

Country	Zimbabwe
Request ID#	2025000034
Title	Mopane Worm to the Market: Solar Drying for Climate-Resilient Livelihoods in Gwanda, Zimbabwe – Phase 2"
NDE	Ministry of Environment, Climate and Wildlife Climate Change Management Department Ms. Munashe Mukonoweshuro NDE Focal Point munamuko@gmail.com 11th Floor, Kaguvi Bulding, Cnr 4th/Central Avenue, Harare, Zimbabwe.
Proponents	Off & Tie Grid Solar Company Kudakwashe Pedzisai Director Research and Development kypedzie@gmail.com 07 Kuwirana House, George Silundika Avenue Harare, Zimbabwe FBC Holdings Limited Napoleon Kokera Head of Investment Banking napoleon.kokera@fbc.co.zw

Summary of the CTCN technical assistance

To consolidate and scale the solar drying pilot launched in Phase 1 by:

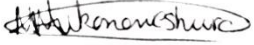
- strengthening the institutional, legal, and technical foundations of the Mopane Worm processing enterprise; generating documented commercial revenues.
- and producing a bankable investment dossier that enables the deployment private green finance – thereby reducing donor dependency and enabling replication across Zimbabwe.

This request represents an innovation in the Adaptation Fund (AF)/CTCN sense on three levels:

- technology innovation – applying existing solar drying hardware to a commercially underexplored indigenous food resource, in a configuration optimized for cooperative ownership and off-season productive use.
- institutional innovation – constructing a multi-stakeholder National System of Innovation (university, cooperative, bank, government, forest authority) anchored around a single production site and designed from the outset for national replication; and
- governance innovation – pioneering a legal framework (woodland by-laws, cooperative access rights, resource quotas) that protects the ecological base on which the business model depends, with first-mover risk deliberately accepted to generate a replicable model for other Mopane Worm districts in Zimbabwe and the region.

Agreement:

(If possible, please use electronic signatures in Microsoft Word file format)

National Designated Entity to the UNFCCC Technology Mechanism Name: Munashe Mukonoweshuro Title: Acting Deputy Director Climate Finance and Resource Mobilization Date: 16 March 2026 Signature: 	Adaptation Fund Focal Point Name: Washington Zhakata Title: Chief Director Environment, Climate and Wildlife Date: 17 March 2026 Signature: 
Project Proponent Off and Tie Grid (OTG) Solar Company Name: Kudawashe Pedzisai Title: Product Development and R&D Date: 13/03/2026 Signature: 	UNFCCC Climate Technology Centre and Network (CTCN) Name: Title: Date: Signature
Project Proponent FBC Bank Limited (FBC) Name: Webster Rusere Title: Managing Director Date: 16/03/2026 Signature: 	

1. Background and context

Please provide a brief description of the background and context for the CTCN Response Plan. Please include national and sectoral information using recognized and publicly available sources. (maximum 2500 characters including spaces).

Last year, UN Climate Technology Centre and Network (**CTCN**) began transforming women's livelihoods and protecting woodlands in Gwanda District, Zimbabwe with the support of the European Commission. The Government of Zimbabwe through its agencies the Rural Infrastructure Development Agency (RIDA), **Zimbabwe Energy Regulatory Authority (ZERA)**, authorities are financing a new borehole that will bring reliable water to Gwanda business Centre. This water source will serve not only local entrepreneurs, but also the nearby health clinic and a school.

In a district where climate change has intensified droughts and made farming increasingly unreliable, water is the single most critical resource—essential for food preparation, processing activities, hygiene, and overall community well-being.

Until now, the community has depended largely on shallow wells that often dry up during prolonged dry spells. Geologists from RIDA will identify sustainable groundwater sources, ensuring that water infrastructure is climate-resilient and long-lasting. This investment signals a broader recognition: rural enterprise cannot thrive without foundational infrastructure. By securing water access, the government is laying the groundwork for Gwanda's business Centre to grow into a vibrant hub of activity. The solar dryer pilot demonstrated how one piece of climate-smart equipment can unlock new income streams. Traditionally, Mopane Worms are dried using firewood—contributing to deforestation and degrading the mopane woodlands that sustain the worms themselves. Solar drying reduces the risk of forest fires and the reliance on fuelwood while producing a cleaner, more hygienic product. But the true innovation lies in thinking beyond a single use.

