



# RNR SECTOR ANNUAL PROGRESS REPORT

JULY 2021 TO JUNE 2022



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# **MINISTRY OF AGRICULTURE AND FORESTS**

## **RNR SECTOR**

**ANNUAL PROGRESS REPORT**

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## INTRODUCTION

The Ministry of Agriculture and Forests also known as Renewable Natural Resource (RNR) Sector is the custodian of the country’s renewable natural resources and the natural environment. The overarching theme for the RNR sector 12<sup>th</sup> FYP is “Enhancing Food Self-sufficiency and spurring RNR Sector transformation while ensuring sustainable Natural Resource Management”.

For the 12<sup>th</sup> plan, RNR sector has identified seven programmes to be implemented by various agencies. The annual progress report of the sector for the fiscal year 2021-2022 is structured based on the achievement of the Annual Performance Agreement (APA) Success Indicators and strategic interventions of the ministry.

The RNR sector plays an important role in terms of contribution to the national economy, food security, natural resources management and utilization, and youth engagement and employment.

### **The primary objective of the sector are as follows:**

- Enhance food and nutrition security
- Enhance Sustainable Management and utilization of natural resources
- Sustain RNR sector contribution to the national economy
- Enhance effective and efficient delivery of RNR services

## MONITORING AND EVALUATION PROCESS

The monitoring and evaluation were done at two levels. At the National Level, the RNR sector performance were monitored, evaluated and reported based on the Key Performance Indicators of Agency Key Result Areas (AKRAs), focusing mostly on the outcome level indicators. While, for the department level, the reporting was done based on the output level results and indicators.



## RNR SECTOR GDP GROWTH AND POLICY INTERVENTION

### i) RNR Sector GDP growth

- The national GDP recorded in 2020 was negative 10.08 percent, while the primary sector (agriculture, livestock and forestry) has grown at 4.57 percent. Overall RNR GDP growth was 15.78 percent in 2019 to 19.23 percent in 2020, i.e an increase of around Nu. 26 billion to Nu. 33 billion.

### ii) Key Policies and Strategies Developed and Implemented during 12th plan

The RNR Sector has developed following key policies and strategies:

- Revision of FNS policy 2014: To address emerging needs and priorities.
- Drafted RNR Strategy 2030: To provide and guide RNR development in next 10 years.
- Developed RNR Marketing strategy 2021: To re-prioritize market led production, facilitate domestic trading of RNR produce and facilitate export markets for RNR produce.
- Developed Food System Pathways: Eight pathways to transform food system of the country

- Incentive Scheme for Market led Production: This scheme is up-gradation of buy-back scheme- The new system prioritizes three categories of the crop /livestock products for the scheme- Category A- Priority crops identified on annual basis (signature commodities), Category B- those products for exports, Category C- Not essential commodities (eg. Cabbage, radish).
- Revised Cost Sharing Mechanism Guidelines: To guide the sector in uniform support through value chains (production, processing and marketing).

## KEY ACHIEVEMENTS

### RNR Commodities Self-sufficiency and Production

- **Food Self-sufficiency:** In terms of Food Self Sufficiency Ratio, the sector stands 34.71% self-sufficient in rice, 72.27% for maize, 84% for vegetables, 92% for dairy, 44% in meat and 100% in egg.
- **Vegetable production:** 6115.24 MT of winter vegetables worth Nu 351 million produced



- **Livestock production:** 225,081MT of milk; 7,571 MT of Chicken; 595 million of egg; 15,363 MT of Cheese; 4,152 MT of pork; 8,151 MT of butter; 1,039 MT of chevon; 30,843 doses of frozen semen produced and distributed for dairy breed intensification program.
- **Livestock Mega farms:** 45 Broiler Farms (3000 bird level), 15 Layer Farms (3000 bird level) and 57 Piggery Breeding Farms (20 sow level) established, engaging 167 youths and laid off employees.

### **RNR Market Facilitation of RNR Produce**

- **Export Facilitation:** Facilitated exports of 155,542 MT of RNR produce worth Nu. 7.8 billion in the past three years.
- **Incentive scheme for market led production (Buy-Back):** Facilitated buy-back of 1925.75 MT RNR produce (Cardamom, Quinoa, Rajma Bean, Maize, cabbage, ginger) worth Nu. 378.27 million in the past three years.
- **Marketing equipment:** 26.82 million worth of value addition and packaging equipment supported to 153 FGs/Coops.
- **School and Hospital Linkage to producers:** Linked 350 schools and 5 hospitals with 470 FGs/Coops

- **Export facilitation:** Facilitated export of 1,014,275MT of RNR produce worth Nu 8884.49 million in the last three years

### **RNR Infrastructures**

- **Irrigation:** 289.4 km of irrigation constructed/renovated
- **Micro-irrigation:** 2,337 acres of land brought under micro-efficient Irrigation System for dry land irrigation.
- **Cold storage:** Three Integrated Cold Stores established with investment of Nu. 127 million, in Sarpang, Wangduephodrang and Trashigang.
- **Market Infrastructure:** 45 various market infrastructures established in various Dzongkhags.

### **RNR Inputs and interventions**

#### **Livestock Sector**

- 3,776,911 Layer Day Old Chicks for Egg production supplied
- 32,862 Piglets supplied to farmers for pork production;
- 7,750,354 Fingerlings supplied to farmers for table fish production;
- 179 Bulls/heifers supplied

#### **Agriculture Sector**

- 5,119 number of Greenhouse supplied

- 12,224.71 MT of fertilizers supplied
- Agro-chemicals supplied – 1879.7 MT of Herbicides and 81.07 MT of Pesticides
- 114,808 numbers of improved temperate fruit seedlings supplied (Apple, Peach, Plum, Pear and persimmon)
- 1,019,785 number of seedlings supplied under Million Fruit Tree Project
- 57.53 MT of vegetable seeds supplied

## **Youth Engagement and Employment generation In RNR Sector**

- **Youth Engagement:** Selected 207 project proposals for funding for establishment of youth enterprises and plan to provide skills to 1800 youths on agri-business.
- **Employment Generation:** 510 paid employments in various FGs/ Coops generated from 2018-2021.
- Trained 887 youths for enterprise development under YERE project
- Trained over 300 farmers/youths on farmers' business literacy.

## **Human Wild-life Conflict Interventions**

### **Human Wildlife Conflict Management:**

To mitigate the Human Wildlife Conflict, construction of electric fencing was carried out in various locations across the country.

The country has more than 5600 KM of electric and solar fencing of which 1956.43 KM were established in past three years

- **Interventions for HWC:** Electric and solar powered electric fence system, Wild Animal Repellent (Sound and light system), Stone wall fencing: Stonewall fencing, Chain-linked fences, Trenches and bee hives, Habitat Management, establishment of Tiger Conservation Fund etc.

