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Inclusive and Responsible Scaling in Zambia: How Enabling Environment Barriers Shape Enterprise Entry, Growth, Resilience, and Innovation Uptake Among Women and Youth

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We also recognize the continued support and collaboration of national and regional partners, whose engagement ensures that the solutions developed are responsive to local needs, strengthen innovation systems, and contribute to building more resilient agrifood systems.

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Back cover photo: Onboarding of Interns at EDGE sponsored by IWMI (*photo*: Agricomm)

Contents

Acronyms	4
Summary	5
1. Introduction	6
2. Conceptual and Theoretical Framing	11
3. Methodology	14
3.1 Review Design	14
3.1.1 Search Strategy	15
4. Review Analysis	15
5. Results	15
5.1 Zambia: Overview of Findings	19
5.2 Interaction and Compounding Effects Across Barrier Domains	20
5.3 Evidence Strength and Gaps (Mapped to AoW2 Domains)	20
5.4 Implications for AoW3 Reach and Investment Mobilization	20
6. Situation Analysis	20
6.1 Current Policy Environment	20
6.2 Existing Reforms Supporting Women Entrepreneurs	22
6.3 Delivery System Mapping	24
6.4 Opportunities for Responsible Scaling Interventions	24
7. Research Gaps	27
8. Conclusion	28
9. Recommendation	28
10. References	30
11. Annexes	32
12. Appendices	35

Acronyms

AFI – Alliance for Financial Inclusion
AIS – Agricultural Innovation Systems
AoW – Area of Work
BCP – BioCarbon Partners
BDS – Business Development Services
CEEC – Citizens Economic Empowerment Commission
CGIAR – Consultative Group on International Agricultural Research
GCF – Green Climate Fund
GESI – Gender Equality and Social Inclusion
ILO – International Labour Organization
KYC – Know-Your-Customer
MSME – Micro, Small and Medium Enterprises
OECD – Organisation for Economic Co-operation and Development
RFILC – Rural Finance and Investment Learning Centre
S4I – Scaling for Impact
SME – Small and Medium Enterprises
ToC – Theory of Change
We-Fi – Women Entrepreneurs Finance Initiative
UNDP – United Nations Development Programme
ZIPAR – Zambia Institute for Policy Analysis and Research

Summary

This report examines how Zambia's enabling environment shapes enterprise opportunities for women- and youth-owned enterprises across six Area of Work (AoW) 2 domains: regulation, finance, market coordination, institutional capacity, Gender Equality and Social Inclusion (GESI), and climate finance. The study uses a scoping review to identify and analyze literature focused solely on Zambia. The review reveals that Zambia's entrepreneurship landscape is characterized by high participation of women and youth in enterprise activities, but their involvement remains concentrated in informal, low-productivity, and survival-oriented businesses.

The findings highlight several interconnected barriers that constrain enterprise formalization, sustainability, and growth. Regulatory and administrative requirements related to business registration, licensing, and taxation are often complex, costly, and documentation-intensive, discouraging formalization among women and youth entrepreneurs. Consequently, many remain excluded from formal financial systems. Despite improvements in financial inclusion nationally, access to growth-oriented finance remains limited due to high collateral requirements, costly lending conditions, lengthy approval processes, and low levels of financial literacy. As a result, many women and youth rely on informal savings groups and village banking schemes that provide short-term liquidity but insufficient capital for enterprise expansion.

Market-related challenges further restrict enterprise growth. Women and youth entrepreneurs are largely concentrated in lower-value segments of agricultural and retail value chains, with limited access to processing, aggregation, export markets, and other higher-value economic opportunities. Weak market coordination, inadequate value-chain integration, information asymmetries, limited collective action, poor infrastructure, and high transaction costs reduce competitiveness and bargaining power, leaving many entrepreneurs as price takers in fragmented local markets.

The review also identifies significant institutional and Gender Equality and Social Inclusion (GESI) constraints. Institutional support systems, including local government structures, extension services, and business development providers, are often under-resourced and inadequately responsive to the needs of women and youth, particularly in rural areas. At the same time, deeply entrenched gender norms, unequal access to productive assets and land, unpaid care responsibilities, insecure trading environments, harassment of informal traders, and limited participation in decision-making processes create additional barriers for women entrepreneurs. These challenges reinforce gender inequalities and contribute to women's concentration in low-return economic activities.

Climate-related shocks further exacerbate these vulnerabilities. While climate finance opportunities are expanding, most financing mechanisms are designed for larger enterprises and projects with complex technical requirements, making them inaccessible to many women- and youth-led businesses. This limits their capacity to invest in climate adaptation and resilience-building measures.

The evidence suggests that although women and youth play a significant role in Zambia's entrepreneurial ecosystem, existing institutional, financial, market, and social arrangements do not adequately support their transition from informal, necessity-driven enterprises toward formal, resilient, and growth-oriented businesses. Addressing these barriers will require integrated reforms that simplify formalization processes, improve access to finance, strengthen market linkages, enhance institutional support systems, and address persistent gender and social inequalities.

1. Introduction

1.1 Background and Context of Zambia

The CGIAR Scaling for Impact (S4I) Programme recognises that responsible scaling depends not only on innovative technologies but also on enabling environments that allow different groups to access, adopt, adapt and benefit from innovations. This review examines Zambia's enabling-environment conditions to inform responsible and inclusive scaling under the country's three S4I innovations also known as Solution Tracks. Within this S4I context, the persistence of informality reflects deeper structural weaknesses within Zambia's enabling environment rather than simply the characteristics of individual entrepreneurs.

Zambia's economy is characterized by a vibrant but predominantly informal entrepreneurial sector that plays an important role in employment creation, household livelihoods, and agricultural transformation. Micro, Small and Medium Enterprises (MSMEs) account for the overwhelming majority of businesses in the country and provide employment opportunities for a significant proportion of the labour force. Women constitute a substantial share of Zambia's MSME sector, with the 2022 MSME Finance Survey indicating that 60.9% of MSMEs are female-owned, compared with 39.1% that are male-owned (Zambia Statistics Agency & Bank of Zambia, 2022). Young people also represent an important segment of the enterprise sector. However, available national evidence does not provide a directly comparable estimate of their overall share of MSME ownership, particularly in agriculture, agro-processing, trade and service-related enterprises. Despite their high participation rates, most women- and youth-owned enterprises remain concentrated in low-productivity, survival-oriented activities characterised by limited capital accumulation, low levels of formalisation and restricted integration into higher-value markets (Government of Zambia, 2008; Chijikwa & Mulenga, 2023; World Bank, 2022).

The persistence of informality in the entrepreneurial sector reflects deeper structural weaknesses within Zambia's enabling environment rather than simply the characteristics of individual entrepreneurs. Formal business registration, licensing procedures, taxation systems, and regulatory compliance requirements often impose disproportionately high administrative and financial costs on micro and small enterprises operating with irregular cash flows and limited managerial capacity. Consequently, many women- and youth-owned enterprises remain outside formal regulatory systems, restricting their access to public procurement opportunities, business development services, formal financial markets and government support programmes (Chirwa & Tembo, 2022; Tamba, 2024). This situation is particularly pronounced in rural and peri-urban areas where institutional support services are less accessible, and administrative processes remain highly centralised. Although Zambia has made notable progress in expanding financial inclusion over the past decade, access to financial services has not translated into equivalent improvements in enterprise growth or productivity.

National financial inclusion statistics indicate that the gender gap in account ownership has narrowed considerably, while women's participation in formal financial services continues to increase (Bank of Zambia, 2021; Alliance for Financial Inclusion, 2023). Nevertheless, access to growth-oriented finance remains constrained by collateral-based lending practices, limited credit histories, inadequate financial products tailored to early-stage enterprises and high transaction costs. These challenges disproportionately affect women and young entrepreneurs who typically possess fewer productive assets, weaker business networks and limited financial records, forcing many enterprises to rely on informal savings groups, rotating credit associations and short-term borrowing mechanisms that are insufficient to support long-term investment and enterprise expansion (Mulenga et al., 2019; World Bank, 2023).

Financial exclusion is further compounded by weaknesses in market coordination and institutional support systems. Many women- and youth-owned enterprises operate within fragmented value chains characterised by poor market information, weak aggregation mechanisms, limited contractual arrangements and restricted access to quality standards and certification systems (Chileshe, 2018; World Bank, 2022). These constraints reduce bargaining power, increase transaction costs and limit opportunities to participate in higher-value domestic and regional markets (Chileshe, 2018; World Bank, 2022). At the same time, local government institutions, extension systems, business development service providers and financial intermediaries often lack the technical, financial and organisational capacity required to provide integrated and inclusive support to emerging enterprises, particularly in rural communities where service provision remains uneven (Mulenga et al., 2019).

Importantly, these enabling environment barriers do not affect all entrepreneurs equally. Women and youth experience these constraints through multiple and intersecting forms of social exclusion that extend beyond economic disadvantage. Gender norms continue to influence ownership of productive assets, decision-making authority, mobility, leadership opportunities and participation in commercial markets. Women also bear disproportionate responsibility for unpaid domestic and care work, resulting in significant time poverty that limits participation in enterprise training, financial services, producer organisations and market activities (Evans, 2018; World Bank, 2023). Young entrepreneurs also face additional barriers linked to limited business experience, inadequate collateral, restricted professional networks, and lower levels of institutional trust. These disadvantages become even more pronounced where gender intersects with youth, disability, geographical location, educational attainment and household poverty, creating multiple layers of exclusion that shape enterprise performance and opportunities for growth.

Climate change introduces an additional dimension to these structural constraints. Women and youth are disproportionately represented within climate-sensitive sectors such as rain-fed agriculture, livestock production and natural resource-based enterprises, making them particularly vulnerable to droughts, floods and increasing climate variability. Yet existing climate finance mechanisms remain largely inaccessible to small enterprises because eligibility criteria frequently require formal registration, technical proposal development, complex monitoring systems and substantial co-financing arrangements. Consequently, enterprises that are most vulnerable to climate risks are often the least able to access resources required for adaptation, resilience building and green investment (Green Climate Fund, 2023; BioCarbon Partners, 2024; Alliance for Financial Inclusion, 2025). These reinforcing feedback loops prevent many women- and youth-owned enterprises from transitioning from subsistence-oriented activities towards resilient, growth-oriented businesses capable of contributing meaningfully to inclusive agricultural transformation.

Rather than operating independently, policy and regulatory barriers, financial exclusion, market coordination failures, institutional capacity gaps, gender inequality and climate finance constraints interact to create reinforcing cycles of disadvantage. For example, limited formalisation restricts access to finance; constrained finance reduces investment in productivity and compliance; weak market integration limits enterprise revenues; and low revenues further reduce the ability of enterprises to formalise, invest or participate in higher-value markets.

It is within this broader context that the CGIAR Scaling for Impact (S4I) Programme positions enabling environment as a critical determinant of responsible scaling of innovations. The programme recognises that successful scaling depends not only on the technical performance of innovations but equally on the policy, institutional, financial and social systems within which innovations are introduced. Consequently, Area of Work 3 (AoW3), the Enabling Environment Lab, seeks to identify and address the systemic barriers that constrain innovation uptake and equitable scaling, particularly among women and youth who frequently face disproportionate exclusion from innovation systems.

Accordingly, this review does not examine enabling environment barriers as isolated development challenges. Rather, it analyses how these barriers influence the responsible scaling of agricultural innovations being implemented under the S4I Programme in Zambia. Particular attention is given to the three Zambia Solution Tracks: (i) Scaling Inclusive Mechanization through Rural Entrepreneurship and Financial Innovation; (ii) Scaling Climate-Smart Agro-Advisories through the Shamba Shape Up Content Generation Platform; and (iii) Scaling Forage-Based Livestock Feed Innovations for Resilient Rural Livelihoods. These Solution Tracks provide the practical innovation context through which enabling environment barriers are examined, allowing the review to generate evidence that is directly relevant to country-level implementation while also contributing broader lessons for responsible scaling across the wider S4I Programme.

