

# Technical Assistance Closure Report Template

## Objective of the technical assistance (TA) Closure Report:

- To communicate publicly in one document a summary of progress made and lessons learned during the TA towards the anticipated impact (sections 1-4).
- To document qualitative and quantitative data collected during TA, for use in donor and UN reporting (Annex 1).

## Steps for completing the TA closure report:

1. The lead TA implementer submits the closure report at the end of the technical assistance as a final deliverable. The TA closure report will capture outputs, outcomes and impacts of all activities conducted under the TA. Please copy and summarise relevant material from previous TA outputs/deliverables and the Response Plan, as relevant.
2. A CTCN Manager will review and revise the closure report before final approval by the CTCN Deputy Director.

## Important note on public and internal use of the closure report:

Once approved by the CTCN Deputy Director, the TA closure report will be a public document available on the CTCN website [www.ctc-n.org](http://www.ctc-n.org). Selected content will be used for targeted communication activities. Annex 2 is for internal use only and will not be publicly available.

## Closure Report for CTCN Technical Assistance

### 1. Basic information

Title of response plan	<i>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</i>
Technical assistance reference number	<i>2018000022</i>
Country / Countries	<i>CAMEROON</i>
NDE organisation	<i>Ministry of Environment, nature protection and sustainable development (MINEPDED)</i>
NDE focal point	<i>Patrick FORGHAB MBOMBA</i>
NDE contact information	<i>forghabp@gmail.com</i>
Proponent focal point and organisation	<i>Patrick FORGHAB MBOMBA</i>
Designer of the response plan	<i>UNEP DTU Partnership</i>
Implementer(s) of technical assistance	<ul style="list-style-type: none"> <li>• <i>OIKO Logica</i></li> <li>• <i>University of Maroua</i></li> </ul>
Beneficiaries	<ul style="list-style-type: none"> <li>• <i>Actors of the dairy value chain: breeders, transformers, collectors</i></li> <li>• <i>Municipalities of Pette and Wina</i></li> <li>• <i>GIC Avenir femmes Pette</i></li> <li>• <i>Help Community</i></li> </ul>

Sector(s) addressed	<ul style="list-style-type: none"> <li>Project focus on the dairy value chain, including milk storage and transformation of dairy products using solar energy</li> <li>Sectors: Agriculture and Renewable Energy</li> </ul>
Technologies supported	<ul style="list-style-type: none"> <li>Technology groups: Solar and Livestock management</li> <li>Technology: Solar PV</li> </ul>
Implementation start date	18/05/2021
Implementation end date	30/12/2022
Total budget for implementation	175,000\$
<p>Description of delivered outputs and products as well as the activities undertaken to achieve them. In doing so, review the log frame of the original response plan and refer to it as appropriate</p>	<p><b>Outcomes</b></p> <ul style="list-style-type: none"> <li>Outcome 1: Deployment of identified technologies for the preservation of dairy products through funding shared between international sources, the state and possibly even an association of producers</li> <li>Outcome 2: The creation of an intermediate storage area shared between producers</li> <li>Outcome 3: A secure delivery system to the point of sale</li> <li>Outcome 4: The creation of small businesses participating in dairy value chains and the conservation of dairy Products</li> <li>Outcome 5: An increase in the self-sufficiency of milk in the region</li> </ul> <p><b>Activities</b></p> <ol style="list-style-type: none"> <li>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</li> <li>Market study of technologies applicable to the local context</li> <li>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</li> <li>Socio-economic impact study of selected technologies and methods</li> <li>Definition of a roadmap including regulatory instruments and financial mechanisms</li> <li>Training and capacity-building of dairy farmers on the implementation of a sustainable and resilient dairy value chain</li> </ol>
Methodologies applied to produce outputs and products	<p><b>Project methodology and approach related to the identification of the most cost-efficient technologies</b></p> <p><u>PHASE 1: Contracting &amp; preparation of data collection tools</u></p> <p><u>PHASE 2. Data collection and analysis</u></p> <ul style="list-style-type: none"> <li>Analysis and Data Collection on dairy value chains in Petté and Wina (with a focus on the COVID-19 pandemic impacts) <ul style="list-style-type: none"> <li>Data collection from dairy farmers</li> <li>SWOT analysis of the data</li> <li>Diagnosis of the technological needs of the dairy value chain</li> </ul> </li> </ul> <p><u>PHASE 3. The drafting and restitution phase</u></p> <ul style="list-style-type: none"> <li>Market Study of Technologies with productive use of energy applicable to the local context</li> </ul>

