

Kingdom of Bhutan

Commercial Agriculture and Resilient Livelihoods Enhancement Programme (CARLEP)

Knowledge Management Strategy

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**KINGDOM OF BHUTAN**

# COMMERCIAL AGRICULTURE AND RESILIENT LIVELIHOODS ENHANCEMENT PROGRAMME

## KNOWLEDGE MANAGEMENT (KM) STRATEGY

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**ROYAL GOVERNMENT OF BHUTAN**

**MINISTRY OF AGRICULTURE & FORESTS**

**COMMERCIAL AGRICULTURE AND RESILIENT LIVELIHOOD ENHANCEMENT  
PROGRAMME (CARLEP)**

**KNOWLEDGE MANAGEMENT STRATEGY**

**December 2016**

Office of the Programme Management (OPM)

Wengkhar, Mongar

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Tashi Wangdi

Programme Director

OPM, CARLEP, Wengkhar

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## **ABBREVIATIONS AND ACRONYMS**

### **ABBREVIATIONS**

ASAP	Adaptation for Smallholder Agriculture Programme
ARDC	Agriculture Research and Development Centre
AWPB	Annual Work Plan and Budget
CAHW	Community Animal Health Worker
CARLEP	Commercial Agriculture & Resilient Livelihoods Enhancement Programme
CSA	Climate Smart Agriculture
DAO	Dzongkhag Agriculture Officer
DLO	Dzongkhag Livestock Officer
EA	Extension Agent
FCBL	Food Corporation of Bhutan Limited
GKMO	Gender & Knowledge Management Officer
ICS	Information and Communication Services
IFAD	International Fund for Agricultural Development
IMS	Information Management System
IT	Information Technology
KM	Knowledge Management
KMO	Knowledge Management Officer
MAGIP	Market Access and Growth Intensification Project

M&E	Monitoring & Evaluation
MoAF	Ministry of Agriculture & Forests
MTR	Mid-Term Review
OPM	Office of the Programme Management
PCR	Project Completion Report
PCU	Project Coordination Unit
PDR	Programme Design Report
RAMCO	Regional Agricultural Marketing and Cooperatives Office
RLDC	Regional Livestock Development Centre

## **ACRONYMS**

Dzongkhag    District

Gewog        Block

### PROGRAMME AREA MAP

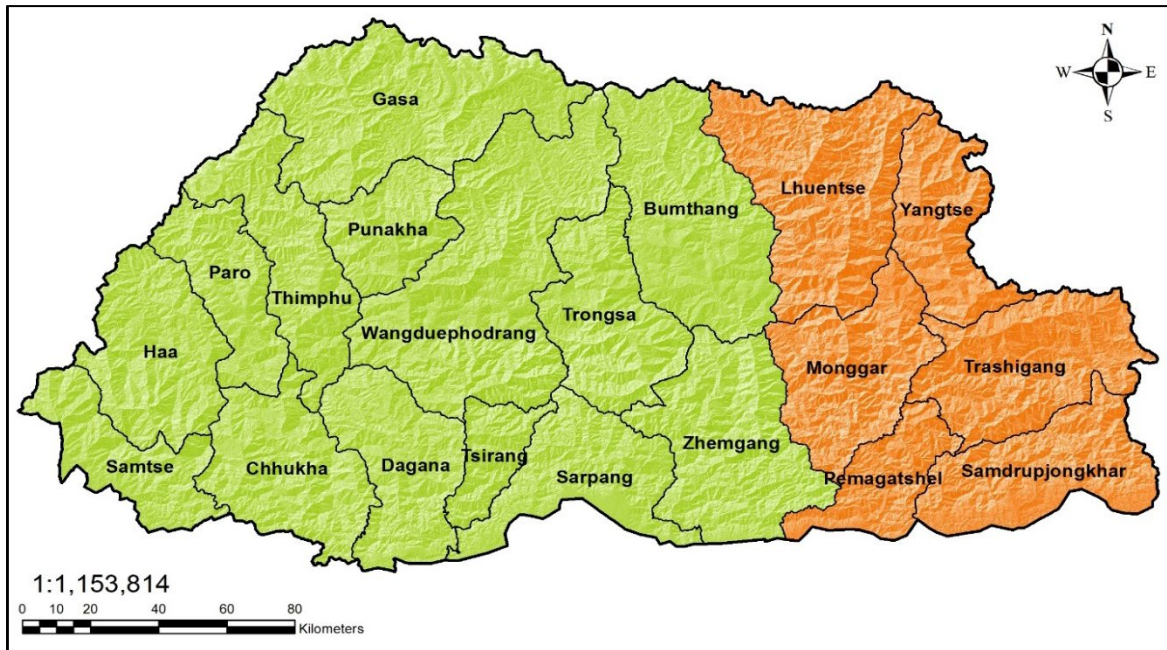
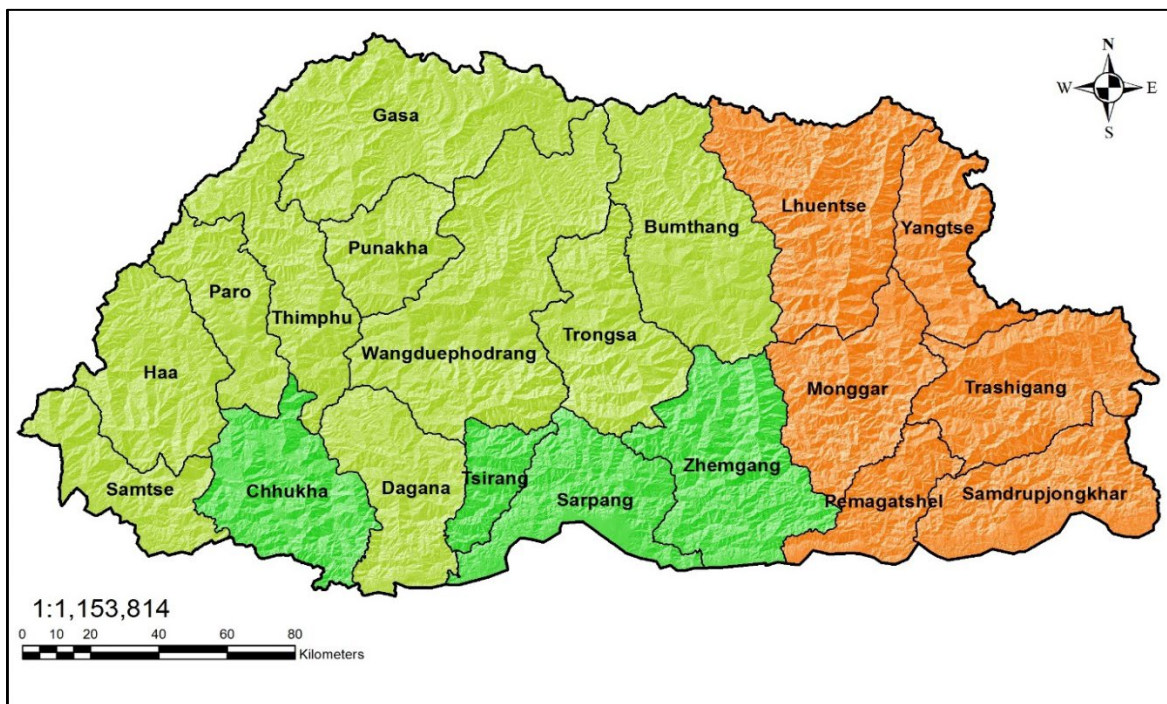