Each Solution Track depends on delivery systems that connect technologies and services with end users through finance, advisory services, markets, extension, private enterprises, producer organizations and supportive institutions. The effectiveness of these delivery systems determines whether innovations are successfully adopted, adapted, sustained and able to generate equitable benefits for women and youth enterprise

By positioning enabling environment analysis within the implementation logic of the S4I Programme, the review demonstrates how strengthening policies, financial systems, market institutions, delivery systems and inclusive governance arrangements can improve innovation uptake, enterprise performance and equitable scaling outcomes. The review therefore contributes not only to understanding what barriers exist, but more importantly how these barriers operate, who they affect, through which mechanisms they influence enterprise development, and what this means for achieving inclusive and responsible scaling of agricultural innovations in Zambia.

The report is structured as follows. Section 2 sets out the objectives, research questions, and conceptual framework. Section 3 explains the review design and search strategy. Section 4 presents the analytical approach and coding themes. Section 5 reports the findings from the Zambia evidence base, and Section 6 discusses the policy environment, existing reforms, and opportunities for responsible scaling interventions.

1.2 Problem Statement

Despite Zambia's policy commitment to promoting inclusive entrepreneurship, agricultural transformation and private sector development, women- and youth-owned enterprises continue to face interconnected enabling environment barriers that limit their ability to establish, grow and sustain competitive businesses. While considerable progress has been made in expanding financial inclusion, strengthening enterprise support policies and promoting innovation, persistent constraints within policy and regulatory systems, financial markets, institutional capacity, market coordination, Gender Equality and Social Inclusion (GESI), and climate finance continue to undermine enterprise performance and restrict access to opportunities for growth. These barriers are mutually reinforcing and create cumulative disadvantages that disproportionately affect women and youth, particularly where gender intersects with age, poverty, geographical location and other forms of social exclusion.

These challenges present a significant concern for the CGIAR Scaling for Impact (S4I) Programme, which seeks to promote the responsible scaling of agricultural innovations through the Zambia Solution Tracks on inclusive mechanization, climate-smart agro-advisories and forage-based livestock feed innovations. The effectiveness of these innovations depends not only on their technical merit but also on the extent to which the enabling environment supports equitable access, adoption, commercialisation and sustained use. Consequently, understanding how enabling environment barriers influence innovation scaling is critical to ensuring that scaling processes are inclusive, responsive and capable of delivering meaningful benefits for women and youth.

These interconnected constraints represent a failure of enabling-environment delivery conditions for the Zambia S4I Solution Tracks, affecting the reach, quality, and continuity of innovation delivery to women- and youth-owned enterprises. As a result, these constraints affect delivery, adoption, adaptation, continuity and benefit across Zambia's S4I Solution Tracks, with cumulative implications for inclusive and responsible scaling.

This review is limited to the Zambian context and focuses on six Area of Work 2 (AoW2) enabling-environment domains: policy and regulation, financial market access, market coordination, institutional capacity, Gender Equality and Social Inclusion (GESI), and climate finance. Rather than examining these domains in isolation, the review analyses how they influence innovation delivery systems supporting Zambia's three S4I Solution Tracks and how their interactions shape enterprise entry, adoption, growth, scaling, resilience and long-term sustainability for women- and youth-owned enterprises across the enterprise lifecycle.

1.3 Objectives and Research Questions

The main aim of this scoping review is to systematically examine how enabling-environment conditions shape the delivery, adoption, adaptation, continuity, and equitable benefits of the Zambia Scaling for Impact (S4I) Solution Track among women- and youth- led enterprises. The review analyses how the six AoW2 enabling-environment domains influence innovation delivery systems and identifies system-level opportunities for responsible and inclusive scaling.

The six enabling-environment domains used to structure the review were derived from the Scaling for Impact (S4I) Area of Work 2 (AoW2) enabling-environment framework and further operationalised through the literature reviewed for the Zambia context. The domains – policy and regulation, financial market access, market coordination, institutional capacity, Gender Equality and Social Inclusion (GESI), and climate finance – represent the principal enabling conditions through which the programme examines systemic barriers to responsible scaling. The literature review was subsequently used to examine how these domains manifest in Zambia and how they interact with innovation delivery systems, enterprise lifecycle stages and the three S4I Solution Tracks. Accordingly, the domains were defined *a priori* by the AoW2 analytical framework rather than generated inductively from the literature, while the specific mechanisms and barriers reported under each domain emerged from the evidence reviewed.

The central research question is: What are the core enabling environment barriers tracked by AoW2 in Zambia, and how do these barriers affect delivery, adoption, adaptation, continuity and benefit across the S4I Solution Tracks while shaping entry, survival, formalization, and growth for women-and youth-owned enterprises?

In addressing this question, the review analyses how barriers operate through solution-track delivery systems that link services, finance, information, markets, and institutional support to women and youth, rather than treating barrier domains as isolated constraints. The study uses six barrier-domain sub-questions:

- **Policy/regulatory:** How do policy and regulatory systems influence innovation delivery and enterprise participation across Zambia's solution tracks?
- **Financial market access:** How do financial systems affect investment in mechanization enterprises, digital agro-advisory services and forage-based enterprises?
- **Market coordination failures:** How do market institutions influence commercialization and scaling within each Solution Track?
- **Institutional capacity gaps:** How do extension systems, business development service providers, local authorities and private-sector actors support or constrain innovation delivery?
- **GESI (as domain + lens):** How do gender, youth, intersectionality, unpaid care work, time poverty and social norms influence participation and benefits across the Solution Tracks?
- **Climate finance:** How do climate-finance systems affect resilience and long-term sustainability of enterprises supported through the Solution Tracks?

In addition to diagnosing enabling-environment barriers, the review considers their implications for two AoW3 outcome dimensions: potential reach and investment mobilization. Potential reach refers to the number of women, youth and enterprises that could plausibly be reached through improvements in the enabling environment and associated Solution Track delivery systems, while investment mobilization refers to public, private, development and enterprise finance that could be leveraged or enabled through such improvements. Since the available literature does not consistently provide Solution Track-specific denominators, conversion rates, or investment values, the review does not present these as observed impacts. Instead, it identifies available quantitative parameters and establishes an estimation framework that can be populated and validated using Solution Track monitoring, partner, and investment data.

Through rigorous analysis of these domains, the review aims to generate robust insights. It clarifies the mechanisms, distributional effects, and interactions shaping Zambia's enabling environment for women and youth enterprises. Table 1 maps research objective/question with main sections addressing it.

Table 1. Mapping of research objective/research question with main sections addressing it

Objective/Research Question	Main section (s) addressing it	Type of evidence used
Diagnose the core AoW2 enabling-environment barriers affecting women- and youth-owned enterprises in Zambia	Sections 5.2, 5.3	Policy sources + empirical literature
Analyze how barriers affect entry, survival, formalization, and growth	Sections 5.2, 6.1	Synthesis across domains
Policy/regulatory barriers: binding rules, implementation practices, and mechanisms	Sections 5.3, 6.1, 6.3	Policy + empirical literature
Financial market access: collateral, product design, risk, delivery, consequences	Sections 5.2, 5.3, 6.1, 6.2, 6.3	Policy + empirical literature
Market coordination failures: information, buyer–seller linkages, standards, logistics	Sections 5.2, 5.3, 6.2, 6.3	Empirical + selected policy sources
Institutional capacity gaps: regulators, support institutions, BDS, extension	Sections 5.2, 5.3, 6.1, 6.2, 6.3	Policy + empirical literature
GESI: norms, discrimination, safety, voice, care burdens, interaction with other domains	Sections 5.2, 5.3, 6.1, 6.2	Policy + empirical literature
Climate finance: eligibility, transaction burdens, institutional arrangements	Sections 5.2, 5.3, 6.1, 6.2, 6.3	Limited empirical + policy strategy documents
Identify opportunities for responsible scaling and enabling-environment interventions to support women and youth-owned enterprises in Zambia	Section 6.4	Empirical evidence + Inferential analysis

2. Conceptual and Theoretical Framework

The scaling of agricultural innovations is increasingly recognised as a systems process that extends beyond the technical performance of innovations to encompass the institutional, policy, financial and socio-economic conditions that influence their adoption, adaptation and long-term sustainability. Enabling environment shape these conditions by determining the incentives, opportunities and constraints that influence how innovations are developed, disseminated and utilised by different groups of actors (North, 1990; World Bank, 2022; OECD, 2019). Within agricultural development, innovation outcomes are therefore influenced not only by the quality of technologies or practices themselves, but also by the interaction between institutions, markets, governance structures and social norms that shape access to resources, information and opportunities (Hall et al., 2006; Kilelu et al., 2011; Sartas et al., 2020). These perspectives provide the theoretical foundation for understanding why similar innovations often achieve different scaling outcomes across contexts and population groups.

In this review, enabling-environment barriers are understood as policy, regulatory, financial, market systems, institutional, social and climate-finance constraints that shape incentives and opportunities for innovation uptake and enterprise development. Responsible scaling refers to scaling processes that are context-specific, risk-aware and accountable to diverse stakeholder groups, ensuring that innovation diffusion does not reproduce or deepen existing inequalities. Inclusive scaling is treated here as a core condition of responsible scaling: it focuses on who enters, participates in and benefits from innovation pathways, with particular attention to women and youth. Solution-track delivery systems are the combined arrangements of actors, rules, technologies, finance, information and support services through which S4I innovations are designed, financed, distributed and supported for end-users, including women- and youth-owned enterprises.

This review is further informed by the Agricultural Innovation Systems (AIS) perspective, which conceptualises innovation as the product of interactions among multiple actors operating within interconnected institutional environments rather than as a linear transfer of technology from research to end users (Hall et al., 2006; Kilelu et al., 2011). Agricultural innovations emerge through collaboration among researchers, extension systems, private enterprises, producer organisations, financial institutions, government agencies and development partners, each contributing complementary functions that support innovation development and diffusion. The effectiveness of these interactions depends on the quality of the enabling environment, including the policies, institutions, markets and governance arrangements that facilitate coordination, learning and investment. Consequently, weaknesses within any component of the innovation system may constrain innovation uptake even where technically sound solutions are available.

These principles underpin the CGIAR Scaling for Impact (S4I) Programme, which recognises that sustainable scaling requires coordinated action across technological, institutional and policy dimensions. The programme seeks to accelerate the adoption of agricultural innovations by strengthening the enabling conditions that influence innovation uptake, enterprise development and system transformation. Within this context, the Enabling Environment Lab focuses on generating evidence to improve the policy, institutional, financial and social environments that support responsible scaling. In Zambia, this work is operationalised through three complementary Solution Tracks: Scaling Inclusive Mechanization through Rural Entrepreneurship and Financial Innovation; Scaling Climate-Smart Agro-Advisories through the Shamba Shape Up Content Generation Platform; and Scaling Forage-Based Livestock Feed Innovations for Resilient Rural Livelihoods. Collectively, these Solution Tracks provide the innovation context within which enabling environment barriers are examined, while offering practical pathways through which evidence generated by this review can inform programme implementation and broader agricultural transformation efforts.

The conceptual framework (Figure 1) therefore considers enabling environment as comprising six interconnected domains that collectively influence innovation scaling: policy and regulatory systems, financial market access, market coordination, institutional capacity, Gender Equality and Social Inclusion (GESI), and climate finance. These domains influence the extent to which enterprises are able to access productive resources, comply with regulatory requirements, mobilise investment, participate in markets and respond to emerging risks. Their interactions shape enterprise trajectories throughout the innovation and business lifecycle, affecting opportunities for entry, growth, resilience and commercialisation. Improvements within one domain often depend on complementary changes across others, highlighting the importance of adopting a systems perspective when analysing enabling environments.