	<ul style="list-style-type: none"> <li>○ Identification and selection of technologies and methods for sustainable and resilient, less costly, socially acceptable dairy value chains</li> <li>○ Workshops with involved stakeholders to validate the report about clean technologies to offer in value chain</li> <li>○ Finalize report according to stakeholder comments</li> </ul> <p><u>PHASE 4: Development of the master plan to support actors in the milk value chain to improve profitability and sustainability of the latter</u></p> <ul style="list-style-type: none"> <li>● Elaborate a Master Plan for the conservation of dairy products with the support of clean technologies for the communes of Pétté and Wina</li> <li>● Socioeconomic impact study of selected technologies and methods</li> <li>● Definition of a roadmap including regulatory instruments and financial mechanisms</li> </ul> <p><u>PHASE 5: Training of actors</u></p> <ul style="list-style-type: none"> <li>● Training and capacity building of dairy farmers on the implementation of a sustainable and resilient dairy value chain <ul style="list-style-type: none"> <li>○ Installation of an appropriate temporary storage system</li> <li>○ Training and capacity building workshop for dairy farmers on the master plan, the proposed roadmap and selected technologies</li> <li>○ Development of a technical guide to ensure an integrated approach</li> </ul> </li> </ul>
Reference to knowledge resources	<a href="#"><u>General approach to mainstreaming gender</u></a>
Deviations	<p><i>Instruction: Please describe any deviations from the response plan against the actual implemented activities, outputs and products</i></p> <p><i>Outcome 5: The creation of companies for the repair, sale and maintenance of technologies. This outcome was included in the technical proposal, but not realized given that technology installed (solar system) don't need a repair and maintenance before 3-4 years.</i></p>
Anticipated follow-up activities and next steps	<ul style="list-style-type: none"> <li>● A draft of proposal to reduce transhumance, aiming to develop pastures and access to water (solar water pumps) by the CTCN</li> <li>● Follow-up and formal submission of funding proposal drafted with support from the CTCN.</li> <li>● Implementation of activities designed by the CTCN</li> <li>● Dissemination of results by the CTCN</li> </ul>

## 2. Lessons learned

	Lessons learned	Recommendations
Lessons learned from the CTCN TA process	It must be taken into consideration that the estimated Level of Effort of each expert can change during the project implementation, due to the sectors and technology	Recommendations include - Including intercultural support during the process could also support the dynamics of the communication as well as the field activities since local and international team members have

