The Accelerating Impact of CGIAR Climate Research for Africa (AICCRA) project is supported by a grant from the International Development Association (IDA) of the World Bank. IDA helps the world's poorest countries by providing grants and low to zero-interest loans for projects and programs that boost economic growth, reduce poverty, and improve poor people's lives. IDA is one of the largest sources of assistance for the world's 76 poorest countries, 39 of which are in Africa. Annual IDA commitments have averaged about $21 billion over circa 2017-2020, with approximately 61 percent going to Africa.
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Dear Investor,

The agriculture sector is the economic backbone for most developing countries and is crucial for strengthening food security, increasing incomes and driving inclusive and sustainable growth. However, the sector remains largely untapped due to low levels of productivity exacerbated by the effects of climate change. To strengthen resilience to climate change and efficient functioning of food systems, significant financial investment is required. The public sector and donors cannot handle this alone; the private finance and investment sector needs to increase its financial commitments.

Under the World Bank-funded AICCRA project, we have set up Zambia’s first science-driven accelerator program for climate-smart agribusinesses, where the aim is to provide technical assistance as well as de-risking funds to scale climate-smart agricultural research innovations as well as to catalyze private finance into these agribusinesses to increase their impact.

Alongside significant de-risking funds, we provide tailor-made technical assistance to strengthen the commercial capacity as well as the sustainability performance of our Accelerator Partners.

After having onboarded a diverse portfolio of high-profile agribusinesses earlier this year, I’m proud to share with you the results of our efforts. The following deal book presents an overview of our project, our approach and our portfolio.

If you are an investor looking to create financial returns alongside sustainable impact in Zambia’s climate-smart ag sector, I encourage you to get in touch with myself and our amazing entrepreneurs.

Best regards,

HAUKE DAHL- Scaling Expert
Accelerator Program Lead
About AICCRA

AICCRA (Accelerating the Impacts of CGIAR Climate Research for Africa) works to make climate information services and climate-smart agriculture more accessible to millions of smallholder farmers across Africa.

With better access to technology and advisory services—linked to information about effective response measures—farmers can better anticipate climate-related events to take preventative action that helps their communities safeguard livelihoods and the environment.

AICCRA has teams in six countries: Senegal, Ghana, Mali, Ethiopia, Kenya and Zambia. These teams collaborate with four AICCRA themes - Knowledge, Partnerships, Innovation and Gender and Social Inclusion.

While these teams focus on accelerating impact in AICCRA focus countries, AICCRA also has a number of regional initiatives that complement national activities to deliver benefits for a broader range of stakeholders across East, West and Southern Africa.

AICCRA is supported by a grant from the International Development Association (IDA) of the World Bank, which is used to enhance research and capacity-building activities of CGIAR centers and initiatives, as well as their African partners.

The IDA grant to AICCRA fulfils the World Bank’s commitment at the 2019 United Nations Climate Summit to increase its support to the CGIAR, a global partnership that unites international organizations engaged in research about food security.

CGIAR is a global research partnership for a food-secure future dedicated to transforming food, land, and water systems in a climate crisis.
We catalyze private finance into climate-smart agribusinesses.
Accelerator Program Approach

One of the focus countries of AICCRA is Zambia, where four of the 14 CGIAR research centers (IWMI, IITA, ICRISAT, WorldFish) are developing services and innovations to help Zambian farmers and communities safeguard their livelihoods in the face of climate change. In a participatory process, four climate-smart innovation bundles were designed that are now being scaled in partnership with high-performing Zambian agribusinesses with the aim to increase the livelihoods of 300,000 Zambian farmers by the end of 2023 (75,000 farmers per bundle, except for bundle #5, fig.1). AICCRA also provides $50,000 in de-risking grants to each of the bundles (fig.1).

The AICCRA Zambia Accelerator Program operates similarly to a conventional startup/business accelerator, with the added benefit of using scientific excellence to leverage the potential of Zambian agriculture while increasing the investment readiness of its agribusiness portfolio for both public donors and impact investors. The process is divided into four main steps (fig.3).
# Our Process

We have developed an end-to-end methodology to scale innovations and catalyze private investments into climate-smart agriculture.

## Preparation

<table>
<thead>
<tr>
<th>Phase</th>
<th>Duration</th>
<th>Steps</th>
</tr>
</thead>
</table>
| Innovation bundling | 6 MONTHS | MARKET ANALYSIS  
- Value chain prioritization  
- Identification of strategic partnership  
- Focus on business models, funding opportunities, corporates and ESOS |
| Partner sourcing | 3 - 4 MONTHS | BUNDLE DEVELOPMENT  
- Identification of innovations  
- Scaling readiness  
- Scientific and commercial complexity/criteria |
| Acceleration | 6 - 9 MONTHS | EVALUATION  
- Set-up of juror team  
- Three-step evaluation process (shortlisting, adjudication center, interviews)  
- ESS screening |
| Access to finance | ONE WEEK | ONBOARDING  
- Contracting and legal (deliverables & fund disbursement)  
- Development of action plans  
- Team-building exercises (focus workshops) |

