



PERFORMANCE AGREEMENT

BETWEEN

**AGRICULTURE RESEARCH AND DEVELOPMENT
CENTRE (ARDC)-WENCKHAR**

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 Agriculture Research and Development Centre (ARDC)-Wengkhari 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 Agriculture Research and Development Centre-Wengkhari 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 and Target

Objective	Weight	Action	Success Indicator	Unit	Weight	Excellent [100%]	Very Good [90%]	Good [80%]	Fair [70%]	Poor [60%]
To increase crop production for enhancing food self sufficiency, income and nutrition security	26.00	Increased Fruits and Nuts Production	Establish commodity focused villages	Number	3.5	6	5	4	3	2
		Increased Ornamental Plants Production	Strengthen floriculture germplasm collection	Number	3.0	3000	2000	1500	1000	800
		Increased Mushroom Production	Supply spawn for mushroom cultivation	Number	3.0	11000	10000	9000	8000	7000
		Increased Maize Production	Increase production of quality maize seeds	MT	4.0	80	70	65	60	50
			Increase Maize productivity	MT	2.0	1.48	1.35	1.3	1.25	1.2
		Increased Rice Production	Produce basic seeds of mid and high altitude rice varieties	Kg	3.0	280	270	260	250	240
			Increase rice productivity	MT	2.0	1.41	1.35	1.3	1.25	1.2
		Increased Oil Seeds Production	Increase groundnut production	MT	3.0	45	44	43	42	41
Quinoa Production Promoted	Crop intensification and promotion of Quinoa	Acres	2.5	26	23	18	14	10		
		Established Demonstration Trials	Establishment of demo orchards	Number	4.0	25	15	12	10	8
			Promote protected vegetables cultivation	Number	3.0	5	4	3	2	1

To generate and promote climate resilient agriculture technologies	53.50	Agriculture Production Research Conducted	Study fruits and nuts phenology trend	Timeline	3.0	4 th wk April	1 st wk May	2 nd wk May	1 st wk June	4 th wk June
			Conduct research on clean citrus planting material production	Timeline	3.0	2 nd wk March	4 th wk April	2 nd wk May	1 st wk June	4 th wk June
			Identify promising citrus varieties	Number	3.0	4	3	2	1	0
			Study local vegetables diversity	Timeline	3.0	Jan	Feb	Mar	Apr	May
			Initiate plant propagation through tissue culture	Timeline	3.0	4 th wk April	1 st wk May	2 nd wk May	2 nd wk June	4 th wk June
			Evaluate and maintain germplasm of fruits and nuts	Number	3.0	9	8	7	6	5
			Release climate resilient maize varieties	Timeline	3.0	4 th wk April	1 st wk May	2 nd wk May	2 nd wk June	4 th wk June
			Evaluate climate resilient maize varieties	Number	3.0	45	44	43	42	41
			Evaluation of Popcorn varieties	Number	3.0	4	3	2	1	0
			Study best management practices of quinoa cultivation	Timeline	2.0	1 st wk April	2 nd wk April	3 rd wk April	4 th wk April	May
			Study effectiveness of bio-pesticides	Timeline	2.0	4 th wk April	2 nd wk May	4 th wk May	2 nd wk June	4 th wk June
			Evaluate local germplasm of groundnut	Number	3.0	5	4	3	2	1
			Research on bioacoustics system with electric fence to repel wild animals from agricultural farm	Timeline	3.0	Feb	Mar	Apr	May	Jun

		Agriculture Technologies Adopted	Promote drip and sprinkler irrigation system	Number	3.0	10	8	6	4	3
			Promote solar dryers using greenhouse	Timeline	2.0	4 th wk April	2 nd wk May	4 th wk May	2 nd wk June	4 th wk June
		Climate Smart Crops Technologies Adopted	Research outreach program of drought tolerant upland paddy	Number	2.0	6	5	4	3	2
		Agriculture Research Technologies Generated	Generate technologies of oyster cultivation on different substrates	Timeline	2.5	Mar	Apr	May	Jun	-
To develop functional farm infrastructure and facilities	4.50	Water Harvesting Technologies Promoted	Establish lift irrigation at Chuthawoong, Trashigang	Timeline	2.5	Mar	Apr	May	Jun	-
		Agriculture Services Delivery Facilities Developed/Improved	Promotion of community based quinoa de-husking machine	Number	2.0	4	3	2	1	0
To promote agriculture enterprise development	2.00	RNR Based Enterprise Established	Agriculture enterprise based employment	Number	2.0	4	3	2	1	0
To enhance effective and		Agriculture Knowledge and	Publish extension materials on crop management technologies	Number	3.0	6	5	4	3	2
			Carry out Cost of Production survey for major crops	Timeline	3.0	Sep	Oct	Nov	Dec	Jan

