



PERFORMANCE AGREEMENT

BETWEEN

NATIONAL POST HARVEST CENTRE (NPHC), PARO

AND

**DEPARTMENT OF AGRICULTURE (DoA),
MINISTRY OF AGRICULTURE AND FORESTS (MoAF)**

(July 1, 2019 – June 30, 2020)

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Preamble

The Performance Agreement is entered into between the National Post Harvest Centre (NPHC) and Department of Agriculture (DoA), MoAF.

The objectives of this Performance Agreement are:

- a) To establish clarity and consensus about annual priorities for the Department of Agriculture consistent with the 12th Five Year Plan of the Ministry, and Government's other priorities;
- b) To provide an objective and fair basis for evaluating the overall performance of the National Post Harvest Centre at the end of the financial year

The Performance Agreement represents an important accountability mechanism for inculcating a performance based culture at all levels of government.

THEREFORE, the parties hereto agree as follows:

Section 1: Vision, Mission and Objectives

Vision

A self-reliant, resilient and sustainable agriculture food system.

Mission

Achieve food and nutrition security, agricultural transformation through innovative and sustainable technologies, diversified and competitive economic/production options, inclusive and sustainable policies and programs.

Objectives

- 1) To increase crop production for enhancing food self-sufficiency, income and nutrition security
- 2) To generate and promote climate-resilient agriculture technologies
- 3) To promote organic farming for sustainable agriculture, safe food, and environment conservation
- 4) To develop functional farm infrastructures and facilities (irrigation channel, farm roads, post-harvest facilities, etc.)
- 5) To promote agriculture enterprise development
- 6) To enhance effective and efficient delivery of agricultural services

Section 2: Objectives, Success Indicators & Target										
Objective	Weight	Action	Success indicator	Unit	Weight	Excellent (100 %)	Very Good (90 %)	Good (80 %)	Fair (70 %)	Poor (60 %)
To generate and promote climate resilient agriculture	55	Agriculture Research Technologies Generated	Generate processed and value added products from fruits	Number	4	10	9	8	7	6
			Generate processed and value added products from vegetables	Number	4	10	9	8	7	6
			Generate processed and value added products from nuts and MAPS produces (Cardamom, Ginger, Mandarin peel oil)	Number	4	9	8	7	6	5
			Processing and product developed from mango (AFACI Project)	Number	4	2	1	0	0	0
			Generate processed and value added products from cereals	Number	4	9	8	7	6	5
			Product development and byproduct utilisation study of rice	Timeline	4	30-April	15-May	30-May	15-June	30-June
		Agriculture Postproduction Research Conducted	Determine post-harvest losses of fruits	Timeline	3	30-April	15-May	30-May	15-June	30-June
			Determine post-harvest losses of vegetables	Timeline	3	30-April	15-May	30-May	15-June	30-June
			Study on frying characteristics of potato chips	Timeline	4	30-April	15-May	30-May	15-June	30-June
			Study on combination effect of apple-potato storage in cold store	Timeline	3	30-April	15-May	30-May	15-June	30-June
			Research on postharvest treatment of mango with hot water for quality and prevention of latex strain	Timeline	3	30-April	15-May	30-May	15-June	30-June
			Milling recovery study of different varieties of rice at Paro and Dagapela region	Timeline	4	30-April	15-May	30-May	15-June	30-June
			Study on extraction of maize syrup from different varieties and development of value added products	Timeline	4	30-April	15-May	30-May	15-June	30-June
			Adaptation of improved postharvest technologies for grain legumes and oil on development of fermented soybean products using cultured microbes to reduce foul odour	Timeline	3	30-April	15-May	30-May	15-June	30-June

