

# New Financial Instruments for Local Resource Management

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Exploring financial incentives and sustainable finance models for informal financial self-help groups

## Executive Summary

Financial incentives have long supported sustainable land management. More recently, a **class of green incentives** has emerged, embedded in financial instruments managed by formal financial institutions and targeted at small-scale producers.

Whilst developing tools for small-scale producers that include sustainability requirements in loan terms, we observed that **most emerging models bypass the majority of producers**. This is a gap: those excluded from formal channels manage much of the world's land and seascapes yet remain **least supported in transitioning** to sustainable practices.

**Informal financial self-help groups (IFSHGs)**, with hundreds of millions of members, provide a potential alternative platform.

Our research identifies **three adaptable models already in use** (one of which we developed), and an **emerging ecosystem of actors** innovating and deploying these approaches.

Our analysis presents an opportunity to **develop steady funding mechanisms, expand the range of green financial instruments, and improve the mechanisms of access** available to IFSHGs.




























This study traces how these models function across different contexts, analysing their **problem framings, theories of change, and environmental logics**.

Case studies from both land and seascapes illustrate their operation in practice. We compare **relative costs and impacts**, explore the **conceptual lenses** that underpin design choices, and examine how organisations using the approach combine finance with capacity-building.

















We also map the **wider ecosystem of funders, methodologies, and implementers** now taking shape, and assess the **challenges and opportunities** that define the pathway forward.

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## Financial incentives have long been used as tools for sustainable land management and resource use.

 Period	 Programme	 Financial Incentive Mechanism
 1870s–1890s	 Tree Planting Bounties (USA)	 Farmers granted <b>cash payments or tax rebates</b> per acre of trees planted/maintained
 Mid–late 1800s	 Colonial Forest Leases & Community Payments (India & Africa)	 Colonial administrations provided <b>annual payments or revenue shares</b> to communities/chiefs in exchange for restricting hunting or logging in designated reserves.
 1936	 Agricultural Conservation Program (ACP) (USA)	 Dust bowl era: first large-scale federal scheme. <b>Direct cash payments</b> to farmers to adopt soil conservation (cover crops, contour farming, retiring vulnerable land).
 1956–1972	 Soil Bank Program (USA)	 Farmers paid to <b>retire cropland</b> to reduce surpluses and prevent erosion — precursor to CRP.
 1985–present	 Conservation Reserve Program (CRP) (USA)	 One of the world's largest PES-style programs, still active. Farmers receive <b>annual rental payments</b> for retiring environmentally sensitive land.
 1992–present	 EU Agri-environment Regulation (EU)	 First EU-wide scheme under CAP reforms: direct payments to farmers adopting environmentally friendly land management.
 1996–present	 Forest PES Law (Costa Rica )	 Landmark <b>national PES program</b> paying landholders for reforestation, forest conservation, and sustainable management, funded by fossil fuel tax and donors.
 1999–2012	 Sloping Land Conversion Program (SLCP) (China)	 Largest developing-country PES: millions of households received <b>cash &amp; grain subsidies</b> to convert sloping cropland to forest/grassland.

**More recently, a class of green incentives have emerged that are embedded in financial instruments, managed by formal financial institutions and targeted at small-scale producers. These often aim to mobilise private capital for the SDGs and create self-replenishing financial sources for incentives.**

 Name	 Mechanism	 Description	 Who
 Microfinance for Ecosystem-based Adaptation (MEbA)	 Loans finance adoption of climate resilient practices and technologies.	 Farmers and communities want to adopt climate-resilient practices but lack upfront capital. By offering targeted microloans bundled with inputs and technical assistance, MEbA removes this financial barrier, enabling adoption of ecosystem-based adaptation measures. The result is improved productivity, resilience, and livelihoods while restoring ecosystems.	 UNEP
 Food Securities Fund	 Working capital loans to SMEs working with smallholder farmers, contingent on improvements in ESG ratings.	 Aggregators are uniquely placed to shift farming practices because they both interface directly with farmers and connect them to markets. By tying credit access to sustainability requirements, the Fund enables aggregators to use this position to incentivize their suppliers to adopt more sustainable practices.	 Clarmondial
 Climate-Smart Lending	 Loans from agri-lenders to farmers contingent on farmer adoption of sustainable farming practices	 Financial institutions hold long term relationships with farming clients and are in strong position to influence farmer behaviour through credit incentives which both improve farming sustainability and reduce credit risk.	 CRDB, Rikolto




**But incentive mechanisms embedded in formal finance will bypass most small-scale producers: those excluded from formal financial channels, but who manage much of the land and seascapes in developing countries.**