## Execution

<table>
<thead>
<tr>
<th>phase</th>
<th>Duration</th>
<th>Steps</th>
</tr>
</thead>
</table>
| DE-RISKING GRANT | 6 - 9 MONTHS | TECHNICAL ASSISTANCE  
- Scientific excellence (CSA, CIS, bundle-specific expertise; provided by CG)  
- Investment readiness (scaling & financing model, pitch deck, business plan, outsourced to partner)  
- Impact measurement and management (CSA indicators on MSME & farmer level; done by CG M&E teams) |
| DEMO-WEEK | ONE WEEK | INVESTOR POOLING  
- CSA Projects are showcased in a trade fare-style event  
- Companies pitch their projects, their track record and their financial/commercial ask  
- Objective is to scale up activities to achieve higher impact, resulting in win-win-win  
- Different exit scenarios possible, e.g. debt/equity investment, link to development project, acquisition by corporate  
- Invitees include impact investors, DFIs, agbanks, public sector players  
- Constant dialogue with different investors that express interest in the Accelerator Program portfolio, focused on requirements (which indicators, what investment size, timelines etc) |

## Network Development

- Pipeline development
- Alumni network
- Partnership facilitation

## Ecosystem Support

- Development of impact assessment reports and guidelines
- Facilitation of partnerships (private and/or public)
- Development of best-practices

## CGIAR Integration

- Provision of expertise and network
- Scaling into other initiatives/projects
Start up Ecosystem Snapshot

Country Characteristics
Zambia is situated at the intersection of Central, Eastern, and Southern Africa, and is home to a sparsely populated and primarily urban population of 18.9 million.

State of the Sector
In 2019, half of the population was employed in agriculture, representing a 20% decline from the decade before, with the biggest share of producers being smallholder farmers. The sector contributes to about 20% of the GDP. Domestic production consists of crops such as maize, millet, and cassava, whereas production for exports includes items such as sugar, coffee, rice, cotton, soybeans, and horticulture.

The sector is characterized by rain-fed and non-mechanized production, and the country benefits from abundant fertile land. Approximately 58% of the total land area is classified as having high potential for agricultural purposes.

Start Up Funding
$23M+

Raised by agribusinesses and agritechs in Zambia between 2011 - 2021

TOP FUNDED
Yalelo Zambia
COMACO
Good Nature Agro

*Figures include disclosed deals to startups
Challenges

The economy is slowly recovering from a contraction caused by high copper prices, food price pressures, heavy rainfall, and supply chain disruptions caused by COVID-19 in 2020. Poverty remains high in rural areas especially, and agriculture is being targeted as an industry to improve livelihoods and food security.

Initiatives and Opportunities

In order to make the necessary improvements, greater mechanization, lower cost of inputs, better infrastructure, and rural financial services are needed. The government is also actively promoting commercial farming, livestock, and fish farming as areas of agriculture to help diversify the economy, alongside fostering the development of appropriate practices, more efficient management, access to training and information, as well as suitable policies and legal frameworks. Conservation agriculture, agroforestry, and irrigation solutions have a lot of potential to create more productive and diversified systems.

The agribusiness and agritech ecosystem is slowly emerging, providing essential services for farmers and rural populations.

*Data provided by Briter Bridges Ltd*
Impact Measurement
AICCRA Zambia works with its Accelerator Partners to identify and measure the social, economic and environmental value of their investments, in the context of climate change. Promotion of climate-smart agriculture and climate-smart information lie at the core of AICCRA’s activities in Zambia. Therein, we seek to equip SMEs with science-based tools and knowledge to quantify, monitor, and evaluate the contribution of their business activities to CSA pillars of improved farmer productivity and food security; enhanced resilience and adaptation to climate; and climate change mitigation.

Our approach to impact measurement is based on principles of user-centered design and holistic impact management. Through capacity building and iterative co-design processes guided by AICCRA scientists, Accelerator teams have developed CSA impact pathways (IPs) for each innovation bundle, which will set the foundation for defining fit-for-purpose metrics and methods to assess these. IPs are tools that help to articulate a vision for impact. They offer a holistic perspective of the change process, by mapping elements that unlock impact, namely: actions, immediate results, outcomes, and assumptions. IPs have built-in flexibility; teams can periodically adjust the impact narrative (e.g., pivot to new impact or outcome areas, adding new core activities, etc.), and so respond to changing, unforeseen future circumstances.

Figure 4 illustrates the high-level impact narrative of the Accelerator programme on CSA, drawn from each bundle-specific IP. While innovation bundles have unique value proposition, they focus on similar results and outcomes, unleashing, to various extents impacts for Zambian smallholder farmers.

Based on the IPs, bundle partners will work closely with the AICCRA Zambia team to select relevant metrics that meet their impact priorities and needs. Monitoring plans will be designed and implemented and a baseline for impact evaluation will be established.

Andreea Nowak
Alliance of Bioversity-CIAT
Research Team Leader, Climate Action
Impact Pathways

Innovation bundles focus on three key investment areas: product design and sales (climate-smart inputs, finance schemes); communication and outreach; and dissemination of climate and agriculture information. These actions will not only help to secure financial returns for the SMEs, but will also deliver outcomes for smallholder farmers, including improved access to productive and financial resources, enhanced awareness, knowledge and skills on CSA, as well as improved access to climate and agriculture information.

![Fig 4. Impact pathway of AICCRA Zambia Accelerator.](image-url)
Farmers have higher farm-related incomes

Farmers use climate-smart products

On-farm production costs are reduced

Farmers are aware of CSA benefits & opportunities

Farm area under irrigation increases

Farmers have knowledge & skills on CSA

Water is used efficiently on the farm

Farmers practice CSA on their farms

On-farm GHG emissions decrease

Farmers use climate information in farm decisions

Crop yields are stable over time

Farmer households have access to food & water

All these will be critical for increasing on-farm uptake of CSA, which, in turn, will unlock long-term benefits, such as improved farm productivity and incomes (via increased yields, returns, and jobs); enhanced climate resilience (via stable access to food and water); or reduced greenhouse gas emissions (via use of renewable energy or reducing use of synthetic fertilizers).
Investment Readiness

Investment readiness assistance is provided by Open Capital.
Investment Readiness Assistance

Investment readiness assistance (IRA) aims to help bridge the gap between climate/agriculture innovation and sound commercial projects/businesses.

