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TERMINAL EVALUATION REPORT

Implementation of the Nagoya Protocol on Access to Genetic Resources and Benefit Sharing in Bhutan

UNDP PIMS: 5239 AND GEF PROJECT ID: 5448

EXECUTING AGENCY/IMPLEMENTING AGENCY AND OTHER PROJECT PARTNERS

1. National Biodiversity Centre
Ministry of Agriculture and Forests
2. Menjong Sorig Pharmaceuticals
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UNDP PIMS: 5239 AND GEF PROJECT ID: 5448

DATE OF REPORT:

October 2018 - December 2018

EXECUTING AGENCY/IMPLEMENTING AGENCY PARTNER/AND OTHER PROJECT PARTNERS:

NATIONAL BIODIVERSITY CENTRE MINISTRY OF
AGRICULTURE AND FORESTS

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Executive Summary

Project Summary Table

Project Title:	Implementation of the Nagoya Protocol on Access to Genetic Resources and Benefit Sharing (ABS) in Bhutan	
UNDP Project ID PIMS :5239	PIF Approval Date	3-Oct-13
GEF Project ID PIMS :5448	CEO Endorsement Date	28-Aug-14
ATLAS Award ID:00080806; Project ID: 00090375	Project Document, ProDoc. Signature Date [date project began]	22-Sep-14
Country: BHUTAN	Date project manager hired	N / A
Region: SOUTH ASIA	Inception Workshop Date	Oct-14
Focal area: Biodiversity	Mid -Term Review Completion Date	23/12/2016–31/01/2017
GEF Focal Area Strategic Objective:	Planned Closing Date	24-Sep-18
Trust Fund [GEF/NPIF]	Proposed Operational Closing Date	N/A
Executing Agency/Implementing Partner(s)	Executing Entity/Implementing Partners	National Biodiversity Centre (NBC), Menjong Sorig Pharmaceuticals Corporation Ltd (MSPCL) & Bio Bhutan
<i>Project Financing</i>	<i>At CEO Endorsement [US\$]</i>	<i>Spent/Realized finance/co-finance at Completion [US\$]</i>
GEF/NPIF	1,000,000	1,000,000
UNDP	106,000.00	181,550.93
NBC	631,182.00	631,915.30
MoAF	806,950.00	707,617.00
MSPCL	494,800.00	494,858.99
BT FEC	105,436.00	373,027.00
NGS	579,300.00	609,186.00
Bio Bhutan	80,000.00	117,182.51
Chanel	200,000.00	135,666.70
PROJECT TOTAL COST	4,003,668.00	4,251,004.43

Brief Project Description

The four year's project on Implementation of the Nagoya Protocol on Access to Genetic Resources and Benefit-Sharing in Bhutan was signed in September 2014 and implemented till December 2018 including a "no cost extension" period of two months. The immediate objective of the project was to develop and implement a national ABS framework including (a) development and operationalization of a national regulatory and institutional framework for ABS; (b) capacity development and awareness-raising for the implementation of the national ABS framework; and (c) demonstration of best practices of ABS processes that recognizes the principles of biodiversity conservation, Prior Informed Consent (PIC) and Mutually Agreed Terms (MAT) including the fair and equitable sharing of benefits through ABS agreements. Through this, the project aimed to contribute towards enabling the people and government of Bhutan to access genetic resources based on sound science, including that emanating from traditional knowledge, and to accrue tangible national and local economic benefits from their commercial utilization in a fair, equitable and sustainable manner. The specific outcomes of the project included;

- An operational national regulatory and institutional framework on ABS
- Strengthened stakeholder capacity and awareness for the implementation of the national ABS framework
- Best practice ABS processes are demonstrated recognizing the principles of biodiversity conservation, PIC and MAT including the fair and equitable sharing of benefits through ABS agreements

Evaluation Rating Table

Rating Project Performance	Rating	
Criteria		
Monitoring and Evaluation: Highly Satisfactory (HS), Satisfactory (S) Moderately Satisfactory (MS), Moderately Unsatisfactory (MU), Unsatisfactory (U), Highly Unsatisfactory (HU) – 6 point scale		
Overall quality of M&E	5	S
M&E design at project start up	4	MS
M&E Plan Implementation	5	S
IA & EA Execution: Highly Satisfactory (HS), Satisfactory (S) Moderately Satisfactory (MS), Moderately Unsatisfactory (MU), Unsatisfactory (U), Highly Unsatisfactory (HU)		
Overall Quality of Project Implementation/Execution	5	S
Implementing Agency Execution	5	S
Executing Agency Execution	5	S
Outcomes Highly Satisfactory (HS), Satisfactory (S) Moderately Satisfactory (MS), Moderately Unsatisfactory (MU), Unsatisfactory (U), Highly Unsatisfactory (HU)		
Overall Quality of Project Outcomes	5	S
Relevance: relevant (R) or not relevant (NR)	5	R
Effectiveness	5	S
Efficiency	6	HS
Sustainability: Likely (L); Moderately Likely (ML); Moderately Unlikely (MU); Unlikely (U). - 4 point scale		
Overall likelihood of risks to Sustainability:	4	L

Financial resources	4	L
Socio-economic	4	L
Institutional framework and governance	4	L
Environmental	4	L
Impact: Significant (S), Minimal (M), Negligible (N) - 3 point scale		
Environmental Status Improvement	2	M
Environmental Stress Reduction	3	S
Progress towards stress/status change	3	S
Overall Project Results (6 point scale)	5	S

Summary of conclusions, recommendations and lessons

Conclusion 1: Concrete results were generated – all three project outcomes were fully realized. It was accompanied by efficient use of project resources which were fully used.