 Segment	 Description	 Access to Credit*	 %	 Value Chain Integration
 Commercialising	 Farming as a business; invest in inputs, sell surplus; traditional & intensified types	 Mix of informal & formal (e.g. input credit, group lending)	 c. 40%	 Limited
 Diversifying	 Farming is secondary; income mainly from labour, trade, or remittances; urban linkages	 Mostly formal	 >10%	 Small numbers
 Subsisting	 Primarily household consumption; low productivity; resilient & vulnerable types	 Very limited; mostly excluded, rely on informal savings/barter	 c. 60%	 Largely excluded

\* Access to credit figures exclude “mobile instant credit.” While this innovation has greatly expanded credit access in recent years, regulators and researchers have raised concerns about high costs, abusive collection practices, and the risks of recurrent indebtedness and default among low-income users. It is often excluded from research into agricultural credit access.

## Informal financial self-help groups (SHGs) provide an alternative and bridge. Hundreds of millions, perhaps billions, participate in such groups using tested financial instruments.

**Definition:** An informal financial self-help group is a small, voluntary, and informal association of individuals, often from similar background, who come together to address common financial needs through mutual support, savings, credit and other financial activities.

 <b>Characteristics of Financial SHGs</b>	 <b>Financial instruments used by SHGs</b>	 <b>Examples</b>
<p>&gt; <b>Informal Structure:</b> These groups are often not formally registered or regulated, operating on the basis of mutual trust and peer control rather than legal contracts.</p>	<p>&gt; <b>ROSCAs (Rotating Savings and Credit Associations):</b> Members contribute regularly; the pooled sum is given in turn to each member.</p>	<p>&gt; <i>Chit Funds (India), Arisan (Indonesia), Ikub (Ethiopia), Stokvels (South Africa), Merry-go-rounds (East Africa).</i></p>
<p>&gt; <b>Voluntary Association:</b> Membership is voluntary, typically comprising 10–30+ individuals who share similar socio-economic backgrounds and common goals.</p>	<p>&gt; <b>ASCAs (Accumulating Savings and Credit Associations):</b> Members save into a fund; money is lent out with interest and shared at cycle's end.</p>	<p>&gt; <i>Village Savings and Loans (CARE International), Savings Groups (Oxfam), Savings for Transformation (World Vision)</i></p>
<p>&gt; <b>Mutual Financial Support:</b> The primary purpose is to solve members' financial problems through collective financial activities such as saving, internal lending, and sometimes joint investment activities.</p>	<p>&gt; <b>Emergency &amp; Social Funds:</b> Dedicated pools for crises such as illness, or community shocks. Or ad hoc social events like weddings or other community events.</p>	<p>&gt; <i>CARE VSLA social fund (covers school fees, medical costs); Plan International youth funds (education emergencies).</i></p>
<p>&gt; <b>Self-Governance:</b> The group is self-governed and peer-controlled, with members collectively making decisions and managing group funds.</p>	<p>&gt; <b>Insurance Pools:</b> Members contribute to cover risks like death, health shocks, or crop failure.</p>	<p>&gt; <i>CARE insurance pilots (Niger, Tanzania); Livestock insurance pools (Ethiopia); MicroEnsure linkages (Ghana).</i></p>
<p>&gt; <b>Focus on Financial Inclusion:</b> These groups often serve populations excluded from formal financial systems, helping members access credit, build savings, and improve financial literacy.</p>	<p>&gt; <b>Savings fund only:</b> Members make regular contributions into a common pool, which accumulates over time and can be withdrawn at agreed intervals.</p>	<p>&gt; <i>Susu/Esusu in West Africa, where members collectively build savings via daily contributions collected by a paid collector</i></p>
<p>&gt; <b>Empowerment and Social Capital:</b> Beyond financial benefits, such groups foster empowerment, especially among women, and build social capital within communities.</p>	<p>&gt; <b>Investment/Enterprise Funds:</b> Group savings used for collective enterprises (e.g. shops, grain mills, farming), asset investment or commodity bulk purchase.</p>	<p>&gt; <i>Chamas (Kenya, group investments in milling); Women's cooperative funds (Uganda).</i></p>

**The logic of their operation may well be better suited to sustainable resource use objectives than other financial service providers.**

