gain Global Alliance for Improved Nutrition

SAGANA

THE CASE FOR INVESTMENT IN NUTRITIOUS FOODS VALUE CHAINS: AN OPPORTUNITY FOR GENDER IMPACT

Final report

July 2024

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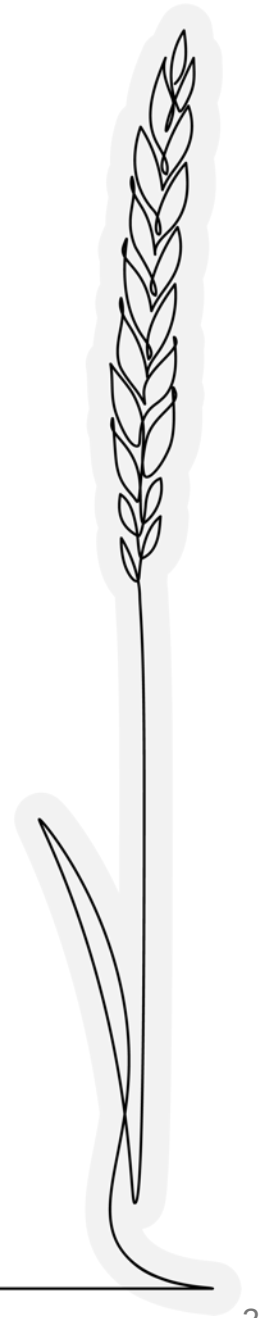

EXECUTIVE SUMMARY

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- **Women play a pivotal role in the global food system**. The agrifood sector is a major employer of women, with women representing 38% of all agrifood-system workers globally[1]. Their role is even more pronounced in developing countries. According to the FAO, 66% of working women in Sub-Saharan Africa and 71% of working women in South Asia work in agrifood systems[1]. In Latin America and the Caribbean, that figure is 29%[1]. **Yet women in the agrifood sector face many gender-related challenges that hinder their full participation in the sector and the benefits they receive from participation.** These challenges include lower access to key assets, resources and services, discriminatory social norms and legal frameworks, more vulnerable employment conditions, and gender-based violence.

- Food security efforts and agricultural investments have often focused on food **quantity** and the increased production and consumption of staple crops. However, to achieve food security, the **nutrition aspect** of food production and consumption cannot be overlooked. **Nutrition investments are an opportunity for investors to strengthen nutritious foods value chains and at the same time, invest in the world's women.** There is **both a strong business case and impact case to invest in nutritious food systems with a gender lens**.

- This report aims to **unlock more funding into nutritious food value chains**, and in particular into small and medium enterprises (SMEs), which critically lack access to financing in emerging markets. It does so **by demonstrating the potential gender impact of nutritious foods value chain investments** and by **highlighting companies operating in this space** with commercial and gender potential. The gender impact of investments is considered using the **2X criteria**, specifically focusing on **women in entrepreneurship and ownership**, **women in leadership**, **women in employment**, and **women in the supply chain**.

- **This report examines six nutritious foods value chains in three geographies from a gender perspective**: Cashew nuts and poultry in Sub-Saharan Africa, aquaculture and quinoa in Latin America, and tomatoes and dairy in South Asia. In value chains where women play a significant role in production and/or processing, such as dairy and poultry, investments can play a role in improving the quality of the supply chains, in particular **improving women's access to quality inputs and services** and **improving women's quality of employment**. In more male-dominated value chains where women hold a large percentage of informal jobs, gender-lens investments can help **improve the inclusion and treatment of women** in the value chain (e.g., aquaculture). Across value chains, gender-lens investments could help **address the lack of representation of women in leadership positions** and **support women entrepreneurship and ownership**.

- As part of this report, we have worked on **nine case studies of companies in selected value chains**. These **can be shared directly with interested parties**. **Please reach out to GAIN directly** at rbove@gainhealth.org if interested. Case study companies were chosen using a portfolio approach, ensuring diversity in the types of companies profiled, both in size and gender potential. Some companies have already received significant investment capital (including from DFIs); Others are still at an early stage but growing and could be viable investment opportunities, either directly or via funds supported by DFI investments. We note that for all of the companies profiled, further analysis and due diligence would be required before any investment decision is taken, and the present report and case studies are neither an investment recommendation nor an endorsement.

Source: 1. FAO (2023), The Status of Women in Agrifood Systems

CONTEXT AND OBJECTIVE

THE PURPOSE OF THIS REPORT IS TO UNLOCK MORE FUNDING INTO NUTRITIOUS FOODS VALUE CHAINS

Overall goals of the report

In this report, we demonstrate that **investing in nutritious foods value chains is a way for investors to realize significant gender impact**...

... and **highlight companies operating in these value chains** with commercial and gender potential

The hope is that **more funding will be unlocked into nutritious food value chains**, and in particular into **small and medium enterprises (SMEs)**, which critically lack access to financing in emerging markets.

WOMEN PLAY A MASSIVE ROLE IN THE GLOBAL FOOD SYSTEM, YET THEIR PARTICIPATION IS HINDERED BY SEVERAL FACTORS

The agrifood sector is a major employer of women...

38%
of all agrifood-system workers globally are women

36%
of working women work in agrifood systems globally

... particularly in developing countries

66%
of working women in **Sub-Saharan Africa**,

71%
of working women in **South Asia** and

29%
of working women **in Latin America and the Caribbean** work in agrifood systems

Challenges faced by women in the sector

- **Lower access to key assets, resources and services**, including access to land, inputs, finance/ credit, extension services and technology (access to irrigation, mechanized equipment, improved seeds/ fertilizers, digital technology, etc.)
- Discriminatory **social norms** and **legal frameworks** that limit the choices available to women and access to assets, inputs and services
- **More vulnerable employment conditions** than men, as women are more commonly hired as temporary or informal/ casual workers, while men are more likely to have more permanent positions
- **Gender-based violence** is prevalent in agrifood value chains
- Gender inequalities increase women's **vulnerability to climate crises**

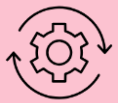
Source: FAO (2023), The Status of Women in Agrifood Systems

TAKING A GENDER LENS IN NUTRITIOUS FOOD INVESTMENTS IS AN OPPORTUNITY; THERE IS BOTH A BUSINESS AND IMPACT CASE

Business case

Improving supplier productivity

According to the FAO, reducing gender inequalities by improving women's access to productive resources and services could **increase women's farms yields by 20%-30%,** in addition to **diversifying agribusinesses' supplier base**.



Improving business resilience

As men increasingly migrate off-farm to pursue employment opportunities, women in emerging markets, who are more mobility-constrained, are increasingly involved in agricultural work. Ensuring women are involved in food production increases business resilience.

Creating a more productive and loyal workforce

By attracting and retaining women, agribusinesses can **benefit from increased diversity**, both at the management and employee level, also resulting in higher retention and lower training costs.

Impact case

Contributing to global food security and nutrition

Helping female farmers realize their full potential could **reduce the number of undernourished people in the world by 12-17%** (100-150 million), according to BII. Women's empowerment is linked to **improved household diets** and in particular **improved child nutrition** (FAO).

Contributing to women's economic empowerment

Improving women's access to resources and access to markets and generally increasing their resilience in food systems is critical to achieve gender equality. It enables them to earn a higher income, reducing household poverty and contributing to economic stability.

Contributing to climate mitigation and adaptation

Climate change exacerbates gender inequalities. It is crucial to address gender inequalities to ensure food value chains are more sustainable and more resilient to climate change, and ensure climate change adaptation meets the needs of women and girls.

Source: BII Gender Tool Kit, FAO (2023), The Status of Women in Agrifood Systems, Sagana

FOR GAIN, "NUTRITIOUS" FOOD IS FOOD THAT PROVIDES BENEFICIAL NUTRIENTS AND MINIMIZES POTENTIALLY HARMFUL ELEMENTS

Types of nutritious foods as defined by GAIN[1]

Type	Description	Examples of food groups
High inherent nutritional value	Naturally contains micronutrients, dietary fiber, unrefined complex carbohydrates, high quality protein and/or essential fats in significant quantities. No major potentially harmful elements when consumed in recommended quantities by a given group	Fruits and vegetables; whole grains; legumes; nuts and seeds; unsweetened dairy products; eggs; fish; minimally processed meat
Enhanced nutritional value	Foods with some inherent nutritional value that are made more nutritious through the addition of nutrients(i.e. fortification) in significant quantities or changes to the processing procedures. No major potentially harmful elements when consumed in recommended quantities by a given group	Fortified staple grains/flours; mitigating loss of germ and dietary fiber in grain products
Some inherent nutritional value	Foods with some inherent nutritional value for which potentially harmful elements have been minimized when consumed in recommended quantities by a given group	Low sugar dairy products; low sodium processed meat; low sugar fortified biscuits
Source of added nutrients	Condiments or supplements which enhance the nutritional value of foods or diets to which they are added	Iodized salt; fortified cooking oils; micronutrient powders; protein- or lipid-based supplements