Conclusion 2: The project outcomes has raised biodiversity conservation in Bhutan to a new level. For the first time in Bhutanese conservation history the practical possibility to accord value to biological resources beyond traditional economic values of biodiversity such as timber, fodder and food.

Conclusion 3: The project has set a new trend in Bhutan’s biotechnology industry which thus far has remained in the field of producing herbal medicine by putting in mechanisms and capacities to develop science based bio-products.

Conclusion 4: By enabling benefits sharing mechanism policy framework the project has been able to introduce a new means of enabling sustainability to conservation efforts in the country.

Conclusion 5: Project implementation benefited from good design, strong country ownership. However, the project indicators lacked specific timelines of delivery.

Conclusion 6: The NBC managed the project effectively and efficiently with the oversight and right directives from the PSC and support from UNDP CO.

Conclusions 7: The establishment of a national institutional framework and organizational arrangements for ABS through the project is the first of its kind in Bhutan. However, the project has not been very effective in enabling ease of access to its knowledge and awareness products. The project has also not been successful in documenting lessons learned from the project which can be applicable in upscaling and in design of similar projects in future.

Conclusion 8: The project management had maintained all information pertaining the project. However, the effectiveness of internal information management is considered weak.

Conclusion 9: The delay in enactment of the revised Biodiversity Bill has not affected the delivery of project outputs and outcomes. However, the Act is necessary for legitimacy for the policy, regulatory and organizational establishment.

Lesson 1: For a project of very specific and technical nature as bioprospecting and ABS, capacity building in the form of technology transfer, equipment, human resource development and awareness are critical.

Lesson 2: Right partnership is critical.

Lesson 3: Awareness and education is critical to success of the project.

Lesson 4: The project design should be reviewed when changes in major deliverables arise. The inclusion of the Biodiversity Act of Bhutan, 2003 as a deliverable should have been included in a revised project design when the need of revisions of Biodiversity Act of Bhutan, 2003 of Bhutan, 2003 is ascertained.

Recommendation 1: It is recommended to commission an economic analysis of the commercial aspects of the project outputs to provide costs involved, pricing, sales and profitability of the commercial products and shed light in the appropriateness of the benefit sharing proportions defined in the pilot ABS agreements and how soon or late actual benefits would practically arise.

Recommendations 2: It is recommended to carry out documentation of lessons learnt in the upscaling implementation process to advice on upscaling.

Recommendation 3: It is recommended that the communication and awareness materials as well the report on experiences of pilot ABS may be made available online through the website of NBC to continue the good effort that the project has made in creating awareness and to promote bioprospecting.

Recommendation 4: It is recommended to pursue the consideration of the Biodiversity Bill by the Parliament at the earliest. However, due to the change in the Parliament, it is suggested that awareness and sensitization of Parliamentarians on ABS and on the bill be conducted prior to submitting the bill to the parliament. This recommendation is made to ensure understanding of the bill in the right context before it is passed or is subjected to further delays. Hence, it may not be submitted to the first session of the 3rd Parliament.

Acronyms and Abbreviations

ABS	Access and Benefit Sharing
BAFRA	Bhutan Agriculture and Food Regulatory Authority
BT FEC	Bhutan Trust Fund for Environmental Conservation
CBD	Convention on Biological Diversity
CFMG	Community Forest Management Group
CSO	Civil Society Organization
CF	Community Forests
DKRA	Dzongkhag Key Result Areas
DoFPS	Department of Forest and Park Services
DoA	Department of Agriculture
DTMS	Department of Traditional Medicine Services
DoL	Department of Livestock
DAMC	Department of Agriculture Marketing and Cooperatives
EDP	Economic Development Policy
FYP	Five Year Plan
GEF	Global Environment Facility
GNH	Gross National Happiness
GNHC	Gross National Happiness Commission
GCBS	Gaeddu College of Business Studies
HRD	Human Resource Development
ITPGRFA	International Treaty on Plant Genetic Resources for Food and Agriculture
JSWNP	Jigme Singye Wangchuck National Park
KPI	Key Performance Indicators
LF	Log Frame
LIC	Local Indigenous Communities
LDC	Least Developed Countries
IBRD	International Bank for Reconstruction and Development
MSPCL	Menjong Sorig Pharmaceuticals Corporation Ltd
MAT	Mutually Agreed Terms
MoAF	Ministry of Agriculture and Forests
MTR	Mid-Term Review
MoH	Ministry of Health
MoEA	Ministry of Economic Affairs
M&E	Monitoring and Evaluation
MoU	Memorandum of Understanding
NPM	National Project Manager
NPIF	Nagoya Protocol Implementation Fund
NBC	National Biodiversity Centre
NSB	National Statistical Bureau
NWFP	Non-Wood Forest Product
NGS	Nimura Genetic Solutions

