



# FMO: Gender lens investing

EVALUATION – CASE STUDY

2024

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# Sistema.bio | Executive summary

FMO's investment in Sistema.bio offers valuable insights primarily for women as end-users from a leading gender-focused customer

## Sistema.bio, a vertically integrated biodigester company serving smallholder farmers, has been an AEF customer since 2019 and is a recognised leader in gender.

This case study highlights Sistema.bio's operations in Kenya, where FMO has focused its investments. Women are often the primary beneficiaries of Sistema.bio's biodigesters and clean cooking solutions, e.g., in Kenya 80% of the smallholder farmers are women and 68% of the households rely on traditional fuels for energy needs, a responsibility that disproportionately falls on women.

## Recognising the key role that women play as end-users, Sistema.bio has independently undertaken steps to increase product access and uptake for women

Sistema.bio has tailored its biodigester and clean cooking solutions to meet women's needs, piloted gender-specific marketing initiatives, employed women sales agents to better reach women customers, driven product adoption through close monitoring, among others. While Sistema.bio has led most of these efforts independently, FMO supported Sistema.bio to qualify for the 2X Challenge under the 'Consumption' criteria, implement the existing gender action plan, and share impact data on women customers.

## Internally, Sistema.bio also implements dedicated initiatives for women as employees and in leadership

Sistema.bio specifically targets women employees during recruitment, seeks to foster a supportive culture, and has implemented gender-forward and anti-harassment policies. FMO supported Sistema.bio to increase women representation in leadership, qualify for the 2X Challenge under the 'Leadership' criteria and share impact data on women employees and board members.

## Consequently, women make up 62% of leadership, 40% of employees and over half (51%) of Sistema.bio's end-users in Kenya

1. Increased equity within the workplace, by defying gender stereotypes, promoting several women in field to leadership and standardising equal pay for equal work
2. Increased job opportunities, as 26% of employees in operations and maintenance direct jobs were women (across regions/globally)
3. Improved organisational performance, as women sold an average of 1.5 biodigesters/month v/s 1.3 by men and women achieved faster sales and increased customer satisfaction
4. Enhanced product use/access, as 95% of users, including women, reported improved quality of life and 94% reported new access to biodigester and 80% it purchased on credit
5. Increased incomes, as 89% of users, including women, reported reduced expenditure and 48% of users, including women, reported generating income with Sistema.bio's product/service

## Sistema.bio's actions have also resulted in various positive and negative unintended effects

The positive outcomes for women as end-users include improved control/agency of their time and improved household health, along with contributions to other SDGs such as SDG 13: Climate Action, SDG 7: Affordable and Clean Energy, and SDG 3: Good Health and Well-being, and for women as employees/in leadership including enhanced empowerment and safety within the organisation. Negative outcomes for women as end-users include the financial burden of repaying credit and for women employees/leadership, potential safety concerns on the field and the challenges faced in navigating biases in a male-dominated sector (agriculture), as seen in some regions. Broadly, all the outcomes are sustainable.

## Sistema.bio's gender actions and impact were primarily driven by four key success factors:

Leadership's internal commitment to gender, importance of gender in the business's performance, FMO's guidance and support, and influence and expectations of other investors/ stakeholders. Yet, challenges remain such as gender data management, limited human resource availability, and poor linkage of financial incentives and impact by investors and lack of consolidated TA.

## FMO and Sistema.bio can derive learnings from this experience, to inform future gender efforts focused on women as end-users, as employees, and in leadership

FMO can focus on simplifying gender impact data metrics and reporting, providing flexible and streamlined gendered TA, and improving customers' gender knowledge through cross-learning and sharing best practices and comparative data, while Sistema.bio can focus on better managing gender impact data, exploring accessing TA support from FMO in partnership with Value for Women, and continue improving its internal gender balance.

