



Team Europe initiative
**Investing in Young
Businesses in Africa**

Women's Economic and Financial Resilience

Measurement Framework and Toolbox

Susana Martinez-Restrepo, PhD.
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About the TPSD/E Facility

The TPSD/E Facility is an advisory service of the European Commission (EC) managed by the E2 Unit for Trade, Investment Climate, Entrepreneurship & Value Chains, in charge of Trade and Private Sector Development and Engagement within the Directorate General for International Partnerships (INTPA). The TEI IYBA facility is part of the overall TPSD/E perimeter of activities.

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Disclaimer

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Table of acronyms

AI	Artificial Intelligence	MSME	Micro, Small and Medium-sized Enterprise
ASEAN	Association of Southeast Asian Nations	NBFC	Non-Bank Financial Company
AYII	Area Yield Index Insurance	NGO	Non-Governmental Organisation
BNPL	Buy Now-Pay LATER	NPL	Non-Performing Loan
CGAP	Consultative Group to Assist the Poor	OECD	Organisation of Economic Cooperation and Development
DB	Development Bank	PAYG	Pay-As-You-Go
DFI	Development Finance Institution	SBA	Small Business Administration
EC	European Commission	SDGs	Sustainable Development Goals
EIB	European Investment Bank	SHG	Self-Help Group
ESA	Emergency Savings Account	SSA	Sub-Saharan Africa
ESG	Environmental, Social, and Governance	TA	Technical Assistance
EWS	Early Warning System	TEI	Team Europe Initiative
FI	Financial Institution	UN	United Nations
GBV	Gender-Based Violence	UNCDF	United Nations Capital Development Fund
GDP	Gross Domestic Product	UNIDO	United Nations Industrial Development Organisation
ICT	Information and Communication Technology	USSD/SMS	Unstructured Supplementary Service Data/Short Message Service
IFC	International Finance Corporation	VSLA	Village Savings & Loans Association
ILO	International Labour Organisation	WEE	Women's Economic Empowerment
IPCC	Intergovernmental Panel on Climate Change	WEAI	Women's Empowerment in Agriculture Index
JLG	Joint Liability Group	WII	Weather Index Insurance
KPI	Key Performance Indicator	W-MSME	Women-Owned/Led Micro, Small and Medium-sized Enterprise
MFI	Microfinance Institution		

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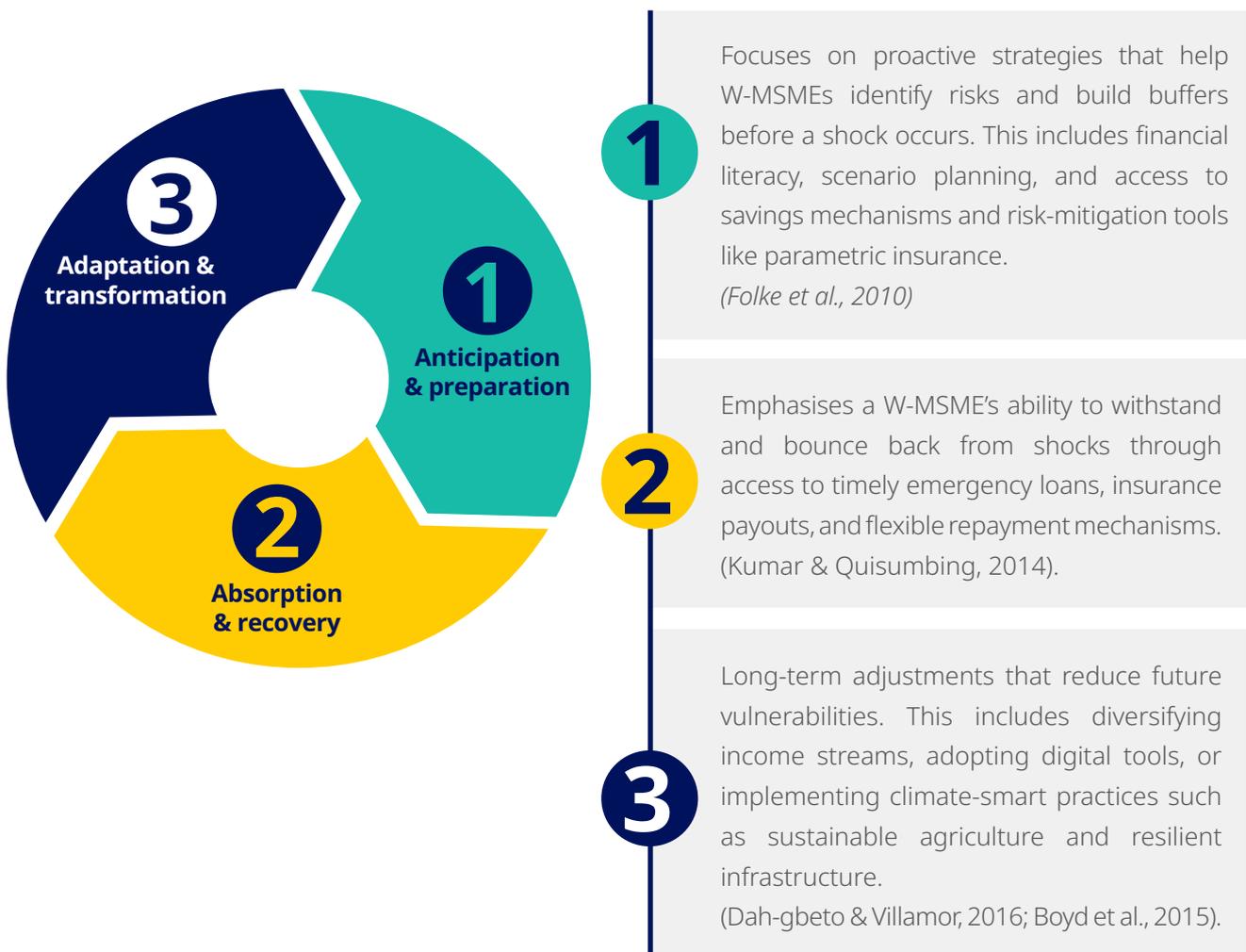
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Executive Summary

Women-led MSMEs face heightened exposure to climate change, pandemics, and economic shocks due to persistent gender inequalities in access to finance, digital tools, productive assets, and markets (CGAP, 2025; ILO, 2023). These structural constraints limit their ability to prepare for, absorb, and recover from crises, leading to slower recovery and higher closure rates (UN Women, 2020a; EIB, 2022). Closing the global credit gap for women-owned businesses could unlock approximately US\$1.7 trillion in economic value worldwide (IFC, 2017b). **This report** aims to guide DFIs, FIs, and donors in designing bundled financial products and technical assistance to close resilience gaps for W-MSMEs. It offers practical tools, global insights, and a three-stage resilience framework.

Defining W-MSMEs Resilience

Resilience for women entrepreneurs is defined as their ability to recover from shocks while pursuing long-term growth in an enabling environment (Jaluka & Beresford, 2025). W-MSMEs face both sudden shocks (e.g., climate events, pandemics) and chronic stressors (e.g., caregiving burdens, financial exclusion), often without equitable access to financial tools (Heltberg et al., 2013; Women's World Banking, 2024a, EIB, 2022). This report proposes a three-stage framework to understand and strengthen the resilience of W-MSMEs over time.



Structural barriers such as limited credit, land, insurance, legal rights, and disproportionate unpaid care, undermine women’s ability to progress across all three stages (EIB, 2022; World Bank, 2023a). Deeply embedded gender norms further restrict mobility, decision-making, and access to assets, shaping risk aversion and discouraging expansion (CGIAR, 2023). These constraints intensify during crises, limiting participation in recovery programmes and reinforcing inequality. Without tackling these systemic barriers, even well-designed financial tools and technical assistance cannot deliver transformative resilience for W-MSMEs.

Existing tools aimed at enhancing resilience for W-MSMEs

Women-led micro, small, and medium-sized enterprises (W-MSMEs) face greater exposure to economic, climate, and health shocks due to systemic gender inequalities—limited asset ownership, lower financial literacy, caregiving burdens, and exclusion from formal markets. These constraints reduce their ability to build financial buffers, access emergency liquidity, or recover from crises (IFAD, 2023a; Jaluka & Beresford, 2025). This report identifies ten tools that are explicitly designed—or adapted—to meet women’s unique needs:

- 1 Parametric insurance** – accessible to women without titled assets; mobile delivery and bundling address trust and literacy gaps.
- 2 Working capital loans with flexible repayments** – ensure business continuity without collateral or male guarantors; align with seasonal cash flows and shocks.
- 3 Digital credit lines with dynamic limits** – use alternative data to overcome lack of credit history and collateral; adapt to women’s irregular income.
- 4 Inventory finance for business inputs** – offers deferred payments and bundled advice/insurance; tailored outreach and mobile channels expand women’s access.
- 5 Green loans for climate adaptation** – finance climate-smart investments (e.g., irrigation, solar); combine concessional terms with training and flexibility for rural women.
- 6 Digital micro-factoring** – provides quick liquidity via cash advances against invoices; collateral-free and accessible through basic digital tools.
- 7 Emergency savings accounts (ESA)** – dedicated mobile savings with immediate access; support women facing irregular income and caregiving burdens.
- 8 Savings-linked microinsurance** – automatically provides coverage from savings; strengthens risk protection and savings habits via mobile and group channels.
- 9 Health and maternity microinsurance** – low-cost coverage for health and maternity shocks; embedded in loans and savings women already use.
- 10 Pay-as-you-go productive assets + insurance** – lowers upfront barriers to acquiring assets; mobile-enabled small repayments with built-in climate risk protection.

Dual-level technical assistance for W-MSMEs

Building resilience among W-MSMEs requires more than financial products, it hinges on targeted **TA** delivered at two complementary levels. At the **first level**, DFIs must strengthen the capacity of financial intermediaries to design, deliver, and monitor inclusive, resilience-building financial services. Many institutions lack gender-sensitive tools, risk modelling capacity, and digital systems required to serve women in vulnerable sectors (IDB Invest & ConsumerCentriX, 2023; López Mayher et al., 2022). For instance, in Guatemala, Esfuerzo Seguro–Aseguradora Rural, MiCRO, and Banrural bundled climate insurance with credit and trained loan officers, improving women’s recovery finance access. In Senegal, UN Women and BICIS/REFAN co-designed agricultural credit lines and trained banks and producer networks, enabling timely investment. PROPULSE–PROPARCO/AFD supported MFIs with digitalisation, gender audits, and ESG tools, automating emergency loans with gender safeguards.

Second, TA must directly support W-MSMEs by building digital, financial, and technical skills to access and use services effectively (Women’s World Banking, 2024a; CGAP, 2025). Go Digital ASEAN trained women in e-commerce and mobile finance, ensuring business continuity. In Fiji, Women’s Weather Watch enabled women to act as disaster responders using SMS and radio. In Mozambique, Futuro Microbank delivered financial literacy and mobile savings training. UN Women in West Africa coached women farmers in composting, irrigation, and markets. In Mali, She Grows combined land rights, agroforestry, and leadership training, tripling incomes and enhancing women’s governance roles.

W-MSME resilience measurement framework and indicators

This framework measures the resilience of W-MSMEs across three stages—anticipation and preparation, absorption and recovery, and adaptation and transformation—providing indicators for financial institutions and development actors. It goes beyond access to services to capture actual use, behavioural change, and the capacity to withstand shocks over time.

Anticipation and preparation	Tracks proactive strategies that help women entrepreneurs manage risks before crises. Indicators include financial literacy, access to emergency savings and insurance, and digital readiness. Examples include: % of W-MSMEs enrolled in financial education, with dedicated savings accounts, active insurance, or using mobile banking and weather advisory tools.
Absorption and recovery	Measures the ability to withstand and rebound from shocks through timely emergency finance, insurance payouts, and loan restructuring. Relevant indicators include % accessing emergency loans within 30 days, average time to disbursement, % receiving payouts within set timelines, % of restructured loans, and % resuming operations within six months.
Adaptation and transformation	Assesses long-term adjustments such as diversifying markets, adopting climate-smart practices, or reinvesting insurance payouts. Indicators include % adopting resilient technologies, investing in infrastructure (e.g., irrigation, solar), reinvesting payouts into assets, using digital platforms, or reporting confidence in managing shocks.

Overall, the measurement framework highlights the need for staged, mixed-method, and gender-disaggregated approaches. It encourages the use of both outcome and output indicators and recommends aligning data collection with the timing of shocks.

Conclusions and recommendations

Resilience for W-MSMEs is not just about surviving shocks, but about transforming constraints into opportunity through access, agency, and support. Strengthening women's capacity to anticipate, absorb, and adapt to crises is critical for inclusive economic recovery and long-term development. The following recommendations outline practical pathways for development partners:

- ✔ Design financial tools aligned with resilience journeys (flexible emergency loans, climate-linked insurance, savings for informal income).
- ✔ Bundle products to meet sector-specific needs, especially in agriculture and retail.
- ✔ Expand digital access through inclusive, low-tech platforms and gender-sensitive scoring tools.
- ✔ Provide dual-level TA: institutional support (gender audits, data systems) and direct training for W-MSMEs on financial, digital, and climate-smart skills.
- ✔ Track impact through gender-disaggregated indicators and support realistic, context-driven scaling.

Taken together, these actions can shift W-MSMEs from vulnerability to resilience, unlocking not only their potential to withstand shocks and stressors but emerge stronger and more competitive.



Section 1.

Introduction

Climate-related disasters, pandemics, political instability, and economic downturns, as well as climate change, are increasingly disrupting the operations of micro, small, and medium-sized enterprises (MSMEs) across the globe. For women-owned/led micro, small, and medium-sized enterprises (W-MSMEs), these shocks and stressors are particularly destabilising due to persistent gender inequalities in access to finance, productive assets, information, and markets (European Commission, 2024; CGAP, 2025). Women entrepreneurs are more likely to operate informally, in vulnerable sectors, and with lower financial buffers, all of which heighten their exposure to both sudden shocks and long-term stressors (Women's World Banking, 2024a; Jaluka & Beresford, 2025). In this context, resilience defined as the ability to anticipate, absorb, adapt to, and recover from crises, has become a critical condition for the sustainability of women's businesses and a key enabler of gender-equitable economic development (Folke et al., 2010; IFAD, 2023a).

Despite growing recognition of W-MSMEs as vital contributors to domestic and international GDP growth, evidence shows that women entrepreneurs continue to face structural **constraints** that limit their capacity to build resilience. These include unequal access to finance and financial services (e.g. credit, insurance), digital exclusion, limited decision-making power, legal and institutional barriers, and a disproportionate burden of unpaid care (ILO, 2023; Delavallade et al., 2025). Shocks such as the COVID-19 pandemic, climate events, or economic recessions have had deeper and more lasting impacts on women entrepreneurs than on their male counterparts globally, resulting in higher business closure rates, slower income recovery, and greater long-term vulnerability (EIB, 2022; UN Women, 2020a).

Creating gender-responsive financial products, services, and technical assistance for W-MSMEs is both equitable and profitable. Research demonstrates that women-led/owned enterprises often exhibit lower risk profiles, higher repayment rates, and greater customer loyalty (EIB, 2025). In emerging economies, women entrepreneurs often achieve equal or better loan repayment rates compared to men, with non-performing loan (NPL) rates that are 1–2 percentage points lower in several markets (IFC, 2021a). Financial institutions that develop gender-intelligent products and services have accessed rapidly growing markets and improved their profitability (FinEquity, 2024). There is a US\$700 billion global revenue opportunity for financial service providers in better serving women as customers (Gillespie & Clempner, 2020). Notably, closing the global credit gap for women-owned businesses could unlock approximately US\$1.7 trillion in economic value worldwide (IFC, 2017b).

Purpose and objectives of the report

This report explores how financial products and technical assistance can jointly strengthen the **resilience** of W-MSMEs. It aims to:

- ✔ Identify and analyse financial tools that help women entrepreneurs better prepare for, absorb, and adapt to shocks.
- ✔ Examine how gender-responsive TA interventions enhance the more effective use of these tools and build long-term capabilities.
- ✔ Provide practical guidance for DFIs, banks, NGOs, and policymakers on how to design and bundle these solutions to help close resilience gaps for women entrepreneurs as well as monitor their success.

Significance and intended audience

At a time of overlapping crises and increasing climate risk, strengthening the resilience of women entrepreneurs is not only a matter of economic survival but a strategic imperative for inclusive growth. The findings inform the TEI IYBA Working Group on Women's Economic Empowerment (WEE), which seeks to integrate gender-sensitive tools and financing solutions into support for early-stage women-owned businesses in Sub-Saharan Africa (European Commission, 2024).

This report is intended for DFIs, commercial banks and microfinance institutions, development agencies, policymakers, and stakeholders such as impact investors seeking to put in place and operationalise gender-responsive resilience strategies. By offering actionable insights, tools, and indicators, it aims to move beyond gender-neutral programming and support the practical design of integrated solutions that close persistent resilience gaps for W-MSMEs.

Scope and structure

The report draws on a global literature review and case examples across diverse regions, with particular attention to women in agriculture, trade, and informal enterprises. It introduces a three-stage framework for resilience and maps corresponding financial and technical tools in each stage. The structure is as follows:

Section 1	Defines resilience in the context of W-MSMEs and explores the shocks and stressors they face;
Section 2	Reviews key financial products and services (insurance, credit, savings) with a gender lens;
Section 3	Analyses how the provision of technical assistance to both financial institutions and to entrepreneurs themselves further builds the digital, financial, and climate-resilience capabilities of W-MSMEs;
Section 4	Proposes a measurement framework to assess resilience outcomes and gender impacts.



Section 2.

Defining W-MSMEs Resilience

W-MSMEs are vital to global economies, driving job creation, diversification, and community development (Qasim, 2018; We-Fi, 2021). They also outperform on social and environmental fronts, often investing in employee training and achieving higher ESG scores (EIB, 2022). For financial institutions, W-MSMEs represent a profitable segment, with lower NPL rates in several markets (IFC, 2021b). Yet despite these strengths, they face greater vulnerability to shocks due to structural gender inequalities in access to finance, markets, and support. This section defines resilience for W-MSMEs, and introduces a three-stage framework for building it. It also explores how shocks and structural barriers shape their ability to cope, recover, and adapt.