## **Natural Resources Management, Utilization and Green initiatives**

- Forest capacity of net carbon sequestration maintained at 8.37 million tons of Co<sub>2</sub> absorption annually
- 17 ecotourism products have been developed
- Mapping of water sources covering 7399 water sources across the country and report published
- **Access and Benefit Sharing initiatives:** Two access and benefit sharing initiatives completed: Oregano species extraction and testing and product development of essential oil.





- **Bio-gas:** Country has over 5000 biogas plants, in the past three years 2,551 new biogas plants were established of which 420 was established in the current reporting period
- **Pasture development:** 30,000 acres area brought under improved pasture developed; 214,531 MT of conserved forage production.
- **Surface Collection and River Bed Materials (RBM):** 56 surface collection and riverbed material dredging sites were operated covering around 1956 acres in SRF, private registered land operated by NRDCL, private companies, and DGM
- Allotment and export of River Bed Materials amounting to 2.9 million cubic meters

### **Agricultural Land Development**

- 8875.15 acres of Agriculture Land Developed
- 3016.81 acres of area brought under sustainable land management
- 4,410.85 acres of wet-land brought under cultivation,
- 21,180.49 acres of land brought under farm mechanization
- Established 65 commercial agriculture farms (mega farms)



## ANNUAL PERFORMANCE AGREEMENT (APA) 2021-2022 SCORE

The rating of APA was evaluated at two levels of Committee, first by the Internal Review Committee (IRC), which was conducted on 27<sup>th</sup> June and 28<sup>th</sup> June 2022. The score was further validated by the National Technical Committee (NTC). For the FY 2021-2022, the score of the MoAF APA was 87.50%. Amongst the agencies within the MoAF, DoA scored highest with 100%, followed by BAFRA 99.96% and DoFPS with 98.35%. The agency-wise score of the APA is shown in the table below.

**Table 1: APA 2021-2022 Scores by agencies**

Agency	NTC's Scores (%)
MoAF	87.50
DoA	100
BAFRA	99.96
DoFPS	98.35
DAMC	95.26
DoL	92.33
Secretariat	95



## ACHIEVEMENT OF KEY APA 2021-2022 SUCCESS INDICATORS

### DEPARTMENT OF AGRICULTURE

Department of Agriculture (DoA) focus to reach out to clients through a network of Extension, Research and Central Program offices established at strategic locations throughout the country, taking services closer to the clients. For the fiscal year 2021-2022, DoA implemented 2 Success Indicators, which were at the Ministry level and 14 sector specific Success Indicators, which aimed to achieve the following objectives:

1. Increase crop production for enhancing food self-sufficiency, income and nutrition security,
2. Promote organic farming for sustainable agriculture, safe food, and environment conservation,
3. Develop functional farm infrastructures and facilities,
4. Generate and promote climate-resilient agriculture technologies.

**Fruit seedlings:** 1,019,785 no. of fruit seedling supplied under Million Fruit Tree Plantation & 2,38,323 no fruit seedling supply through NSC.



**Protected Agriculture:** 350 number of greenhouses were supplied to the famers in the reporting period to boost vegetable production and to subsequently reduce dependance on import of vegetables.

**Climate smart irrigation and water efficient technologies:** 529 acres were brought under micro efficient irrigation schemes against the target of 400. Similarly, 56.26 KM of irrigation constructed/renovated in the reporting period.

**Agriculture Land development:** 1621.33 acres of agriculture land were developed and fallow land were revived during the fiscal year 2021-2022. In addition, 440.89 acres of area were brought under SLM against the target of 200. Similarly, 6450 acres of land were mechanized through government hiring scheme.

**Organic farming for sustainable agriculture:** In the fiscal year 2021-2022, 1200.043 acres of land were certified for organic agriculture production against the target of 1000.

Besides, 1640 MT of Organic fertilizers were produced and 17.6 MT of organic seed supplied to the farmers. Further, 15 products were certified as organic products against the target of 4.





## DEPARTMENT OF LIVESTOCK

The Department of Livestock (DoL) plays an integral role in the lives of Bhutanese farmers that creates enabling environment for farmers and entrepreneurs to invest in livestock activities. For the financial year 2021-2022, DoL implemented 2 Success Indicators, which were at the Ministry level and 6 sector specific Success Indicators, which aimed to achieve the following objectives:

1. Increase livestock production for enhancing food self-sufficiency, income and nutrition security,
2. To promote green livestock farming practices to adapt/mitigate climate change, and
3. To improve and sustain livelihood of highlanders and livestock farmers.

**Livestock production:** In the fiscal year 2021-2022, the department has produced 56,196.17 MT of milk production against the target of 55,171 MT, 156.41 million egg were produced against the target of 154.8 million, 2123.8 MT (258.8 MT BTI) chicken production against the target of 2636 MT, 1189 MT pork production against the target of 1146 MT, 211.25 MT fish were produced against the target of 205 MT, 13 commercial broiler farms at enterprise level was established against the target of 13, 161.73 MT of Chevon production against the target of 229 MT, 24 Layer farms established against the target of 20 and 9.638 acres of new fish pound established against the target of 8 acres.

**Input supply:** During the reporting period, 23 breeding farms were established against the target of 19 farms, 653,094 Layer

DoC were produced and distributed from three farms against the target of 437,000. Similarly, 14,608 of piglets were produced by DoL farms and private pig breeders against the target of 13,519, 2,775,894 fingerlings were produced and distributed to 14 Dzongkhags against the target of 912,750 and 74516 milch cattle population is maintained against the target of 83,404. (Livestock Census 2021)

**Highland Development Program:** The department managed to maintained 38,642 yak population against 40,438 and 966 households of yak herder against the target of 1039 HH. Similarly, 10,694 sheep population was also maintained against the target of 11,277.

**Climate smart livestock farming:** During the reporting, the department has developed 1606.88 acres of improved pasture and 4963 acres of winter fodder. A total of 6569 acres were developed against target of 5000 acres. In addition, 420 biogas plant were established against the target of 880. However, the target revision of 440 was proposed during midyear review and was considered because of funding as well as feasibility issue.



## DEPARTMENT OF FOREST AND PARK SERVICES

The Department of Forests and Park Services (DoFPS) is one of the oldest government departments established way back in 1952. Since its establishment, several paradigm shifts have been witnessed in the way forest resources are managed. The key responsibilities of the DoFPS are to ensure sustainable management of forest resources, efficient and effective forestry administration and service delivery.

For the financial year 2021-2022 DoFPS implemented two Success Indicators, which were at the Ministry level and 9 sector specific Success Indicators, which aimed to achieve the following objectives:

1. Enhance sustainable management and utilization of Natural Resources for ecosystem goods and services,
2. Enhance Climate Smart and Disaster Resilient Development, and
3. To enhance coordination and support services.