NBSAP	National Biodiversity Strategy and Action Plan
NKRA	National Key Results Areas
NBF	National Biosafety Framework
PSO	Project Support Officer
PPD	Policy and Planning Division
PSC	Project Steering Committee
PIC	Prior Informed Consent
PPG	Project Preparation Grant
PIF	Project Information Form
PA	Protected Area
PMU	Project Management Unit
PlaMS	Planning and Monitoring System
PIR	Project Implementation Review
QPR	Quarterly Progress Report
RF	Results Framework
RGoB	Royal Government of Bhutan
RNR	Renewable Natural Resources
R&D	Research and Development
RSPN	Royal Society for the Protection of Nature
RDC	Research and Development Centre
SMART	Specific, Measurable, Attainable, Realistic and Time-Bound
SD	Standard Deviation
SKRA	Sector Key Result Area
SDGs	Sustainable Development Goals
SGP	Small Grant Programme
SESP	Social and Environment Screening Procedure
SES	Social and Environmental Sustainability
TOR	Terms of Reference
TT	Tracking Tool
TK	Traditional Knowledge
TAG	Technical Advisory Group
UNDP	United Nations Development Programme
UNDP CO	United Nations Development Programme Country Office
UNDAF	United Nations Development Assistance Framework
UNEP	United Nations Environment Programme

Bhutanese terms used

Dzongkhag:	District
Dzongkha:	National Language of Bhutan
Detshen:	Committee
Gewog:	Sub-district
Chiwog:	Village
Tshogpa:	Group

1. Introduction

This Terminal Evaluation (TE) report is prepared in accordance with the contract signed between the United Nations Development Programme (UNDP), Country Office, Bhutan and the individual contractor to conduct TE (herein referred to as the "Consultant"). The report summarizes the findings of the TE for the UNDP-supported GEF-financed medium-size project entitled "Implementation of the Nagoya Protocol on Access to Genetic Resources and Benefits Sharing in Bhutan" (herein referred to as the "ABS Project"). The project is implemented by the UNDP with financing support provided by the GEF and co-financing partners.

1.1 Purpose of the evaluation

In line with the project level evaluation guidance for conducting terminal evaluation of UNDP-supported GEF-financed projects, this Terminal Evaluation is undertaken at the end of project implementation period to assess project performance (in terms of relevance, effectiveness and efficiency), achievement of project results (project outputs and outcomes and impacts), determine outcomes and impacts (actual and potential) including global environmental benefits, replication effects and other local effects deriving/stemming from the project as well as sustainability of project interventions. Main evaluation principles and criteria are given in the evaluation Terms of Reference (TOR) in Annex 1.

The objectives of the evaluation are to assess the project performance in achieving its intended results and to draw lessons that can both improve the sustainability of benefits from this project, and aid in the overall enhancement of UNDP programming.

1.2 Scope & Methodology

The TE covers the project progress since its inception in October 2014 till December 2018 in terms of project strategy, design, implementation arrangements, adaptive management, sustainability issues, actions taken by the project to achieve the end-of-the-project targets and resources actually expended at the time of the evaluation versus the total resources allocated to the different outcomes of the project. It also assesses lessons learned and good practice on implementation of pilot ABS agreements in the project's pilot demonstration sites. The TE focuses on the delivery of the project's results as initially planned. It looks at impact and sustainability of results, including the contribution to capacity development and the achievement of global environmental benefits/goals.

1.2.1 Review of secondary information

The terminal evaluation process reviewed relevant project documents: PIF (Project Initiation Form), UNDP Initiation Plan, UNDAF, UNDP Strategic Plan 2014-2017, UNDP Environmental & Social Screening Procedures (SESP), Project Document, Project Progress Reports, Project Implementation Reviews (PIRs), Mid –Term Review Report of the project, and Project Financial Progress Reports. In addition, the evaluation studied Guidance for conducting Terminal Evaluation of UNDP-supported GEF-Financed Projects, 2012; UNDP's Handbook on Planning,

Monitoring and evaluating for Development Results, 2009; UNDP Evaluation Policy, 2016; The GEF-6 Bio-diversity Strategy; National Biodiversity Strategies and Action Plan (NBSAP), 2014; and Nagoya Protocol;

1.2.2 Field Visits, group discussions and primary data collection

In consultation with the UNDP CO, TE conducted discussion with the NBC, MSPCLL and Bio-Bhutan, mainly with the project's component coordinators. The consultant conducted field visits to the project pilot sites; Dzedokha in Loggchina Gewog under Chhukha Dzongkhag, Dagala under Thimphu Dzongkhag and Namther in Langthel under Trongsa Dzongkhag for interviews, direct observations and interaction with the participating community members.