# Sistema.bio | Overview

Sistema.bio is a biodigester company acknowledged as a gender leader and a long-standing FMO customer

## Customer context



## About

Founded in 2010 in Mexico, Sistema.bio is a vertically integrated biodigester company that designs, manufactures, sells, and provides technical support and financing for modular biodigesters and accessories to smallholder farmers.<sup>1, 2</sup>

With over 600 employees, Sistema.bio operates in 35+ countries via four hubs in India, Kenya, Mexico, and Colombia, installing 100K+ biodigesters, including 11K+ in Kenya till date.<sup>1, 3, 4</sup>

More than 60% of Sistema.bio's sales come from B2B and B2B2C channels and the rest from B2C. Most users are women on small farms (B2C) and in cooperatives (B2B) in East Africa. Approved to issue carbon credits under the Gold Standard, the company subsidises system costs through carbon revenue, increasing its affordability for the end-user.<sup>1, 2, 3</sup>

Over 600K people generate clean and renewable energy and organic fertiliser with Sistema.bio's products and services.<sup>4</sup>

## FMO's investment

Sistema.bio has been AEF's customer since 2019. In 2019 and 2020 AEF provided loans of USD1M and USD1.35M, respectively, for the company's Kenyan operations. In 2023, AEF provided another USD4M to refinance the outstanding facilities and cover working capital needs.<sup>2, 5</sup>

## Goals of case study

### Rationale for selection

- This case study explores the impact of FMO's investments on **women as end-users** (primary domain) and **women in leadership/as employees** (secondary domain), with a focus on Kenya, where FMO has primarily directed its investments
- Sistema.bio is a **gender leader** in the energy sector, for instance, (i) it was one of the first organisations to qualify for the **2X Challenge** and (ii) it participated in the **IFC Clean Impact Bond**. It has **intentionally integrated a gender lens**, and **demonstrated gender impacts** through its products, services and internal initiatives, recognising the **vital role women play as smallholder farmers and beneficiaries of clean household energy, and as employees and leaders**.<sup>1, 2, 3</sup>
- Although FMO's investments were not directly linked to gender, Sistema.bio was chosen for a deep-dive, as it is an **opportunity for FMO to learn from a leading gender-focused customer** and gain insights into inherently gendered areas such as biodigesters and clean cooking.

### Key learning objectives

- 01 Understand the **gendered impacts** of Sistema.bio's products and services (focused on Kenya)
- 02 Analyse how FMO and Sistema.bio **impacted** women as end-users, and any other secondary domains, **directly and indirectly** (focused on Kenya)
- 03 Derive key **learnings for FMO** from a leading gender-focused customer

## Gender challenges

80% of Kenya's smallholder farmers are women,<sup>6</sup> many of whom **lack access to technology, resources, and financing** to enhance agricultural productivity and sustainability.<sup>7</sup> **Sistema.bio addresses this gap** by providing simple, affordable technology that transforms organic waste into renewable biogas and fertiliser, promoting sustainable farming practices and economic prosperity for smallholder farmers.<sup>7</sup>

Additionally, **68% of households in Kenya**, primarily in rural areas, **rely on solid biomass** like firewood and charcoal for cooking.<sup>8</sup> **Biogas produced from Sistema.bio's biodigesters provides an eco-friendly alternative to traditional fuels**. It **reduces the burden and time women spend to collect firewood, increases convenience and save time** as cooking with biogas is faster, **less cleaning is required** as cooking pots are not blackened by soot, and there is **no need to tender the fire continuously** as biogas ignites directly.<sup>1, 2, 3</sup> This **enables women to focus on activities other than household chores**, including income generating activities.<sup>1, 2, 3</sup>

Recognising this opportunity to advance gender equality, Sistema.bio has taken several gender actions for its end-users and has also made advancements in internal gender balance for women as employees and in leadership, in cultures where gender equality is not always the norm.