Phase 1
IRA needs assessment and support prioritization which includes assessing the project bundles to identify commercial and investment readiness needs.

Phase 2
IRA delivery which includes providing tailored support to 3 prioritized bundles namely bundles 1, 2, and 3 through 10 weeks of hands-on team support and seven weeks of ongoing senior mentorship support; will also include a group training to ALL bundles post IRA delivery.

Phase 3:
Support and learnings documentation which includes sharing and disseminating key lessons learnt through project implementation that can be leveraged to influence future AICCRA IRA support.
Key Insights

There is ample room to cover between a climate-smart innovation and what would be considered an ‘investment-ready’ entity, highlighting the importance of the support that AICCRA Zambia is providing.

Across the portfolio, bundles/companies are looking to develop, refine or update high-impact business models that respond to market conditions and can be scaled, as well as to better understand (e.g., activities, resource requirements) and articulate their growth targets – technical assistance can be catalytic in supporting them bridge the gap to investment readiness.

Bundle partnerships can be helpful to enable different companies to test new agricultural markets and build off each other’s strengths, but also require substantial coordination and bring some complexity to attract capital jointly (e.g., definition of an ‘investable entity’).

Most bundles/companies would benefit from refining their understanding of and quantifying their target market (TAM/SAM/SOM)*, profiling key customer segments, and articulating their unique value proposition clearly – all things investors actively look for.

Another key support area observed across the portfolio is to build and/or refine the right documents articulating the investment opportunity that targeted investors will be looking for, including a detailed financial model and an investment memorandum/teaser, which are critical for investor outreach and ongoing discussions.

*TAM = Total Addressable Market; SAM = Serviceable Available Market; SOM = Serviceable Obtainable Market

Source: OCA Team analysis
BUNDLE 1: Sustainable Financing for Off-Grid Solar Irrigation
Bundle 1: Financing off-grid solar irrigation through a digital financing model and one-stop-shop offer for smallholder farmers

The project uses big data to provide user-centric financial solutions to scale end-to-end irrigation technologies and services to > 75,000 small-scale farmers in Zambia. The partnership scales innovation around off-grid solar irrigation as well as climate information services and agricultural best-practices. The objective is to sell surface solar pumps, as well as to disseminate meteorological and weather data and individualized advice on farming.

Locations: Lusaka, Central, Southern.

VITALITE

Name: Vitalite
Sector: Renewable energy,
Provider of products and services around household and farm electrification, Zambian distributor of "Futurepump".

Lupiya

Name: Lupiya
Sector: FinTech
FinTech startup providing financial services to individuals, small businesses & female micro-entrepreneurs.

Lima Links

Name: Lima Links
Sector: Agtech
Agriculture technology platform in Zambia providing market price information and connections to markets for smallholder farmers.

Total fund ask: $250,000
Recent data shows that around 58 percent of households in Zambia have no access to electricity. This has resulted in many turning to environmentally-harmful sources of energy such as charcoal and wood to meet their household needs.

However, the challenge has also presented a huge opportunity for the promotion of off-grid solar solutions.

Zambia’s off-grid solar value chain comprises developers (manufacturers), distributors (assemblers, wholesalers, retailers) and last mile distribution agents.

The market potential for off-grid solar, according to a 2019 survey by Signify Foundation and Intellecap was estimated at $234 million per year.

In light of this huge market potential, some Zambian businesses are at the center of innovative and cost-efficient financial products for productive use technologies such as off-grid solar pumps aimed at increasing productivity for ordinarily rainfall-dependent smallholder farmers.

These businesses include Lupiya, Lima Links and Vitalite Zambia, which are AICCRA Zambia’s accelerator partners teaming up to work in the areas of sustainable finance, climate information services and off-grid solar irrigation.

Founded in 2013, the social enterprise Vitalite initially focused on addressing the energy needs of rural Zambians and today offers a Pay-As-You-Go (PAYGO) system that enables inclusive service offerings through its credit options and innovative payment mechanisms. It promotes sustainability through its quality and affordable range of products, such as solar-powered water pumps.
The fintech Lupiya, which is an online marketplace for borrowing and lending, boasts of being the fastest growing fintech platform in Zambia. It is also the first Zambian company to be backed by Google through the Google for Startups Black Founders Fund.

A recipient of the Best Southern African Food/Agri-tech Start-up of 2018 by the Southern Africa Startup Awards, Lima Links, the third business under innovation bundle one, offers a technology solution which brings markets into the hands of farmers and provides them with up-to-date market price and buyer information every day.

As a team, the three businesses have devised an innovative solution that provides affordable financing to Zambian farmers wishing to invest in off-grid solar irrigation systems.

The World Bank's Lighting Africa Programme stated in its Business Trends Report 2020, that the global off-grid sector has grown to a $1.75 billion market, servicing 420 million consumers, mostly in sub-Saharan Africa. Lighting Africa calculated that during the 2017-19 period, off-grid solar companies' revenues increased by 30% annually while their sales volumes increased by 10% annually.