The framework also recognises the central role of innovation delivery systems in translating enabling environment conditions into enterprise outcomes. Agricultural innovations reach women and youth through a network of interconnected actors, including public extension services, private agribusinesses, mechanisation service providers, digital advisory platforms, producer organisations, financial institutions, research organisations, civil society and local government authorities. Agricultural Innovation Systems literature emphasises that innovation emerges through interactions among multiple actors and through the alignment of technical, social, institutional and organisational dimensions (Hall et al., 2006; Kilelu et al., 2013). These delivery systems facilitate access to technologies, information, markets, finance and institutional support, while also influencing the quality, inclusiveness and sustainability of innovation uptake. Their effectiveness is shaped by the broader enabling environment and by the strength of linkages among actors, making delivery system a critical interface between enabling-environment conditions and enterprise-level outcomes (Hall et al., 2006; Sartas et al., 2020).

A Gender Equality and Social Inclusion (GESI) perspective provides the analytical lens through which the six enabling environment domains are examined. Extensive evidence demonstrates that women and youth experience institutions, markets and financial systems differently because of unequal access to productive resources, decision-making authority, education, information, mobility and economic opportunities (Kabeer, 1999; Evans, 2018; FAO, 2023). These differences are further influenced by the intersection of gender with age, disability, geographical location, wealth, education and other dimensions of social identity, producing diverse experiences of opportunity and exclusion.

Particular attention is therefore given to the mechanisms through which time poverty, unpaid care responsibilities, gendered divisions of labour, discriminatory social norms, unequal asset ownership and limited representation influence enterprise participation and innovation uptake. Examining these dimensions provides a more comprehensive understanding of how enabling environment barriers affect women and youth throughout the enterprise lifecycle and identifies opportunities for designing interventions that promote equitable participation and benefit sharing.

Applying a GESI lens therefore requires asking four inclusion questions across enabling-environment domains and solution-track delivery systems: who is able to enter these innovation and enterprise spaces, who sustains participation over time, who bears the direct and indirect costs of participation and who ultimately controls and benefits from the economic, social and climate-related gains generated. These four inclusion tests guide the coding and interpretation of evidence across the six AoW2 domains.

The framework is equally informed by the principles of Responsible Scaling, which emphasise that scaling processes should maximise developmental benefits while anticipating and managing potential social, economic and environmental trade-offs (Wigboldus & Leeuwis, 2013; Wigboldus et al., 2020). Responsible scaling extends beyond expanding the reach of innovations to ensuring that scaling processes remain inclusive, context-specific and responsive to the needs of different stakeholder groups. Within the S4I Programme, these principles are reflected through efforts to strengthen institutional capacity, improve coordination among innovation actors and ensure that women, youth and other historically underserved groups are able to participate meaningfully in innovation systems. This perspective provides an important foundation for analysing how enabling environment reforms can support equitable innovation uptake while reducing the risk of reinforcing existing inequalities.

Drawing on these perspectives, the review adopts a Theory of Change (ToC) that positions the six AoW2 enabling-environment domains as the foundational conditions influencing innovation delivery systems. Strengthened policies, financial systems, market institutions, institutional capacity, GESI responsiveness and climate-finance mechanisms improve the effectiveness of delivery systems, including extension services, mechanization service providers, digital advisory platforms, financial institutions, producer organizations and private enterprises. Stronger delivery systems enable more effective implementation of Zambia's three Solution Tracks, leading to improved innovation delivery, adoption, adaptation, continuity and equitable benefit sharing. These intermediate outcomes contribute to increased enterprise productivity, commercialization, resilience and inclusive agricultural transformation while ensuring that scaling processes remain responsible and sustainable.

In summary, the conceptual framework (Figure 1) positions the enabling environment as the foundation upon which innovation delivery systems operate to support Zambia's three S4I Solution Tracks. The framework integrates systems thinking, Agricultural Innovation Systems, Responsible Scaling, Gender Equality and Social Inclusion, and Theory of Change perspectives to explain how policy, finance, institutions, markets, climate finance and social norms collectively influence innovation delivery, enterprise performance and responsible scaling outcomes. It also recognizes that women and youth experience these systems differently because of intersecting social and structural inequalities. This integrated framework guides the methodology and analysis presented in the subsequent sections.

CONCEPTUAL FRAMEWORK: RESPONSIBLE AND INCLUSIVE SCALING IN ZAMBIA

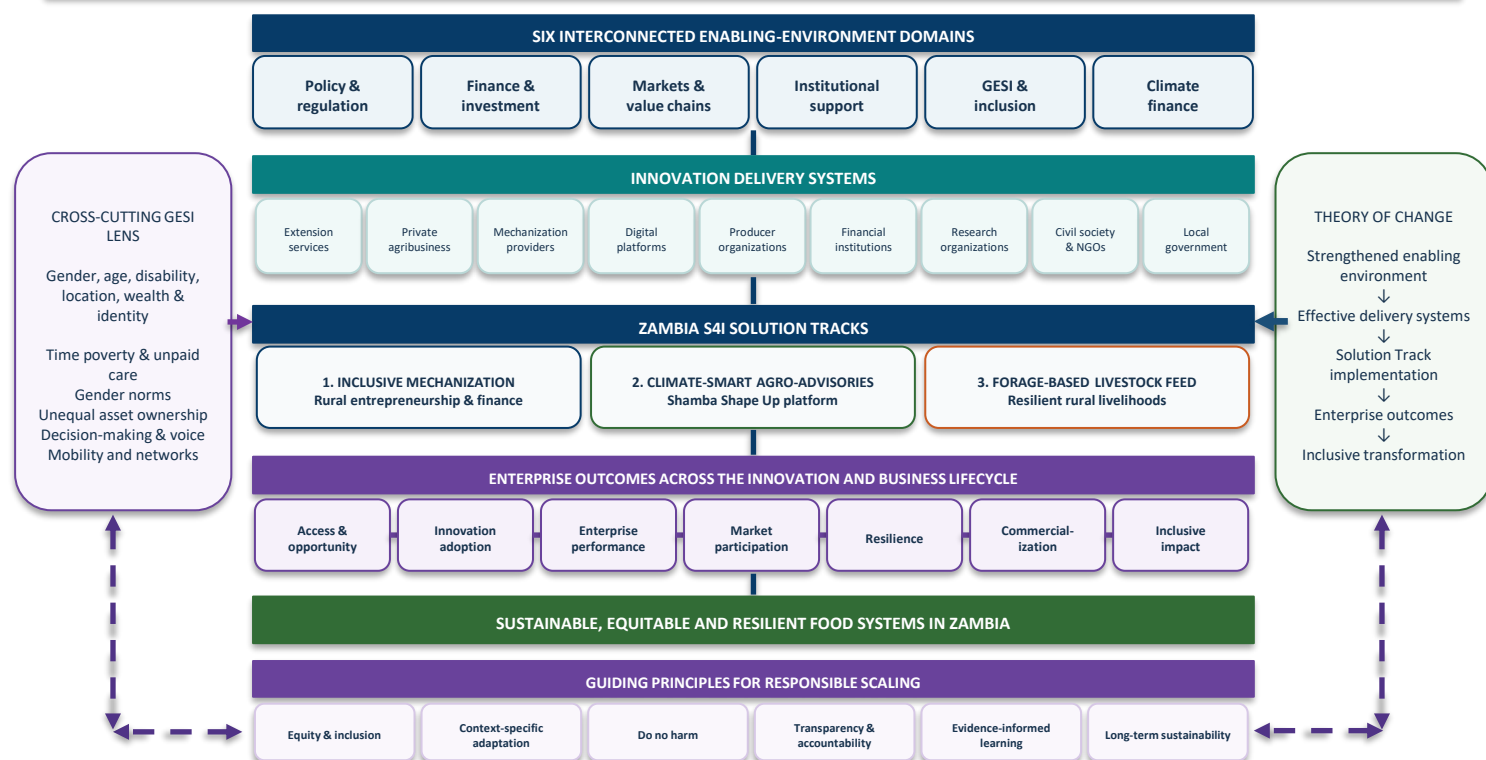


Figure 1. Conceptual Framework showing conditions for responsible scaling of three selected agricultural innovations in Zambia

Source: Authors' conceptualisation, informed by Agricultural Innovation Systems (Hall et al., 2006; Kilelu et al., 2013), Gender Equality and Social Inclusion (Kabeer, 1999), and Responsible Scaling Literature (Wigboldus & Leeuwis, 2013; sartas et al., 2020).

Responsible scaling requires examining not only whether innovations can reach more people, but whether scaling may generate unintended social, economic or environmental risks. Responsible scaling literature emphasizes anticipation, reflexivity, inclusion, legitimacy and responsiveness when innovations are expanded across contexts (Wigboldus & Leeuwis, 2013; Wigboldus, Klerkx & Leeuwis, 2020). For the Zambia Solution Tracks, this means assessing who may be excluded, who may lose access to resources, and who may bear new costs as innovations scale.

For inclusive mechanization, possible risks include concentration of equipment ownership among better-capitalized actors, unaffordable services for poorer women and youth, and displacement of labour opportunities without alternative income pathways. For climate-smart agro-advisories, risks include digital exclusion of women with limited phone access, connectivity or literacy, and uneven benefits where advisory content does not address women's crops, livestock roles or time constraints. For forage-based livestock feed innovations, risks may include unequal access to land, input markets and livestock assets, as well as increased pressure on women's labour if forage production adds responsibilities without changing household decision-making as presented in Figure 1.

3. Methodology

3.1 Review Design

This study adopts a scoping review approach with systematic elements to identify, organize, and synthesize evidence on enabling-environment barriers affecting women- and youth-owned enterprises in Zambia. The review was structured around the six AoW2 domains and used a transparent process of source identification, screening, domain-based extraction, and thematic synthesis.

3.1.1 Search strategy

This review was conducted between May and August 2026 to examine the institutional, financial, market, gender, and climate-related factors influencing the participation, formalization, sustainability, and growth of women- and youth-led enterprises in Zambia. The review adopted a structured literature review approach, combining evidence from peer-reviewed academic studies, policy documents, government frameworks, institutional reports, and other relevant grey literature. This approach was selected to ensure that both empirical evidence and the broader policy and institutional context shaping entrepreneurship outcomes in Zambia were adequately captured.

The literature search focused on evidence relating to women's entrepreneurship, youth entrepreneurship, enterprise formalization, access to finance, market participation, institutional support systems, gender equality and social inclusion (GESI), climate finance, and enterprise resilience. Academic literature was primarily sourced through Google Scholar and relevant online repositories using combinations of search terms including women entrepreneurs Zambia, youth entrepreneurship Zambia, MSME formalization, financial inclusion, enterprise development, market access, gender and entrepreneurship, climate finance, women-owned enterprises, and youth-led enterprises. Preference was given to studies published between 2015 and 2026 in order to capture recent developments in Zambia's entrepreneurship ecosystem while also incorporating foundational studies relevant to the review objectives.

To complement the academic evidence base, a review of policy and grey literature was undertaken. These sources included reports and policy documents from the Government of Zambia, the Bank of Zambia, Alliance for Financial Inclusion (AFI), World Bank, International Labour Organization (ILO), Green Climate Fund (GCF), Zambia Institute for Policy Analysis and Research (ZIPAR), Rural Finance and Investment Learning Centre (RFILC), BioCarbon Partners (BCP), and other development and research organizations.

Studies and documents were included if they: (i) focused on Zambia; (ii) examined issues related to women, youth, MSMEs, entrepreneurship, enterprise development, financial inclusion, market access, institutional support, gender equality, or climate-related enterprise challenges; and (iii) provided empirical, policy, or analytical evidence relevant to the review objectives. Sources that did not focus on Zambia, lacked relevance to enterprise development, or did not address women and youth participation were excluded from the final analysis.