Figure 1: Map of the Programme area - Dairy Value Chain





## **KNOWLEDGE MANAGEMENT STRATEGY**

### **1. Introduction**

#### ***a. Context***

The Commercial Agriculture and Resilient Livelihoods Enhancement Programme (CARLEP), funded by the International Fund for Agricultural Development (IFAD), aims to facilitate the transformation of a subsistence-based rural agricultural economy into a sustainable value chain and market driven productive sector by promoting climate smart approaches in agriculture and strengthening capacities of communities and local institutions. It is built on the lessons learned and the achievements of the past projects and programmes supported by IFAD. Unlike previous interventions, which focused on increased agricultural production, CARLEP makes a basic shift in approach towards marketing and climate resilient farming practices.

The goal is to sustainably increase smallholder farmers' incomes and reduce rural poverty. This will be achieved through climate resilient commercialized production of crops and livestock by programme households linked to nationally organized value chains and marketing systems. The objective is "increased returns to smallholder farmers through climate resilient production of crops and livestock in nationally organized value chains and marketing systems".

The CARLEP came into effect on 11 December 2015 and covers a period of seven years (2015-2022). The total programme costs of USD 31.5 million is financed as follows: an IFAD loan of USD 8.25 million; an IFAD grant of USD 1.05 million, a grant from the Adaptation for Smallholder Agriculture Programme (ASAP) of USD 5.0 million, a contribution from beneficiaries of about USD 0.6 million, and USD 5.7 million from the Royal Government of Bhutan (RGoB) and USD 4.8 million from Food Corporation of Bhutan Limited (FCBL). CARLEP has three interlinked components: 1) Market-led sustainable agricultural production, 2) Value chain development and marketing, and 3) Institutional support and policy development.

The programme is coordinated and managed by the Office of Programme Management (OPM) based at Wengkhar in Mongar. The key implementing partners are Food Corporation

of Bhutan Limited (FCBL), Regional Agricultural Marketing and Cooperatives Office (RAMCO), Agriculture Research and Development Centre at Wengkhar, Regional Livestock Development Centre (RLDC) at Kanglung and six Programme Dzongkhags (Lhuntse, Mongar, Pema Gatshel, Samdrup Jongkhar, Trashigang and Trashi Yangtse).

### ***b. Rationale***

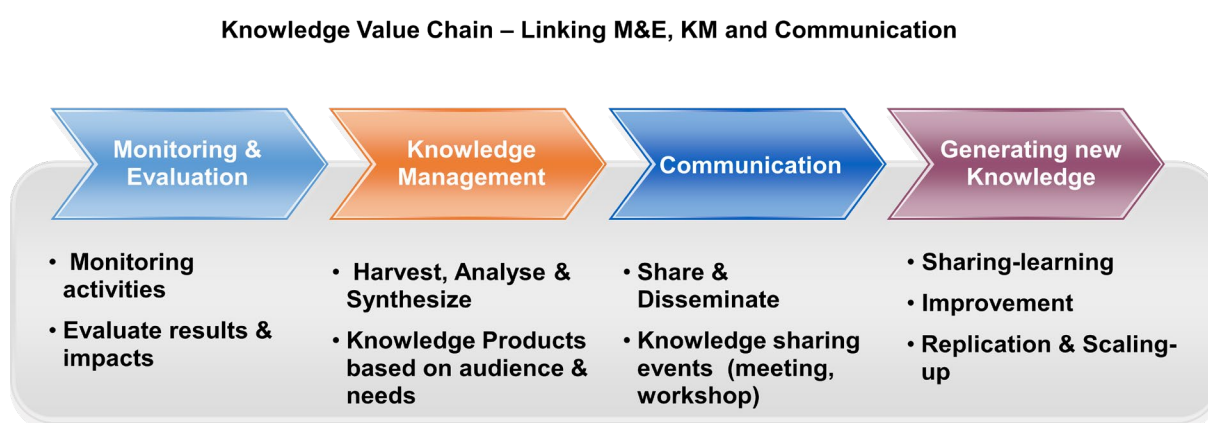
The Programme Design Report (PDR) of CARLEP clearly recognizes the importance of Knowledge and the need to develop Knowledge Management (KM) Strategy. The key reasons why KM is considered important in CARLEP and how a KM strategy would contribute to the overall achievement of the programme objectives are as highlighted below.