efficient delivery of agricultural services	14.00	Information Management Improved	Frameworks/Guidelines/Standards developed	Timeline	2.0	2 nd wk May	1 st wk June	2 nd wk June	4 th wk June	-
			Regional database developed	Timeline	2.0	Dec	Jan	Feb	Mar	Apr
			Publish annual report	Timeline	2.0	4 th wk June	1 st wk July	2 nd wk July	3 rd wk July	4 th wk July
	Budget Utilization Ensured	Budget utilized efficiently as per BUP	Percent	2.0	>95	90	80	70	60	

Section 3: Trend Values of Success Indicators

Objective	Action	Success Indicator	Unit	Actual Values [FY 2018-19]	Actual Values [FY 2019-20]	Target Values [FY 2020-21]	Target Values [FY 2021-22]	Projected Values [FY 2022-23]
To increase crop production for enhancing food self sufficiency, income and nutrition security	Increased Fruits and Nuts Production	Establish commodity focused villages	Number	6	6	5	4	3
	Increased Ornamental plants production	Strengthen floriculture germplasm collection	Number	17000	3000	2000	1000	500
	Increased Mushroom production	Supply spawn for mushroom cultivation	Number	11000	10000	9000	8000	7000
	Increased Maize production	Increase production of quality maize seeds	MT	74	80	87	93	100
		Increase Maize Productivity	MT	1.44	1.48	1.52	1.56	1.6

	Increased Rice production	Produce basic seeds of mid and high altitude rice varieties	Kg	240	280	320	360	400
		Increase rice productivity	MT	1.38	1.41	1.44	1.47	1.5
	Increased oil seed crops production	Increase groundnut production	MT	43	44.6	46	48	50
	Quinoa promotion	Crop intensification and promotion of Quinoa	Acres	18	26	34	42	50
To generate and promote climate resilient agriculture technologies	Established demonstrations trials	Establishment of demo orchards	Number	30	20	15	15	10
		Promote protected vegetables cultivation	Number	3	5	3	2	1
	Agriculture Production Research Conducted	Study fruits and nuts phenology trend	Number	0	2	2	2	0
		Conduct research on clean citrus planting material production	Number	0	1	0	0	0
		Identify promising citrus varieties	Number	0	4	1	0	0
		Study local vegetables diversity	Number	1	1	0	1	0
		Initiate plant propagation through tissue culture	Number	0	1	0	0	0

		Evaluate and maintain germplasm of fruits and nuts	Number	0	9	0	0	0
		Release climate resilient maize varieties	Number	0	1	0	0	0
		Evaluate climate resilient maize varieties	Number	5	4	1	0	0
		Evaluate climate resilient maize varieties	Number	5	45	0	0	0
		Evaluation of Popcorn varieties	Number	0	4	0	0	0
		Study best management practices of quinoa cultivation	Number	0	2	0	0	0
		Study effectiveness of bio-pesticides	Number	0	1	0	0	0
		Evaluate local germplasm of groundnut	Number	0	5	0	0	0
		Research on bioacoustics system with electric fence to repel wild animals from agricultural farm	Number	0	1	0	0	0
	Agriculture technologies adopted	Promote drip and sprinkler irrigation system	Number	3	10	0	0	0
		Promote solar dryers using greenhouse	Number	3	2	0	0	0

	Climate smart crops technologies adopted	Research outreach program of drought tolerant upland paddy	Number	9	6	4	3	2
	Agriculture research technologies generated	Generate technologies of oyster cultivation on different substrates	Number	0	1	0	0	0
To develop functional farm infrastructure and facilities	Water harvesting technologies promoted	Lift irrigation at Jatshabi, Lhuntse and Chuthawoong, Trashigang	Number	1	1	0	0	0
	Agriculture services delivery facilities developed/ improved	Promote community based quinoa de-husking machine	Number	0	4	0	0	0
To promote agriculture enterprise development	Agriculture enterprise base employment	Support to commercial farms	Number	7	4	3	3	2
To enhance effective and efficient delivery of agricultural services	Agriculture knowledge and information management improved	Publish extension materials on crop management technologies	Number	16	6	5	5	5
		Carry out cost of production survey for major crops	Number	0	1	0	0	0