2.1 Understanding resilience among W-MSMEs

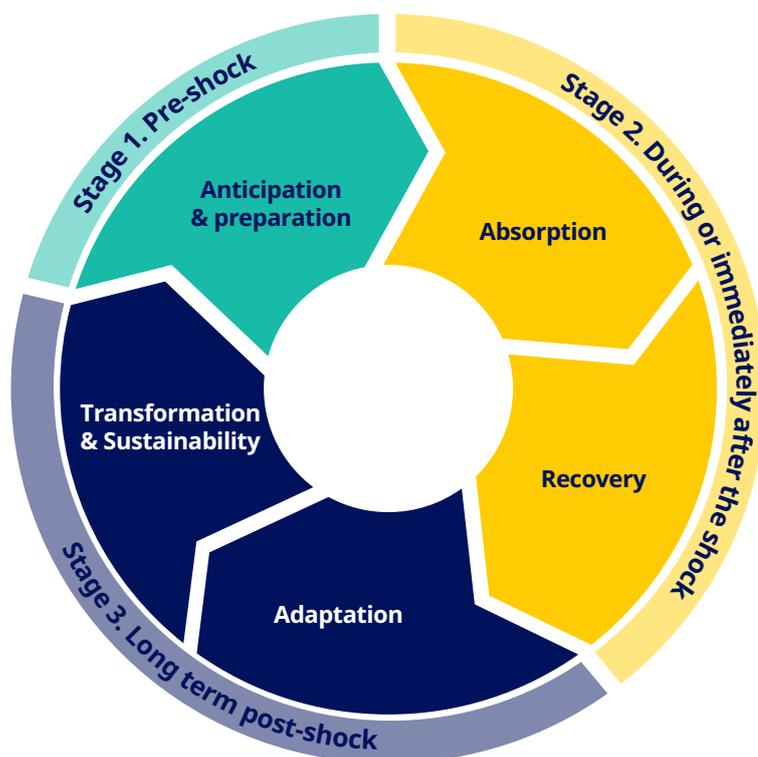
While resilience has been defined in many ways, one particularly relevant framing for women entrepreneurs is from Strive Women: *“the ability of women entrepreneurs to recover from shocks in the short term while prioritising long-term growth in an environment that enables and encourages them to do so”* (Jaluka & Beresford, 2025). This definition highlights that resilience involves not only recovery, but also forward planning and growth, especially within enabling environments.

While women entrepreneurs often demonstrate greater concern about future risks and are more likely than men to express interest in risk mitigation tools such as insurance (Swiss Re Institute, 2021; GIZ, 2021), they frequently lack equitable access to the financial products, information, and institutional support needed to act on this risk awareness. In addition to navigating structural barriers like gender-based financial exclusion and disproportionate caregiving responsibilities, women face a combination of sudden shocks, such as financial crises, pandemics, or extreme weather events, and long-term stressors, including the impacts of climate change (Heltberg et al., 2013; Women’s World Banking, 2024a, Nelson & Forsythe, 2023, EIB, 2022). These layered and often compounding challenges call for a broader, forward-looking understanding of resilience, one that includes the capacity to foresee and prepare for disruptions, enabling proactive measures to mitigate risks, as well as the ability to adapt and transform in response to an evolving business environment, thereby supporting long-term sustainability (Folke et al., 2010; Nelson & Forsythe, 2023).

To operationalise a broader and more actionable understanding of resilience, this report introduces a three-stage framework that captures how W-MSMEs experience and respond to shocks over time. The framework consists of: **(1) pre-shock**, focused on anticipation and preparation; **(2) during and immediately after shock**, focused on absorption and recovery; and **(3) post-shock**, focused on long-term adaptation and transformation. Each stage involves specific financial needs, decision-making moments, and institutional support requirements.

Figure 1. Stages of resilience framework

Source: Authors' own elaboration based on literature review.



1 Stage 1. Pre-shock

Anticipation and preparation involve identifying risks and implementing proactive strategies, such as financial literacy programmes, savings mechanisms, and risk assessment tools. These measures help businesses prepare for unforeseen challenges (Dah-gbeto & Villamor, 2016). Women entrepreneurs often have fewer financial buffers, making financial literacy and risk assessment crucial for preparedness (Folke et al., 2010).

2 Stage 2. During or immediately after shock

Absorption or coping refers to a business's ability to withstand shocks through financial reserves, emergency loans, and insurance. W-MSMEs often rely on informal financial networks rather than formal financial products, limiting their capacity to absorb shocks effectively (Denton, 2002; EIB, 2022).

Recovery depends on access to a range of financial and protective tools, including personal savings, social protection (e.g., cash transfers), insurance, credit guarantees. These resources help cushion shocks and support faster, more sustainable recovery. However, women on average have more limited credit access, fewer savings,¹ and face greater barriers to formal financial services compared to their male counterparts, leading to riskier coping strategies and weaker long-term resilience (Kumar & Quisumbing, 2014; Bryan et al., 2023).

¹ While women may have lower total savings than men in absolute terms—often due to lower incomes—studies show women are also more inclined to save than their male counterparts, largely because of greater risk awareness (Lee and Pocock, 2007, Kureishi and Wakabayashi, 2013). During the Covid-19 pandemic, a study found that in six different countries, women were more likely to have increased their savings and reduced their consumption than men (Dang and Nguyen, 2021).

3

Stage 3. Long-term - post-shock

Adaptation involves adjusting operations, financing, and business models during and post-shock. Strategies include diversifying income streams, leveraging digital platforms, and modifying production cycles in response to market fluctuations (Meinzen-Dick et al., 2014). Women in agrarian economies, for instance, adopt different land-use strategies based on climate uncertainty (Dah-gbeto & Villamor, 2016).

Transformation and sustainability require structural changes when recurring shocks make existing business models unsustainable. Creating gender-equitable financial inclusion and business ecosystems strengthens long-term resilience. Policies promoting women's access to financial products and training play a key role in sustainable recovery (Boyd et al., 2015).

For each stage, different coping mechanisms, resilience strategies, and/or adaptive practices help W-MSMEs anticipate, prepare for, absorb, adapt to, and recover from shocks and stressors. These strategies may involve financial products, but also financial skills and inclusion, such as building a credit history to access emergency loans or maintaining financial records to qualify for business insurance. The following table illustrates how these strategies align with each stage of resilience, providing concrete examples of financial products, capacities, and support systems that can strengthen W-MSMEs over time. Financial institutions should also be encouraged to collect and use sex-disaggregated data, including W-MSME business performance, together with past data on disasters and shocks. This can strengthen predictive capacity and help pre-empt risks that disproportionately affect women clients.

Table 1. Stages of resilience and corresponding resilience strategies for W-MSMEs

Resilience Dimension	Examples of financial capacity, skills and inclusion	Example of financial products and services
Stage 1. Pre-shock		
Anticipation and preparation	<ul style="list-style-type: none"> Financial literacy and management training strengthen W-MSMEs' survival, profitability, and financial stability during economic downturns. Scenario planning in the agricultural sector can help anticipate climate-related shocks and adjust cropping strategies. 	<ul style="list-style-type: none"> Parametric insurance programmes help women farmers maintain income levels despite droughts, rainfalls, and floods.
Stage 2. During or immediately after shock		
Absorption	<ul style="list-style-type: none"> Crisis management training can improve women's ability to navigate sudden market shifts. Financial counselling for women facilitates better loan renegotiation post-crisis. 	<ul style="list-style-type: none"> Emergency loan programmes provide quick liquidity support for W-MSMEs during the crisis. Emergency savings accounts enabled W-MSMEs to avoid closure during crisis.

	<ul style="list-style-type: none"> Peer learning networks enhance business continuity by sharing best practices for financial planning. 	<ul style="list-style-type: none"> Short-term working capital loans for W-MSMEs can prevent business closures during supply chain disruptions. Women in savings groups can use pooled emergency funds to withstand economic downturns without falling into over-indebtedness. Invoice financing for women exporters allows continued operations despite currency fluctuations.
Recovery	<ul style="list-style-type: none"> Post-disaster business resilience programmes provide financial training alongside credit guarantees to ensure sustainable recovery. Advocacy for inclusive financial policies leads to improved access to recovery funds for W-MSMEs. 	<ul style="list-style-type: none"> Subsidised reconstruction loans can help W-MSMEs (e.g., in the Caribbean) recover from hurricanes and other natural disasters. Replacement seed and inputs provided through an insured bundle programme, can give women farmers a second chance at harvest if a shock occurs early in the crop cycle. Flexible repayment programmes allow women to adjust loan repayments post-crisis.
Stage 3. Long term - post-shock		
Adaptation	<ul style="list-style-type: none"> Business coaching for women entrepreneurs enhances resilience by diversifying revenue streams during and post-crisis. Training in e-commerce strategies can allow women to transition to online sales after traditional markets collapsed. 	<ul style="list-style-type: none"> Crop insurance payouts enable women farmers to reinvest in the next planting season while supporting household food security in the interim.
Transformation & sustainability	<ul style="list-style-type: none"> Training for women in sustainable practices to mitigate climate change (e.g., water management, energy efficiency, agroforestry, reforestation and afforestation, drought-resistant crops, climate-smart infrastructure). 	<ul style="list-style-type: none"> Green loans—for example, for solar-powered irrigation—can help reduce farmers' vulnerability to drought and other climate-related risks.

Source: Authors' own elaboration based on the literature review.

These stages show that resilience is not a one-time response, but an ongoing process requiring tailored financial tools and support systems across time. Section 2.2. explores the types of shocks and stressors that W-MSMEs face—and why addressing them with gender-responsive solutions is essential.

2.2 Understanding business shocks, stressors and their impact on W-MSMEs

To understand what shapes the resilience of W-MSMEs in practice, we now turn to the types of disruptions they commonly face. These disruptions may be sudden shocks or prolonged stressors. They can originate from both the business environment (internal and external) and the personal lives of female MSMEs owners, including time poverty due to unpaid care responsibilities, health shocks, or household-level financial instability (UN Women, 2020c; World Bank, 2021d).² This ever-changing landscape opens the door to disruption, which typically manifests in two forms: **shocks** and **stressors** (Lechner, 2015; Choularton et al., 2015; World Bank, 2011; FAO, 2023a).

On the one hand, **shocks are sudden, unforeseen events that significantly** disrupt normal business operations, either positively or negatively (Sutton et al., 2023). They can stem from exogenous factors, such as natural disasters, pandemics, or economic recessions, or from endogenous factors, such as operational failures, financial crises, or leadership challenges. Due to their abrupt nature, shocks often require immediate responses through crisis management and recovery strategies to restore stability (Wilson, 2016). **Stressors, on the other hand, are chronic, ongoing, prolonged or gradually** accumulating pressures that strain a business over time (e.g., climate change, demographic shifts, and prolonged market instability). Either of these disruptions can create ongoing challenges that businesses must adapt to in order to survive and thrive. Understanding the nature of these challenges and how they impact business operations, especially those of women, is essential for building resilience, as evidence shows that women often act as shock and stressors absorbers during times of crisis (Heltberg et al., 2013).

As Table 2 shows, **exogenous shocks** stem from factors outside the control of business owners but can have devastating impacts on W-MSMEs due to pre-existing gender inequalities and access to finance barriers.

Table 2. Examples of exogenous shocks and their impact on W-MSMEs

Type of shock	Impact on W-MSMEs
<p>Environmental/climate shocks Natural disasters such as floods, droughts, and wildfires disrupt supply chains, damage infrastructure, and reduce resource availability for business operations (IPCC, 2014; UNDRRa, 2022). They also increase the risk of illness, death, displacement, and food insecurity.</p>	<p>Women, and by extension W-MSMEs, are disproportionately affected by natural disasters due to gender inequalities that limit their access to information, mobility, resources, decision-making, and opportunities to gain life skills, such as the ability to swim (Oxfam, 2017; IFC, 2024).</p> <p>During the 1991 Bangladesh cyclone, women were five times more likely to die by drowning than men (Ayeb-Karlsson, 2020). They also face greater risk of gender-based violence after disasters and more barriers to accessing relief and recovery support—further weakening their resilience (World Bank, 2023a; UN Women, 2025a).</p>

² While these personal-level disruptions significantly influence women's ability to manage and grow their businesses, the focus of this report remains on designing financial products, services, and technical assistance that strengthen the resilience of W-MSMEs as economic actors.

<p>Economic shocks</p> <p>Inflation, recessions, and global supply chain disruptions can lead to reduced consumer spending, higher input costs, and shrinking market access (IMF, 2023; World Bank, 2022).</p>	<p>Studies emphasise that most W-MSMEs emerged as survivalist enterprises due to economic hardships, making them particularly vulnerable to inflationary pressures (UN Women, 2025b). In Zimbabwe, for example, austerity measures and inflation from 2018 to 2023 significantly impacted W-MSMEs. These businesses, predominantly informal and survivalist in nature, faced challenges like reduced purchasing power and increased operational costs (UN Women, 2025b).</p>
<p>Institutional/regulatory shocks</p> <p>Sudden policy shifts such as trade embargoes, tax reforms, or labour regulation changes can disrupt business planning and profitability (Rodrik, 2011; WTO, 2023).</p>	<p>In Zambia, abrupt changes in tax regulation in 2020 disproportionately affected informal women traders in border towns. Limited awareness and lack of negotiation power led to fines and business closures (CUTS International, 2021; Amnesty International, 2024).</p>
<p>Epidemic shocks</p> <p>Pandemics cause workforce shortages, reduced mobility, and declining consumer demand, increasing operational and health-related costs (WHO, 2022; ILO, 2021).</p>	<p>Studies indicate that epidemics often affect W-MSMEs more severely than those of men due to a combination of social, economic, and cultural factors that shape how women experience and respond to crises (WHO, 2020). For example, during the Ebola outbreak in the Mano River Union region of Sierra Leone, market closures and mobility restrictions hit women especially hard, as they made up 70% of cross-border traders (IASC, 2015; UN Women, 2014).</p>
<p>Man-made shocks</p> <p>Armed conflict, terrorism, and political crises often disrupt markets, displace populations, and create prolonged instability, severely limiting market access, financing, and operational continuity for businesses (UNDP, 2019; OECD, 2021b).</p>	<p>Armed conflicts in regions like West and Central Africa have disrupted markets and displaced populations, directly impacting W-MSMEs. Women engaged in trading and agriculture face increased risks, including violence and loss of livelihood. For instance, in conflict zones, women traders often encounter dangers such as attacks or harassment when accessing markets or farmlands, leading to decreased economic activity and income (UN Women, 2021a).</p>
<p>Technological shocks</p> <p>Rapid advances in AI, automation, and digital tools can disrupt traditional industries and require costly adaptation. Cybersecurity threats can also endanger small enterprises (McKinsey, 2025; Jada & Mayayise, 2024).</p>	<p>In South Africa, digitalisation of retail services has outpaced women-owned microenterprises, many of which lack digital literacy or access to online payment systems. This widened the digital divide post-COVID (GSMA, 2022; UNCTAD, 2021). In Uganda, during internet shutdowns, female entrepreneurs reported limited access to online platforms, which affected their ability to conduct business. They resorted to more expensive means, such as phone calls, to continue providing services to clients. This led to missed opportunities, difficulties in accessing market prices, conducting bank transactions, and reaching customers (Aceng, 2022).</p>

Source: Authors' own elaboration based on Sutton et al., (2023) and additional literature.

At the same time, **endogenous shocks**, stemming from within the business or its immediate operations, represent a significant challenge for W-MSMEs. These shocks can destabilise the business and threaten its survival. W-MSMEs often experience a heightened impact due to limited access to financial resources, access to formal networks, technological capacity, and human capital.

Table 3. Examples of endogenous shocks and their impact on W-MSMEs

Type of shock	Impact on W-MSMEs
Operational failures , machinery breakdowns, IT system failures, cyberattacks, and internal supply chain disruptions can significantly disrupt production, increase costs, and threaten the survival of businesses (World Bank, 2020a).	Operational failures disproportionately affect W-MSMEs with limited technical capacity or financial reserves. For instance, in India, a study found that only 5% of W-MSMEs were able to finance maintenance costs, and only 3% had the means to purchase technical equipment, leaving them highly vulnerable to machinery failures or breakdowns (Ramaswamy et al., 2015). Similarly, a study in Malawi highlighted that unreliable electricity and lack of affordable ICT devices were major concerns that affected mostly micro-enterprises (where women are more likely to be represented) leading to operational challenges (Malanga and Banda, 2021).
Financial crises can often trigger sudden cash flow shortages, forcing businesses to downsize or shut down (OECD, 2020).	W-MSMEs are particularly exposed due to lower capital buffers and reliance on personal rather than formal financing. In sub-Saharan Africa, many women lack property ownership, limiting their ability to secure loans or meet collateral requirements (IMF, 2020; Morsy & Youssef, 2017). As a result, they are often excluded from government recovery schemes channelled through formal financial institutions, deepening their vulnerability during crises.
Labour strikes, high employee turnover, talent shortages , can disrupt daily operations, reduce service quality, and limit the growth potential of businesses (ILO, 2018).	Women-owned businesses are more likely to be smaller in size and have fewer employees, and therefore, they are more sensitive to labour disruptions (World Bank, 2021e). In Uganda, high employee turnover among informal women-owned businesses in the services sector severely hampered scaling efforts (Namatovu et al., 2012). Because W-MSMEs tend to employ more women, they are doubly exposed, both through the owner and the workforce, making them especially vulnerable to economic shocks.

Source: Authors' own elaboration based on literature

Stressors, on the other hand, are prolonged or gradually accumulating pressures that strain a business over time (demographic shifts, and prolonged market instability). These stressors do not necessarily cause immediate disruption but, if persistent, can weaken a business' ability to function effectively and respond to future shocks (Adger, 2006). As a result, stressors require long-term adaptation and structural adjustments (Burzyński, 2022).

Table 4. Examples of exogenous stressors and their impact on W-MSMEs

Type of stressor	Impact on W-MSMEs
<p>Climate change and environmental degradation: Rising temperatures, changing precipitation patterns, and soil degradation can gradually reduce agricultural productivity and strain natural resources, such as water (IPCC, 2014).</p>	<p>Women entrepreneurs are often concentrated in climate-sensitive sectors such as agriculture, where exposure to climate shocks, combined with limited resources, reduces productivity and increases business risks (Agol et al., 2023; Gannon et al., 2022). They also have less access to fertile or strategically located land, often due to customary norms or tenure insecurity, further limiting their productivity and resilience.</p>
<p>Demographic changes: Ageing populations and urban migration patterns can create labour shortages, housing crises, or shifts in consumer demand (Bloom et al., 2015).</p>	<p>The phenomenon of male out-migration has led, in some places, to the “feminisation of agriculture.” This shift often results in labour shortages during peak agricultural seasons, adversely affecting productivity. For instance, in Ethiopia, migrant-sending households suffer labour shortages during critical periods, compelling women to undertake additional tasks to sustain agricultural output (Bassie et al, 2022).</p>
<p>Persistent economic inequality: Long-term income disparity and limited access to land title (World Bank, 2023b).</p>	<p>In many disaster-affected contexts, women are not formally listed on household assets or financial accounts, which are typically registered under men’s names. When male family members die or go missing after disasters, women often face significant legal and bureaucratic barriers to proving ownership or accessing family resources. This lack of formal recognition can severely limit their ability to recover and rebuild (Word Bank, 2020c; World Bank, 2021d; Thurston et al., 2021).</p>
<p>Political instability: Uncertain or continuously shifting policies create prolonged uncertainty for businesses and investors (Rodrik, 2011).</p>	<p>Political unrest often leads to economic instability, which can severely restrict women entrepreneurs’ access to critical resources such as financing. For instance, in Africa, political conflict and instability have been shown to disproportionately affect W-MSMEs by limiting their access to debt financing and disrupting day-to-day operations due to for example unsafe conditions, compared to their male counterparts (Jaim, 2022; Bellows, 2024).</p>

Source: Authors’ own elaboration based on literature

Shocks and stressors do not affect businesses in isolation; rather, they interact with household-level vulnerabilities that can amplify economic instability. The intersection between individual, household, and business-level shocks and stressors is particularly relevant for women entrepreneurs, who often balance economic activities with family and domestic responsibilities (Folbre, 2017).