- **Improve programme performance:** KM enables programme to share success and failure stories, cases and best practices can be replicated and mistakes avoided during the course of the programme implementation; by making technical know-how available and learning from other's experiences, better and faster decisions can be made thereby saving time, money and effort;
- **Increase the visibility of the programme interventions:** If relevant stakeholders become increasingly aware of the work done under the project, they can share appropriate knowledge and solutions based on their own experiences with similar projects. Inversely, relevant stakeholders can learn from the project;
- **Promotes collaboration and partnership:** Generation of knowledge products will require collective efforts from all the knowledge actors and programme implementers. In addition, knowledge sharing and learning events will be organized which will enable better learning from each other thereby fostering improved collaboration and partnership.
- **Provide evidence for policy level decision-making:** As a part of KM products and based on sound information and data, various policy briefs and notes will be developed, which would help decision makers to make informed and evidence based decision and policies. This is directly relevant to the mainstreaming of lessons learned and experiences gained on value chain and climate smart agriculture into national policies and programmes.
- **Stimulate innovations:** Under CARLEP various innovations such as Climate Smart Agriculture (CSA), Permaculture, Biogas, e-agriculture, value chain, community animal health workers (CAHW), lead farmer model, etc. will be promoted in the programme

Dzongkhags. All these innovations will require proper documentation regarding their successes and failures for learning, scaling up and further innovations.

## 2. Knowledge Management (KM) Concept

KM is about facilitating the processes by which knowledge is created, shared and used in changing people's attitudes, behaviors and work patterns thereby improving the performance and effectiveness of the programme. This facilitation under CARLEP will be guided by the IFAD knowledge value chain concept which advocates strong connection between KM and M&E. The current weakness is that there is no generation of knowledge from the M&E, let alone its utilization for project management purposes. Therefore, under CARLEP the M&E system will adopt the value-chain approach towards knowledge generation, sharing and utilization. The Figure 3 below illustrates the knowledge value chain concept.



**Figure 3: Knowledge Value Chain Concept**

## 3. Development process of the KM strategy

This Strategy was developed following five days of sensitization and writeshop held from 12-16 December 2016 at Agriculture Research and Development Sub-Centre, Lingmethang. The write-shop was attended by 32 participants from six programme Dzongkhags (Dzongkhags Agriculture Officers (DAOs), Dzongkhag Livestock Officers (DLOs) and Extension Agent (EA) representatives), ARDC Wengkhaz, RLDC Kanglung, RAMCO and the Office of the Programme Management (OPM), CARLEP (see Annex 1 for detail list of Participants). Based on the inputs provided by the participants during the write-shop and

further reference made to IFAD KM Strategy, MAGIP KM Strategy and its lessons learned, the present document was drafted<sup>1</sup>.

It may however be noted that most of the KM activities reflected in the strategy document are targeted for the first two years of the programme. The Strategy will be revised and updated based on the review during the Mid-term review (MTR) and the lessons learned from it. Thus the Strategy will remain a dynamic document.

#### **4. Lessons Learned**

The MAGIP Project Coordination Unit (PCU) based at the Secretariat of the Ministry of Agriculture & Forests (MoAF) has done its best in terms of KM. However, due to weak KM culture and learning system in place, the project management team had great difficulty in fulfilling the requirements during the preparation of Project Completion Report (PCR). Therefore, it would be important to draw key lessons from MAGIP KM Strategy implementation and take forward in CARLEP. Some of the key lessons learned from MAGIP KM include the following:

- **KM Strategy not implemented seriously:** Although the KM Strategy was developed during the second year of the Project, its implementation remained a serious weakness. Most of the knowledge products and the related activities reflected in the strategy largely remained underdeveloped or unimplemented. There was no KM audit too to check how much of the KM Strategy was implemented.
- **Limited KM products:** The development of knowledge products under MAGIP KM Strategy was limited to news articles, case study reports and other reports (supervision mission reports, progress reports, consultant reports, etc.).
- **No full-time KM officer:** There was no full time dedicated KMO to champion or spearhead the implementation of KM Strategy. The part-time, semi-dedicated KM focal point from the Information and Communication Section (ICS) of the MoAF could not do much because of her full-time responsibility. In fact, the failure to achieve the preceding two was mainly due to lack of a full time KMO. Even the M&E officer, like other component managers were on part-time basis and hence lacked collective

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<sup>1</sup> By Mr. Lhap Dorji, Programme Director, ARDC Wengkhari and Mr. Tashi Wangdi, Programme Director, CARLEP

effort and commitment in initiating the knowledge generation, sharing and learning.

- **Poor collaboration and partnership:** MAGIP failed to take on board its major counter parts such as ARDC Wengkhari and RLDC Kanglung who could have supported meaningfully in project implementation and in KM. Particularly, in KM, the role of different knowledge actors is critical.
- **No common platform:** The main KM tools or infrastructure used for knowledge sharing and learning were project e-mail account ([pcumagip@gmail.com](mailto:pcumagip@gmail.com)) and facebook account (<http://www.facebook.com/PCUMAGIP>), MoAF website ([www.moaf.gov.bt](http://www.moaf.gov.bt)), IFAD Asia portal (<http://asia.ifad.org>) and Dropbox for MAGIP. Most of these were not fully used as expected. The project did not have its own website, which otherwise would have served as a common platform for KM.
- **No knowledge sharing and learning events:** Although targeted in the KM Strategy, not many of knowledge sharing and learning events took place in MAGIP. As a result, the knowledge generation, sharing and utilization was also very limited.
- **No linkage between KM and M&E:** One of the purposes of M&E is to contribute towards strengthening the basis for managing results, foster learning and generate knowledge for the improvement of overall performance and quality of results of the project. However, inadequate attention was paid in the previous efforts. M&E was used only to report the activities results and outputs. No critical reflections were made to draw learning and generate knowledge.

From the foregoing lessons, it is clear that the project should recognize the importance of KM and put in place necessary conditions including human resource, incentives and infrastructure to ensure successful implementation of KM. Most critical of all is the need to link up KM with the M&E, which was grossly missed in MAGIP. Knowledge should be generated based on the evidence from the M&E and other reliable means.