Mopane Worms are harvested seasonally, primarily in December–January and March–April. For the rest of the year, the dryer should not sit idle. Community members are now exploring how to diversify its use: drying wild fruits, mushrooms, and honey; processing baobab fruit into powder for juice production; even baking bread and pizza for sale at the business Centre. During peak harvesting periods, approximately 30,000 people travel to Gwanda—some from as far as Harare—to collect Mopane Worms. These visitors need food and services. Local production could meet this demand while keeping more value within the community.

Importantly, the Government of Zimbabwe is treating Mopane Worms as a strategic national resource. An estimated 80% of Zimbabwe's population consumes dried Mopane Worms, and the product also has regional markets in South Africa, Botswana, and Zambia. To protect this valuable industry, the Gwanda District is collaborating with the Forest Commission and the Rural District Council to strengthen sustainability by-laws and forest protection regulations. If mopane woodlands are cut down for fuel, the habitat disappears—and with it, both food security and economic opportunity.

New value chains are also emerging. Mopane Worm "frass" (excrement) is being examined as a high-nutrient organic fertilizer with export potential. Meanwhile, baobab fruit—another local asset—will be processed collectively through cooperative models, increasing quality and market access.

2. Problem statement

Zimbabwe is classified as a climate-vulnerable country, with Matabeleland South Province among its most drought-prone regions. Gwanda District experiences mean annual rainfall of 250–450 mm, increasingly erratic and concentrated into shorter wet seasons because of climate change. The district has recorded a significant increase in the frequency and severity of dry spells over the past two decades, undermining rain-fed agriculture, depleting shallow water sources, and threatening ecosystem services on which rural livelihoods depend.

Rural women in Gwanda, who represent most of the informal agricultural workforce and small enterprise operators, are disproportionately affected. Their livelihoods are closely tied to natural resource use – particularly the harvesting and processing of Mopane Worms (*Gonimbrasia belina*), a seasonal protein-rich food resource that constitutes both a critical source of nutrition and income for approximately 80% of Zimbabwe's population.

Mopane Worms are harvested primarily in December–January and March–April. Traditionally, post-harvest processing relies almost entirely on fuelwood for drying, contributing directly to the deforestation of mopane woodlands – the very ecosystem on which the resource depends. This creates a destructive feedback loop: as climate change reduces rainfall and increases drought stress, communities intensify firewood use to maintain food processing activities; this in turn degrades the woodland canopy, reduces soil moisture retention, and accelerates land degradation, further amplifying climate vulnerability.

The lack of reliable water infrastructure compounds these challenges. The Gwanda business center, a hub serving approximately 30,000 seasonal visitors during peak Mopane Worm harvesting, currently depends on shallow wells that frequently run dry during prolonged dry spells. Without water, hygiene standards cannot be maintained, food processing is compromised, and the development of diversified value chains is impossible.

At the enterprise level, the Mopane Worm processing industry in Gwanda remains largely informal, subsistence-oriented, and unable to access formal markets, credit, or value-addition opportunities. Structural barriers include limited technical knowledge of post-harvest transformation; absence of quality certification and food safety standards; lack of formal enterprise structures eligible for bank financing; and limited understanding of the broader commercial potential of mopane-derived products, including protein powders, organic fertilizers, and snack products with regional export potential.

Without targeted technical assistance, this community-level economic asset – anchored in a rare and ecologically bounded resource – risks remaining trapped in low-value subsistence trade, while the ecological base that sustains it continues to degrade.

3. Logical Framework for the CTCN Technical Assistance:

(Guidance: Please note that multiple activities lead to one Output, and multiple Outputs lead to one Outcome. There can be several Outputs, but only one Outcome description capturing the CTCN technical assistance. Deliverables are the products or services to be delivered to the NDE/Proponent/CTCN based on the Activities and the Outputs.)

Objective: To consolidate and scale the solar drying pilot launched in Phase 1.															
Outcome: strengthening the institutional, legal, and technical foundations of the Mopane Worm processing enterprise; generating documented commercial revenues; and producing a bankable investment dossier that enables the deployment of private green finance – thereby reducing donor dependency and enabling replication across Zimbabwe															
										MONTHS					
										1	2	3	4	5	6
										7	8	9	10	11	12
Mandatory Output: Project management															
<i>All implementers must undertake the following project management activities at the beginning of, during and at the end of the CTCN technical assistance.</i>															
Activity A: Beginning of implementation															
A detailed work plan of all activities, deliveries, outputs, deadlines and responsible persons/organisations and detailed budget to implement the Response Plan. The detailed work plan and budget must be based directly on this Response Plan.															
Based on the work plan, a Monitoring and Evaluation (M&E) plan with specific, measurable, achievable, relevant, and time-bound indicators used to monitor and evaluate the timeliness and appropriateness of the implementation. The monitoring and evaluation plan should apply selected indicators from the Closure and Data Collection report template and enable the lead implementer to complete the CTCN Closure and Data collection report at the end of the assignment (please refer to item iv below and section 14 in the Response Plan). This M&E plan also includes a CTCN Impact Description formulated in the beginning of the technical assistance which will be revised in the Closure and Data Collection report once the technical assistance is fully delivered (templates will be provided).															
Other additional Monitoring and Evaluation indicators or templates may be required depending on the donor that is funding the technical assistance.															