In order to gauge gender based perspectives and assess level of participation by gender, both the individual based questionnaire as well as checklist for Focused Groups Discussions (FGD) included information on gender of respondents and of participants at the FGDs respectively. The evaluation also viewed training records at the NBC by gender.

1.2.3 Data analysis

Qualitative data availed through interviews and FGDs were entered in Excel sheets and descriptive statistics generated in the case of pilot sites of the project. In the case of other components, analysis of relevant documents were done to generate information for assessment of the project's achievements and results. Questions asked in the FGDs, individual interviews were based on the indented impact of project objectives. The information availed from the respondents and field observations were triangulated with project reports, particularly the Project Implementation Review (PIR) reports, office records at the NBC, the MTR report and the Study on Access and Benefit Sharing Awareness and the Impact of ABS Project on Gender, 2017.

1.3 Structure of the evaluation report

The TE Report is structured into five sections in line with the TE outline recommended by the UNDP Guidance for Conducting Terminal Evaluations of UNDP-supported, GEF-financed Projects and the Terms of Reference.

The executive summary gives the project information table, summarizes brief project description, project progress, TE rating and achievement table and, concise conclusion and recommendation.

The first section describes introduction, project background, the purpose of TE and its objectives, scope of the TE, approach and methodology and data analysis.

The second section describes the project, its duration, the problems that the project aimed to address, its development objectives, stakeholders involved, the baseline indicators and expected results of the project.

The third section comprises of the findings of this TE and descriptive assessments of the TE in

terms of project design, project implementation and management followed by assessment of the project results.

The fourth section includes conclusions, recommendations and lessons from the project followed by the fifth section comprising of Annexes.

2. Project description and development context

2.1 Project start and duration

The Project Document on Implementation of the Nagoya Protocol on Access to Genetic Resources and Benefit-Sharing in Bhutan was signed in September 2014. The four-year project implementation happened between October 2014 and December 2018 including a “no cost extension” of three months. The project practically operated till end of December, 2018.

2.2 Problems that the project sought to address

Bhutan supports a wide range of ecosystems and vegetation zones. The distinctive biogeographic location combined with extreme altitudinal range and micro-climatic conditions have given rise to an outstanding diversity of flora and fauna in Bhutan ranging from hot and humid sub-tropical conditions in the southern foothills to cold and dry tundric conditions in the northern mountains.

In as small as 3,839,400 hectares of its total area, Bhutan has about 5600 species of vascular plants and 282 Non-vascular plants. These include 411 species of ferns and allies, 46 rhododendron species, 469 orchid species, 350 fungus species and about 100 insect-fungi including the Chinese caterpillar fungus *Ophiocordyceps sinensis*, which is highly valued for its medicinal properties as an aphrodisiac and cure of lung and kidney ailments. About 144 plants are endemic to Bhutan including species such as *Rhododendron bhutanense*, *R. kesangiae*, *Meconopsis superba*, *Pedicularis inconspicua*, *Bhutanthera himalaica*, and *Vanda chlorosantha*. More than 200 species of wild species are used for the formulation of various traditional medicines.

The faunal diversity comprise of 200 species of mammals, 27 of them classified as globally threatened mammals including the Bengal tiger (*Panthera tigris tigris*), snow leopard (*Uncia uncia*), clouded leopard (*Neofelis nebulosa*) red panda (*Ailurus fulgens*), Bhutan takin (*Budorcas taxicolor whitei*), golden langur (*Trachypithecus geei*), capped langur (*Trachypithecus pileatus*), Asian elephant (*Elephas maximus*), Himalayan musk deer (*Moschus chrysogaster leucogaster*) and Pygmy Hog (*Sus salvanius*). Many species facing challenge of survival elsewhere exist in healthy numbers in Bhutan. For instance, the National Tiger Survey Report, 2015 indicated existence of 123 tigers and National Snow Leopard Survey Report, 2015 indicated prevalence of 96 snow leopards in the natural landscapes of Bhutan. Bhutan is considered as the lone tiger range country that can be considered as a tiger landscape almost in its entirety.

There are 730 species of birds including 18 globally threatened birds. The white-bellied heron (*Ardea insignis*) is considered critically endangered according to the Red List of Threatened Species maintained by the World Conservation Union while others such as the black-necked crane (*Grus nigricollis*), rufous-necked hornbill (*Aceros nipalensis*), chestnut-breasted partridge

(*Arborophila mandellii*), Pallas's fish eagle (*Haliaeetus leucoryphus*), beautiful nuthatch (*Sitta Formosa*), wood snipe (*Gallinago nemoricola*), Blyth's tragopan (*Tragopan blythii*), etc are considered vulnerable.

In terms of heptofauna, Bhutan has about 41 amphibians and 124 reptiles including globally threatened species such as the Gharial (*Gavialis gangeticus*), Indian Python (*Python molurus*) and Yellow Monitor Lizard (*Varanus flavescens*). About 586 species of butterflies that occur in Bhutan include rare species such as the Blue Dake (*Euthalia durga*) and Blue Forester (*Lethe scandal*) as well as internationally protected species such as the Bhutan Glory (*Bhutanitis lidderalii*) and Kaiser-i-Hind (*Teinopalpus imperialis*). The fish fauna of Bhutan has 119 fishes including the totally protected golden masher (*Tor putitora*).