	<p>prioritization. As some sectors are prioritized and some not, the overall workload can be different as expected during the project formulation.</p>	<p><i>different access to information, training, and connectivity.</i></p> <p><i>The Project Implementor should be flexible to adjust the tasks to the team, according to the development of the project and the sector prioritized.</i></p>
<p>Lessons learned related to climate technology transfer</p>	<ul style="list-style-type: none"> <li>• <b>Main constraints (dairy value chain):</b> <ul style="list-style-type: none"> <li>○ <i>Lack of electricity: 80% of transformers use wood to transform milk</i></li> <li>○ <i>Inappropriate tools for milk conservation and transformation: 60% of transformers store milk in calabashes</i></li> <li>○ <i>Lack of pastures: 2/3 of transformers note as a major constraint the lack of pasture which results in insufficient milk production and therefore a drop in the production of derivative products</i></li> <li>○ <i>Insufficiency of water due to the drought in the Far North</i></li> </ul> </li> <li>• <b>Opportunities (technology):</b> <ul style="list-style-type: none"> <li>○ <i>Availability of electricity, through solar system to facilitate storage of milk and conservation of derivative products</i></li> <li>○ <i>Availability of electricity will enable to increase the dairy production</i></li> <li>○ <i>Capacity building of population over of solar technology</i></li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• <b>Risk mitigation measures</b> <ul style="list-style-type: none"> <li>○ <i>Use local team to operate according to the gender and youth approach meanwhile they constantly bear in mind the different contextual and cultural features</i></li> <li>○ <i>A network of researchers and professionals in place, who already get methodology tools and will be able to send clear messages and transfer the knowledge and technologies to the end users.</i></li> </ul> </li> <li>• <b>Opportunities for over-coming barriers</b> <ul style="list-style-type: none"> <li>○ <i>Set a program oriented on the development of pastures and access to water. Pastures and water are two major elements to increase the dairy production. Management of pastures and water supply are included in "Program 17" of the NDC</i></li> </ul> </li> <li>• <b>Long-term sustainability</b> <ul style="list-style-type: none"> <li>○ <i>Training/capacity building addressed to transformers to increase the cheese production, powdered milk</i></li> <li>○ <i>Measures aimed to develop dairy production from sheep and goats</i></li> <li>○ <i>Funding opportunities through microfinances institutions to enable actors of the dairy value chain to access finance</i></li> </ul> </li> </ul>

### 3. Illustration of the TA and photos

For communication purposes, please provide 2-4 Power Point slides, including illustrations or charts, describing barriers, opportunities, methodology, activities, outputs and achieved results. The illustrations must be copied into the TA Closure report but must also be delivered as power point files. Also, please provide at least five high-resolution pictures in jpg format, capturing technical assistance. The pictures should illustrate how the TA has impacted the lives of the beneficiaries in particular and the communities in general.

## Illustrations

### What we found in the beginning of the Project

- Procedure of milking



Pette



wina



- procedure of collect and transport of milk

## What we propose and put in place in Pette with the project

- Moto avec un dispositif adapté pour transport de lait à l'aide de bidons



réfrigérateurs solaire (02) installation des baterries



## Workshops organised

- Atelier Pette



## Contraintes

- Accès à l'électricité très faible voire quasi-inexistant
- Plus de 77% des enquêtés utilisent le bois de feu, pourtant zone à écologie très fragile
- Faible zone de pâturage surtout en saison sèche
- Transhumance
- Vol de bétail
- Changement climatique

## Workshops organised

- Atelier wina



## Opportunités

Existence d'un projet gouvernemental soutenu par la banque mondiale sur le lait (PRODEL)

Disponibilité de la ressource solaire en grande quantité

Nombre de bovin dans le cheptel important avec une moyenne de 70 têtes

Nombre de vache laitière important avec un pic autour de 10 vaches

Production laitière moyenne autour de 22000 litres

Production journalière moyenne 5l en saison de pluie et 1,5l en saison sèche

Important cheptel de petits ruminants (chèvre, mouton)

#### 4. Impact Statement

The information in the table below will be used to communicate results and anticipated impacts of this technical assistance publicly. Please copy information from impact statement developed in the M&E Plan and update as relevant.

<p><b>Challenge</b></p>	<p><i>Cattle breeding is one of the most widespread economic and social activities in Cameroon. Due to a lack of storage and processing facilities and low electrification rate, large quantities of milk produced are lost along the value chain. Breeders conserve this milk using generators, generate GHG, due to the use of gasoline for energy production. Beyond these challenges, the COVID-19 pandemic has further increased the vulnerability of the sector by disrupting the supply chain.</i></p>
<p>CTCN Assistance</p>	<ul style="list-style-type: none"> <li>• <i>Fight against climate change by setting up an Energy- Milk- Processing-Commercialization project in the municipalities of Petté and Wina in the far north of Cameroon.</i></li> <li>• <i>Develop sustainable and climate-resilient dairy value chains in Cameroon through the use of low-carbon technologies</i></li> </ul>
<p>Anticipated impact</p>	<p><i>The pilot project in the municipalities of Petté and Wina sought to strengthen the milk chain.</i></p> <p><i>A first production of a chilled milk storage was carried out in Petté, as part of the project, as well as successful workshops and training actions.</i></p> <p><i>The project created awareness among all the actors of the milk chain, and also among the political decision-makers concerned, at several levels, local level of elected officials, in Petté and Wina, regional level of the sub-prefect, and national ministerial level. Effective support was provided, provision of a temporary</i></p>