Following identification and screening of relevant materials, evidence was extracted and organized according to the review's analytical framework. The findings were coded and synthesized around key thematic domains. Thematic synthesis was then used to identify recurring patterns, barriers, opportunities, and policy implications emerging across the literature.

Declaration of Generative AI Use

Generative artificial intelligence (AI) tools, specifically OpenAI's ChatGPT, supported the preparation of this technical report. AI assistance included language editing, improving the clarity and coherence of selected sections, refining the presentation of conceptual and methodological arguments, organising and synthesising draft content, and developing an editable visual representation of the conceptual framework presented in Figure 1. The use of AI tools was intended to support the drafting, editing and presentation of the report rather than replace the authors' scientific judgment. The authors retain responsibility for verifying the accuracy of the information presented, checking references and citations, interpreting the evidence, developing the conclusions and recommendations, and ensuring the integrity of the final publication. Authors reviewed and revised AI-generated outputs.

Declaration of Competing Interests

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

4. Review Analysis

For each included source, the review extracted information on the type of barrier described, the groups affected, the reported enterprise consequences, and any identified institutional or policy response. Evidence was then mapped to one or more of the six AoW2 coding themes according to its primary substantive focus. Where a source described linked effects across domains, for example, where regulatory burdens affected financial access, or where GESI inequalities shaped market participation, these interactions were recorded as cross-domain patterns and incorporated into the synthesis. This approach enabled the review to organize findings by domain while also identifying how barriers overlap and reinforce one another across enterprise trajectories.

5. Results

5.1 Zambia: Overview of Findings

5.1.1 Women, youth, and collective enterprise perspectives

Zambia presents a paradoxical enterprise landscape in which women and youth exhibit high participation rates yet remain concentrated in low-productivity informal economic activities. According to Tamba (2024) and Chijikwa & Mulenga (2023), while women make up 60% of MSMEs in Zambia, only about 15.7% are formally registered, thereby limiting their access to structured enterprise development opportunities such as finance and credit, tax incentives, and procurement opportunities. The International Labor Organization (ILO) found that women and youth-led enterprises in Zambia are heavily skewed toward trading and retail (44%) and agriculture (31%), with limited representation in higher-value sectors such as manufacturing, technology, and energy (ILO, 2015). This reflects structural constraints, including limited access to capital, markets, and skills. Women also start with significantly lower median startup capital of US\$55 compared to US\$85 for men, contributing to lower productivity and concentration in low-return sectors (ILO, 2015).

In addition, youth, especially young women, enter entrepreneurship primarily as a response to limited employment opportunities, with unemployment reaching over 41% among women aged between 15 – 29 years (ILO, 2015). Limited employment opportunities, especially for young people, have resulted in many enterprises being formed out of necessity rather than choice a prominent feature in rural, peri-urban, and metropolitan (Chijikwa & Mulenga, 2023). Nevertheless, these dynamics vary across rural, peri-urban, and urban contexts, reflecting differences in economic opportunity structures and social norms. In rural and peri-urban areas, entrepreneurship is predominantly necessity-driven, emerging as a response to limited wage employment opportunities and persistent youth unemployment (Chijikwa & Mulenga, 2023). On the other hand, the urban setting of Lusaka provides more market choices and less severe enforcement of conventional gender stereotypes. Access to formal labour and product markets, however, is a significant problem (Evans, 2018; Gough & Langevang, 2016).

Many innovation delivery pathways in agriculture depend on collective structures such as cooperatives, savings groups, producer groups and mechanization service groups. In Zambia, informal savings groups and financial cooperatives are already important mechanisms for women and youth because they provide liquidity, shared risk and social support where formal finance remains inaccessible (Mulenga et al., 2019; RFILC, 2020). However, these collective mechanisms often provide short-term liquidity rather than the larger and longer-term capital required for enterprise upgrading and innovation commercialization.

Collective enterprise models are especially relevant to the Zambia Solution Tracks. Mechanization services may be delivered through service-provider groups or farmer organizations; forage-based livestock feed innovations may depend on producer groups, aggregation systems and livestock associations; and climate-smart agro-advisory services may reach women and youth through group-based information networks. Yet collective models can also reproduce exclusion if leadership structures are male-dominated, youth are excluded from decision-making, or poorer members bear participation costs without gaining proportional benefits (Kabeer, 1999; FAO, 2023). The results therefore suggest innovations for scaling in Zambia need to explore the governance, representation and accountability conditions under which collective enterprise models support inclusive scaling. This would help distinguish whether cooperatives and groups are acting as genuine inclusion pathways or simply as delivery channels that may mask internal inequalities. Table 2 highlights central issues that could potentially emerge within collective enterprise with implications for scaling innovations across socially differentiated category.

Table 2. Showing collective enterprise issues affecting innovations

Collective delivery model	Mechanism supporting inclusion and scaling	Potential exclusion or scaling risk	Research and learning needs
Savings groups/village banking	Liquidity and peer support	Insufficient capital for scale-up	Evidence on transition from savings to growth finance
Cooperatives	Aggregation and bargaining power	Elite capture or weak women/youth voice	Data on leadership, membership and benefit distribution
Producer organizations	Market linkage and quality compliance	Exclusion of smaller or poorer producers	Evidence on standards, costs and price benefits
Mechanization service groups	Shared equipment access	Control of machinery by better-resourced actors	Evidence on access rules and service affordability

Overall, collective enterprise models can reduce individual barriers to finance, markets and innovation access by pooling resources, strengthening bargaining power and facilitating shared service delivery. However, their contribution to inclusive and responsible scaling depends on governance arrangements that ensure women, youth and less-resourced members have meaningful participation, equitable access to services and a fair share of the benefits generated.

5.1.2 Enterprise lifecycle analysis

Policy and regulatory frameworks in Zambia present significant barriers to enterprise formalization and growth. Regulations governing business registration, licensing, and taxation are complex, costly, and documentation-heavy, discouraging women and youth from formalizing enterprises (Chulu & Kachamba, 2025). These policy and regulatory constraints influence enterprise entry by discouraging formalization, limiting innovation adoption, and restricting access to support services that underpin Zambia's three S4I Solution Tracks. Within the Inclusive Mechanization Solution Track, cumbersome registration and licensing requirements constrain the establishment and expansion of mechanization service enterprises. Under the Climate-Smart Agro-Advisory Solution Track, informal enterprises struggle to access partnerships, digital service platforms, and formal advisory networks. Similarly, within the Forage-Based Livestock Feed Solution Track, regulatory barriers reduce opportunities for commercialization, market participation, and long-term enterprise growth. Consequently, these barriers limit enterprise entry, innovation adoption, business continuity, and equitable participation, particularly among women and youth.

Because of a lack of formalization, most women and youth face challenges accessing finance and credit from reputable institutions. While Zambia has seen improved women's financial inclusion from 2009 to 2020, a persistent gender gap remains in access to finance and credit from formal financial services (Data2X, 2021). This is driven not only by a lack of business formalization but also by barriers such as high collateral requirements, particularly land ownership, high interest rates (often above 15%), and lengthy loan approval processes (World Bank, 2023). Women also cite limited financial education and literacy as factors restricting their access to capital. This leaves several women relying on informal services to access finance, thereby limiting their expansion, growth, and market reach. These financing constraints directly affect the Inclusive Mechanization Solution Track by limiting investment in machinery, equipment, and mechanization service enterprises. They also reduce adoption of digital advisory services under the Climate-Smart Agro-Advisory Solution Track by limiting entrepreneurs' ability to invest in complementary technologies and expand their businesses. Likewise, limited access to finance constrains investment in forage production, processing, and commercialization under the Forage-Based Livestock Feed Solution Track. Consequently, financial exclusion reduces innovation adoption, enterprise productivity, commercialization, resilience and equitable benefit sharing, particularly for women and youth enterprises.

A study by the ILO (2015) found that women entrepreneurs face several market coordination barriers, as shown by their dominance in lower-value segments of value chains and limited access to higher-margin enterprises such as processing, aggregation, and export markets. Chulu & Kachamba (2025) cite weak value chain integration, information asymmetries, and limited collective action as challenges keeping many women and youth as price-takers in fragmented local markets. Weak market coordination reduces opportunities for enterprises to participate effectively within all three Zambia Solution Tracks. Limited aggregation, weak buyer-seller linkages, inadequate market information and poor value-chain integration constrain commercialisation of mechanization services, reduce demand for climate-smart advisory products and limit profitable market opportunities for forage enterprises. These coordination failures therefore reduce enterprise productivity, innovation continuity, value-chain upgrading, and long-term business growth while reinforcing low-return market participation among women- and youth-owned enterprises.

Limited institutional support further exacerbates this, as evidenced by poor road networks, limited access to technology, and high transaction costs that constrain market participation (Imakando, 2024). As a result, this limits women's and youth's inclusion in higher-margin enterprise opportunities, leading to gender-unequal outcomes and failing to address the specific constraints faced by women and youth (Chulu & Kachamba, 2025). Institutional capacity constraints weaken the delivery systems that support implementation of Zambia's Solution Tracks. Under the Inclusive Mechanization Solution Track, inadequate extension services and limited business development support reduce entrepreneurs' technical and managerial capacity. Within the Climate-Smart Agro-Advisory Solution Track, insufficient coordination among extension providers, digital platforms and local institutions constrains effective dissemination and sustained use of advisory services. Similarly, weak institutional support limits enterprise development and commercialization within the Forage-Based Livestock Feed Solution Track. As a result, institutional weaknesses reduce innovation delivery, enterprise adaptation, business continuity and scaling outcomes for women and youth.

Gender norms affect enterprise development not only through attitudes but through concrete constraints on time, mobility, asset ownership, leadership, access to networks and control over income. Kabeer's resources-agency-achievements framework is useful for showing how limited resources and constrained agency shape economic outcomes (Kabeer, 1999).

In Zambia, unpaid care responsibilities and gendered divisions of labour can reduce women's time for training, market visits, extension meetings and enterprise management. Mobility constraints and safety concerns can limit access to markets, financial institutions and advisory services. Unequal asset ownership reduces collateral and bargaining power, while limited representation in cooperatives, producer organizations and market committees affects voice in decisions over services, prices and benefit sharing. These mechanisms help explain why women may participate in enterprises but remain concentrated in low-return activities (ILO, 2015; RFILC, 2020; FAO, 2023; World Bank, 2023). Social norms remain operational constraints that shape the cost of participation, the feasibility of adoption, and control over benefits. Hence, GESI should not be treated as a stand-alone theme, but as a lens for understanding how gender and youth inequalities interact with finance, market coordination, policy, and institutional capacity.

Failure to address gender-specific challenges has resulted in GESI constraints that are deeply rooted in Zambia's entrepreneurial landscape. Several women experience significant poverty, with 73.2% involved in unpaid family labour compared to 26.8% of men (BioCarbon Partners (BCP), 2024). Deeply entrenched norms, asset inequality, harassment of women informal traders, insecure trading conditions, and limited legal protection in marketplaces are cited as GESI barriers faced in Zambia's socio-economic landscape (Kapaso et al, 2026). However, these constraints reduce productivity, limit mobility, and reinforce concentration in low-return activities. They influence not only whether women and youth participate in innovation systems but also whether they are able to sustain participation, benefit equitably, and influence decision-making. Time poverty arising from unpaid care responsibilities, unequal division of labour, limited ownership of productive assets, mobility restrictions and discriminatory social norms reduce women's capacity to adopt mechanization services, participate in climate-smart advisory systems and invest in forage enterprises. These challenges become even more pronounced where gender intersects with youth, poverty, disability and rural location, creating multiple forms of exclusion that constrain enterprise productivity, innovation continuity, leadership opportunities and equitable benefit sharing across all three Solution Tracks.