### *Sustainable management and utilization*

**of natural resources:** In the fiscal year 2021-2022, the department allotted 3.26 million cft of timber against the target of 2.8 million cft for different purposes. Further, 2.876 mm<sup>3</sup> of RBM were extracted and exported

**Scientific thinning:** To improve the quality of timber and health of the forests and to sustainably manage the forests, during the reporting period, over 146 hectares of State Reserved Forests (SRF) were brought under scientific thinning against the annual target of 25 ha, which correspond to 584% achievement against the annual target.

**Nature based eco-tourism:** During the reporting period, the department developed 9 nature based eco-tourism products against the target of 7 and handed over to Tourism Council of Bhutan.

**Protected and conservation management area:** Effectiveness of 18 protected areas (10 parks and 8 biological corridors) assessed through Bhutan METT. Under HWC measures, 3 HWC mitigation measures for tiger, elephant and snow leopard were carried out.



## DEPARTMENT OF AGRICULTURAL MARKETING AND COOPERATIVES

Farming in Bhutan has largely remained subsistence although the sale of agriculture, livestock and forestry products continues to be the major source of income to many of the farmers. Despite continued efforts to make the agriculture marketing system efficient and vibrant, the development of agriculture marketing and trade is still being faced with many challenges. Therefore, the DAMC is mandated to improve marketing system (both internal and external) of RNR products, value addition and enterprise development.

This is expected to enhance employment opportunities, income generation and product diversification. Promotion of Farmers groups and cooperatives, establishment of functional farm-shops and development of market infrastructures are some of the major interventions for the department. For the fiscal year 2021-2022, the DAMC implemented four Success Indicators, which were at the Ministry level and 9 sector specific Success Indicators, which aimed to achieve the following objectives:

1. Increase annual export and domestic trade of RNR products,
2. Increase employment in RNR sector and promote RNR enterprises, and
3. Establish RNR commodity value chain.

**RNR based enterprises:** In the fiscal year 2021-2022, the department facilitated and established 12 RNR based enterprises

### **Farmers Groups and Cooperatives:**

55 undergoing FGs were mentored and 43 potential FGs/ Coops were provided Value addition technology and product promotion

**Market Infrastructure:** DAMC supported the establishment of 14 market infrastructures in dzongkhags such as Sarpang, Dagana, Chukha, P/Gatshel, Mongar, Paro, Thimphu, Trongsa, Samte & S/Jongkhar. In addition land were identified in Samtse, Phuntsholing, Gelephu and Nganglam to construct Export Facilitation Centers to promote export market

**RNR Export:** A total of 47,232 MT of RNR commodities which comprises of Apple (804.9 MT), Betel nut (3127 MT), Cardamom (646.8 MT), Ginger (2284 MT), Potato (37484MT) and Vegetables (2884 MT) were exported. In addition, 17 products were sent to Singapore including quinoa, turmeric, ginger, Highland honey 240qms, 3 products were sent to Malaysia, 6 products were sent to Japan.

## BHUTAN AGRICULTURE FOOD AND REGULATORY AUTHORITY

Bhutan Agriculture and Food Regulatory Authority (BAFRA) is a perpetual, public-sector institution mandated to strengthen Plant/Animal Biosecurity and Biosafety, and to enhance food safety and quality in the country. For the financial year 2021-2022 BAFRA implemented two Success Indicators, which were at the Ministry level and 8 sectoral Success Indicators to achieve following objectives:



1. Strengthen Plant and Animal Biosecurity
2. Enhance Food Safety and Quality

**National Biosecurity Index:** In the fiscal year 2021-2022, BAFRA developed Import risk analysis guidelines, conducted training on guidelines (livestock officials of Eastern Region). Besides, the maintenance of 5 incinerators at entry point (PAQS Samtse, DGPC, Gelephu, Phuntsholing, Samdrupjongkhar and Ngalam) and X-ray screening technical competency for detection and identification of biosecurity risk for quarantine inspectors were provided to 11 employees at Bhutan Post. Further, meat inspection manual was developed and training on ante-mortem and postmortem were given to the BAFRA field officials.

**National Food Safety Index:** 4 GAP certificate issued and 5 Product certificate under BAFRA's Third party certification issued during the FY against the target of 7. Inspection services strengthened by implementing the requirements of ISO/IEC 17020 - MRM, Internal Audit, Issuance of conditional Clearance conducted, 27 food establishment licensed as per the requirement of BAFRA GHP and GMP, Food Certification Scope maintained and renewed, 12 organic certifications granted, 35 test parameters maintained and PRA carried out for 25 Crops and 5 non-wood produce

In addition, 15 organic products were certified (ginger, Chili, cabbage, beans, spinach, cauliflower, cardamom, broccoli, onion, turmeric, kiwi, mandarin, tomato and strawberry).

Likewise, 40 organic farms were registered

for BAFRA's Third Party Certification against the target of 30. Further, 5 New test parameters were initiated/introduced to enhance the testing services of NFTL (2 microbiological test parameters are Fecal streptococci in food; and pseudomonas aeruginosa in water, while 3 new test parameters for chemicals are i) total ash in spices and condiment; ii) turmeric in chilies and coriander; and ii) iron in water)

## SECRETARIAT SERVICES

The Secretariat services include agencies such as Directorate Services, Policy and Planning Division, National Bio-diversity Center and Rural Development Training Center. The Secretariat Services aims to mainstream 'Triple C' concept of Coordination, Consolidation and Collaborations and enhance cross-sectorial coordination and collaborations. Therefore, in the current fiscal year 2021-2022, Secretariat Services implemented two Success Indicators, which were at the Ministry level and 11 sector specific Success Indicators, which aimed to achieve the following objectives:

1. Enhance efficiency and effectiveness of RNR Policies, information, legislation services,
2. Strengthen Planning and monitoring system,
3. Increased and diversify conservation of biodiversity and generate quality information,
4. Enhance capacity of youths and farming communities, and
5. Strengthen Human Resource Management and Development

**Policy and strategies:** FNS policy review initiated with the approval of concept note by GNHC and the Cabinet. The financial support was sought from EU-TACS project under PPD. The revision of RNR Strategy 2030 initiated and Fallow Land Bank framework developed and being finalized for implementation.

**Bhutan RNR Statistics:** The Bhutan RNR Statistics provides a wealth of information that will enhance understanding of the operations of the agricultural holdings in Bhutan. It also presents additional information that will create and enhance the evidence-based decisions that are required to develop and implement effective policies and programs related to the RNR sector in the country.

Chiefly, the information covers agricultural holdings in terms of their geographic distribution, general characteristics, demography, land and land use, irrigation, crops, agricultural practices, livestock and forestry that will be important for the policy makers.

**RNR sector legislation:** A total of three important RNR legislations were drafted or reviewed in the fiscal year 2021-2022 as follows;

1. Forest and Nature Conservation (Amendment) Rules and Regulations, 2021;
2. Forest and Nature Conservation (Amendment) Rules and Regulations, 2022;
3. Revision of Cooperatives Act, 2009.