	<p><i>building in the first phase for the first storage of milk, and land to build a larger storage, and provision of municipal staff. Petté's workshop on December 16, 2022 successfully showcased the technology and engaged with participants and stakeholders. The workshop demonstrated the usefulness of milk refrigeration to the women's collective. There was broad commitment and representation of women (mostly dairy processors) and men (mostly dairy farmers)</i></p> <p><i>A first refrigerated storage equipment, financed by the project, for a capacity of about 300 liters of chilled milk from energy from solar panels, was installed in a first existing building, made available by the Town Hall of Petté (dated December 15th)</i></p> <p><i>To improve and make the collection and transport of fresh milk to storage more efficient, the provision of a milk transport motorcycle for the Town Hall of Petté is planned. This will be a significant improvement compared to the current transport by milk collectors by bicycle. In the future, the dairy chain in Petté, from milking, transport collection, refrigerated storage, processing, must be well operational, before considering an extension of storage and transport means. Overall this project delivered:</i></p> <ul style="list-style-type: none"> <li><i>- Extension of the refrigerated milk storage (in a new building, located on land already made available by the municipality of Petté)</i></li> <li><i>- Creation of new jobs in the dairy sector</i></li> <li><i>- Reproduction of the model in other communes of Cameroon, starting with Wina</i></li> </ul> <p><i>There is a wide possibility of extension to other villages, in Northern Cameroon and throughout all the country, with the objective of reducing dependence on imported dairy products, and progress towards the country's food self-sufficiency.</i></p>
<p>Co-benefits: Achieved or anticipated co-benefits from the TA</p>	<ul style="list-style-type: none"> <li>• <i>Training/Capacity building to producers, transformers and collectors</i></li> <li>• <i>Availability of a conservation unit of milk and dairy products, using solar technology</i></li> <li>• <i>Sharing experiences on best practices with actors of the dairy value chain in Pette and Wina</i></li> <li>• <i>Availability of a motorcycle to facilitate milk collection</i></li> <li>• <i>Increasingly of the dairy production and derivative products</i></li> </ul>
<p>Gender aspects of the TA</p>	<p>Each workshop and meeting have gender data represented and collected to evaluate gender participation. During workshops, capacity building about gender mainstreaming in the TNA and TAP has been conducted. However, during the TA and the local country context, it has been difficult to conducted deeper gender analysis.</p> <ul style="list-style-type: none"> <li>• <i>The milk belongs to the woman and the cow belongs to the man</i></li> <li>• <i>Milk is milked by family members, mainly by children. 43% say that milk is milked by children, compared to 12% and 13% respectively by women and men in the family.</i></li> <li>• <i>Enormous gender potential that can be capitalized on if belief systems change</i></li> </ul>

