting methods that align with the cooperative's ecological responsibilities.

2. Socioeconomic Legacy:

While the cooperatives have greatly contributed to the empowerment of women in Morocco, providing them with economic independence and social mobility, they also face ongoing challenges in scaling up and ensuring that the benefits reach all members. Many cooperatives still struggle with limited access to resources such as raw materials, machinery, and financial support. As the global demand for argan oil increases, cooperatives must adapt to ensure that they can meet production demands while keeping the community-driven, women-led model intact. Furthermore, securing fair wages and ensuring transparent distribution of profits are central to maintaining the socioeconomic legacy of these cooperatives.

3. Legacy of Sustainability and Community Empowerment:

The legacy of the cooperatives is intrinsically tied to their ability to promote sustainable livelihoods while preserving the environment. As the cooperatives evolve, they face the challenge of navigating the tension between economic growth and environmental preservation. The cooperative model, which has been successful in promoting gender equality and supporting community development, faces pressure to scale and meet global market demands without losing sight of its social and environmental goals.

4. Cultural Markets & Global Visibility:

- Ancestral craftsmanship is an essential part of cooperative life. By hosting artisan markets, both locally and online, cooperatives can showcase traditional textiles, handwoven baskets, and natural dyes alongside their argan oil products.
- These markets can be seasonal community events that attract visitors and offer a platform for artisans to share their stories. Local partnerships with restaurants and wellness spaces can create argan-infused culinary experiences, further integrating cooperative products into everyday life.

By weaving cultural preservation into economic development, cooperatives can strengthen community resilience, protect ancestral knowledge, and ensure that the next generation carries forward these traditions with pride.

Best Practice: Develop cultural tourism programs, storytelling initiatives, and community education workshops to enhance both economic sustainability and cultural heritage.

8.2 Key Takeaways

In summary, the legacy of argan cooperatives is one of cultural resilience, environmental stewardship, and socioeconomic empowerment. However, these cooperatives are at a crossroads, having to adapt to modern challenges while preserving their traditional values. Their future success will depend on their ability to balance these competing pressures and sustain both their cultural and ecological legacies in a changing world.

8.3 Risks if Legacy Is Not Defined and Actively Sustained

If cooperatives do not intentionally define, document, and nurture their cultural and ecological legacies, they risk losing the very foundations that distinguish them. Without active transmission of ancestral knowledge, future generations may view the cooperative model as merely transactional rather than transformational. Environmental stewardship traditions could weaken under commercial pressures, leading to further land degradation. Ultimately, the cooperative could become just another supply chain node, rather than a living guardian of Morocco's cultural and ecological heritage.

Reflective Question

How can our cooperative ensure that our cultural, ecological, and economic legacies are not just preserved — but actively lived, shared, and strengthened for generations to come?

Chapter 9. From Roots to Futures: A New Chapter for Cooperative Resilience

A blueprint to carry culture, knowledge, and leadership forward.

Note to Reader:

The following chapter introduces a forward-looking framework, The Cooperative Legacy Blueprint which is inspired by observations and recurring themes uncovered during the diagnostic research phase of this project. While **Step 1 (Diagnose and Reflect)** was completed as part of the deliverable commissioned by the Global Diversity Foundation (GDF), **Steps 2 and 3** are presented here as proposed next steps developed independently by Andrea Worthoff through Native Wild Living. These ideas are not part of the original project scope and are shared solely to offer a conceptual pathway for future cooperative support and regenerative planning.

Everything in the previous chapters, from governance to gender roles points to one essential truth: resilience requires more than good practices; it requires an enduring legacy.

A cooperative is not merely a business. It is a living bridge between past, present, and future. For Amazigh communities, who have long faced marginalization of their language, land rights, and cultural autonomy, protecting ancestral knowledge and ecological stewardship is not only a matter of pride, it is a matter of survival. Without intentional action, these legacies risk being lost amid modernization and external pressures.