		Frameworks/Guidelines/Standards developed	Number	1	1	1	1	0
		Regional database developed	Number	1	1	1	1	1
		Publish annual report	Number	1	1	1	1	1
	Budget Utilization Ensured	Budget utilized efficiently as per BUP	Percent	>95	>95	>95	>95	>95

Section 4: Definition of Success Indicators

Success Indicator	Description	Data Collection Methodology	Data Collection Frequency	Data Source
Establish commodity focused village	It measures number of commodity focused village established through promotion of subtropical fruit plants, temperate fruit plants, and water melon	BTOR/Field Report	Annually	Annual Report
Strengthen floriculture germplasm collection	It measures total number of ornamental plants produced for supporting landscaping and beautification activities	BTOR/Field report	Annually	Annual Report
Supply spawn for mushroom cultivation	It measures number of Oyster and Shiitake spawn produced and supplied to the farmers	BTOR/Field Report	Annually	Annual Report
Increase production of quality maize seeds	It measures the production from Hybrid maize promoted as spring maize and improved OPV maize varieties such as Yangtsepa, Chaskarpa and Bhur ashom 1.	BTOR/Field Report	Annually	Annual Report
Increase Maize productivity	It measures the average crop productivity carried out through crop cuts in the maize growing areas.	Crop cut method	Annually	Annual Report
Produce basic seeds of mid and high altitude rice varieties	It measures the on farm production of mid and high altitude rice varieties for seeds	BTOR/Field report	Annually	Annual Report
Increase Rice productivity	It measures the average crop productivity carried out through crop cuts in the rice growing areas.	Crop cut method	Annually	Annual Report

Increase groundnut production	It measures the quantity of ground nut production within the region.	BTOR/Field report	Annually	Annual Report
Crop intensification and promotion of Quinoa	It measures the area of quinoa promoted in the region.	BTOR/Field report	Annually	Annual Report
Establishment of demo orchards	It measures number of orchards established through lead farmers approach	Training/Field Reports	Annually	Annual Report
Promote protected vegetables cultivation	It measures number of sites where cultivation of horticulture crops under greenhouse has been supported	BTOR/Field Report	Annually	Annual Report
Study fruits and nuts phenology trend	It measures the phenology study (record of date of flower bloom at on-station) of fruit plants conducted in two sites and report generated by the given timeline	Trial report	Annually	Annual Report
Conduct research on clean citrus planting material production	It measures the initiation of citrus clean planting material production through shoot tip grafting by the given timeline	Trial report	Annually	Annual Report
Identify promising citrus varieties	It measures number of processing citrus varieties evaluated and promising ones identified	Trial report	Annually	Annual Report
Study local vegetables diversity	It measures the local chilli types collected and evaluated for morphological and agronomic characteristics and report compiled by the given timeline	Trial report	Annually	Annual Report
Initiate plant propagation through tissue culture	It measures initiation of trial on fruit crops propagation through tissue culture by the given timeline	Trial report	Annually	Annual Report
Evaluate and maintain germplasm of fruits and nuts	It measures number of wine grapes varieties evaluated in collaboration with Serbhum Brewery	Trial report	Annually	Annual Report
Release climate resilient maize varieties	It measures 1 line of climate resilient variety proposed for release to the VRC by given time.	VRC minutes	Annually	Annual Report/VRC minutes
Evaluate climate resilient maize varieties	It measures number of climate resilient maize varieties introduced and evaluated on-station	Trial report	Annually	Annual Report
Evaluation of Popcorn varieties	It measures the number of local popcorn varieties evaluated.	Trial report	Annually	Annual Report