Furthermore, a gender evaluation and gender action plan (GAP) will be prepared and followed throughout the technical assistance (a template will be provided). ¹															
Activity B: Implementation A project steering committee will be formed, consisting of the implementing team (international and local consultants), the NDE, the project proponent(s), beneficiary(ies), and CTCN. The objective of this steering committee is to provide a high-level oversight of project implementation, including receiving progress reports from the implementing partner. It is recommended that this steering committee meets at least quarterly. The Steering Committee can also provide advisory support to the project implementer, including suggesting improvements, ideas, recommendations and guidance.															
Activity C: End of implementation A Closure and Data Collection report completed at the end of the technical assistance (a template will be provided) including - Technology & business model factsheet (CTCN knowledge platform). - Cost-benefit analysis: solar drying vs. fuelwood processing. - Gender impact assessment (disaggregated data). - Replication toolkit for 3 identified districts. - Lessons learned document for CTCN and AF programme portfolios. - Potential project-end communication and dissemination activities (such as knowledge sharing webinar, dialogue with financial institutions, press release) may be conducted in collaboration with the CTCN Secretariat, subject to appropriateness.															
Mandatory deliverables: Deliverable A: Detailed work plan; M&E plan; gender assessment and gender action plan Deliverable B: Quarterly Project Steering Committee meeting reports Deliverable C: Closure and Data Collection report.															
Output 1: Launch of the project															

¹ Additional information is available under Section 10 of the response plan.

An in-person kick of meeting will be held to provide the opportunity to the Project Proponents, NDEs, Adaptation Fund Focal Point, the collectivity of women managing the project to meet each other in person, to present the objective of the project, share expectations, requirements, needs and ensure that the results planned by the Technical Assistance are aligned with the needs and expectations of all the partner. This 1st PSC meeting will ideally be organized with the AF Focal point at the project site with the harvesters and processors. The workplan will be revised, the dates for the Steering Committee will be agreed, and a concise Term of References of the roles and responsibilities of each party will be described and endorsed.																	
Deliverable 1: * - Inception Report. - Minute of the first in-person kick off meeting.	X																
Output 2: Market Study and Value Chain Analysis • Quantitative market study: mopane worm volumes, prices at each value chain stage, existing distribution channels, identification of 3–5 formal buyers with letters of intent • Derivate product analysis: commercial feasibility of mopane protein powder, packaged snacks, biofertilizer from frass, and baobab derivatives – with prioritization matrix (market potential vs. local transformation feasibility) • Analysis of the 30,000 seasonal visitor market: purchasing behavior, unmet demand, pricing benchmarks • Export market scan: South Africa, Botswana, Zambia – standards, volumes, pricing, key buyers • Design Productive Use of Energy (PUE) and Off-Season buffer business master plan. • Maximize the facility's Productive Use of Energy (PUE) during the 10 months when Mopane Worms are not in season. • Establish operational, and recovery cost – KWh daily generation, Load profiling (cost centers) & tariff structure feeding into cost of production vis-à-vis forest conservation.																	
Deliverables 2: • Market study of the mopane worms, including at least commercial analysis of derivate products, Demand analysis, Export markets options. • Draft of Business Master Plan • Energy Efficiency required in the facility (what, when, why, how much, added value) • Minute of the workshop organized in person with the partners.	X	X	X														