Off-grid solar solutions continue to play a vital role in providing access to energy for millions in Africa. To speed up the adoption of off-grid solar technologies, however, and provide energy to many of the 840 million people worldwide without it right now, additional financial investments towards home grown solutions such as those offered by Lupiya, Vitalite and Lima Links will be required.
## Business Model Support

<table>
<thead>
<tr>
<th>Description of Support</th>
<th>Outcome</th>
<th>Deliverable</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Refine business model:</strong> Identify gaps and share recommendations supporting the bundle to refine the business model</td>
<td>• Supported bundle 1 to understand potential business model improvements to accelerate AICCRA pilot project&lt;br&gt;• Supported bundle 1 by providing recommendations that bundle can incorporate into their plan</td>
<td>12-15 slide PPT</td>
</tr>
<tr>
<td><strong>Conduct bundle financial feasibility analysis:</strong> Model the expected financial performance of the business model during pilot and once scaled</td>
<td>• Will enable bundle partners understand the broad financial viability of the project&lt;br&gt;• Will support the bundle identify a high-level capital need and use of funds</td>
<td>Financial feasibility excel assessment including a scenario analysis</td>
</tr>
<tr>
<td><strong>Financial feasibility excel assessment including a scenario analysis</strong></td>
<td><strong>Financial feasibility excel assessment including a scenario analysis</strong></td>
<td>Scheduled discussions</td>
</tr>
</tbody>
</table>

**Outcome:**
- Supported bundle 1 to understand potential business model improvements to accelerate AICCRA pilot project
- Supported bundle 1 by providing recommendations that bundle can incorporate into their plan
- Will enable bundle partners understand the broad financial viability of the project
- Will support the bundle identify a high-level capital need and use of funds

**Scheduled discussions**
- Will enable bundle partners understand the broad financial viability of the project
- Will support the bundle identify a high-level capital need and use of funds

**Deliverable:**
- Financial feasibility excel assessment including a scenario analysis

---

**Support provided by:**

---

**AICCRA INVESTOR DEALBOOK 24**
束 1：影响路径

愿景：提高小规模农户的生产力和韧性，参与灌溉农业，并提供负担得起的金融解决方案。

<table>
<thead>
<tr>
<th>活动</th>
<th>结果</th>
</tr>
</thead>
<tbody>
<tr>
<td>太阳能泵产品设计与测试</td>
<td></td>
</tr>
<tr>
<td>Co-design, test, and disseminate finance products</td>
<td>Agri-finance product designed &amp; tested</td>
</tr>
<tr>
<td>Organize events and outreach campaigns</td>
<td>Farmers receive CSA information (ag advice)</td>
</tr>
<tr>
<td>Disseminate agro-advisory and climate information</td>
<td>Partnership established with Ag Data Hub</td>
</tr>
</tbody>
</table>

影响路径：AICCRA赞比亚加速度器束 1

Impact pathway of AICCRA Zambia Accelerator Bundle 1
Farmers have higher farm-related incomes

On-farm production costs decrease

Farmers register higher crop yields

Farm area under irrigation increases

Crop yield variability is reduced

Water is used efficiently on the farm

Farmer households have access to water

Share of clean energy sources increases on farm

On-farm GHG emissions decrease

Farmers have knowledge & skills on CSA

Farmers are aware of CSA benefits & opportunities

Farmers use climate info in farm decisions

Farmers access finance products available

Farmer households have access to water

Crop yield variability is reduced

Water is used efficiently on the farm

Farmer households have access to water

Share of clean energy sources increases on farm

On-farm GHG emissions decrease

Farmers register higher crop yields

Farm area under irrigation increases

On-farm production costs decrease

Farmers have higher farm-related incomes

Outcomes (short, medium) CSA impacts

CSA impacts: productivity (orange); resilience (blue); mitigation (green)
Bundle 2: Promoting integrated aquaculture agriculture systems through dissemination of CIS and production of high-value fingerlings and farmed fish

The project aim is to implement and scale the integrated production of farmed fish and small livestock (chicken/goats) for over 70,000 fish farmers in Zambia through awareness raising, market development and provision of extension services, in order to scale the production.

Locations (s): Luapula and Northern provinces

**Name**

**Eunimos**

A Zambian private limited company carrying out aquacultural related business such as fish farming, and fish value chain, livestock farming, trading of agriculture produce and products and other agriculture related business.

**Name**

**Hopeways Enterprises**

**Sector**

Retail and Distribution

Agricultural input supplier of seeds, chemical inputs, livestock medicines and fish feeds.

**Name**

**Triple Blessings**

**Sector**

Retail and Distribution

Supermarket providing customer service to fish farmers, by buying and selling assorted goods including fish and commercial fish feeds, and providing extension services to farmers.
A group of young performing artists dedicated to educating the masses on developmental issues and social challenges affecting people.

Name: Kasama Arts
Sector: Media, Education

Agricultural supplier of quality fingerlings and other agricultural products.

Name: Kasakalabwe Cooperative
Sector: Retail and Distribution

$5,000-$50,000
Total fund ask:
Various ticket sizes for agricultural machinery and other assets
To Fish and to Feed: The Zambian SMEs integrating agriculture and aquaculture

Small businesses are considered the fuel behind Zambia’s aquaculture sector, particularly Zambia’s Northern Province whose growing small-scale aquaculture sector offers new opportunities to improve food and nutrition security and boost income.