	<ul style="list-style-type: none"> <li>• Awareness raising, training and organizational capacity building for women and youth</li> <li>• A strategy of horizontal and vertical integration of youth and women in the chain in networks of associations, entrepreneurial training and management of economic activities is possible</li> </ul> <p>Modernization and rejuvenation of the dairy sector to fill the generational gaps.</p>
Anticipated contribution to NDC	<ul style="list-style-type: none"> <li>• Reducing the vulnerability of livestock to the effects of climate change</li> <li>• Financing of a solar-powered milk storage unit, combined with technology transfer</li> <li>• Capacity building. The aim is to promote best practices and share experiences on collect and transformation</li> <li>• Food security and agribusiness development, notably milk transformation</li> </ul>
The narrative story	<p>In the region of Northern Cameroon, there is a large quantity of cattle but very few modern livestock farms and the greatest quantity of milk is lost because of a very inadequate milk chain.</p> <p>The CTCN technical assistance aimed at reducing vulnerabilities of the livestock sector to climate change as well as promoting solar-powered milk storage units in the milk sector in the North Cameroon zone.</p> <p>The project began with an in-depth field study, particularly in the two target municipalities of the project, Petté and Wina. Geographical, sociological and cultural data were analysed, both quantitatively and qualitatively. A detailed diagnosis was carried out, distinguishing the milk chain between milk producers (cattle breeders and dairy cows), milk collectors providing transport, and dairy product processors. Interviews and focus groups were conducted with all actors in Petté and Wina. A component and holistic analysis of the value chain as well as a SWOT study was conducted. The gender dimension was taken into account, with women processing dairy products. Petté already benefits from existing collectors and the GIC Avenir Femmes, producing curdled milk, yogurt, butter and cheese.</p> <p>Based on the data collected, the needs and constraints, including the energy required for the conservation of milk, the possibility of a pilot operation were studied based on the best technologies for the collection, transport and refrigerated storage of milk and dairy products adapted to the local context. A technical-economic study allowed for workshops to be held with the municipalities of Petté and Wina and the Help a Community Organization.</p> <p>Several workshops were held (minutes and lists of participants attached), including a workshop held on May 19 at the University</p>

	<p>of Maroua, as well as training workshops held in Petté on December 16, 2022, and in Wina on December 17.</p> <p><i>In Petté, the establishment of community milk storage facilities, refrigerated with solar energy, was considered an essential first step. After research and consultation, the Municipality of Petté proposed a plot of land for the construction of a dedicated building (decision officially confirmed by a letter dated July 21, 2022 from the Sub-Prefect of the Petté district). The project financed the establishment of a pilot refrigerated milk storage unit for Petté, including, among other things, a solar milk tank, a refrigerator and equipment for transporting the milk. To accommodate this pilot refrigerated storage equipment, the Municipality of Petté made available a first existing building, which was rehabilitated (photos in this report). In this storage building in Petté, the first solar-powered milk refrigeration equipment was supplied the day before the final training workshop, on December 15, 2022, from Douala. The solar panels are installed on the roof of the building. The power of the solar panels is in principle 1.25 KW, providing about 6 to 7 KWh in useful energy per day. Batteries for storing the electricity produced by the solar panels are installed. The battery is of 160 Ah, an energy of approximately 3 KWh is stored there, which makes it possible to ensure the cooling for the period without sun. In Wina, a similar study was conducted. A roadmap and a program of training and capacity building for the actors of the dairy sector has been developed and training activities for the actors of the dairy sector were carried out.</i></p>
<p>Contribution to SDGs</p> <p>A complete list of SDGs and their targets is available here:  <a href="https://sustainabledevelopment.un.org/partnership/register/">https://sustainabledevelopment.un.org/partnership/register/</a></p>	<ul style="list-style-type: none"> <li>• <i>SDG 2: End hunger, achieve food security and improved nutrition and promote sustainable agriculture. Far North is one of the poorest region in Cameroon and one of the most affected by climate change. The increasingly of dairy production will improve nutrition, mostly for infants and children</i></li> <li>• <i>SDG 5: Gender Equality: The project reduces gender inequalities in the milk value chain by raising awareness and encouraging women and youth to overcome cultural barriers and limiting beliefs for full and active involvement.</i></li> <li>• <i>Also, inequalities are reduced through equitable offers of entrepreneurial training, management and management of economic activities</i></li> <li>• </li> <li>• <i>SDG 13: Climate Action: The project enabled to set a conservation unit using solar technology. Availability of clean energy will provide a continuous access to electricity for conservation and transformation of milk</i></li> </ul>

## Annex 1 Technical assistance data collection

Please add quantitative and qualitative values for the indicators selected in the M&E plan and monitored throughout the technical assistance in the tables below. Indicators which have been monitored in addition to the proposed indicators below may be added at the end of table A. Non-relevant indicators should be left blank.