This chapter introduces The Cooperative Legacy Blueprint, a regenerative framework designed to ensure that the identity, memory, and leadership of cooperatives continue to thrive across generations.

The guide so far has offered practical strategies to strengthen governance, production, marketing, and financial resilience. Now, we turn to the heart of long-term survival: protecting the invisible systems that hold everything together, wisdom, culture, and care.

9.1 What Is The Cooperative Legacy Blueprint?

Just like a house needs a good plan to stay strong, your cooperative needs a good plan to protect its values, traditions, and knowledge, especially as times change.

The Cooperative Legacy Blueprint is a regenerative, three-step framework designed to help cooperatives define, protect, and carry forward their cultural, ecological, and enterprise legacies. These steps are interconnected but can also be approached progressively.

Step 1: Diagnose and Reflect (Completed)

Identify strengths, gaps, and areas for growth across cooperative operations, governance, production, member engagement, and ecological impact. This step builds the technical and organizational foundation.

Step 2: Learn and Exchange (Proposed)

Engage in peer-based learning across cooperatives to strengthen resilience through shared experience. These cooperative exchanges support mutual reflection, technical improvement, youth engagement, and succession planning. Step 2 is not only a bridge between learning and action, but also a space to strengthen trust, grow leadership, and share legacy strategies over time. This step can be started independently, even before full implementation of Step 3, making it one of the most accessible entry points into the Blueprint.

Step 3: Legacy Implementation & Intergenerational Planning (Proposed)

Adopt regenerative strategies through custom toolkits, systems, and succession plans rooted in ancestral values and cooperative identity. This phase involves structured tools, ongoing facilitation, and long-term planning.

This framework helps cooperatives:

- Document ancestral practices and ecological wisdom.
- Evaluate cultural, ecological, and operational resilience.
- Plan for succession of leadership, knowledge, and identity.
- Build regenerative business strategies aligned with core values.
- Reclaim their role as stewards—not just of oil, but of living landscapes and communities.

“We never thought about legacy before, but when we started talking about what we want our daughters to carry forward, it became clear that it’s not just about selling oil. It’s about who we are.”

— Member, Timgharine Cooperative (Field interview, 2025)

9.2 How Is The Cooperative Legacy Blueprint Being Developed?

The Cooperative Legacy Blueprint is a future-facing, regenerative planning system designed to help cooperatives define, protect, and transmit their cultural, ecological, and enterprise legacies across generations. While the initial inspiration emerged during the 2025 research fellowship with the Global Diversity Foundation (GDF), the full design, including its facilitation model, diagnostic tools, legacy-mapping templates, and implementation worksheets has been created independently by Andrea Worthoff through Native Wild Living following the close of that fellowship.

This chapter presents a living framework in progress. It offers a blueprint, a set of guiding concepts and applied tools by which cooperatives can begin to articulate their long-term vision, assess their resilience beyond financial metrics, and intentionally shape the future they want to pass on.

The Cooperative Legacy Blueprint is grounded in the principle that legacy is not merely what is inherited, it is what is actively cultivated. By approaching legacy as both a story and a strategy, cooperatives can move beyond survival toward regeneration. This includes renewing purpose, strengthening leadership continuity, and aligning enterprise growth with cultural and ecological values.

The Cooperative Legacy Blueprint invites action, imagination, and co-creation. It is not about preserving the past, but protecting the thread that holds past, present, and future in meaningful relationship.

This system is intentionally open for future collaboration. While the foundational tools have been authored independently, the Cooperative Legacy Blueprint is envisioned as a shared platform, one that can grow stronger through cooperative input, collective wisdom, and regional adaptation.

9.3 Implementation, What Comes Next?

The transition from a diagnostic tool to a framework to a blueprint for legacy.

This guide began as a diagnostic tool. It has grown into a roadmap. Now, it points toward a potential blueprint—one that invites cooperatives to shape their futures, not just survive the present.