In a census conducted by WorldFish in Northern and Luapula provinces, researchers found that 29 percent of smallholder farmers had given up fish farming and this was evidenced by a significant number of abandoned ponds. According to WorldFish, interviewees noted that many farmers had abandoned their ponds due to poor productivity, citing a lack of technical knowledge, limited access to extension services and undeveloped market linkages.

In light of these challenges, AICCRA is supporting promising small businesses that are integrating aquaculture and agriculture in their business to help them scale to the next level.

Established in 1998 and located in Mansa town, Luapula Province, Hopeways Farms and General Dealers was officially registered in 2001 and since August 2022, was incorporated as a private company limited by shares.

Hopeways is a growing private fish hatchery operator, producing high quality fingerlings for an available market in the province that are not locally available to access by fish growers in Luapula.

It has established a private pond and ‘Hapa’ based fish hatchery, which is still under development into a commercial fish hatchery to address the gaps observed in supplying quality fingerlings to farmers.

The company also markets table-size fish on behalf of its farmers to its off-takers, advocates for women and youth to access land and water.
resources for fish farming through traditional chiefs and headmen and supplies quality fingerlings to women and youth-led startups at affordable prices.

Another fish farming business that has received AICCRA support is Kasakalabwe Multi-Purpose Cooperative. Founded in 2015 in the Northern Province town of Kasama, it was registered as a business in March 2017.

Fingerling production is the company’s main business and it particularly farms catfish and Oreochromis macrochir, a species native to the Zambezi Basin, Lake Mweru and Lake Bangweulu. Kasakalabwe integrates its fish farming with agriculture by growing crops such as sunflowers, soya beans, millet, maize and cassava.

By the end of 2022, the company is targeting to supply up to two million fingerlings and to expand its market further.

Eunimos Investment Limited is also a fish farming business based in Mansa whose core product is table-size fish.

The company currently stocks around 70,000 fingerlings every six months and captures a market share of at least 50 percent in Mansa, often selling all of its fish harvests due to the high demand for its product.

In order to address the information gap in aquaculture that presently exists in Zambia, the Kasama Arts Theatre Production company is providing on-farm demonstration services and using social, cultural innovation to disseminate climate-smart information. It is doing this through the production of multi-media using both digital and non-digital platforms such as radio, TV, social media, film shows and roadshows.

Kasama Arts is therefore using the information it disseminates for the purpose of demand creation on behalf of local SMEs such as Hopeways Farms and General Dealers, Kasakalabwe Multi-Purpose Cooperative and Eunimos Investment Limited, which are directly linked to individual farmers.
## Business Model Support

<table>
<thead>
<tr>
<th>Description of Support</th>
<th>Outcome</th>
<th>Deliverable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Facilitated bundle 2 in mapping and reviewing operating model: Identified gaps and potential opportunities to help improve bundle operating model</td>
<td>Supported bundle to better articulate their operating model to external parties such as investors</td>
<td>10-12 slide PPT</td>
</tr>
<tr>
<td>Identify investable entity: Analyze which partner(s) are best suited to receive future financing</td>
<td>Supported bundle to identify gaps and potential opportunities for improving their operating model and thus the way bundle partners engage with each other and with other external partners</td>
<td>8-10 slide PPT</td>
</tr>
<tr>
<td>Post TA-deliver mentorship support: High level support to bundle two partners related to getting investment ready</td>
<td>Support bundle 2 to better understand aquaculture financing trends and propose potential investment arrangements that can help capture external financing as a group or via individual partners that includes providing an initial sense of likely capital structures and investor types</td>
<td>Scheduled discussions</td>
</tr>
<tr>
<td></td>
<td>Provide bundle partners with post-TA delivery support as they look to potentially begin conducting outreach to investors and will include guidance on topics such as investor material preparation</td>
<td></td>
</tr>
</tbody>
</table>
Bundle 2: Impact Pathway

Vision: Improve production and adaptation for small-holder farmers engaged in aquaculture (fish feed, fingerling, fish production and distribution) in Northern and Luapula provinces.
On-farm fish production increases
Farmers have access to fingerlings, fish feed
Farmers access fingerlings, fish feed
Farmers have knowledge & skills on CSA
Farmers practice integrated aquaculture
Farmers use climate information
Farmers are aware of benefits of integrated aquaculture
On-farm GHG emissions decrease
Water is used efficiently on the farm
Farm households have access to water
Farm households are food secure
Farmer households are food secure
Farmers register higher crop yields (use of fish waste)
Farmers register higher crop yields (use of fish waste)
Farm production is diversified (fish, crops)
Farmers use fewer synthetic fertilizers & antibiotics
Farmers use fewer synthetic fertilizers & antibiotics
Farmers have higher farm-related incomes
Farmers have higher farm-related incomes
Outcomes (short, medium)  CSA impacts
CSA impacts: productivity (orange); resilience (blue); mitigation (green)
BUNDLE 3: Addressing Drought through Climate-Smart Seed Varieties
Bundle 3: Scaling Climate-Smart Inputs & Agricultural Practices in Zambia

The project aim is to scale up the distribution of CSA input packages (climate resilient seeds and nutrient absorption enhancer/organic bio-stimulant) for maize, groundnut and soyabean, in addition to providing access to CIS and extension support on best agronomic practices to 10,000 farmers and a total of 95,000 beneficiaries.

Location: Central Province

Name: PlantCatalyst  
Sector: Bio Technology

Agricultural input supplier of organic bio-stimulant (reduces chemical fertilizer use amongst other crop benefits).