# Sistema.bio | Gender actions (1/2)

The company implemented a number of gender actions across the product lifecycle, with FMO supporting its existing plans

Sistema.bio recognises women as end-users of its biodigester and clean cooking solutions and has implemented targeted actions, such as adapting its products to women's needs, piloting targeted marketing, employing women sales agents, and improving product affordability and adoption for women



## Product design and development

- **Design:** Integrated gender considerations into the design process, e.g., ensuring biodigesters are user-centric designed and efficient to meet the needs of women farmers, who often manage smaller farms in Kenya<sup>1</sup>
- **Development:** Developed revised products specifically to address women's needs, e.g., piloted new cookstoves in the Mexican market tailored to women's feedback that the original stoves were unsuitable for making tortillas and had insufficient height<sup>1</sup>



## Marketing and awareness building

- **Gender-specific marketing:** Partnered with Value for Women (VfW) on a Shell Foundation supported pilot in 2018, to better understand gender differences among customers and tailor marketing to reach men/women in Kenya and Mexico. While no change in sales can be directly attributed to this, it led to increased awareness;<sup>1,2</sup> The company continues to use distinct messaging for men and women to improve awareness<sup>1</sup>
- **Word-of-mouth:** Utilises a community-based approach, encouraging women farmers to share their experiences with other women to drive product purchase and adoption<sup>1,5</sup>



## Sales and distribution

- **Code of conduct:** Respecting women's rights is stated as a code of conduct and sales agents are trained accordingly<sup>4</sup>
- **Women sales agents:** Employs local women as sales agents as they better understand the context and challenges and can influence women's purchase decisions through trust-building<sup>1,5</sup>
- **Referral method:** 1-2 monthly payments are waived off for existing customers upon referring new customers, which has been effective with women's groups in Kenya<sup>1</sup>
- **Affordability:** Subsidises 50% of biodigesters costs using carbon credit and offers credit (65% sales are on credit, 85% of which is from Sistema.bio and the rest from banks, MFIs, and dairy cooperatives);<sup>1</sup> Offers financing program to women for biodigesters, cookstoves, among others<sup>6</sup>



## Installation, training, and adoption

- **Dedicated training and usage plan:** Offers personalised technical monitoring and training workshops to build capacity, on the use and maintenance of the biodigester for the whole family, including women;<sup>1,5</sup> Specifically engages women during the kitchen stove test<sup>1,5</sup>
- **Systematic follow-ups:** Conducts 3 default monitoring visits, at 30 and 90 days and 6 months after installation, and ongoing virtual consultations, to reiterate training and improve adoption of the product by women<sup>1,3,5</sup>



## Data collection, monitoring, and reporting

- **Uptake monitoring:** Tracks customer satisfaction and product adoption (especially by women) through systematic sex-disaggregated customer data collection during maintenance visits, using the Taroworks technology platform (baseline and bi-annual);<sup>1,2,3,5,8</sup> 10-year commitment to ensure product adoption for customers enrolled in the carbon program<sup>1</sup>
- **Gender reporting:** Reports gender impact metric of #female clients to investors through impact due diligence conducted annually<sup>1,3,4,5</sup>

Sistema.bio's gender actions

While FMO has supported some of Sistema.bio's gender actions for end-users, its influence on the company's gender impacts is limited. Specifically, FMO:

- **Encouraged Sistema.bio to agree to 2X Challenge qualification**, upon identifying that FMO's initial investment in Sistema.bio was eligible. Sistema.bio qualified under the 'Consumption' criteria, as women are the primary end-users benefiting from Sistema.bio's clean cooking solutions, and the 'Leadership' criteria (refer to the next slide for details)<sup>10</sup>
- **Actively supported the implementation of the existing gender action plan** that was developed and aligned with other investors<sup>3</sup>
- **Required gender-related KPI reporting**, such as #female clients and sustainable livelihood improvements, reinforcing Sistema.bio's commitment to gender reporting<sup>3</sup>

Source: 1) Dalberg interviews with Sistema.bio and FMO and field visit to Kenya; 2) Sistema.bio, Value for Women, and EEP Africa, [Sistema.bio - Gender Impact Report, 2021](#); 3) Convergence, [Case Study - Sistema.bio, 2021](#); 4) FMO's internal documents; 5) Sistema.bio's internal documents; 6) Sistema.bio, [International Day of Rural Women: Equal Opportunities Between Genders Is a Task for All, 2020](#); 8) Sistema.bio, [Empowering Sistema.bio's women through Taroworks digital technology, 2023](#); 9) 10) Sistema.bio, [Sistema.bio and the 2X Challenge: Investing in our world's women, 2021](#)