One example is **health-related shocks and stressors. Indeed, personal or family illnesses** can significantly impact business management, often leading to reduced productivity (OECD, 2010; Tetzlaff, Vogel, & Jaskiewicz, 2024). Indeed, health events can disrupt women entrepreneurs’ ability to manage

daily operations, particularly in micro and small enterprises where owner presence is critical, whether due to their own health or that of a family member, as women often serve as primary caregivers (Eppanapally et al., 2024).

Another example is **care-related shocks and stressors**. Women, who are more likely to bear caregiving responsibilities, often experience longer business recovery periods after major disruptions (OECD, 2021a). For instance, during the COVID-19 pandemic in Kenya, increased unpaid childcare work led to reduced revenue and operating hours for women-owned businesses (UN Women, 2020b).

Gender-based violence (GBV) intensifies during and after shocks, since they increase household tensions, reduce mobility, and heighten dependence on abusive partners (Delavallade et al., 2025). This pattern becomes especially pronounced in the aftermath of climate-induced events or natural disasters that force families to migrate in search of safety and resources, often resulting in displacement to temporary or overcrowded camps where women face heightened risks of GBV, trafficking, and exploitation (Verma et al., 2011; IOM, 2018; Bah et al., 2023; Women's World Banking, 2024a). Evidence from Asia and Africa underscores this vulnerability, showing unsafe shelter and inadequate protection as recurring concerns, with reports of increased sexual violence during migration (Brown, 2008; Mitchell et al., 2007). Similarly, in Puerto Rico, domestic violence deaths doubled after Hurricane Maria, with lack of financial autonomy trapping women in abusive situations and directly affecting their mental health and, for entrepreneurs, their business continuity (Cheng, 2024).

Understanding the range of shocks and stressors is key to designing effective support for W-MSMEs. These disruptions often overlap, revealing how business and personal vulnerabilities are intertwined. The next section examines the barriers women face in building resilience, and the strategies they use to cope, recover, and adapt.

2.3 Barriers that W-MSMEs face to cope with shocks and stressors

W-MSMEs are especially vulnerable to economic, health, financial, and environmental shocks at the local, national, and global levels. These businesses typically have thinner capital buffers than male-owned enterprises, limited institutional support, and often operate in lower-margin, service-based sectors more exposed to economic disruption, making recovery more difficult (Churchill et al., 2023a; EIB, 2022; Women's World Banking, 2024a). Indeed, it is estimated that 753 million women in climate-vulnerable regions lack access to financial services, while 880 million cannot receive emergency relief payments due to exclusion from digital and financial systems (Women's World Banking, 2024a). Furthermore, smallholder women farmers in developing countries face systemic economic, social, and cultural barriers that limit their access to agricultural inputs, education, and financial services, including insurance (Mugambi & Harmeling, 2022).



Access to financial services remains one of the most significant resilience barriers for women.

W-MSMEs often lack access to credit due to low collateral ownership, limited credit histories, and gender bias in lending practices (Women's World Banking, 2023a; Alibhai et al. 2019). Globally, financial institutions often perceive them as riskier investments, resulting in higher interest rates, stricter collateral requirements, and fewer expansion loans (Pavlova and Gvetadze, 2023; Carter et al., 2015). Moreover, women are overrepresented in the informal economy, which further restricts their access to formal financial products and limits their eligibility for public aid during crises (ILO, 2023; Women's World Banking, 2024a). Globally, financial products also often fail to reflect the unique needs of W-MSMEs, with rigid repayment schedules, inflexible terms, and eligibility criteria that exclude informal or caregiving-intensive businesses (Women's World Banking, 2023b).



Legal and regulatory constraints significantly limit women's ability to prepare for and recover from crises.

Globally, women hold less than 20% of land titles, and just 13% in sub-Saharan Africa (World Bank, 2023a; IFAD, 2023b). In countries like Niger, Cameroon, and Equatorial Guinea, women must obtain their husband's consent to manage property or open bank accounts (World Bank, 2024b). Elsewhere, legal or customary norms prevent women from signing contracts or inheriting land (Ajefu et al., 2024). These barriers restrict access to credit, insurance, and business formalisation. In agriculture, the impacts are severe: without land as collateral, women face reduced access to finance; combined with limited access to climate-resilient tools, this leaves them more vulnerable to environmental shocks.



The sectoral distribution of women's businesses further constrains the resilience of W-MSMEs.

Women are overrepresented in informal, lower-value-added sectors such as personal services, retail, and caregiving (areas with limited access to business development networks and formal contracts) (ILO, 2023). Conversely, they remain underrepresented in high-growth, capital-intensive sectors like manufacturing, technology, and finance, where opportunities for scaling, investment, and public procurement are greater. These disparities were starkly revealed during the COVID-19 pandemic, as women-owned businesses, particularly in female-dominated and those in the informal economy, faced higher closure rates and slower recovery than male-owned firms (EIB, 2022).



Limited intra-household bargaining power can be a key structural barrier to resilience

(Friedson-Ridenour & Pierotti, 2019). Women's limited (or lack of) intra-household bargaining power³ and financial autonomy significantly constrain their ability to invest in resilience strategies across sectors (Delavallade et al., 2025). For example, a study of cocoa-producing households in Central America found that land use decisions were made exclusively by men in over 70% of cases (Martinez-Restrepo, 2024). These dynamics limit and shape their capacity to introduce innovation, diversify income, or invest in resilience-enhancing assets such as new technologies, expanded production, or green practices (CGIAR, 2023).

3 Intra-household bargaining refers to the negotiation of interests, resources, and responsibilities between members of a household, especially between men and women (Kabeer, 1997).



Care responsibilities are one of the most pervasive constraints on women's economic resilience. In most societies, women bear primary responsibility for unpaid care and domestic work. These duties increase during crises, limiting time and mobility to manage businesses, access public services, or participate in recovery programmes (Delavallade et al., 2025; Koning et al., 2021). Studies showed that during COVID-19, women entrepreneurs reported increased stress, lower productivity, and higher exit rates from their businesses due to the increased care burden at home (ILO, 2023; Bullough & Renko, 2023).

2.4 W-MSMEs coping mechanisms in response to shocks and stressors

Studies indicate that resilience is shaped by multiple factors, including entrepreneurial characteristics, resourcefulness, networking, adaptability, and continuity (Matharu & Juneja, 2021). However, recent research expands on these findings, emphasising the role of psychological capital, financial and digital literacy, and social support networks in fostering resilience among women entrepreneurs (Hazudin et al., 2023).



Psychological capital,⁴ encompassing self-efficacy, optimism, and perseverance, is particularly critical for crisis resilience. A study found that Malaysian women entrepreneurs with strong psychological resilience⁵ are better equipped to find solutions in crises and actively pursue business goals despite setbacks (Hazudin et al., 2023). Another study on women entrepreneurs in Ibadan, Nigeria, found that those with high self-efficacy and an internal locus of control⁶ demonstrated greater innovative behaviour, enabling them to adapt to challenges and sustain their businesses during crises (Babalola, 2009).



Social networks, defined as connections with peers, mentors, and industry stakeholders that provide access to resources, support, and market opportunities, play a key role in business resilience. In India, women entrepreneurs with strong networks were better able to innovate and adapt during the COVID-19 crisis, helping their businesses survive and build a foundation for future growth (Sahi, Modi, and Mantok, 2023). Similarly, research on small-scale women entrepreneurs in Cameroon revealed that those with robust networks could better navigate operational challenges, leading to improved business sustainability and growth (Ning, 2020).

4 Psychological capital is a positive psychological state of development, consisting of four key components: Hope, efficacy, resilience, and optimism (Çavuş & Gökçen, 2015).

5 Psychological resilience refers to an individual's capacity to cope with stress, adversity, or trauma, and to bounce back or recover from difficult experiences (Fletcher and Sarkar, 2013).

6 Locus of control refers to an individual's belief about the extent to which they can control events affecting them (Rotter, 1966; Nowicki et al., 2021).



Financial literacy is a critical competency for business survival in crisis contexts. Women entrepreneurs with good financial literacy are better able to face economic crises and make more informed financial decisions (Dura & Wardana, 2024). A study on Bangladeshi women entrepreneurs post-COVID-19 found that those with financial literacy were more likely to leverage digital financial services and access e-commerce platforms (UNCDF, 2023). The OECD (2021) further highlights how financial literacy allows women entrepreneurs to better manage emergency relief funds, navigate tax deferrals, and access low-interest credit during downturns.



Financial inclusion determines how well women entrepreneurs can prepare for and respond to crises. Access to credit and capital, secure savings, efficient payment services, and insurance enable businesses to navigate challenges and protect against unforeseen risks and financial shocks (World Bank, 2025). For instance, a study across 16 Sub-Saharan African countries found that while mobile money use increases business investment overall, the effect is almost entirely driven by women-owned enterprises, with no significant impact observed among male-owned firms. In comparable settings, women entrepreneurs gained a disproportionate investment benefit from mobile money access, highlighting digital financial inclusion as a critical driver of resilience and growth for women-led businesses (Islam and Muzi, 2020).



The use of technology can sustain and transform business models during economic shocks. For example, female entrepreneurs, in Kenya's agribusiness sector, who used mobile banking and e-commerce platforms were more resilient against unpredictable droughts and price fluctuations (Torres et al., 2019). Similarly, during the COVID-19 pandemic, many African women entrepreneurs turned to digital payments and e-commerce to stay afloat. In Kenya, over half of W-MSMEs went online, and 83% of those using digital payments saw revenue growth (Visa, 2021). In Mauritius, W-MSMEs that integrated digital tools, such as WhatsApp for customer engagement and online payment solutions, were better able to navigate COVID-19 lockdown restrictions and sustained sales (Kasseeah, 2024).



Training and control over resources can help women adapt to climate shocks, boosting both resilience and productivity. In Liberia, cocoa yields were 36% higher in households where both men and women received training, showing how inclusive capacity-building boosts resilience (GROW, 2023). In Indonesia, coffee-farming groups that trained both men and women saw a 131% increase in productivity, compared to 95% in male-only groups (IFC, 2017a). Similarly, in Tanzania, women's control over farm resources was a key factor in adopting irrigation, agroforestry, and other climate-smart technologies. A study in Colombia showed that women working in the rice sector, when recognised as main producers (which is often not the case) were more likely to adopt water-saving irrigation systems such as Alternate Wetting and Drying (AWD), provided they had access to necessary resources and support (García et al., 2016).

Building lasting resilience requires targeted financial inclusion, supportive policies, and gender-responsive systems. Section 3 explores the financial products and delivery models that can strengthen this resilience in practice.



Section 3.

Existing tools⁷ aimed at enhancing resilience for W-MSMEs

⁷ Tools refer to both financial and non-financial instruments designed to strengthen the resilience of individuals and businesses, particularly women-owned enterprises.

Both shocks and long-term stressors demand that W-MSMEs have access to tools that reduce risk and support recovery. Financial products, such as insurance, loans, and savings, are essential for resilience, helping businesses recover from crises and adapt to changing conditions. This section outlines some examples of financial and non-financial tools⁸ available to strengthen the resilience of W-MSMEs. These tools, complemented with targeted TA (discussed in section 4) can help W-MSMEs withstand shocks, adapt to risks, and build long-term sustainability. It is important to consider that the effectiveness of these tools depends on their accessibility and adaptation to local contexts. Real-time feedback, practical training, and ongoing support are essential to ensure women entrepreneurs can integrate them into daily operations. Additionally, scalability and long-term sustainability are crucial. Many promising tools fail to survive beyond pilot stages, especially in rural areas. Success often depends on links to government programmes, women’s networks, or digital platforms. This section highlights tools with proven durability and institutional backing.

Providing financial tools is not only a matter of equity, but it also represents a major economic opportunity. If insurers sold life insurance to women at the same proportion of their income as men, they could generate an additional US\$500 billion in new written premiums. In corporate and institutional banking, better serving women clients and gaining market share could unlock another US\$80 billion in existing revenue. Together, these gaps amount to a US\$700 billion missed opportunity (Gillespie & Clempner, 2020).

Table 5. Key financial tools that promote resilience among W-MSMEs

Product Name	Description	Why it Promotes W-MSMEs’ Resilience
3.1. Parametric insurance	Insurance triggered by measurable events (e.g. drought), not damage assessments.	Fast, mobile payouts without needing asset ownership; supports recovery from shocks like crop failure or hospitalisation; accessible via microloans and informal networks.
3.2. Working capital loans with flexible repayments	Loans should match seasonal income and offer fair terms comparable to those provided to men.	Helps manage liquidity during personal or environmental shocks; allows repayment alignment with cash flows; supports business continuity without collateral or male guarantors.
3.3. Digital credit lines with dynamic limits	Mobile-based credit lines that adjust based on income and transactions.	Enables flexible, instant liquidity during emergencies; uses alternative data for creditworthiness; reduces default risk through adaptive repayment and real-time access.

⁸ Tools were selected for their innovation (defined in terms of contextual relevance and impact) and their demonstrated or potential contribution to resilience (as outlined in the framework on section 2). In this assessment, we distinguish between product features (how the tool is designed) and implementation strategies (how it is delivered and scaled by practitioners).

3.4. Inventory finance for business inputs	Deferred payment for inputs like seeds or inventory, often bundled with insurance.	Overcomes liquidity and collateral constraints; supports climate resilience and input access; promotes scaling with repayment after harvest or sales.
3.5. Green loans for climate adaptation	Loans financing climate-smart investments, with concessional terms and TA.	Supports sustainable upgrades (e.g. solar irrigation); tailored repayment plans for irregular income; bundled with training; helps women adapt to environmental stressors.
3.6. Digital micro-factoring	Fast, digital cash advances against invoices, without collateral.	Converts receivables into liquidity to cover disruptions; removes barriers like credit history; highly accessible for micro enterprises in informal value chains.
3.7. Emergency savings accounts (ESA)	Dedicated savings tools for shocks, often mobile-enabled and behaviourally nudged.	Builds financial buffers for unexpected expenses; improves decision-making power and liquidity access; tailored to irregular income and privacy needs.
3.8. Savings-linked microinsurance	Insurance premiums are deducted automatically from a linked savings account, often with incentives (e.g., bonus coverage for consistent savings).	Encourages disciplined savings while providing affordable insurance coverage; reduces lapse rates by automating payments; protects against shocks without requiring lump-sum premiums.
3.9. Health and/or maternity microinsurance for women	Low-cost insurance products bundled with credit or savings, targeting health and maternity risks for women entrepreneurs.	Protects women from business disruptions due to health or maternity events; improves business continuity; targets key risks like childbirth and illness with simple, trusted solutions.
3.10. Pay-As-You-Go productive assets + nsurance	Asset-based, mobile-enabled financing model for productive assets with embedded insurance and small, flexible repayments.	Reduces upfront costs and climate risk; helps W-MSMEs continue production in unstable conditions; leverages early warning systems to enable timely support and planning.

Source: Authors' own elaboration.

3.1. Parametric insurance with product features that promote W-MSMEs resilience

Parametric insurance is a risk-transfer financial instrument that provides pre-agreed payouts based on the occurrence of a specific event (the *parameter*), such as a weather anomaly or health incident, rather than assessed losses (World Bank, 2020b). Unlike indemnity insurance, which requires post-event damage verification, parametric insurance allows for fast, automatic compensation when defined thresholds are met. Under Parametric insurance, payouts are linked to specific, measurable events, like rainfall below a threshold or extreme heat, using satellite data, weather stations, or mobile reporting systems.



Why this is gender-sensitive:

Parametric insurance benefits women by not requiring asset ownership, using mobile-based payouts, and bundling with products women already access (like microloans or input packages). Programmes like SEWA's in India or Pula in Malawi reach women through trusted networks, mobile tools, and simplified claims—addressing barriers like landlessness, financial control, and low insurance literacy.

This speeds up compensation and removes the need for subjective loss assessments. Once the trigger is met, funds are automatically paid out, often via mobile money providing quick liquidity for coping with losses, stabilising income, and ensuring continuity in business operations (Cuadros, 2025, Swiss Re, 2023). Unlike traditional insurance, parametric coverage is tied to activities or locations—not asset ownership—benefiting women who often lack titled assets but are active in farming and informal trade (Cuadros, 2025). Parametric insurance products could be tailored for delivery through mobile platforms, group-based distribution, or microfinance partners, channels more accessible to women in informal or rural markets (Cuadros, 2025). Parametric insurance is expanding beyond agriculture to cover health shocks, business interruptions, and disasters—addressing diverse risks faced by women, from crop failure to hospitalisation (Purswani, 2021; Jerry, 2023; Dutta and Bhaumik, 2023).

Implementation strategies that promote resilience

Implementation strategies are the delivery methods that ensure financial products are accessible, trusted, and effectively used, especially by women in underserved markets.

- ✔ **Localised index design:** In regions like northern Nigeria and Malawi, simple weather indices (e.g., rainfall deviation) are used to manage drought risk. In more complex environments, hybrid models combine multiple data sources, like rainfall and yield estimates, for more accurate protection (Makaudze, 2018; Nguyen et al., 2024).
- ✔ **Gender-responsive bundling:** Products are increasingly bundled with microloans, agricultural inputs, or savings programmes. In Guatemala, women microentrepreneurs receive business interruption insurance as part of loan packages (through a partnership between MiCRORisk and Aseguradora Rural, a local insurance company), supporting recovery after floods without needing to prove losses (World Food Programme, 2022).

- 
Trust-based distribution channels: Microfinance institutions, cooperatives, and savings groups are crucial for reaching women in informal markets. CARD Pioneer Microinsurance in the Philippines delivers typhoon insurance through its microfinance network, which serves a predominantly female client base (World Bank, 2021c).
- 
Pay-at-harvest and mobile delivery: To address affordability and liquidity issues, programmes like Pula's partnership with Olam in Nigeria allow farmers to pay insurance premiums after crop sales (Pula, Shell Foundation, & UKAID, 2022).
- 
Digital integration and tailored outreach: Programmes are increasingly designed for mobile disbursement, and include localised messaging to ensure usability and trust. SEWA's heatwave insurance in India triggers automatic payouts via mobile money when temperatures exceed 40°C (World Economic Forum, 2025).

Results suggest that in Guatemala and the Philippines, parametric insurance has helped women resume business quickly after climate shocks (World Food Programme, 2022; Howden Group Holdings, 2023; World Bank, 2021c). Lessons also suggest that decoupling insurance from asset ownership improves access (World Economic Forum, 2025) and bundling with credit or savings boosts uptake (Cuadros, 2025).

Box 1. Parametric crop insurance in Kenya by Pula Advisors (Back to tool)

Pula Advisors, founded in 2015, provides parametric crop insurance to smallholder farmers across Africa, Asia, and Latin America. The company uses a hybrid model that combines Area Yield Index Insurance (AYII) and Weather Index Insurance (WII), leveraging satellite imagery and AI to assess risks and trigger payouts without manual claims. Its core product covers agricultural inputs, such as seeds and fertilisers, against losses from drought, floods, pests, and disease. Insurance is bundled with agricultural products and services, enabling farmers to gain coverage automatically when buying inputs or accessing credit.