## 5. Vision or Goal

The overall goal of the KM strategy is to *“Improve decision-making and performance of CARLEP in commercializing agricultural production and sustainably increase smallholder*

*producer's incomes and reduce rural poverty”.*

## **6. Expected Outcomes**

The implementation of this KM strategy is expected to contribute to the following three main outcomes, among others:

- *Improved programme performance and results through enhanced learning, knowledge sharing and dissemination/communication;*
- *Enhanced information management system (IMS) which will ensure better access to reliable information and knowledge in relation to the programme components; and*
- *Better engagement, partnership and collaboration with the programme implementing partners in KM (knowledge generation – sharing – utilization).*

## **7. Activities and Outputs**

The expected outputs and activities of the KM strategy will be presented below in terms of KM culture, processes, infrastructure, and partnerships.

### **a. Knowledge Management Culture**

**Expected output:** *A KM culture is promoted whereby generating, sharing and using knowledge is increasingly considered by the programme staff and implementing partners as an integral part (and not an add-on) of their daily work.*

The absence of a vibrant KM culture in past projects has resulted in poor documentation and knowledge sharing which is considered to be a major lesson for CARLEP to take on board. The implementation of CARLEP will attempt to institute a dynamic KM culture in rural development in the region.

In order for creating KM culture in and from CARLEP implementation, firstly, a full-time Gender & KM Officer (GKMO) is appointed with the OPM who will liaise closely with the component managers (CMs) at the OPM, focal officers at the supporting agencies namely ARDC, RLDC, RAMCO and the Dzongkhag Sector Heads. The establishment of CARLEP website will serve as a common platform for the implementing agencies. The GKMO and the

Programme Support Officer (PSO) in collaboration with the Information and Technology (IT) Associates at ARDC will manage the website. An additional feature in the websites allowing field updates by extension and Dzongkhag, other implementing agencies in the region could enable quick flow of data and information. Adequate awareness to the features will be provided to field staff and implementing agencies.

KM section of the OPM will also facilitate information editing and make suitable for mass dissemination. In addition to physical and financial reporting, Dzongkhags and gewogs will be encouraged to provide detail case studies and write ups of successful case linked to some of the key achievements reported in respective quarters. These cases apart from dissemination will be archived for future references.

The OPM in collaboration with line agencies such as ARDC and RLDC will organise appropriate trainings of field staff in information collection, compilation and Knowledge Product Development. Some of these stories and any other uploads such as images capturing project interventions will be assessed and those dedicated contributors from the field will be rewarded by instituting a system of awarding the contributors such that a knowledge development and management culture is instituted.

One focal extension staff among the existing is appointed as a field reporter who will not only send in field updates and information uploads but will also liaise up with other field staff in respective Dzongkhags. The appointment of these focal increase over the years depending on the trainings on Knowledge Product (KP) Developments are conducted such that over the program period, field staff and implementing agencies roles in providing knowledge management are not only reinforced but are also activated. In order for this role to translate into actions, the KM section of the OPM will facilitate the process by reminding, assisting the field staff in guidance and collection of KPs or useful information that can be converted into KPs.

In view of the importance to give due recognition to intellectual rights, in all KP Developments, the main provider(s) of data and information that results in a Knowledge Product shall be authors or contributors and shall be acknowledged.

## ***b. Knowledge Management Processes***

**Expected outputs:** *Processes to learn and share knowledge are strengthened and effectively used; Capacity of project staff to generate, share and use knowledge is enhanced; Implementing staff are engaged in generating and sharing KPs*

KM for CARLEP will be based on theme based development of KPs following a participatory development process involving all key stakeholders of the program implementation and with IFAD. Key thematic areas and KPs identified at the strategy development write shop is presented in Table 1.

**Table 1: Thematic based KP Development & Dissemination**

<b>KM Themes</b>	<b>KM Products</b>	<b>Area of focus (Content)</b>	<b>Dissemination/communication</b>
<b>Gender</b>	Case Stories, video clips, Assessment Reports	<ul style="list-style-type: none"> <li>• Success stories of women headed FGs and their role in farming</li> <li>• Women led Farmer to farmer extension in agro processing</li> <li>• Women in seed processing (vegetable, maize, nurseries etc)</li> <li>• An assessment of user friendly farming technologies, tools and equipment's with emphasis to gender</li> <li>• Role of women in farming</li> </ul>	<ul style="list-style-type: none"> <li>• MoAF/CARLEP Websites, News letters</li> <li>• Half yearly and Annual Reports</li> <li>• Assessment Reports</li> </ul>
<b>Youth</b>	Case stories News Clips	<ul style="list-style-type: none"> <li>• Youth and farming, entrepreneurship and farm business</li> </ul>	<ul style="list-style-type: none"> <li>• MoAF/CARLEP Websites, mass media, RNR news letters</li> </ul>
<b>Poverty</b>	Case study	<ul style="list-style-type: none"> <li>• Livelihood enhancement from poverty targeted interventions</li> </ul>	<ul style="list-style-type: none"> <li>• MoAF/CARLEP Websites, Broadcast</li> </ul>



		(Benefits of PSF and SIF, Climate smart Interventions)	mass media, RNR news letters
<b>Climate Smart Agriculture</b>	Case study, stories, Reports	<ul style="list-style-type: none"> <li>• Vulnerability Assessment</li> <li>• Climate Resilient Farming (focus on Indigenous Pig, Poultry, Goat, crops, bio gas, soil and water conservation, fodder improvement)</li> <li>• Livelihood enhancement</li> <li>• Traditional Knowledge's and practices and climate resilience</li> </ul>	<ul style="list-style-type: none"> <li>• MoAF/CARLEP Websites, RNR news letters</li> </ul>
<b>Value chain (Vegetable and Dairy)</b>	Training and extension Manuals, Case study, Posters, Market related study Reports  Video Clip	<ul style="list-style-type: none"> <li>• Marketing and Linkages</li> <li>• Product Diversification, group marketing initiatives, value chain coverage, marketing outlets</li> <li>• Staggered vegetable production (year-round vegetable production and marketing)</li> </ul>	<ul style="list-style-type: none"> <li>• MoAF/CARLEP Websites, Training programs, fairs</li> </ul>
<b>Groups/Coops</b>	Training manuals  Case study	<ul style="list-style-type: none"> <li>• Capacity development, Sensitization and mobilization of new FGs</li> <li>• Up-gradation of FGs</li> <li>• Linkages with market outlets</li> <li>• Women led groups</li> </ul>	<ul style="list-style-type: none"> <li>• Training, demonstration, meetings, Exposure trips</li> </ul>
<b>Innovations and best practices</b>	Case studies, Media clips,	<ul style="list-style-type: none"> <li>• Integrated farming practices (Agricultural and Livestock farming, integrated crop.</li> <li>• Innovations (such as but not limited</li> </ul>	<ul style="list-style-type: none"> <li>• Training, use of manuals, Practical demonstration, meetings, exchange</li> </ul>