Total fund ask: $250,000  
Concessional debt
PlantCatalyst: The All-Natural, Non-Toxic Water Additive

Assisting Zambia’s farmers address climate change, reduce greenhouse gas emissions and address heat stress and drought, PlantCatalyst’s core product is an all-natural, green, water additive that boosts a plant’s ability to more fully absorb and utilize nutrients.

PlantCatalyst has been registered in Zambia since 2018 and empowers farmers in Zambia and around the globe to grow crops in a more sustainable and profitable way by increasing crop yield and profits by more than 20%, reducing fertilizer by 25% and making all crops more drought and disease resistant. Its parent company, PlantCatalyst, Inc. was founded in 1973.

The company encompasses a number of biological functions including better germination, faster plant growth, resistance to stress events like drought and disease, enhancing soil health, and better yield. Over the last three years, PlantCatalyst’s sales in Zambia have experienced sustained growth with slightly more than 5,000 liters sold in 2019; 8,000 liters sold in 2020; 13,000 liters sold in 2021; and more than 20,000 liters expected to be sold in 2022.

The primary obstacle to more significant growth for the company has been the limited staff on the ground and the concurrent inability to train farmers quickly within the current partner structures. PlantCatalyst, Inc.’s goals and obstacles include scaling a sales and marketing team and building a broader distribution system to meet customer demand.
Unique Value Proposition

PlantCatalyst is the only product of its kind currently available in the sub-Saharan region. Its non-toxic, environmentally friendly formulation, combined with the tremendous impact on a number of different plant biological functions combines to make PlantCatalyst the superior solution for governments, non-profits, and farmers hoping to reduce dependence upon environmentally damaging and increasingly expensive synthetic fertilizers. In short, nothing on the market today allows farmers to easily and immediately reduce fertilizer usage by 25 percent, while saving more than 20 percent on costs per hectare and increasing yield in an environmentally sustainable manner.

PlantCatalyst, Inc. currently has several NGO and corporate partners with a total addressable market of more than 200,000 liters annually. While all of these partners are expected to purchase PlantCatalyst in modest quantities in 2022, full implementation of PlantCatalyst adoption among all of these partners will require a significant expansion of staff needed to train farmers and manage the relationships.

Opportunity

The overwhelming majority of Zambian farmers are smallholders, with about 75 percent of farmers operating on less than five hectares of land. Approximately 17 percent of farmers are on medium-sized plots between 5 and 20 hectares, and the remaining eight percent are large-scale farmers on more than 20 hectares of land. Crop production is dominated by maize, which is grown by 80 percent of farming households and is the prime target for PlantCatalyst use. Smallholder farming households number approximately 1.5 million of which over 20 percent are headed by women.

With nearly 80 percent of Zambian agricultural production dedicated to a crop that requires significant input support in the form of synthetic fertilizer and the cost of fertilizer skyrocketing in recent years, PlantCatalyst is well positioned to experience significant growth in the maize market.

The company, therefore, estimates that the total
addressable market for maize at 1.5 liters per hectare, per season, is approximately 7.2 million liters per year at $14 is $100,800,000 per year. Zambian farmers, even smallholders of limited education, are becoming accustomed to expanding technologies and are therefore relatively open to new improved technologies.

A recent study of Zambian farmers found that 39% of Zambian maize hectares currently use fertilizer. The serviceable addressable market can be expected to be roughly $39,312,000. Other studies by international NGOs operating in Zambia indicate that roughly 42% of Zambian farmers have adopted new technologies over the last five years meaning that the serviceable obtainable market for PlantCatalyst in Zambia is likely to be approximately $16,511,000 annually.

What financing will do

Financing will empower PlantCatalyst to fully capitalize on partnerships through expanded staff, targeted advertising, better inventory management and more farmer training. The primary milestones for the funding would be the successful implementation and full adoption of PlantCatalyst by all of its partners and the farmers in their networks.

To date, PlantCatalyst has been very well received by both corporate and smallholder farmers in the region, including Zambia. Multiple corporate, governmental, and NGO entities have been conducting research trials, demonstration plots, farmer training exercises and outreach over the past few years. Their efforts are beginning to show fruit among farmers in the region.
## Business Model Support

<table>
<thead>
<tr>
<th>Description of Support</th>
<th>Outcome</th>
<th>Deliverable</th>
</tr>
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<tbody>
<tr>
<td>Develop a 3-statement 5-year financial model: Develop an investor facing financial model illustrating financial performance and capital need</td>
<td>OCA support will enable bundle 3 to utilize the relevant investor materials in ongoing conversations with investors. Investor materials will help articulate the market opportunity, key growth drivers, financial performance, and capital needs, use, and timelines</td>
<td>5-year, 3 statement financial model (excel)</td>
</tr>
<tr>
<td>Update investor-facing ‘teaser: Review and refine existing investor pitch deck to articulate opportunity</td>
<td>Provide Plant Catalyst with post-TA delivery support as they look to potentially begin conducting outreach to investors and will include high-level guidance on potential investors to conduct outreach to, investor conversations among others</td>
<td>10-12 slide PPT</td>
</tr>
<tr>
<td>Post TA-deliver mentorship support: High level support to Plant Catalyst related to engaging investors</td>
<td>Scheduled discussions</td>
<td></td>
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Support provided by...
Bundle 3: Impact Pathway

Vision: Improve adaptation and resilience for small-holder farmers engaged in legume farming in Eastern Province.
Farmers use climate-smart inputs