### A. Output and outcome indicators

<b>Indicator</b>	<b>Quantitative value</b>	<b>Qualitative description</b>
Please note indicators below highlighted as <b>anticipated</b>	<i>Numerals only; disaggregates must sum to the total</i>	<i>List the various elements corresponding to the quantitative value as well as timelines and responsible institutions</i>
Total number of events organized by proponents and implementing partners  <b>19 events</b>	2	Field surveys
	6	Focus groups
	6	Meeting with Municipalities of Petté and Wina
	2	Meeting Avenir femmes Petté
	1	Workshop at Maroua University
	2	Workshop and training: 16-17 December 2022
Number of participants in events organized by proponents and implementing partners	72	Producers Transformers Collectors Civil servants
a) Number of men	53	
b) Number of women	19	
Number of climate technology RD&D related events	1	Solar system to supply milk conservation unit
Number of participants in climate technology RD&D events	49	Participants in Pette, including producers, collectors and transformers
a) Number of men	36	
b) Number of women	13	
Number of training organized by proponents and implementing partners	<b>3</b>	Workshops (2) to promote and set up sustainable and resilient dairy chains for the municipalities of Petté and Wina. December 16-17, 2022  Organization of the dairy value chain actors in the municipality of Wina
Number of participants in trainings organized by proponents and implementing partners	72	Producers Transformers Collectors Civil servants
a) Number of men	49	
b) Number of women	21	

Total number of institutions trained	3	<ul style="list-style-type: none"> <li>• <i>Municipalities of Pette and Wina</i></li> <li>• <i>GIC Avenir Femmes (NGO)</i></li> </ul>
a) Governmental (national or subnational)	2	<i>Ministry of Livestock Municipalities of Pette and Wina</i>
b) Private sector (bank, corporation, etc.)	0	N/A
c) Nongovernmental (NGO, University, etc.)	1	<i>GIC Avenir Femmes</i>
Percentage of participants reporting satisfaction with CTCN training (from CTCN training feedback form)	<b>Not implemented</b>	<i>Satisfied= 4+ on 5-pt scale</i>
Percentage of participants reporting increased knowledge, capacity and/or understanding as a result of CTCN training (from CTCN training feedback form)	<b>Not Implemented</b>	<i>Increased knowledge, capacity and/or understanding= 4+ on 5-pt scale</i>
a) Percentage of men		
b) Percentage of women		
Total number of deliverables produced during the assistance (excluding mission, progress and internal reports)	21	<p><i>D.1. Detailed work plan of all activities, deliveries, outputs, deadlines and responsible person and detailed budget</i></p> <p><i>D.2. Monitoring and Evaluation Plan</i></p> <p><i>D.3. Two-page CTCN Impact Description</i></p> <p><i>D.1. Excel for data collection classified by years, production centers, production phase and report of the kick-off workshop</i></p> <p><i>D.2. SWOT Analysis</i></p> <p><i>D.3. Diagnosis of technological needs based on SWOT analysis.</i></p> <p><i>D.1. Draft 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).</i></p> <p><i>D.2. Final 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).</i></p> <p><i>D.1. A master plan for the conservation of dairy products with the support of clean technologies from the commune of Pétte</i></p> <p><i>D.2. A master plan for the conservation of dairy products with the support of clean</i></p>