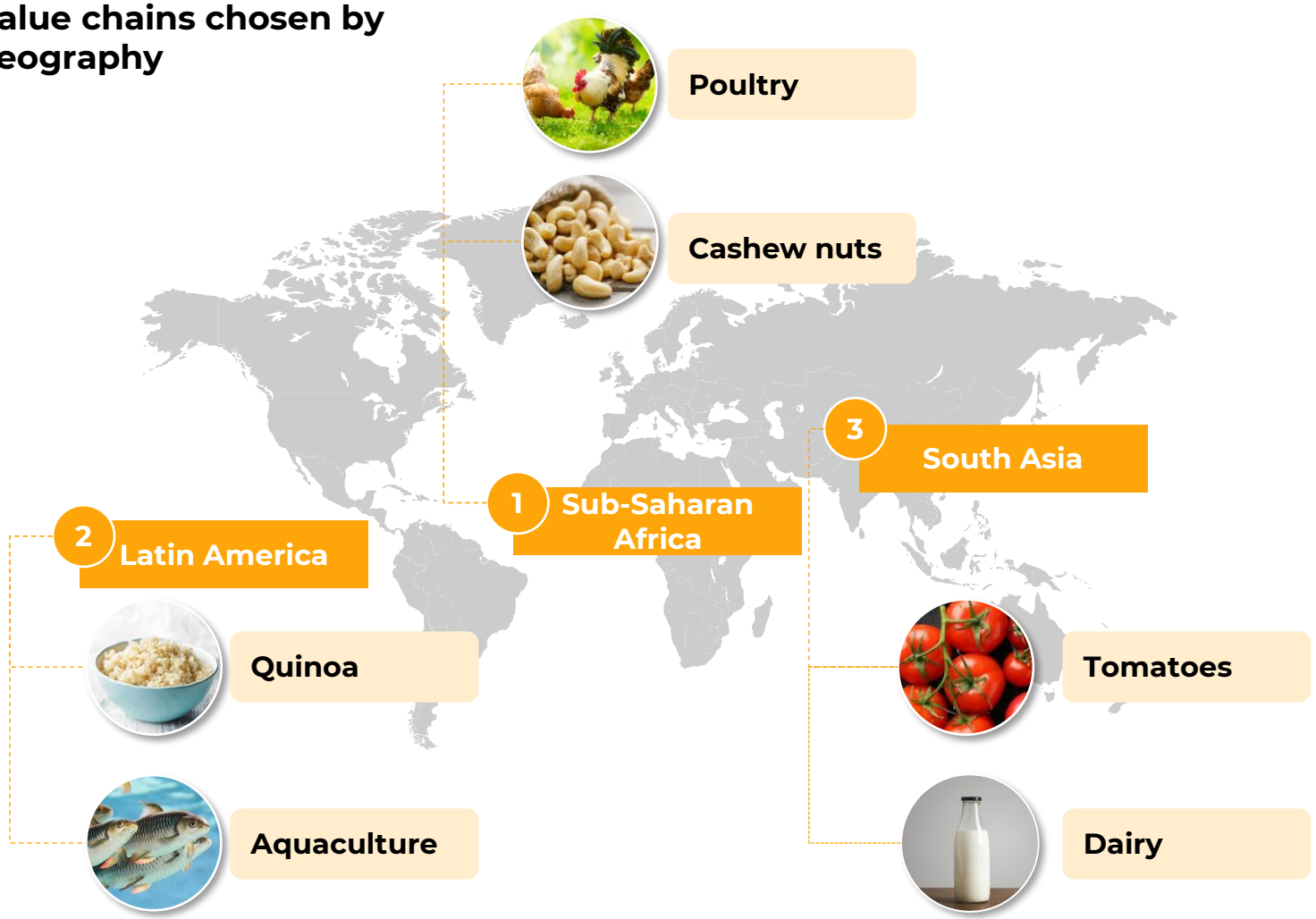
Comments

- Food security efforts and agricultural investments have often focused on food **quantity** and the increased production and consumption of staple crops. However, to achieve food security, the **nutrition aspect** of food production and consumption cannot be overlooked.
- The FAO defines **nutrition security** as food's "quality" aspect and highlights that "only nutrition security can guarantee the quality and diversity of food necessary for good health and nutritional status."
- For maximum impact, it is crucial for investors to **consider the nutritional aspect of the value chains** they invest in.
- GAIN's mission revolves around nutritious and safe foods, and this table (left) shows **how GAIN defines nutritious foods**. The present report focuses on **high inherent nutritional value foods**.
- As mentioned previously, studies show that women's economic empowerment is often linked to improved child nutrition (FAO).

Source: 1. GAIN's definition of nutritious and safe foods; FAO, Investing in Food Security

WE HIGHLIGHT SIX NUTRITIOUS FOODS VALUE CHAINS IN SUB-SAHARAN AFRICA, LATIN AMERICA AND SOUTH ASIA

Value chains chosen by geography



Approach

- We chose six value chains across three geographies, on which to perform a gender impact analysis
- The gender impact analysis aims to answer the following questions:
  - ✓ How are women involved in each of these value chains and why? (with a focus on entrepreneurship, leadership, employment and supply chain)
  - ✓ What types of investment opportunities would positively impact women in the value chain?
  - ✓ What are examples of such investment opportunities?
- This report is based on insights from interviews with over 25 experts, impact investors and companies, as well as secondary research
- 9 case studies of companies in these value chains are available upon request. Please reach out to GAIN directly if interested

KEY FINDINGS

KEY MESSAGE: INVESTORS HAVE AN OPPORTUNITY TO STRENGTHEN NUTRITIOUS FOODS VALUE CHAINS AND, AT THE SAME TIME, INVEST IN THE WORLD'S WOMEN

- Women in the agri-food sector are **largely concentrated in smaller-scale production and in processing roles**; This is also the case for the 6 value chains we looked at. Women continue to face gender-based constraints that hinder their full participation or limit the benefits their receive from participation in the value chain.
- The **2X criteria**, which were recently updated in June 2024, **provide a clear and standardized framework for investing in companies with a gender lens**. The updated framework now also considers women in the supply chain as an additional criteria. In this report, we focus on potential for gender impact with regards to 4 2X criteria, women in entrepreneurship and ownership, women in leadership, women in employment, and women in the supply chain.
- **Several companies in the 6 value chains show evidence of gender impact or gender impact potential** in at least one of these criteria. DFI capital can be highly additional in two different ways:
  - For companies that already show high potential from a 2X alignment perspective, a DFI investment can help take those companies over the line in terms of 2X alignment.
  - For companies that are further away from 2X alignment, a DFI investment that takes a gender lens can help them work on improving inclusion and the treatment of women within the company itself and/or in the value chain in which they operate.
- 9 case studies available upon request **illustrate the types of opportunities available in each sector.**

WOMEN ARE LARGELY CONCENTRATED IN SMALLER-SCALE PRODUCTION AND IN PROCESSING ROLES

Types of food value chain actors and concentration of women workers[1]

Significant share of women

Value chain actors	Input suppliers	Producers: Field and tree crops	Producers: Livestock	Traders	Processors, manufacturers and post-harvest serv.pr.	Transporters	Other
Less formal activities ↓ **Activities** ↓ *More formal activities*	**Service providers:** artificial inseminators, vets, extensionists, equipment providers, etc.	**Smallholder farmers** of grains, fruits and vegetables; roots, tubers, and bananas; selling to local markets	**Small-scale** dairy, fish and poultry **producers**; Beekeepers	**Sellers of small quantities of food** at farmgate or in local wet markets	**Small-scale processors** of fruits and vegetables, nuts, honey, spices, cheese and yogurt; **Packaging**	**Head-loading and hand-carrying** small loads on foot or by public transportation	Providers of specialized agriculture-related support information and financial services
	Input producers: seed, animal or fish feed, compost, etc.	**Smallholder farmers of commodity crops** (e.g., tea, coffee, specialty markets)	**Calf- and goat-fattening producers**; **fishers** owning fishing boats	**Local buyers and marketers; Petty traders**	**Grain, root and tuber processors**	**Via own transport**: bicycles, motorbikes, autos, pick-up trucks	
	Input retailers: Agro-input shops and distributors	**Contract farmers** of commodity crops (e.g., sugarcane)	**Franchises**	**Cross-border traders** (larger quantities and more diverse products)	**Meat processing**; **Industrial production of inputs** (e.g., animal feeds, fertilizer)	**Via own or managed transport firms**	
	Agro-dealers and wholesalers	**Large farmers** of grains, fruits and vegetable, etc. selling to national, regional and international markets	**Ranchers**; **large-scale poultry producers**	**Wholesalers**	**Industrial food processing** (bakeries, cereal production, large-scale milling plants, food packaging)		
					Warehouse owners		

Quotes

"Wherever processing activities are involved, women tend to be engaged at higher rates than men."

- FAO[2] (2023)

"Across various value chains, few women are involved in the more profitable activities of transporting or wholesale trading."

- FAO[2](2023)

"Women trade in less profitable commodities than men … [such as] fruits and vegetables."

- FAO [2](2023)

Source: 1. Table derived from: IFPRI (2019), Building an Inclusive Agriculture: Strengthening Gender Equality in Agricultural Value Chains, Table 6.1, Types of value chain actors ; 2. FAO (2023), The Status of Women in Agrifood Systems

WOMEN'S CONCENTRATION IN PRODUCTION AND PROCESSING ROLES IS ALSO TRUE FOR THE SIX VALUE CHAINS WE LOOKED AT

Value chain	Geography	Women involvement	Where are women most involved?	Key reason
Cashew nuts	Sub-Saharan Africa	**High**	**Processing:** While both men and women are involved in raw cashew nut production, processing is dominated by women	Raw cashew-nut processing is very manual
Poultry	Sub-Saharan Africa	**High**	**Production**: Women dominate family-scale poultry production, though they are less involved in larger-scale farming operations	Poultry-keeping is viewed as compatible with other household responsibilities and thus perceived as suitable for women
Quinoa	Latin America	**Medium**	**Production & processing**: Quinoa cultivation and processing are both usually done manually at the farm level	The value chain is characterized by the fragmentation of smallholder farmers who cultivate the grain
Aquaculture	Latin America	**Medium**	**Processing** (informal, lower-paid jobs): Women have traditionally not been involved much in aquaculture primary production, but hold a disproportionately large percentage of people engaged in more informal, lowest-paid jobs	Aquaculture primary production has traditionally been male dominated and considered men's domain; Aquaculture is particularly capital intensive
Tomatoes	South Asia	**Medium**	**Production**: Women tend to be most involved in cultivation. While there are some women-led microenterprises that process tomatoes into puree, ketchup and pastes, women tend to lose control over the product as it moves from farm to market	Women provide the majority of labor for horticulture within smallholder households. As the produce moves through the value chain, it goes through larger scale processing facilities that may or may not employ women
Dairy	South Asia	**High**	**Production:** Milk production, particularly that by small-scale farmers, is dominated by women. Most of the milk is consumed by the farming household or sold locally	Similar to poultry, milking and animal care are viewed as an extension of domestic work rather than as part of business operations

Source: Sagana analysis

GENDER-BASED CONSTRAINTS HINDER WOMEN'S PARTICIPATION IN THE VALUE CHAIN AND THE BENEFITS THEY RECEIVE FROM IT

Elements impacting women's role in the value chain

Geographic-specific considerations

Overarching cultural norms

Cultural beliefs and norms can **restrict or enable women's participation in certain activities within the economy** and specific agricultural value chain, often dictating the types of work or the types of crop/ livestock that are deemed appropriate for women.

Access to resources

Women's ability to access resources, including **assets** (e.g., land and equipment), **agricultural services** (e.g., access to technology, to agricultural inputs) and **financial services**, have a huge impact on their participation in a value chain and ability to economically benefit from it. Policy and regulation can impact women's access to resources.

Access to education & training

Women's ability to make choices and ability to control resources and economic benefits depend on their **education level/ existing capabilities** and **ability to access relevant training**.

Value chain-specific considerations

Input requirements of value chain

High-input crops may present barriers to women who have limited access to capital and resources. In contrast, **crops that require fewer inputs or are more tolerant to poor soil conditions** might see higher participation from women.

Labor-intensity/ degree of mechanization of value-chain

Crops that require a **high degree of manual labor for planting, maintenance, harvesting, and processing** often see greater participation from women. Relatedly, as sectors become more mechanized, there is often a **shift towards male labor** if women do not have equal access to training and resources to operate the relevant machinery.