The project document (UNDP/GEF/RGoB, 2014) describes a wide range of issues that threatens Bhutan's biological wealth and ecological integrity. These threats emanate from human-induced disturbances on land use and land cover changes induced by competing land-use from rapid urbanization and infrastructure development, unsustainable localized harvesting of genetic resources (medicinal plants, wood and NWFPs and, illegal poaching of wild animals) unleashed by the transition from subsistence-based agrarian economy to consumption-based cash economy. These are exacerbated by climate change impacts as well as recurrent and widespread forest fires. Enhancing the social and economic value of biodiversity conservation through sustainable and science-based access to genetic resources and commercialization that provides for a fair and equitable benefits-sharing is envisioned as a solution to address the wide range of threats to biodiversity of Bhutan.

The specific problem considered for this project to address is the lack of a functioning national legal, institutional and financial framework that will enable the equitable sharing of benefits from the exploration and exploitation of biological resources and traditional knowledge between the state, commercial interests, and the owners and custodians of these resources and traditional knowledge.

The key barriers include to realizing such an outcome area.

1. The absence of ABS policy, rules and regulations, and comprehensive institutional mechanisms;
2. Limited awareness of the benefits of an ABS policy and bio-prospecting program;
3. Lack of clearly articulating the procedural requirements and institutional mandates and functions in Biodiversity Act of Bhutan, 2003 of Bhutan, 2003;
4. Limited technical and legal expertise, experience and capacity (including laboratory facilities) for establishing and managing a comprehensive ABS regime;
5. Inadequate documentation of traditional knowledge associated with genetic resources to aid the PIC process and establishment of MAT to ensure that the holders of TK will be able to derive tangible and fair benefits from ABS deals;
6. Rudimentary bio-prospecting facilities which are not sufficient to carry out bio-activity tests and analyses of genetic materials to the level of acquiring research results that can add value for potential commercialization;
7. Utilization of existing expertise with institutes such as Menjong Sorig Pharmaceuticals Corporation Ltd is constrained by the lack of access to technology (new science and

- equipment) and funds for researching and developing commercially potential products based on the principles and practices of ABS;
8. Non-existent technical capacity for ABS-based enterprises in the private sector and
 9. Lack of experience in developing and implementing ABS agreements that are fully compliant with the Nagoya Protocol.

The project aimed at addressing these barriers and to enable sustainable and science-based and access to genetic resources and commercialization that provides for a fair and equitable benefits-sharing.

2.3 Immediate and development objectives of the project

The immediate objective of the project is to develop and implement a national ABS framework, build national capacities and facilitate the discovery of nature-based products through (a) development and operationalization of a national regulatory and institutional framework for ABS; (b) capacity development and awareness-raising for the implementation of the national ABS framework; and (c) demonstration of best practices of ABS processes that recognizes the principles of biodiversity conservation, PIC and MAT including the fair and equitable sharing of benefits through ABS agreements.

The development objective of the project is to contribute towards enabling the people and government of Bhutan to access genetic resources based on sound science, including that emanating from traditional knowledge, and to accrue tangible national and local economic benefits from their commercial utilization in a fair, equitable and sustainable manner. The benefits may be accrued in the form of business, employment, research, technology transfer and capacity development opportunities. The development goal of the project is to contribute to the conservation and sustainable use of globally significant biodiversity in Bhutan.

2.4 Baseline Indicators established

The National Biodiversity Centre (NBC) was established in 1998 under the Ministry of Agriculture and Forests (MoAF) to coordinate biodiversity conservation and sustainable use programs in the country. Bhutan prepared its Biodiversity Act of Bhutan, 2003 and Biodiversity Action Plans (BAPs) from 1997 to BAP 2009 including BAP I, II and III. Based on experiences and lessons learned from BAPs, the country prepared its first National Biodiversity Strategies and Action Plan (NBSAP) through the work of a National Task Force (NTF) representing key biodiversity stakeholders in the country under the coordination of the NBC. NBC has also established the Bhutan Access and Benefit Sharing (BABS) Fund, as a mechanism to channel the monetary benefits obtained mainly from ABS collaborations.

The NBC, as the authorized agency that facilitates ABS agreements and Material Transfer Agreements (as per the Biodiversity Act of Bhutan, 2003, 2003) has been spearheading and coordinating the process of exploring biological resources and work on establishing national mechanisms for the implementation of the ABS regime.