**Conservation and sustainable utilization of biological resources:** during the fiscal year 2021-2022, NBC has collected and conserved 5695 germplasm and biological resources against the target of 4327. The 5695 germplasm consists of 105 crop accession, 2 seed species (garlic & potato), 4852 doses of animal semen, 603 doses of animal DNA, 103 No. of herbarium specimens, 25 Native plants seed of 5 species.

In addition, ABS prototype product for Sweritia Chirayita- developed and the supply chain for the ABS product has been formalized at Lauri, Samdrup Jongkhar with the formation of community cooperative (Pedmai Tshothang Ngomen Khalui Bedrur Dey) along with the community Bylaw and executive members. Further, 454 species pages were curated on the Bhutan Biodiversity portal against the target of 450.

**Budget utilization:** In terms of budget utilization, Nu 3629.701 million were spent against the target of Nu 4026.452 million as of 30th June 2022 which is 90.3% achievement.

## FINANCIAL ALLOCATION AND UTILIZATION

For the Financial year 2021-2022, the Royal Government of Bhutan has approved annual plan outlay of Nu. 4,026.45 million of which Nu. 1,784.843 million for current and Nu. 2,241.609 million as capital budget. Of the total allocation, about 34.74% was allocated to Forestry, followed by 25.01% to agriculture and 19.15% to Livestock sector as in the table below.

**Table 2: Budget and expenditure statement for the fiscal year 2021-2022**

FOR THE FISCAL YEAR 2021-2022 NAME	REVISED BUDGET			EXPENDITURE			Percent
	CURRENT	CAPITAL	TOTAL	CURRENT	CAPITAL	TOTAL	
SECRETARIAT	106.098	221.974	328.07	105.122	185.102	290.22	88%
DEPARTMENT OF AGRICULTURE	386.583	620.550	1,007.13	383.465	519.688	903.15	90%
DEPARTMENT OF LIVESTOCK	340.047	431.186	771.23	336.755	404.363	741.12	96%
DEPARTMENT OF FOREST AND PARK SERVICES	808.563	590.388	1,398.95	804.665	504.670	1,309.34	94%
BHUTAN AGRICULTURE & FOOD REGULATORY AUTHORITY	108.096	29.220	137.32	107.802	25.999	133.80	97%
DEPARTMENT OF AGRICULTURE MARKETING AND COOPERATIVES	35.456	348.291	383.75	35.047	313.951	349.00	91%
<b>GRAND TOTAL</b>	<b>1784.843</b>	<b>2241.609</b>	<b>4,026.45</b>	<b>1772.856</b>	<b>1953.773</b>	<b>3,726.63</b>	<b>93%</b>

An assessment of the expenditure shows that 93% of the budget allocated were utilized, while 7% was left unspent during the financial year. This indicates that the overall implementation capacity of the ministry in terms of allocated budget stands at 93%. Analysis on the sector wise expenditure shows that BAFRA and DoL spent 97% and 96% of the budget, followed by DoFPS (94%). While on other hand, Secretariat spent lowest with 88% of the budget.

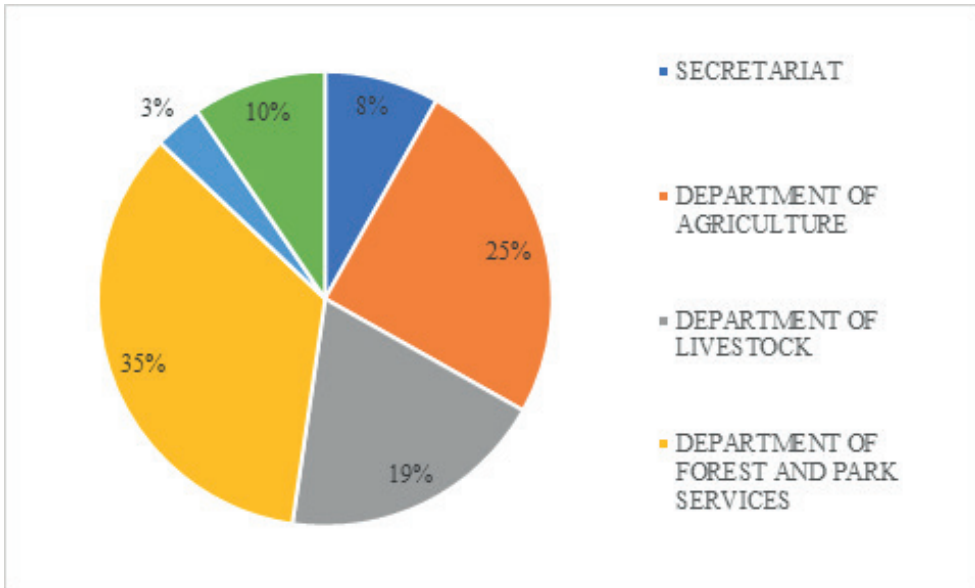


Figure 1: Sector-wise budget allocation

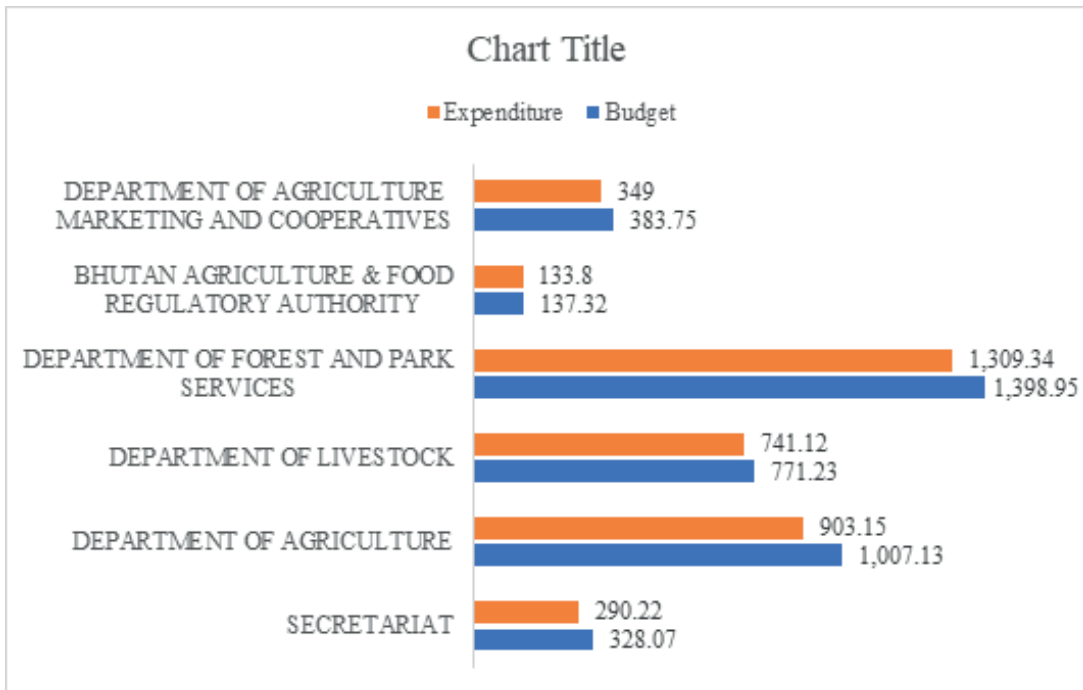


Figure 2: Sector-wise budget and expenditure statement



## ISSUES AND CHALLENGES

*General Challenges to the RNR Sector:* Bhutan is characterized as “agriculture-based society” with majority of the population depending on it directly for their livelihood. The RNR sector continued to face the recurring challenges of:

1. Loss of agriculture land for other development activities,
2. Rural urban migration and labor shortages,
3. Human wildlife conflicts,
4. Decline in share of budget allocation,
5. Climate change due to global warming,
6. Slow growth in Agro-based industries
7. Weak internal market system

## CONCLUSION

Despite challenges, the Ministry was able to achieve most of the key performance indicator targets and results set for the fiscal year 2021-2022. However, the ministry needs to emphasize on maximum utilization of allocated funds. There is also a need to carry out analysis to set-up realistic annual APA targets focusing to address challenges and issues of the sector.

Over the years, contribution of the ministry to the national economy in terms of GDP and the growth of RNR sector has slightly increased as compared to the previous years. The self-sufficiency policy continues to be percepts of overall agriculture development in the country, which will ultimately contribute towards economic self-reliance. Efficient and effective management of natural resources has ensured maintaining minimum of 60% of the country’s geographical area under forest cover for all times to come as enshrined in the Constitution of Bhutan.









## ANNEXURES: PROGRESS AGAINST APA 2021-2022 SUCCESS INDICATORS

### Ministry of Agriculture and Forests

Success Indicator	Unit	Target	Actual Achievement
Post production facilities established	Number	13	Completed: Large Market Facility, Phuntshotang; Ginger aggregation Center, Roadside market shed, Chaling, Mongar, Collection Shed, Tsakaling, Mongar; Damchu Packhouse Construction on-going: Drujegang roadside MF (80% completed); Chodzom, Sapa-ng PH; Dagapela PH (80% completed) Initiated: 3 cold stores (Dagana, Zhemgang & Sarpang- feasibility study carried out, land identified, and design and drawings completed)
Meat import substituted (chicken)	MT	800	258.8 MT Chicken production under BTI against the target of 800 MT. The target was proposed for review during the mid-year review but directed to halt for consideration during the assessment by the NTC & HPC. The Score is based on the achievement (no consideration was accorded).
Self-sufficiency for high demand vegetables	Percent	65	Self-sufficiency of 66% was achieved for high demand vegetables
RNR based enterprises established	Number	11	12 RNR based enterprises established. The detail are as follows; <ol style="list-style-type: none"> <li>1. Gelephu Om Detshen Ice Cream Making</li> <li>2. Doma Muza &amp; Supari Processing, Sarpang</li> <li>3. Chips processing unit, Tangsibji, Trongsa</li> <li>4. Potato chips processing unit, Tshangkha, Trongsa</li> <li>5. Ice block manufacturing, Bongo, Chhukha</li> <li>6. Urka bangla pickling, Trashiyangtse</li> <li>7. Bhutan growers cold pressed oil processing unit at Jazam, Chang, Thimphu (Perrilla, Mustard and groundnut oil)</li> <li>8. Druk meto (bhutan bloosoms) - value addition and processing</li> <li>9. B-Organic (processing and marketing)</li> <li>9. Drangmaling potato chips processing unit, Tsamang</li> <li>10. Changkha potato chips processing unit</li> <li>11. Noodles, pickle and Bakery, Bjabcho, Chukha</li> <li>12. 4 Bites candy processing youth group, Lingmithang</li> </ol>

Success Indicator	Unit	Target	Actual Achievement
Number of products for trial export marketing conducted and market promotion supported	Number	7	6 products were sent to Australia; 6 products were sent to Japan; 15 products to Singapore and 6 products to Bangladesh and Malaysia.
Supply Chain enhanced	Percent	100	1. one F&V aggregators in each dzongkhag identified (30%) 2. Online RNR produce buying and selling platform initiated and developed (10%). 3. 550 FGs/ Coops were linked with schools and hospitals and other institution (124 new linked) against the target of 300 (50%); 4. linking 12 organic groups to urban market carried out (10%)
Export of agricultural commodities facilitated	Number	5	Technical Information of Pest Risk Analysis of 25 Crops and 5 non-wood produce carried out
Sustainable utilization of NRS maintained	Percent	100	2.87 mm3 extracted again the target of 2.2; 146 hectares of scientific thinning carried out against the target of 100.
Germplasm and biological resources conserved	Number	4307	5695 germplasm and biological resources conserved against the target of 4327. They are as follows: 105 crop accession (Target 100). 2) 2 seed species (garlic & potato) (target 2). 3) 4852 Doses of animal semen (target 3500). 4) 603 doses of animal DNA (target 600). 5) 103 No. of herbarium specimens (target 100) 6) 25 Native plants seed of 5 species collected (target 27).



Success Indicator	Unit	Target	Actual Achievement
Delivery of the key public services in compliance to the SDG	Percent	100	DoFPS: 519 Rural house building Timber Permit; 632 Removal of Forest produce from pvt land; 3267 permit for flagpole, firewood and fencing pole. BAFRA: 60 services of food licensing issued; 2819 biosecurity services (1608 import permit; 75 in country movement permit; 1136 phytosanitary certificate) delivered; DoL: Sterilization of pet animals; 154 (ultrasonography) Clinical Diagnostic test; 995 Laboratory diagnostic test (397 hematology; 346 lab parasitology; 252 bio chemistry). DoA: 15 number LoI and Technical clearance issued; 4 number of testing and certification of agriculture machineries
Availability of timely, relevant and reliable data ensured and decisions improved	Percent	90 and above	Achievement as reported by NSB
Integrity score improved	Percent	90% and above	Achievement as reported by ACC



## Department of Agriculture

Success Indicator	Unit	Target	Actual Achievement
Promote fruit seedlings	Number	140,000	1. Total number of fruits seedlings promoted by the NSC, ARDCs and Seed Agencies. a. Subtropical fruit plants:36,174 b. Temperate fruit plants: 24,730 c. Assorted seedlings: 177419 d. Million fruit tree plantation project=1,019,785
Promote Protected Agriculture	Number	350	594 numbers of protected agriculture structure (prefabricated greenhouse) were supplied to the farmers in 18 dzongkhags
Area brought under micro-efficient irrigation schemes	Acres	400	529 acres brought under micro efficient irrigation schemes against the target of 400.
Agriculture Production Research	Number	85	145 agriculture production research conducted against the target of 85. The details are: ARDC Bajo (37 no.), ARDC Wengkhar (32 no.), ARDC Samtenling (46 no.), NCOA Yusipang (30 no.)
Area brought under Sustainable Land Management	Acres	200	440.89 Acres of area were brought under SLM against the target of 200.
Area of land certified for organic agriculture production	Acres	1000	1200.043 acres of land certified for organic agriculture production against the target of 1000
Organic products certified	Number	4	15 Products were certified against the target of 4
Organic inputs produced	MT	1500	1640 MT of Organic fertilizers were produced,
Construction of Laboratories for Organic Sector Development	Number	3	Construction of Microbiology at NSSC at 35% progress against the target of 30%; Construction of Bio-control laboratory at NPPC at 50% progress against the target of 30%; Construction of organic research laboratory at NCOA at 80% progress against the target of 80%.