Access to market

In addition to gender biases in market systems, and access to resources, women's ability to access the market and economically benefit from it is influenced by these value-chain characteristics:

- **Prevalence of subsistence farming vs. commercial farming in value chain**: Women tend to be more involved in subsistence farming. As crops become more commercialized, women may be marginalized from the more profitable segments of the value chain unless there are concerted efforts to include them
- **% destined for local vs. global markets**: Crops destined for local markets are more likely to have higher participation from women in selling and processing activities, whereas crops aimed at global markets are more likely to see women participating in the initial production stages but less in the trading and export activities.

Source: FAO, Sagana analysis

THE 2X CRITERIA PROVIDE A CLEAR AND STANDARDIZED FRAMEWORK FOR INVESTING IN COMPANIES WITH A GENDER LENS

The 2X Criteria challenge aims to **drive investment in women**. Investments align with the 2X Criteria if they meet basic 2X ESG and minimum Governance and Accountability requirements, **and** (a) meet at least one of the six 2X Criteria (see below) and (b) provide a time-bound commitment to meeting one additional criteria. Most thresholds are **country** and **sector specific**. [1]

Gender lens approach outlined by 2X Global (2024)

Focus in this report's gender analyses & case studies

1. Entrepreneurship & Ownership

Goal:
- Expand opportunities for women entrepreneurs and business owners through access to finance
- Promote women entrepreneurs and business owners

2. Leadership

Goal:
- Promote equal opportunity and corporate diversity
- Promote women business leaders

3. Employment

Goal:
- Drive gender diversity; Improve women's access to quality work opportunities
- Support women's development and career advancement

4. Supply Chain

Goal:
- Enhance supplier diversity
- Empower businesses that are owned, led or founded by women, or businesses that provide women with decent work opportunities

5. Products & Services

Goal:
- Give women access to products and services that enhance their well-being, and/or drive gender equality

6. Via a financial intermediary

Goal:
- Indirectly support businesses that are women-owned, -led or –founded, that provide decent work opportunities, or design products and services that enhance women's well-being

Basic 2X ESG (to ensure fundamental environmental and social standards are met)

Governance & Accountability (to ensure intentionality)

Source: 1. 2X website and 2X Criteria Reference Guide.

SEVERAL COMPANIES IN THE 6 VALUE CHAINS SHOW GENDER IMPACT OR GENDER IMPACT POTENTIAL ALONG 2X THEMES

Theme		Investor approach and examples
1.	**Entrepreneurship & Ownership**	• This approach involves finding companies that are founded or owned by women. To meet this 2X criteria, women must hold at least 51% ownership, or the founders must be at least 50% women. • The companies we highlight in our 9 case studies are not founded or owned by women. However, there are examples in these value chains, such as Cashew Coast, in Côte d'Ivoire, co-founded by two women, which sources and processes local cashew kernels, and Animall, in India, co-founded by a team of four including two women, an online platform for trading cattle for dairy farming.
2.	**Leadership**	• This approach involves finding companies that have a significant percentage of female leadership. To meet this 2X criteria, the percentage of senior management who are women must be at least 30% but may be higher depending on the country and industry, OR women must make up at least 30% of the board. • For example, at **AquaFoods**, an aquaculture company based in Costa Rica that farms tilapia and snapper, two members of their four-person leadership team (50%) are women (in line with the 50% 2X threshold for agribusiness & food SMEs in Costa Rica).
3.	**Employment**	• This approach involves finding companies where women represent at least 25% of employees although it may be higher depending on the country and industry, AND that have at least one 'quality' indicator beyond compliance, for example, Gender Wage Equity. • For example, at **Hatch Africa**, a global company that distributes day-old chicks across 6 countries in Sub-Saharan Africa, 40% of their employees are women, although this % is an average and the company might not fulfill the 2X criteria in every country in which it operates.
4.	**Supply chain**	• This approach involves finding companies that have a strategic commitment to women in the supply chain AND that have at least one 'quality' indicator beyond compliance, for example regularly collecting metrics on their suppliers that are women-owned / women-led. • For example, **S4S Technologies**, an India-based platform providing industrial kitchens and packaged food companies with shelf-stable, nutritious, and convenient foods, integrates primarily micro-enterprises led by women into its supply chain.

Xxx: Company case study available upon request

Note: A company may show gender impact or impact for gender potential in one of the four categories above without checking all boxes to be 2X-eligible.

Source: 2X website, company websites, Sagana analysis

INCORPORATING A GENDER LENS IN AGRI INVESTMENT OPPORTUNITIES CAN YIELD ECONOMIC AND SOCIAL RETURNS

Opportunities for investing with a gender lens and potential impact along the value chain

	Input supply	Production	Handling, storage & transport	Processing	Distribution/ Retail
Type of companies in which to invest with a gender lens	• Input service providers • Agricultural service providers	• Companies employing or working with farmers/ producers	• Companies involved in the logistics of handling, storing and transporting food goods	• Companies involved in the processing of food goods	• Companies involved in distributing food goods
Potential economic and social impact	• Increases likelihood of high yields or productivity, implying better quality of the product and/or ability to sell at a premium, as well as increased resistance to climate change or other shocks • Can ensure women and men have equal access to inputs and training that enable them to (1) participate in food value chains and (2) achieve better yields	• Can ensure that women benefit more from their participation in a given value chain, especially in value chains where they participate but where their participation is either not quantified/ recognized, or in value chains where they participate but do not reap economic benefits from it	• Supports companies in improving their logistics, increasing their volumes and reducing waste • Can ensure that women have better access to storage technologies in particular for perishable, nutritious food • Purchasing from female farmers positively impacts them and reduces their post-harvest losses	• Supports companies in improving their processing capabilities, including the volume of product they can process • Can ensure that women remain or become more involved and are able to benefit from the higher margins they can derive from value addition linked to food processing or food fortification	• Supports women's access to relevant retailers • Can enable women to obtain a higher selling price for their product, and/or established contract with retailers

Source: ICRW website on Agriculture,, Sagana analysis

IN THE VALUE CHAINS WE CONSIDER, THERE ARE SEVERAL AREAS WHERE INVESTORS CAN HAVE HIGH GENDER IMPACT

Value chain	Geogr.	Where gender-lens investment can have the most impact (not exhaustive)
Cashew nuts	Sub-Saharan Africa	• **Employment:** Because there is an opportunity to **invest in local processing facilities** and women play a dominant role in cashew nut processing, investors have an opportunity **to ensure that women's needs in factories are particularly taken into account**
Poultry	Sub-Saharan Africa	• **Employment**: Because women are prevalent in the smallholder poultry value chain but are often left out from more professionalized poultry farming, investors have an opportunity to **incentivize companies to increase their women employees** • **Supply chain:** In input businesses selling to farmers, there is an opportunity to **ensure that women and men have equal access to inputs and training**
Quinoa	Latin America	• **Supply chain**: Given the fragmentation of the value chain, there is an opportunity to **ensure that the strengthening of supply chain goes hand-in-hand with the inclusion of women**, and that they **equally benefit from improved inputs and services**
Aquaculture	Latin America	• **Employment:** There is an opportunity to **increase the number of women in production** and **improve the employment conditions of women in processing**, including creating safer spaces for women in the value chain
Tomatoes	South Asia	• **Supply chain**: Women play a **significant role in tomato cultivation and processing** and investors can incentivize their investees to incorporate more inclusive supply chain policies and practices that recognize the role of women
Dairy	South Asia	• **Supply chain**: Women play a **significant role in dairy production**, and there is an opportunity for investors to invest in companies that are intentionally building inclusive supply chains

Women entrepreneurship & ownership and **Women leadership**: There is an opportunity for investors to incentivize these aspects in companies across the value chains.

IN MOST CASES, INVESTMENT IN AND OF ITSELF WILL NOT "SOLVE" GENDER ISSUES; FURTHER MEASURES ARE NEEDED

- Even once a deal with a gender potential has been identified, the investment in and of itself is often not enough to ensure that women are positively impacted.
- Integrating gender tools and processes into investors' existing investment processes is key (See illustration below).
- In particular, identifying and tracking **relevant gender metrics and integrating them into investors' Impact Measurement and Management processes**, as well as **integrating gender sensitivity into the value-creation** provided to portfolio companies, are both key to ensure that an investment has the intended gender impact.
- At the portfolio company level, **investor support** can include gender assessments and gender action plans (GAP) to identify areas to prioritize for gender action, the identification of opportunities to strengthen company supply chains by integrating gender, workplace equity and diversity actions, gender awareness trainings, etc.

Illustrative list of processes and tools investors can use to integrate gender-smart practices

Investment strategy	Deal sourcing	Screening, evaluation, execution and terms	Portfolio Management
• Weave gender integration into existing investment thesis through **identification of 2X aligned metrics** and **right-sized gender commitments**	• Identify and **track relevant gender metrics** • Review existing networks for gender biases; Identify new networks to **enhance sourcing of women-led companies**	• Include **gender** in **team assessment** • Select and **integrate key questions and KPIs** into screening • Work on the screening, diligence and investment evaluation processes to **mitigate any unconscious bias or other hurdles** to screening women-led or co-led businesses, or businesses that provide products and services to women (access, affordability, choice), or businesses that rely on women as suppliers • Strengthen screening and evaluation process by **designing customized and sector-specific gender-smart frameworks and tools,** integrating them within existing processes	• **Integrate relevant gender-smart metrics** into Impact Measurement and Management (IMM) • **Analyze portfolio data;** Identify industry benchmarks and **compare** with portfolio companies • **Integrate gender sensitivity into value-creation** provided to portfolio companies; Provide mentorship, training, etc.

Source: Sagana's Gender approach for fund managers

Company case studies available upon request to GAIN (rbove@gainhealth.org)

IN OUR CASE STUDIES (AVAILABLE UPON REQUEST), WE HIGHLIGHT A PORTFOLIO OF NINE COMPANIES: OVERVIEW

Value chain	Company	Country	Description
Cashew nuts	Cajou Espoir	Togo	Togo's largest processor of raw cashew nuts (RCN), with a strong focus on sustainable practices.
Poultry	Hatch Africa	Global (Multiple)	A leading distributor of high-quality, resilient day-old chicks to smallholder farmers in Sub-Saharan Africa.
Quinoa	Olam Agri	Global (Case study on Peru)	The superfoods division of Olam Agri, an operating group of the Olam Group, a global leader in food, feed and fiber, is the largest organic quinoa and chia supply chain partner in Peru.
Aquaculture	Omega Azul	Mexico	A Baja California based sustainable aquaculture company that produces a native yellowtail (kanpachi).
	AquaFoods	Costa Rica	A leader in Central America in the sustainable aquaculture of rose snapper and tilapia.
Tomatoes	Sahyadri Farms	India	A farmer-owned company that is a leading player of the fruit and vegetable sector in India.
	S4S Technologies	India	A decentralized platform providing shelf-stable, nutritious, and convenient foods to industrial kitchens and packaged food companies.
Dairy	Akshayakalpa	India	India's largest certified organic dairy enterprise, delivering milk and milk products across 2 major cities.
	Sid's Farm	India	A processor and distributor of milk and dairy products, purchasing milk directly from farmers, delivering to customers' doorsteps.