Revision of the deliverables based on the inputs of the partners.																			
Output 3: Commercial Operations and Revenue Demonstration - Participate in 2026 harvest season (December– January): purchase, process, package, and sell Mopane Worms – fully documented pilot commercial operation. - Acquire complementary equipment: vacuum packaging unit, weighing and labelling system, basic quality control kit. - Pilot production of one high-priority derived product identified in Component 1. - Establish a simple sales register and cost accounting system, maintained by the cooperative with university support (Gwanda State University which is within the district and near the project site). - Prepare a report summary of the weaknesses, challenges, opportunities, successes of this pilot to share the experience of the collectivity and receive feedback from the steering committee that can also be considered as a mentor, as constructive advisers.																			
Deliverables 3: - Results of the pilot, inventory of products developed/produced - Report of the weakness, challenges, opportunities and success.					X	X	X	X											
Output 4: Legal, Regulatory, and Environmental Framework - Legal analysis: status of mopane woodland protection under current Zimbabwean law; gaps and recommendations - Support Forest Commission and Rural District Council to draft, consult, and formally adopt mopane woodland by-laws (harvest quotas, fire management, fuelwood restriction zones) - ZABS food safety certification process: gap analysis, process documentation, submission - Formalize the cooperative's access rights to harvest zones through a legal agreement with the District Council																			
Deliverables 4: - Draft proposal of sustainable management plan (seasonal migrant harvesters, harvest quotas, fire management, fuelwood restriction zones) - Draft proposal for food safety process, gap analysis and process - A consensus agreement signed between the cooperative and Forestry commission, District Council and owner of the land to authorize the access to the mopane worms to the cooperative.									X	X	X								

Output 5: Business Plan and Private Finance Investment Dossier and Pitch - Co-develop a 5-year business plan with NUST and a locally embedded financial consultant - Build a financial model with investment scenarios (with private financial injection of USD 200,000 / USD 500,000): revenue projections, employment creation, repayment structure - Produce a bankable investment dossier ready for formal investor's committee review - Produce a replicability study identifying 3 other Zimbabwean districts where the model could be replicated - Engagements with private finance institutions and promoting the business - Closing Workshop either virtual or in-person to present the results of output 1, 2, & 3																
Deliverable 5: - 5-year business plan and financial model with different investment scenarios - Bankable dossier - Replicability study model - Interest gained and secured investments private finance institutions - Closing Workshop virtual or in-person to present the results of the output 1, 2, 3 & 5												X	X			

4. Resources required and itemized budget:

Activities and Outputs	Input: Human Resources (Title, role, estimated number of days)	Input: Travel ² (Purpose, national vs. international, number of days)	Inputs: Meetings/events ³ (Meeting title, number of participants, number of days)	Input: Equipment/Material (Item, purpose, buy/rent, quantity)	Estimated cost in USD	
					Minimum	Maximum
Mandatory Output: Project Management.	Team Leader		Meetings can be organized virtually.	/	6,000	8,000
Output 1: Multi-stakeholder governance.	All the team of the Implementing Partner.	Project Proponents, Steering Committee to the kickoff meeting.	The kickoff meeting.	/	4,000	5,000
Output 2: Market Study and Value Chain Analysis.	All the team of the Implementing Partner Operators, Processors, Harvesters, Purchase, Supply Chain & Finance.	Project Proponents, Steering Committee to the in-person sessions Potentially some to the ground visits for the qualitative analysis.	Field report to present the deliverables – results obtained.	/	15,000	20,000
Output 3: Commercial Operations and Revenue Demonstration.	All the team of the Implementing Partner Operators, Processors, Harvesters, Purchase, Supply Chain & Finance.	Project Proponents, Steering Committee to the in-person workshop Some travels to be planned for the pilot.	Integrated experimental field workshop with harvesters and processors to consolidate & validate system processes and procedures at each stage of the trial runs.	Up to 16,000 USD maximum	25,000	30,000

² All budget values related to Daily Subsistence Allowance or logistical support for local participants shall remain as indicated.

³ All budget values related to the organization of meetings and events shall remain as indicated.

Output 4: Legal, Regulatory, and Environmental Framework	<i>Team Leader. Legal Expert.</i>	<i>Bilateral meetings with the governmental institutions to review, discuss the legal agreement.</i>		/	10,000	12,000
Output 5: Business Plan and Private Finance Investment Dossier developed and pitch to prospective financiers.	<i>Team leader. FBC Bank Limited. Project Steering Committee and other Stakeholders</i>	<i>Bilateral meeting with FBC Bank to review and improve the dossier. In person / virtual - Closing workshop</i>	<i>Meeting with FBC to pitch and present the dossier to identified investors. In-person / virtual workshop</i>	/	4,000	5,000
Estimated range of costing for the entire Response Plan.					65,000	80,000