Limited access to climate finance reduces the capacity of enterprises to invest in climate adaptation, resilience and sustainable business growth across Zambia's three Solution Tracks. Women- and youth-owned enterprises often lack the technical capacity, financial records and institutional linkages required to access available climate finance mechanisms. Consequently, enterprises implementing mechanization, climate-smart advisory and forage innovations remain highly vulnerable to climate shocks, limiting innovation continuity, enterprise resilience, long-term commercialization and responsible scaling outcomes.

5.1.3 Implications across the enterprise lifecycle

In the Zambian context, the three enterprise stages affected by enabling-environment barriers are startup, early growth, and scale-up. At startup, many women and youth rely on personal savings, family contributions, and informal savings groups, as formal startup finance is largely inaccessible. This is because startup businesses are often regarded as high-risk investments by banks, investors, and other financial institutions. Lack of collateral, limited business experience, poor creditworthiness, information asymmetry, limited awareness of funding opportunities, and regulatory hurdles are cited as key contributing factors (World Bank, 2023; Chulu & Kachamba, 2025).

Across the enterprise lifecycle, enabling-environment barriers influence not only whether enterprises are established but also whether innovations are adopted, adapted, sustained and able to generate equitable benefits. During enterprise entry, regulatory complexity and financial exclusion discourage formalization and innovation uptake. During early growth, weak delivery systems constrain productivity, market integration and business continuity. At the scale-up stage, institutional bias, limited access to investment finance and constrained market opportunities reduce commercialization and long-term enterprise resilience. Collectively, these barriers limit responsible scaling by preventing women- and youth-owned enterprises from fully participating in and benefiting from Zambia's three Solution Tracks.

Evidence from Zambia suggests that women and youth often enter enterprise activities under conditions of necessity, limited startup capital, weak employment alternatives and reliance on informal finance. These entry conditions later shape their outcomes because enterprises that begin with low capitalization and weak records are less able to formalize, access finance, comply with regulatory requirements or participate in higher-value markets (ILO, 2015; Chijikwa & Mulenga, 2023; World Bank, 2022).

At the survival stage, women- and youth-owned enterprises face liquidity constraints, weak market information and limited institutional support, which increases exposure to business discontinuity. During formalization and growth, documentation burdens, high collateral requirements and limited credit histories create reinforcing constraints, especially for rural women, young women, and entrepreneurs with limited literacy or asset ownership (RFILC, 2020; World Bank, 2023). At the scale-up and resilience stages, barriers related to climate shocks, fragmented value chains, market standards and limited investment finance restrict enterprise upgrading and reduce the capacity of SMEs and cooperatives to sustain innovation use over time (World Bank, 2022; Green Climate Fund, 2023). A lifecycle lens therefore clarifies that barriers do not only affect whether women and youth start enterprises; they shape whether enterprises survive shocks, formalize, grow, commercialize innovation and remain resilient. This is important for the S4I Solution Tracks because inclusive mechanization, climate-smart agro-advisories and forage-based livestock feed innovations require sustained enterprise participation rather than one-off adoption as described in Table 3.

Table 3. Showing Enterprise lifecycle mechanisms

Enterprise lifecycle stage	Key enabling environment barriers	How the barrier operates (mechanism)	Implications for women- and youth-owned enterprises
Entry	Registration costs, low capital, limited employment alternatives	Necessity-based enterprise entry under weak support conditions	High informality and low initial productivity
Survival	Cash-flow stress, limited savings, weak BDS	Low working capital reduces ability to absorb losses	Business discontinuity and reliance on informal coping systems
Formalization	Documentation, licensing and tax compliance burdens	Compliance costs outweigh perceived benefits	Exclusion from procurement, finance and government support
Growth	Collateral, market fragmentation, limited standards support	Low investment and weak market integration restrict upgrading	Stagnation in low-return activities
Scale-up/resilience	Climate shocks, limited climate finance, weak insurance	Asset erosion and reduced lender confidence	Reduced continuity, commercialization and adaptation capacity

The table above demonstrates that enabling-environment barriers are cumulative across the enterprise lifecycle, with constraints experienced at entry influencing enterprises' ability to survive, formalize, grow and eventually scale. This highlights the need for stage-responsive support that addresses the changing financial, regulatory, market and institutional needs of women- and youth-owned enterprises throughout their development, rather than concentrating support only at enterprise start-up

5.2 Interaction and Compounding Effects Across Barrier Domains

Literature from Zambia shows that barriers affecting women and youth-owned enterprises should not be viewed in isolation, as they are linked through cause-and-effect dynamics. For instance, the policy and regulatory challenges related to documentation and registration hurdles that are key to establishing formal enterprises directly affect women's and youth's access to finance and credit (ILO, 2015; RFILC, 2020). Limited access to finance leaves most women and youth with no option but to venture into informal enterprises characterized by market coordination failures, limited investment capacity, and limited access to structured value chains with higher value, thereby affecting their productivity and bargaining strength (ILO, 2015; World Bank, 2022).

These challenges affect institutional ability to curtail GESI barriers, as women and youth representation in leadership roles remains low. As a result, challenges related to customary land systems and intrahousehold power relations continue to limit women's access to collateral, finance, and high-margin markets. Further, constraints such as poverty and mobility restrictions among women reduce their capacity to engage with formal institutions; and market harassment and insecurity push women into low-risk, low-return niches. In the same vein, for youth, lack of credit history, distrust by lenders, and exclusion from business networks magnify the effects of regulatory and financial barriers, especially in rural and peri-urban areas.

Climate risk and climate finance exclusion overlay these structures. Women's and youth's concentration in agriculture and informal livelihoods makes them highly vulnerable to droughts and other shocks, while the design and scale of climate finance instruments mean they rarely access adaptation or mitigation resources. Climate shocks then further erode asset bases and income stability, making enterprises even less attractive to lenders and buyers and deepening a cycle of vulnerability, informality, and underinvestment.

Inclusion cannot be assessed only by participation numbers; it also requires examining who pays the direct and indirect costs of participation, who carries the risks of innovation adoption, who controls productive assets, and who captures benefits. This is consistent with the review's GESI lens and with responsible scaling principles that emphasize equitable benefit sharing and avoidance of harm (Kabeer, 1999; Wigboldus & Leeuwis, 2013; FAO, 2023).

For example, young women may face higher participation costs because of time poverty, childcare responsibilities, limited mobility and weaker access to collateral. Rural women may bear higher travel costs to reach registration offices, banks, markets and extension providers. Youth may bear reputational risk and lender distrust because they lack credit histories and business records. Informal traders may face harassment, insecure trading conditions and unpredictable enforcement. Cooperatives may reduce individual costs but can also create internal exclusions if leadership and benefit allocation are not transparent (RFILC, 2020; World Bank, 2023; Kapaso et al., 2026). A distributional lens would help the review identify whether Solution Track interventions reduce or shift burdens. This is important because an intervention can increase adoption while still leaving women and youth to absorb hidden costs, unpaid labour, repayment risk or climate-related losses.

Collectively, these interacting barriers demonstrate that innovation scaling depends on the performance of interconnected delivery systems rather than isolated interventions. Weak policy implementation constrains financial inclusion; financial exclusion limits investment in innovation; poor institutional capacity weakens advisory and extension systems; while market failures reduce commercialization opportunities. These interacting mechanisms influence enterprise entry, innovation adoption, adaptation, continuity, productivity and resilience across Zambia's three Solution Tracks. Their effects are particularly pronounced for women and youth because structural inequalities amplify exclusion throughout the enterprise lifecycle.

5.3 Evidence Strength and Gaps (Mapped to AoW2 Domains)

Strongest evidence

The evidence on women and youth-owned enterprises in Zambia is quite uneven across the AoW2 domains. It is strongest where finance, regulation, and gendered social norms are concerned, and much weaker for climate finance, frontline institutional practice, and youth-specific dynamics. Studies consistently show that women face high collateral requirements, dependence on informal finance, and bias in credit assessment, confirming a persistent gender finance gap (ILO, 2015; RFILC, 2020; Data2X, 2021; World Bank, 2023). The way statutory law interacts with customary land systems is also well documented, underscoring how unequal control over land and assets constrains women's economic participation (RFILC, 2020). A broad body of work further highlights gendered and intersectional constraints, such as unpaid care work, early marriage, school dropout, and spatial disadvantage, and their central role in shaping enterprise outcomes (RFILC, 2020).

The picture is somewhat less clear regarding market coordination. There is a fair amount of qualitative and mixed-methods evidence showing that women are concentrated in lower-value parts of value chains and have weaker networks, limited mentorship, and patchy access to market information (ILO, 2015; World Bank, 2022). These studies are informative, but they remain fragmented and lack large-scale quantitative data, so confidence in the breadth of these findings is moderate rather than high (ILO, 2015; Imakando, 2024; World Bank, 2023).

Key evidence gaps

Climate finance for women and youth owned enterprises is a clear gap: existing work shows that women are highly exposed to climate risks and rarely access climate finance instruments, but offers little hard data on who is reached, at what scale, and with what impact (Green Climate Fund, 2023; BCP, 2024). Much of what is known comes from program narratives and policy documents rather than rigorous impact evaluations, which makes it difficult to draw firm conclusions (Green Climate Fund, 2023; BCP, 2024). The same is true for institutional capacity for inclusive enforcement. While there is good descriptive work on regulatory gaps and the limits of gender neutral policies, there is very little systematic evidence on how local councils, market authorities, and bank branches actually implement rules in practice; observations of practices such as spousal consent demands or harassment in markets tend to be localized and qualitative (RFILC, 2020; Kapaso et al, 2026).

Youth specific constraints are also not well captured. Young people are often treated as a sub-group within broader MSME or women focused studies, which means there is limited analysis of how age intersects with gender, location, and lifecycle stage to shape distinct challenges (PMRC, 2015). This leaves important blind spots, such as differences between rural and urban youth, or between young women and young men, at exactly the point where more nuanced evidence would be most useful for policy and program design (PMRC, 2015). These gaps suggest the need for embedded learning in AoW2 programs, including gender and age-disaggregated data, institutional process evaluations, and tracking of climate-finance access for women and youth-owned enterprises.

These evidence gaps have important implications for the S4I Programme. Limited evidence on climate finance, institutional implementation and youth-specific enterprise dynamics constrains understanding of how delivery systems perform across Zambia's three Solution Tracks. Strengthening embedded learning, monitoring and evaluation within the Solution Tracks will improve understanding of innovation adoption, adaptation, continuity and equitable benefit sharing while generating evidence to support responsible scaling.

5.4 Implications for AoW3 Reach and Investment Mobilization

The enabling-environment barriers identified in this review have direct implications for the scale of people and enterprises that can be reached through Zambia's three S4I Solution Tracks and for the volume of investment that can be mobilized to support scaling. While the evidence base is sufficiently strong to identify the direction and mechanisms of these effects, it is not sufficiently complete to produce robust national estimates of either reach or investment leveraged. This distinction is important because the review should not attribute program-level outcomes to national statistics or literature-derived parameters without evidence of a direct causal or delivery relationship.

Nevertheless, the available evidence provides useful parameters for defining the scale of the opportunity. Women account for a substantial share of Zambia's MSMEs, yet only a relatively small proportion of women-owned enterprises are formally registered. Women also enter entrepreneurship with lower median start-up capital than men. These findings indicate a potentially large population of enterprises that could benefit from interventions addressing formalization, finance, market access and innovation delivery constraints. They should, however, be interpreted as indicators of the addressable enabling-environment opportunity, rather than as the number of enterprises that S4I will directly reach.

The Enabling Environment Lab (AoW3) therefore suggests quantification should distinguish between three levels: (i) the addressable population, representing people or enterprises potentially affected by the identified enabling-environment constraint; (ii) programme-enabled reach, representing enterprises or individuals reached through Solution Track delivery systems following an enabling-environment intervention; and (iii) sustained or effective reach, representing those who subsequently adopt, adapt or continue using the innovation. This distinction prevents national-level opportunity estimates from being reported as programme achievements.