# Sistema.bio | Gender actions (2/2)

Sistema.bio has also taken steps to support women employees and leaders – FMO enabled these efforts

Sistema.bio strategically fosters a gender-inclusive organisation by hiring women through targeted recruitment, piloting gender-inclusive approaches, promoting a supportive growth culture, and implementing gender-forward and anti-harassment policies



## Recruitment and onboarding

- **Local job opportunities:** Focuses on hiring women locally, to support community growth and build trust with customers<sup>1,2,3</sup>
- **Gender conscious hiring:** Seeks to achieve a gender balance in Kenya by recruiting more women in sales/technical roles by promoting women at recruiting events, depicting women in marketing materials, using gender-neutral job descriptions, and highlighting benefits such as family leave and lactation room<sup>4</sup>
- **Flexible jobs:** Provides flexible employment options in Kenya for women to earn supplementary income<sup>3</sup>
- **Women's quota:** Currently expanding internal diversity in LatAm with quotas for women, including recent hires in the technology and operations teams<sup>3</sup>



## Training and development

- **Gender-inclusive approaches pilot:** In 2019, Sistema.bio with support from the AlphaMundi Foundation, USAID, and VfW designed and tested gender-inclusive approaches to equip women sales staff to improve sales, by analysing gender-disaggregated sales / loan data<sup>4</sup>: It continued practices from the pilot, e.g., transport stipend<sup>4</sup>
- **Gender trainings:** Mandates regular gender trainings across regions;<sup>3</sup> Implementing a new learning measurement system to track training efficiency by gender and ensure equal access to training<sup>3</sup>
- **Gender diagnosis:** Conducted a gender diagnosis in Mexico with TA from EcoEnterprises Fund to assess gender gaps and is subsequently implementing trainings on safety, harassment<sup>3</sup>



## Performance and retention

- **Safety measures:** Trains women sales agents to prioritise safety, avoid trips after dark, and ensures they can contact managers for safe overnight accommodations if needed, in Kenya<sup>3</sup>
- **Convenient data management:** Provides a mobile customer relationship management app (TaroWorks), which allows women sales agents and technicians to collect/analyse data and manage fieldwork real-time, enabling greater flexibility and work-life balance<sup>3,5</sup>



## Promotion and career progression

- **Culture:** Aims to foster a supportive culture for women, with many long-serving women leaders and managers who have advanced through roles; Fosters a cycle of women's advancement with women employees eager to recruit more women<sup>3,4</sup>
- **Promotion:** Prioritises internal recruitment for new openings and encourages women to apply, particularly in Kenya<sup>3</sup>
- **Skill development:** Supports women employees in Kenya to pursue professional development and opportunities for hard and soft skills, particularly for high performers<sup>3,4</sup>
- **Amplify women's voices:** Encourages women, especially on the technical team, to share best practices/speak up<sup>3</sup>



## Workplace policies and data collection and reporting

- **Gender-forward policies:** Offers 3 months maternity leave, 2 weeks paternity leave, and leave for miscarriage, stillbirth, and adoption, going beyond Kenya's laws;<sup>4</sup> Provides flexible hours and lactation rooms on-site for mothers and sanitary products<sup>4</sup>
- **Fair compensation:** Standardises salaries based on market and role, regardless of gender, using a formula<sup>4</sup>
- **Anti-harassment and grievance mechanism:** Enforces zero tolerance anti-harassment policy covering discrimination, bullying, and retaliation, and a grievance handling system<sup>3,4</sup>
- **Gender data collection and reporting:** Collects sex-disaggregated data on applicants and hires, with targets for women in each department;<sup>4</sup> Tracks #female employees and #female board members as KPIs<sup>3,6</sup>

## FMO has played an enabling role to support Sistema.bio's internal gender actions by:

- **Driving them to hire more women in leadership,** both management and board, recognising that in 2019 when FMO first invested, there were no women in the board (only 2 women as board observers)<sup>3</sup>
- **Encouraging Sistema.bio to apply for the 2X Challenge qualification under the 'Leadership' criteria** as well, as at the time of application in 2021, 4/10 senior management and 1/6 board members were women<sup>7</sup>
- **Requiring gender-related KPI reporting,** such as #female employees and #female board members annually<sup>3</sup>