		to cattle urine as bio pesticides, fertilizers, urea molasses mineral block (UMMB), total mixed ration (TMR), efficient water use, soil fertility, erosion control, crop diversification) <ul style="list-style-type: none"> <li>• Land development and management</li> </ul>	visits
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The KM process shall deploy a variety of mechanisms such as open sharing of information and updates on the web portal, periodic updates of additional write ups for QPRs and ARs, case studies, photographic and video records. The collection and archiving of this information will be translated into KPs at the OPM and disseminated further to wider audiences. A two-pronged development and management process will be followed as outlined in Figure 4.

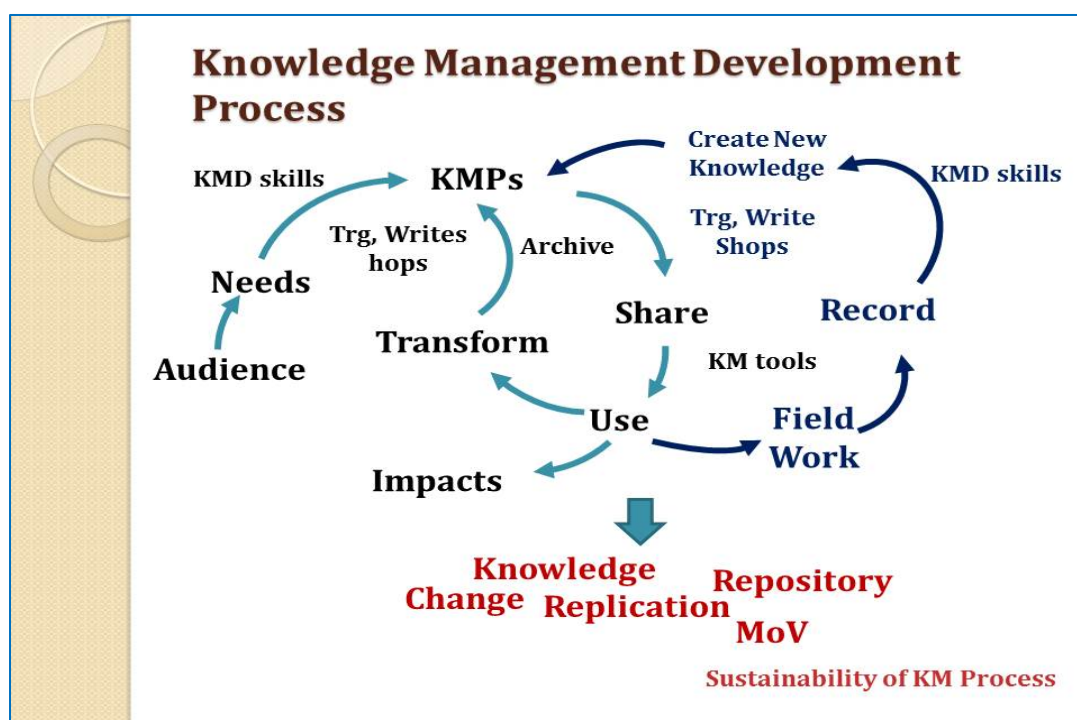


Figure 4: The Knowledge Management & Development Process

KPs shall be developed based on the needs led by the KM unit at OPM using existing skills and disseminated as well as new KPs developed in the process of program implementation through field works, recordings and creation of KPs. Regular and consistent M&E of activities shall greatly contribute to KP developments.

The OPM will coordinate KM development skills and learning events such as trainings, workshops, fairs and provide adequate funds as input to KMD process. KPs will also be subjected to transformation in response to suit its utility with audiences and better chances of meeting its end results of knowledge enhancement, bringing about change in farming, better management system through archiving for reference and dissemination.

### ***c. Knowledge Management Infrastructure***

**Expected output: A KM infrastructure that considers both formal and informal ways that promotes effective KP development, storage and sharing will be used.**

In line with the opportunities of information technology platform both formal and informal greatly enabling better information management, communication and knowledge-sharing, CARLEP will explore potentials of existing sources of knowledge and skills. The program will provide platforms and adequate supports to facilitate effective knowledge development and sharing mechanisms. CARLEPs will use its website ([www.carlep.gov.bt](http://www.carlep.gov.bt)) as the main platform for sharing and management of KPs developed.

The following KM infrastructure (i.e. physical infrastructure) shall be used:

- Internet (although not easily accessible to all stakeholders) – mainly use of emails backed up by fax transmission. Informal channels offered by growing popularity of social media such as Facebook and WeChat will be used for information sharing and updates. The existing CARLEP WeChat Group can be enlarged or sub groups formed. Existing face books pages of the implementing agencies and extension staff in the region will be looked up as a major ignition for KP development
- MoAF website ([www.moaf.gov.bt](http://www.moaf.gov.bt)) mainly for information dissemination with periodic updates
- IFAD Asia portal (<http://asia.ifad.org>), which is an interactive portal for IFAD partners and stakeholders by providing periodic updates

- Google drive for e storage of documents and sharing (such as progress reports, field monitoring reports, reports of workshops, trainings, studies/research, supervision/support missions, MTR, completion review), training materials, brochures, posters, manuals, newsletters, case studies, minutes of meetings, extension leaflets, audio-visual materials (such as video-clip and documentary), etc.
- Knowledge materials (e.g. training materials, posters, brochures, video clips, etc.) that are relevant to target communities/beneficiaries and extension staff will also be displayed in the RNR centres at Geog level and made easily accessible.
- KM Unit at OPM shall maintain a repository of KPs and put in place a systematic record of KPs at the Dzongkhag and regional levels with the implementing agencies

#### ***d. Partnerships for Knowledge Management***

##### **Expected output: Strategic partnerships are strengthened for KM**

The implementation of CARLEP will foster linkage development with the existing partner agencies regional, national and international. While efforts will be put in to maintain and enhance linkages at international levels through the IFAD head office and regional offices, the implementation will mainly focus on the partners on the ground. Partner agencies such as the ARDC Wengkhaz, RLDC Khangma, RAMCO Mongar, Dzongkhags and other Area Development Projects through these agencies and through MoAF.