A similar distinction is required for investment. The literature demonstrates substantial financing constraints affecting women- and youth-owned enterprises, including inadequate collateral, limited growth finance and dependence on informal financing. These constraints indicate considerable potential for investment mobilization, particularly through equipment finance, credit guarantees, blended finance, climate finance and private investment. However, the evidence reviewed does not provide sufficient Solution Track-specific information to calculate investment leveraged. Such estimates require data on the financing instrument, baseline investment, public or programme contribution, private co-investment and attributable additional capital mobilized.

Accordingly, the quantitative contribution of this review is to establish an AoW3 estimation framework that can be populated as Solution Track implementation data become available. This allows the barrier diagnostic to inform current KPI reporting while maintaining a clear distinction between evidence-based estimates, programme targets and verified outcomes as shown in Table 4.

Table 4. Translating Enabling Environment Findings into Reach and Investment Metrics

Solution Track	Principal AoW3 Opportunity	Indicative Reach Metric	Indicative Investment Metric	Data Required for Quantification
Inclusive Mechanization through Rural Entrepreneurship and Financial Innovation	Reduce financing and formalization barriers affecting mechanization service enterprises and underserved users	No. of women/youth mechanization enterprises supported; no. of farmers accessing services; proportion of new users who are women/youth	Value of equipment finance, leasing, credit guarantees and private co-investment mobilized	Number of MSPs; client records; equipment costs; loan/leasing values; programme contribution; private finance
Climate-Smart Agro-Advisories through Shamba Shape Up	Reduce information, digital access and institutional delivery barriers	No. of women/youth reached with advisories; no. of enterprises/farmers actively using services; continued-use rate	Public/private investment mobilized for content generation, digital delivery, telecom partnerships and advisory platforms	Platform analytics; sex/age-disaggregated users; partner contributions; platform investment; adoption/continuity data
Forage-Based Livestock Feed Innovations	Address finance, input, market and institutional barriers affecting forage adoption and commercialization	No. of women/youth producers and enterprises accessing forage innovations; no. sustaining production/use	Value of finance mobilized for seed, production, processing, aggregation and commercialization	Producer records; enterprise investment; credit values; input costs; buyer/private-sector investment
Cross-cutting AoW3 enabling environment	Improve policy, finance, markets, institutional coordination and GESI conditions across Solution Tracks	No. of enterprises benefiting from improved services/policies; proportion reaching previously underserved groups	Value of public/private/development finance catalysed through policy, institutional or financing reforms	Administrative data; partner records; financial institution data; programme attribution evidence

This framework demonstrates how the enabling-environment findings can be translated into measurable AoW3 outcomes by linking each Solution Track to potential reach and investment-mobilization metrics, while distinguishing the broader addressable opportunity from outcomes that can be attributed to program interventions.

To operationalize these metrics consistently across the three Solution Tracks, the indicative calculation framework (Annex 1) can be applied as relevant baseline, program coverage, uptake, continuity, and investment data become available. The calculations should initially be treated as an estimation framework rather than verified program results; as Solution Track monitoring and partner data become available, assumptions can progressively be replaced with observed values to generate more robust and attributable estimates of AoW3 reach and investment mobilization.

6. Situation Analysis

6.1 Current Policy Environment

The policy environment in Zambia reflects a dual reality: while formal frameworks signal strong commitment to gender inclusion and enterprise development, their practical application reveals persistent structural exclusions affecting women- and youth-owned enterprises. Zambia has adopted a relatively comprehensive pro-enterprise and gender-responsive policy architecture, including the National Gender Policy (Government of Zambia, 2015, 2025), the Micro, Small and Medium Enterprise Development Policy (Government of Zambia, 2008), and successive National Financial Inclusion Strategies (Bank of Zambia, 2017; AFI, 2025). These frameworks collectively emphasize women's entrepreneurship, financial inclusion, and SME development, indicating policy recognition of the importance of inclusive economic participation. However, as AFI (2023) observes, these policies are not sufficiently differentiated to address the distinct needs of women- and youth-led enterprises, particularly across different stages of the enterprise lifecycle.

Despite this progressive policy landscape, the regulatory environment continues to impose significant barriers that disproportionately affect women and youth. Business registration, licensing, and taxation processes remain complex, costly, and non-transparent, particularly for informal and low-income entrepreneurs (Government of Zambia, Ministry of Gender, 2023). While provisions such as preferential procurement and gender quotas exist in policy, weak codification and limited enforcement reduce their effectiveness in translating into tangible economic opportunities for women-owned enterprises (Government of Zambia, Ministry of Gender, 2023). Furthermore, youth-specific policy instruments, primarily embedded within the National Youth Policy, focus largely on employment and skills development rather than providing concrete mechanisms for enterprise support, thereby limiting their operational impact (PMRC, 2015; Government of Zambia, Ministry of Youth, Sport and Arts, 2024). These regulatory limitations indicate a misalignment between policy intent and the lived realities of entrepreneurs operating within resource-constrained environments.

This misalignment manifests clearly in patterns of exclusion across different groups and geographies. Rural and peri-urban women operating informal enterprises are systematically excluded from formal economic systems due to their inability to meet documentation and registration requirements, which are often perceived as complex and unaffordable

(AFI, 2023). Similarly, youth-owned enterprises are excluded from formal SME support programmes because they lack collateral, business records, and income histories required during implementation processes (Government of Zambia, Ministry of Youth, Sport and Arts, 2024). These structural barriers are further compounded for low-educated women and young female heads of households, whose participation is constrained by limited literacy, time poverty, and care responsibilities (World Bank, 2023). As a result, exclusion is not uniform but intersectional, shaped by gender, age, location, and socio-economic status.

Consequently, the operative reality for women- and youth-owned enterprises diverges significantly from formal policy commitments. Many enterprises remain informal not by choice but by necessity, reflecting the absence of accessible, affordable, and predictable pathways to formalisation (Government of Zambia, Ministry of Gender, 2023). Youth-led MSMEs in secondary towns and rural areas are particularly underserved by business development services and market linkage programmes, despite national commitments to inclusive growth. Moreover, monitoring systems rarely incorporate sex-, age-, and location-disaggregated data, allowing programmes to claim inclusiveness without demonstrating actual reach or impact (Caritas Zambia, 2023). This weak accountability framework further obscures the extent of exclusion within the enterprise ecosystem.

Beyond formal institutions, informal norms and governance structures play a critical role in shaping enterprise opportunities and constraints. Gender norms and mobility restrictions limit women's ability to engage in market activities, participate in business networks, and negotiate within male-dominated sectors, reinforcing occupational segregation and concentration in low-value enterprises (World Bank, 2023). At the same time, high levels of youth unemployment contribute to the emergence of a "hustle economy," characterized by widespread informal entrepreneurship that operates outside formal financial and social protection systems. Informal institutions, including women's savings groups and market associations, provide important mechanisms for information sharing, savings mobilisation, and collective action. However, while these networks offer resilience and support, they rarely provide sufficient scale or integration into formal markets to enable sustained enterprise growth.

These policy reforms provide an important foundation for strengthening the enabling environments that support Zambia's three Solution Tracks. However, their effectiveness ultimately depends on how well they improve innovation delivery systems, facilitate enterprise entry, support innovation adoption and enable women- and youth-owned enterprises to sustain participation and benefit equitably from scaling processes.

6.2 Existing Reforms Supporting Women Entrepreneurs

In Zambia, recent reforms targeting women's entrepreneurship reflect an increasing policy recognition that structural barriers require deliberate and targeted interventions. At the level of legal and administrative reforms, efforts to simplify business registration and enhance financial inclusion represent important steps toward lowering entry barriers into the formal economy. The National Financial Inclusion Strategies (Bank of Zambia, 2017; AFI, 2025) have promoted women-specific financial products and introduced simplified Know-Your-Customer (KYC) requirements aimed at reducing documentation burdens for women-owned SMEs. Complementary initiatives at the local government level, including e-registration and bundled licensing systems in selected markets, particularly those dominated by women traders, further demonstrate attempts to streamline regulatory processes (AFI, 2025).

Similarly, provisions for preferential procurement under the National Gender Policy (Government of Zambia, Ministry of Gender, 2023) represent a potentially transformative mechanism for integrating women-owned enterprises into formal markets. Yet, weak enforcement, inadequate monitoring systems, and limited transparency in procurement processes significantly constrain their impact, resulting in a persistent gap between policy intent and actual economic participation.

In the domain of financial-sector reforms, targeted interventions have sought to address the longstanding gender finance gap. Institutions such as the Citizens Economic Empowerment Commission (CEEC) provide dedicated loan and guarantee schemes aimed at improving women's access to capital, while international initiatives such as the Women Entrepreneurs Finance Initiative (We-Fi) have introduced tailored financial products, collateral relaxation mechanisms, and financial literacy support (United Nations Zambia, 2023; AFI, 2023). These reforms represent a shift toward more inclusive financial architecture, recognizing that traditional collateral-based models systematically exclude women.

Efforts to address market coordination failures have also emerged through targeted platforms and programs designed to improve women's and youth access to markets and business networks. Youth-focused programs such as the Youth-Led MSME Empowerment Program provide skills development and digital market access for early-stage enterprises (UNDP, 2025).

Collectively, these reforms strengthen important components of the innovation delivery systems underpinning Zambia's Solution Tracks. However, gaps remain in ensuring that financial services, market platforms, institutional support and enterprise development programs operate in an integrated manner that promotes innovation adoption, commercialization, resilience and equitable benefit sharing among women and youth.

In practice, enabling-environment reforms are shaped by the incentives, resources, and authority of actors who control registration systems, market spaces, finance, procurement, extension, land access, and local enforcement. Institutional theory highlights that formal rules and informal norms jointly shape economic behaviour, and that unequal power can determine who is able to use rules to their advantage (North, 1990; Kabeer, 1999). In Zambia, women and youth may face exclusion not only because policies are absent, but because frontline officials, market authorities, financial institutions, customary land arrangements, trader associations, and private-sector actors' mediate implementation. For example, simplified registration reforms may still exclude rural women if processes remain centralized or digitally inaccessible; financial inclusion policies may fail if bank-level risk assessment reproduces collateral bias; and preferential procurement commitments may have limited impact if information, eligibility and tendering processes favour better-connected firms (AFI, 2023; Government of Zambia, Ministry of Gender, 2023; World Bank, 2023).

The review therefore identifies actors, incentives, and possible bottlenecks within each Solution Track to move from general recommendations to where reform coalitions, accountability mechanisms, and targeted institutional incentives may be required as presented in Table 5.

Table 5. Key actors and institutions for enabling environment reform

EE system	Key actors and institutions
Formalization	Local authorities, registration agencies, tax authorities
Finance	Commercial banks, CEEC, savings groups, guarantee schemes
Markets	Aggregators, buyers, trader associations, procurement bodies
Extension/BDS	Line ministries, local councils, NGOs, private providers
Land/assets	Customary authorities, households, financial institutions

6.3 Delivery System Mapping

Delivery systems include the actors, rules, finance, information, technologies, support services and market relationships through which innovations reach women and youth. Agricultural Innovation Systems literature shows that innovation performance depends on coordination among these actors, and weak links in the system can limit uptake even when technologies are technically sound (Hall et al., 2006; Kilelu et al., 2011; Sartas et al., 2020). For inclusive mechanization, the delivery system includes equipment suppliers, service providers, financial institutions, extension agents, local authorities, farmer organizations and repair services. For climate-smart agro-advisories, it includes content developers, digital platforms, mobile/telecom channels, extension systems, farmer groups and feedback mechanisms. For forage-based livestock feed, it includes input suppliers, livestock producers, extension services, aggregation systems, feed processors, buyers and local market institutions. Mapping these systems would clarify where policy, finance, market coordination, institutional capacity, GESI and climate finance barriers enter the scaling process. The review highlights these delivery systems and they require strengthening, which actors need to coordinate, and where AoW2 can support targeted enabling-environment interventions as described in Table 6.