# Sistema.bio | Direct and indirect impact pathways (1/2)

By implementing these gender actions, Sistema.bio achieved five broad indirect outcomes through three impact domains

Indirect outcomes

Increased equity within the workplace

Improved workplace policies for diversity and equity

## Defied gender stereotypes

by hiring women into field-based sales and technical roles<sup>1</sup>

Greater gender equity in promotion/retention rates

## Several women

in field leadership roles have advanced through the ranks<sup>1</sup>

Greater gender equity in wages

## Equal pay\*

for equal work for men and women with the standardisation of salaries<sup>1</sup>

Increased incomes

Improved savings and investment opportunities

## 89% users\*\*

reported reduced weekly spending;<sup>3</sup> Households save USD30-80 monthly in energy costs, but whether women retain the savings varies by household<sup>2</sup>

Higher incomes for women

## 48% users\*\*

reported using product/service for income generation, of which 38% reported an increase in income;<sup>3</sup> Women reported exploring other sources of income through biogas, e.g., offering takeout services;<sup>2, 4</sup> Women reported using time saved for income generating activities, e.g., other farming activities<sup>2, 5</sup>

Increased job opportunities

Increased access to job opportunities

## ~26% women\*

in direct jobs for operations and maintenance as of 2022 v/s 25% in 2019;<sup>6</sup> Enables women to earn supplementary source of income through flexible employment to work at their own terms and time<sup>2</sup>

Enhanced product use and access

Increased benefits from products and services

## 95% users\*\*

reported improved quality of life;<sup>3</sup> Women reported greater satisfaction with time saved for rest and leisure<sup>5</sup>

Increased access to new and improved products and services

## 94% users\*\*

reported accessing a biodigester package for the first time<sup>3</sup>

## 96% users\*\*

reported not having access to a good alternative<sup>3</sup>

More affordable and user-friendly products and services

## 80% users\*\*

purchased the biodigester on credit<sup>3</sup>

Improved organisational performance

Improved financial performance

## 1.5

biodigesters were sold by women per month on average v/s 1.3 by men, during a pilot conducted in Kenya<sup>1</sup>

Increased productivity

## Faster sales

by women sales agents, with fewer follow-up engagements than men<sup>1</sup>

## Increased customer satisfaction

as installations done by female technicians have very few post-installation technical issues<sup>1</sup>

Direct outcomes



Women in leadership

## 62%

of the leadership in East Africa are women, well above the 30% 2X threshold;<sup>2</sup> 50% of the board of directors are women<sup>2</sup>



Women as employees

## 40%

of the employees in East Africa are women, well above the 25% 2X threshold;<sup>2</sup> 60% of the sales agents and 17% of the technicians are women<sup>2</sup>



Women as end-users

## 51%

of the users in East Africa are women;<sup>2</sup> Actual number may be higher, as women are often the end-users even when men make the purchase<sup>2</sup>

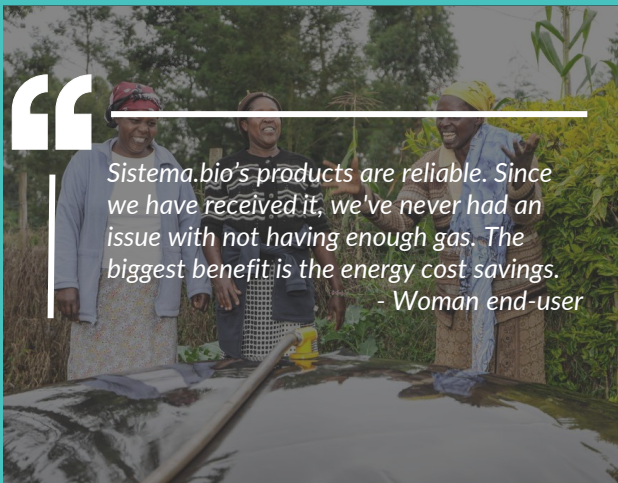
Note: Circles only represent the strength of the evidence available, and does not correspond to FMO's impact; All data points are specific to Kenya/East Africa unless specified otherwise; \* Across regions/global; \*\* While the study respondents included women, gender-disaggregated data is unavailable, so specific insights on female users are limited. Source: 1) Sistema.bio, Value for Women, and EEP Africa, [Sistema.bio - Gender Impact Report](#), 2021; 2) Dalberg interviews with Sistema.bio and FMO and field visit to Kenya; 3) Sistema.bio's internal documents; 4) Sistema.bio, International Day of Rural Women: Equal Opportunities Between Genders Is a Task for All, 2020; 5) ESMAP and World Bank, Building Evidence to Unlock Impact Finance: A Field Assessment of Clean Cooking Co-Benefits for Climate, Health, and Gender, 2023; 6) FMO's internal documents; 7) 2X Challenge, [2X Criteria Thresholds](#), accessed in October 2024