Source: Company websites

Note: Further analysis and due diligence would be required before any investment decision is taken, and the report and case studies are neither an investment recommendation nor an endorsement.

GENDER IMPACT ANALYSIS

WE HIGHLIGHT 6 VALUE CHAINS: SUMMARY

Value chain	Geography	Key points on value chain with gender lens	Implications for investment opportunities
Cashew nuts	Sub-Saharan Africa	• Africa is the world's largest producer of raw cashew nuts. • Only 10% of processing in Sub-Saharan Africa is done locally; Women play a dominant role in the shelling and sorting of cashews, which is done manually. • There are strong policy incentives towards greater processing facilities on the continent.	• There is an opportunity to invest in increased processing facilities to ensure value addition is done locally. • As the industry is transformed, it is important women benefit from increased mechanization and reap these economic gains.
Poultry	Sub-Saharan Africa	• Poultry systems in Sub-Saharan Africa are dominated by subsistence farming. • Women are prevalent in the poultry value chain but are often left out from opportunities to benefit from its economic gains. • Access to nutritious animal feed, improved breeds and health services are key challenges.	• Opportunities exist to support the professionalization of poultry farming and ensure gender equity in the process. • These mostly revolve around production and processing.
Quinoa	Latin America	• Quinoa's 'superfood' status has driven exports in the last decade. • Small-scale farming dominates quinoa production; Cooperatives are key for women to benefit from the export boom.	• There are few SMEs involved in quinoa production. • There may be some investment opportunities in processing and exporting, but efforts to proactively include women will be key.
Aquaculture	Latin America	• LatAm's aquaculture sector has significant growth potential but environmental sustainability is a key concern. • Women are underrepresented in the value chain (though more involved in processing than production).	• Investment opportunities may exist at the intersection of aquaculture, sustainability and ocean health. • Women could play a role in the transition towards sustainable aquaculture.
Tomatoes	South Asia	• South Asia has a high tomato production, with India being the world's second largest producer. The vast majority of tomatoes produced in India are intended for sale in the domestic market • The value chain is threatened by changing climate and limited storage and transportation infrastructure. • Women play a key role in tomato cultivation and processing but have limited control over resources.	• Given the perishable nature, high input requirements and high involvement of women in the value chain, there are ample opportunities for investments that bolster production, improve farm-to-market linkages and enable processing, and reduce food losses.
Dairy	South Asia	• India is the largest milk producer and consumer in the world • ~80% of the milk produced in South Asia comes from small scale and landless farms. Small holder farmers obtain about half of their income from livestock. • Women make up 75% of the workforce within the dairy industry.	• Dairy co-op models, that source milk from farmers, and process it into milk and milk products. • Investors should not assume bigger is better for meeting consumer demand. Instead, they can support smallholder dairy enterprises to sustainably meet growing needs.

Source: Desk research; Sagana analysis

AFRICA IS THE WORLD'S LARGEST PRODUCER OF RAW CASHEW NUTS

Overview of the value chain

- The global production of Raw Cashew Nuts has risen sharply in the last decade, representing around 5 million tons of in 2022[1].
- Africa is the world's **largest producer of Raw Cashew Nuts**, contributing 60% of world production. **Côte d'Ivoire** is the world's leading producer (about 1 million tons of crop output), and **Tanzania** is the leading producer in East Africa (220,000 tons). Smaller countries, too, contribute to the region's cashew nut production.
- Cashew kernels are the main product derived from cashew nuts, but **only 10% of cashews are currently processed locally into cashew kernels**. Most are sent to Vietnam and India for processing.
- There are increased governmental efforts to **promote the local processing of cashews given the economic opportunity this represents**, for example via subsidies offered in Côte d'Ivoire on exported kernels, and Benin's decision by Presidential decree not to export raw cashew nuts from 2024 onwards, resulting in the multiplication of cashew processing plants in the country.
- The main challenges to solve for the cashew value chain's further development in Africa are related to **infrastructure**, **high production/ conversion costs**, **costly access to financial capital** and the **upcycling of cashew nut by-products** (namely, the shell and the apple, which are largely ignored currently). In addition, the speculative nature of the sector implies that prices of raw cashew nuts are very volatile.
- Over **2 million women** are involved in the cashew value chain in Africa.[2]

Key statistics

80%+
of the labor force collecting raw cashews on farms in Africa are women[3]

<13%
of cashew nut farms are owned by women[3]

80%+
of the workforce in cashew processing units are women[3]

<5%
of cashew processing units are owned by women[3]

10%
of raw cashew nuts are currently processed locally

Source: Desk research; 1. Chelmer Foods (2023); African Cashew Alliance (2022), Perspectives on Cashew in Africa; 2. Technoserve website, Prosper Cashew; 3. ComCashew, Women Leaders in Cashew Value Chain

WOMEN PLAY A DOMINANT ROLE IN SHELLING AND SORTING, WHICH IS PRIMARILY DONE MANUALLY

Geographic-specific considerations		Value chain-specific considerations	
Overarching cultural norms	• From a cultural norm perspective, the cashew nut value chain is not typically viewed as a "male-only" chain or a "female-only" chain like other value chains can be. • Women are involved in different levels of the value chain, both in production and in processing, but the **division of labor is gendered**. Men typically engage in land clearing, land preparation and soil collection, while women plant, weed, and engage in harvest and post-harvest activities. Women typically dominate in nursery management and cashew processing, including sorting, peeling, roasting, grading and packaging.[4] • Some of the processing activities in the value chain that are done by hand are considered "feminine" because they are typically manual and require patience.[1]	**Input requirements of value chain**	• Cashew cultivation **does not require as many inputs** as some other crops. In particular, cashew trees are known for their resilience and ability to survive and thrive in dry conditions and high temperatures without special inputs. • The land area required for cashew nut cultivation is not as large as for other crops. Smallholder farmers often cultivate cashew trees alongside/ intercropped with other crops. • However, the issue of land ownership and the capital required for processing cashews are limiting factors for women to economically benefit in the value chain given the gender-based constraints to accessing these resources.
Access to resources	• Women in the cashew nut value chain **face barriers to accessing land, credit and agricultural inputs**. • In particular, although women are active in the processing of cashews, **it is rare for women to own their own processing units**. A Prosper Cashew assessment[3] of the sector in West Africa highlights that while some women may own smaller processing units, the number of female owners of processing units with a yearly capacity over 5,000 tons is small, and that when they do exist, the women have inherited the company from a relative or work with their husbands.	**Labor-intensity/ degree of mechaniza-tion of value-chain**	• A distinguishing factor of the cashew value chain is its **highly labor-intensive nature**. • In production, women are active in **harvest and post-harvest activities**, such as the separation of nuts from apples and the transportation from farm to village. We note that production activities are seasonal, as the harvest period lasts about 4 months. • In processing, the shelling and sorting of the cashew nuts are predominantly **done by hand**. This leads to high participation of women, albeit rarely in managerial positions. • As mechanization increases, there could be a shift that marginalizes women unless there are concerted efforts to provide them with the necessary training and resources.
Access to education & training	• There is a **gap in access to agricultural education and training** for women. Training focused on improving agricultural practices, processing techniques, and business skills can help women move up the value chain, but such opportunities are limited.	**Access to market**	• Cashew nuts in Africa are **primarily a commercial crop**, with 90% of cashews currently destined for export. Women's involvement tends to be more in the initial processing rather than in decision-making roles or in direct export activities, which are more profitable. • Developing local processing capabilities would benefit women working in the value chain.

Source: Desk research; 1. GIZ (2012), Gender Transformation in the Cashew Value Chain; 2. TechnoServe (2021), Planting Gender Equality in the Benin Cashew Value Chain.; 3. TechnoServe (2022), Prosper Cashew Project ;

THERE IS AN OPPORTUNITY TO INVEST IN INCREASED PROCESSING FACILITIES TO ENSURE VALUE ADDITION IS DONE LOCALLY

Implications on types of investment opportunities that would benefit women in the value chain

- Given that (i) women tend to be involved in processing, (ii) developing local processing capability adds value to the raw cashews, while at the same time decreasing exposure to price swings in the commodity markets, and (iii) African government are actively taking measures to encourage local processing, investments in local processors represent opportunity that would particularly benefit women in the value chain. The African Cashew Alliance estimates that increasing processing capacity in Africa would generate USD 280 m in added value and create 250,000 new jobs, especially benefiting women in rural areas.[1]
- There are initiatives such as Prosper Cashew, funded by the US Department of Agriculture (USDA), launched in October 2020 and meant to be implemented over 2020-2025, whose objective is to catalyze the local cashew processing sector in West Africa and increase cashew processing capacity to 50% of its total production volume in Côte d'Ivoire, Ghana and Nigeria.
- Challenges to local processing include the price volatility of raw cashew nuts and processors' lack of visibility on final demand for their processed product. As a result, securing enough raw cashew nuts to run their processing facilities at full capacity is a key challenge. One way for local processors to differentiate themselves and increase their margins is to obtain organic and/or fair trade certifications. For example, **Cajou Espoir**, a local processor in Togo, states that the premium for organic and fair trade cashew kernels is at least 25% compared to conventional kernels. For that reason, the company has completely transitioned to organic sourcing.
- Some of the larger processors are vertically integrated and secure their nut supply by operating their own plantations, in addition to sourcing from small-scale producers. For example, **Kenya Nut Company**, a family-run business operating in the nut production sector since 1974 (including both macadamia and cashew) and a nut processor leader in Kenya, is involved in both the cultivation and processing of nuts. The company received a USD 18.7m loan from Proparco in 2020.[2] **Jungle Nuts**, also in Kenya, sources and processes a variety of nuts (macadamia and cashew) and dried fruits locally from over 30,000 smallholder farmers.
- A number of smaller processing companies are likely to require funding to further develop their operations. Examples include **Cashew Coast** in Côte d'Ivoire, a woman-founded local processor founded in 2018 committed to building a sustainable cashew value chain, sourcing from over 7,000 farmers; and **YYTZ Agro-Processing** in Tanzania, a local processor founded in 2016, which sources from over 4,700 smallholder farmers and women's groups.
- Investment opportunities may also exist in the processing of cashew apples, which usually become waste once cashews are harvested. However, processing of cashew apples is operationally complicated, as they are highly perishable and start spoiling within two days of being harvested, and thus require prompt handling and adequate short-term storage and refrigeration facilities to ensure they can be processed. The main by-products of cashew apples are juice, jam and alcoholic beverages.