Pula partners with over 100 organisations, including governments and NGOs, and has reached over 20 million farmers. Notably, in Malawi, 67% of insured farmers in 2020 were women. Its pay-at-harvest model in Nigeria and embedded insurance in Zambia are examples of accessible, innovative delivery. Since launch, it has disbursed over US\$122 million in payouts.

Pula's impact includes improved resilience, quicker recovery from climate shocks, and increased investment in quality inputs. However, challenges persist: affordability, low awareness, limited mobile access, and gender-specific barriers restrict uptake. Women farmers especially face exclusion due to lower digital literacy, land ownership, and financial autonomy. Despite these, Pula remains a scalable model for inclusive, climate-resilient agriculture.

3.2. Working capital loans with flexible repayments

Traditionally, working capital loans cover day-to-day expenses like inventory, payroll, or supplier payments, to keep operations running (European Merchant Bank, 2024; BDC, n.d.). These loans can be secured (with collateral) or unsecured, the latter often carrying higher interest rates due to increased risk for the lender (BDC, n.d.). W-MSMEs frequently struggle to access them due to lack of collateral, and high rates can make unsecured options unaffordable. To address this, innovative initiatives, such as We-Fi and IFC Banking for Women, have introduced resilience-oriented working capital loan solutions tailored specifically for W-MSMEs (We-Fi, 2020; IFC, 2020).



Why this is gender-sensitive:

Working capital loans offer flexibility in repayment terms, lower interest rates, and adaptable structures, specifically designed to support women entrepreneurs. Initiatives like We-Fi and IFC Banking for women provide tailored loan terms, addressing barriers such as collateral limitations and high-interest rates, helping women-owned businesses thrive.

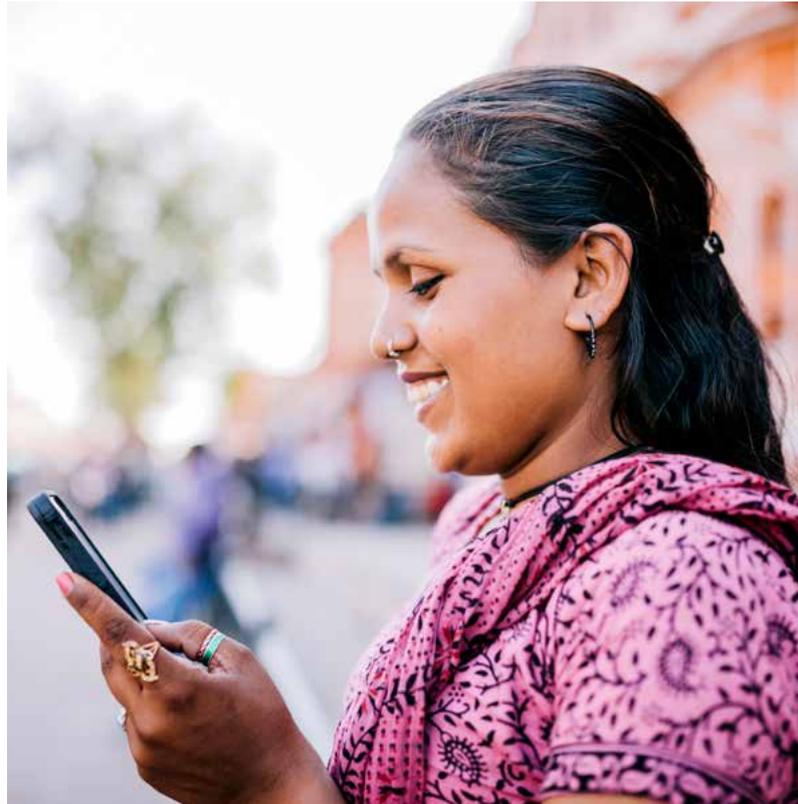
These products offer greater flexibility in repayment terms, lower interest rates, and adaptable structures that help businesses withstand financial shocks (We-Fi, 2020). These types of loans allow for grace periods,⁹ fast disbursements and repayment restructuring triggered by personal or environmental shocks. Their defining feature is their built-in flexibility, which allows women entrepreneurs to have longer repayment tenures (between 12 and 60 months) and align their repayment schedules with future revenues—in some cases allowing reschedule, pause, or adjust repayments— (Kinara Capital, 2024). M-Shwari in Kenya enabled digital rescheduling during the COVID-19 pandemic, helping its women borrowers stabilise operations (Sararicom, n.d.). These features prevent default and asset liquidation during crises. Since speed in reimbursements is critical in emergencies, programmes like Kinara Capital's HerVikas in India uses app-based approval with alternative credit scoring, allowing disbursement in under 24 hours (Kinara Capital, n.d.-a). This enabled thousands of women entrepreneurs to quickly access capital without collateral or male guarantors, factors that often limit financial autonomy for women. Unlike restricted-purpose loans, flexible working capital loans offer women control over how to allocate resources, whether to restock inventory, pay wages, or invest in solar solutions (as seen in HerVest Nigeria) (Hervest, n.d.). This freedom to prioritise reinforces both adaptation and business continuity during uncertain times. In addition, this product allows seasonal alignment. In the case of rural-focused models such as those from MicroLoan Foundation (Malawi, Zambia, Zimbabwe) tailor repayment to harvest and sales cycles (MicroLoan Foundation, 2024). This helps women avoid forced repayment during lean periods.

⁹ Through credit guarantee schemes and grants, governments and international development organizations have incentivized financial institutions to offer longer grace periods and to maintain, or even extend loan maturities during times of crisis. One such example is the GRiF grant from the World Bank. For more detail see: <https://www.insuresilience.org/news/five-reasons-the-global-risk-financing-facility-is-relevant-during-an-ongoing-pandemic/>

Implementation strategies that promote resilience

In order to reach target users, maximise user uptake and ensure the effective usage of the financial product, FIs use a variety of delivery channels/strategies to deploy this tool/product which include:

- ✔ **Alternative collateral & credit scoring:** Using alternative assets such as inventory, jewellery, or livestock, alongside methods like psychometric assessments and transaction history analysis, expands access to credit. Wasasa microfinance in Ethiopia and U Bank in Pakistan have successfully used these approaches to reach thousands of women, without requiring male guarantors (World Bank, 2024a; Mastercard Newsroom, 2024).
- ✔ **Bundled and gender-sensitive support:** Loans combined with business training, financial literacy, and insurance strengthen women's ability to manage shocks. Programmes like *Emprendiendo Mujer*¹⁰ in Peru or Sewa Bank in India show that bundled support increases business survival and adaptability (Mastercard Newsroom, 2024).
- ✔ **Real-time loan rescheduling through digital platforms:** Digital platforms allow women to quickly reschedule payments during crises, helping prevent defaults. Experiences from programmes like Tala in Kenya and Kinara Capital's HerVikas programme in India show that access to digital rescheduling options improves loan performance and business continuity (Tala, n.d.; Kinara Capital, n.d.-b).



¹⁰ *Emprendiendo Mujer* is a programme launched by Financiera Confianza (microfinance institution) and the ignite project of CARE Perú and Mastercard.

Box 2. Working capital loans in India by Kinara Capital – HerVikas (Back to tool)

Kinara Capital's HerVikas programme, launched in 2019, is a gender-focused working capital loan initiative designed to build the resilience of W-MSMEs in India. It addresses common barriers to credit—like lack of collateral, affordability, and procedural complexity—through tailored product features and integrated support. Key resilience-enhancing features include a 60-day repayment holiday to help manage disruptions, rapid disbursement via the AI-powered myKinara app (within 24 hours), and unsecured loans up to ₹30 lakhs (approx. US\$36,000). Additional benefits include a 1% interest discount, 50% lower processing fees, and business coaching and mentorship. The app supports paperless applications in local languages, improving accessibility for women across diverse geographies. Since inception, HerVikas has disbursed over ₹700 crores (US\$8.4 million) to more than 13,700 W-MSMEs in 100+ cities, helping create around 37,000 jobs—33% of which went to women. Beneficiaries have reported significant growth: one entrepreneur tripled her workforce and turnover. On average, women saw a 16% increase in proprietor salaries, enhancing household resilience and economic stability. By combining accessible credit, digital tools, and business support, HerVikas offers a replicable model for strengthening women's economic resilience.

3.3. Digital credit lines with dynamic limits

By analysing financial data such as income changes, spending patterns, payment history, and economic trends, the system provides a more accurate and responsive credit limit (Shangle Visa, 2024). This approach overcomes the limitations of traditional, static credit limits that fail to reflect rapid changes in a customer's financial situation (Shangle Visa, 2024). This represents a promising innovation in inclusive finance, particularly for women entrepreneurs who face volatile incomes, limited access to formal credit, and vulnerability to economic and climate shocks (Women's World Banking, 2024b, 2024c & 2024d).



Why this is gender-sensitive:

Digital credit lines with dynamic limits offer women entrepreneurs flexible access to capital that adapts to their evolving business needs, overcoming traditional barriers like rigid loan structures and limited credit histories.

For many women, the lack of collateral and formal credit history are major barriers. Some of these products, when delivered responsibly, overcome such barriers by using alternative data, such as mobile money transactions, airtime purchases, and e-commerce activity, to assess creditworthiness (Carlson 2017; Cassara et al., 2023). Furthermore, most digital credit lines have flexible repayment terms, in some cases allowing grace periods, such as the case of M-Shwari, or freely selecting a repayment date that aligns with your income flow such as the case of Tala. Such flexibility helps avoid defaults and long-term exclusion from the financial system.

Implementation strategies that promote resilience

In order to reach target users, maximise user uptake and ensure the effective usage of the financial product, FIs use a variety of delivery channels/strategies to deploy this tool/product which include:

✔ **Mobile-first and inclusive design:** Digital credit access through USSD/SMS interfaces ensures that they can use digital credit products even with basic phones. These mobile-based designs allow women to request credit when needed, make timely repayments, and manage cash flow, all essential for keeping their businesses operational, especially during shocks like illness or market closures.

✔ **Public-private partnerships for risk sharing:** Access to credit for women entrepreneurs (especially at affordable rates) is often blocked by risk perceptions and collateral requirements. Initiatives like AFAWA (Affirmative Finance Action for Women in Africa) address this by de-risking loans through partial guarantees (ADB, n.d.). By reducing the perceived risk for lenders, AFAWA expands access to larger, longer-term credit lines that women entrepreneurs can use for capital investments, restocking, or recovery post-shock.

✔ **Bundled services for business continuity:** Bundling credit with other services, such as health insurance, training, or savings, ensures that businesses remain functional during personal or systemic shocks. For instance, Jipange KuSave in Kenya offers a “lend-to-save” model, providing interest-free loans, one-third of which is placed in a savings account. The client repays the loan at the pace she chooses, and once she repays the loan in full, she becomes eligible for a larger loan under the same conditions (CGAP, 2012). This design allows women to avoid dipping into working capital when facing unexpected expenses.

However, despite their potential, the use of digital credit lines come with significant challenges and must be approached very carefully and in line with client protection principles. High interest rates (2–10% monthly) can burden women borrowers, especially in low-margin sectors (CGAP, 2016). Predatory lending and fraud are widespread, with many loan apps concealing costs or misusing data (Goldstein, 2024; Al Jazeera, 2019). Algorithm-driven credit scoring also carries the risk of reproducing existing gender and social biases if not designed responsibly. Without strong safeguards—such as transparent pricing, responsible lending standards, and financial literacy support—digital credit may increase financial vulnerability rather than resilience.



Box 3. Digital Credit Lines in Kenya, Mexico, the Philippines, and India by TALA (Back to tool)

TALA is a mobile-first digital lending platform that enhances the resilience of women entrepreneurs in emerging markets like Kenya, Mexico, the Philippines, and India. By leveraging alternative data and AI-driven credit assessments, TALA provides unsecured, instant credit lines to women excluded from traditional financial systems, enabling them to maintain business operations, manage emergencies, and adapt during income shocks.

Key features that support resilience include quick access to liquidity—85% of loans are disbursed within 10 minutes—flexible, unsecured credit, and tailored financial education. During crises, such as Hurricane Otis in Mexico, TALA waived fees and mobilised aid, demonstrating rapid crisis response. Financial literacy workshops (e.g., *Talaneando* and *TALAkayan*) and wet market outreach further equip women with the knowledge to use credit responsibly and strengthen their financial decision-making.

By November 2024, TALA had reached 10 million users and disbursed nearly US\$6 billion. Surveys show that 70% of women use TALA to sustain their businesses through volatile periods, 58% report improved decision-making power, and 80% report increased confidence. Through accessible, rapid credit and financial empowerment, TALA supports both short-term stability and long-term resilience among women entrepreneurs.

3.4. Inventory finance for business inputs

Inventory finance¹¹ models tailored for business inputs are transforming access to finance for women entrepreneurs, especially in agriculture and informal trade. By offering deferred payment options for essential inputs like seeds, fertilisers, and inventory, these models address liquidity constraints, mitigate climate risks, and empower women to scale their businesses. This analysis delves into the mechanics, benefits, and implementation strategies of inventory finance for business inputs, highlighting case studies from Apollo Agriculture and SympliFi in Kenya.



Why this is gender-sensitive:

Inventory finance models use mobile tools, alternative credit scoring, and female agents to overcome barriers women face—like lack of collateral, digital access, and formal credit histories—making inputs, training, and finance more accessible to women entrepreneurs.

11 Some inventory finance providers refer to their products as Buy Now, Pay Later (BNPL) for business inputs. However, unlike consumer-focused BNPL, inventory finance is designed specifically to support business operations by deferring payment until goods are sold or revenue is generated.

Inventory finance models provide immediate access to business inputs, with repayments scheduled post-harvest or after sales. For instance, Apollo Agriculture in Kenya offers smallholder farmers input packages on credit, requiring a 10% down payment and the remaining 90% payable after harvest. Digital vouchers, often disbursed via mobile platforms like M-Pesa, ensure funds are used specifically for input purchases, reducing the risk of fund misallocation (Benni, 2023; Mercy Corps Social Venture Fund, 2023). Very importantly, this product can have climate-adaptive features. To safeguard against climate-induced losses, some inventory finance programmes integrate insurance products. Apollo Agriculture bundles, for example, weather-indexed insurance with its credit offerings, providing automatic payouts in the event of droughts or floods, thereby protecting farmers from defaulting on loans due to unforeseen climatic events (Benni, 2023).

Traditional credit scoring methods often exclude women entrepreneurs due to lack of formal financial histories. Products like this one by Apollo Agriculture addresses this issue by utilising alternative data sources, such as mobile transaction histories and satellite imagery, to assess creditworthiness. This approach enables more inclusive access to credit for women farmers (Benni, 2023).

Implementation strategies that promote resilience

- ✔ **Mobile-first design:** To accommodate users with varying literacy levels and access to technology, inventory finance programmes employ mobile-first approaches.¹² Apollo Agriculture utilises USSD and SMS platforms, ensuring accessibility for women entrepreneurs using basic mobile phones (Benni, 2023).
- ✔ **Female-centric outreach:** Recognising the importance of trust and relatability, programmes like Apollo Agriculture deploy female field agents to engage with women entrepreneurs. These agents provide training and support, fostering confidence and facilitating the adoption of inventory finance services.
- ✔ **Bundled services:** Combining credit with additional services enhances the value proposition of inventory finance models. Apollo Agriculture offers agronomic advice and climate insurance alongside its credit products, reducing default risks and promoting sustainable farming practices.
- ✔ **Strategic partnerships:** Collaborations with local suppliers and networks are crucial for effective inventory finance implementation. Apollo Agriculture partners with over 1,000 local agro-dealers, ensuring that women entrepreneurs have convenient access to quality inputs (Apollo Agriculture, n.d.).

Inventory finance schemes offer short-term liquidity and credit-building benefits for women entrepreneurs, but key challenges persist. In Kenya, lack of regulation has led to predatory practices and over-indebtedness (Business Daily Africa, 2024).¹³ Programmes like Apollo Agriculture address this by offering voice-based tutorials and in-person support, highlighting the need for tailored, safeguarded implementation (Benni, 2023).

12 “Mobile-first approaches” refer to designing products, services, or platforms with mobile devices as the primary access point, rather than as an afterthought to web or in-person experiences. This approach recognises that for many people, especially in low-income, rural, or emerging markets, a mobile phone is their main or only digital device. They accommodate low literacy through tools like USSD menus (eg.,*123#), voice prompts, icons, local languages, and agent-assisted options.

13 While this concern has mostly focused on consumer-facing BNPL products, some inventory finance providers use similar deferred payment models. Because both operate on the “buy now, pay later” principle, often without traditional credit checks, they carry similar risks and require clear regulation to prevent misuse, ensure transparency, and protect users from over-indebtedness.

3.5. Green loans for climate adaptation

Green loans are a form of credit exclusively used to finance environmentally sustainable projects (World Bank, 2021b). Unlike green bonds, which are typically issued through capital markets, green loans are usually smaller in scale and provided directly by commercial banks or microfinance institutions, often with funding support or guarantees from DFIs or climate finance programmes (World Bank, 2021a & 2021c). Green loans, though not always specifically tailored to W-MSMEs, can be transformative for women entrepreneurs, especially in rural and climate-vulnerable areas, by addressing persistent barriers to accessing capital (DCED, 2019). They help W-MSMEs improve productivity, adopt climate-resilient practices, and strengthen their long-term viability (DCED, 2019).



Why this is gender-sensitive:

Green loans for climate adaptation support women by providing access to climate-resilient financing, addressing gender-specific vulnerabilities such as the disproportionate impact of climate change on women in rural and marginalized communities.

Green loans can finance a broad range of climate-adaptation solutions in agriculture, water, and natural resources—such as drought-resistant seeds, solar irrigation, or rainwater harvesting systems (Loan Market Association, 2023). This flexibility is especially valuable for women who are often engaged in small-scale farming in climate-vulnerable areas. These loans can support practical solutions that help adapt to environmental shocks, such as drought-resistant seeds, solar irrigation, rainwater harvesting systems, water reservoirs or landfilling to prevent flood damage (Kiva, n.d.).

Many green loans tend to include favourable financial terms, such as reduced interest rates,¹⁴ flexible repayment plans, and in some cases, reduced or no collateral requirements, such as Melanin Kapital green credits in Africa, CONAFIPS green credit programme in Ecuador or UIA green credit in Argentina (Financial alliance for women, 2023; GreenFi, 2021). These features are particularly supportive for W-MSMEs who often face irregular cash flow or limited access to traditional credit (OMFIF, 2023).

Implementation strategies that promote resilience

-  **Decentralised delivery through credit unions and cooperatives:** As seen in Ecuador and Cambodia, this helps reach underserved borrowers, especially women and youth in rural areas. Institutions such as Root Capital channel green loans through farmer organisations, enabling broader outreach, reducing transaction costs, and strengthening trust (BIOFIN, 2024).