	> Banks	> Private agri-lenders	> NGO agri-lenders	> Agri SACCOs/ Coops	> Digital lenders	> Informal Finance SHGs
> <b>Who They Serve</b> → <i>Target clients?</i>	> Large farmers, agribusinesses with collateral	> Smallholders in urgent need, often cash-strapped	> Marginalised smallholders, women, excluded groups	> Member farmers, small to medium, within organised and semi-organised value chains	> Anyone with SIM/mobile money profile	> Group members
> <b>Small-scale producers served</b> → <i>How many?</i>	> Very few	> Some, but on costly terms	> Credit-worthy small-scale producers	> Credit-worthy small-scale producers	>	> Hundreds of millions globally – includes non-credit worthy.
> <b>Ownership / Governance</b> → <i>Who controls it?</i>	> Formal boards, regulators	> Owner-driven	> NGO programmes, donor oversight	> Member-elected boards	> Fintech management, investors	> Group members, collective rules
> <b>Pricing Logic</b> → <i>How are loans priced?</i>		> High interest, short term, risk-priced	> Often subsidised, soft terms	> Member-set, moderate interest	> Portfolio-based credit risk, high effective interest.	> Member-set, usually modest; interest stays in group.
> <b>Value Flow</b> → <i>Where does surplus go?</i>	> Management and shareholders	> Owners/investors	> Recycled into programmes	> Shared among members	> Management and shareholders	> Shared among members
> <b>Purpose / Mission</b> → <i>What's the end goal?</i>	> Profit and financial stability	> Profit	> Development and inclusion	> Member welfare, collective bargaining	> Scale, profit	> Mutual support, resilience
> <b>Green / Social Instruments</b> → <i>What's available?</i>	> Limited pilots, e.g. sustainability-linked loans	> Very limited	> Frequent, but mainly loans for green assets	> Mainly loans for green assets	> Very limited	> Emerging — eco-credit, savings for sustainable investments, emergency funds

**Footnote:** Value chain finance is increasingly prominent, with buyers, processors, and input suppliers extending credit tied to production or sales. However, it is not a distinct class of lender and typically reaches only farmers integrated into formal supply chains, excluding the majority of small-scale producers.

## Our research shows the emergence of three basic models, established and experimental, which are used to meet environmental objectives.



### Accumulated Savings & Credit Associations

- 1 Groups are formed of 15-30 members
- 2 Members make regular savings in a group
- 3 Shares are issued according to deposit size
- 4 As deposits increase, credit is issued to members
- 5 As deposits increase, credit issued to members
- 6 The fund is wound up (usually) annually
- 7 Distributions are made according to share stakes

**Funding mechanism:** Member deposits

**Environmental mechanism:** Training and/or encouragement to use savings and loans to invest in sustainable production technologies and systems.

**Variations:** Many NGOs have evolved their own branded versions of the basic Village Savings and Loans Methodology.



### Community Eco-Credit Groups

- 1 Groups of 15-30 members are recruited.
- 2 Groups can be existing or newly formed.
- 3 Groups agree fund terms and ecological objectives.
- 4 Groups are capitalised with \$1-1.5K/group.
- 5 Loans are issued to members
- 6 Loans include requirements for ecological actions.
- 7 But are otherwise unrestricted in use.

**Funding mechanism:** Grant capitalisation

**Environmental mechanism:** Environmental action is required under loan terms. Financial incentives are recycled as loans are repaid.

**Variations:** the method is built as principles, and all groups decide their own fund and environmental terms. Implementing organisations have adapted the method in each use case.



### Emergency Funds

- 1 Existing groups of 15-30 members.
- 2 Members make regular contributions to a fund.
- 3 The fund accumulates.
- 4 And is used to pay out against defined events.
- 5 Or for other emergencies, like crop failure.

**Funding mechanism:** Member deposits.

**Environmental mechanism:** pay out against risk event, storm, drought etc.

**Variations:** Most groups are flexible in how the fund is used according to need.



## These different models replicate with considerable local adaptation across agricultural landscapes.



### Case Study 1: NATURE FUNDI

- > **Location:** Mebeya Region, Tanzania
- > **Local implementing organisation:** Rikolto Tanzania and Tanzanian Informal Microfinance Association of Practitioners
- > **Environmental focus:** Sustainable farming practices
- > **Participant Numbers:** 42 groups to date, c. 1,000 members.
- > **Financial instruments:** Community eco-credit, village savings and loans.
- > **Inferred theory of change:** small financial incentives towards implementation of sustainability practices, supported by market off-take of sustainable produce.
- > **Environmental management mechanism:** access to credit drawn from a group's community eco-credit fund is contingent on implementation of on-farm sustainable farming practices, such as use of mulch.
- > **Governance Mechanism:** groups are governed by elected group officers, under a constitution. Groups self-determine the focus of their environmental activities.



