



United Nations Industrial Development Organization

TERMS OF REFERENCE (TOR)

Title: Support to the implementation of an integrated project Water-Energy-Livestock for the dairy value chain in the municipalities of Pette and Wina - North Cameroon

18 February 2021

CTCN request reference number: 2018000022

Country: Cameroon

1 BACKGROUND INFORMATION

The Climate Technology Centre and Network (CTCN) is the operational arm of the United Nations Framework Convention on Climate Change (UNFCCC) Technology Mechanism and hosted by the United Nations Environment Programme (UN Environment) in collaboration with the United Nations Industrial Development Organization (UNIDO) and supported by 11 partner institutions with expertise in climate technologies. The mission of the CTCN is to promote accelerated deployment and transfer of climate technologies at the request of developing countries for energy-efficient, low-carbon and climate-resilient development.

These requests for Technical Assistance (TA) are being submitted to the CTCN by the National Designated Entity (NDE) of the respective country. The scope of services under these Terms of Reference shall be executed based on a restricted solicitation process. By mandate, only accepted Members of the CTC Network are eligible to execute the required services to implement the response. Should the bidder partner with another institution to deliver a minor part of the services described in these Terms of Reference, it is expected that the partner institution also joins the CTC Network.

In case you are not a CTCN network member yet, you may bid for implementation of the technical assistance, subject to the condition that you submit your completed application for CTC Network membership before the bid closure and the same is acknowledged by the CTCN. Furthermore, the contract award – should your bid be selected – is conditional to your network membership application having been successfully approved by the Director of CTCN. Should the bidder partner with another institution to deliver the services described in these Terms of Reference, it is expected that the partner institution also joins the CTC Network.

The maximum budget for this contract is USD 175,000.

It is mandatory for the implementer(s) to allocate at least 1% of the budget to integrate a gender-approach to the activities. Please refer to the CTCN Gender Mainstreaming Tool for Response Plan Development for guidance at <https://www.ctc-n.org/technologies/ctcn-gender-mainstreaming-tool-response-plan-development>.



United Nations Industrial Development Organization

2 CONTEXT OF THE ASSIGNMENT

Agriculture and animal husbandry are the leading sectors of the Cameroonian economy both in terms of assets and resources generated. Yet, Cameroon is one of the countries in the world where the production and consumption of milk per capita is the lowest. The Cameroonian livestock is estimated at 12 million head for a production of 125 000 tons of milk. Most of the dairy animals are raised extensively. Milk is only collected to a limited extent. Thus, it is estimated that actual milk production represents only 45% of potential production. The processing and distribution sector is still in its infancy, although dynamic. According to statistics from the Ministry of Livestock, Cameroon has an average production deficit of more than 170,000 tons of milk per year due to low yields and the isolation of the main production basins. In the Far North region, milk is one of the staple foods for the population.

The Far North of Cameroon is a very different region from the rest of the country: it presents a significant similarity with the other countries of the Sahel. It is the arid zone that for years has been in the international headlines due to conflicts, terrorism, drought and hunger. The Sahel is also one of the most environmentally degraded regions in the world. It is undoubtedly one of the most vulnerable parts of climate change, with temperature increases expected to be 1.5 times higher than the global average.

The United Nations has launched a major support plan to promote sustainable peace and inclusive growth in the region. The plan focuses on six key areas, including climate action; cross-border cooperation; prevention and peacekeeping; inclusive growth; renewable energy; and the empowerment of women and youth.

In Cameroon's Sahel region, two-thirds of the population is under the age of 25. A young population is one that has hope, productive capacity, and the capacity to transform the economy. Local development is a barrier to urban migration. Energy issues are of paramount importance for agriculture, forestry and the life of human society as a whole (e.g. the situation of women and youth). There is a close relationship between energy consumption and the development of a given region. Success largely depends on the relevance and sustainability of the solution. A useful approach covering many sectors (water, agriculture, women and youth, renewable energy, health) is often more effective.

This is why this assistance aims to participate in the fight against climate change by setting up an Energy-Milk-Processing-Commercialization project in the communes of Pétté and Wina in the far north of Cameroon.

The full text of the request submitted to the CTCN can be found here: <https://www.ctc-n.org/technical-assistance/projects/support-implementation-integrated-project-water-energy-livestock>

The Response plan developed in collaboration with Liberia can be found here: <https://www.ctc-n.org/content/support-implementation-integrated-project-water-energy-livestock-dairy-value-chain-0>

The specific activities are detailed in section 3.