Table 6. Delivery-system function by solution track

Innovation scaling pathway	Key delivery system actors	Potential bottlenecks and inclusion requirements
Inclusive mechanization	Equipment providers, service entrepreneurs, financiers, extension, farmer groups	Finance, equipment access, maintenance, service affordability, women/youth targeting
Climate-smart agro-advisories	Content developers, digital platforms, telecoms, extension, farmer groups	Advisory relevance, language, connectivity, feedback, trust and continuity
Forage-based livestock feed	Input suppliers, livestock groups, extension, processors, buyers	Input access, land/livestock access, technical support, aggregation and market demand

Overall, Table 6 demonstrates that each Solution Track depends on a network of interconnected actors and services, with weaknesses at any point in the delivery system potentially constraining innovation uptake and continuity. Responsible scaling therefore requires stronger coordination across finance, extension, markets, technology providers and producer organizations, while ensuring that the specific access constraints faced by women and youth are addressed within each delivery pathway

6.4 Opportunities for Responsible Scaling Interventions

The Zambian evidence base points to the need for integrated, system-level interventions that address multiple enabling-environment barriers simultaneously rather than in isolation. For the Zambia Solution Tracks, inclusive scaling depends on whether women and youth become aware of innovations, access associated services, adopt them, adapt them to local enterprise conditions, continue using them and capture benefits over time. Agricultural Innovation Systems literature emphasizes that innovation depends on interactions among actors, institutions, knowledge systems, markets and policy environments rather than on technology dissemination alone (Hall et al., 2006; Kilelu et al., 2011).

For inclusive mechanization, adoption may be constrained by service affordability, distance to providers, social norms governing women's mobility, and control over revenue from mechanized production. For climate-smart agro-advisories, access may be limited by digital literacy, phone ownership, language, connectivity and trust in advisory content. For forage-based livestock feed innovations, adoption may depend on land access, livestock ownership, input availability, extension support and market demand. These barriers affect both initial adoption and continuity of use, which is central to responsible scaling because innovations only generate equitable outcomes when benefits are sustained and controlled by intended users.

This review therefore suggests an adoption-continuity pathway: awareness, access, adoption, adaptation, sustained use and equitable benefit. This pathway would support AoW2 and AoW3 learning by clarifying where women and youth are most likely to drop out of the scaling process and what complementary enabling-environment interventions are required as further elaborated on Table 7.

Table 7. Adoption, scaling and continuity pathway for innovations

Innovation pathway stage	Mechanisation service delivery system	Climate-smart advisory delivery system	Forage innovation delivery system
Awareness	Knowledge of service providers	Knowledge of advisory platforms	Knowledge of forage options
Access	Affordable and nearby services	Phone/connectivity/language access	Input and extension access
Adoption	Ability to pay and use services	Trust and relevance of content	Land/livestock/resources to apply innovation
Adaptation	Service fit to enterprise needs	Local relevance of advice	Fit to feed systems and markets
Continuity	Reliable service and finance	Regular content and follow-up	Sustained input supply and demand
Benefit	Revenue, time savings, productivity	Improved decisions and resilience	Livestock productivity and commercialization

Table 7 highlights that successful scaling extends beyond initial awareness or adoption to sustained use and equitable benefit sharing. Addressing barriers at each stage of the adoption-continuity pathway is therefore critical to reducing drop-off among women and youth and ensuring that increased reach translates into sustained participation and meaningful benefits from the three Solution Tracks.

The most promising opportunities for responsible scaling lie in interventions that bridge regulatory, financial, market, institutional, and social constraints while remaining sensitive to political economy dynamics and risks of exclusion (World Bank, 2022; Alliance for Financial Inclusion, 2023). A first critical opportunity lies in streamlined formalization pathways for women- and youth-owned enterprises. This intervention would target policy and regulatory barriers by simplifying registration, licensing, and tax compliance processes through bundled, low-cost, and mobile-enabled systems. The mechanism of change involves reducing transaction costs and documentation burdens, thereby enabling informal enterprises to transition into the formal economy and access finance and markets. Key actors include the Ministry of Commerce, local authorities, and digital service providers. While politically feasible given existing policy commitments to MSME development, risks include exclusion of digitally marginalized groups and potential elite capture if benefits are concentrated among already semi-formal enterprises (Chirwa & Tembo, 2022; Chijikwa & Mulenga, 2023). Mitigation would require hybrid (digital + in-person) delivery models and targeted outreach to rural and low-literacy populations.

A second opportunity involves gender-responsive financial architecture, including collateral alternatives and blended finance mechanisms. This intervention targets barriers to financial market access by introducing guarantee schemes, movable-asset registries, and cash-flow-based lending models. The mechanism of change lies in de-risking lending to women and youth while aligning financial products with the realities of enterprise. Responsible actors include the Bank of Zambia, the Citizens Economic Empowerment Commission, and commercial banks. Politically, this is feasible given ongoing financial inclusion reforms; however, risks include moral hazard, over-indebtedness, and bias in loan allocation (Bank of Zambia, 2021; Data2X, 2021). Strong monitoring systems and the integration of financial literacy are therefore essential.

A third scaling pathway is the development of market coordination platforms and value-chain integration mechanisms. This intervention targets market failures by strengthening linkages between women- and youth-led enterprises and buyers, processors, and aggregators through digital platforms, certification support, and collective action models. The mechanism of change involves improving price discovery, reducing information asymmetries, and increasing bargaining power. Key actors include private sector platforms, development partners, and trade facilitation agencies. While feasible, the approach carries risks, including platform exclusion, dominance by larger firms, and unequal access to infrastructure (Gough & Langevang, 2016; Mwale & Phiri, 2022). Ensuring inclusive design and subsidized onboarding for smaller enterprises is critical.

Fourth, strengthening decentralized institutional capacity and integrated service delivery represents a key opportunity. This intervention targets institutional capacity gaps by building the capability of local government, business development service providers, and extension systems to deliver gender-responsive support. The mechanism of change involves improving service accessibility, coordination, and quality, particularly in rural and peri-urban areas. Actors include line ministries, local councils, and NGOs. Political feasibility is moderate but constrained by fiscal limitations and coordination challenges. Risks include fragmentation and duplication, which can be mitigated through unified coordination frameworks (Chileshe, 2018).

Fifth, addressing GESI constraints through embedded enterprise support models is essential for inclusive scaling. This intervention targets gender and social barriers by integrating childcare support, safe market infrastructure, and gender-transformative programming into enterprise development initiatives. The mechanism of change lies in reducing time poverty, mobility constraints, and exposure to risk, thereby enabling women to participate more effectively in markets. Key actors include government, civil society, and community-based organizations. While politically sensitive, this approach is increasingly recognized as necessary. Risks include reinforcing gender norms if poorly designed and adding unintended burdens; thus, interventions must be participatory and context-specific (Evans, 2018).

Finally, expanding inclusive climate finance pathways for MSMEs represents a critical frontier. This intervention targets climate finance barriers by developing simplified, MSME-accessible climate finance instruments aligned with national frameworks and institutions such as the Green Climate Fund. Access to finance is critical, but women- and youth-owned enterprises also require climate information, adaptation advisory services, risk transfer mechanisms, disaster recovery support, green enterprise finance and institutional intermediation. Existing evidence indicates that climate finance instruments often involve technical eligibility requirements, formal registration, proposal preparation and co-financing conditions that are difficult for small and informal enterprises to meet (Green Climate Fund, 2023; AFI, 2025). The mechanism of change involves reducing technical and eligibility barriers while integrating climate risk tools such as micro-insurance and green credit lines. Actors include government, development finance institutions, and private intermediaries. Climate shocks can erode asset bases, reduce income stability, undermine repayment capacity and weaken market participation, which in turn makes enterprises appear riskier to lenders. This creates a reinforcing cycle in which climate vulnerability reduces finance access while lack of finance reduces adaptation capacity (World Bank, 2023; BCP, 2024; Caritas Zambia, 2023). While policy momentum exists, feasibility depends on institutional capacity and financing structures. Risks include elite capture and the exclusion of informal enterprises, which require deliberate targeting and simplified access pathways (Green Climate Fund, 2023; Alliance for Financial Inclusion, 2025).

Collectively, these interventions strengthen the interconnected delivery systems required for successful implementation of Zambia's three Solution Tracks. Rather than addressing individual barriers in isolation, they improve the policy, institutional, financial and market conditions necessary for innovation delivery, adoption, adaptation, continuity and equitable benefit sharing. In doing so, they advance responsible scaling by improving enterprise productivity, commercialization, resilience and inclusive agricultural transformation for women and youth.

Implications for AoW3 Outcomes

The responsible scaling opportunities identified above have implications not only for the quality and inclusiveness of innovation scaling but also for the magnitude of AoW3 outcomes. Regulatory simplification and improved delivery systems can expand the pool of enterprises able to participate in the Solution Tracks; inclusive finance can mobilize additional capital for innovation adoption and enterprise expansion; improved market coordination can increase the commercial viability of investments; and GESI-responsive delivery can increase the proportion of women and youth effectively reached. These pathways provide the basis for translating enabling-environment interventions into measurable AoW3 outcomes related to people and enterprises reached, investment mobilized, and sustained participation in innovation systems. Quantification should use the estimation framework presented in Section 5.4 and be validated against Solution Track implementation data.

7. Research Gaps

Despite a relatively strong evidence base in key domains, significant research gaps persist across the AoW2 framework, limiting the precision of policy and program design. These gaps specifically include longitudinal evidence, cooperative models, disability inclusion, monitoring, and solution-track learning.

Current evidence is strongest on finance, regulatory constraints and broad gendered barriers, but weaker on longitudinal enterprise trajectories, cooperative enterprise performance, climate finance outcomes, youth-specific dynamics, disability inclusion and the performance of frontline delivery systems. These gaps limit the ability to identify which interventions work, for whom, under what conditions, and at what stage of the enterprise lifecycle.

First, longitudinal evidence is needed to track how women- and youth-owned enterprises move from entry to survival, formalization, growth, scale-up or exit. Second, more evidence is needed on cooperatives and savings groups, including governance, leadership, access to finance, aggregation, and benefit sharing. Third, youth analysis should be disaggregated by gender, rural/urban location, education, enterprise type, and lifecycle stage rather than treating youth as a homogeneous category (PMRC, 2015; Government of Zambia, Ministry of Youth, Sport and Arts, 2024). Fourth, disability inclusion should be explicitly examined because disability may intersect with gender, age, poverty and rural location to create additional barriers to finance, training, markets and digital services.

Finally, the review establishes a preliminary measurement architecture for linking enabling-environment findings to AoW3 outcomes, particularly program-enabled reach, sustained reach and investment mobilization. The indicative calculation framework developed in this review provides an initial basis for estimating these outcomes, while recognizing that several parameters still require program- and partner-level data. As implementation progresses, MELA systems should progressively replace assumptions with observed values and track reach, adoption, continuity, costs, risk exposure, decision-making power and benefit control, disaggregated by sex, age, location, enterprise type and disability where possible. This will enable the Solution Tracks to assess not only how many people or enterprises are reached and how much investment is mobilized, but also whether participation and benefits are sustained and equitably distributed.

Overall, the evidence demonstrates that enabling-environment domains influence responsible scaling through their effects on innovation delivery systems. Strengthening policy implementation, financial inclusion, market coordination, institutional capacity, GESI responsiveness and climate finance will improve the delivery, adoption, adaptation, continuity and equitable benefits of Zambia's three Solution Tracks.

Achieving these outcomes requires coordinated system-level interventions that reduce structural exclusion, strengthen enterprise resilience and ensure that women and youth are able not only to participate in innovation systems but also to sustain participation, influence decision-making and share equitably in the benefits of scaling.