Study best management practices of quinoa cultivation	It measures the number of sites for the trial being carried out. The trial method includes various ways of quinoa sowing such as broadcasting, transplanting and line planting.	Field/Trial report	Annually	Annual Report
Study effectiveness of bio-pesticides	It measures the study conducted to assess effectiveness of bio-pesticides on vegetables pests by the given timeline	Trial report	Annually	Annual Report
Evaluate local germplasm of groundnut	It measures the number of local groundnut seeds (within the region) and evaluated on-station/on farm	Trial report	Annually	Annual Report
Research on bioacoustics system with electric fence to repel wild animals from agricultural farm	It measures the study on bioacoustics system conducted and information generated by the given timeline	Trial report	Annually	Annual Report
Promote drip and sprinkler irrigation system	Number of sites promoted with drip/sprinkler/smart irrigation systems	BTOR/Field report	Annually	Annual Report
Promote solar dryers using greenhouse	It measures the number of sites promoted with solar dryers using greenhouse by the given timeline	BTOR/Field report	Annually	Annual Report
ROP of drought tolerant upland paddy	It measures the number of sites for ROP carried out within the region.	BTOR/Field report	Annually	Annual Report
Generate technologies of oyster cultivation on different substrates	It measures the study conducted to cultivate oyster and shiitake on saw dust by the given timeline	Trial report	Annually	Annual Report
Lift irrigation at Jatshabi, Lhuntse and Chuthawoong, Trashigang	It measures the initiation of lift irrigation installation by the given timeline	BTOR/Field report	Annually	Annual Report
Promote community based quinoa de-husking machine	It accounts for number of quinoa de-husking machines promoted in the region.	BTOR/Field report	Annually	Annual Report
Support to commercial farms	It measures numbers of farmers/entrepreneurs/youth groups that have been supported in establishing agriculture based enterprises (field crops, horticulture crops, mushroom and agriculture related enterprises)	BTOR/Field report	Annually	Annual Report

Publish extension materials on crop management technologies	It measures number of articles/research papers published in BJA/Sanam Drupdrey/Other Journals both national and international, Extension materials and Audio-visuals produced related to agriculture	Publication	Annually	Publication/Annual Report
Carry out cost of production survey for major crops	It measures survey conducted to estimate cost of production of identified horticulture crops and data submitted to DoA for final analysis and publication	Survey/BTOR	Annually	Annual Report/DoA
Frameworks/Guidelines/Standards developed	It measures at least one standard/guideline for crops/technology evaluation or dissemination developed and circulated for comments by the given timeline	Publication	Annually	Publication/Annual Report
Regional database developed	It measures the regional database on 9 indicators compiled by the given timeline	Online using Google sheet	Annually	Online
Publish annual report	It measures the activities completion report published for the given financial year	Publication	Annually	Publication/Annual Report
Budget utilized efficiently as per BUP	It measures the utilization of budget for given financial year	Expenditure report	Annually	Budget report/Annual 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)
Farmers/Dzongkhags	Establish commodity focused village	Interest of the farmers and administrative support from Dzongkhag agriculture sector	Output depends on the interest of farmers and administrative support of Dzongkhags	Provide labour and agree to establish orchards	Target may not meet
Farmers/Dzongkhags	Supply spawn for mushroom cultivation	Interest of the farmers and support from Dzongkhag agriculture sector	Output depends on the interest of farmers and administrative support of Dzongkhags	Farmers arranges billets/straws and take up mushroom cultivation	Target may not meet
Farmers/Dzongkhags	Increase production of quality maize seeds	Interest of the farmers and administrative	Output depends on interest of the farmers	Farmers takes up maize production and	Target may not meet

		support from Dzongkhag agriculture sector	and administrative support from Dzongkhag agriculture sector	cooperates while conducting crop cut	
Farmers/Dzongkhags	Increase Maize productivity	Interest of the farmers and administrative support from Dzongkhag agriculture sector	Output depends on farmers' cooperation	Farmers cooperate while conducting crop cut	Target may not meet
Farmers/Dzongkhags	Increase Rice productivity	Interest of the farmers and administrative support from Dzongkhag agriculture sector	Output depends on interest of the farmers and administrative support from Dzongkhag agriculture sector	Farmers cooperate while conducting crop cut	Target may not meet
Farmers/Dzongkhags	Evaluate local germplasm of groundnut	Interest of the farmers and administrative support from Dzongkhag agriculture sector	Output depends on interest of the farmers and administrative support from Dzongkhag agriculture sector	Farmers provide the land for on farm evaluation	Target may not meet
Farmers/Dzongkhags	Increase groundnut production	Interest of the farmers and administrative support from Dzongkhag agriculture sector	Output depends on interest of the farmers and administrative support from Dzongkhag agriculture sector for production	Farmers take up groundnut production	Target may not meet
Farmers/Dzongkhags	Crop intensification and promotion of Quinoa	Interest of the farmers and administrative support from Dzongkhag agriculture sector .	Output depends on interest of the farmers and administrative support from Dzongkhag agriculture sector	Farmers take up community seed production	Target may not meet