Legend ● Strong ● Moderate ● Weak

## Sistema.bio | Direct and indirect impact pathways (2/2)

There are many inspiring stories from the field about how Sistema.bio has impacted women's lives

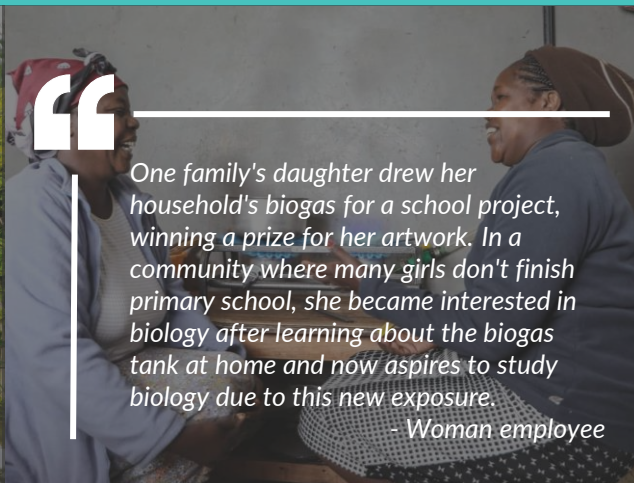
Women as end-users



“

*Sistema.bio's products are reliable. Since we have received it, we've never had an issue with not having enough gas. The biggest benefit is the energy cost savings.*

- Woman end-user



“

*One family's daughter drew her household's biogas for a school project, winning a prize for her artwork. In a community where many girls don't finish primary school, she became interested in biology after learning about the biogas tank at home and now aspires to study biology due to this new exposure.*

- Woman employee



“

*In Mexico's Mayan Community, one woman received a biodigester and realised it was not only transforming her daily activities but also providing surplus biogas. With the extra fuel, she started a small restaurant and began selling food. She and her friends proudly call themselves as the entrepreneurial women of the community.*

- Woman employee

Women as employees/in leadership



“

*We've trained women sales staff to boost their confidence in selling. One agent, originally a B2C expert from a rural background, initially lacked confidence engaging with governments. After training, including elevator pitch practice, we saw a big change and she could start closing deals with government agencies.*

- Woman employee



“

*At Sistema.bio, we believe employing women is essential. We've found that they excel in organisational and planning skills and often outperform men in performance reviews.*

- Woman employee



“






*Many of the women in leadership at Sistema.bio advanced within the company, for instance, the current East Africa Director was the first woman to hold a technical role in the Kenya team.*

- Woman employee




# Sistema.bio | Unintended effects and sustainability of impact

The gender actions led to several unintended positive outcomes, alongside some negatives - overall, the outcomes are sustainable

As a recognised gender-focused company, Sistema.bio has observed and documented several unintended positive impacts