Objective	Weight	Action	Success indicator	Unit	Weight	Excellent (100 %)	Very Good (90 %)	Good (80 %)	Fair (70 %)	Poor (60 %)
			Documentation of postharvest handling of Quinoa and determination of postharvest losses	Timeline	4	30-April	15-May	30-May	15-June	30-June
To develop functional farm infrastuctures and facilities (Irrigation channel, farm roads, postahrvest facilities, etc)	15	Postharvest Infrastructures Developed	Develop/Generate appropriate postproduction technologies; Design and develop prototype of paddy dryer for household level at Paro	Timeline	5	30-April	15-May	30-May	15-June	30-June
			Promote/Develop postharvest technologies; Promotion maize curing/drying and storage shed	Number	5	8	7	6	5	4
		Postproduction Research Conducted	Determination of efficiency of NPHC designed onion curing and storage structure	Timeline	5	30-April	15-May	30-May	15-June	30-June
To promote organic farming for sustainable organic agriculture, safe food, and environment conservation	5	Monitor and Report Flagship program	Progress as per singed Organic Flagship Performance Agreement	Percent	5	100	90	80	70	60
To promote agriculture enterprise development	15	Value Added Products Developed	Technical support on value addition of products from fruits, vegetables, cereals and NWFP for food enterprises	Number	5	10	9	8	7	6
			Facilitae procurement processing and value addition machines, equipment and consumbles for enterprise development	Timeline	5	30-April	15-May	30-May	15-June	30-June
		RNR Based Enterprises Established	Cereal based processing and value addition enterprise	Timeline	5	30-April	15-May	30-May	15-June	30-June
To enhance effective and efficient delivery of agriculture services	10	Agriculture Service delivery facilities established/improved (Lab facilities/RNR office structure)	Reconstruction of Integrated Food Processing Plant, Goling, Zhemgang	Timeline	2	30-April	15-May	30-May	15-June	30-June
		Budget Utilization Ensured	Budget utilised effeciently as per BUP	Percent	2	>95	90	80	70	60
		Planning and Monitoring System Strengthened	Annual report/ highlights submisson	Timeline	2	4th wk June	1st wk July	2nd wk July	3rd wk July	4th wk July
		Framework/Standards/Guidelines/ strategies/Manuals Developed	Develop food processing manuals	Number	2	400	360	320	280	240

Objective	Weight	Action	Success indicator	Unit	Weight	Excellent (100 %)	Very Good (90 %)	Good (80 %)	Fair (70 %)	Poor (60 %)
		Regional Database Developed	Monitoring and evaluation of postproduction technologies in the field	Number	2	10	9	8	7	6

Section 3: Trend Values of Success Indicators

Objective	Action	Success Indicator	Unit	Actual Values [FY 2018-19]	Target Values [FY 2019-20]	Projected Values [FY 2020-21]	Projected Values [FY 2021-22]	Projected Values [FY 2022-23]
To generate and promote climate resilient agriculture	Agriculture Research technologies generated	Generate processed and value added products from fruits	Number	10	10	10	10	10
		Generate processed and value added products from vegetables	Number	10	10	10	10	10
		Generate processed and value added products from nuts and MAPS produces (Cardamom, Ginger, Mandarin peel oil)	Number	2	5	5	5	5
		Processing and product developed from mango (AFACI Project)	Number	0	3	2	1	1
		Generate processed and value added products from cereals	Number	1	1	1	1	0
		Product development and byproduct utilisation study of rice	Number	0	1	0	0	0
	Agriculture postproduction research conducted	Determine post-harvest losses of fruits	Number	1	1	2	1	1
		Determine post-harvest losses of vegetables	Number	0	2	3	2	2
		Study on frying characteristics of potato chips	Number	0	1	0	1	1
		Study on combination effect of apple-potato storage in cold store	Number	0	1	0	0	0
		Research on postharvest treatment of mango with hot water for quality and prevention of latex strain	Number	0	1	0	1	0
		Milling recovery study of different varieties of rice at Paro and Dagapela region	Number	0	1	0	0	0
		Study on extraction of maize syrup from different varieties and development of value added products	Number	0	1	0	0	0
		Adaptation of improved postharvest technologies for grain legumes and oil on development of fermented soybean products using cultured microbes to reduce foul odour	Number	0	1	0	0	0
		Documentation of postharvest handling of Quinoa and determination of postharvest losses	Number	0	1	0	0	0