5. Profile and experience of experts

Based on the required Human Resources identified in section 4 (Resources required and itemized budget) please provide a description of the required profile of all involved experts for the implementation of the CTCN Response Plan. Please note that an expert with experience in gender mainstreaming is required. The CTCN Gender and Climate Technology Expert Roster can help you identify a suitable expert: <https://www.ctc-n.org/networking-and-collaboration/gender-and-climate-technology-expert-roster>

Experts required	Brief description of required profile
<i>Please use the same titles for all experts as applied in section 4.</i>	<i>Please provide a short description of expertise and experience needed (education, sectors of expertise, years of experience, country experience, language requirements, etc.).</i>
Team leader.	• 10+ years in climate innovation ecosystems or technology incubation. • Experience in setting up or running Climate Innovation Centers. • Understanding of both global best practices and African contexts. • Proven strategic planning and leadership experience. • Education: Master's or PhD in Renewable Energy, Environmental Sciences, Climate Policy, Innovation Management, or related field.
Sustainability and Resource Mobilization Advisor	• 10+ years in resource mobilization, donor engagement, and business models for private banking institution. • Experience in climate finance and international development funding (GCF, GEF, etc.). • Education: Master's in Banking & Finance, Economics, Public Administration, or related field.
Legal expert	• 7+ years in the formulation of legal agreement between collectivities and government. • Experience in connecting governmental institutions with rural beneficiaries through legal instruments. • Education: master's in advocacy, legal instruments.
Monitoring, Evaluation, and Learning (MEL) Specialist (NE1)	• 5+ years in M&E for international development or innovation programs. • Experience designing logic models, KPIs, and data systems. • Experience in monitoring Adaptation to Climate Change, financial indicators as well as Innovation and Gender. • Education: Master's in M&E, Development Studies, Statistics, or related field.

6. Intended contribution to impact over time

The primary follow-up is the deployment of private green finance from private sector investors and formalize the partnership with a formal letter of intent. The investment dossier produced in Component 5 will be the direct input to private banking's Investment Committee process. FBC has expressed interest in the project from a financial advisory and capital raising mandate perspective, targeting multilateral finance mechanisms and private finance. Mandate Agreement/Letter to be developed and signed between OTG Solar Company and FBC Bank Limited before project commencement.

A complementary funding track is the Adaptation Fund project currently under development for Zimbabwe, which includes solar drying and Mopane Worm processing as a component. The Phase 2 outputs – particularly the market data, by-laws, and commercial demonstration results – will directly strengthen and de-risk this larger project.

The replicability study will identify 3 other Zimbabwean districts where the model can be deployed. REF, as a national statutory body with a mandate for rural electrification and enterprise development, is well positioned to lead replication nationally.

CTCN will produce a knowledge capitalization note and web story documenting the model for dissemination across its network, with relevance for other sub-Saharan African countries with similar agroecological and livelihood contexts (e.g., Zambia, Botswana, Mozambique).

This Phase 2 technical assistance is implemented under the UNEP CTCN AFCIA II program (Innovation for Adaptation), contributing primarily to AFCIA II Component 1 (technology testing and assessment) and Component 3 (NSI development and finance leverage), with a direct pathway to the AF's Zimbabwe national program under development.

7. Relevance to NDCs and other national priorities

Please identify relevance and contribution from the technical assistance to the Nationally Intended Contributions (NDC) and other relevant national prioritized efforts (TNAs, TAPs, NAPs, NAMAs, etc.). (Maximum 2500 characters including spaces.)

Zimbabwe's Nationally Determined Contribution (NDC, updated 2021) identifies agriculture, forestry, and land use as priority sectors for both adaptation and mitigation. It explicitly references the need to strengthen the resilience of rural livelihoods dependent on natural resources and to reduce deforestation linked to biomass energy use. This project directly addresses both priorities through solar drying adoption and mopane woodland protection.

Zimbabwe's National Adaptation Plan (NAP) process, currently ongoing, identifies drought resilience, water security, and ecosystem-based adaptation as core national adaptation needs – all central to this project.

The Zimbabwe Technology Needs Assessment and Technology Action Plan (2021) identify solar energy technologies and renewable energy for productive uses as high-priority climate technologies for Zimbabwe, consistent with the solar drying infrastructure at the heart of this project.

REF's mandate under the Rural Electrification Fund Act (Chapter 13:20) is to advance rural energy access and enterprise development – fully aligned with the project's objectives and institutional embedding.