Source: Desk research; 1. African Cashew Alliance (2022), Invest in Africa: Cashew; 2. Proparco website

POULTRY SYSTEMS IN SUB-SAHARAN AFRICA ARE DOMINATED BY SUBSISTENCE FARMING

Overview of the value chain

- World poultry meat production increased from **9 to 133 million tons** between 1961 and 2020, and egg production from **15 to 93 million tons** (FAO).
- Poultry production includes a **range of actors**, from **small family farmers focused on livelihood and/or local markets** that sell their outputs to informal trading networks, to **larger-scale industrialized enterprises** that are integrated in global value chains. The former supply mainly local markets, while the latter supply populations that live far from production sites. In developing countries, **80% of rural households raise poultry**.
- Small-scale, rural poultry systems are an **important source of income in Sub-Saharan Africa**, particularly for women. In addition, poultry production is linked to food security and better nutrition.
- The main challenges in the poultry value chain's development in Sub-Saharan Africa are (i) insufficient access to **affordable and nutritious animal feed**; (ii) limited access to **improved poultry breeds** and limited access to quality day-old chicks; (iii) limited access to **poultry health services** (e.g., vaccines and other drugs); (iv) **poor infrastructure** in smallholder farms (e.g., animal sheds); (iv) inadequate processing facilities infrastructure; and (v) **limited links to connect** small farmers, feed producers, animal processing facilities, and markets.
- Relatedly, other challenges are capital-related, including the low market price for animal products vs. the cost of inputs, and the high cost of capital limiting smallholder farmers' ability to participate in the value chain.

Key statistics

80%+

Of rural households in developing countries raise poultry

57%

of women in Nigeria that were given the choice of which value chain to enter from among 11 value chains (as part of an agrobusiness program), chose to enter poultry[4]

In Kenya, women account for

70%

of the poultry farming industry, and are particularly involved in care giving[3]

In Tanzania, female-headed households have herds that are

2/3

of the size of male-headed households[2]

Source: Desk research; 1. FAO website, The Poultry Chain; FAO (2023), "Small livestock development in Rwanda: Policy analysis of pig and poultry value chains"; 2. FAO, Poultry sector review: Tanzania 3. According to 2009 research provided by Census, in Poultry News; 4. World Bank (2021), Occupational Sex Segregation in Agriculture;

WOMEN ARE PREVALENT IN POULTRY DUE TO LOW ENTRY BARRIERS BUT ARE OFTEN LEFT OUT FROM ECONOMIC GAINS

Geographic-specific considerations		Value chain-specific considerations	
Overarching cultural norms	• From a cultural norm perspective, the poultry value chain is considered a value chain where women are particularly active. • Small family poultry production is a **key source of income for poor, rural households in Sub-Saharan Africa** and often supplements other livelihood activities. • Women are usually responsible for family poultry production, as **family poultry keeping** is viewed as **compatible with other household responsibilities**. • Poultry producing is frequently considered a domestic activity and an insurance in case of need, rather than a commercial activity[2].	**Input requirements of value chain**	• **Little initial investment** is required for **family-scale poultry**. production, and it generates quick returns, making it particularly attractive for women in rural areas. • However, in order for these operations to be more productive and/or for **more intensive/larger-scale poultry production, more and better inputs** are required, including access to **affordable and nutritious animal feed**, access to **improved breeds/ day-old chicks**, as well as access to **vaccines/ veterinary services** to raise heathy flocks/ produce healthy eggs. Ensuring better training of women/ access to inputs could increase their involvement in larger-scale production operations.
Access to resources	• Women in Sub-Saharan Africa face barriers linked to accessing **land, inputs** and **capital**. In addition, women are particularly constrained in their ability to **sell their products** due to restrictions that limit their access to markets where meat is sold and their interactions with male traders[1]. • There is a clear **gender gap in poultry ownership** (women own smaller flocks) and **access to poultry services** (veterinary services, agricultural extension services), as highlighted by a 2023 Burkina Faso study[1].	**Labor-intensity/ degree of mechaniza-tion of value-chain**	• Mechanization in the poultry value chain varies depending on the scales of operations and access to technology. While mechanization is increasing, smaller-scale and informal processing units rely on **manual labor and simple mechanical processing equipment**. As a result, women are heavily involved in the processing of poultry. • In many rural areas, small-scale poultry processing units are common, often operated by women or small family businesses. Their tasks include slaughtering, evisceration, cleaning and packaging, and some value-added activities such as marinating, smoking, or transforming to other processed poultry products. There is also a **significant informal sector** involved in poultry processing.
Access to education & training	• **Increasing the number of women that are trained in animal health practices** (e.g., vaccination, treatment against parasites and diseases, etc.) is key to contribute to reducing disease incidence and improve the quality of the meat being produced. For example, SELEVER2, a 6-year program funded by the Bill & Melinda Gates Foundation to improve the nutritional status of women and children in Burkina Faso by strengthening women involvement in poultry, has a strong education component to educate communities around poultry farming, the prevention of poultry illnesses and the training of vaccinators[3].	**Access to market**	• Poultry production in Sub-Saharan Africa is mainly viewed as a **subsistence activity** to diversify income (and rely less on crops that may be subject to bad harvests). • It is **geared towards domestic consumption** rather than meant to be exported. As a result, it is less lucrative than some other value chains, which also explains women's high involvement. • There are **inadequate links between small farmers, processing facilities and markets**, a challenge that is exacerbated for women.

Source: Desk research; 1. Journal of Rural Studies (2023); 2. Tanager (2016), Gender analysis Report Selever Project Burkina Faso; 3. Tanager website

OPPORTUNITIES EXIST TO SUPPORT THE PROFESSIONALIZATION OF POULTRY FARMING AND ENSURE GENDER EQUITY IN THE PROCESS

Implications on types of investment opportunities that would benefit women in the value chain

- A key differentiator for poultry-related businesses in Sub-Saharan Africa is the **health and resilience of birds**. As a result, many of the most promising investment opportunities are related to **inputs**. Better access to inputs can **help women access a more industrial way of farming poultry**, e.g., by enabling better access to key inputs such as animal feeds, vaccines or better breeds of poultry.
- For example, **Hatch Africa** (see Case Study) is a leading distributor of high-quality day-old chicks to smallholder farmers in Sub-Saharan Africa. Since starting its operations in Ethiopia as Ethiochicken, the group has expanded across Sub-Saharan Africa and operates under 3 brands in 6 countries. The company distributes a breed of birds that is more resilient than local birds and that converts feed into meat and eggs more efficiently, thus resulting in higher profits for the smallholder farmers who raise them. Hatch's objective is to increase the number of day-old-chicks it sells from 45m to 340m by 2030.
- Other examples of SMEs in the space include **Silverlands**, a producer of day-old-chick and poultry feed production in Tanzania, and **Amo Farm**, a producer of day-old chicks in Nigeria. Both of these businesses have been supported by a technical assistance mechanism, IGNITE, to incorporate gender and nutrition perspectives in their poultry businesses. **Brentec Vaccine** is an example of a Uganda-based pharmaceutical company that develops health solutions for livestock.
- Feed mills, feed distribution networks, processing facilities and cold chains for poultry are also opportunities that could benefit smallholder farmers and women particularly, assuming the investment is made with a gender lens.

Source: Desk research; 1. Tanager website

MOST QUINOA GLOBALLY IS GROWN IN THE ANDEAN REGION; ITS ‘SUPERFOOD’ STATUS HAS DRIVEN EXPORTS IN THE LAST DECADE

Overview of the value chain

- Global production of quinoa represented 159,000 metric tons in 2022. It is grown primarily in the **Andean regions** of South America, Peru being the leading quinoa producer (71% of global production), followed by Bolivia (28%) and Ecuador (<1%).[1]
- Quinoa is a **key staple of the region’s diet**. It is protein-rich, high in vitamins and fibers and low in fat, and was named by FAO as one of the “most promising” crops for humanity – 2013 was named by FAO as the Year of the Quinoa, and it is known as a “superfood”.
- As a result, its popularity in high-income markets exploded and **production and export of quinoa have grown exponentially**. A number of programs have been put in place to ensure local consumption of the crop can continue. While 66% of Peruvian quinoa was exported in 2017, that number had decreased to 42% in 2022, as a result of falling prices and greater local demand.[2]
- A large proportion of quinoa is produced using **traditional farming methods**. Similarly, much of the processing of quinoa is done manually. However, there is a **growing trend towards mechanization**. This is increasingly encouraged by the government to increase small and medium farmers’ productivity and yield.
- Most of the larger companies in the sector are exporters.

Key statistics

71%
of quinoa is produced in Peru

Majority
of quinoa producers are “family farmers” in Peru

~40%
Of farmers in Peru are women

Source: Desk research; 1. Statista; 2. Peruvian Ministry of Agriculture, Pronóstico de producción de quinua al 2023;

SMALL-SCALE FARMING DOMINATES QUINOA PRODUCTION; COOPERATIVES KEY FOR WOMEN TO BENEFIT FROM EXPORT BOOM

Geographic-specific considerations		Value chain-specific considerations	
Overarching cultural norms	• Quinoa is a key staple of Andean communities' diet and women have traditionally been responsible for tasks related to food production, processing and cooking. • In the rural regions where quinoa is grown, the "ayni" system, which emphasizes the idea of reciprocal exchange and living in harmony without exploiting anything or anyone, allows quinoa farmers to help one another with agricultural tasks on an informal basis, promoting community resilience. Unequal access to resources and other gender constraints may limit women's ability to participate in labor exchange activities that would allow them to benefit from the system.	**Input requirements of value chain**	• The main inputs requirements for the cultivation of quinoa is **high-quality seeds** and **land**. • Compared to other crops, **relatively few inputs are required**, as quinoa is relatively pest and disease-resistant, and can adapt to diverse environmental conditions (including draughts or in areas where water is limited, or in soil that are not rich in nutrients). This makes it particularly advantageous for women.
Access to resources	• Women in rural Andean communities face challenges in **accessing resources such as land, seeds and credit**, which can constrain their participation in the value chain, particularly in decision-making positions or in higher-value activities.	**Labor-intensity/ degree of mechaniza-tion of value-chain**	• The quinoa value chain is characterized by **little mechanization**. Production is overwhelmingly done using "traditional" production techniques, and is therefore quite labor intensive. • Women are very involved at the processing level, which is **usually done manually** at the farm level and is time-intensive. This includes drying out the quinoa after harvesting, threshing it, and rinsing the seeds to remove its saponin layer. However, there is a **growing trend towards mechanization of these processes** to satisfy increasing demand for quinoa (e.g., mechanical threshers, winnowers, de-saponification machines, etc.). This could result in fewer women in the value chain if efforts are not done to support them to access the right resources and training. • Quinoa can also be further transformed into other products such as quinoa flour, flakes, or other snacks, before distribution. This is something that the Peruvian and Bolivian governments are pushing, as this is an opportunity to obtain higher prices.
Access to education & training	• Women in the quinoa value chain have **limited access to training and extensions services**, including in **post-harvest handling**, **processing techniques** and **entrepreneurship**.. • A successful Andean Grains Program (a joint ILO-FAO-UNESCO initiative) improved women's livelihoods by training women on seed selection based on market demand[2]. Prior to the training, "we sowed without knowing the types of seed, but now we know the properties of each one and its benefits," says a program participant.[2]	**Access to market**	• The value-chain as a whole is **export-oriented** since the quinoa boom of the last ten years • There are few companies/ SMEs in the production of quinoa, as the majority of quinoa is produced by farmers. **Cooperatives can help farmers, and in particular women**, be more connected to the export market and negotiate better prices • Initiatives that can improve women's access to market information, access to credit and improve their value-added opportunities would improve women's participation in the value chain.