### Case Study 2: RIPOMA Project

- > **Location:** Mbeya Region, Tanzania
- > **Local implementing organisation:** Helvetas
- > **Environmental focus:** Climate-smart rice production
- > **Participant Numbers:** 42 groups to date, c. 1,000 members.
- > **Financial instruments:** VSLA.
- > **Inferred theory of change:** Farmers need access to capital to invest in climate-smart technologies. VSLA provides savings and some access to credit.
- > **Environmental management mechanism:** Training can be provided through aggregated groups, farmers can newly afford sustainable inputs and technologies
- > **Governance Mechanism:** groups are governed by elected group officers, under a constitution. Groups follow Helvetas land-management requirements

## And also seascapes.



### Case Study 1: MKUBA


- > **Location:** Pemba Island, Zanzibar Island, Mainland Tanzania Coast
- > **Local implementing organisation:** MCCC Ltd (Mwambao)
- > **Environmental focus:** coastal and marine management
- > **Participant Numbers:** 300 groups. Approx. 7,500 members.
- > **Financial instruments:** Community eco-credit, VSLA, social & emergency funds, enterprise funds for bulk purchase of rice
- > **Inferred theory of change:** Community-based natural resource management institutions can improve support of natural resource management plans through use of eco-credit schemes.
- > **Environmental management mechanism:** access to credit drawn from a group's community eco-credit fund is contingent on participation in group ecological management activities such as beach patrols and mangrove planting
- > **Governance Mechanism:** groups are governed by elected group officers, under a constitution and linked through environmental activities to the natural resource management plan of the ward-level community-based natural management plan.


















### Case Study 3: Bewambay Model

- > **Location:** Pemba Island, Zanzibar
- > **Local implementing organisation:** Kwanini Foundation and WCS
- > **Environmental focus:** Coastal and marine management, small farmers, plastic waste
- > **Participant Numbers:** 810 across 7 shehias or wards
- > **Financial instruments:** Payments for Ecosystem Services channelled into group accounts to build up savings for revolving, no-interest loans.
- > **Inferred theory of change:** Account deposits generated by the completion of mini environmental actions help build up groups' capital for no-interest microloans and encourage better resource management practices long enough for participants to recognise the benefits of those practices and incorporate them into their daily lives and habits.
- > **Environmental management mechanism:** The deposit-generating environmental actions contribute to larger natural resource management objectives such as waste management, regenerative farming and reduction of pressure on marine resources.
- > **Governance Mechanism:** The groups elect their own leaders and vote on issues affecting group procedures and operations. Local NGO staff help monitor the groups and provide technical assistance.

**Their design reflects different problem framings and theories of change. Each case embodies a distinct idea of how finance drives sustainability.**

 <b>Problem Definition</b>	 <b>Theory of Change</b>	 <b>Financial Instrument</b>	 <b>Example</b>
<p>&gt; Resource users want to adopt sustainable practices or technologies but lack upfront capital for initial investments</p>	<p>&gt; By pooling savings into accumulating funds, communities generate credit for sustainable investments, enabling investment in low-cost resource-protecting practices and technologies.</p>	<p>&gt; <b>Accumulated Savings &amp; Credit Association (ASCA) Model:</b> community group members pool savings, lend to each other with interest, and later share accumulated funds, providing both credit and returns.</p>	<p>&gt; VICوبا COCOBA</p>
<p>&gt; Most small-scale producers face immediate costs but delayed or externalised benefits from conservation. With limited access to formal credit, they will not be able to access credit incentives through formal channels.</p>	<p>&gt; Embedding ecological obligations into credit offsets conservation costs with financial benefits, encouraging small-scale producers excluded from formal finance to invest in restoration and sustain natural resource management.</p>	<p>&gt; <b>Community Eco-Credit Model:</b> A group-based finance model where members access loans tied to ecological obligations, so that credit use both supports livelihoods and ensures investment in restoring and sustaining natural resources.</p>	<p>&gt; Nature Fundi</p>
<p>&gt; Low-income households face sudden climate and environmental shocks, such as floods, droughts, or storms, and without savings or insurance, they lack timely financial support to cope without undermining their livelihoods.</p>	<p>&gt; By providing rapid access to pooled resources in times of climate or environmental shocks, members can protect livelihoods, reduce distress asset sales, and maintain resilience to future risks.</p>	<p>&gt; <b>Emergency Fund Model:</b> A community-based pool of capital set aside to provide quick financial support during shocks such as floods, droughts, or storms, helping households recover without depleting livelihoods.</p>	<p>&gt; Mkuba</p>
<p>&gt; Ecosystem services like clean water, soil fertility, and carbon storage are undervalued and overused, as land managers bear costs while the wider public reaps benefits, leaving little incentive to restore resources.</p>	<p>&gt; By channelling external payments into community revolving microloan funds, ecosystem stewards receive tangible compensation (micro-nudges) for conservation, creating a sustainable financing loop that rewards restoration and resource management while helping to promote long-term behaviour change.</p>	<p>&gt; <b>Payments for Ecosystem Services Fund Capitalisation Model:</b> Payments for conservation actions are pooled into group accounts, building up their savings base for revolving, no-interest microloans. These recurring financial incentives reward ecosystem stewardship and promote behaviour change underpinning long-term improvements in resource management.</p>	<p>&gt; Bewambay</p>