Farmers/Dzongkhags	Establishment of demo orchards	Interest of the farmers and logistics support from Dzongkhag agriculture sector	Output depends on interest of the farmers and administrative support from Dzongkhag agriculture sector	Farmers participate in the lead farmers' program	Target may not meet
Farmers/Dzongkhags	Promote protected vegetables cultivation	Interest of the farmers and logistics support from Dzongkhag agriculture sector	Output depends on interest of the farmers and administrative support from Dzongkhag agriculture sector	Farmers take up protected cultivation of horticulture crops	Target may not meet
Serbhum Brewery/Sunridge	Evaluate and maintain germplasm of fruits and nuts	Cooperation and support from the mentioned private companies	Collaborative trial among ARDC and private companies	Companies support orchard management both in terms of fund and technical supports	Target may not meet
VRC	Release climate resilient maize varieties	Approval of the VRC	Output depend upon the approval of VRC	VRC's approval is required to release the variety	Target may not meet
CIYMMT/Dzongkhags	Evaluate climate resilient maize varieties	Support from CIYMMT	Output depends on support of CIYMMT	CIYMMT provides planting materials and technical support	Target may not meet
Farmers/Dzongkhags	Study best management practices of quinoa cultivation	Interest of the farmers and administrative support from Dzongkhag agriculture sector .	Output depends on interest of the farmers and administrative support from Dzongkhag agriculture sector and collaborative research	Farmers take up crop cultivation as per the crop management trial protocols	Target may not meet

Farmers/Dzongkhags	Promote drip and sprinkler irrigation system	Interest of the farmers and administrative support from Dzongkhags	Farmers interest to take up the technology is required	Farmers take up the technology	Target may not meet
Farmers/Dzongkhags	Promote solar dryers using greenhouse	Interest of the farmers and administrative support from Dzongkhags	Farmers interest to take up the technology is required	Farmers take up the technology	Target may not meet
Farmers/Dzongkhags	ROP of drought tolerant upland paddy	Interest of the farmers and administrative support from Dzongkhag agriculture sector .	Output depends on interest of the farmers and administrative support from Dzongkhag agriculture sector.	Farmers take up crop cultivation	Target may not meet
Farmers/Dzongkhags	Research on bioacoustic system with electric fence to reple wild animals from agricultural farm	Interests of the farmers	Output depends on the farmers' interests	Farmers accept to install the system for trial	Target may not meet
Farmers/Dzongkhag	Lift irrigation at Chuthawoong, Trashigang	Support of farmers and administrative support from Dzongkhag	Output depends on their interest and support	Farmers support installation of lifts and Dzongkhag in monitoring	Target may not meet
Farmers/Dzongkhags	Promote community based quinoa dehusking machine	Interest of the farmers and administrative support from Dzongkhag agriculture sector.	Output depends on interest of the farmers and administrative support from Dzongkhag agriculture sector.	Farmers take up community utilization of quinoa dehusking machines	Target may not meet
Farmers/Dzongkhags/ Banks	Support to commercial farms	Interest of the farmers, support from Dzongkhag agriculture sector and	Output depends on the interest of farmers, administrative support	Farmers take up commercial enterprise with loan	Target may not meet

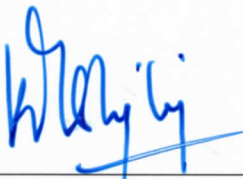
		loan support from Banks	of Dzongkhags and loan approval from Banks	approval from Banks and technical support from ARDC	
Dzongkhags	Regional database developed	Support of Dzongkhags	It a compilation of Dzongkhags' data	Dzongkhags provides the data on time	Target may not meet

Whereas,

I, Program Director, Agriculture Research and Development Centre (ARDC)-Wengkhar, 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 Program Director, Agriculture Research and Development Centre-Wengkhar to provide necessary support for the delivery of the results described in this Annual Performance Agreement.

SIGNED:



Kinlay Tshering
DIRECTOR, DoA

28th August, 2019.

Date



Wangda Dukpa
CHIEF, ARED

28/08/2019

Date



Lhap Dorji
PROGRAM DIRECTOR
ARDC-WENGGHAR

28/8/2019.

Date