Source: Desk research; 1. FAO (2016), Género y Sistemas Agroalimentarios sostenibles; 2. ILO (2017), How Peruvian quinoa farmers have boosted their income

THERE MAY BE SOME INVESTMENT OPPORTUNITIES IN PROCESSING AND EXPORTING; EFFORTS TO INCLUDE WOMEN WILL BE KEY

Implications on types of investment opportunities that would benefit women in the value chain

- Given the structure of the value chain and the prevalence of smallholder farmers in the grain's production, most investment opportunities will be further down along the value chain, i.e., in processing and exporting.
- Examples of SMEs in the space include **Wiraccocha**, a Peruvian family business founded in 2008, specialized in the production, processing and marketing of Andean grains, including organic quinoa. The company works with over 1,440 smallholder famers in 168 Andean communities. In Bolivia, **Jacha Inti Industrial** is a processor and exporter of Bolivian Royal Quinoa also founded in 2008, which sources from 169 farms. **SINDAN**, a Bolivian exporter of quinoa, was a 2021 investee of Incofin's Fairtrade Access Fund.[1] However, the scale of these businesses is still relatively small. In addition, smaller businesses are highly susceptible to the volatility of quinoa prices. This has generally deterred commercial investors.
- The highly fragmented nature of the market implies that a key challenge is to create a sustainable supply chain enabling the product to get to market. In addition, because most quinoa is grown in Bolivia and Peru, if anything goes wrong in the supply chain, availability of the grain becomes volatile. Therefore, building a stable supply chain stable is crucial to ensure the supply of quinoa to export markets. This is the challenge that **Olam Agri** has set out to tackle. Since launching its Superfoods division seven years ago, Olam Agri is now the largest organic quinoa and chia supply chain partner in Peru; It is vertically integrated and differentiates its business by working directly with over 2,500 smallholder farmers.
- There are opportunities to empower women in the value chain, including by providing training services to women farmers for better yields, especially in the organic quinoa space, which command greater prices.

Source: Desk research, Sagana analysis; 1. Incofin 2021 press release

LATAM'S AQUACULTURE SECTOR HAS SIGNIFICANT GROWTH POTENTIAL BUT ENVIRONMENTAL SUSTAINABILITY IS A KEY CONCERN

Overview of the value chain

- Global aquaculture production of animals represented 87.5 million tons in 2020, of which 4.3% were produced in Latin America.[1]
- Latin America's aquaculture sector is marked by its significant growth potential, with countries like **Chile, Ecuador, and Brazil** playing leading roles, especially in **salmon, tilapia and shrimp farming**. The industry benefits from the region's vast and biodiverse aquatic ecosystems, which support a **wide range of aquaculture activities**. Chile is world's fourth largest exporter of fish products, while Ecuador is the ninth[3].
- Opportunities in the sector include the **expansion of sustainable practices**, **diversification of species cultivated**, and **enhancement of value-added processing** to meet global seafood demand.
- However, the industry faces challenges such as **environmental sustainability concerns**, including the impact of aquaculture on local ecosystems and the need for effective disease management. Other risks include the vulnerability to global market fluctuations and the need for technological advancements to improve production efficiency and reduce costs.
- Women are increasingly recognized as key players in sustainable aquaculture in Latin America, although their roles and contributions have historically been underappreciated.

Key statistics

21%
Of the 58.5m people engaged in primary fisheries and aquaculture are women, globally[1]

15%
of full-time workers in the primary sector are women, globally[1]

50%
Of those in full-time employment in the processing sector are women, globally[1]

71%
Of those in part-time employment in the processing sector are women, globally[1]

Limited
Women's participation in tilapia farming operations (i.e., production) in Brazil[2]

50%-90%
Women's participation in the tilapia processing industry in Brazil[2]

Source: 1. FAO (2022), The State of World Fisheries and Aquaculture 2022; 2. FAO (2019), Social and Economic Performance of Tilapia Farming in Brazil; 3. Statista

WOMEN ARE UNDERREPRESENTED IN AQUACULTURE, DUE IN PART TO THE CAPITAL-INTENSIVE NATURE OF THE SECTOR

Geographic-specific considerations		Value chain-specific considerations	
Overarching cultural norms	• Traditional gender roles and cultural norms influence women's participation in the aquaculture value chain. • Women have traditionally been less involved in fishing and aquaculture, although an FAO study of women in the sector in Latin America highlights the "invisibilization" of women in the sector due to a lack of sex-disaggregated data[1]. This is true for both fish farming and the farming of other types of seafood, e.g., shrimp. • Women are mainly engaged in the lowest paid, informal jobs in the sector, requiring the least skills. • Women's participation in fishery organizations is low, as these organizations have traditionally been male dominated[1].	**Input requirements of value chain**	• Requirements for the aquaculture value chain are **quite input-heavy**, including **fish feed**, **fingerlings** (young fish), **equipment** and **technology**. This is even more true for high-value species such as salmon, shrimp or other shellfish, which require higher initial investment in broodstock/ fingerlings. Tilapia, on the other hand, is known for its relatively fast growth rates and more efficient feed conversion rates than other types of fish. They also tolerate a wider range of water quality parameters, meaning that water treatment equipment does not need to be as sophisticated. • Aquaculture farmers require adequate **aquaculture facilities** such as ponds, cages and tanks. While women are involved in small-scale and family-owned farms, they are less involved in larger fish farming operations, and their productivity/ economic benefits overall are limited by their limited access to these key resources.
Access to resources	• Women face barriers to accessing resources such as land, inputs and capital. There is a gender gap in the ownership and control of land and water bodies, as well as productive assets. • Studies also show a lack of access to credit to finance their aquaculture activities in the region, due in particular to a lack of financial products that match the needs of women in aquaculture.[1]	**Labor-intensity/ degree of mechaniza-tion of value-chain**	• The level of mechanization in the aquaculture value chain varies and is higher in production, which limits women's participation. • In addition, the physical nature of work on aquaculture farms limits women's participation. • Processing of farmed fish includes cleaning, gutting, freezing and packaging the fish at the most basic level; More value-added products include smoking, canning or food-preparing. **Women are active in the processing industry**.
Access to education & training	• Women's access to education and training is limited. A 2016 FAO study in Chile, Colombia, Paraguay and Peru highlights the limited training opportunities available to women in those countries, especially in artisanal fishing. While the study states that women in aquaculture have higher access to training than women in fisheries, there is still a gap.[1]	**Access to market**	• Aquaculture in Latin America is destined both to local consumption and export markets. • Efforts to strengthen women's market access, including improving transportation infrastructure and better market information, would help women benefit from the value chain more.

Source: Desk research; 1. FAO (2016), El Rol de la Mujer en la Pesca y la Acuicultura en Chile, Colombia, Paraguay y Perú;

INVESTMENT OPPORTUNITIES MAY EXIST AT THE INTERSECTION OF AQUACULTURE, SUSTAINABILITY AND OCEAN HEALTH

Implications on types of investment opportunities that would benefit women in the value chain

- Few aquaculture companies are likely to put gender at the center of their strategy. Investment opportunities that could benefit women in the value chain are more likely to lie with companies that view sustainable aquaculture as a priority, and that may be willing to consider working on increasing the number of women in their operations and leadership positions or adding gender as an impact area.
- In general, environmentally and financially sustainable aquaculture farms are more likely to be vertically integrated, given the possibility of better resource efficiency and traceability. We note that IFC invested in 2023 in **Omarsa**, a large shrimp producer, processor and exporter in Ecuador, and in **Industrial Pesquera Santa Priscila**, an integrated hatcher, processor and exporter of shrimp and tilapia, also in Ecuador, in 2022. **AquaFoods**, formerly known as Industrias Martec, is a sustainable aquaculture culture leader in Central America. Since 2022, it has large tilapia farming operations in addition to its native rose snapper farms. **Omega Azul** is a smaller company, based in Baja California, Mexico, focused on the sustainable aquaculture of native yellowtail.
- There may be opportunities for women to participate in aquaculture's transition to a more sustainable sector (See box below). We note that in early 2024, Conservation International Ventures and Hatch Blue, a fund focused on aquaculture, hosted the third edition of their Women in Aquaculture Innovation Studio, aiming to "develop more successful and innovative companies in ocean foods."[1]

What is the link between gender balanced teams and sustainability?

Women in leadership positions often emphasize sustainability more than their male counterparts. Studies have shown that companies with higher gender diversity in their boards or executive teams tend to have better sustainability performance.

- Participation of women in leadership roles is not (only) a matter of compliance with current regulations. Through their ability to monitor key social and environmental issues from a long-term perspective and their attention to the internal control systems, companies more effectively pursue their financial and nonfinancial aims.[2]
- Companies with greater gender diversity on their boards are significantly more likely to reduce energy consumption, greenhouse gas emissions, and water use. Specifically, these companies are 60% more likely to reduce energy intensity, 39% more likely to lower greenhouse gas emissions, and 46% more likely to decrease water use compared to companies with less gender diversity.[3]
- Research on global energy leaders showed that female leadership correlates with higher levels of carbon disclosure, indicating a stronger commitment to transparency and environmental responsibility. This study highlights that women on corporate boards play a crucial role in promoting sustainable practices within the energy sector, a significant contributor to global carbon emissions.[4]

Source: Desk Research; 1. Hatch Blue website; 2. Emerald Insight, 2023, A systemic literature review of studies on women at the top of form hierarchies ; 3. FP Analytics, 2020, Women As Levers of Change; 4. MDPI, 2023, The Effect of Women's Leadership on Carbon Disclose by the Top 100 Global Energy Leaders

INDIA DEMONSTRATES MARKET POTENTIAL FOR FRESH & PROCESSED TOMATOES; VALUE CHAIN AT RISK DUE TO CLIMATE & INFRASTRUCTURE

Overview of the value chain

The value chain demonstrates market potential

- Tomato is grown in nearly all South Asia countries, and as per 2021 FAO data, **India is the world's second largest tomato producer**, producing over 20m metric tons of tomatoes in 2021.[5]
- Further, in **India**, the demand **for processed tomato products has been growing at an annual rate of about 30%** over the last few years. Yet, a majority of tomatoes are sold fresh for domestic consumption, while only 1% are sold for processing. Further, India contributes to only 2% of global tomato exports.