Farmers are aware of CSA benefits & opportunities

Farmers have knowledge & skills on CSA

Farmers use climate information in farm decisions

Farmers practice CSA on their farms (incl. irrigation)

On-farm production costs are reduced

Farm area under irrigation increases

Water is used efficiently on the farm

On-farm GHG emissions decrease

Farmers register higher crop yields

Farmers have higher farm-related incomes

New farm jobs are created

Crop yields are stable over time

Farmer households have access to water

Outcomes (short, medium) CSA impacts
BUNDLE 4: Diversified integrated mixed chicken/goats – legume systems
Bundle 4: Legume Value Chains; Changing Lives, Protecting Nature

The project aim is to establish a federation of 55 cooperatives that give equal opportunity to women and youth to become more profitable and food secure by adopting an agroforestry and legume-based farming system with their inherent conservation benefits. This partnership will also help achieve increased gender role in cooperative leadership, commitment to community-agreed conservation regulations for soil and forest protection, cooperative-run services to support farmer training and local seed production and improved financial sustainability of COMACO.

Locations (s): Eastern Province – Nyimba, Petauke, Sinda, Katete, Chipata, Mambwe, Lundazi

The Chitetezo Federation represents 55 farmer cooperatives in Eastern Province to help improve the cost-efficiency of its community-based supply chain of legumes by enhancing cooperative leadership to address such challenges as grain quality, crop bulking, transport logistics, and local adoption of mobile banking.

Social enterprise that finances improved agricultural practices through the adoption of agroforestry and a legume-based farming system that increases food crop yields and market opportunities for over 230,000 small-scale farmers. It sells over 20 different value-added food products through its retail brand "It’s Wild!" in supermarkets across Zambia and South Africa.

<table>
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<th>Name</th>
<th>Sector</th>
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<tr>
<td>The Chitetezo Federation</td>
<td>Wholesale and Distribution</td>
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The Chitetezo Federation represents 55 farmer cooperatives in Eastern Province to help improve the cost-efficiency of its community-based supply chain of legumes by enhancing cooperative leadership to address such challenges as grain quality, crop bulking, transport logistics, and local adoption of mobile banking.

Name: The Chitetezo Federation
Sector: Wholesale and Distribution

Total fund ask: $6m
- Debt finance: $300,000
- Grant finance: $6,000,000
It's Wild! - A home grown brand inspired by nature

Representing over 230,000 smallholder farmers as a market-based solution to restore soils and biodiversity in rural landscapes, Community Markets for Conservation (COMACO) was established in 2009 as a limited-by-guarantee company, preceded by a ten-year R&D period to develop and test the business model.

COMACO’s core product is nature-based food products grown without chemicals under its leading food brand, It’s Wild! that come entirely from small-scale farmers that adopt practices leading to a wide range of positive conservation outcomes, including more trees, more wildlife and healthier soils.

Led by CEO and founder Dale Lewis, it works with unskilled farmers by empowering them to become an economically viable source of nutritious, chemical-free food to meet their own dietary needs and convert their surplus into value-added food products.

COMACO boasts a strong market presence with retail sales in all major stores across Zambia and has begun exporting to South Africa and the UK, with growing opportunities in the region.

Unique value proposition

COMACO is building business sustainability by helping farmers become self-managed agricultural cooperatives, taking on the role of farmer education, and supporting supply chain logistics to make It’s Wild! products. In this way, it has become a cooperative business, reducing its logistics costs and increasing its reach into new, more nature-based markets, such as the sale of carbon credits, forest products and certified organic foods.

It is helping reduce rates of deforestation and biodiversity loss in a third of the country through agricultural practices that allow farmers
to remain sedentary without clearing land for more fertile soil.

**Opportunity**

The main market COMACO is going after is mostly retain chain stores, institutional buyers and mass market channels in Zambia and for export expansion, it is targeting premium market outlets in South Africa (Eastern Cape and Gauteng Provinces) and UK (honey).

COMACO has made the required capital investment in processing equipment and warehouse to expect 20-30% sales growth in the coming years in Zambia with several new products and expects export markets to reach upwards to 40-50% of total sales over the next several years. It has completed new labelling and packaging for all its export products. It also has a strong brand story that will attract premium consumer interest.

Its sustainability is enhanced by having an important secondary revenue stream from carbon credit sales of which it has successfully completed three.

Its key business growth drivers are the over 230,000 small-scale farmers that constitute a supply chain of chemical free grain and other products. All are organized into cooperatives to facilitate cost-reduction in supply chain logistics and promoting compliance to conservation practices.

Another key growth driver is the quality of food products that reinforce sustainable, eco-agricultural farming practices by sustaining top market prices for small-scale producers and the conservation and human stories behind the brand of its products, It's Wild!

Additionally, COMACO has a strong, complementary team that make business, farmer extension support and carbon markets all work together.
**Bundle 4: Impact Pathway**

**Vision:** Improve adaptation and resilience for small-holder farmers engaged in legume farming in Eastern Province.

**Activities**

1. Build partnerships to improve farmers’ access to assets
2. Communicate information on CSA/CIS (SMS, local radio, TV, other campaigns)
3. Deliver agro-advisory and climate information

**Results**

- Partnership established with Ag Data Hub
- Farmers receive CSA information (ag advice)
- Farmers receive climate information
- Mobile banking products are available
- Value chain partnerships are established

CSA impacts: productivity (orange); resilience (blue); mitigation (green)
Farmers are aware of CSA benefits & opportunities

Farmers have knowledge & skills on CSA

Farmers use climate info in farm decisions

Farmers access finance (loans)