United Nations Industrial Development Organization

3 OBJECTIVE OF THE CONTRACT

The objective of this contract is to develop sustainable and climate-resilient dairy value chains in Cameroon through the use of low-carbon technologies.

Scope and activities of the proposed contracted services

Once the contract is signed, the CTCN will organize a kick-off call among all relevant parties involved in the request to introduce the Contractor to the NDE and Proponent. This kick-off virtual meeting shall present the activities, their timeline and clarify roles and responsibilities.

The Contractor shall undertake the following activities:

Mandatory Output: Development of implementation planning and periodical reporting documents

Activity i: Preparing the consultancy work plan, periodical progress reports and final reports.

Deliverable i: A detailed work plan of all activities, deliveries, outputs, deadlines and responsible persons/organizations and detailed budget to implement the CTCN response plan. The detailed work plan and budget must be based directly on the CTCN response plan included in the tender package, as per CTCN standard procedure in all technical assistances (In English). The response plan framework represents the basic common structure of the work.

Deliverable ii: Based on the work plan, a monitoring and evaluation 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 (in English).

Deliverable iii: A two-page CTCN Impact Description formulated in the beginning of the technical assistance and update/revised once the technical assistance is fully delivered (a template will be provided) (in English)

Deliverable iv: A Closure and Data Collection report completed at the end of the technical assistance (a template will be provided) (in English)

Output 1: Analysis and data collection on dairy value chains in the communes of Petté and Wina in Cameroon with a special focus on the impacts of the COVID-19 pandemic.

Activity 1.1: Data collection from dairy farmers in the communes of Petté and Wina in Cameroon.

These data will include (but are not limited to) the number of livestock, annual milk production, technologies used to produce and preserve milk on site, milk losses based on historical data, milk sales points (distance to be traveled, frequency of trips) as well as the means used for transport, estimated losses during transport. Emphasis will be placed on the impact of climate change and COVID -19.



United Nations Industrial Development Organization

This activity will begin with a workshop to present the project and its objectives to which all Pétte and Wina producers will be invited.

Data on gender will also be collected (number of female producers, historical growth).

Activity 1.2: SWOT analysis of the data.

Analysis of collected data and identification of internal strengths and weaknesses as well as external opportunities and threats.

Activity 1.3 Diagnosis of the technological needs of the dairy value chain

Identification of the major problems encountered for the conservation of milk according to the different phases from production to sales, definition of barriers, identification of the needs of producers, both for the commune of Pétte and for the commune of Wina.

Definition of the technological needs of dairy producers in Pétte and Wina by integrating the gender dimension (analysis of the barriers faced by women in the agri-food sector and reflection on the role of technology and access to energy to promote the participation of vulnerable populations in agricultural production).

Deliverable 1.1: Excel for data collection classified by years, production centers, production phase and report of the kick-off workshop (with list of participants, photos, summary of presentations made, questions received etc).

Deliverable 1.2 and 1.3: Diagnosis of technological needs based on SWOT analysis.

Output 2: Market study of technologies applicable to the local context

Activity 2.1: Identification and selection of technologies and methods for sustainable and resilient, less costly, socially acceptable dairy value chains at the production, intermediate storage and point of sales.

Study to highlight feasibility criteria, advantages and disadvantages of different technologies and to make useful and usable recommendations. Gender will be considered in this analysis.

Deliverable 2.1: Technical and detailed report on existing clean technologies to ensure the conservation of dairy products at the production, storage and transport taking into account the local context (communes of Pétte and Wima).

Output 3: Elaborate a master plan for the conservation of dairy products (production, storage, transport) with the support of clean technologies for the communes of Pétte and Wina

Activity 3.1: Define the operation of a pilot project, in the commune of Pétte, including the definition of a duly equipped system to ensure the conservation of dairy products through the use of low-carbon



United Nations Industrial Development Organization

technologies, an intermediate storage area (duly equipped on the basis of the results of Output 2) and logistics (transport) up to the sales points.

Activity 3.2: Define the operation of a pilot project, in the commune of Wina, including the definition of a duly equipped system to ensure the conservation of dairy products through the use of low-carbon technologies, an intermediate storage area (duly equipped on the basis of the results of Output 2) and logistics (transport) up to the sales point.

Activity 3.3: Analyze the possibility of optimizing costs by defining storage areas and supply chain common to both communes

Deliverable 3.1: A master plan for the conservation of dairy products with the support of clean technologies from the commune of Pétté.

Deliverable 3.2: A master plan for the conservation of dairy products with the support of clean technologies from the commune of Wina.