Women play a predominant role in tomato cultivation and processing

- Women are traditionally the **predominant workforce in horticulture-based nurseries** in South Asia, including tomatoes. They **play a key role in the value chain**, with their contributions spanning cultivation, post-harvest handling, and sorting.
- Women also typically form the **bulk of the labor force in horticultural processing units,** and there is growing presence of such processing units and products within the tomato value chain.

The value chain faces the risk of changing climate as well as high perishability with limited storage and transportation infrastructure

- Increasingly, **climate change is impacting tomato production** through erratic weather patterns, extreme temperatures, unpredictable rainfall, and increase in pests. Droughts, floods, heatwaves, and storms can disrupt production cycles, reduce yields, and increase production costs.
- Additionally, the value chain faces the challenge of tomatoes being short duration and highly perishable, with a short shelf life and lack of adequate storage and transportation infrastructure in South Asian countries.

Key statistics

21m+
metric tons of tomatoes grown in South Asia[1]

30%
year-on-year increase in demand for processed tomato products in India[3]

95%
of all tomato cultivation in South Asia is done in India[2]

60%+
of the farm operations in vegetable cultivation is done by women, across South Asian countries[4]

<10%
of farms in India are owned by women

Source: 1. Statista (2021); 2. APSA Seed (2017); 3. GIZ (2016); 4. SEEA (2005); 5. FAO (2022)

WOMEN PLAY A KEY ROLE IN CULTIVATION AND PROCESSING

Geographic-specific considerations		Value chain-specific considerations	
Overarching cultural norms	• There is often a **clear division of labor along gender lines in the tomato value chain**. **Women take on a majority of the labor and drudgery-intensive roles** in tomato cultivation, including seed selection, nursery management, land preparation, weeding, harvesting, sorting, and grading, while men typically support with ploughing, pesticide application, use of farm equipment where required, and sales/marketing. • On the farm, women's **participation in decision-making** is limited, particularly in relation to resource allocation, crop management, and sales/marketing. • In South Asia, women also tend to **operate microenterprises that process tomatoes** into puree, ketchup, and pastes. • There is evidence that **women tend to lose control over the product as it moves from farm to market** and thereafter income. They are mostly employed for planting and harvesting, but almost never in commerce or transportation of the produce.	**Input requirements of value chain**	• **Tomato cultivation is input intensive**, and includes (i) pest-resilient varieties of seeds suited to changing climatic conditions (purchasing these hybrid seeds has increased input costs), (ii) fertilizers, (iii) pesticides, and (iv) irrigation systems. • **Changing climate conditions have made it harder to grow certain varieties of tomatoes**, and tomato cultivation now requires hybrid seeds/purchase of saplings from the market (previously farmers preserved and reused seeds). Owing to the nature of the crop and changing climates, there is also a higher need for adequate pest management. • In small pockets, **women farmers are seen to be playing a role in driving climate adaptive, biodiverse cultivation practices** for growing tomatoes, with recent examples seen in India.
Access to resources	• Women in South Asia tend to have **limited access to and control over resources such as credit, and new agricultural technologies**, which are largely controlled by men. • Additionally, with growing emphasis on commercialization of vegetables, women's access to resources has further declined. For instance, the use of hybrid seeds for higher yield has reduced the role of women in seed management. • **Land ownership is predominantly male-dominated**, which further limits women's access to and control over land for tomato cultivation and is a hindrance in accessing credit. • A **shift in women's role**, decision making and control over resources is seen **when they participate in self-help groups** or farmer-producer orgs within the value chain.	**Labor-intensity/ degree of mechaniza-tion of value-chain**	• Within the value chain, **labor is a crucial input at various stages,** from planting and tending to harvesting and processing tomatoes, and these labor-intensive roles typically tend to be taken up by women. • There is a **requirement for storage and warehousing facilities owing. to the short shelf-life of tomatoes**, and in the absence of these, there tends to be high post-harvest loss within the value chain (also resulting in price fluctuations). This also often requires smallholder farmers to sell off their crop immediately after harvesting.
Access to education & training	• Due to prevailing gender norms and division of labor, **men are more likely in South Asia to access trainings**, extension services and information sources.	**Access to market**	• The tomato value chain in South Asia is **fraught with fragmentation, price volatility, quality and quantity losses** and low levels of processing that result in low prices, distress sales and losses for farmers. • Women tend to have **limited control over large-scale sales/marketing but often tend to play a role in small-scale farm to market sales.**

INVESTMENTS THAT IMPROVE MARKET LINKAGE, SUPPLY CHAIN AND PROCESSING CAN IMPACT WOMEN WHILE SECURING THE VALUE CHAIN

Implications on types of investment opportunities that would benefit women in the value chain

- Viable investment opportunities that would benefit women in the tomato value chain are likely to be involved in horticulture value chains more broadly, rather than be solely focused on tomatoes.
- Given women's involvement in tomato cultivation, investment opportunities that would benefit women are likely to exist in agritechs that are building farmer-consumer or farmer-retailer or wholesaler market-places. In addition, given the high-input nature and high perishability of tomatoes, opportunities may exist for agri startups and SMEs that are strengthening farmer capacity (for instance, providing inputs or precision farming techniques), or providing infrastructure for storage, handling and transportation (which can also play a role in reducing the impacts of market volatility and post-harvest loss). Finally, opportunities may exist in tomato processing, given the growing demand for processed products and the high employment of women in such processing units.
- For example, **S4S Technologies** is a decentralized agri-processing platform in India that processes tomatoes and onion at the farm-gate, before labeling and supplying the produce to its B2B customer base. 100% of the farm-level processing is done by women micro-entrepreneurs. Another example is **Sahyadri Farms**, a farmer-owned company that provides fully technology-enabled and integrated value chain services for 8 horticultural crops, including tomatoes, across the pre-harvest and post-harvest stages.

Source: Desk research, Sagana analysis

WOMEN DRIVE SOUTH ASIA'S DAIRY SECTOR, THE LARGEST IN THE WORLD

Overview of the value chain

- **Smallholder dairy farmers are the main producers of milk in South Asia[1].** They rear dairy animals such as cows, buffaloes, goats and sheep. Dairy farming is prevalent in both rural and peri-urban areas, with varying degrees of intensification and management practices. While some farmers operate small-scale backyard and even landless systems, others may have semi-commercial or commercial operations.
- Dairy animals in the region are fed a combination of natural grazing, crop residues, green fodder, and supplementary feed. Feed and fodder production is a critical component of the diary value chain, and **efforts to improve feed quality and availability can enhance milk productivity and profitability for farmers.**
- About 46% of the milk produced is either consumed by producers or sold/bartered to non-producers in rural areas[5]. The remaining milk produced by small farmers, usually with 1-2 animals, is typically **sold to local cooperatives** which are a part of a system developed in the 1960's called the Anand model. Local farmers purchase a stake in their village dairy cooperative society (DCS). The DCS has collection points where milk is tested and brought to a District Union, owned by multiple DCSs. There, the milk is then processed. State Federations are then in charge of marketing the milk products[6]. Dairy farmers are paid at the end of each year based on the amount and quality of milk they've contributed.
- Recently, there has been a growing number of SMEs that have replicated this cooperative model, to source, process and label milk and milk products and sell these via various B2C channels.
- In spite of these models, SME dairy farmers continue to face challenges such as access to formal markets, milk aggregation, and access to quality inputs.

Key statistics

80%
Dairy production by smallholder farmers in South Asia[1]

70+%
Dairying work carried out by women in India[2]

24%
Global production of dairy produced in India[3]

Source: 1. IFAD (2023) 2. Government of India PIB (2023) 3. The Economic Times (2023) 4. USDA FAS (2023) 5. World Bank (2004) 6. National Dairy Development Board

WOMEN DO A MAJORITY OF LABOR INTENSIVE TASKS IN DAIRY. THIS IS OFTEN CONSIDERED AN EXTENSION OF DOMESTIC WORK

Geographic-specific considerations		Value chain-specific considerations	
Overarching cultural norms	• In rural areas, women often play a significant role in dairy farming. Women make up 71% of the agrifood system workforce in South Asia, compared to men who make up 47% [1].They are responsible for tasks such as milking, feeding, and care of cattle. Cultural norms regarding gender roles may influence the division of labor within dairy farming households. **Women are responsible for labor intensive tasks such as milking and animal care which are viewed as an extension of domestic work** rather than as part of business operations.	**Input requirements of value chain**	• **Accessing and utilizing financial capital** plays a crucial role in enhancing inclusive value chains. For small-scale farmers, it is essential to procure high-quality inputs (livestock, fodder, equipment). Small-scale dairy farmers in India do not have adequate access to the input credit, insurance, working capital, and asset procurement required to scale their operations.[5]
Access to resources	• **Increasing urbanization can negatively impact adequate access to water** which is crucial for dairy farming. Competition for water resources from agriculture, industry, and urban areas can pose challenges for dairy farmers, especially during dry seasons.[2] • **Limited access to modern technology and infrastructure**, such as refrigeration, transportation, and veterinary services can hinder the growth and productivity of the dairy industry in some areas. • Small-scale farmers have **limited access to credit** which can impede their ability to improve their operations and expand production. This is especially a problem for female farmers, as women already face discrimination when accessing financing[3]. Access to finance increases access to critical inputs that can unlock gains in productivity and income.[4]	**Labor-intensity/ degree of mechaniza-tion of value-chain**	• Dairy farming in South Asia is often **labor-intensive**, with manual tasks such as milking, feeding and cleaning, largely being undertaken by women. The availability and cost of labor influence the degree of mechanization along the value chain. In some cases, small-scale farmers may rely heavily on family labor, while larger operations may invest in mechanized equipment to increase efficiency. • Given that the majority of dairy farms in South Asia are small-scale operations, the potential for mechanization is limited. **Any efforts to further mechanize the value chain, would need to mitigate the risk of women being pushed out of the value chain.**
Access to education & training	• In many rural areas in South Asia, **access to formal education is limited**. This can hinder the adoption of modern dairy farming practices, as farmers may lack the necessary knowledge and skills to improve productivity and efficiency. • Despite limited formal education, there is often a wealth of informal knowledge and expertise within rural communities. Traditional knowledge passed down through generations remains valuable, but there is also a need to integrate it with modern agricultural practices through educational initiatives.	**Access to market**	• **Access to market infrastructure**, including cold storage facilities, transportation networks, and retail outlets, is essential for connecting small-scale dairy producers with consumers. In some areas, inadequate infrastructure may limit market access and contribute to wastage. • **Value addition along the dairy value chain**, such as processing and packaging, can create opportunities for higher returns and market differentiation. However, realizing these opportunities requires investment in processing facilities, quality control measures, and marketing strategies to target consumers effectively.