## NGOs which support development of informal finance SHGs combine finance with capacity-building and other support services.

 Problem Definition	 Theory of Change	 Financial Instrument
 Livelihood Training	 Supports households to adopt more productive and remunerative livelihood strategies, e.g. improved crop practices, diversified farming, or value-added processing, enhancing income security and resilience.	 Nature Fundi project trains in good agricultural practices.
 Environmental Training	 Builds awareness and skills for sustainable resource use, e.g. soil conservation, agroforestry, or water management, reducing environmental degradation and supporting long-term productivity.	 Mkuba programme trains in environmental practices required by loan terms
 Financial Literacy Training	 Improves financial skills, e.g. budgeting, savings, credit management, and group fund governance, enabling better decision-making and access to finance.	 Most programmes will offer this as standard.
 Market Linkages	 Connects producers with buyers and value chains, e.g. collective marketing, certification schemes, or partnerships with private firms, securing better prices and stable demand.	 Nature Fundi project connects farmers to reputable offtakers.

They draw on diverse lenses, including PES, credit incentives, CBNRM, community banking, and empowerment.



#### Payments for ecosystem services

Both capitalisation funds and access to credit are strong incentives for groups and individuals to participate in ecosystem protection and restoration.



#### Credit incentives

Linking loan conditions to sustainable practices provides strong motivation for borrowers, offering improved terms or access to finance when ecological objectives are met.



#### Helping correct failures of formal microfinance

While formal microfinance can smooth cashflow for low-income earners, its wider benefits are contested. Additionally, most rural and coastal inhabitants are not able to access this form of finance.



#### Community-based natural resource management

These are instruments which can be deployed by community-based natural resource institutions in service of their objectives. The numbers of IFSHGs and associated members can help to quickly get nature-based solutions and management practices to a scale that can make a difference.



#### Sustainable and durable funding source

Once capitalised, long-term financial pools provide sustainable incentives for improved natural resource management



#### Community banking

Local control of pools of capital offers the possibility for communities to direct finance to development of local assets and priorities.



#### Funding availability

A narrative of support for financial self-help is attractive to funders. Self determination and "locally-led" initiatives are also a donor priority.



#### Self determination

These instruments offer the possibility to set financial fund and loan terms and locally determine which ecosystems to prioritise in protecting.



#### Alignment with financial regulation

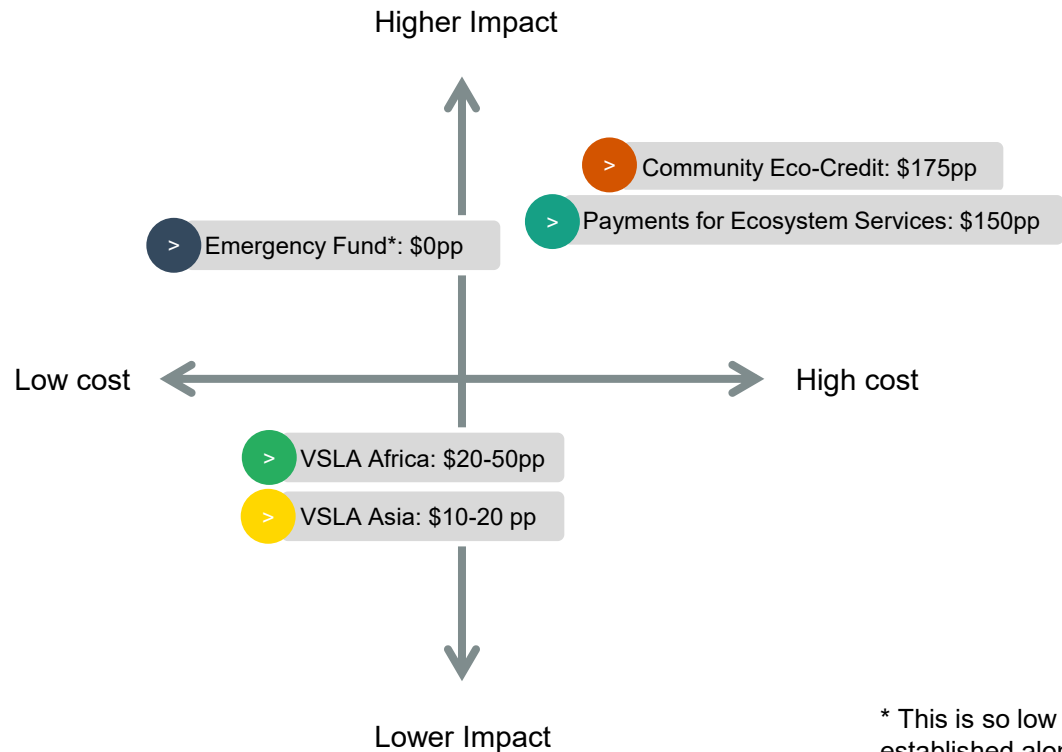
Credit issuance is increasingly regulated, which imposes costs on issuers. Small groups issuing credit are mostly lightly regulated or exempted as the opportunities for fraud and abuse are lower.