The following pages outline what each step could offer in the cooperative journey—from practical application to visionary planning. Step 1 has been completed and shared in this book. Steps 2 and 3 are outlined here as optional pathways for future collaboration and development.

This chapter closes with tools and attachments to support Step 1 implementation and introduces concepts for peer exchange and legacy planning for those interested in continuing the journey.

To support your journey, please review a three-step rollout of tools and support materials:

Completed Step 1. (Diagnose and Reflect)

This guide serves multiple roles, each contributing to the long-term resilience of argan cooperatives. As a **toolkit**, it offers actionable guidance through diagnostics, checklists, and recommendations. It acts as a **bridge**, connecting traditional wisdom with regenerative business models. It stands as an **advocacy piece**, amplifying the voice of cooperatives as guardians of culture and land, not just producers of oil. It also functions as a **philosophical framework** through The Cooperative Legacy Blueprint, which names, organizes, and protects the intangible systems that matter most: knowledge, community, and voice. Finally, it offers **ethnobotanical testimony**, grounding economic sustainability in the ecological traditions, plant knowledge, and cultural memory of Amazigh communities.

Guardians of the Argan Forest: A Regenerative Roadmap & Practical Guide for Cooperative Legacy Building

**Chapter / KPI
Measured**

6.1-6.11

**Action Plan
Checklist (Included)**

☒ Action Checklists

**Attachments/Worksheets
(Included in Guide)**

N/A

Legacy Reflection Card

Cost: \$0

Proposed Step 2. (Learn & Exchange)

The second step is a legacy-building approach that focuses on **peer-based learning and cooperative exchange**. Rooted in reciprocity and shared wisdom, this initiative provides space for cooperatives to learn from one another, reflect on challenges, and co-create regenerative solutions that align with their values. This part of the model uplifts the expertise already present within the cooperative network.

Each peer session centers on a key resilience theme such as business modeling, traceability, quality control, or youth engagement and is grounded in real cooperative experience. This step represents not only a method of knowledge exchange, but a **living demonstration of legacy in motion**, passed from elder to youth, cooperative to cooperative, and story to system.

Peer-Based Learning Initiative: Regenerative Capacity Building Through Cooperative Exchange

Chapter / Peer Learning Theme	Cooperative Exchange/Activity	Workshops and Worksheets
(Recommendation)		What is Provided:
July 2025	Thiganimine, Timgharine & Bio.IDG Google Meet & Greet	How to Use This Guide How to By-Pass The Middleman
August 2025: Business Resilience	Case study: Timgharine Draft 1-Year Business Model and Cooperative	Business Model Canvas, Peer Reflection Workshop, Worksheets Remodel
October 2025: Traceability	Case Study: Tighanimine	Workshop, Worksheets
November 2025: Quality Control	Quality Control Location: Tighanimine	Quality Control Process Workshop
December 2025: Youth Legacy Mapping	Youth-elder interviews & storytelling Field demo at Bio.IDG	Legacy Card Guide, Story Archive Tracker

What Cooperatives Can Expect from Peer-Based Learning Exchanges

Peer-to-peer learning exchanges are designed to address the very real challenges surfaced in the Executive Summary, such as the lack of marketing know-how, strategies to bypass the middleman, building solid quality control systems, intergenerational engagement, and long-term business models. Each session gives cooperatives the opportunity to:

- **Learn directly from peers** who have already built strong systems (e.g., Tighanimine's quality control and Timgharine's business model and tourism model).
- **Receive templates and tools** to adapt and apply these systems in their own operations.
- **Test solutions** in a collaborative space before implementing them alone.
- **Build leadership capacity** by involving youth, elders, and cooperative staff in shared dialogue.
- **Document challenges and successes** that will later inform customized legacy planning in Step 3.