8. Conclusion

At the domain level, climate finance accessibility for women and youth MSMEs remains underexplored, with limited empirical evidence on uptake, effectiveness, and scalability. Similarly, institutional enforcement dynamics, particularly how frontline actors interpret and implement policies, how frontline actors interpret and implement policies are insufficiently documented, leaving a gap in understanding how rules translate into practice. Additionally, youth-specific market coordination constraints remain weakly analyzed, with limited differentiation between youth and general MSME dynamics.

At the intersectional level, there is insufficient evidence on how barriers vary across gender, age, geography, and socio-economic status. Rural women, young mothers, and informal traders are often grouped together without disaggregated analysis, obscuring critical differences in constraints and opportunities. Furthermore, limited research distinguishes between enterprise types, including SMEs versus cooperatives and informal versus formal enterprises. This limits understanding of how interventions should be tailored to different organizational and lifecycle contexts.

This review demonstrates that enabling-environment barriers influence enterprise development primarily through their effects on innovation delivery systems. Policy, financial, market, institutional, GESI and climate resilience domains operate as interconnected systems that shape awareness, access, adoption, adaptation, continuity and equitable benefit sharing across Zambia's three Solution Tracks. Consequently, responsible scaling depends not only on strengthening individual innovations but also on improving the broader enabling conditions through which innovations are delivered.

The review further demonstrates that women and youth experience these systems differently because of intersecting inequalities associated with gender, age, poverty, geographical location, disability and social norms. Addressing these structural inequalities therefore represents a prerequisite for inclusive agricultural transformation rather than a complementary social objective.

Finally, responsible scaling requires anticipating unintended consequences alongside expected benefits. Future implementation should therefore strengthen innovation delivery systems, improve institutional coordination, expand inclusive financing, strengthen market systems and embed continuous learning to ensure that scaling processes remain equitable, adaptive and responsive throughout the enterprise lifecycle.

9. Recommendations

The recommendations below translate the report's findings into domain-specific actions to reduce compounding exclusion and improve enterprise support. They are organized around the main barrier domains and reflect the report's strongest recurring priorities: administrability, usable finance, institutional support, and substantive inclusion.

Strengthen policy implementation and regulatory simplification

Simplify, harmonize, and decentralize registration and licensing, with low-cost pathways specifically designed for micro and small enterprises led by women and youth.

Strengthen enforcement accountability and grievance mechanisms to reduce harassment and informal payments during inspections.

Build integrated innovation delivery systems

Scale agricultural innovations by coordinating delivery systems that effectively connect enterprises with finance, advisory services, markets, technology providers and public institutions.

Investments should focus on strengthening last-mile service delivery, improving institutional coordination and creating integrated support systems that facilitate innovation awareness, access, adoption, adaptation and continuity across the Inclusive Mechanization, Climate-Smart Agro-Advisory and Forage-Based Livestock Feed Solution Tracks.

Strengthen market coordination and commercialisation

Support women and youth-owned enterprises to upgrade along value chains through aggregation, standards and certification support, logistics, and procurement readiness interventions.

Encourage inclusive procurement, supplier development programs, and digital market platforms that reduce entry barriers for smaller firms.

Strengthen monitoring, learning and responsible scaling

Strengthen AoW3 outcome measurement and attribution. Establish a common results framework across the three Zambia Solution Tracks that connects enabling-environment interventions to measurable reach and investment outcomes.

Establish baselines for the number and characteristics of enterprises potentially served, followed by routine measurement of delivery coverage, uptake, adoption, continuity, and equitable benefit sharing.

Financial tracking should distinguish program expenditure from external investment mobilized and document the contribution pathway through which AoW3 interventions catalyze additional public, private or enterprise finance.

Disaggregate all reach indicators by sex, age, location, and enterprise type, including disability where feasible.

Promote gender-responsive and youth-inclusive governance

Design enterprise support that explicitly addresses care burdens, mobility constraints, safety, and representation of women and youth in governance structures.

Use participatory, context-specific approaches to ensure that interventions do not inadvertently reinforce restrictive norms.

Expand inclusive and climate-resilient finance

Create MSME-sized climate-finance instruments with simple eligibility and strong local intermediation, and ensure women- and youth-owned enterprises are explicit target groups.

Integrate climate-risk management and adaptation support (e.g., advisory, insurance, equipment finance) into broader MSME and agricultural programs.

Generate evidence to support adaptive management

Future research should address the evidence gaps identified in this review by generating longitudinal evidence on enterprise development, innovation adoption and responsible scaling outcomes.

Particular attention should be given to understanding enterprise progression across the lifecycle, governance of collective enterprises, disability inclusion, political economy dynamics and the effectiveness of integrated innovation delivery systems

The recommendations presented above should not be implemented as isolated interventions. Rather, they should be viewed as complementary components of an integrated responsible scaling strategy that strengthens the enabling environment, innovation delivery systems and enterprise ecosystems simultaneously. Collectively, these actions will improve the capacity of women- and youth-owned enterprises to establish, grow and sustain competitive businesses while ensuring that the benefits of Zambia's three Solution Tracks are distributed equitably, remain resilient to future shocks and contribute to inclusive agricultural transformation.

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11. Annexes

Annex 1 – Reach and Investment Metrics

A. Reach Metrics		
Metric	Formula	Description / Definition
Estimated program-enabled reach	Addressable population × Eligibility rate × Delivery coverage × Uptake rate	The estimated number of people or enterprises that access or take up the innovation/service through the program.
Estimated sustained reach	Estimated program-enabled reach × Adoption/continuity rate	The estimated number of people or enterprises that continue to use the innovation/service over the defined monitoring period.

Key terms in the reach metrics

Term	Definition
Addressable population	Total number of people or enterprises potentially relevant to the Solution Track.
Eligibility rate	Proportion meeting the intervention's targeting or participation criteria.
Delivery coverage	Proportion that the intervention and its delivery partners are realistically able to reach.
Uptake rate	Proportion of those reached who access or take up the innovation/service.
Adoption/continuity rate	Proportion maintaining use over the defined monitoring period.

B. Investment Metrics		
Metric	Formula	Description / Definition
Total investment mobilized	Attributable external/public finance + Private-sector co-investment + Participating financial-institution finance + Enterprise co-investment	Total additional investment mobilized for the Solution Track from external/public sources, private sector, participating financial institutions, and enterprises.
Investment leverage ratio	Additional investment mobilized ÷ S4I/AoW3 investment	Ratio of additional investment mobilized to the S4I/AoW3 investment.

Annex 2 – Preliminary AoW3 Reach and Investment Mobilization Framework

Solution Track	AoW3 intervention/outcome pathway	Proposed reach measure	Proposed investment measure	Data required	Status/classification
Scaling Inclusive Mechanization through Rural Entrepreneurship and Financial Innovation	Strengthening access to mechanization services and enabling women- and youth-led mechanization enterprises to establish, grow and serve farmers	Number of women/youth enterprises supported; number of farmers accessing mechanization services; number/proportion sustaining use	Equipment finance, leasing, guarantees, financial-institution lending, private-sector co-investment and enterprise investment mobilized	Number and profile of service providers; farmer/client records; equipment utilization; financing agreements; partner contributions; uptake and repeat-use data	To be established / Programme assumption
Scaling Climate-Smart Agro-Advisories through the Shamba Shape Up Content Generation Platform	Expanding access to relevant climate-smart information and advisory services through digital and complementary delivery channels	Number of women and youth reached; active users; proportion accessing advisory content; proportion continuing to use services	Investment in content generation, digital platforms, telecommunications, dissemination systems and partner co-investment	Platform analytics; user registration and engagement data; sex- and age-disaggregated reach; repeat-use data; partner financial contributions	To be established / Programme assumption
Scaling Forage-Based Livestock Feed Innovations for Resilient Rural Livelihoods	Expanding access to forage technologies, inputs, advisory services and market opportunities for livestock producers and enterprises	Number of producers/enterprises accessing forage innovations; number adopting; proportion sustaining use	Finance mobilized for forage seed/input supply, production, processing, aggregation and commercialization	Producer records; input distribution; adoption and continuity data; credit/finance records; processor and buyer investment; partner contributions	To be established / Programme assumption
Cross-cutting enabling-environment interventions	Strengthening policies, finance, markets, institutions and inclusive delivery systems supporting all three Solution Tracks	Number of enterprises benefiting from improved services, financing mechanisms, partnerships or enabling-environment reforms	Additional public, private, development-finance and financial-institution resources catalysed through S4I-supported interventions	Administrative records; partner reporting; financial-institution data; investment agreements; programme contribution/attribution evidence	Literature-derived / To be established

This annex translates the enabling-environment findings of the review into a preliminary framework for estimating AoW3 outcomes related to reach and investment mobilization across Zambia's three S4I Solution Tracks. It provides a transparent bridge between the qualitative barrier analysis in the review and the quantitative outcome metrics required for AoW3 reporting. Given the limitations of the available literature and program-level data, the framework does not present all parameters as verified program results; rather, it identifies the metrics, data requirements, and assumptions that can be progressively populated and validated through Solution Track implementation and MELA systems.

Status classification

To avoid presenting preliminary assumptions as verified AoW3 results, each parameter or estimate used in applying the framework should be assigned one of the following classifications:

Observed: Derived directly from verified program monitoring, administrative, partner or financial data and therefore represents an observed result.

Literature-derived: Based on published research, official statistics, policy documents or other credible secondary evidence. These values may inform the size of the addressable population or other parameters but should not automatically be interpreted as S4I-attributable results.

Program assumption: An explicit planning assumption used where observed data are not yet available, for example expected delivery coverage, uptake or continuity rates. Assumptions should be documented and subsequently tested against implementation data.

To be established: The required parameter is currently unavailable or insufficiently supported by evidence and should therefore be established through baseline assessment, program monitoring, partner reporting or further research.

The classification should be applied at the level of individual parameters wherever possible. For example, the addressable population may be classified as *Literature-derived*, while delivery coverage is a *Program assumption* and actual uptake is *Observed*. This distinction provides an audit trail showing which components of an estimate are empirically established and which remain provisional.



The framework provides an initial measurement architecture rather than a final estimate of AoW3 results. As implementation progresses, MELIA systems should progressively replace program assumptions and data gaps with observed values, while retaining the status classification to maintain transparency regarding the evidentiary basis of each estimate. In addition to reach and investment mobilization, monitoring should track adoption, continuity, costs, risk exposure, decision-making power and benefit control, disaggregated by sex, age, location, enterprise type and disability where feasible. This will enable AoW3 reporting to assess not only the scale of reach and investment mobilized, but also whether scaling outcomes are sustained, inclusive and equitably distributed.

12. Appendices

Appendix A – Authorship Decision Log

Date	Contributors	Credit roles	Proposed Author order	Notes/Agreements
6 June 2026	Winnie Kasoma-Pele	Writing – original draft, Investigation; Writing – review & editing	Winnie Kasoma-Pele, Ojongetakah Enokenwa Baa, Likiemyeleash Nigussie, Agrey Wapamesa, Karen Nortje, Inga Jacobs-Mata	The authors declare that they have no known competing interests or personal relationships that could have appeared to influence the work reported in this paper
7 June 2026	Agrey Wapamesa	Writing – review & editing		
12 June 2026	Ojongetakah Enokenwa Baa	Conceptualization, Methodology, Writing – review & editing, Supervision		
12 Jun 2026	Mahlatse Nkosi	Review		
1 July 2026	Likiemyeleash Nigussie	Writing – original draft; Writing – review & editing		



Disclaimer

This publication has been prepared under the CGIAR Scaling for Impact (S4I) Program and has not been peer reviewed. Responsibility for editing, proofreading, and layout, opinions expressed, and any possible errors lies with the authors and not the institutions involved.

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