#### Raiffeisenism

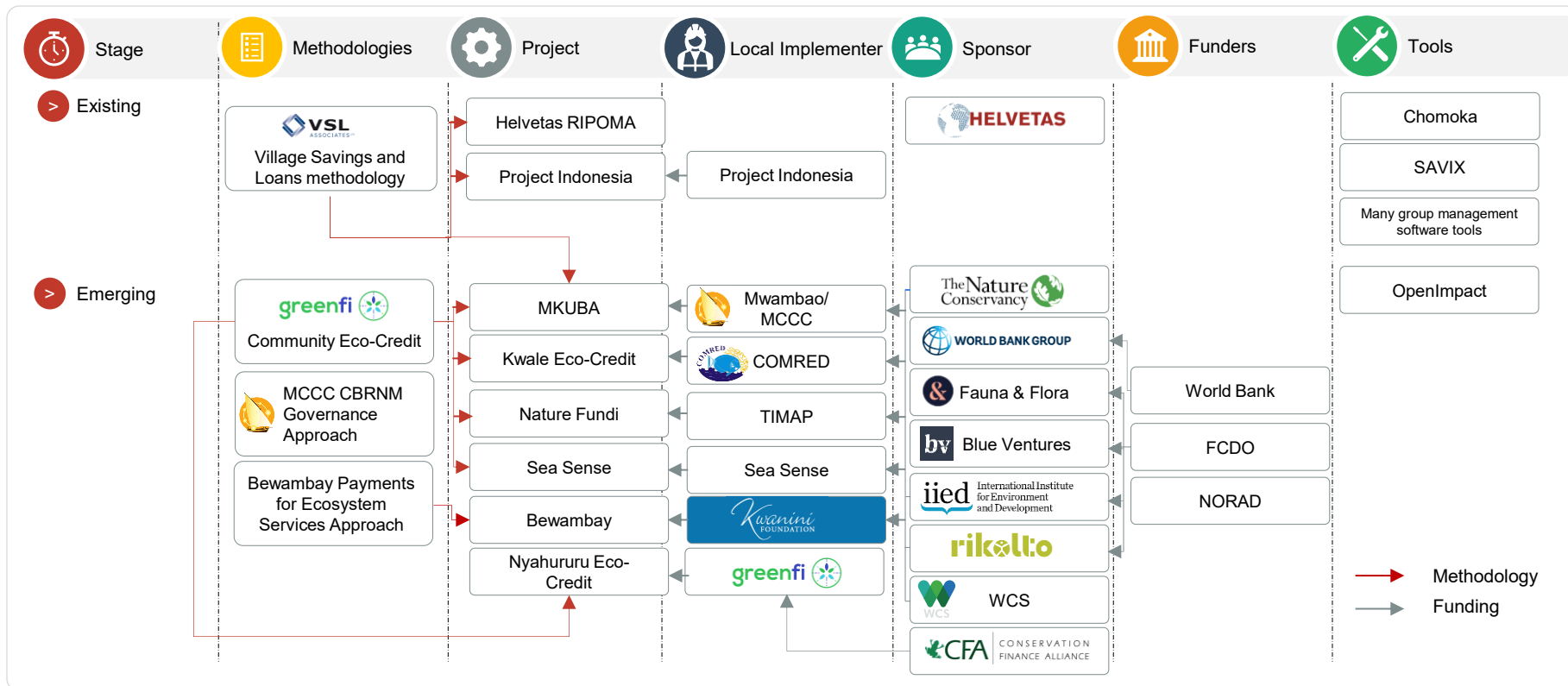
A 19th-century cooperative model where communities pooled local savings and provided credit to members on fair terms. It built strong, trust-based institutions that reinvested capital locally, offering a traditional framework for sustainable finance in North West Europe.