NBC's involvement in the EU RNR SSP project included development of capacity to promote sustainable use of biological resources through bio prospecting by way of training staff in basic

plant extraction techniques. The baseline of the project at inception are as follows;

Table 1: Baseline indicators of the Project

Project outputs	Baseline
Outcome 1: An operational national regulatory and institutional framework on ABS	
Output 1.1: An approved national ABS policy in place and disseminated	Draft ABS policy in place and under review
Output 1.2: Biodiversity rules and regulations developed and promulgated in compliance with the approved ABS policy, amended Biodiversity Act of Bhutan, 2003 2003 and Nagoya Protocol	Biodiversity Act of Bhutan, 2003, 2003 in place but there are no rules and regulations detailing procedures and institutional mechanisms for implementation. <i>(the act required aligning with ABS policy and Nagoya Protocol –such as designated Competent Authorities for ABS, definition & formalization of monitoring and enforcement of ABS permits</i>
Output 1.3: Institutional mechanisms for ABS established and operational.	Interim institutional measures in place in anticipation of the approval of draft ABS policy NBC designated as the National Focal Point based on Government Executive Order; No Competent Authorities designated at national/ sub-national levels; No checkpoints designated for checking ABS information/ permits
Outcome 2: Strengthened stakeholder capacity and awareness for the implementation of the national ABS framework:	
Output 2.1: Upgraded facilities and staff skills for bio-prospecting laboratory work and TK documentation	Laboratory facility and staff skills covered only crude extraction; 250 crude extracts were preserved in NBCs extract library for bio-activity test and No compounds have been fractionated for development of trial products
Output 2.2: Improved technical capacity among NBC and partners agencies for implementing ABS regime management and activities	Less than 20 staff have basic and partial knowledge and skills for ABS regime management

Output 2.3: Increased awareness of ABS and associated national regulatory and institutional framework for a wide range of stakeholders	<p>Baseline study, 2015 reported 91.7% of the respondents including farmers, businessman, local government office bearers, parliamentarians and researchers are were not aware on ABS.</p> <p>The study reported high level of understanding on National ABS Policy and associated regulatory and institutional frameworks among parliamentarians and researchers while it was low among local government, office bearers, businessmen and farmers.</p>
Outcome 3: Best practice ABS processes are demonstrated recognizing the principles of biodiversity conservation, PIC and MTA including the fair and equitable sharing of benefits through ABS agreements	
Output 3.1: Three pilot ABS agreements/schemes compliant with the approved ABS Policy and Nagoya Protocol developed and operationalized	Two ABS agreements exist that prior to Bhutan's ratification of the Nagoya Protocol. Only Some preliminary engagement with local communities were carried out on PIC processes with ILCs and no full-fledged processes have been undertaken
Output 3.2: Knowledge resources emanating from Bhutan's experience of ABS are developed and disseminated	<p>No Bhutan-specific knowledge resources on ABS available</p> <p>As per baseline study 2015, 90.6% of the communities are not aware on ABS. Levels of awareness on the existence, use and option values of the biological resources under their stewardship was very among the population of ILCs participating in the pilot projects</p>

2.5 Main stakeholders

The project document presents a comprehensive list of stakeholders and their role in implementation of the project. These include the National Biodiversity Centre, MoAF (as principal implementing partner for the project); Gross National Happiness Commission (for overall monitoring of the delivery of UNDP/GEF/NPIF funds and ensuring that project is in accordance with national policies); Department of Forests and Park Services (for technical guidance and support in matters related to management and use of forest products including those sourced from community forests and non-timber forest products management schemes and for guidance on matters related to trade in wild plants and animals and their products); The National Environment Commission (for strategic coordination as the national focal agency for global environmental conventions such as UNFCCC, UNCCD and UNCBD); Menjong Sorig

Pharmaceuticals Corporation Ltd (for collaborative research and knowledge-sharing on genetic resources of pharmaceutical value, and to lead a pilot project under Component 3); The Council of RNR Research and Regional RNR Research and Development Centres (for collaborative research and knowledge-sharing on animal and plant genetic resources of commercial value); Bhutan Food and Agriculture Regulatory Authority (for implementation of the Biodiversity Rules and Regulations once promulgated); Royal Society for the Protection of Nature (for conservation education and advocacy, community mobilization); the Tarayana Foundation (for community mobilization and formation of local self-help groups for sustainable livelihoods); Private companies such as Bhutan Pharmaceuticals Private Ltd (BPPL), Bio Bhutan, etc. (for collaborative research and knowledge-sharing on genetic resources of pharmaceutical value, and to lead a pilot project under Component 3); International companies such as Nimura Genetic Solutions, Quantum Pharmaceuticals Ltd, Yves Rocher, Chanel, Shin Nippon Biomedical Laboratories, etc. (to pilot ABS agreements, collaborative research and knowledge-sharing, commercial utilization of products from Bhutanese genetic resources, building on their existing experience, co-financing, capacity development, benefit-sharing); National Council and National Assembly of the Parliament (for review and ratification of national laws and international conventions); Dzongkhag and Gewog Administrations (for rural extension services, community mobilization and facilitation of benefit-sharing agreements with local communities); Rural communities (for participation in the ABS Agreements as immediate users and custodians of biological resources, traditional knowledge practitioners, and primary beneficiaries of ABS); Academia (for technical expertise and support in the implementation of the project through collaborative research, knowledge management and capacity building); Bhutan Trust Fund for Environmental Conservation (for co-financing) and the UNDP (as the GEF Implementing Agency).