Women as end-users			Women as employees/in leadership		
 <b>Improved women's time-use agency</b>	 <b>Improved health of users/households</b>	 <b>Contributed to other SDGs</b>	 <b>Enabled employee's empowerment</b>	 <b>Enhanced internal safety and security</b>	
<ul style="list-style-type: none"><li>90% users reported decreased cooking time<sup>1</sup></li><li>Women reported saving 35 minutes/day on cooking and reducing 7.7 hours/week on activities perceived as drudgery<sup>*,2</sup></li><li>Greater satisfaction with the time saved for rest and leisure indicated time-use agency<sup>2</sup></li></ul>	<ul style="list-style-type: none"><li>82% users reported improvement in health<sup>1</sup></li><li>21.2 days (~3 weeks) of healthy life added to the household per year of biodigester use, primarily due to reduced exposure to smoke, that leads to 0.058 aDALYs** per household per year<sup>3</sup></li></ul>	<ul style="list-style-type: none"><li>SDG 13: Climate Action - Treated 40.5M+ m3 of waste and mitigated over 1M tons of CO2e till date<sup>4</sup></li><li>SDG 7: Affordable and Clean Energy - Produced over 225.7M m3 biogas per year<sup>4</sup></li><li>SDG 3: Good Health and Well-being - Less toxic fumes<sup>4</sup></li></ul>	<ul style="list-style-type: none"><li>Women reported feeling supported in a workplace where they can raise concerns with management and be heard<sup>5</sup></li><li>Flexible working arrangements, e.g., work from home, is beneficial for women employees to manage work-life balance, especially for new mothers returning to work<sup>6</sup></li></ul>	<ul style="list-style-type: none"><li>Employees in an internal survey reported that they do not feel discriminated against<sup>6</sup></li><li>Sexual harassment cases are handled appropriately, e.g., a case in LatAm was recently addressed with the help of an external partner:<sup>6</sup> Zero complaints have been received from other markets<sup>6</sup></li></ul>	

There are some unintended negative outcomes as well from Sistema.bio's operations

Women as end-users	Women as employees/in leadership	
 <b>Financial burden on women</b>	 <b>Safety concerns for women in field roles</b>	 <b>Straining to navigate biases</b>
<ul style="list-style-type: none"><li>When a family struggles financially, women find it difficult to meet the terms of credit sales in Kenya, and to repay the amount, adding to their financial burden<sup>6</sup></li></ul>	<ul style="list-style-type: none"><li>While engaging women in field roles, such as sales agents, is beneficial for Sistema.bio, it may lead to safety and security concerns for the employees in rural areas<sup>6</sup></li></ul>	<ul style="list-style-type: none"><li>Women employees and leaders find it straining to work and navigate biases in the agriculture industry which is often male-dominated in some regions, e.g., in LatAm<sup>6</sup></li></ul>

The outcomes for both women as end-users and as employees/in leadership are highly sustainable

- Targeting women as end-users has proven sustainable for Sistema.bio, as women have consistently made up the majority of its customers, demonstrated a strong history of timely credit repayments, among others. Recognising this, the company acknowledges a clear business case for continuing to reach and serve women.<sup>6</sup>
- Hiring women in leadership and as employees has also been a sustainable practice for Sistema.bio, with the proportion of women in leadership roles and overall employment growing over the years. The company has implemented gender-forward policies, including equal pay, and aims to increase the percentage of women employees from ~27% currently to 35% by 2027.<sup>6</sup>

Note: \* Drudgery refers to any regular household-related activities that are very hard work, either physically or mentally, and time consuming, repetitive, and unavoidable; \*\* aDALYs refers to Averted disability adjusted life years (aDALYs)  
Source: 1) Sistema.bio's internal documents; 2) ESMAP and World Bank, Building Evidence to Unlock Impact Finance: A Field Assessment of Clean Cooking Co-Benefits for Climate, Health, and Gender, 2023; 3) IFC, Clean Impact Bond: Mobilizing Finance for Clean Cooking, 2023; 4) Sistema.bio, Website, accessed in September 2024; 5) Sistema.bio, Value for Women, and EEP Africa, Sistema.bio - Gender Impact Report, 2021; 6) Dalberg interviews with Sistema.bio and FMO and field visit to Kenya; 7) Business Fights Poverty, Women Smallholders Will Drive Africa's Transition to Regenerative Agriculture, 2023; 8) FMO's internal documents



# Sistema.bio | Success factors and challenges

Success stems from Sistema.bio's internal commitment and business model, reinforced by external support - but challenges persist