		<p><i>technologies from the commune of Wina.</i></p> <p><i>D.3. A report with recommendations to optimize the implementation costs between the 2 communes</i></p> <p><i>D.1. Socio-economic study, including the gender impact of the proposed master plan for the commune of Pétté</i></p> <p><i>D.2. Socio-economic study, including the gender impact of the proposed master plan for the commune of Wina</i></p> <p><i>D.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.</i></p> <p><i>D.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.).</i></p> <p><i>D.2. Report of the demonstration workshop of the selected technologies and presentation of the master plan with the list of participants, photos, presentation etc.</i></p> <p><i>D.3. An infographic guide to the technical and technological solutions proposed for each stage of conservation (production, storage, transport).</i></p> <p><i>D.4. Closure and Data Collection Report</i></p> <p><i>3 progress reports</i></p>
<p>a) Number of communication materials, including news releases, newsletters, articles, presentations, social media postings, etc.</p>	<p>1</p>	<p><i>1 article being written but not printed yet.</i></p>
<p>b) Number of tools and technical documents strengthened, revised or developed</p>	<p>3</p>	<p><i>Best practices in milking and milk collection</i></p> <p><i>Best practices in milk transportation</i></p>

		<i>Best practices in milk storage</i>
c) Number of other information materials strengthened, revised or created (For example training and workshop reports, Power Points, exercise docs etc.)	3	<i>Best practices in milking and milk collection</i>
4		<i>Best practices in milk transportation</i>
		<i>Best practices in milk storage</i>
Total number of policies, strategies, plans, laws, agreements or regulations supported by the assistance	N/A	N/A
a) Adaptation related	N/A	N/A
b) Mitigation related	N/A	N/A
c) Both adaptation- and mitigation related	N/A	N/A
<b>Anticipated</b> number of policies, strategies, plans, laws, agreements or regulations proposed, adopted or implemented as a result of the TA	N/A	N/A
a) Adaptation related	N/A	N/A
b) Mitigation related	N/A	N/A
c) Both adaptation- and mitigation related	N/A	N/A
<b>Anticipated</b> number of technologies transferred or deployed as a result of CTCN support	2	<ul style="list-style-type: none"> <li>• <i>Technology groups: Solar and Livestock management</i></li> <li>• <i>Technology: Solar PV</i></li> <li>○ <i>Cooled storage unit of Milk using solar photovoltaic energy (including panels, batteries and inverter)</i></li> <li>○ <i>Refrigerator for conservation of milk and dairy products</i></li> </ul>
<b>Anticipated</b> number of collaborations facilitated or enabled as a result of technical assistance	3	<i>Private sector, University, NGO</i>
a) Number of South-South collaborations	1	<i>University of Maroua Help a community</i>
b) Number of RD&D collaborations	1	<i>Université de Maroua M&amp;T Global Energy Help Community</i>
c) Number of private sector collaborations	1	<i>Freecold M&amp;T Global Energy WeeY-Energy</i>
Number of countries with strengthened National System of Innovation as a result of CTCN support	N/A	N/A
<b>Insert any additional indicators here</b>	N/A	N/A

## B. Core impact indicators

Please fill in the tables for anticipated impacts of the CTCN assistance. Every technical assistance should contribute to at least one of the indicators below. For guidance on how to report on core indicators see the '[M&E Guidance Document for TA Implementers](#)'.

<b>Core indicator 1</b>	<b>Anticipated metric tons of CO<sub>2</sub> equivalent (CO<sub>2</sub>e) emissions reduced or avoided as a result of CTCN TA</b>  <i>Please add your calculations in word or excel format as an Annex to this Closure Report, where applicable.</i>	
	Anticipated metric tons of CO <sub>2</sub> e reduced or avoided as a result of the TA <b>on annual basis</b>	Anticipated metric tons of CO <sub>2</sub> e reduced or avoided as a result of the TA <b>in total</b>
Quantitative value (emissions reductions)	<i>Total number (numerals only, no rounding or abbreviations)</i>	<i>Total number (numerals only, no rounding or abbreviations)</i>
Unit	tCO <sub>2</sub> e	tCO <sub>2</sub> e
<b>GHG assessment boundary (project emissions)</b>  Identify expected post-TA activities, associated effects and assess boundary for quantification of GHG emission reductions	N/A	N/A
<b>Baseline emissions</b>  Describe baseline scenario, baseline candidates, emission factors and emissions calculated	N/A	N/A
<b>Methodology</b>  Explain the method or process of verifying the indicator and how data was gathered	N/A	N/A
<b>Assumptions</b>  Describe assumptions made during calculation and quantification of GHG reductions	N/A	N/A