Instruments vary in both cost and contribution to environmental outcomes.
























\* This is so low because emergency funds are established alongside other funds which carry the cost.

## A new ecosystem of funders, expertise, tools, and implementers is taking shape.

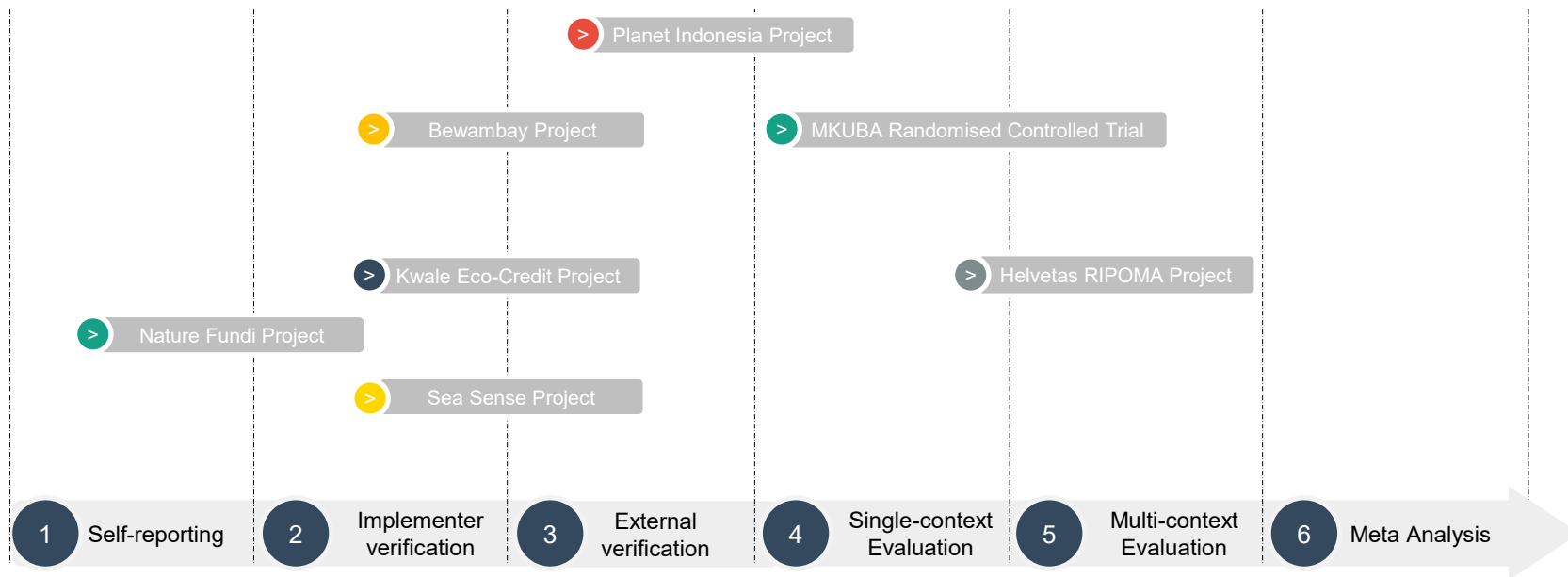


## Challenges are becoming visible, but pathways to address them already exist.

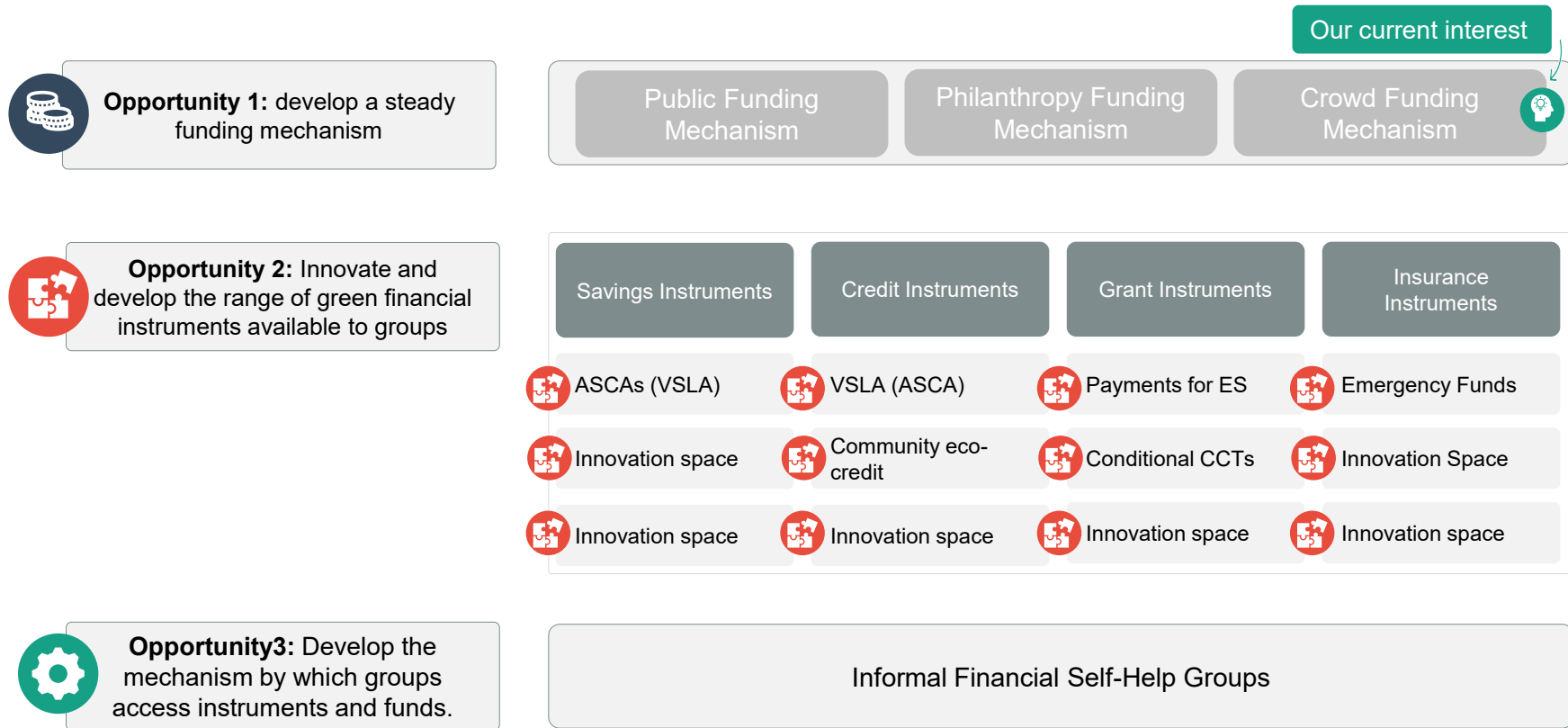
 Challenge	 Description	 Pathway Forward
 Monitoring	 Similar to many environmental projects, the cost of robust monitoring risks exceeding the financial and environmental benefits of the project itself, for both participants and sponsors.	 Experiments in local determination of monitoring methodologies, mobile phone reporting and AI recognition. complemented by occasional audits.
 Scalability	 The need to adapt tools to local socio-economic, governance, and environmental contexts ensures relevance and ownership, but reduces scope for cookie-cutter scalability.	 Recognise this is a feature not a bug. Build a library of approaches that enables local innovators to rapidly identify and adapt methods best suited to their context.
 Funding	 The costs of developing groups remain high, approximately 3.5 times the amount that actually reaches the groups.	 Develop direct-to-group funding models that channel resources efficiently while sustaining NGO support by reinforcing their ongoing efforts.
 Trade-offs	 Environmental trade-offs are inherent: prioritising one ecosystem service can diminish another, and new funding streams create additional environmental footprints.”	 Be explicit about trade-offs: while unavoidable, these models place both decision-making power and incentive mechanisms in the hands of those directly affected.
 Risk management	 Innovative financial mechanisms introduce novel risks that can lead to social harms if unmanaged.	 Work through existing groups that already manage arrears and rely on strong internal trust to mitigate novel risks.
 Change management	 Adoption takes time: new implementing teams may need a year or more to grasp approaches. Sometimes experiencing ideological resistance to paying poor people or linking nature with finance.	 Invest in patient engagement and demonstration, allowing time for teams to learn and evidence to shift assumptions and ideological resistance.



These models are new, and their evidence base is still emerging as models move beyond pilots and internal monitoring.



Small-scale producers are vital for sustainability yet underserved with green financial instruments, presenting an opportunity to channel resources efficiently and improve their resource use.



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