Existing KPs developed in the past through IFAD interventions or by the partner agencies with relevance to CARLEP shall be exchanged and utilized. Strengths and opportunities for complementarity in KM and dissemination will be explored. Farmers as or major target audience in the program, partnerships with key farmers, group leaders and local leaders with attention to women will be established through the network of extension staff as well as through the increasing field visits of the CMs from the OPM.

Media agencies playing the key role of mass dissemination, the OPM shall also keep links with media representatives in the region and link with them directly or their engagements in the field work coverages coordinated by the implementing agencies. The Program Director assisted by the KMO shall be the main media spokesperson and shall operate under the existing media engagement norms of both MoAF and IFAD.

***e. KM products dissemination and communication***

***Expected Output: Appropriate dissemination and communication channels identified and used***

The implementation of CARLEP will focus on the use of existing dissemination channels such as radio, television, and channels that promote paperless communication. A two-way channel of communication between and among the implementing agencies shall be established by reviewing and collecting feed backs on KPs that will be put to use in transformation of KPs.

The OPM will explore use of strategic locations and such as farm shops and other public places to show case and disseminate KPs and information generated from the program. Periodic fairs in the program areas shall be organised to disseminate information and demonstrate technologies in climate resilience. While most formats for KM products will be mainly print based but with incorporation of illustrations and graphics unlike text based in the past, attempt will also be given to use channels such as Radio, Television and informal social media networks for dissemination. In fact, putting social media channels in proper use by using it as project information dissemination in itself could an innovation that could be studied at the end of the program and lessons be drawn and replicated if found as an effective dissemination tool.

Formal meetings, workshops and trainings will be organized as part of knowledge sharing and learning events. Efforts will also be made by the OPM and the support agencies to participate in the Dzongkhag sector coordination meetings (Agriculture and Livestock) for information dissemination and program implementation advisory.

***f. Staff capacity building***

***Expected Outputs: KM skills and approaches identified***

Appropriate training of staff on KM and KP development will be organized by the OPM allocating adequate funds to enhance skills and competencies of field staff. Training programs will be facilitated by resource persons from within MoAF as well as outside MoAF

through local consultancy firms especially for KM development tools such as graphics and illustrations, use of IT tools in KP development. Participation to these skills developments will be gender mainstreamed by involving equal representation of both men and women participants.

## 8. Implementation

### *a. Implementation steps and arrangements*

The overall responsibility for the successful implementation of the KM strategy rests with the OPM. The Programme Director and the KM team should provide strong and visible leadership role in spearheading the implementation of the KM strategy. It will also require strong partnerships from programme partners – ARDC, RLDC, Dzongkhags, RAMCO, FCBL and the farmers' organizations as KM is a cross cutting theme and everyone has a crucial role to play for successful implementation of the strategy. Most of the activities envisaged in the strategy document will strengthen these partnerships. The key KM activities with clear timeframe and responsibilities are presented in Table 2.

**Table 2: Details of KM Activities with Timeframe & Responsibility**

Key KM Activity	Timeframe	Responsibility
Training on quantitative and qualitative data collection, analysis and report writing including case studies and online articles	2017	OPM
Collection of field work data and information as per AWPB	2016-2018	Dzongkhags, ARDC, RLDC, RAMCO, FGs
Development of training manuals	2016-2017	ARDC, RLDC, RAMCO
Development of Guidelines	2016-2017	ARDC, RLDC,

		RAMCO, OPM
Regular update of news and events in CARLEP website and Facebook, IFAD/ASIA Portal and Facebook	Regular	GKMO and PSO
Preparation of audio and video documentation	Need based	OPM, ARDC, RLDC
Organizing Knowledge sharing and learning events (meetings, workshops, seminar, conferences)	Every year	OPM
Design incentive system to encourage and recognize knowledge sharing and learning by staff involved in the programme implementation	2016-2017	OPM
Organize and facilitate case study writeshop	Every year	OPM, ARDC, RLDC
Organize institutional visit to other project sites both within and outside country for cross project learning on KM	2017-2018	OPM
Procurement and supply of KM tools and equipment	2017-2018	OPM
Conduct Annual KM Audit to ensure implementation of activities envisaged in the KM Strategy	Every year	OPM and IFAD mission
Revision of KM Strategy	2018-2019	OPM
Publication and dissemination of KM Products	Every year	OPM

### ***b. Costs and Financing***

Since most of the activities envisaged in the strategy document will be mainstreamed into the AWPB of the respective implementing partners financed under the programme, an

additional cost should not arise. The OPM will ensure that the KM activities are adequately and appropriately reflected in the AWPB of the agencies. However, there are some activities that will require additional costs, which will have to be financed by the programme as part of M&E and KM. The details of KM activities that will require additional costs are as presented in the Table 3 below.