Source: 1. FAO (2023) 2. Alam et al, Urbanisation threats to dairy cattle health (2023) 3. Wellalage et al Access to credit by SMEs in South Asia (2017) 4. CSIS (2022) . RTI International (2023)

BIGGER ISN'T NECESSARILY BETTER IN DAIRY OPERATIONS: THERE IS AN OPPORTUNITY TO SUPPORT SMALLER-SCALE OPERATIONS

Implications on types of investment opportunities that would benefit women in the value chain

- In South Asia, the majority of small-scale dairy farmers are predominantly women. While there is a perception that mechanizing, and as a result, industrializing dairy farming would enhance the sector, transitioning to larger-scale operations risks marginalizing women from participation in the market. Investments that address challenges within the framework of small-scale dairy farming, focusing on areas such as collection, feeding, and animal care, will prevent the exclusion of women from the sector.
- In India, 90%+ of the 15 million women-owned SMEs rely on informal sources of financing. Increasing access to capital to grow and improve small scale farming operations has the potential to increase income generation for women dairy farmers.
- Examples of SMEs in the space include **Akshayakalpa**, India's largest certified organic dairy enterprise, which delivers milk and milk products across 2 major cities in India, sourcing its milk from over 1,200 farms. **Sid's Farm** is another example, as a processor and distributor of milk and dairy products, purchasing milk directly from its network of 4,500 farms.
- **Animall**, also in India, is a woman-owned and led digital platform for cattle trading, aiming to solve the problem of fragmentation and disorganization of the cattle marketplace in India; The goal of Animall's app is to enable farmers to buy and sell cattle for dairy farming easily, and the company has demonstrated steady growth over the past 3-4 years.

Source: Desk research, Sagana analysis

PLEASE REACH OUT TO ACCESS THE 9 CASE STUDIES OF COMPANIES IN THESE VALUE CHAINS

Case studies available upon request

Company	Relevant value chain
Cajou Espoir	Cashew nuts
Hatch Africa	Poultry
Olam Agri	Quinoa
Omega Azul	Aquaculture
AquaFoods	Aquaculture
Sahyadri	Tomatoes
S4S Technologies	Tomatoes
Akshayakalpa	Dairy
Sid's Farm	Dairy

To learn more, please reach out directly to rbove@gainhealth.org

ANNEX

ANNEX

- Approach
- References

INVESTING IN NUTRITIOUS FOOD VALUE CHAINS CAN HAVE A SIGNIFICANT IMPACT ON WOMEN: OUR APPROACH

Overall objective of the report

The objective of the present report is to:

- Demonstrate that investing in nutritious foods value chains is a way for investors to realize significant gender impact.
- Highlight companies operating in these value chains with commercial and gender potential.

Approach

We followed a three-pronged approach:

1. **Selection of value chains to prioritize:** We first selected 6 nutritious value chains to prioritize in Latin America, Sub-Saharan Africa and South Asia, though a mix of desk research and key informant interviews.
2. **Gender impact analysis of value chains:** We then conducted a gender analysis of each of the six value chains, by highlighting the involvement of women at various stages of the value chain, and by focusing on what makes each value chain unique in terms of potential gender impact.
3. **Identification of companies to highlight:** We identified high-potential companies in each value chain and wrote case studies on them, highlighting examples of opportunities in each value chain.

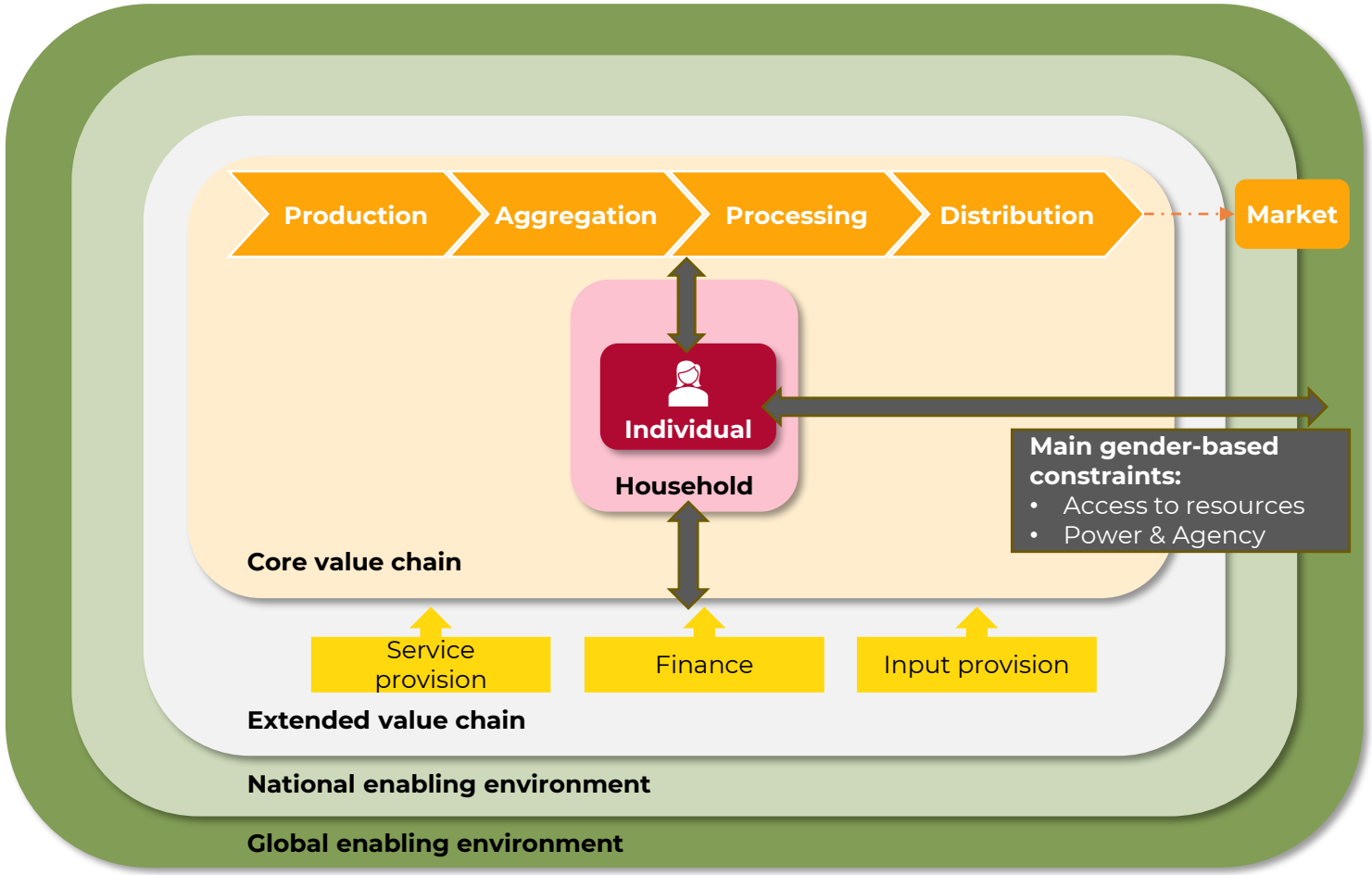
WE SELECTED VALUE CHAINS TO PRIORITIZE BASED ON FOUR KEY CRITERIA…

In order to narrow down food value chains to a portfolio of six value chains across three geographies, Sub-Saharan Africa, Latin America and South Asia, we used four key criteria, shown below

Criteria	Description
Nutritious-supporting aspects of the value chain	• Is the food classified as highly nutritious per GAIN's definition of nutritious foods? • Is the portion of food used for non-nutritious purposes minimal? (other uses including oil, cosmetics, junk food, animal feed, etc.)
Current or future opportunity for women in value chain	• Does the selected food value chain exhibit evidence of women involvement in the value chain or opportunity for women involvement in the value chain? • E.g., Are women a significant proportion of workers in the value chain? (Formal or informal) Is there an opportunity to create more formal employment for women in this value chain by investing in it?
Commercial viability of value chain	• Have there been investments in the value chain that demonstrate that this value chain is considered commercially viable? • Is the value chain considered "high value" given demand for the product, size or growth of the market, or other evidence of high margin potential? Is the value chain export-oriented?
Meaningful role for SMEs in value chain	• Have we found examples of SMEs meaningfully participating in the value chain, or larger companies that could play a role in supporting SMEs in the value chain?

GENDER-BASED CONSTRAINTS HINDER WOMEN'S PARTICIPATION IN THE VALUE CHAIN AND THE BENEFITS THEY RECEIVE FROM IT

FAO framework to analyze gender in food value chains[1]



Comments

- Women in food value chains are influenced by several types of "gender-based constraints" that **hinder their full participation** or **limit the benefits they receive** from participation in the value chain due to factors linked to gender.
- FAO's Gender-Sensitive Value Chain Framework highlights the **multi-level causes of gender-based constraints**, from the individual and household level to the local and national level, as can be seen in the figure to the left.
- **Two main dimensions** transcending these levels **influence women's participation and ability to economically benefit** from a given value chain: **Access to resources and power & agency**.
- The **geography** in which women operate greatly influences these two dimensions. At the same time, **characteristics of each value chain itself and of the food itself,** also influence women's role within it.

Source: 1. Figure derived from FAO gender-sensitive value chain framework; FAO

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- Multiple fund websites and press releases
- Company websites

This report has been produced through the Nourishing Food Pathways programme jointly funded by:

In partnership with Canada

Co-funded by the European Union

german cooperation
DEUTSCHE ZUSAMMENARBEIT

Irish Aid
An Roinn Gnóthaí Eachtracha
Department of Foreign Affairs

Ministry of Foreign Affairs

Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

Swiss Agency for Development and Cooperation SDC

The findings, ideas, and conclusions presented in this report are those of the authors and do not necessarily reflect positions or policies of any of the agencies mentioned above.