ZERA's mandate as outlined in the Energy Regulatory Authority Act [Chapter 13:23] of 2011 and other ancillary instruments, ZERA serves the nation through continuously striving to achieve the following key result areas:

➤ **Increase Access & Security of Supply.**

To promote the procurement, production, transportation, transmission and distribution of energy in accordance with public demand and recognized international standards.

To ensure the maximization of access to energy by consumers that is affordable and environmentally sustainable.

To promote coordination and integration in the importation, exportation and pooling of energy from any source in the SADC and COMESA region

➤ **Key Stakeholder Advisory.**

To advise the Minister on all matters relating to the energy industry.

To establish appropriate consumer rights and obligations regarding the provision of energy services.

To arbitrate and mediate disputes among and between licensees and consumers and to represent Zimbabwe internationally in matters relating to the energy industry.

➤ **Regulation & Licensing.**

To regulate the procurement, production, transportation, transmission, distribution, importation and exportation of energy.

To ensure that prices charged by licensees are fair to consumers in the light of the need for prices to be sufficient to allow licensees to finance their activities and obtain reasonable earnings for their efficient operation.

To establish or approve operating codes for safety, security, reliability, quality standards and any other sector related codes and standards for the energy industry or any sector thereof.

Reference document	Extract / Alignment
Zimbabwe NDC (updated 2021)	Agriculture and LULUCF adaptation priorities; reduced deforestation; rural livelihood resilience (Section 3, Adaptation Component).
National Adaptation Plan (in progress).	Water security, drought resilience, Ecosystem-based Adaptation as national priorities.
Zimbabwe Technology Needs Assessment & Technology Action Plan (2021).	Solar energy for productive uses identified as priority climate technology.
ZERA Act (Chapter 13:23) of 2011.	ZERA's statutory mandate of: ➤ Increasing Access & Security of Supply. ➤ Key Stakeholder Advisory role, and ➤ Regulation & Licensing.
REF Act (Chapter 13:20)	REF statutory mandate for rural electrification and enterprise development.
Zimbabwe National Development Strategy 1 (2021 – 2025)	Inclusive rural economic growth; women's economic empowerment; food systems development.

8. Linkages to relevant parallel on-going activities:

Please identify relevant previous and ongoing public and private sector initiatives, projects or programmes that the CTCN assistance will specifically build on and contribute to. To the extent possible, please add practical and operational details on the linkages between existing activities and the CTCN assistance. (maximum 2500 characters including spaces)

This request builds directly on the Phase 1 CTCN technical assistance implemented in 2024–2025 with European Commission financing. The Phase 2 concept was developed through a consultative process involving: (i) field visits to the Gwanda business Centre and participatory assessments with the women's cooperative; (ii) technical consultations with OTG the primary project proponents and REF as the national counterpart; (iii) meetings with Gwanda Rural District Council, the Forest Commission, and RIDA; and (iv) Consultations with FBC Bank, resulting in the formal letter of support for the project.

The NDE has been consulted throughout the design process and has endorsed the Phase 2 concept as consistent with Zimbabwe's NDC and national adaptation priorities. The request has been reviewed and approved for NDE signature prior to submission to the CTCN.

The Adaptation Fund's Designated Authority has also been contacted and confirmed the relevancy of the approach.

FBC has shared a letter of support for the project.

The project is trying to leverage additional funding from EEP.

9. Anticipated follow up activities after this technical assistance is completed:

Please describe the expected future use of the outputs and deliveries produced by this technical assistance, after the CTCN implementation is completed, towards contributing to the anticipated impacts over time articulated in section 6. For example, what organizations or stakeholders will use the outputs of the technical assistance after it is completed, for what purpose, at what scale and scope the outputs and deliveries will be applied, when and what will be the next steps undertaken, etc. Please also describe the role of the NDE and project proponent(s) in post-implementation monitoring and reporting. (maximum 2500 characters including spaces)

The main objective of this technical assistance is to demonstrate that this business model is bankable and will support a sustainable industrialization of the rural areas of Zimbabwe by preparing a strong business model that could lead to private funding leveraging.

The Project Steering Committee will serve as the primary monitoring body, meeting quarterly to review progress against agreed milestones. REF will provide embedded project coordination. Quarterly progress reports and a final project report will be submitted to the CTCN following standard procedures.

Key monitoring indicators will include: (i) volume of mopane worms processed and sold; (ii) revenue generated by the cooperative; (iii) adoption of mopane woodland by-laws; (iv) ZABS certification status; (v) FBC feedback on project's investment readiness targeting private financing; and (vi) number of women employed and trained.