This approach ensures that cooperatives are not learning in isolation, but as a united, forward-looking network. It uplifts the strengths already present across the three cooperatives while making space for shared innovation, resilience, and trust-building.

Cost: Each cooperative contributes in-kind support such as time, hospitality, or hosting space. To sustain and grow this model, a modest shared-cost approach is recommended.

This may include pooled contributions for HR resources, travel, meals, printed materials, or facilitation when needed.

This flexible system ensures fairness, honors each cooperative's time and effort, and reinforces the spirit of reciprocity that drives peer-to-peer learning. As the network expands, rotational hosting or light grant support may also be explored to maintain accessibility for all participants.

Note: Peer exchanges include only light tools for reflection and co-creation. They do not include implementation systems or facilitator manuals.

Proposed Step 3. (Implement & Regenerate)

Step 3 moves beyond diagnostics and dialogue into structured, tangible action, not just to improve operations, but to protect the heart of the cooperative itself.

In this final phase of the Cooperative Legacy Blueprint, cooperatives are supported in applying regenerative strategies through custom toolkits, cultural continuity plans, and intergenerational learning pathways.

This step centers the intangible systems too often overlooked: ancestral wisdom, ecological stewardship, women's leadership, youth engagement, and the cultural identity woven through daily work.

Each toolkit provides more than technical resources, like budget templates or harvest logs. It delivers legacy-building tools designed to uplift community voice, document traditions, map values, and foster leadership succession. Through these actions, cooperatives can protect what matters most: their story, their dignity, and their future.

Legacy is not just what we leave behind. It is what we live, protect, and pass forward, together.

In Step 3, cooperatives move from planning to practice, implementing hands-on systems that not only improve daily operations but actively build and preserve legacy. This phase introduces modular toolkits that help cooperatives translate ancestral values into regenerative business systems, ensuring that both function and identity are sustained for the long haul.

Each module in Step 3 is designed with two layers:

A functional layer that provides ready-to-use templates, checklists, and workshop guides to strengthen cooperative systems now.

A legacy layer that captures cultural memory, ecological knowledge, and intergenerational practices to pass down over time.

These are legacy-based systems grounded in the lived realities of argan cooperatives, tools for cultural preservation as much as operational resilience.

Whether you are mapping traceability, training the next generation of leaders, or refining oil quality, each toolkit links **technical strength with cultural depth**. By implementing these systems, cooperatives begin to regenerate with purpose, identity, and continuity.

Each toolkit is designed to be adapted based on cooperative needs, size, and goals. Modules can be used individually or together and can evolve through feedback and ongoing use. Legacy-building is not one-size-fits-all, it's shaped by your voice, your story, and your pace.

Step 3 marks the full activation of the Cooperative Legacy Blueprint, a movement from survival to regeneration, from production to protection, and from today's work to tomorrow's wisdom.

Module Name	What Cooperatives Receive	Toolkit Elements
Member Engagement & Retention Blueprint	Full Workshop Kit	Meeting templates, reflection exercises, voice maps
Open Books System	Financial transparency ToolKit	Income allocation posters, budget sheets, audit prep forms
Leadership Ladder	Leadership development program	Rotational role cards, mentorship path diagrams
Traceability Made Visible	Branding + traceability bundle	QR mapping toolkit, harvest logs, product origin labels
Get Certified	Business Certification readiness system	Visual timeline, audit checklist, cost calculator
Build Your Story	Marketing/Sales/Branding mapping worksheets, cooperative value mapping	Cultural story identity
Quality Control Gold Standard	Step-by-step oil quality standards	Harvest timing log, drying protocols, storage best practices

What You Can Expect from Step 3: Implementation & Regeneration

In Step 3, cooperatives will receive hands-on implementation toolkits designed to help them put legacy into practice, from member retention to traceability, leadership development to oil quality. Each module is grounded in cooperative realities and built for everyday use, not consultant theory. Cooperatives can expect ready-to-use workshop kits, financial templates, role cards, harvest logs, certification guides, and storytelling worksheets, all tailored to regenerative business models that honor culture and community. These resources turn planning into practice and help ensure that the systems supporting your cooperative are not only surviving but regenerating for future generations. Step 3 marks the full activation of the Cooperative Legacy Blueprint: a path not only to better operations, but to deeper meaning, continuity, and resilience.