¹⁴ Low interest rates are typically available through targeted or blended finance mechanisms involving public subsidies, guarantees, or concessional capital.

✔ **Integration with technical assistance:**

Programmes like Root Capital in Latin America, and UNDP Biodiversity Finance Initiative in Ecuador combine green loans with climate-resilient agriculture training and financial education, ensuring borrowers (mostly women) can adopt and sustain green practices effectively (Sparkassenstiftung, 2021).

✔ **Bundling with vetted green technologies:**

Programmes like Contactar and ODEF partner with approved suppliers to bundle loans with climate-smart technologies such as solar dryers or irrigation systems, ensuring product quality and access to training or maintenance (Sparkassenstiftung, 2021).

✔ **Incentives for climate-friendly practices:**

FDL's "bio-awards" in Nicaragua and Bancamía's reward borrowers for adopting sustainable practices, boosting both environmental outcomes and repayment discipline (Sparkassenstiftung, 2021).

✔ **Risk mitigation through insurance products:**

Sembrar Sartawi in Bolivia includes microinsurance that covers loan instalments during certified climate events like droughts or frost, helping farmers avoid default and rebuild quickly (Sparkassenstiftung, 2021).

✔ **Partnerships with NGOs and donors:**

Initiatives like Women Adapt are implemented by organisations such as the Africa Enterprise Challenge Fund in partnership with the GEF and UNIDO, leveraging local networks and expertise (AEC Africa, 2024).

✔ **Monitoring and verification:**

Green loan programmes aligned with GLP require borrowers to report on fund use, ensuring transparency (World Bank, 2021b). Many also apply environmental and social risk assessments, such as Ecuador's SARAS or hazard mapping by Annapurna Finance (BIOFIN, 2024; Women's World Banking, 2024a).



Green loans have supported women's resilience by enabling business continuity, infrastructure upgrades, and adoption of climate-smart technologies. However, key challenges remain. Upfront costs for green technologies are often unaffordable, even with concessional rates, highlighting the need for ex-post subsidies or grants. Graduated access models, where future benefits depend on repayment, encourage discipline and income generation.

Box 4. Green Credit Lines in India by Annapurna Finance (Back to tool)

Annapurna Finance, an Indian NBFC-MFI, has pioneered green credit lines tailored to enhance the resilience of women-owned/led businesses in climate-vulnerable rural and semi-urban regions. Funded through a €4.5 million sustainability-linked loan from Crédit Agricole CIB and the Grameen Crédit Agricole Foundation, the product ties interest rates to environmental KPIs, integrating climate incentives into its financial model.

Key features include unsecured group loans, cash flow-based assessments, and hazard mapping to pre-emptively restructure credit in disaster-prone areas. Loan sizes range from ₹10,000–₹1,000,000, with flexible repayment terms aligned to agricultural cycles and grace periods during climate shocks. Bundled products support investments in solar energy, clean water, sanitation, and income-diversifying assets. Parametric insurance options and climate-smart agriculture training further bolster resilience.

Implementation combines women-centric outreach through SHGs and JLGs, mobile-based training, and digital repayment platforms. AI and satellite data help adjust credit terms dynamically. Partnerships with NGOs and tech providers support scaling and ESG alignment. As of 2024, Annapurna served 2.8 million clients, with 11% of its ₹10,336 crore (~US\$1.2B) portfolio in green loans. Reported outcomes include increased income (55%), job creation (33%), enhanced quality of life (76%), and food security during shocks (92%), positioning Annapurna as a leader in gender-responsive climate finance.

3.6. Digital micro-factoring to strengthen resilience of W-MSMEs in value chains

Factoring is a financial solution in which a third-party company, called a factor, provides businesses with immediate cash advances against unpaid invoices (accounts receivable).¹⁵ The factor gives the business an advance payment, usually a percentage of the invoice amount, and then collects the full payment from the customer when the invoice is due. By converting receivables into liquidity, it enables businesses to respond to supply chain disruptions or cover unexpected expenses. There are two main types of factoring: recourse and non-recourse.



Why this is gender-sensitive:

Digital micro-factoring allows women entrepreneurs to access immediate liquidity by selling receivables, relying on the credit history of their business clients instead of their own, which helps women with limited business credit histories manage cash flow more effectively without the need for traditional collateral.

¹⁵ Accounts receivable are often paid after 30–90 days. These delays create cash flow gaps, limiting a business's ability not only to reinvest but also to respond to disruptions or cover unexpected expenses.

In recourse factoring, the business remains responsible if its customer fails to pay. In non-recourse factoring, the factor assumes the risk of non-payment by the customer (Novuna, n.d.). Unlike traditional bank loans that require strong credit histories and collateral, factoring relies on the creditworthiness of the business's customers (SBG Funding, 2025). A more accessible and innovative form is digital micro-factoring. While it shares the core features of traditional factoring, it is tailored for smaller invoice amounts, making it more suitable for micro and small businesses. For women entrepreneurs, particularly those in informal sectors or running micro and small enterprises, digital micro-factoring removes common barriers like collateral requirements, lack of credit history, and long processing times, enhancing resilience and business continuity (Factor funding company, 2024).



- ✔ **Digital micro-factoring** platforms such as CHITA (Chile) has introduced innovations that address long-standing financial access issues for women entrepreneurs (Chita, 2025):
- ✔ **Collateral-free processes:** CHITA synchronises with Chile's national tax authority (SII) to verify invoices automatically. Bankers Factoring uses non-recourse factoring, relying only on the creditworthiness of clients' customers rather than the business owner's credit history.
- ✔ **Simple online registration:** CHITA offers 100% online registration, and all steps, including invoice submission, offer acceptance, and contract signing, are fully digital. No physical paperwork or branch visits are required.
- ✔ **Fast disbursement:** CHITA approves most operations within 20 minutes, and 70% of funds are disbursed in less than two hours.
- ✔ **Low entry barriers:** CHITA accepts invoices as low as \$15,000 CLP (approx. US\$16), making it ideal for W-MSMEs with low-value but high-frequency transactions. Additionally, there is no minimum company age or size required.
- ✔ **High advance rates:** CHITA finances up to 98% of the invoice value; the remainder is paid once the invoice is collected from the debtor.

Providers are using targeted delivery strategies to increase uptake and ensure these tools reach underserved women: **Mobile-first communication:** CHITA uses SMS and WhatsApp for client engagement and support, channels accessible to rural and less digitally connected users. Digital micro-factoring boosts resilience by improving liquidity for W-MSMEs. Platforms like CHITA have financed over 255,000 invoices for 69,500+ small businesses, 94% of which are microenterprises (Chita, 2025). Key challenges include digital and financial literacy gaps and the need to tailor products to micro-business realities. Integration with public systems enhances scale and reach.

3.7. Emergency Savings Accounts (ESA) for Resilience

Emergency savings accounts (ESAs)¹⁶ are financial products designed to help individuals build financial buffers for unexpected expenses or shocks (Vestwell, 2025; We-Fi, 2020). WomenSave (Uganda) and Women's Economic Opportunity Initiative (global) (WomenSave, 2021; Buvinic & Jaluka, 2018) recognise the proven role of savings in enhancing the financial resilience of women entrepreneurs, particularly in the face of income volatility, caregiving burdens, and climate-related disruptions (Jaluka & Beresford, 2025). Unlike general-purpose savings, ESAs are structured with features that promote frequent deposits, immediate access during crises, and flexible usage aligned with irregular income streams (Center for Global Development, 2020).



Why this is gender-sensitive:

Emergency savings accounts tailored for women focus on promoting frequent deposits, flexible usage, and immediate access during crises. Programmes like WomenSave and the Women's Economic Opportunity Initiative are designed to address the unique challenges women entrepreneurs face, such as income volatility, caregiving, and climate disruptions, enhancing their financial resilience.

ESA models can be structured with either voluntary or mandatory contributions. Voluntary models suit women with irregular incomes, offering flexibility without fixed contributions (WomenSave, 2023). For instance, WomenSave in Uganda and BRAC's SafeSave in Dhaka offer mobile-enabled accounts with no minimum balance or fixed contributions, enabling women to save for emergency expenses at their own pace (BRAC, 2020). Mandatory models such as HERfinance ESA in India use behavioural nudges, like US\$3 monthly payroll deductions, to build consistent saving habits (Ashraf et al., 2006). Most ESAs allow immediate access based on self-declared emergencies (WomenSave, 2023).

¹⁶ While not all savings tools described in this section are formally labelled "Emergency Savings Accounts," the term ESA is used here to refer broadly to savings products that are explicitly designed to help women build buffers for emergency use. These include variations such as mobile savings accounts for emergencies that enable quick access during shocks.

Implementation strategies that promote resilience

- ✔ **Mobile-first delivery:** Programmes like M-Pawa (Tanzania) and Jipange KuSave (Kenya) are accessed via mobile phones using USSD or SMS, enabling women without smartphones or bank accounts to participate fully (CGAP, 2015).
- ✔ **Community-based support:** Village Savings and Loan Associations (VSLAs), cooperatives, and peer educators assist women in understanding and using ESA products (CARE, n.d.).
- ✔ **Employer-linked savings:** Programmes like HERfinance ESA (India) embed savings into payroll systems, automatically deducting small contributions from wages—ideal for factory workers and garment sector employees (HERproject & MicroSave, 2019).
- ✔ **Resilience-enhancing features and training:** These may involve financial coaching to strengthen digital literacy and support consistent savings habits (Buvinic & Jaluka, 2018). Tools like SMS reminders and visual trackers further boost user engagement (CDG, 2021; Buvinic & Jaluka, 2018).

While rarely studies show results in terms of resilience, lessons learned show that despite their potential, ESAs face key challenges. Whole Digital tools expand access, but only when tailored to low-tech environments and supported by financial literacy training (Buvinic et al., 2018; CGAP, 2015). Without clear interfaces and trust-building measures, uptake can be low (Buvinic & Jaluka, 2018). Incentives like matched savings improve consistency (Buvinic & Jaluka, 2018), and private accounts enhance women's control over funds, reducing household pressure and reinforcing autonomy (Bill & Melinda Gates Foundation, 2021).

3.8. Savings-linked microinsurance for building resilience

Savings-linked microinsurance combines regular savings accounts with automatic insurance coverage triggered by reaching a pre-set threshold. These bundled financial tools serve two critical functions: reduce the reliance on loans in the case of natural disaster or health emergency and inculcate a savings culture among customers, particularly women entrepreneurs, supporting the gradual accumulation of capital (Churchill et al., 2023b; Raboy, 2021). This model offers an inclusive pathway to financial resilience, especially for women with irregular incomes who lack collateral, documentation, or access to traditional insurance products (Cuadros, 2025;



Why this is gender-sensitive:

Women in the informal sector often navigate volatile income, caregiving responsibilities, and exposure to both personal and environmental risks. Savings-linked microinsurance responds to these constraints with inclusive design features that include: 1) no need for upfront premium payments, 2) mobile-based disbursement and low documentation requirements, 3) Community-based delivery through trusted groups.

Churchill et al., 2023b; Churchill et al., 2012). Unlike conventional insurance, where premiums are paid separately, these integrated products build on existing saving behaviours, using community institutions like cooperatives and MFIs for delivery.

This approach removes key barriers such as liquidity constraints, limited mobility, and low insurance literacy (Cuadros, 2025). In the Philippines, the Oro Integrated Cooperative (OIC) and Cooperative Life Insurance and Microinsurance Beneficiaries Scheme (CLIMBS) offer a Health and Disaster Savings product that activates calamity insurance once the member saves PHP 5,000 (~US\$100). Withdrawals are allowed only in emergencies, such as typhoons, floods, or health shocks, preserving the resilience function of savings (Hilot, 2020; ICMIF, 2020). In India, SEWA's savings-linked health microinsurance programme helped women save incrementally to pay premiums, making coverage accessible despite irregular income. SEWA's model also integrates savings, credit,¹⁷ and insurance, delivered through trusted women's groups, reinforcing inclusion and uptake (Churchill et al., 2023b).

Implementation strategies that promote resilience

- ✔ **Threshold-based activation:** In OIC and SEWA models, insurance is triggered once a member meets a specific savings milestone (e.g., PHP 5,000). This motivates regular contributions and ties insurance access to achievable goals (ICMIF, 2020; Hilot, 2020).
- ✔ **Emergency-linked withdrawal rules:** Withdrawals are restricted to specific shocks (e.g., typhoons, illness), ensuring that savings are preserved for resilience purposes and discouraging non-urgent spending (Churchill et al., 2023b).
- ✔ **Behavioural nudges for saving consistency:** If deposits lapse, the cooperative uses personalised nudges (calls, SMS) to re-engage women savers, fostering financial discipline (Churchill et al., 2023b).
- ✔ **Microfinance and cooperative-based delivery:** Institutions like CARD MRI and OIC integrate savings-linked insurance into their loan and savings infrastructure, reaching women through trusted channels (ICMIF, 2020; Munich Re Foundation, 2020).
- ✔ **Mobile integration and financial education:** Some schemes offer mobile tracking of balances and outreach programmes to explain the value of risk protection, improving literacy and trust (Churchill et al., 2023b).

In India, SEWA's model led to increased uptake of health insurance among informal workers and faster income recovery post-shock (Nambiar, 2021). Key lessons include the importance of trusted channels, behavioural incentives, and tying insurance access to achievable savings milestones (Churchill et al., 2023b). Most importantly, by making insurance accessible without requiring stable income, savings-linked models create viable, inclusive pathways for women to build resilience and autonomy (Ranson et al., 2006).

¹⁷ SEWA offers a credit loan linked scheme. The objective of this product is to cover the risk of natural and accidental death of the insured member and her husband and provide loan relief. The tenure of premium is on a yearly basis (SEWA, n.d).

3.9. Health and maternity microinsurance for women

Microinsurance provides low-cost, simplified insurance products designed to protect low-income individuals against specific risks such as health emergencies, disability, or death. For women entrepreneurs, these products can be bundled with credit or savings to provide essential protection against income disruptions and unforeseen expenses. In Nigeria, First City Monument Bank's¹⁸ (FCMB) women-centric health microinsurance covers medical emergencies for women entrepreneurs such as market vendors, using mobile technology and simplified enrolment to promote uptake. In Colombia, Bancamía's *Ser Mamá Protegida* provides maternity-specific insurance bundled with microloans to protect pregnant women from income loss due to childbirth complications.



Why this is gender-sensitive:

Women in informal businesses often face heightened exposure to health-related financial shocks, compounded by lack of insurance. In Nigeria, where 97.9% of women lack health coverage (Aregbeshola and Khan, 2018), even minor illnesses can lead to business shutdowns. Health and maternity microinsurance directly responds to this by allowing women to access health and care and maintain business continuity.

Implementation strategies that promote resilience

- ✔ **Bundling with financial services:** In Nigeria, health insurance is offered embedded in FCMB's E-Don Beta loan, a group microlending product (Swiss Re, 2025). Similarly, in Colombia, maternity insurance is bundled with microcredit for women entrepreneurs, targeting those without access to formal maternity protection (BBVA, 2025).
- ✔ **Trusted delivery channels:** FCMB distributes its FCMB Meta Health Insurance primarily through its network of branches and loan offerings, particularly those



¹⁸ Women's World Banking collaborated with FCMB, Hygeia HMO, and the Swiss Re Foundation to design FCMBeta Health, a health insurance product tailored for women in Nigeria. The initiative was supported by funding from the Swiss Re Foundation and the Financial Inclusion Fund, launched by the Government of Luxembourg and managed by the European Investment Bank (Women's World Banking, 2025).

targeting small businesses (Swiss Re, 2025). Bancamía reaches rural and underserved women through its national network of microfinance branches and rural officers (Bancamía, 2024).

 **Simplified claims and enrolment:** In Colombia, claims are validated by health professionals such as midwives, facilitating quick access to maternity benefits (Bancamía, 2025a).

In Colombia, *Ser Mamá Protegida* disbursed over COP 600 billion (approx. US\$148.9 million) in microloans to women in 2024 (Bancamía, 2024). In Nigeria, since its launch in 2023, FCMBeta Health Insurance has provided coverage to over 90,000 customers, primarily women and their families. (Women's World Banking, 2025). Both cases demonstrate that microinsurance tailored to women's realities, whether illness or maternity, can safeguard livelihoods and improve long-term resilience.

3.10. Pay-As-You-Go productive assets + insurance: climate-adaptive tools for women entrepreneurs

Pay-as-you-go (PAYG) financing is a form of asset-based, technology-enabled loan that enables individuals to acquire productive equipment (e.g., solar irrigation pumps, fridges, or clean cookstoves) as well as utilities (e.g., electricity access and gas), by paying in small, flexible instalments over time, usually through mobile money. Unlike traditional loans, PAYG financing requires no upfront payment or formal collateral. Ownership is granted once the product is fully paid. In cases such as ARESS in Benin and M-Kopa in East and West Africa, solar panels and solar kits are distributed under PAYG schemes that enable customers to pre-pay 10–20% of the total cost and then pay the remainder through digital instalments using mobile banking (Barry and Creti, 2020). The PAYG model in Benin, for example, works by installing devices with digital lock/unlock features, allowing remote activation upon payment and automatic disconnection in case of non-payment.

To improve repayment rates and enhance customer resilience, PAYG providers have begun bundling their services with additional financial products such as insurance and loans. This integrated approach helps reduce exposure to shocks, particularly health-related, and supports the continuity of women-owned microenterprises, especially in off-grid or rural areas vulnerable to climate variability (IRENA, 2020; M-Kopa, 2019).



Why this is gender-sensitive:

PAYG systems address women's lack of collateral, by using the asset itself as collateral, removing the need for guarantors or upfront capital. Mobile-enabled instalments reduce the time burden of travelling to financial institutions, while embedded insurance ensures continuity in case of disaster. A growing number of providers (like Easy Solar in Sierra Leone) specifically target women-led enterprises, particularly in food vending, farming, and micro-retail.

Implementation strategies that promote resilience

- ✔ **Add-on product bundles:** In West Africa, PEG Africa (NGO) partners with Prudential (insurance company) to bundle hospitalisation insurance into solar plans, improving repayment rates. In Uganda, Fenix International offers education loans to customers with strong PAYG repayment histories (IRENA, 2020).
- ✔ **Partnerships with financial institutions and MFIs:** PAYG providers (e.g., M-KOPA in Kenya, Uganda, Nigeria, and Ghana; Bboxx in Rwanda, DRC, Kenya, Nigeria, and Togo, Easy Solar in Sierra Leone and Liberia) partner with local MFIs or digital lenders to facilitate asset finance. These partnerships help onboard customers, manage credit scoring (based on payment history), and occasionally co-finance asset purchases.
- ✔ **Local community-based agent networks:** In Sierra Leone, community-based agents (25% women) provide door-to-door delivery, onboarding, and after-sales support, building trust and boosting adoption in hard-to-reach communities (CCS, 2017; UNDP, 2021).
- ✔ **Mobile payment integration:** Repayments through M-Pesa (in Kenya, Uganda) or similar platforms align with irregular cash flows. In the case of **ARESS and M-Kopa**, devices are automatically disabled after missed payments, avoiding legal enforcement and helping manage credit risk.
- ✔ **Climate-relevant asset selection:** In some initiatives, products are tailored for climate adaptation and income generation e.g., solar-powered water pumps reduce rainfall dependency; fridges reduce food spoilage in high temperatures.