As well as indicators at outcome level such as:

Annex 1. Guidance Note for the Response Plan template

Current indicator (process-level)	Recommended addition (outcome-level)
Volume of mopane worms processed and sold	% income increase per cooperative member attributable to solar drying vs. traditional processing
Adoption of mopane woodland by-laws	Estimated tons of fuelwood displaced annually by solar drying (CO ₂ e avoided)
Number of women employed and trained	Reduction in women's income volatility during dry season (number of months with positive income vs. baseline)
Investment readiness	Hectares of mopane woodland under formal protection by-laws at project close

10. Gender and co-benefits:

Each technical assistance must integrate gender mainstreaming activities and lead to gender and other co-benefits. At least 5% of the technical assistance budget need to be allocated to gender mainstreaming activities. A suitable expert can be identified through the CTCN Gender and Climate Technology Expert Roster: <https://www.ctc-n.org/networking-and-collaboration/gender-and-climate-technology-expert-roster>

Gender:

The primary beneficiaries and enterprise operators are a women-led cooperative in Gwanda. The project will: (i) strengthen women's economic agency and financial literacy through business management training; (ii) generate documented income for women members from formalized sales; (iii) create pathways for women's access to formal banking (FBC account opening, financial history); and (iv) position women leaders as participants in the PSC alongside government and financial institutions. The university partnership will specifically target female students in agro-business or food technology to support the cooperative, creating peer mentorship opportunities.

Biodiversity and ecosystem co-benefits:

Legal protection of mopane woodlands through formal by-laws will reduce deforestation pressure, protect biodiversity, maintain ecosystem services (carbon sequestration, soil moisture, habitat), and preserve the ecological foundation of the entire value chain. The solar dryer eliminates fuelwood consumption, directly reducing woodland degradation.

Economic co-benefits:

The project is explicitly designed to leverage USD 80,000 in CTCN technical assistance into a private investment of significantly greater scale. Employment will be created in processing, packaging, logistics, and sales. Regional market access for mopane products, including export to South Africa, Botswana, and Zambia, will increase economic value captured at community level.

Social and nutritional co-benefits:

Improved quality and hygiene standards for mopane worm products will benefit consumer health. Reliable water access (via RIDA borehole) will improve hygiene at the business Centre and at the nearby school and health clinic. Youth employment pathways in an emerging formal industry will be created.

11. Main in-country stakeholders in implementation of the technical assistance activities:

Using the table below, please list and describe the role of in-country stakeholders, participants and beneficiaries who will be involved in or directly consulted during implementation of the assistance.

Stakeholder	Role in implementation
Ministry of Environment, Climate, Tourism and Hospitality Industry (MECTHI) – NDE	Overall request endorsement; alignment with national climate strategy; co-chair of PSC
Rural Electrification Fund (REF)	National implementing partner: REF coordinator embedded in project; facilitates government relations

ZERA	Regulatory compliance, data input and research input
Off & Tie Grid Solar Company	Support the implementation of the TA. Stakeholder engagement and coordination,
CTCN	Technical assistance provider; coordination of expert inputs; quality assurance; knowledge product development
FBC Bank	Project Financial Advisory member of PSC; lead in the development of the investment dossier; Capital raising mandate targeting private and concessionary finance for the project.
Gwanda State University (GSU), Gwanda	Technical partner for business plan development, financial modelling, and enterprise capacity building
Women's Cooperative, Gwanda	Primary beneficiary and enterprise operator; Technical Committee member; commercial operator in Component 3
Forest Commission	Co-lead on mopane woodland by-law drafting; Technical Committee member
Gwanda Rural District Council	Legal authority for by-law adoption; formalizes cooperative's access to harvest zones; PSC member
Rural Infrastructure Development Agency (RIDA)	Implements borehole infrastructure; Technical Committee member
Adaptation Fund (observer)	Observer on PSC; prospective larger-scale financing vehicle for national replication

12. SDG Contributions:

Instructions: Please complete the grey section below for **a maximum of three SDGs** that will be advanced through this TA. A complete list of SDGs and their targets is available here:

<https://sustainabledevelopment.un.org/partnership/register/>.