Farmers access new output markets

Farmers practice CSA on their farms (production, post-harvest)

Crop yields increase

On-farm production costs decrease

Soil water retention capacity increases

Farmers increase farm product sales on output markets

Farmers have higher incomes from farming

Crop yields are stable over time

Farmers use less fuel in farm activities (no tillage)

Farmers use less synthetic fertilizer

Farmers household have access to water

Outcomes (short, medium)
Bundle 5: Scaling Climate-Smart Agriculture and CIS for Sustainable Economic Participation & Inclusion & Livelihood

The project aim is to scale mobile-based CIS and training on CSA practices for soyabean and groundnuts, for vulnerable communities (People Living with HIV (PLHIV), Women-led households, Gender-based Violence Survivors, and Young Women) to increase their food and economic household security, reaching 35,000 cooperative members and targeting mainly female farmer cooperatives.

Location: Chibombo, Mumbwa and Chisamba in Central province

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<td>BetterWorld innovations</td>
<td>Agtech</td>
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</table>

Registered non-governmental organization promoting and scaling up climate-smart agriculture among vulnerable communities to improve food, nutrition and economic security. (Private limited company, operating an a social enterprise).

Total fund ask: $50k-$300k

Various activities
A better world through climate-smart agriculture

Better World Innovations was founded in 2019 in Chibombo District of Lusaka Province as an incorporated social enterprise whose main focus is climate-smart agriculture.

The company works with vulnerable communities in Zambia that include women with disabilities, women living with HIV, adolescent mothers and the youth by rolling out climate-smart agriculture practices and products that target these groups.

Better World Innovation’s core product is agripreneurship training, seed bank development for drought resilient seed and promoting weather index insurance among smallholder farmers. In all this, it works with partners like International Institute of Tropical Agriculture (ITTA), CORTEVA, PlantCatalyst, Hollard Insurance and others.

Unique Value Proposition

The company negotiates prices of drought resilient seed on behalf of farmers. It purchases the seed at a wholesale price making the markup small and its prices competitive as a social enterprise by asking for less than what the market asks on average.

Better World Innovations encourages the ‘Pass on’ concept among the farming cooperatives it works with, whereby cooperatives collect 10kg seed for free and return 30kg seed after harvesting.

Its key business growth drivers include technology, training and strategic partnerships with Zambian government ministries such as the Ministry of Small and Medium Enterprise Development, the Ministry of Agriculture and the Ministry of Local Government to orient cooperatives in the Constituency Development Fund (CDF) guidelines.
Opportunity

Better World Innovations has signed several of sales level agreements with partners such as Hollard Insurance, PlantCatalyst, Financial Sector Deepening (FSD) Zambia and AICCRA, making it attractive for further investment.

It has also finished developing the Harvesti mobile-based app in readiness for launch, which will enable farmers to access information on climate-smart agriculture, weather information and other decision-making data. The app also acts as a marketing tool by which farmers can sell their produce to commodity buyers on the platform and where buyers can purchase seed, agrochemicals and insurance packages.

Not only is Better World Innovation’s low cost strategy making its products competitive, some its sales agreements such as insurance provision at a subsidized price is further adding to its competitive advantage.

What financing will do

Financing will help the company establish a seed bank for soya beans and fingerlings. It will also assist in the accreditation process of its agripreneurship training programs by the Technical Education, Vocational and Entrepreneurship Training Authority (TEVETA) and provide the resources to conduct more marketing, expanding its products and services to other provinces and hiring more human resources on the ground.

Another milestone financing can get the company to is the establishment of an edible oil extraction and feed formulation plant for poultry and fish farmers and setting up a transport delivery system for the farmers it supports to assist in timely product delivery to markets.
**Bundle 5: Impact Pathway**

**Vision:** Improve adaptation, production and resilience for farming cooperative.

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**Activities**

- Cooperatives are trained (offline)
- CSA training manual disseminated (offline)
- App developed & disseminated

**Results**

- Coop members have skills to access CSA finance
- Agriculture advisory & weather info available
- Information available on commodities on sale
- Ag inputs are available to farmers

**CSA impacts:** productivity (orange); resilience (blue)
Cooperatives receive CSA funding

Farmers use ag advisory & weather info provided by app

Farmers buy inputs through app

Farmers have access to markets through app

Coop members have knowledge & skills on CSA

Farmers practice CSA on their farms

On-farm production costs decrease

Farmers have higher farm-related incomes

Farmers register higher crop yields

Farmer households are food secure

Outcomes (short, medium) CSA impacts
Conclusion

The mission of programs such as AICCRA Zambia’s Accelerator Program is to support the private sector in addressing the immediate challenges towards food security by identifying high-impact, high-growth bankable projects and de-risking them to unlock additional sources of financing.

At the center of this approach is encouraging partnerships between the private and public sector to strengthen food systems, promote healthy diets and inclusive growth.

To bridge the funding gap, decrease risk for investors and support high-potential entrepreneurs, the complex array of different ecosystem players must come together and align their objectives to create mutually beneficial outcomes. Without suitable frameworks and intermediaries, current market dynamics are apt to exacerbate global financial discrepancies and misalignments.

AICCRA and the CGIAR are committed to building a pipeline of bankable, climate-smart agricultural innovations across Zambia and sub-Saharan Africa.

We invite you to share your insights and interests as an investor and look forward to designing and implementing a pathway to successful and scalable investment opportunities across the extended agricultural ecosystem.
OUR PARTNERS

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