While most PAYG models serve mixed client bases, studies show clear gains for women when products are adapted to their business needs. For instance, in Uganda, female farmers using PAYG solar irrigation pumps via PEG Africa reported increased yields and reduced dependence on erratic rainfall, supporting more stable income (CGAP, 2022). In Kenya, women running informal food businesses used PAYG fridges from Koolboks to extend product shelf life and reduce spoilage due to heat. 85% of users of the freezer reported an increase in income generated from their businesses as well as waste reduction as a result of having a sustainable cooling solution (GSMA, 2024). Key lessons include the need to prioritise productive-use assets, ensure risk coverage for climate shocks with insurance, and expand women-targeted outreach to maximise benefits for women-led enterprises.

The financial tools such as parametric insurance, green loans, and digital credit demonstrate that gender-

responsive design and delivery are essential to building the resilience of women-led MSMEs. Key features like flexibility, bundling, mobile money, and trusted delivery channels improve access. Since many women lack titled assets, alternative forms of collateral, including mobile payment history or movable assets, are critical for access. For this, group-based lending models (used by institutions such as Opportunity International, BRAC, and Kenya Women Microfinance Bank), enable W-MSMEs to access credit through peer guarantees, rather than physical collateral. These trust-based models (e.g., Opportunity International and KWFT) mobilise social capital to unlock credit for women who typically lack titled assets or formal income streams. As shown in section 4, bundling with technical assistance is also critical, not just for programme uptake, but for long-term impact.

Box 5. Key considerations for designing financial tools that strengthen W-MSME resilience

- Ensure mobile-first access with USSD/SMS compatibility and design adapted for low digital and financial literacy.
- Use alternative credit scoring based on mobile money, informal income, or behavioural data; eliminate collateral and guarantor requirements.
- Embed shock-responsive features, including grace periods, seasonal repayment, and dynamic limits that adjust to income fluctuations.
- Align repayment schedules with caregiving burdens and irregular household cash flows; allow emergency access without penalties.
- Bundle financial products with complementary services like health insurance, savings, technical training, or green technologies.
- Deploy through trusted gender-responsive channels, such as MFIs, cooperatives, or women's groups, and engage female agents to build trust.
- Include transparent pricing, fraud protection, and consumer redress mechanisms to ensure safety and long-term use.
- Monitor outcomes using sex-disaggregated, resilience-specific indicators, including continuity aftershocks and business recovery.
- Adapt tools to reach rural, informal, or climate-exposed segments, using local data and hazard mapping.
- Prioritise scalability and sustainability, by embedding tools within broader systems such as public schemes or donor-financed platforms.



Section 4.

Dual-level technical assistance for W-MSMEs

Resilience among W-MSMEs cannot be achieved through financial products alone. Whether it be climate shocks, economic downturns, or health crises, women’s ability to access, use, and benefit from resilience-related financial products, such as emergency loans, insurance, or savings-linked services, depends critically on tailored TA. This support must operate at two levels. First, TA is needed to strengthen the capacities of financial institutions, ensuring that product design, targeting, and delivery are responsive to women’s resilience needs. Second, TA must also reach W-MSMEs directly, equipping them with the skills, tools, and confidence to access and use financial services effectively. This section explores both levels of TA and how they reinforce each other to build lasting resilience.

4.1. Technical assistance to financial institutions for designing and delivering resilience-building financial products for women

To enable financial intermediaries to contribute to women’s resilience, DFIs can provide technical assistance services that help to design, deliver, and monitor financial products tailored to women’s risk profiles and business contexts. Crucially, many FIs lack the internal systems, skills, and gender-sensitive tools required to do this (IDB Invest & ConsumerCentriX, 2023; López Mayher et al., 2022). Moreover, some resilience solutions—such as insurance, bundled products, or behavioural nudges—require external partnerships with insurers, fintechs, consultants, or TA providers. Others, like technical training for women entrepreneurs, are often implemented through external programmes, internal units, or affiliated foundations, and funded by DFI-supported grant components.

The example of the **Aseguradora Rural & MiCRO, offers evidence of the need for bundled climate risk insurance and technical assistance.** In response to Guatemala’s high exposure to climate risks and the limited resilience of microentrepreneurs, particularly women, Aseguradora Rural (AR), a subsidiary of Banrural, partnered with MiCRO and Swiss Re to develop *Esfuerzo Seguro*¹⁹, an innovative bundled product that combines index-based microinsurance with tailored TA. The product was linked to Banrural’s productive credit lines and aimed to reduce the economic impact of droughts, excess rainfall, and earthquakes on micro and small enterprises. MiCRO led the feasibility and index modelling process. The TA included in-person and virtual training sessions for Banrural’s loan officers. These covered insurance literacy, client onboarding strategies, and disaster risk basics.

- ✔ MiCRO organised “risk fairs” to familiarise staff and clients with the product. When monetary incentives for sales proved insufficient, non-monetary motivators (e.g., public recognition) were introduced, fostering institutional buy-in.
- ✔ Educational campaigns—designed in partnership with Guatemala’s disaster agency (CONRED)—used posters, community events, and storytelling to raise awareness. Claims payouts were framed as teachable moments, helping build trust in the product.

19 *Esfuerzo Seguro* includes automatic payouts based on predefined climate or seismic events, a 72-hour emergency response kit, and disaster preparedness education. The insurance is embedded in Banrural loans and specifically tailored to clients in climate-vulnerable areas. Approximately 70% of beneficiaries are women.

- ✓ MiCRO tracked data in real-time to refine the product. In 2020, coverage was recalibrated to balance payout frequency and financial sustainability.

Another example is the **UN Women programme Women's Empowerment through Climate Resilient Agriculture**. UN Women has implemented a flagship programme across seven countries in West and Central Africa, Central African Republic, Côte d'Ivoire, Liberia, Mali, Niger, Nigeria, and Senegal, focusing on women's empowerment through climate-resilient agriculture value chains (UN Women, 2022b). The programme combines policy advocacy with TA not only to women farmers but also to financial institutions and government officials— to improve women's access to land, finance, and climate-resilient agricultural technologies to adapt to climate change (UN Women, 2021b). TA interventions were tailored to each country context, common components include:



- ✓ In Senegal, Mali, the Central African Republic, and Nigeria, over 300 traditional leaders and local and national government officials, including land commission members, were trained in gender-responsive land governance. This targeted TA strengthened institutional understanding of women's land rights and built accountability for their enforcement. It also helped establish mechanisms like dispute resolution systems and land action plans that secure women's long-term access to productive assets, reduce precarity, and enable investment. Access to land as collateral is especially vital for strengthening resilience to climate, economic, and health-related shocks.
- ✓ In Senegal, UN Women provided technical assistance to BICIS (a commercial bank) and the REFAN women's rice producers' network to co-design a credit line tailored to women farmers. By bridging the gap between women clients and formal lenders, the initiative increased access to credit for input purchases and value addition, while also equipping women with the tools to manage loans and protect their investments, especially against climate shocks.
- ✓ In Senegal, UN Women supported REFAN's Executive Committee to partner with financial institutions. The TA included training in contract development and credit promotion. Improved ability to engage with financial institutions enables women to secure timely credit for production inputs, technology adoption, and value addition, which are all crucial for maintaining income and food security, especially during climate, economic, or health shocks.

PROPULSE by PROPARCO, provides TA for crisis adaptation and inclusive financial systems. Under the Choose Africa Resilience initiative, the AFD Group and PROPARCO provide targeted TA, guarantees, and loans to financial institutions to expand access to capital for MSMEs and vulnerable entrepreneurs. A flagship of this initiative is PROPULSE, a tailored TA programme that builds institutional capacity in crisis

response, digitalisation, and inclusive practices. PROPULSE's TA delivery model includes strategic missions co-developed with partner institutions to address local needs. The programme has implemented over 350 TA projects in 4 regions, including Africa, impacting over 200 institutions with €8 million in funding committed (PROPARCO, 2020a). Key TA activities and examples include:

- ✓ PROPULSE supported Banco Promerica (Costa Rica) to strengthen SME lending by reviewing its commercial strategy, credit processes, and creating awareness campaigns for SMEs (PROPARCO, 2020a).
- ✓ In Africa, it provided assistance for the Microfinance Group's digital transformation to enhance its service offerings by: i) developing a credit scoring tool tailored for microenterprise loans, and ii) designing an automated nano loan system to address urgent financial needs (PROPARCO, 2020b).
- ✓ Inclusive and sustainable practices: At ENDA (Tunisia), PROPULSE conducted a gender audit and trained over 600 officers to mainstream gender equality in product delivery and operations. Similarly, Banque Centrale Populaire (Morocco) implemented an Environmental and Social Management System (ESMS) with TA support (PROPARCO, 2020a).

4.2. Knowledge for resilience: TA pathways for W-MSMEs

To translate financial inclusion into true resilience, W-MSMEs need more than access to credit, they need knowledge and skills strengthening. This section outlines how banks, MFIs, and development actors provide technical assistance directly to women, focusing on three skill domains: digital inclusion, financial knowledge, and technical skills for climate-smart production and adaptation. Table 8 outlines how tailored technical assistance in digital, financial, and agricultural skills strengthens women's resilience and financial inclusion.

4.2.1 Digital inclusion and digital skills

Digital inclusion refers to women's access to tools like smartphones and internet connectivity, while digital skills reflect their ability to use these tools effectively, from basic tasks like receiving payments by SMS to advanced uses like climate data interpretation (UNESCO, 2022). During COVID-19, women lacking digital literacy struggled to pivot online or use mobile banking. In contrast, tailored digital training enabled women to reach new markets, adopt mobile financial tools, and build resilience (Women's World Banking, 2024a; Accion, 2024). Digital inclusion and skills facilitate the use of resilience-enhancing financial products-like digital wallets, savings apps, or parametric insurance platforms-making them indispensable tools for inclusive financial resilience (UNCDF, 2022).

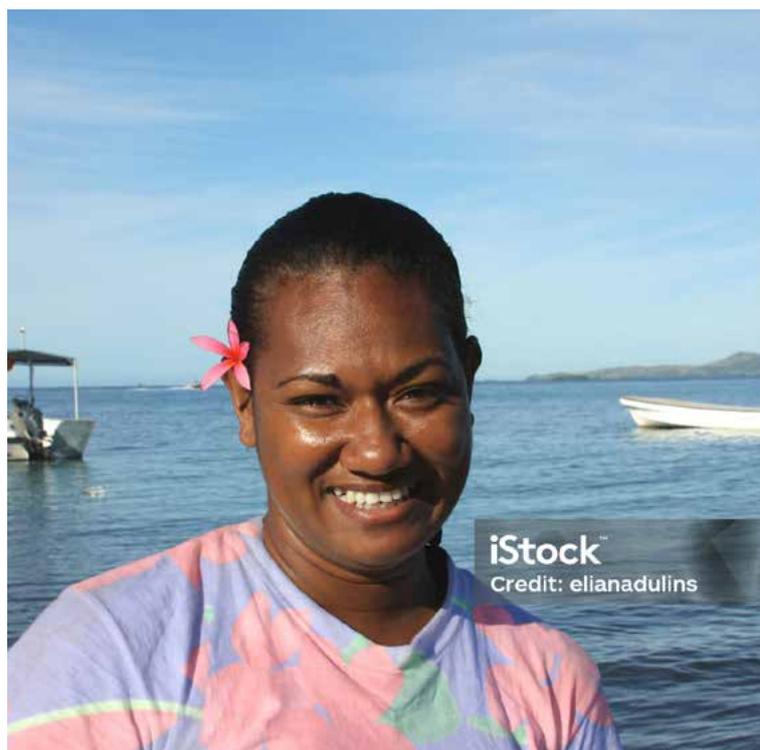
An example of a programme advancing digital resilience for W-MSMEs is Go Digital ASEAN. Women entrepreneurs in Southeast Asia face systemic barriers in climate-vulnerable sectors like agriculture and handicrafts: low digital literacy limits their ability to adopt technologies that mitigate climate risks (e.g., droughts, pest outbreaks), while gender norms restrict access to finance and training. Go Digital ASEAN, led by The Asia Foundation funded by Google.org, trained 215,896 MSMEs (60% women) across 10 ASEAN

nations (2020–2025). It is estimated that 93% of MSMEs increased their confidence in using digital tools, 91% of MSMEs took action based on what they learned (Go Digital ASEAN, 2025). The programme prioritised advanced digital skills through.

- ✔ **Go Digital:** expert-led training programme delivered by local in-country partners, designed to equip business owners and aspiring entrepreneurs with essential skills to start and grow their businesses online. The topics cover essential digital skills, including basic digital marketing, account setup and security, using e-commerce and social media for business, and creating strong passwords.
- ✔ **Explore Digital:** inspiring online speaker series showcasing entrepreneurs and thought leaders from across ASEAN, who share their expertise, success stories, and insights on regional trends impacting small businesses.
- ✔ **Grow Digital:** It offered advanced training for entrepreneurs and business owners to scale their businesses online. Led by a team of regional master trainers, the programme creates a regional learning environment focused on helping ASEAN entrepreneurs grow, become profitable, and build sustainable digital businesses.

Another example is the **Fiji Women’s Weather Watch (WWW) with community-led early warning systems**.

In Fiji, women and children face disproportionate risks during climate-related disasters such as cyclones and floods. This is due to gendered caregiving responsibilities, limited mobility, and their exclusion from formal disaster planning processes. Traditional early warning systems (EWS) often fail to reach rural and remote communities or to address women’s specific needs, exposing them to safety and economic risks (UNDRR, 2022b; UN Women, 2022a; SPREP, 2020). The WWW, launched by femLINKpacific and ActionAid Australia, empowers women as local leaders of community-based EWS. The programme builds advanced communication and digital skills to translate complex meteorological data into accessible, timely, and gender-sensitive information.



- ✔ **Advanced skills:** Interpreting weather forecasts, translating technical alerts into local languages, managing SMS and community radio broadcasts.
- ✔ **Intermediate skills:** Using geolocation apps to map high-risk households and coordinate targeted evacuations.

Unlike top-down systems, this model is designed and led by women within their own villages, using community radio, SMS, and peer networks to share real-time alerts and feedback. Women act as first responders, ensuring that EWS reflect local needs, especially of vulnerable groups, and influence national disaster policy from the ground up (ActionAid Australia, 2019; femLINKpacific, 2020; UN Women, 2022a). Women leaders participated in workshops on satellite weather interpretation, SMS bulk messaging, and community radio broadcasting. Key tools included SMS alerts sent in local languages to women leaders before disasters, community radio (femTALK89FM) delivering real-time updates and gathers grassroots impact reports, and social media (Viber/Facebook) to facilitate peer-to-peer risk sharing and needs assessments. The programme collaborated closely with the Fiji Meteorological Service and National Disaster Management Office to align community messaging with national policy (ActionAid Australia, 2019; femLINKpacific, 2020).

4.2.2 Financial knowledge and financial skills

Financial knowledge is foundational for resilience because it determines whether W-MSMEs can both access and effectively use financial products before, during, and after shocks. These capabilities enable women to anticipate and mitigate risks, manage disruptions, and invest in long-term adaptation and recovery. Much of the literature on women entrepreneurs in informal or microenterprises highlights the importance of basic financial literacy, such as budgeting, interest rate comprehension, and savings habits. However, resilience requires going beyond basic numeracy. For women operating larger or more complex businesses, financial knowledge must also include evaluating and managing financial products, like emergency credit, insurance, or digital wallets, across diverse risk contexts (CARE, 2025; CGAP, 2025c). Indeed, resilient W-MSMEs often diversify income streams and financing sources, manage repayment schedules, and adjust business models when confronted with economic or climate shocks (ADB, 2024; We-Fi, 2024). Prior experience with financial systems, such as maintaining a bank account, credit history, or financial documentation, remains a critical enabler of access to formal services (CGAP, 2025).

An example of a programme that combines these factors is **Futuro Microbank (Mozambique)**, a microfinance bank supported by TechnoServe, that implemented a gender-intentional model²⁰ combining group and individual microloans for traders and smallholders, bundled microinsurance covering drought and climate risks, and mobile-based savings accounts with low fees and tailored technical assistance.

- ✔ **Financial literacy training:** Loan officers trained to deliver context-sensitive workshops on budgeting, record-keeping, and loan management, tailored to women's literacy levels. Topics included separating household and business finances, understanding interest rates, and using insurance payouts post-disaster.
- ✔ **Business management skills:** Practical guidance on inventory management, cash flow forecasting, and market diversification.
- ✔ **Digital inclusion:** Mobile payment solutions (e.g., *M-Pesa*) introduced to reduce reliance on cash and improve transaction security.

20 Defined as specifically designed or adapted to address gender-related barriers.

- ✔ **Training and coaching plan:** Futuro Microbank aims to strengthen loan officers' ability to deliver training in a practical, accessible manner tailored to women's needs, taking into account their specific context and literacy levels. It also updated the training curriculum to include financial literacy and business management skills.

Outreach included mobile banking units and community agents in remote areas. Training was adapted to women's literacy levels and schedules. Partnerships with Hollard Insurance and fintech providers facilitated delivery. Loan officers were trained in gender sensitivity and engaged male household members when needed (TechnoServe, 2023).

Results: Over 35,000 clients made deposits and loans; 45,000 loans to 21,000+ borrowers (67% women); 3,724 clients trained (65% women); 70% adopted mobile payments (IFAD, 2021; SDC, 2025; AYANI, 2022). 86% of women who received training reported improvements in business performance, and 83% adopted better management practices. Additionally, 37% reported an increase in income, and 77% said they felt more confident about growing or expanding their business (TechnoServe, 2023).

4.2.3 Technical skills for climate and agricultural resilience

Beyond digital tools, building business resilience among women in agriculture also depends on their access to and mastery of **technical skills for sustainable production, natural resource management, and climate adaptation**. These capabilities range from basic techniques in soil conservation to complex decision-making around irrigation systems and bio-inputs. These skills help stabilise yields, reduce losses, and enable long-term adaptation to climate shocks.

An important climate resilient agriculture project is **UN Women's flagship programme Empowering Women Through Climate-Resilient Agriculture in West and Central Africa** (2017–2021). This programme delivered targeted TA to over 17,000 women across six countries. The programme focused on developing women's technical skills in sustainable agriculture, natural resource management, and climate adaptation (UN Women, 2021b). The TA approach integrated hands-on training, demonstration plots, and the promotion of eco-efficient technologies to enhance women's roles in food security and climate resilience. The programme did not provide direct grants or financial products to women, but it facilitated access to finance by establishing partnerships with local banks and MFIs, and by setting up guarantee funds, credit lines, and agricultural insurance schemes specifically for women farmers.

As a result of the intervention, in Senegal, women boosted rice productivity by 25–35%, from 4.5 to 8 tons/hectare. In addition, the report reports reduced labour time and water use contributed to more sustainable, low-carbon production systems, as well as enhanced food security, adaptive capacity, and women's leadership in local agricultural innovation systems.