Final Thought

Step 1: identifies. Step 2: connects. Step 3: implements.

Legacy is not only what we inherit; it is what we choose to protect, cultivate, and pass forward.

In cooperatives, legacy includes ancestral knowledge, ecological stewardship, community identity, and the systems that sustain both people and place. It is living memory in action, shaping not just what we do, but who we become together.

Together, they form a regenerative cycle of reflection, relationship, and renewal. This is a living commitment rooted in ancestral knowledge, carried forward by community hands, and designed for the long haul of cooperative resilience.

Each step honors a different kind of wisdom: the clarity to see what is, the courage to share what's known, and the vision to shape what's to come. In doing so, the Cooperative Legacy Blueprint invites cooperatives to become not just producers of oil, but stewards of identity, tradition, and place.

It is a roadmap not only for enterprise, but for enduring meaning and a future made stronger by the legacies we choose to protect together.

9.3.1 Why Legacy Matters: Indigenous Identity and the Struggle for Continuity

In Morocco, many argan cooperatives are rooted in Amazigh (Berber) communities, the Indigenous Peoples of North Africa. Their legacy is not only economic or agricultural; it is cultural, ecological, and ancestral. To understand the urgency of legacy planning, we must also understand the broader context in which these cooperatives exist.

According to the International Work Group for Indigenous Affairs (IWGIA), Amazigh communities continue to face land dispossession, marginalization, and limited recognition of their cultural and territorial rights. While symbolic reforms have been made, meaningful implementation remains weak. New development projects including land privatization (Melkisation) and national parks, often proceed without community consent, disrupting traditional lifeways and severing cultural ties to land.

In this context, legacy becomes a form of protection, a way to actively safeguard ancestral knowledge, retain cultural identity, and ensure that Indigenous values are carried forward by future generations. Legacy is not just about what is remembered; it is about what is preserved, practiced, and passed on.

The Cooperative Legacy Blueprint invites cooperatives to see themselves not merely as producers of oil, but as guardians of memory, culture, and place. It is a tool to protect what is sacred, even as the world around them changes. For Amazigh cooperatives, legacy is not a luxury, it is a lifeline.

9.4 Global Perspectives on Cooperative Resilience

To fully understand the power and relevance of legacy-based approaches, we can look beyond Morocco to parallel cooperative movements around the world. The following examples illustrate how similar principles of cultural continuity, ecological stewardship, and intergenerational resilience are shaping cooperatives globally.

In Colombia, rural and Indigenous communities (Pastos and Emberá) are cultivating the **cacay tree (*Caryodendron orinocense*)** to produce a nutrient-rich oil now gaining recognition in global skincare markets. Companies like BioIngredientes Amazónicos have helped establish direct partnerships between growers and international buyers, providing stable income to families while restoring degraded lands through agroforestry systems. Supported by organizations such as GIZ and the World Bank, these initiatives align strongly with the four domains of The Cooperative Legacy Blueprint because they document cultural knowledge, regenerate biodiversity, plan for intergenerational transmission, and link local identity to regenerative business practices.

In Brazil's babassu nut breakers, led by women's collectives, and Kenya's shea butter cooperatives demonstrate how land rights, traditional processing techniques, and cooperative governance models can protect ecosystems and uplift marginalized groups. These global examples not only confirm the value of legacy-based approaches but also offer inspiration for cooperative innovation rooted in place and tradition.