Success Indicator	Unit	Target	Actual Achievement
Agriculture land developed and fallow Land revived	Acres	1050	<p>1. 521.88 acres of fallow land has been brought back to cultivation (Lhuntse-2, Bumthang-211, Pemagatshel-27, Trashigang-36, Samdrupjongkhar-12, Tashiyangtse-11, Zhemgang-20, Gasa-3, Wangdue-96, Chukha-41, FMCL-66) from the target of 300 acres</p> <p>2. 1,100 acres of agriculture land has been brought under ALD. (Mongar-77, Lhuentse-165, Bumthang-260, Tashigang-24, S/ jongkhar-15, Trashiyangtse-63, Trongsa-3, Zhemgang-46, Chukha-191, Paro-74, Haa-39, Samtse-96, Tsirang-95, Dagana-5) from the target of 750 acres</p>
Area under Farm Mechanization	Acres	520	The progress for hiring of the services such as ploughing, rotavating, puddling, transplanting and harvesting of FMCL was submitted in excel sheet which was signed by program director, Agriculture machinery center. As per that spreadsheet,4928.65 acres of land were mechanized
Irrigation Channels Constructed/ Renovated	KM	36	56.26 KM of irrigation constructed or renovated. Jimthang Irri. Scheme(13.5km), Mangchhuka Irri. Scheme(5.5km), Pangkabji Irri. Scheme(14.9km), Lachhu Irri. Scheme(5.1km), Lingtey & Hariyokhola Irri.(5km), Jachedphu Irri. Scheme(1.7km), Zingbee & Sharokchhu Irrigation Scheme(10.56km)
Agriculture Service Delivery infrastructure/Facilities constructed/ renovated	Number	5	<ol style="list-style-type: none"> <li>1. Construction of office cum multipurpose hall at ARDC Samtenling,</li> <li>2. Maintenance of old office building at ARDSC Panbang,</li> <li>3. Scrap house construction at Samtenling</li> <li>4. Scrap house construction at Khangma</li> <li>5. Construction of dining hall, toilet &amp; fencing of farmers hostel, NCOA Yusipang</li> </ol>

Success Indicator	Unit	Target	Actual Achievement
Agriculture inputs made available	MT	2800	3264.8 MT of agriculture input were made available. Chemical fertilizers (2196.52MT) , PP chemicals (533.68 MT as per NPPC annual report 2021), cereal seeds (156.37 MT), Oilseeds & pulses (5.14MT), Vegetable seeds (11.04MT) and potato seeds (362.05MT)

## Department of Livestock

Success Indicator	Unit	Target	Actual Achievement
Livestock production enhanced	Percent	100	<ol style="list-style-type: none"> <li>1. 56,196.17 MT of milk production against the target of 55,171 MT (20%);</li> <li>2. 156.41 million egg production against the target of 154.8 million (10%)</li> <li>3. 2123.8 MT (258.8 MT BTI) chicken production against the target of 2636 MT (8.05%)</li> <li>4. 1189 MT pork production against the target of 1146MT (10%)</li> <li>5. 211.25 MT fish production against the target of 205 MT (10%)</li> <li>6. 13 commercial broiler farms at enterprise level were established against the target of 13 (10%)</li> <li>7. 161.73 MT of Chevon production against the target of 229MT (7.06%)</li> <li>8. 24 Layer farms established against the target of 20 (10 %)</li> <li>9. 9.638 acres new fish pound established against the target of 8 acres (10 %)</li> </ol>
Livestock input production enhanced	Percent	100	<ol style="list-style-type: none"> <li>1. 23 breeding farms were established against 19 target farms (25%)</li> <li>2. 653,094 Layer DoC were produced and distributed from three farms against the target of 437,000 (20%)</li> <li>3. 14,608 of piglets were produced by DoL farms and private pig breeders against the target of 13,519 (20 %).</li> <li>4. 2,775,894 fingerlings were produced and distributed to 14 Dzongkhags against the target of 912,750 (20 %).</li> <li>5. 74516 milch cattle population is maintained against the target of 83,404. (Livestock Census 2021) (13.4%)</li> </ol>

Success Indicator	Unit	Target	Actual Achievement
Animal health services improved and enhanced	Percent	100	<ol style="list-style-type: none"> <li>1. 81% Vaccination coverage against the target of 80% (25%)</li> <li>2. Sterilization of 49835 dogs (45886 stray dogs) were sterilized against the target of 10000 (25%);</li> <li>3. 89.09 client satisfaction rate was found against the target of 85% (25%)</li> <li>4. 29% sterilization of dogs within the TAT; CDT 100% within the TAT; LDT 100% within the TAT (19.08);</li> </ol>
Livestock research strengthened	Percent	100	Dairy Research- 3; Fishery Research- 6; Animal Nutrition Research- 3; Animal Health- 4; Yak and Rangeland Research- 3; Poultry Research- 1; Piggery Research- 2.
highland livestock farmers livelihood improved	Percent	100	<ol style="list-style-type: none"> <li>1. 38,642 yak population maintained against 40,438 (33.45)</li> <li>2. 966 households of yak herder maintained against 1039 HH (32.54)</li> <li>3. 10,694 sheep population maintained against 11,277 (28.45)</li> </ol>
Climate-smart livestock farming promoted	Percent	100	<ol style="list-style-type: none"> <li>1. 1606.88 acres of improved pasture and 4963 acres of winter fodder, total of 6569 acres against target of 5000 acres (50 %)</li> <li>2. 420 biogas plant against the target of 880. However, the target revision of 440 during mid-year review was considered because of funding as well as feasibility issue (48 %)</li> </ol>