2.6 Expected Results

As stated in the Project Document, upon completion, the project is expected to result in the following outcomes and related outputs:

- Outcome 1: An operational national regulatory and institutional framework on ABS with:
 - Output 1.1: An approved national ABS policy in place and disseminated;
 - Output 1.2: Biodiversity rules and regulations developed and promulgated in compliance with the approved ABS policy, amended Biodiversity Act of Bhutan, 2003 of Bhutan 2003 and Nagoya Protocol;
 - Output 1.3: Institutional mechanisms for ABS established and operational.
- Outcome 2: Strengthened stakeholder capacity and awareness for the implementation of the national ABS framework with:
 - Output 2.1: Upgraded facilities and staff skills for bio-prospecting laboratory work and TK documentation;
 - Output 2.2: Improved technical capacity among NBC and partners agencies for implementing ABS regime management and activities;
 - Output 2.3: Increased awareness of ABS and associated national regulatory and institutional framework for a wide range of stakeholders.

- Outcome 3: Best practice ABS processes are demonstrated recognizing the principles of biodiversity conservation, PIC and MAT including the fair and equitable sharing of benefits through ABS agreements:
- Output 3.1: Three pilot ABS agreements/schemes compliant with the approved ABS Policy and Nagoya Protocol developed and operationalized;
- Output 3.2: Knowledge resources emanating from Bhutan's experience of ABS are developed and disseminated.

3. Findings

3.1 Project Design/Formulation

The PIF and the project document (ProDoc) are used as main references for the Terminal Evaluation to assess the project design. Both the PIF and the ProDoc are of good quality and were well-designed, with carefully thought-out strategy to specifically address the priorities identified to be addressed in enabling the people and government of Bhutan to access genetic resources based on sound science, including that emanating from traditional knowledge, and to accrue tangible national and local economic benefits from their commercial utilization in a fair, equitable and sustainable manner.

The ProDoc clearly defined the project objectives, outcomes, outputs, activities and milestones, with key stakeholders responsible for the project activities properly identified. The financial inputs were appropriately budgeted. The overall project design is considered relevant and contain sound strategies for putting in place policy, legislative and regulatory framework to enable implementation of ABS in the context of Bhutan and in line with the Nagoya Protocol. The project design has proven effective in capacitating the human resources, laboratories and partnership arrangements of relevance in dealing with ABS.

The documentation, development of awareness materials and dissemination of information have been well targeted to enable achievement of the project outputs as well as to sustain the project efforts post project period through wide and active participation of stakeholders including the local communities who actually own the TK or have customary or legal rights over the genetic resources. The project activities were made achievable through active participation of the relevant stakeholders from within the central government, local government, bureaucracy, private sector and local communities. The project budget and co-financing commitments were appropriate for the level of interventions and the intended outputs were achievable for the planned four-year duration of implementation.

3.1.1 Analysis of LFA/Results Framework

Project Logical Framework was established with development objective and project objective. Outputs for each outcome, baseline indicators, indicators of achievement, means of verifications or source of information and assumptions/risks were clearly indicated. This served as useful tool in monitoring and project progress during implementation and a useful guide for the Terminal Evaluation. An analysis of the intended project outcomes was performed to see whether they were "SMART" (Specific, Measurable, Achievable, Relevant, Time-bound). The results of the

analysis are summarized below:

Specific (outcome indicators must use change language, describing a specific future condition): Each outcome is clearly identified, and each outcome contains a number of intended outputs. All of the outputs indicators are very specific with clear description of future conditions.

Measurable (Results, whether quantitative or qualitative, must have measurable indicators, making it possible to assess whether they were achieved or not): The project established very specific quantitative value to all output indicators. Where quantitative values are not possible, the project design has accorded clear qualitative description which makes are indicators measurable.

Achievable (Results must be within the capacity of the partners to achieve): During project formulation, financial and technical resources were assessed, and capacity of key project partners evaluated. With activities to establish and strengthen laboratories, enhance equipment and human capacity combined with well thought out enabling policy environment, the project outputs and outcomes were achievable within the four-year period of implementation.

The 3-months extension in project operational closure has arisen due to delays caused in some of the activities because of national elections that happened during September and October, 2018. These actual dates for the election period were not known during the time of project formulation four years ago. The project that remained to be implemented during the extension period pertain to training workshop on ABS toolkit, marketing of newly launched ABS products and Auditing of the project. The schedule of auditing is not in the project's control. Auditing has to be abided by the schedule provided by the Royal Audit Authority.

Relevant: The national strategy for biodiversity conservation in Bhutan is defined by NBSAP, 2014. The ABS project implements the national target defined by NBSAP, 2014, notably – National Target 16 (By 2015, the Nagoya Protocol is implemented through National ABS legislative, Administrative, and Institutional Framework consistent with the Nagoya Protocol) through its outcome 1, outputs 1.1, 1.2 and 1.3 respectively. Under the project outcome 2, output 2.1 and output 2.3 contribute to achieving the national targets 13 (By 2020, the genetic diversity of key cultivated plants and domesticated animals, including that of crop wild relatives are documented and conserved) & 18 (By 2020, TK and Customary Practices of communities, relevant to biodiversity conservation and sustainable use are documented and used, and where appropriate revived and protected). The project outcome 3, documenting good lessons learned and best ABS practice contributes to achieving the national target 19 of NBSAP (By 2020, science-based knowledge and technologies related to biodiversity are generated, improved, made accessible and applied where appropriate).