Objective	Action	Success Indicator	Unit	Actual Values [FY 2018-19]	Target Values [FY 2019-20]	Projected Values [FY 2020-21]	Projected Values [FY 2021-22]	Projected Values [FY 2022-23]
To develop functional farm infrastructures and facilities (Irrigation channel, farm roads, postharvest facilities, etc)	Postharvest infrastructures developed	Develop/Generate appropriate postproduction technologies; Design and develop prototype of paddy dryer for household level at Paro	Number	0	1	1	0	0
		Promote/Develop postharvest technologies; Promotion maize curing/drying and storage shed	Number	9	8	10	10	10
	Postproduction research conducted	Determination of efficiency of NPHC designed onion curing and storage structure	Number	0	1	0	0	0
To promote organic farming for sustainable organic agriculture, safe food, and environment conservation	Monitor and report Flagship program	Progress as per signed Organic Flagship Performance Agreement	Percent	0	100	100	100	100
To promote agriculture enterprise development	Value added products developed	Technical support on value addition of products from fruits, vegetables, cereals and NWFP for food enterprises	Number	20	20	20	20	20
		Facilitate procurement processing and value addition machines, equipment and consumables for enterprise development	Number	15	15	15	15	15
	RNR based Enterprises established	Cereal based processing and value addition enterprise	Number	4	1	1	1	1
To enhance effective and efficient delivery of agriculture services	Agriculture service delivery facilities established/improved (Lab facilities/RNR office structure)	Reconstruction of Integrated Food Processing Plant, Goling, Zhemgang	Number	1	1	1	1	0
	Budget Utilization Ensured	Budget utilised efficiently as per the BUP	Percent	>95	>95	>95	>95	>95
	Annual Report/Annual Highlights published	Annual report/ highlights submission	Number	1	1	1	1	1
	Framework/standard/guidelines/strategies/manuals developed	Develop food processing manuals	Number	7	10	10	10	10
	Regional database developed	Monitoring and evaluation of postproduction technologies in the field	Number	10	9	8	7	6

Section 4: Definition of Success Indicators

Success Indicator	Description	Data Collection Methodology	Data Collection Frequency	Data Source
Generate processed and value added products from fruits	This SI measures the number of food products developed from different fruits	Food product development practical report	Annually	Annual progress report
Generate processed and value added products from vegetables	This SI measures the number of food products developed from different vegetables	Food product development practical report	Annually	Annual progress report
Generate processed and value added products from nuts and MAPS produces (Cardamom, Ginger, Mandarin peel oil)	The SI measures the number of processed and value added products generated	Product development report (Administrative record)	Annually	Annual progress report
Processing and product developed from mango (AFACI Project)	The SI measures the number of diversified mango products developed for Farmers Group in Tashicholing Geog, Samtse	Product development report, field data (Administrative record)	Annually	Annual progress report/ Project progress report
Generate processed and value added products from cereals	SI measures the number of value added products from locally available cereal commodities	Food product development practical report	Annuually	Annual progress report/ Technical report (paper)
Product development and byproduct utilisation study of rice	The SI measures the number of products developed from byproducts of rice at Mongar and Pema Gathsel	Food product development practical report	Annuually	Annual progress report/ Technical report (paper)
Determine post-harvest losses of fruits	The SI measures the number of fruit (pear) whose postharvest losses has been determined for different parameters such as weight, Sugar content (TSS) and firmness	Field survey data and report	Annuually	Annual progress report/ Technical report (paper)
Determine post-harvest losses of vegetables	The SI measures the number of vegetables (chilli and cabbage) whose postharvest losses has been determined for various parameters	Field survey data as per research protocol	Annuually	Annual progress report/ Technical report (paper)