Deliverable 3.3: A report with recommendations to optimize the implementation costs between the 2 communes

Output 4: Socio-economic impact study of selected technologies and methods.

Activity 4.1: Socio-economic study of the proposed master plan for the commune of Pétté.

Activity 4.2: Socio-economic study of the proposed master plan for the commune of Wina

Deliverable 4.1: Socio-economic study, including the gender impact of the proposed master plan for the commune of Pétté

Deliverable 4.2: Socio-economic study, including the gender impact of the proposed master plan for the commune of Wina

Output 5: Definition of a roadmap including regulatory instruments and financial mechanisms

Activity 5.1: Development of a roadmap, including regulatory instruments and financial mechanisms for the promotion and implementation of sustainable and resilient dairy value chains for the commune of Pétté and Wina.

Deliverable 5.1 : Roadmap, including regulatory instruments and financial mechanisms for the promotion and implementation of sustainable and resilient dairy value chains for the commune of Pétté and Wina.



United Nations Industrial Development Organization

Output 6: Training and capacity building of dairy farmers on the implementation of a sustainable and resilient dairy value chain

Activity 6.1: Installation of an appropriate temporary storage system (solar cooling for dedicated milk transport vehicles for example for a maximum of 15,000 USD). This system needs prior approval by the CTCN Regional Manager and the NDE.

Activity 6.2: Training and capacity building workshop for dairy farmers in the communes of Pétte and Wina on the master plan, the proposed roadmap and selected technologies.

The training will be provided to both men and women.

This training will include a demonstration of the selected technology for milk conservation at the production site, as well as a visit of the temporary storage system installed in activity 6.1.

This activity is fundamental for producers to understand how the technologies work. This training will introduce the technical characteristics of the technologies, the maintenance required, the energy consumption characteristics, the solar charging time required, etc. This training should allow time for local producers to familiarize themselves with the technologies and as well as a decent time to share questions about the proposed technologies.

Activity 6.3: Development of a technical guide (infographic) to ensure an integrated approach combining the different technical and technological solutions for the management of dairy products, translated into the main languages of the country.

Deliverable 6.1: Report explaining the implementation of the technologies (with photos and explanation of the implementation process: where, when, who were present, the steps of the installation, the set-up, the testing exercise, etc.).

Deliverable 6.2: Report of the demonstration workshop of the selected technologies and presentation of the master plan with the list of participants, photos, presentation etc.

Deliverable 6.3: A infographic guide to the technical and technological solutions proposed for each stage of conservation (production, storage, transport). Translated into the main languages of the country (at least 2 languages and up to 4).

4 GENERAL TIME SCHEDULE

CTCN technical assistance activities under this contract have an expected duration of up to twelve (12) months from the contract signature. The proposed plan for the implementation of activities and deliveries:



United Nations Industrial Development Organization

Outcome	Activities /deliverables	Months											
		1	2	3	4	5	6	7	8	9	10	11	12
Preliminary Activity													
CTCN Mandatory Activities and Deliverables	Development of implementation planning, reporting and communication documents												
	A detailed work plan of all activities	x											
	A monitoring and evaluation plan	x											
	A one page description of intended outcomes and impacts from this TA drafted at initiation of implementation and revised at closure	x											
	A TA Closure and Data Collection Report												x
Outcome 1: Analysis and data collection on dairy value chains in the communes of Petté and Wina	Activity 1.1 Data collection from dairy farmers in the communes of Petté and Wina in Cameroon												
	Activity 1.2: SWOT analysis of the data.												
	Activity 1.3 Diagnosis of the technological needs of the dairy value chain												
	D1.1 Excel of data collection			x									
	D1.2 Diagnosis of technological needs based on SWOT analysis			x									
Outcome 2 : Market study of technologies applicable to the local context	Activity 2.1 : : Identification and selection of technologies												
	D2.1: Technical and detailed report on existing clean technologies to ensure the conservation of dairy products at the production, storage and transport phase and adapted to the local context					x							
Outcome 3: Elaborate a master plan for the conservation of dairy products (production, storage, transport) with the support of clean technologies for the communes of Petté and Wina	Activity 3.1: Define the operation of a pilot project, in the commune of Petté												
	Activity 3.2: Define the operation of a pilot project, in the commune of Wina												
	Activity 3.3: Analyze the possibility of optimizing costs by defining storage areas and supply chain common to both communes												
	D3.1 Master plan for the conservation of dairy products with the support of clean technologies from the commune of Petté									x			
	D3.2 Master plan for the conservation of dairy products with the support of clean technologies from the commune of Wina									x			
	D3.3 A report with recommendations to optimize the implementation costs between the 2 communes									x			
	Outcome 4: Socio-economic impact study of selected technologies and methods	Activity 4.1: Socio-economic study of the proposed master plan for the commune of Petté.											
Activity 4.2: Socio-economic study of the proposed master plan for the commune of Wina													
Outcome 5 :Definition of a roadmap including regulatory instruments and financial mechanisms	Activity 5.1: Development of a roadmap												
	D.5.1 Roadmap, including regulatory instruments and financial mechanisms for the promotion and implementation of sustainable and resilient dairy value chains for the commune of Petté and Wina.												x
	Outcome 6 : Training and capacity building of dairy farmers on the implementation of a sustainable and resilient dairy value chain	Activity 6.1: Installation of an appropriate temporary storage system											
Activity 6.2: Training and capacity building workshop for dairy farmers in the communes of Petté and Wina on the master plan, the proposed roadmap and selected technologies													
Activity 6.3 Development of a technical guide (computer graphics) to ensure an integrated approach combining the different technical and technological solutions for the management of dairy products, translated into the main languages of the country.													
D6.1 Report explaining the implementation of the technologies (with photos and explanation of the implementation process)													x
D6.2 Report of the demonstration workshop													x
D6.3 A infographic guide to the technical and technological solutions proposed for each stage of conservation (production, storage, transport).													x