9.4.1 Comparative Table:

Region	Product	Community Model	Legacy Dimensions
Colombia	Cacay oil	Indigenous and rural cooperatives	Cultural heritage, ecological stewardship, economic resilience
Brazil	Babassu nuts	Women-led associations	Land rights, gender equity, environmental conservation
Kenya	Shea butter	Women's cooperatives	Traditional knowledge, community empowerment, sustainable livelihoods

Chapter 10. Conclusion: From Sustainability to Regeneration and Cooperative Legacy

Regeneration Begins with Legacy

This guide emerges from four weeks of immersive fieldwork, participatory diagnostics, and direct dialogue with Moroccan argan cooperatives navigating ecological, generational, and economic transitions. While each cooperative demonstrated its own identity and maturity, they shared systemic challenges in governance, traceability, youth engagement, and long-term planning. Yet within those challenges, a deeper opportunity was revealed: each cooperative also possessed distinct strengths the others lacked, whether in business model development, cooperative restructuring, quality control, or marketing.

The insights from this diagnostic phase directly shaped the design of this guide. Through structured surveys, interviews, and observations, eleven key performance areas were assessed, spanning member participation, production, financial transparency, regenerative practices, youth inclusion, and legacy awareness. The findings revealed not only technical gaps and governance inconsistencies, but also promising opportunities for alignment, mutual learning, and intergenerational resilience.

From this foundation, a three-step system was created to support cooperative regeneration:

Step 1: This Practical Guide — a field-based manual offering action-oriented checklists and tools for building best business practices across governance, production, financial equity, marketing, and traceability, grounded in the lived realities of cooperatives.

Step 2: Peer-to-Peer Learning — an immediate and scalable opportunity for cooperatives to exchange expertise, co-lead workshops, and support one another through reciprocal, field-based training rooted in complementary strengths.

Step 3: Legacy Implementation & Intergenerational Planning — a forward facing process to help cooperatives define their long-term vision, map their cultural, ecological, and enterprise legacies, and build systems for leadership transition that carry their legacy forward with clarity and purpose.

Together, these three steps form the Cooperative Legacy Blueprint, a participatory planning system rooted in cooperative realities, not external agendas. While much of the global development sector has emphasized *sustainability*, preserving what exists and reducing harm, this framework advances a more ambitious goal: **regeneration**.

This guide may begin with diagnostics and business practices, but its deeper purpose is regenerative: to help cooperatives reclaim cultural continuity, restore ecological balance, and reimagine enterprise as a force for long-term reciprocity. As this work evolves, it holds the potential to become more than a field-tested model. With continued refinement and collective stewardship, it could serve as a living precedent for Earth aligned cooperative design, where legacy, ecology, and enterprise are treated not as separate aspirations, but as one interdependent whole.

The road ahead is not only about building stronger cooperatives, it is about safeguarding the roots that sustain them and ensuring the story of the argan forest is carried forward by the hands that honor it most.

As you turn the next page, you will find the **Legacy Card**, a reminder that behind every practice, project, and product lies something far greater: the living legacy we are all called to protect.

Attachment: Legacy Card

Our Cooperative Legacy Card: Remember, Reflect, Renew

Five (5) Legacy Reflection Questions

1. What do we want future generations to remember about our cooperative?
 2. Which traditional practices do we most want to protect and pass on?
 3. How can we keep our connection to the land alive in our work every season?
 4. What knowledge, stories, or skills are at risk of being forgotten?
 5. What new ideas can strengthen our cooperative while honoring our roots?
-

Mini Checklist for Legacy Leadership

- ✓ Document Elder Stories — Capture oral histories, techniques, and memories.
- ✓ Train the Next Generation — Mentor younger members with patience and purpose.
- ✓ Honor Regenerative Practices — Prioritize sustainability, not just productivity.
- ✓ Tell Our Story Publicly — Celebrate our origins in markets, labels, and websites.
- ✓ Design for the Future — Plan projects that serve the cooperative's next 20–50 years.

Annex 1: Cooperative Legacy Card – For Internal Use

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