Success Indicator	Description	Data Collection Methodology	Data Collection Frequency	Data Source
Study on frying characteristics of potato chips	The SI measures the number of frying parameters; total weight, size, overall turn over of finished product, frying temperature	Laboratory practical	Annuually	Annual progress report/ Technical report (paper)
Study on combination effect of apple-potato storage in cold store	The SI measures various storage combination storage parameters; weight loss, colour, compatibility, etc of apple-cold store at NPHC	Practical as per research protocol	Annuually	Annual progress report/ Technical report (paper)
Research on postharvest treatment of mango with hot water for quality and prevention of latex strain	The SI measures the effectiveness of postharvest treatment of hot water with mangoes	Field report and practical	Annuually	Annual progress report/ Technical report (paper)
Milling recovery study of different varieties of rice at Paro and Dagapela region	The SI measures milling parameters such as recovery, broken and unbroken, weight of different varieties of rice grown at Dagapela and Paro	Field survey	Annuually	Annual progress report/ Technical report (paper)
Study on extraction of maize syrup from different varieties and development of value added products	The SI focuses on extraction of maize syrup from different varieties of maize at Mongar region	Field survey, laboratory practical	Annuually	Annual progress report/ Technical report (paper)
Adaptation of improved postharvest technologies for grain legumes and oil on development of fermented soybean products using cultured microbes to reduce foul odour	The SI measures number of product developed from fermented soybean using cultured microbes	Laboratory practical	Annuually	Annual progress report/ Technical report (paper)
Documentation of postharvest handling of Quinoa and determination of postharvest losses	The SI measures the postharvest losses of quinoa at different postharvest operation stages	Field survey	Annuually	Annual progress report/ Technical report (paper)

Success Indicator	Description	Data Collection Methodology	Data Collection Frequency	Data Source
Develop/Generate appropriate postproduction technologies; Design and develop prototype of paddy dryer for household level at Paro	The SI measures the number of design and develop prototype for paddy dryer for household level at Paro	Field report, field survey	Annually	Annual progress report/ Technical report (paper)
Promote/Develop postharvest technologies; Promotion maize curing/drying and storage shed	The SI measures the number of maize curing/drying shed promoted in 20 Dzongkhags	Field report	Annually	Annual progress report/ Technical report (paper)
Determination of efficiency of NPHC designed onion curing and storage structure	The SI measures the study of efficiency of NPHC designed onion curing and storage structure at Langthel, Trongsa	Field survey, Field report	Annually	Annual Progress Report
Progress as per signed Organic Flagship Performance Agreement	The indicator measures the status of progress of one organic success indicator which is responsibility of NPHC outlined in the flagship APA	Administrative record	Monthly	Annual Report
Technical support on value addition of products from fruits, vegetables, cereals and NWFP for food enterprises	The SI measures number of value added products developed from fruits, vegetables, cereals and NWFP for food enterprises	Field data and Administrative record	Annually	Annual Progress Report/ Technical report (paper)
Facilitate procurement processing and value addition machines, equipment and consumbles for enterprise development	The SI measures the overall management and technical supervision of reconstruction of Integrated Food Processing Plant Goling, Zhemgang	Field report	Annually	Annual Report and Completion report
Cereal based processing and value addition enterprise	The SI measures the number of value added products to for Food enterprises	Field report	Annually	Annual Progress Report
Reconstruction of Integrated Food Processing Plant, Goling, Zhemgang	The SI measures number technical specifications of food processing machines, equipments and consumables provided for food enterprises	Field report	Annually	Annual Progress Report

Success Indicator	Description	Data Collection Methodology	Data Collection Frequency	Data Source
Budget utilized effeciently as per the BUP	The SI measures the number of Food Enterprises technically supported by NPHC throughout the country	Food Enterprise record format/ Administrative record	Annually	Annual Progress Report
Annual report/ highlights submission	The SI measures the percent of approved budget utilisation of the Centre for FY 2019-20	Administrative record	Quarterly	Annual Progress Report
Develop postproduction leaflets, booklets, brochures, pamphlets and posters	The SI measures the percent of staffs of NPHC declared assets	Administrative record	Annually	Annual Progress Report/ Govt. Official Record
Monitoring and evaluation of postproduction technologies in the field	The SI measures the timeline of the Quarterly report submitted to Department of Agriculture	Administrative record	Quarterly and Annually	Quarterly and Annual Progress Report