## Department of Forest and Park Services

Success Indicator	Unit	Target	Actual Achievement
Forest carbon stock and forestry resources of Bhutan assessed (NFI)	Number	2424	2424 cluster plots assessed as per National Forestry Inventory fieldwork
National Tiger Survey	Date	5/15/22	Northern block data management collection completed within the target (Jan to April 2022)- 13 sites Southern block- out of 15 sites (forest divisions), 1 completed before 30 <sup>th</sup> May, 22, 10 sites before 15 <sup>th</sup> June, 2022 & 4 sites before 30 <sup>th</sup> June, 2022. (National Tiger 2nd cycle Survey report)
Volume of timber allotment ensured (million cft)	Others	2.8	A total of 3.8 million cft of timber allotted for different purposes (Annual Forestry Statistics 2021)
Ensure sustainable extraction and monitoring of RBM (million cubic meters)	Others	1.69	2.876 mm <sup>3</sup> of RBM extracted as per the raw data generated from the Department
Forest area brought under scientific thinning	Hectares	25	Scientific thinning-146 hectares as per Field Division office)
Management effectiveness of PAs and BCs assessed	Number	18	Effectiveness of 18 protected areas (10 parks and 8 biological corridors assessed through Bhutan METT.
HWC mitigation measures (Innovative and effective) upscaled	Number	3	1)Grassland/Waterhole creation at Trashigang & Trashiyangtse Electric fencing at Rabti village, T/yangtse 2) Portable solar fencing for protection against snow leopard, JKSNR, Haa 3) Supply of corral materials to Nubri, Tsentogewog & bush clearing/weeding in Gelephu for protection against elephant attack.
Potential ecotourism products and recreational sites identified and developed for handing over to TCB	Number	7	9 ecotourism products developed and handed over to TCB as per letter no. DoFPS/NCD/NERES-02/2022/0601 dated 1st June, 2022
Online Forestry Services developed and implemented to reduce TAT	Number	1	Development of online forestry services (OFS) completed on 27th June 2022 as per FPED, DoFPS letter no. FPED/FLCS/2-1/2022/1288 dated 27/06/2022. 2nd round of User Acceptance test on OFS held from 20-24/06/22 (as per minutes of meeting).

**Department of Agricultural Marketing and Cooperatives**

Success Indicator	Unit	Target	Actual Achievement
Number of RNR-based enterprise established	Number	11	12 RNR based enterprises established <ol style="list-style-type: none"> <li>1. Chips processing unit, Tangsibji, Trongsa</li> <li>2. 4 Bites candy processing youth group, Lingmithang</li> <li>3. Bhutan growers cold pressed oil processing unit at Jazam, Chang, Thimphu (Perilla, Mustard and groundnut oil)</li> <li>4. Urka bangla pickling, Trashiyangtse</li> <li>5. Ice block manufacturing, Bongo, Chhukha</li> <li>6. Potato Chips Tangsibji and Tshangkha Farmers' Group</li> <li>7. Doma Muza &amp; Supari Processing, Sarpang</li> <li>8. Aa-Paw Ice Cream Processing Plant, Gelephu.</li> <li>9. Food processing unit in Tashi Gatshel</li> <li>10. Noodles, pickle and Bakery, Bjabcho, Chukha</li> <li>11. Druk meto (bhutan blossoms) - value addition and processing</li> <li>12. Drangmaling potato chips processing unit, Tsamang</li> </ol>
Number of value chain studies conducted and established	Number	4	Four value chain studies conducted. <ol style="list-style-type: none"> <li>1. The maize value chain studies done and submitted the evidence for payment made in the favor of Regional Agricultural marketing &amp; Cooperatives, Mongar.</li> <li>2. Supported the value chain study for Buckwheat by B-organic.</li> <li>3. Barley and Millet chain analysis</li> <li>4. Winter chili value chain analysis</li> </ol>
Number of FGs/Coops strengthened	Number	82	<ol style="list-style-type: none"> <li>1. Supported 33 FGs/Coops by providing value addition technology such as Sealing Machine for Shamu Zhimpoo Production Group in Paro.</li> <li>2. Mentored 55 non performing FGs/Coops</li> </ol>

Success Indicator	Unit	Target	Actual Achievement
Supply chain enhanced	Percent	100	<p>1. Target achieved for one F&amp;V aggregator achieved (20%).</p> <p>2. All 30 feeding schools of Zhemgang have been linked with 23 FGs and a cooperative. A total of 16 feeding schools &amp; 1 hospital were linked with 13 vegetable group/producers', 4 Milk Producers, 1 poultry supplier and 1 meat suppliers across 12 Gewogs in Tsirang Dzongkhag. All 20 feeding schools of Sarpang have been linked with 25 FGs and two cooperatives. All 36 feeding schools linked with 36 FGs in Samtse. One feeding school and one hospital were linked with two vegetable group/producers in Dagana Dzongkhag. Only 103 FGs was linked with schools and hospital out of target value of 300=30% (<math>103/300 \times 30</math>) =10.3%</p> <p>3. Online RNR produce buying and selling platform initiated and developed (Agriculture Commodities Market Initiative) =10%</p> <p>4. 67 value added products developed against target of 20=15%</p> <p>5. 12 Organic Producers Group linked to urban market=10%</p> <p>6. Post-harvest machine=1 onion curing shed dissemination, 2 ginger store dissemination, 1 flatbed dryer, 1 paddy dryer, 10 cardamom dryer, 1 vegetable dryer against target 7=15%</p>
Number of National and Dzongkhag RNR Marketing Action Plan developed and implemented	Number	21	5 Dzongkhag RNR Marketing Action Plan Developed for Paro, Dagana, Chukha, Sarpang & Pemagatshel. The target was revised from 8 to 5 numbers during MYR as approved by HPM. DAMC also came up with a scheme replacing Buy-back scheme- 'Incentive scheme for market led production for RNR commodities' to help smallholder farmers and facilitate marketing of semi-commercial production.
Number of market infrastructure constructed/established/initiated	Number	14	DAMC supported the establishment of 14 market infrastructures in dzongkhags such as Sarpang, Dagana, Chukha, P/Gatshel, Mongar, Paro, Thimphu, Trongsa, Samte & S/ Jongkhar
RNR export facilitated	Percent	100	Total of 47232 MT of Apple (804.9 MT), Betel nut (3127 MT), Cardamom (646.8 MT), Ginger (2284 MT), Potato (37484.483 MT), Vegetables (2884 MT) were exported. .



Success Indicator	Unit	Target	Actual Achievement
Export Facilitation Centres (EFC) establishment at the main export gateways established/initiated		100	1. Samtse EFC (land identified, land demarcated) 2. Phuntsholing EFC (Land identified, Surveyed) 3. Gelephu EFC (Land identified, public consultation, institutional fulfilment) 4. Nganglam EFC (Land identified, drawing and design in process). 5. In DAMC S/jongkhar could not initiate due unavailability of land.
Number of exportable products for trial export marketing conducted and market promotion supported	Number	7	17 products were sent to Singapore including quinoa, turmeric, ginger, Highland honey 240qms, 3 products were sent to Malaysia, 6 products were sent to Japan.