United Nations Industrial Development Organization

All drafts and final deliverables are subject to approval by the CTCN Climate Technology Manager, before these can be considered as completed. Deliverables will be produced in English.

5 PERSONNEL IN THE FIELD (PROFESSIONAL EXPERIENCE AND QUALIFICATIONS)

To ensure the projects sustainability it is vital that the qualified bidder can confirm its ability to engage at the local level. The Contractor is expected to provide the services of a team that should ideally comprise the following competencies (see Section 4 in the Response Plan for a detailed description):

Expert title	Minimum qualification requirements	Necessary experience
Expert 1: Expert in rural electrification or related fields, team leader	<ul style="list-style-type: none"> • Master’s degree or engineer in rural electrification, renewable energy, energy efficiency or similar. 	<ul style="list-style-type: none"> • A minimum of 15 years relevant work experience in off-grid rural electrification technologies. • At least 10 years of experience in the implementation of clean energy in Africa. • At least 5 demonstrated experience of solar electrification projects adapted to small and medium enterprises in Africa. • Excellent abilities to interact with local stakeholders, collect and evaluate data and transform the information into high quality documentation tangible to the target audience. • High level of French and English required.
Expert 2: Expert in Economic and social impact	<ul style="list-style-type: none"> • Master degree or above in economy, Environmental and social studies, Business school, climate finance, Renewable Energy, or related fields 	<ul style="list-style-type: none"> • A minimum of 10 years relevant work experience in renewable energy in Africa. • At least 8 demonstrated experience socioeconomic impact of renewable energy projects. • At least 5 demonstrated experience of socio-economic studies on off-grid and clean technologies (solar energy for example). • Excellent abilities to interact with local stakeholders, collect and evaluate data and transform the information into high quality documentation tangible to the target audience. • Excellent written and communication skills in French requested.
Expert in dairy production	<ul style="list-style-type: none"> • Engineer in agriculture, food production, or related fields. 	<ul style="list-style-type: none"> • A minimum of 5 years of relevant work experience in the identification of clean technologies suitable for food production. • Proven experience in Sub-Saharan Africa



United Nations Industrial Development Organization

		<ul style="list-style-type: none">• Presence in Cameroon expected.• Good communication skills in French required.
Expert on gender	<ul style="list-style-type: none">• Master or Bachelor degree in Sociology, anthropology, or other relevant education.	<ul style="list-style-type: none">• A minimum of 5 years relevant work experience in the field of gender equality and gender mainstreaming.• Formal training in gender analysis and gender planning and demonstrated expertise in mainstreaming gender in projects and programmes.• Excellent abilities to interact with local stakeholders, collect and evaluate data and transform the information into high quality documentation tangible to the target audience.• Previous work experience in Africa is required.• Excellent written and communication skills in French required.

The CVs of the respective experts assigned to this assignment by the Contractor must be provided.

6 LANGUAGE REQUIREMENTS

The working languages for the purposes of this assessment are French and English, thus an excellent command of French is required for the proposed personnel. English is also required for the reporting to the CTCN and UNIDO. All delivered documents must be of sufficient quality so that no further editing shall be required.