**Table 3: Key KM Activities and the Estimated Costs**

<b>Key KM Activity</b>	<b>Estimated budget (Nu. million)</b>
Training on quantitative and qualitative data collection, analysis and report writing including case studies and online articles	1.500
Development of Guidelines	0.500
Preparation of audio and video documentation	1.000
Organizing Knowledge sharing and learning events (meetings, workshops, seminar, conferences)	1.500
Design incentive system to encourage and recognize knowledge sharing and learning by staff involved in the programme	0.500



implementation	
Organize and facilitate case study writeshop	0.750
Organize institutional visit to other project sites both within and outside country for cross project learning on KM	2.500
Procurement and supply of KM tools and equipments	1.000
Publication and dissemination of KM Products	0.350
<b>Total</b>	<b>9.600</b>

### ***c. Risk Management***

The Table 4 below describes some of the risks likely to impede the successful implementation of the KM strategy and possible mitigation measures to be taken up to minimize those risks. Reiterate

**Table 4: Potential Risks and Mitigation Measures**

<b>Risk identification</b>	<b>Risk qualification</b>	<b>Risk mitigation measures</b>
Quality and content	<ul style="list-style-type: none"> <li>Poor quality data, reports or stories from the field</li> </ul>	<ul style="list-style-type: none"> <li>Provide training to the staff on proper data collection, analysis and report writing</li> <li>Organize a separate case study or report writing workshop</li> </ul>

Collaboration and partnership	<ul style="list-style-type: none"><li>• Programme implementing partners not extending necessary support and cooperation</li><li>• Inefficient KM coordination</li></ul>	<ul style="list-style-type: none"><li>• Carry out regular monitoring from the OPM</li><li>• Review the KM progress and take timely remedial action</li></ul>
Human and financial resources	<ul style="list-style-type: none"><li>• Frequent turnover of staff</li><li>• Inadequate fund to implement KM strategy</li></ul>	<ul style="list-style-type: none"><li>• Training and re-training on KM and its importance to new staff</li><li>• Mainstream KM activities with the regular AWPB</li><li>• Careful analysis and control of requirements</li></ul>
Internet connectivity or access	<ul style="list-style-type: none"><li>• Poor internet connectivity in some gewogs/chiwogs may hinder easy access</li></ul>	<ul style="list-style-type: none"><li>• Targeted knowledge product development and dissemination (mainly through print media)</li></ul>
KM culture and learning system	<ul style="list-style-type: none"><li>• KM not given priority by the stakeholders</li><li>• Knowledge products not used for learning purposes</li></ul>	<ul style="list-style-type: none"><li>• Sensitization on KM and its importance</li><li>• Embedding knowledge instruments within the work programmes</li><li>• Institute incentive system to recognize and encourage the knowledge actors</li></ul>

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| New information technology platform and knowledge tools | <ul style="list-style-type: none"><li>• Staff are unable to use new tools and techniques due to lack of knowledge or awareness</li><li>• Sometimes new tools and techniques are not user friendly</li></ul> | <ul style="list-style-type: none"><li>• Provide hands-on training or awareness on new tools and techniques</li><li>• Careful prioritization and selection of tools</li></ul> |
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## 9. Results Framework

The Results Framework for KM Strategy in CARLEP is shown in Table 5.

**Table 5: Results Framework for CARLEP KM**

<b>KM Themes</b>	<b>KM Products</b>	<b>Activity</b>	<b>Indicators</b>	<b>Timeframe</b>	<b>Inputs required</b>	<b>Responsibility</b>	<b>End Result</b>
<b>Gender</b>	Case Stories, video clips	Successful Cases of Women led FG production and marketing (Vegetable and Dairy)	6	2018-2019	field work data, skills Resources	DAOs and DLOs with respective EAs	Program interventions gender mainstreaming documented and disseminated
		Develop a video clip on the involvement of women in farming benefitting them / a case of both men and women depicting shared roles and responsibilities	2	2017-18 2019-2020	Resources and skills	EAs and KMO ARDC/RLDC/RAMCO/FCB	Changed perspectives to gender in farming
		Role of women in farmers group management	1	2017-2018	field work data, skills	RAMCO	

		Farmer to farmer extension in traditional processing techniques in maize (Transferring skills from women farmers of Talo West Bhutan to Yangtse in East)	1	2016-2017	field work data, skills	DAO Yangtse	
		A case of women farmers in seeds and seedlings production	1	2017-2018	field work data, skills	ARDC Wengkhar and DAOs	
		An assessment of user friendly farming technologies, tools and equipment's with emphasis to gender	1	2018-2019	field work data, skills	ARDC, AMC and DAOs	

<b>Youth</b>	Case stories News Clips	Success stories of Youth in farming (Dairy, Vegetables, cereals) / agri-business, entrepreneurship	6	2018-2019	Technical write-up trainings and write shops	DAOs and DLOs	Youth in the region engaged and farming is replicated as source of employment
		Media clips	3	2017 onwards	Field work	DAOs, DLOs	
		Promoting engagement of Youth in farm machinery operations (Youth Farm Machinery Operators)	1	2018-19	Data and information on such cases from Dzongkhags	ARDC Wengkhar, AMC and DAOs, DLOs	
<b>Poverty</b>	Case study	Cases of livelihood enhancement from targeted interventions	6	2018-19	Data, information and field records of targeted	OPM, DAOs and DLOs	Program interventions targeted for social inclusion

					interventions		
<b>Climate smart Agriculture</b>	Case study, stories, Reports	Participatory Vulnerability Assessments of six CSVs	6	2016-2017	Assessment funds	ARDC, OPM, RLDC, DAO, DLO, RAMCO, Geog staff	Vulnerable villages and farmers resilience enhanced
		Impact of water efficient technologies in enhancement of livelihoods and adaptation to climate change.	1	2018 -2019	field work data, technologies	ARDC	
		Climate Resilient Farming Practices (focus on Indigenous Pig, Poultry, Goat, crops, bio gas, soil and water conservation, fodder improvement) and	1	2017-2018	Technical write-up trainings and write shops	OPM, ARDC and RLDC	

		adaptation to climate change impacts					
<b>Value chain</b>	Report	Vegetable and Dairy Value Chain Report	1	2020-2021	Data and information	CM Ag and CM Liv ARDC, RLDC and RAMCO/FCB	Value chain targeted and developed
	Training and extension Manuals, Case study, Posters, Market related study Reports  Media Clips	Media coverages on value chain interventions	12	2017-2019	Field activities	DAOs, DLOs, RAMCO carry out media coverages of value chain interventions	Farming is commercialized
		Extension material on	1	2016-2017	Data and	ARDC	



		staggered vegetable production			information with ARDC, Resources	
		Study of import substitution of vegetables through commercialization, FGs	1	2018-19	Data from Dzongkhags and FCB, Farm Shops, Outlets	RAMCO and DAOs
		Study of dairy production enhancement in the region	1	2018-19	Data	RLDC and DLOs
		Study on utilization of market infrastructures (market outlet, farm shops) and its impact on the farming communities.	1	2016-2017	Data	RAMCO