### Bhutan Agriculture & Food Regulatory Authority

Success Indicator	Unit	Target	Actual Achievement
Incursion of exotic and emerging animal/plant diseases prevented	Percent	90-99	1. Guideline delivered and training conducted (8) 2. All 5 incinerators at PoE are maintained and operational (5) 3. X ray screening technical competency for detection and biosecurity risk conducted in November 2021 (10)
BAFRA's component of one health strategy of Bhutan implemented	Date	05/15/2022	Meat inspection manual developed on 01 April and training provided on 04 May-08 May.
Quality Assurance System and Certification Implemented	Number	77	1. 4 GAP certificate issued and 5 Product certificate under BAFRA's Third party certification issued during the FY against the target of 7 (6) 2. Inspection services strengthened by implementing the requirements of ISO/IEC 17020 - MRM, Internal Audit, Issuance of conditional Clearance conducted (6) 3. 27 food establishment licensed as per the requirement of BAFRA GHP and GMP (5) 4. Food Certification Scope maintained and Renewed (5) 5. 12 organic certification granted (5). 6. 35 test parameters maintained (5) 7. PRA 25 Crops and 5 non-wood produce carried out (5)

Success Indicator	Unit	Target	Actual Achievement
Organic products certified for domestic market	Number	10	15 Organic products certified
Individual/Farmers' Groups/ Cooperatives registered under BAFRA Organic Certification System increased	Number	30	40 organic farms registered for BAFRA's Third Party Certification against the target of 30
New food testing parameters introduced	Number	5	Following testing parameters are introduced: 2 microbiological test parameters are Fecal streptococci in food; and pseudomonas aeruginosa in water. 3 new test parameters for chemicals are 1) total ash in spices and condiment; 2) turmeric in chilies and coriander; and 3) iron in water
Delivery of biosecurity services related to plant, animal and their products through Bhutan Biosecurity Services System	Percent	≥95	100% delivered in accordance with the TAT
Delivery of food business licensing services	Number	Within 21 days	1 applicant was rendered beyond the TAT from total of 60 applicants

### Secretariat Services

Success Indicator	Unit	Target	Actual Achievement
Investment & resource mobilization facilitated	Number	3	Total 10 project proposals reviewed/developed. 1) FNS Policy revision budget proposal developed and submitted to EU-TACS for fund support 2) Fallow land bank budget proposal developed and submitted to EU-TACS 3) RNR strategy 2040 revision proposal developed and submitted to EU-TACS and FAO 4) Reviewed and submitted project proposal on Conservation of Asian Elephants in Bhutan: For a healthier landscape 5) Integrated Conservation Project for Lesser-Known Species: Red Panda Conservation and River Rangers Programme in Bhutan 6) Reviewed proposal under Austrian Volunteer Impact Fund 7) Fostering decent jobs and sustainable income opportunities for youth in Agribusiness review and submitted to the GNHC 8) Asian Food Composition Database Projects 9) HiHi TCP developed and submitted to the GNHC 10) The project proposal on Commercialization of Trout Farming to Enhance Income and Employment Generation submitted to FAO

Success Indicator	Unit	Target	Actual Achievement
International and regional obligations fulfilled	Number	5	MoAF's regional/international engagement/representation in 1) High level introductory meeting on Hand-in-Hand Initiative of the FAO 2) 45th Session of IFAD Governing Council 3) Ministerial Roundtable Meeting on Climate Change 4) 52nd ICIMOD Board Meeting 5) UN Food pathways 6) HKH high-level meeting 7) 35th APRC Chair
Policy, Planning & Monitoring system strengthened	Number	5	1) FNS policy review initiated with the approval of concept note by GNHC and the Cabinet 2) RNR Strategy 2040 under revision 3) Fallow land Bank framework developed and being finalized for implementation 4) APA first quarter review completed 5) Mid-year APA review completed 6) APA third quarter review 7) 4 nos of Departmental monthly review meeting convened
Capacity of youth & farming communities enhanced	Number	660	697 trainees trained both in campus and as outreach against the target of 660. Trainees are trained in following areas: 1. Protected vegetable (118); 2. Integrated farming and experience exchange program (50); 3. Community Forestry Book and record keeping (54); 4. citrus canopy mgt (116); 5. Sustainable land management (78); 5. Temperate fruit cultivation (25); 6. mushroom farming (62); 7. diary product development (22);
No. of IEC materials developed and disseminated	Number	35	1. One No Brochure on Foothill Medicinal and Recreational developed 2. One No photo album Dasho Secretary (Rinzin Dorji) 3. One No RNR extension manual 2022 published and shared online ( <a href="https://www.moaf.gov.bt/rnr-extension-manual-2022-online/?fbclid=IwAR2PmqzmxANIGnMv-VRT5CNWAoStOa5K85UGRmAFenfS0_nbYls22U4QExk">https://www.moaf.gov.bt/rnr-extension-manual-2022-online/?fbclid=IwAR2PmqzmxANIGnMv-VRT5CNWAoStOa5K85UGRmAFenfS0_nbYls22U4QExk</a> ) Sanam Drupdrey 2022 1 no 4. 23 Nos of RNR Newsletter published online 5. 19 Felicitations 6. Two crop content made available for RNR Crop Advisory mobile app



Success Indicator	Unit	Target	Actual Achievement
Bhutan RNR Statistics information disseminated and published	Number	1	Published one no of Bhutan RNR statistics
Germplasm and biological resources conserved	Number	4327	5695 germplasm and biological resources conserved against the target of 4327. They are as follows: 1) 105 crop accession (Target 100) 2) 2 seed species (garlic & potato) (target 2) 3) 4852 Doses of animal semen (target 3500) 4) 603 doses of animal DNA (target 600). 5) 103 No. of herbarium specimens (target 100) 6) 25 Native plants seed of 5 species collected (
Access and benefit sharing initiatives developed	Number	1	Sweritia Chirayita- ABS prototype product developed and the supply chain for the ABS product has been formalized at Lauri, Samdrupjongkhar with the formation of community cooperative (Pedmai Tshothang Ngomen Khalui Bedrur Dey) along with the community Bylaw and executive members.
Number of species pages curated on the Bhutan Biodiversity Portal	Number	450	454 species pages curated on the BB portal against the target of 450
Budget utilization	Percent	90-100	Nu 3,629.701 million spent against the target of Nu 4026.452 million as of 30 <sup>th</sup> June 2022 (90.3% budget utilization)
RNR sector legislation drafted or reviewed	Date	06/30/2022	Total of three important legislations were drafted or reviewed as follows: 1. Forest and Nature Conservation (Amendment) Rules and Regulations, 2021; 2. Forest and Nature Conservation (Amendment) Rules and Regulations, 2022; 3. Revision of Cooperatives Act, 2009.