In Mali,
+11,000
women



received training in



composting



soil restoration



crop rotation

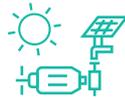


Farmers adopted alternating crop systems to rehabilitate degraded land.

Women
in Mali and
Nigeria



adopted solar-powered pumps



and Californian drip irrigation systems



extending growing seasons and improving water efficiency.



In Nigeria,
2,500
women



trained on high-yield, short-cycle rice varieties



mechanised tillage.



Women also developed and distributed adapted seed varieties.



In Niger,
women



established **168** composting pits



and adopted organic pest control methods using locally sourced ingredients.



Extension services and demonstration plots allowed farmers to



experiment



learn,



replicate techniques

Another example of TA for land access, enterprise development, and climate resilience, is the case of Tree Aid – She Grows in Mali. This project (2020–2023), supported by UK Aid Match and implemented in partnership with ADAF GALLE, delivered targeted technical assistance to empower women’s economic and climate resilience across 10 villages in Mali’s Koulikoro region (Tree Aid, 2024). Operating in a context of deep gender inequality and climate vulnerability, the project focused on land rights, enterprise development, and local governance. The *She Grows* project did not offer formal financial products but facilitated access to finance through community-based VSLAs that enabled women to save, borrow, and invest in their enterprises, enhancing financial inclusion in remote areas.

40 women's cooperatives were supported



to secure formal land access agreements



advancing the national target of allocating **15%** of public land to women's groups.



Cooperatives received training in



agroforestry



soil and water conservation



beekeeping



and processing of non-timber forest products (e.g., shea butter, syrups, honey).

40 profitable women-owned/led enterprises were launched.



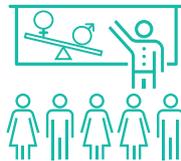
Savings and credit groups (VSLAs) were created and linked to financial service providers



enhancing women's investment capacity and control over income.



More than **348** people, including men, participated in gender equality training.



Radio campaigns and public speaking workshops increased women's visibility and confidence.



As a result, women's representation in natural resource governance increased from

31% to 57%.



The impact reported suggests that the average household income rose by 171% (over US\$2,000/year), food insecurity fell by 50%, and participation in decision-making and forest protection improved. The project demonstrates that bundled TA for land rights, business skills, and gender equality can deliver transformative, climate-resilient outcomes in the Sahel (Tree Aid, 2024). Across all examples, TA emerges as a critical enabler of resilience. When bundled with inclusive products, grounded in local realities, and adapted to women's needs, TA supports women not only to recover from shocks—but to lead lasting change within their communities and economies.

Box 6. Dual-level technical assistance: Practical strategies to strengthen W-MSME resilience

Level 1. Support to financial institutions:

- Provide product design TA to develop bundled tools (e.g. climate insurance + credit), as in Aseguradora Rural–MiCRO.
- Offer staff training on onboarding, disaster risk, and gender-sensitive delivery (e.g. via risk fairs, coaching loan officers).
- Support digitalisation and automation, including scoring models, nano-loans, or client dashboards (e.g. Microfinance Group, Banco Promerica).
- Conduct gender and environmental audits to align institutional strategy (e.g. ENDA, Banque Centrale Populaire).
- Co-finance pilot launches and awareness campaigns to build buy-in and test tools in real-world contexts.
- Embed Monitoring & Evaluation (M&E) systems to track product uptake, payouts, and gendered impact using real-time, sex-disaggregated data which includes supporting the integration of resilience indicators into loan appraisal and monitoring systems.
- Strengthen business model sustainability by helping FIs analyse which gender-responsive products can scale without long-term subsidies. Support TA that builds internal business cases, pricing models, and cross-subsidy strategies to avoid donor dependency.

Level 2. Support to W-MSMEs directly:

- Deliver climate-smart agriculture training (e.g. soil restoration, solar irrigation, agroforestry, composting) via demo plots and field schools.
- Expand digital skills programmes, from basic mobile use to e-commerce, as in Go Digital ASEAN and Women's Weather Watch (Fiji).
- Strengthen financial literacy and risk management, including budgeting, credit use, and post-shock planning (e.g. Futuro Microbank).
- Support women's access to land through TA for land commissions and traditional authorities (e.g. UN Women in West Africa, Tree Aid Mali).
- Facilitate enterprise development and value addition with coaching, VSLA links, and contract negotiation support.
- Promote confidence and leadership via public speaking, gender training, and peer role modelling to shift local norms.
- Ensure training includes behavioural components that enhance women's agency and decision-making, not just knowledge acquisition, drawing on models like Kinara Capital or the WeFi Code.
- Tailor TA to women's real constraints by coordinating delivery through local groups, cooperatives, or mobile platforms that account for literacy levels, mobility, and care responsibilities.



Section 5.

W-MSME resilience measurement framework and indicators

This section presents a structured set of indicators that help assess the resilience of W-MSMEs across three critical stages: 1) anticipation and preparation, 2) absorption and recovery, and 3) adaptation and transformation. The indicators span thematic dimensions such as financial literacy, emergency credit, insurance access, debt restructuring, income diversification, and behavioural change. They are designed to capture both access to relevant financial instruments and the actual use of those tools under stress. Many indicators can be tracked through client-level administrative data (e.g., loan records, insurance claims, digital usage). Others require surveys or interviews to capture behaviour, confidence, and recovery. Together, they support internal bank monitoring, donor programme tracking, and evaluation of resilience-focused technical assistance.

The most widely accepted definition of women-owned business is legal ownership of more than 51% of shares, typically demonstrated through official registration or shareholding documents. Evidence shows some businesses register women as owners solely to access preferential financial products (a12e, 2023). This has led financial institutions to tighten eligibility, requiring majority ownership and sustained control by women. For instance, the SBA mandates at least 51%²¹ ownership and active management to qualify as women-owned (SBA & OHA, 2023).

Equally important is the classification of micro, small, and medium enterprises (MSMEs). While there is no universally accepted definition, MSMEs are typically categorised based on the number of employees, annual turnover, or total assets. In addition, common disaggregations for this type of data should include sector (e.g., agriculture, trade, services), geographic location (urban/rural, region), age of business, digital access (online vs. offline), climate exposure (e.g., flood-prone areas), formality (registered/unregistered), and vulnerability markers (e.g., migrant-owned, youth-owned, single mothers).

5.1. Indicators to measure resilience in Stage 1: Anticipation and preparation

As outlined in section 2, *anticipation and preparation* are the first pillars of resilience. They refer to the capacity of individuals or businesses to identify risks early and implement proactive strategies before shocks and stressors occur (Dah-gbeto & Villamor, 2016; Folke et al., 2010). The indicators in Table 6, span multiple dimensions of preparedness, from financial literacy and risk awareness to savings behaviour, insurance uptake, gender-sensitive product access, and climate information usage.

21 Women-owned businesses are those with $\geq 51\%$ female ownership and control. Women-led businesses are managed or directed by a woman, regardless of ownership share. Women-managed businesses are run operationally by a woman but may lack ownership/control. Equally owned businesses have 50/50 gender ownership, requiring further analysis of decision-making power. Nevertheless, definitions may vary across institutions. For example, WE-FI defines “Women Led” as businesses in which women own a majority stake in the business ($>50\%$) or women fully own a business (WE-FI, 2025). For International Finance Corporation (IFC) women-owned enterprises are those in which at least 51 percent of the capital is in the hands of women, or those in which one or more women own at least 20 percent of the capital and have: i) at least one woman in the position of chief executive officer, chief operations officer, president, or vice president of the company and ii) at least 30 percent of the board of directors are composed of women (IFC, n.d.).

Table 6. Indicators to measure anticipation and preparation for resilience in W- MSMEs

Dimension	Indicator	How it is measured	Type
Financial literacy & risk awareness	% of W-MSMEs enrolled in financial education programmes	Training records or digital logs	Output
	% of W-MSMEs using risk assessment tools (e.g., cash flow forecasting tools)	Survey or app usage data	Outcome
	Number of W-MSMEs accessing business advisory services	Programme records	Output
Savings & liquidity buffers	% of W-MSMEs with dedicated emergency savings accounts	Core banking data	Output
	Median emergency savings balance (as % of monthly revenue) among W-MSMEs	Bank data / financial statements	Outcome
	% of W-MSMEs using structured savings groups (e.g., VSLAs)	Survey or group participation data	Output
Insurance & risk mitigation products	% of clients with active insurance (e.g., business interruption, health, climate)	Insurance partner data	Output
	% of agri-W-MSMEs with parametric insurance (if applicable)	Enrolment logs	Output
Digital preparedness	% of W-MSMEs using mobile banking for savings/ transactions	Digital transaction logs	Output
	% of W-MSMEs adopting digital accounting tools	Surveys / platform data	Outcome
Financial access & preparedness	% of W-MSMEs accessing formal financial services for the first time (e.g., insurance, savings, mobile money)	KYC/account opening data	Impact
	% of W-MSMEs reporting preparedness for financial shocks	Survey	Outcome
	% of W-MSMEs who track expenses digitally (apps/ spreadsheets)	Survey / app analytics	Output
	% of W-MSMEs making regular savings toward future financial goals	Survey or financial institution records	Outcome
	% of W-MSMEs with a debt-to-income ratio < 30%	Credit bureau + income data	Outcome
Gender-inclusive access	% of W-MSMEs accessing risk mitigation products (vs. men)	Disaggregated product data	Outcome
	% of financial products with gender-sensitive design (e.g., no collateral)	Product audits	Output
Climate preparedness	% of agri-W-MSMEs using weather advisory tools	Surveys / partner reports	Output
	% of W-MSMEs with documented disaster preparedness plans	Surveys / partner reports	Output

Source: Adapted from CGAP's outcome and impact measurement frameworks, including the Women's Economic Empowerment Indicator Menu, Impact Measurement and Management reviews, and digital financial inclusion guidance. Additional indicators are based on sectoral best practices and evidence from CGAP and partners to track preparedness, resilience, and gender inclusion (CGAP, 2025a; CGAP, 2025b; FAO, 2023b).

5.2. Indicators to measure resilience in Stage 2: Absorption and recovery

As outlined in Section 2, **absorption and recovery** refer to the ability of individuals or enterprises to withstand and rebound from shocks. While absorption capacity includes immediate access to liquidity through emergency savings, insurance payouts, or short-term loans, recovery refers to the capacity to re-establish operations and income flows through instruments such as recovery credit lines, loan restructuring, and business continuity support. These two stages are closely linked and are critical in avoiding long-term income loss and debt accumulation, particularly for W-MSMEs, which often face more limited access to formal financial networks (Denton, 2002; Kumar & Quisumbing, 2014). This stage of resilience differs from stage 1 of **anticipation and preparation** in that it focuses on responses immediately after a shock has occurred, rather than proactive measures taken beforehand.

The indicators presented in Table 7 below measure how effectively financial institutions and ecosystems support W-MSMEs during and immediately after a shock. They capture response speed (e.g., time to disbursement or payout), the availability and targeting of emergency credit, the degree of flexibility offered through restructuring, and behavioural signals of coping capacity.

Table 7. Indicators to measure absorption and recovery capacity among W-MSMEs

Dimension	Indicator	How it is measured	Type
Emergency finance & credit access	% of clients accessing emergency loans/overdrafts within 30 days of shock	Loan disbursement logs	Output
	% of emergency or quick-disbursement loans given to W-MSMEs	Identify emergency loan product codes, filter by gender	Output
	Average time-to-disbursement for emergency credit W-MSMEs vs non W-MSMEs	Loan system logs (application date vs. disbursement date)	Outcome
	% of W-MSMEs using digital credit platforms for quick access	Digital transaction logs, platform API data or client survey	Output
Insurance & shock response	% of W-MSMEs covered by agricultural, health, or property insurance	Insurance linkage with loan accounts	Output
	# and % of W-MSMEs receiving payouts following a trigger event	Claims data from insurer	Output
	% of payouts processed and disbursed within X days of triggering event / or claim filed ²² for W-MSMEs	Claims database (event vs. payment timestamp)	Outcome

22 Measuring the triggering event can be more complex and less consistent than using the claim submission date.

Debt restructuring & flexibility	Payout coverage ratio: average % of loss or input cost recovered via payout	Claims data and loss assessments	Outcome
	% of clients with loan deferrals/restructuring post-shock	Bank restructuring logs	Output
	Default rates among restructured loans (6-month follow-up) for W-MSMEs	Loan portfolio performance data	Outcome
	Usage of grace periods or flexible repayment terms W-MSMEs	Loan agreement metadata	Output
Recovery lending	% of loans disbursed within 6 months post-shock to W-MSMEs	Loan issuance data linked to shock timelines	Output
	% of W-MSMEs accessing recovery loans/working capital post-crisis	Bank lending system disbursement logs	Output
	% of W-MSMEs resuming normal operations within 6 months	Sales/transaction data	Outcome
Financial health & coping	% of W-MSMEs with savings or credit available to cover unexpected expenses	Survey or account/credit report linkage	Outcome
	% of W-MSMEs with active insurance coverage (e.g., health, property)	Insurance records	Output
	% of W-MSMEs who report capacity to cope with a financial shock	Client survey/self-assessment	Outcome
	% of W-MSMEs who report having been able to recover from financial shocks within 3/6/12 months	Survey or qualitative interviews	Result
Coping behaviour	% of W-MSMEs relying on savings (vs. high-cost loans) post-shock	Survey	Outcome
	% reducing reliance on negative coping (e.g., skipping meals) for W-MSMEs	Survey	Outcome

Source: Authors' own elaboration based on several reports. See note.²³

5.3. Indicators to measure resilience in Stage 3: Adaptation and transformation

Adaptation and transformation refer to the long-term capacity of businesses to adjust their strategies, operations, and financing models in response to shocks. As outlined in Chapter 2, **adaptation** involves changes that help enterprises better respond to future risks—such as diversifying income streams, adopting digital platforms, or modifying agricultural practices (Meinzen-Dick et al., 2014). In agrarian contexts, for example, women often adjust land-use strategies or crop choices to cope with climate variability (Dah-gbeto & Villamor, 2016). **Transformation** goes further: it entails deeper structural shifts when recurring shocks

²³ Note: Most indicators in this table are adapted from CGAP's customer outcomes-based frameworks and technical guidance on resilience, credit, and insurance, with a focus on timely access, payout effectiveness, and coping capacity (CGAP, 2023; CGAP, 2025). Additional indicators are supported by sectoral best practices in financial health and resilience measurement (UNEP FI, 2024).

render existing models unsustainable. This includes integrating, for example, long-term investments, and ecosystem-wide changes to ensure resilience is not only reactive (Boyd et al., 2015).

The indicators in Table 8, below, track how W-MSMEs evolve their behaviour and strategies after a crisis. They measure the adoption of new practices (e.g., climate-smart agriculture, digital tools), access to long-term capital, and client perceptions of preparedness for future shocks. Several indicators also assess structural enablers, such as the availability of credit guarantees or the reinvestment of insurance payouts into productive assets. These indicators are especially relevant for financial institutions and ecosystem actors designing long-term resilience strategies.

Table 8. Indicators to measure adaptation and transformation among W-MSMEs

Dimension	Indicator	How it is measured	Type
Business adaptation & diversification	% of W-MSMEs who diversify income or enter new markets post-payout (e.g., new products/markets)	Follow-up surveys or updated business profiles	Outcome
	% of agri-MSMEs adopting climate-smart practices (drought-resistant crops)	Farmer surveys/ extension records	Outcome
	% of MSMEs using digital platforms to access new markets	E-commerce/ transaction logs	Outcome
Climate adaptation & resilience	% of W-MSMEs that invested in resilient infrastructure (e.g., flood defences, irrigation, flood walls)	Post-shock investment tracking or surveys	Outcome
	% of W-MSMEs adopting sustainable practices in business (e.g., clean energy, solar biogas)	Environmental or business audit reports	Outcome
	% of W-MSMEs accessing long-term investment loans (equipment/tech upgrades)	Loan portfolio analysis	Output
Recovery & transformation	% of W-MSMEs who report having been able to recover from financial shocks within 3/6/12 months	Survey (post-event follow-up)	Result
	% and number of W-MSMEs reporting full recovery of livelihood/business operations within X months after a climate event	Survey or digital operational data	Impact
	Growth in credit guarantees for W-MSMEs post-shock	Guarantee fund administrative data	Outcome
Product use & behavioural shifts	% of payouts reinvested in productive assets or inputs to W-MSMEs	Post-disbursement client survey	Outcome
	% of W-MSMEs policyholders renewing (Financial product) (for example parametric insurance)	Policy renewal database	Output
	% of W-MSMEs that feel confident in managing future shocks	Self-assessment survey or risk perception scale	Outcome

Box 8. Key considerations for measuring business resilience among W-MSMEs

- Use a staged framework to assess resilience across anticipation, absorption, and adaptation stages, aligned with business responses before, during, and after a shock.
- Track both access to and actual use of financial tools (e.g., credit, insurance, savings) to distinguish between availability and effective uptake.
- Combine administrative data (loan systems, insurance claims) with survey-based indicators to capture behavioural change, confidence, and recovery trajectories.
- Align measurement timelines with shock stages: pre-shock (baseline), short-term (0–6 months), and long-term (6–24 months).
- Always measure both outputs and outcomes since they provide different information
- Disaggregate all indicators by sex of business owner, size, sector, and formality to identify intersectional barriers.
- Use indicators not only for monitoring but also to evaluate the effectiveness of technical assistance, particularly in improving financial resilience among W-MSMEs.
- Measure sustainability of interventions by tracking product longevity (beyond pilot), recurring usage by W-MSMEs, and institutional commitment post-TA.

This report set out to examine how financial products and TA can jointly enhance the resilience of W-MSMEs. Its central aim was to identify practical solutions that enable women entrepreneurs to anticipate, absorb, adapt to, and recover from shocks, be they climate-related, economic, or personal, and to contribute meaningfully to gender-equitable economic development.

The findings demonstrate that W-MSMEs are more exposed to shocks and long-term stressors due to structural gender inequalities, including limited access to credit, digital tools, social protection, and decision-making power. Using a three-stage resilience framework, the report mapped key financial instruments, such as parametric insurance, emergency savings, and green credit lines, and showed that these tools are more effective when bundled with TA that builds financial, digital, and climate adaptation skills.

The analysis also revealed that resilience is not just about financial access but about agency. Tailored support mechanisms, especially those delivered through peer networks, mobile platforms, or women-led cooperatives, can unlock women's capacity to manage risk, sustain business operations, and invest in long-term transformation. Case studies from Kenya, India, Niger, and Mozambique illustrated that when W-MSMEs are supported with the right combination of finance and skills, they are better positioned to pivot, innovate, and lead within their communities, even under crisis conditions.

For DFIs, FIs, development agencies, and other development partners, these findings underscore that resilience-building for W-MSMEs must go beyond gender-neutral approaches. Addressing the underlying constraints that limit women's capacity to recover and grow is essential to achieving broader economic stability and inclusive growth.

As climate, political, and economic shocks continue to multiply, W-MSMEs will remain at the front line of both risk and recovery. Strengthening their resilience with financial products and skills is not just a safeguard against future crises, it is a strategic investment in building more just, adaptive, and sustainable economies.