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		Study of GH and production supports and its impact on commercialisation	1	2017-18	field works	ARDC	
		Study the utilisation of Milk marketing equipment's in Dairy Groups	1	2017-18	Field works	RLDC	
<b>Groups/Co ops</b>	Training Manuals	Dairy Management; Pig farming; Poultry farming; Fishery; Dairy processing; CAHW; Animal nutrition; Milk quality and assurance at Farm	1	2016-2017	Fund for publication	RLDC	Farmers groups and cooperatives replicated
	Case study	Linking of FGs with Milk Processing Plants and its	1	2018-19	Data	RLDC and DLOs	

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		impact on milk marketing					
		The role of Farm Shops in agriculture input sales and marketing of farm produce	1	2017-18	Data	RAMCO and DAOs	
		A comparative study of FGs	1	2018-2019	Data	RAMCO  DAOS, DLOs	
<b>Innovations and best practices</b>	Video Clip	IFAD interventions in eastern Bhutan	1	2016-17	Data records	OPM	Programs lessons, experiences and innovations
	Case studies, Media clips,	Land development and optimum utilization of land	1	2019-2020	field work	DAOs	Shared

	Case study	Assessment of Lead farmers, integrated vegetables and fruits, crop intensification approaches in commercialization and production enhancement: Changing perspectives in agriculture extension	1	2017-2018	field work	ARDC	
		Case studies of integrated agriculture and livestock farming:	1	2018-2019	field work	ARDC and RLDC with DAOs and DLOs	
		Cattle Urine as bio pesticides, fertilisers, bio gas slurry, soil and water conservation etc.	6	2017-18	field work	DAOs and ARDC	

		Urea molasses mineral block (UMMB), total mixed ration (TMR), Silage feeding and its benefits in production enhancement	6	2017-18	field work	DLOs and RLDC
	Extension materials	Post-harvest processing manual	1	2017-18	field work	ARDC and IFPP
	Video	Collections of footages for video documentation of program interventions	1	2017 onwards Video documentary in 2020	field work, funds, equipment	OPM-KM and CMs
	Trainings and write shops	Training on KM product Development and Write shop	2	2017-2018	Funds, tools and equipment's	OPM, ARDC, RLDC, RAMCO

	Case study	Compilation of best case studies collected during the program period	1	2020-21	Cases	OPM, ARDC, RLDC, RAMCO	
	Case study	The use of social media channels and their benefits in agriculture information dissemination	1	2020	Cases	ARDC and RLDC	

*Note: Periodic activity completion reports, quarter progress reports and Annual Reports are not included above. The above KM Products should complement the periodic reports.*

**Annex 1: List of Participants for the Writeshop**

<b>Sl. No.</b>	<b>Name</b>	<b>Designation</b>	<b>Organization</b>	<b>Remarks</b>
1	Mr. Lhap Dorji	PD	ARDC	Resource Person
2	Mr. Kinley Tshering	Dy. CHO	ARDC	
3	Mr. Dorji Rinchen	Specialist/RC	RAMCO	
4	Dr. Tshering Dorjee	PD	RLDC, Kanglung	
5	Ms. Tashi Zangmo	LPO	RLDC, Kanglung	
6	Mr. Sonam Penjor	CPO	NCWC, Thimphu	Resource Person
7	Ms. Tashi Yangzom	SPO	PPD, Thimphu	Resource Person
8	Dr. Norbu Doelma	DLO	Lhuentse	
9	Mr. Dorjee	DAO	Lhuentse	
10	Mr. Nima Dorji	Sr. LHS	Tshankhar, Lhuentse	
11	Ms. Nancha	ES II	Jarey, Lhuentse	
12	Mr. Khampa	DAO	Mongar	
13	Mr. Tenzin Dorji	Sr. DLO	Mongar	
14	Ms. Sonam Dolkar	ES II	Tshakaling, Mongar	

15	Ms. Kelzang Tshering	ES-II	Tsamang, Mongar	
16	Mr. Sangay Tenzin	ADLO	Pema Gatshel	
17	Mr. Tshering Dorji	ADAO	Pema Gatshel	
18	Mr. Sha Bdr. Barakoti	ES-II	Shumar, Pama Gatshel	
19	Mr. Kinley Phurpa	LES-II	Samdrup Jongkhar	
20	Mr. Thinley Rabten	DLO	Samdrup Jongkhar	
21	Mr. Dorji Gyeltshen	DAO	Samdrup Jongkhar	
22	Ms. Pelden Tshomo	Sr. ES III	Orong, Samdrup Jongkhar	
23	Mr. N.S. Tamang	DLO	Trashigang	
24	Mr. Phurpa Tshering	Sr. ES	Radhi, Trashigang	
25	Mr. Pema Wangchen	ES-I	Trashigang	
26	Ms. Kuenzang Peldon	DAO	Trashi Yangtse	
27	Mr. Phurpa Tshering	DLO	Trashi Yangtse	
28	Mr. Jigme Dorji	ES-II	Tongzhang, Trashi Yangtse	
29	Mr. Tashi Wangdi	PD	CARLEP	Facilitator



30	Mr. Norbu	CM, Livestock	CARLEP	
31	Mr. Ugyen Wangdi	CM. Agriculture	CARLEP	
32	Mr. Sangay Choeda	CM, VCM	CARLEP	
33	Mr. Karma Tenzin	M&EO	CARLEP	
34	Mr. Sangay Choda	PSO	CARLEP	
35	Ms. Karma Wangmo	GKMO	CARLEP	
36	Ms. Choki Wangmo	Admin. Asst.	CARLEP	