<b>Core indicator 2</b>	<b>Anticipated increased economic, health, well-being, infrastructure and built environment, and ecosystems resilience to climate change impacts as a result of technical assistance</b>  <i>Please provide a <b>qualitative</b> description of the anticipated impacts on the categories below</i>
<b>Infrastructure and built environment</b> Anticipated increased infrastructure resilience (avoided/mitigated climate induced damages and strengthened physical assets)	<ul style="list-style-type: none"> <li>○ Cooled storage unit of Milk using solar photovoltaic energy (including panels, batteries and inverter)</li> <li>○ Refrigerator for conservation of milk and dairy products</li> </ul>

<p><b>Ecosystems and biodiversity</b> Anticipated increased ecosystem resilience (areas with increased resistance to climate-induced disturbances and with improved recovery rates)</p>	<p><b>Ecosystems and biodiversity</b> N/A</p>
<p><b>Economic</b> Anticipated increased economic resilience (e.g. less reliance on vulnerable economic sectors or diversification of livelihood)</p>	<p>The most important here is the economic development of agriculture and the milk sector, which is still at almost zero level and which has a very big potential of development, to allow Cameroon to go towards food self-sufficiency</p>
<p><b>Health and wellbeing</b> Anticipated increased health and wellbeing of target group (e.g. improved basic health, water and food security)</p>	<p>The increasingly of dairy production will improve basic nutrition and health, mostly for infants and children under 5 years old</p>

Core indicator 3	Anticipated number of direct and indirect beneficiaries as a result of the TA	
	Quantitative value	Means of verification
Total beneficiaries	<p>300 to 1000 in Pette and Wina</p> <p>10 000 to 20000 in Far North</p> <p>100 000 to 200 000 in the whole country</p>	<p>Increasingly of dairy production and derivative products</p> <p>Presence of collectors in the dairy value chain in Wina;</p> <p>Number of transformation units</p> <p>Number of cooled storage units using solar technology;</p> <p>Press releases</p>
Number of adaptation beneficiaries	N/A	N/A
Number of mitigation beneficiaries	N/A	N/A
Number of adaptation-and mitigation beneficiaries	N/A	N/A

Core indicator 4	Anticipated amount of funding/investment leveraged (USD) as a result of TA (disaggregated by public, private, national, and international sources, as well as between anticipated/confirmed funding)			
	Quantitative value confirmed in USD	Quantitative value anticipated in USD	Qualitative description List the institutions, timelines, and description or title of the investment	Methods Describe methods used for quantification of funds leveraged
Total funding	Total number in USD	Total number in USD (numerals only, no		

	<i>(numerals only, no rounding or abbreviations)</i>	<i>(rounding or abbreviations)</i>		
Anticipated amount of public funding mobilised from national/domestic sources	N/A	N/A	N/A	N/A
Anticipated amount of public funding mobilised from international/ regional sources	N/A	N/A	N/A	N/A
Anticipated amount of private funding mobilised from national/domestic sources	N/A	N/A	N/A	N/A
Anticipated amount of private funds mobilised from international/regional sources	N/A	N/A	N/A	N/A

**Annex 2 (for internal use – to be filled in by the CTCN)**

**CTCN evaluation**

This section will be completed **by the relevant CTCN Technology Manager**.

- Evaluation of the timeliness of the TA implementation as measured against the timeline included in the response plan;
- Evaluation of TA quality as defined in the response plan;
- Overall performance of the Implementers;
- Overall engagement of the NDE and Proponent;
- Lessons learned on the CTCN process and steps taken by the CTCN to improve.