Section 6.

Conclusions and recommendations



Recommendations

The following recommendations offer actionable strategies for development partners (donors, DFIs, TA providers, policymakers) to strengthen the resilience of W-MSMEs through gender-responsive financial products, institutional reforms, and measurement systems.

1. Develop and Scale Resilience-Building Financial Products

- ✔ **Design financial tools tailored to women’s resilience pathways and resilience stages.** Development partners should support product design that reflects women’s unique vulnerability profiles, such as time poverty, mobility limitations, climate exposure, and informal sector dominance. Products should include emergency credit with flexible repayment, insurance bundled with cash transfers, or informal group-based savings tools that mirror care cycles and income variability.
- ✔ **Bundle tools around women’s sector-specific risks.** Design products specific to sectors dominated by W-MSMEs (e.g. informal retail, agriculture, beauty services). For example, offer seasonal loans to rural women bundled with weather-indexed insurance and farm extension services, or working capital lines for urban vendors integrated with flexible digital repayment options.
- ✔ **Engage with mobile money platforms through partnerships, not competition.** While many platforms already offer financial products, development partners could enable strategic partnerships between banks and mobile operators to co-create women-centred solutions. For example, banks can embed gender-sensitive credit scoring into mobile ecosystems, or offer resilience microinsurance via USSD in collaboration with telcos. Rather than displacing existing platforms, development partners should support interoperability and partnership models.
- ✔ **Prioritise digital channels that address women’s usage patterns.** Invest in mobile-based financial services that are accessible on low-end phones, accommodate irregular cash flows, and are embedded with financial literacy features. Gender-smart design includes voice-based guidance, airtime-based incentives, and human-assisted onboarding, especially for first-time users.
- ✔ **Incorporate scalability pathways and business model stability early in product design.** Resilience-focused products should be designed with an understanding of their long-term viability—whether through commercial channels, cross-subsidy models, or public-private partnerships. Anticipate scale constraints for rural or highly informal W-MSMEs and plan accordingly.

2. Provide Dual-Level Technical Assistance

- ✔ **Support institutional gender transformation within FIs.** Development partners could fund TA that goes beyond product development to support gender audits, the integration of ESG and gender criteria, staff capacity-building, and sex-disaggregated portfolio data systems. For example, programmes like AFAWA help FIs adopt internal systems to track outreach and performance with W-MSMEs.
- ✔ **Ensure technical assistance to W-MSMEs is tailored to women's realities.** Support should include digital and financial literacy for first-time users, training delivered in women's cooperatives or community hubs, and climate-smart agriculture adapted for women with limited land titles or mobility. Tools like SMS training, radio, and WhatsApp-based coaching can increase accessibility.
- ✔ **Collaborate with local women's organisations and grassroots networks.** Local actors often have deeper knowledge of the barriers women face and can co-deliver TA more effectively. DFIs and FIs should build alliances with women's associations, cooperatives, or trusted local facilitators to reach underserved populations. For instance, engaging rural women's savings groups to deliver insurance education or onboarding.
- ✔ **Prioritise high-impact and scalable TA interventions.** Development partners could map and sequence interventions according to available funding and institutional maturity. For example, prioritise TA for FIs serving highly vulnerable sectors (e.g. climate-exposed agriculture or informal trade), or with a demonstrated willingness to shift internal systems. Scalability can be achieved by focusing on models that can be replicated across multiple institutions or markets, embedding gender-sensitive practices into core systems, and leveraging digital tools to reach wider groups of women entrepreneurs at lower cost.
- ✔ **Ensure that training programmes incorporate agency-building and behavioural design.** Effective TA should strengthen women's self-confidence, decision-making power, and capacity to act under uncertainty—not only improve financial knowledge. Use evidence-based adult learning methods and feedback systems to tailor content to different profiles of W-MSMEs.
- ✔ **Build local delivery capacity to improve cost-efficiency and sustainability.** Partner with community-based organisations or savings groups to co-deliver training and resilience tools, reducing the cost of TA and anchoring it locally. This also supports scale and continuity once donor support ends.

3. Improve measurement, learning, and accountability

- ✔ **Track institutional progress, not just client outcomes, and treat gender-intentional transformation as impact.** Measurement should include the integration of gender in portfolio performance metrics, evolution of internal systems, and uptake of inclusive risk models—especially in banks and fintechs that traditionally lack sex-disaggregated insights.
- ✔ **Apply a staged, gender-sensitive resilience measurement framework.** DFIs and FIs and alike institutions could track both product uptake and use across anticipation, absorption, and adaptation stages, capturing how W-MSMEs prepare for, survive, and grow after crises. Indicators should reflect financial access (e.g. emergency credit), behavioural shifts (e.g. increased savings), and outcomes (e.g. time to recovery).
- ✔ **Track institutional progress, not just client outcomes.** Technical assistance should include metrics to assess how FIs improve gender-disaggregated data systems, scoring models, product design, and staff diversity. This institutional transformation is often overlooked but essential to long-term impact.
- ✔ **Disaggregate all data by sex, sector, geography, and vulnerability.** Track not only women's access but also their outcomes—such as default rates, post-shock recovery, or insurance reinvestment. Integrate these into existing MIS and DFI reporting systems.
- ✔ **Incentivise learning through performance-linked funding.** DFIs and donors can provide performance bonuses, concessional finance, or guarantees to institutions that show progress in resilience-related gender outcomes, such as increased emergency lending to women or reduced default rates among women borrowers post-crisis.
- ✔ **Encourage knowledge-sharing and local adaptation.** Fund national learning hubs or regional platforms where local organisations, MFIs and fintechs can share what works in different contexts. Create country-level feedback loops to adapt strategies based on local evidence.
- ✔ **Acknowledge and monitor scalability limits in certain contexts.** Not all resilience products for W-MSMEs—particularly those targeting rural, informal, or climate-vulnerable groups—can achieve rapid scale. Incorporate realistic indicators of success that balance impact, reach, and business model viability over time.

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Appendix

A. Business resilience at the enterprise level: indicators and adaptations beyond the ILO framework

FIs, DFIs, and TA programmes can go beyond retail-level data by assessing firm-level capabilities that influence resilience. In its 2023 report, the International Labour Organisation (ILO) introduced a *Business Resilience Index (BRI)*, designed to measure firms' capacity to withstand and adapt to shocks. This framework is particularly useful for informing policy and TA efforts aimed at improving business continuity, especially among W-MSMEs.

The table below presents the key dimensions and categories of firm-level resilience from the BRI, highlighting a combination of internal capabilities (e.g., human capital, management, innovation) and external enablers (e.g., infrastructure, financial access) that are critical to building, sustaining, and assessing business resilience, particularly among W-MSMEs. These indicators can guide the design of technical assistance, diagnostics, and policy tools aimed at strengthening firms' ability to anticipate, withstand, and recover from shocks.

Table 12. Firm-level resilience indicators adapted from the ILO Business Resilience Index (BRI)

Dimension	Category	Indicator	Type	Note
Human capital	Knowledge stock and flows	% of staff trained in resilience, adaptability, or crisis response topics	Output	Indicates firm capacity to adapt to change and maintain operations under stress
	Knowledge stock and flows	% of employees receiving structured on-the-job training annually	Output	Supports continuous learning and workforce flexibility in dynamic environments
Technology capability	Research and development	Gross expenditure on R&D (GERD) as % of GDP	Outcome	Reflects national investment in innovation and potential for technological resilience
	Research and development	Average QS world university ranking of top 3 national universities	Output	Proxy for national academic excellence and innovation infrastructure
	Research and development	% of firms collaborating with universities on R&D	Output	Captures cross-sector knowledge exchange critical for innovation resilience
	ICT	ICT Access Index (GII methodology)	Output	Measures national infrastructure readiness to support digital and remote business models

Infrastructure	ICT	ICT Access Index (GII methodology)	Output	Measures national infrastructure readiness to support digital and remote business models
	ICT	ICT Use Index (GII methodology)	Outcome	Captures real-world application of ICTs supporting digital resilience
	Transport	Average quality rating of port infrastructure (scale 1–7)	Output	Enables supply chain continuity and shock absorption
	Transport	Average quality rating of airport infrastructure (scale 1–7)	Output	Supports logistical adaptability and international business continuity
	Transport	Logistics Performance Index score	Outcome	Summarises infrastructure and service readiness for cross-border trade resilience
Innovation	Production and ecosystem	Index of production process sophistication (scale 1–7)	Outcome	Reflects ability to innovate and optimise processes under uncertainty
	Production and ecosystem	Depth of cluster development index	Outcome	Measures ecosystem density, which enhances innovation spillovers and resilience
	Production and ecosystem	Patent families filed in at least two offices per billion PPP\$ GDP	Outcome	Captures depth and breadth of innovation resilience
	Production and ecosystem	Capacity for innovation score (GCI)	Outcome	Summarises national innovation system's capacity to respond to emerging challenges
Financial	Liquidity	% of firms reporting access to emergency financial support or credit	Outcome	Measures liquidity resilience under stress or demand shocks
	Liquidity	% of firms with overdraft facility or emergency credit lines	Output	Indicates working capital flexibility
	Funding	Ease of Getting Credit Index (0–100)	Output	Measures accessibility of formal credit markets
	Funding	Depth of financing equity market index	Outcome	Reflects diversity of financial instruments available for business growth and recovery
	Funding	Domestic credit to private sector as % of GDP	Outcome	Indicates overall availability of credit for resilience investment
Management	Capabilities	Management Index score (e.g. World Management Survey)	Outcome	Captures firm capacity for strategic planning, problem-solving, and operational flexibility
	Capabilities	% of firms reporting high efficiency in use of internal talent	Outcome	Indicates adaptive HR practices and operational flexibility
	Capabilities	% of firms using ICT to enable new organisational models	Output	Reflects technological and organisational adaptability
	Capabilities	% of firms able to attract and retain skilled workers during crises	Outcome	Indicates labour market competitiveness and organisational resilience

Source: ILO, 2023.

While the ILO's business resilience framework provides essential indicators of firm capabilities and external conditions, it does not fully capture how businesses actively adapt or how those adaptations are financed—a crucial dimension for designing effective financial and technical support. Understanding whether firms are making strategic changes, and whether they rely on financial products to do so, helps bridge the gap between observed resilience outcomes and the tools that enable them. Key complementary indicators could include:²⁴

- % of adaptation measures financed through internal resources vs. external support
- % of businesses financing adaptations with formal financial products (credit, insurance, etc.)
- % of businesses using resilience-oriented financial products
- Types of financial products most commonly used for resilience purposes.

Gender considerations are essential for resilience diagnostics but remain largely absent from the ILO BRI framework. While disaggregating all indicators by W-MSMEs vs. non-W-MSMEs is a necessary first step, deeper analysis is needed to uncover structural and behavioural barriers affecting women's ability to build resilience. Tailored technical assistance should address these gaps in financing, skills, networks, and innovation access. Key gender-responsive indicators include:²⁵

- % of W-MSMEs using formal financial products to finance adaptation measures
- % of W-MSMEs accessing resilience-related training or TA
- % of W-MSMEs reporting adaptation challenges due to care responsibilities
- % of W-MSMEs integrated into R&D or innovation ecosystems
- % of W-MSMEs using resilience-oriented financial products.

B. Measuring women's economic empowerment as a foundation for resilience

Women's Economic Empowerment (WEE) is defined as the process by which women acquire the ability to make and act on economic decisions that affect their lives and those of their households and communities. This includes access to and control over economic resources, agency in decision-making, and the ability to define and achieve economic goals. As Naila Kabeer (1999) highlights, empowerment is about the expansion in people's ability to make strategic life choices in contexts where this ability was previously denied to them. It requires access to resources, agency to use those resources, and achievements that reflect meaningful change.

24 Sample questions: (1) Have you made any changes to your business operations, products, or services in response to recent challenges (e.g., market shifts, supply chain disruptions, climate events)? (2) How did you finance these changes or adaptations? a) Own savings b) Business revenues c) Loan or credit d) Insurance payout e) Government or NGO support f) Other. (3) Are you currently using any financial products specifically to manage risks or increase your business's resilience (e.g., overdraft facility, bundled loan + insurance, climate-smart loan, digital payments)?

25 Sample questions: (a) How did you finance recent business adaptations? (b) Have you accessed any training or technical support related to crisis or risk management? (c) Have you faced difficulty retaining staff during crises due to caregiving responsibilities? (d) Are you currently involved in any R&D or business innovation networks (e.g., clusters, university partnerships)?

Understanding WEE is fundamental to building resilience, particularly for women-led households and businesses. Women who are economically empowered are better positioned to prevent, absorb, and recover from economic, environmental, or personal shocks. Their access to savings, decision-making autonomy, and control over financial tools not only buffers them during crises but also enables long-term adaptive strategies. WEE-related indicators should be systematically measured through surveys targeting individual women or household members and should include clear, gender-disaggregated analysis. Financial institutions, development actors, and policy programmes can integrate these indicators into customer intake forms, monitoring frameworks, or gender impact assessments—especially when designing financial products or technical assistance services aimed at increasing resilience.

Table 1A. Indicators of women’s economic empowerment and their relevance to resilience

Dimension	Indicator	Type	WEE/resilience & rationale
Access to resources and opportunities	% of women participating in income-generating activities	Outcome	WEE - Reflects access to economic participation
	% of women who feel confident using financial products	Outcome	WEE - Shows financial capability and confidence
	% of women who believe women should be free to choose employment or business outside the home	Output	WEE - Indicates social norms and beliefs change
	% of men who participate in household tasks	Output	WEE - Enables redistribution of care work, affecting time use
Agency	% of women able to make financial decisions without consulting others	Outcome	WEE - Measures decision-making autonomy
	% of women who participate in household financial decisions	Outcome	WEE - Indicates joint financial agency
	% of women able to leave the household for work or personal business without consulting others	Outcome	WEE - Captures mobility and autonomy
	% of women who feel they have control over how they use their time	Outcome	WEE - Shows autonomy over time use, critical for empowerment
	% of women able to maintain a private savings account or make private phone calls	Output	WEE - Reflects privacy and control over assets
	% of women who feel confident managing their own financial situation	Outcome	WEE - Shows internal confidence and capability
	% of women who set and pursue financial goals	Outcome	WEE - Indicates self-direction and planning capacity
	% of women who feel they have control over their own finances	Outcome	WEE - Reflects perceived financial autonomy
	% of women who are satisfied with their financial situation	Outcome	WEE - Measures subjective well-being and satisfaction

Achievements and resilience	% of women who report increased contribution to household income	Result	WEE and Resilience - Reflects impact and improved standing
	Median income earned in the last 12 months	Result	WEE - Shows tangible economic achievement
	% of women who made major household/business purchases in last 12 months	Result	WEE - Indicates financial power and economic participation
	% of women able to mobilise 1/20 GNI per capita in 30 days	Outcome	Resilience - Demonstrates ability to absorb financial shock
	% of women who feel financially secure	Outcome	Resilience - Measures perception of economic stability
	% of women who feel women have influence in households and communities	Outcome	WEE - Reflects agency and perceived social influence

Source: Author's own elaboration.

Another useful tool to measure WEE, particularly in agricultural contexts, is the Women's Empowerment in Agriculture Index (WEAI), developed by the International Food Policy Research Institute (IFPRI). Rooted in Naila Kabeer's conceptualisation of empowerment as a process of gaining choice and agency, the WEAI captures both individual and collective agency and control over resources across agricultural value chains (IFPRI, 2018).

The WEAI methodology is publicly available and includes survey instruments and guidelines to compute the composite index. While the full WEAI consists of a multidimensional score, it is also possible to use selected indicators from the index to track empowerment outcomes over time or to diagnose constraints as part of TA, programme targeting, or monitoring efforts (Seymour et al., 2023; Yount et al., 2019). It has been applied in programmes supported by USAID, IFAD, and others in Africa, Latin America, and South Asia to inform design, implementation, and evaluation of gender-responsive agricultural interventions (Malapit et al., 2017). Pro-WEAI, one of the latest adaptations of WEAI, developed as part of the Gender, Agriculture, and Assets Project Phase 2 (GAAP2), includes 13 agricultural development projects in nine countries in South Asia and Sub-Saharan Africa (Yount et al., 2019).

This tool is especially relevant for programmes supporting resilience, as many of the indicators touch on women's control over productive decisions, assets, income, and collective participation—all of which influence their capacity to absorb and adapt to shocks. The following table presents selected indicators from WEAI and its pro-WEAI adaptation, most relevant for understanding empowerment and its link to resilience in agriculture or household livelihoods.

Table 2A. WEAI Indicators

Dimension	Category	Indicator	Type	Why this measures resilience/ agency
Intrinsic agency	Autonomy	% of women who feel they can make personal income decisions independently	Outcome	Reflects self-direction and confidence in financial decision-making
	Self-efficacy	% of women who report confidence in achieving goals	Outcome	Indicates psychological resilience and belief in one's capacity to act
	Intimate Partner Violence (IPV) attitudes	% of women who reject all justifications for intimate partner violence	Outcome	Captures personal autonomy and resistance to disempowering norms
Instrumental agency	Agricultural decision-making	% of women with input or sole decision-making over productive decisions	Outcome	Reflects influence over core economic activities, especially in agricultural contexts
	Ownership of assets	% of women who own land, livestock, or other productive assets	Output	Asset ownership strengthens resilience via economic security and access to credit
	Access to credit	% of women who accessed financial credit and contributed to decisions on its use	Output	Shows agency in resource mobilisation and household-level economic planning
	Control over income	% of women who can decide how their income is used	Outcome	Reflects economic empowerment and strategic control over household resources
Collective agency	Group membership	% of women who are active members of community groups	Output	Group participation enhances social capital, which is key to resilience and collective bargaining
	Leadership	% of women in leadership roles within community groups	Output	Captures ability to influence community-level decisions and lead initiatives
Agency-enabling	ICT access	% of women who use mobile phones or internet for economic activities	Output	ICT access supports information sharing, digital inclusion, and adaptive capacity
	Financial access	% of women who can independently open and manage a bank or mobile money account	Output	Demonstrates autonomy and capacity to engage with formal financial services
	Secure property rights	% of women with documented ownership or use rights over land or housing	Output	Legal recognition of rights increases stability, bargaining power, and investment in resilience-enhancing assets

Source: Adapted from the Women's Empowerment in Agriculture Index (WEAI), IFPRI. Available at: <https://www.ifpri.org/project/weai>

Measuring resilience among W-MSMEs requires more than tracking default rates or loan uptake. It involves capturing the full pathway through which financial access, decision-making power, digital tools, and adaptive business practices contribute to a firm's ability to withstand and grow through shocks. The indicators presented in this section offer banks, DFIs, and TA providers a harmonised and evidence-based set of tools to diagnose gaps, monitor progress, and design more inclusive and responsive financial ecosystems.

When applied consistently and disaggregated by gender, business size, and sector, these indicators not only help evaluate the effectiveness of current offerings but also support continuous learning and innovation in gender-responsive finance. Ultimately, building financial resilience among W-MSMEs is not only a risk mitigation strategy; it is an essential pillar of inclusive economic growth.