## Success factors

**Sistema.bio's gender efforts were largely driven by its internal commitment and business model, with external support from FMO and other investors**

01

**Leadership's gender commitment:** Since inception Sistema.bio's leadership is deeply committed to gender equality and women's economic empowerment both internally and externally, and leads by example, as it is integral to its mission as a social enterprise. Reporting on gender KPIs such as #female clients #female employees and #female board members and implementing action plans are embedded in the company's operations

02

**Gender is integral to business performance:** Gender is central to Sistema.bio's business model, as women are the primary users of its biodigesters and clean cooking solutions, which enables Sistema.bio to reach women customers and tailor offerings to their needs, e.g., credit offerings to women, while showcasing the gender benefits of its products. Consequently, Sistema.bio has increased its female workforce, particularly hiring more women as sales agents who can connect better with women customers

03

**FMO's support:** While FMO's financing was not specifically linked to gender, it enabled Sistema.bio to expand and sustain its operations in Kenya. This support often came at crucial moments, contributing to ongoing gender-related impacts and reinforcing Sistema.bio's gender commitments, e.g., FMO's encouragement for Sistema.bio to qualify for the 2X Challenge inspired Sistema.bio to seek new opportunities to enhance its gender impact

04

**Other investors' and stakeholders' expectations:** Financial incentives, gender impact reporting requirements and TA from other investors such as EDFI, Triodos Investment Management, helped drive Sistema.bio's gender actions, e.g., the LatAm region received TA from EcoEnterprises Fund for internal gender initiatives. Support from funders and participation in results-based financing programs also contributed to gender impacts, e.g., Sistema.bio received grants from the Shell Foundation, AlphaMundi Foundation, and USAID for gender-based studies/initiatives, participation in the IFC Clean Impact Bond helped mobilise financing for gender outcomes

**However, challenges remain, including the collection of gender impact data, limited human resources, and differing investor priorities**

01

**Gender impact measurement:** Collecting gender impact data is challenging, as it often requires time-intensive primary research, e.g., time-use surveys conducted during the IFC Clean Impact Bond. Additionally, reporting to various investors with different priorities can be resource-heavy. Moreover, the gender impact findings can be highly contextual to different regions, e.g., while women sales agents in Kenya close sales faster than men, those in Mexico find it more difficult. These nuances further complicate consistent impact measurement

02

**Difficulties demonstrating the gender business case:** It is difficult to measure the accurate number of women customers because men make purchasing decisions even if the end-users are women. While Sistema.bio tries to collect the data on how many women are in the household, it is hard to determine how many are actual owners

03

**Human resource constraints:** There remains a gender imbalance in junior operational roles, such as security and finance, and field roles, such as technicians, because the talent pool is insufficient, making it harder to hire women. Safety concerns in factories also limit the hiring of women technicians, making it challenging to increase their numbers. The company continues to work towards closing this gap, but it remains a complex issue

04

**Lack of streamlined investor efforts:** Investors have yet to establish a strong link between gender impact and financial returns making it difficult to fundraise, as there is a perception that Sistema.bio, similar to other gender impact-focused companies, may offer lower compared to traditional businesses. Additionally, while investors offer TA individually, a more consolidated and coordinated approach could enhance effectiveness in driving both gender impact and financial outcomes

## Challenges

01

## Enhance management of gender impact data

Implement mechanisms to collect and monitor gender impact data on outcomes like gender equity in promotion and retention, higher incomes for women, improved financial performance, increased productivity, no. of actual women customers, among others. Going ahead, this would help take region-specific actions, driven by insights rooted in data

02

## Explore accessing gendered TA support from FMO

Sistema.bio can work with FMO to make use of the gendered TA support through Value for Women which includes free-of-charge introductory webinar, on-demand office hours, one-on-one coaching, and co-funded TA (includes opportunity scan, action planning, design and implementation of strategies)

03

## Continue to improve internal gender balance

Continue enhancing internal gender practices to achieve the goal of 35% women employees by 2027. This includes actively attracting and considering strong women candidates for all roles, particularly in leadership, ensuring teams track data on the number of women reached out to, applied, and hired, and providing coaching and mentorship to support women's growth