Section 5: Requirements from Other Agencies

Organisation Name	Relevant Success Indicator	Requirement from the Organisation	Justification for the Requirement	Requirement detail	Impact (If Not Met)
Zhemgang (Agriculture Sector)	Value addition and marketing of berti rice (product development)	Technical help in product development	NPHC provides technical support in value addition and product diversification	The value addition can be done in the field or at IFPP, Goling	There will be postharvest loss of berti rice both in quality and quantity
Zhemgang (Agriculture Sector)	Supply and installation of cardamom dryers	Technical help in installation	NPHC is mandated to provide technical support in installation and operation of cardamom dryers	Since NPHC does not have annual budgeted fund for supply of cardamom dryers, the Dzongkhag should procure materials for installation	If not met, this will result in quality and quantity loss of cardamom
Zhemgang (Agriculture Sector) & NOP	Post Production equipment supply (Chilly dryers for Thrisa Ema)	Technical help in installation	The Dzongkhag requires technical support in installation of 5 numbers dryers	The dryer materials to be procured by the Dzongkhag	The installation can be done
Trongsa (Agriculture Sector)	Promotion of electrical dryer	Technical help	The Dzongkhag requires technical support in installation of 5 numbers dryers	The dryer materials to be procured by the Dzongkhag	The installation can be done
Trongsa (Agriculture Sector) & ARDC Samtenling	Joint impact assessment study of onion curing shed at Langthel, Trongsa	NPHC to lead in technical assessment	NPHC has disseminated onion curing shed in Langthel Trongsa	Joint assessment of efficiency of onion curing need to be done	Efficiency study cannot be executed
Trongsa (Agriculture Sector)	Value Addition & processing Training to Agriculture Extension Supervisors	Technical (As Resource persons) support in training	NPHC do not have separate budget for training of EAs	Training budget required	Training will not be possible
Sarpang (Agriculture Sector)	Promotion of value addition and processing of fruit & vegetables	Technical	NPHC do not have separate budget for training of EAs	Training budget required	Training will not be possible
Sarpang (Agriculture Sector) & ARDC Samtenling	Exploration of value addition and post production storage interventions of Beetle nut for shelf life extension	NPHC to lead in technical research	On-going research trial at ARDC, Samtenling	Research collaboration needed from ARDC, Samtenling	On-going
Sarpang (Agriculture Sector)	Promotion of drying technology for cardamom (1 gewog in Sarpang)	Technical	NPHC is mandated to provide technical support in installation and operation of cardamom dryers	Since NPHC do not have annual budgeted fund for supply of cardamom dryers, the Dzongkhag should procure materials for installation	If not met, this will result in quality and quantity loss of cardamom
Samtse (Agriculture Sector)	Promotion of Enterprise development through value addition of Mango (AFACI project)	NPHC to lead as per Project requirement	Identify the group for Enterprise Development	Farmers Group formation	On-going

Organisation Name	Relevant Success Indicator	Requirement from the Organisation	Justification for the Requirement	Requirement detail	Impact (If Not Met)
Samtse (Agriculture Sector)	Supply of cardamom dryer at Chudzom	Technical help	NPHC is mandated to provide technical support in installation and operation of cardamom dryers	Since NPHC do not have annual budgeted fund for supply of cardamom dryers, the Dzongkhag should procure materials for installation	If not met, this will result in quality and quantity loss of cardamom.
Samdrup Jongkhar (Agriculture Sector)	Value addition of Turmeric and Ginger at Gomdar and Phuntshothang	NPHC to lead	The Dzongkhag has good production of turmeric and ginger	Need to provide product development demonstration to growers	The postharvest glut and losses of ginger and turmeric will continue without interventions
MAPS program	Facilitate in providing specifications, procurement and dissemination of postproduction technologies for MAPS commodities	Technical specifications of postproduction technologies	NPHC provides technical specifications of food processing equipment and machines	NPHC do not have separate budget to support. The lead agency should have budget	The specification for machines and equipment cannot be provided
Bumthang (Agriculture Sector)	Wheat & Barley product development	Technical help in collaboration with RAMCO, Mongar	NPHC provide product development of locally available cereals	Budget requirement	The product development cannot be done
Lhuntse (Agriculture Sector)	Enterprise development(value addition on maize) funded by CARLEP	Technical support	NPHC helps in technical aspect of Enterprise Development	Budget requirement and collaboration	The Enterprise Development or establishment may not be possible
Mongar (Agriculture Sector) & ARDC, Wengkhari	Product development of maize	Technical support	NPHC provide product development of maize	Budget requirement	The product development cannot be done
Pema Gatshel (Agriculture Sector)	Value addition of Quinoa	Technical support	NPHC provide product development of quinoa	Budget requirement	The product development cannot be done
Trashigang (Agriculture Sector)	Product development of maize	Technical support	NPHC provide product development of maize	Budget requirement	The product development cannot be accomplished
Trashigang (Agriculture Sector)	Demonstration on vacuum packaging machine for rice	Technical support	NPHC provide vacuum packaging and demonstration service to beneficiaries	The raw material (rice) can either be brought to IFPP, P/Gatshel or the machine can be transported to the field	If not met, the vacuum packaging machine demonstration will not be possible
Tashi Yangtse (Agriculture Sector)	Value addition and product diversification from maize funded by CARLEP	Technical support	NPHC provide product development of maize	Budget requirement	The product development cannot be accomplished
Tashi Yangtse (Agriculture Sector)	Peanut product development	Technical support	NPHC provide product development of peanut	Budget requirement	The product development cannot be accomplished
Thimphu (Agriculture Sector)	Develop drawing, design and estimate on mini processing plant at Chang Gewog (fruits and vegetables)	Technical support	NPHC technical advisory support in setting up food processing units	Budget requirement and the proponent Dzongkhag to initiate	The food processing plant cannot be established