Goal	Sustainable Development Goal	Direct contribution from CTCN TA (1 sentence for top 1-3 SDGs)
1	End poverty in all its forms everywhere	
2	End hunger, achieve food security and improved nutrition, and promote sustainable agriculture	This project will aim at making dried mopane worms accessible to all in Zimbabwe
3	Ensure healthy lives and promote well-being for all at all ages	
4	Ensure inclusive and equitable quality education and promote life-long learning opportunities for all	
5	Achieve gender equality and empower all women and girls	The project is handled by a community of women.
6	Ensure availability and sustainable management of water and sanitation for all	

7	Ensure access to affordable, reliable, sustainable, and modern energy for all (consider adding targets for 7)	The first phase implemented a solar facility
	7.1 - By 2030, ensure universal access to affordable, reliable and modern energy services	
	7.2 - By 2030, increase substantially the share of renewable energy in the global energy mix	
	7.3 - By 2030, double the global rate of improvement in energy efficiency	
	7.a - By 2030, enhance international cooperation to facilitate access to clean energy research and technology, including renewable energy, energy efficiency and advanced and cleaner fossil-fuel technology, and promote investment in energy infrastructure and clean energy technology	
	7.b - By 2030, expand infrastructure and upgrade technology for supplying modern and sustainable energy services for all in developing countries, in particular least developed countries, small island developing States, and land-locked developing countries, in accordance with their respective programmes of support	
8	Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all	If successful, this TA should lead to the creation of jobs in rural areas of Zimbabwe
9	Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation	Yes, industrialization of the rural areas of Zimbabwe
10	Reduce inequality within and among countries	
11	Make cities and human settlements inclusive, safe, resilient and sustainable	
12	Ensure sustainable consumption and production patterns	
13	Take urgent action to combat climate change and its impacts	<i>All TAs should indicate relevance to Goal 13 and at least one target below (13.1 to 13.b).</i>
	13.1 - Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries	By this project, deforestation will be limited, food security is strengthened
	13.2 - Integrate climate change measures into national policies, strategies and planning	Legal agreement is also a key deliverable of this project to ensure a sustainable production of the mopane worms
	13.3 - Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning	Yes, awareness raising will be at the centre of the project: to support the collectivist of women in design of the business, partnership with local universities, inclusion of youth.
	13.a - Implement the commitment undertaken by developed-country parties to the United Nations Framework Convention on Climate Change to a goal of mobilizing jointly \$100 billion annually by 2020 from all sources to address the needs of developing countries in the context of meaningful mitigation actions and transparency on implementation and fully operationalize the	

	Green Climate Fund through its capitalization as soon as possible	
	13.b - Promote mechanisms for raising capacity for effective climate change-related planning and management in least developed countries and small island developing States, including focusing on women, youth and local and marginalized communities	Zimbabwe is an LDC
14	Conserve and sustainably use the oceans, seas and marine resources for sustainable development	
15	Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss	Mopane worms will be protected through a sustainable decree that will define what could be harvest by year so that the insect can reproduce itself.
16	Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels	
17	Strengthen the means of implementation and revitalize the global partnership for sustainable development	

13. Classification of technical assistance:

Please indicate primary type of technical assistance. Optional: If desired, indicate secondary type of technical assistance.

Please tick off the relevant boxes below	Primary	Secondary
☐ 1. Decision-making tools and/or information provision	X	☐
☐ 2. Sectoral roadmaps and strategies	☐	☐
☐ 3. Recommendations for law, policy and regulations	☐	X
☐ 4. Financing facilitation	X	☐
☐ 5. Private sector engagement and market creation	X	☐
☐ 6. Research and development of technologies	☐	X
☐ 7. Feasibility of technology options	☐	X
☐ 8. Piloting and deployment of technologies in local conditions	X	
☐ 9. Technology identification and prioritization	☐	☐

Please note that all CTCN technical assistance contributes to strengthening the capacity of in country actors.

14. Monitoring and Evaluation process

Upon contracting of the implementing partners to implement this Response Plan, the lead implementer will produce a monitoring and evaluation plan for the technical assistance. The monitoring and evaluation plan must include specific, measurable, achievable, relevant, and time-bound indicators that will be used to monitor and evaluate the timeliness and appropriateness of the implementation. The CTCN Technology Manager responsible for the technical assistance will monitor the timeliness and appropriateness of the Response Plan implementation. Upon completion of all activities and outputs, evaluation forms will be completed by the (i) NDE about overall satisfaction level with the technical assistance service provided; and (ii) the Lead Implementer about the knowledge and learning gained through delivery of technical assistance. Furthermore, the NDE together with the project proponent(s) will complete a periodic post-implementation form to track the impact of the activities beyond the technical assistance end date