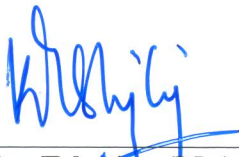
Organisation Name	Relevant Success Indicator	Requirement from the Organisation	Justification for the Requirement	Requirement detail	Impact (If Not Met)
Haa (Agriculture Sector)	Farmers Capacity Development - Post-Harvest Management of cardamom at Gakiling (38 hours)	Technical support	NPHC provide training to stakeholders on postharvest management	Budget requirement from the proponent Dzongkhag	Training will not be possible
Haa (Agriculture Sector)	Marketing and product development for MAPS commodities at Bjee Gewog (40 Hours)	Technical support in collaboration with MAPS Program	NPHC provide technical support to stakeholders on product development	Budget requirement from the proponent Dzongkhag	Product development cannot be materialised
Haa (Agriculture Sector)	Produce improvement. Packaging and labelling Eusu and Samar geowg	Technical support in collaboration with DAMC	NPHC provide technical support on labelling and packaging	Budget requirement from the proponent Dzongkhag	The activity can not be executed
Chukha (Agriculture Sector)	Turmeric Processing Plant	Technical support in collaboration with MAPS Program & ARDC, Yusipang	NPHC provide training/technical support on processing	Budget requirement from the proponent Dzongkhag	The activity can not be executed
Paro (Agriculture Sector)	Promotion of electrical deep fat fryers at Shari geog	Technical support	NPHC facilitate in promotion of deep fat fryers	Budget requirement	Promotion is not possible
MAPS Program, (ARDC Yusipang)	Training of extension staff on cardamom Production and post harvest management in Chukha and Haa through FSAAP/RGoB MAPS (HQ)	Technical support	NPHC provide training on postharvest management	Budget requirement from the proponent Dzongkhag	Training will not be possible
NOP	Packaging, processing and labelling buckwheat at Haa	Technical support	NPHC provide technical support on labelling and packaging	Budget requirement from the proponent Dzongkhag	The activity can not be executed

Whereas,

I, Chief, National Post Harvest Centre (NPHC), commit to the Director, Department of Agriculture (DoA), MoAF to deliver the results described in this Annual Performance Agreement.

We, Department of Agriculture, MoAF commit to the Chief, National Post Harvest Centre to provide necessary support for the delivery of the results described in this Annual Performance Agreement.

SIGNED:



**Kinlay Tshering (Ms.)
DIRECTOR, DoA**

28th August, 2019

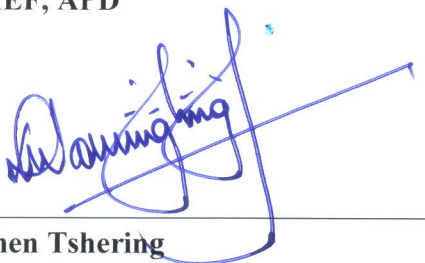
Date



**Namgay Thinley
CHIEF, APD**

28/8/19

Date



**Dechen Tshering
CHIEF POST PRODUCTION OFFICER
POST NATIONAL POST HARVEST CENTRE**

28/8/2019

Date