The project goal and objective are aligned with the 11th FYP aim to achieve Self-Reliance and Inclusive Green Socio-Economic Development through rational commercialization of the biological wealth. Specifically, the project contribute to the national development outcomes NKRA 1: Sustained economic growth ushered by research and commercialization of genetic resources; NKRA 6: Indigenous Wisdom, Arts and Crafts Promoted for Rural Livelihood through TK documentation, ABS awareness and policy advocacy program; NKRA 8:

Sustainable utilization and management of natural resources through hands-on training on bio-prospecting technique and sustainable harvest, processing and marketing of traditional medicinal plants; NKRA 12: Democracy and Governance Strengthened through enabling ABS policy and regulatory framework; NKRA 13: Gender-friendly Environment for Women's Participation through delivery of project products and services that benefit more women as primary beneficiaries across the 3 pilot sites.

Time-bound (Results should not be open-ended and should be tagged with expected date of accomplishment):

The project design has however has not been able to provide adequate considerations on being specific with timelines for delivery of output indicators.

Table 2: Project indicators timeline assessment

Objective/ Outcome	End of Project target	Remarks
Objective: To develop and implement a national ABS framework, build national capacities and facilitate the discovery of nature based products	National ABS Policy approved, and regulatory and institutional frameworks developed and operationalized	This is an outcome indicator can be logically understood to be achieved at the end of the project
	Improved institutional and personnel capacity indicated by an increase of at least 25% over the GEF ABS Tracking Tool baseline score	This indicator is about the overall ABS capacity and can be understood to be delivered at the end of the project
Outcome 1: An operational national regulatory and institutional framework on ABS	ABS Policy approved within the first year of the project, followed by promulgation of the Biodiversity Rules and Regulations encompassing ABS implementation in the second year.	This has timeline (within first year)
	Competent authorities designated at national level and, if necessary, at subnational level based on the approved Biodiversity Rules and Regulations - A network of 4-5 exit/entry points designated for checking ABS information/ permits - System of internationally recognized certification of origin and compliance in place and operational	No time line
Outcome 2: Increased national capacities and awareness for the implementation of the national ABS framework	- Laboratory facility and staff skills will be upgraded for bio-activity tests up to the level of fractionation - 1,250 crude extracts preserved in NBC's extract library - 25 compounds fractionated from the extracts for development of trial products	No time line
	At least 25 staff in NBC and partner agencies have improved knowledge and skills for the full cycle of ABS regime management	No time line

Objective/ Outcome	End of Project target	Remarks
	<ul style="list-style-type: none"> - At least 250 participants, including 50% women, covered through the targeted training seminars - An increase of at least 50% over the baseline survey results from the first year of the project 	No time line
Outcome 3. Best practice ABS processes are demonstrated recognizing the principles of biodiversity conservation, Prior Informed Consent (PIC) and Mutually Agreed Terms (MAT) including the fair and equitable sharing of benefits.	<p>At least three ABS agreements developed and operationalized for initial commercialization of at least 3 trial products incorporating PIC, MAT and fair and equitable benefit sharing provisions.</p> <p>The agreements should also include in situ and/or ex situ conservation measures for the concerned biological resources.</p>	No time line
	At least one PIC process with ILCs implemented in accordance with the planned PIC /community protocol	No time line
	- At least 3 studies on ABS carried out, published and disseminated;	No time line
	- National seminar on ABS experience in Bhutan conducted towards the end of the project	Has time line

In the absence of specific timelines, it appears that the all project activities required to produce the intended outcomes and outputs are designed to have been achieved at the end of the project period. The objective of the project was to develop and implement a national ABS framework, build national capacities and facilitate the discovery of nature-based products.

The strategy adopted was: development and operationalization of a national regulatory and institutional framework for ABS; develop capacity and raise awareness for the implementation of the national ABS framework; and to demonstrate best practices of ABS processes that recognizes the principles of biodiversity conservation, PIC and MAT including the fair and equitable sharing of benefits through implementation of ABS agreements in pilot sites. The project was realistic and appropriate to achieve the stated outputs and outcomes within the timeframe.

The design considers an effective and logical strategy by way of defining progressive steps for legislative development; domestic research and development (R&D) and compound identification; development of ABS contracts and protection of and benefit sharing for indigenous and local communities. Activities such as awareness raising have been planned in parallel.

The design of the project enabled the project to;

- Develop policy, legal and regulatory frameworks,
- Promote technology transfer through scientific collaboration, relevant capacity development and private sector engagement and
- Practically pursue opportunities leading to actual ABS agreements between users and providers;
- Strengthen involvement of communities in conservation of genetic resources and in preservation of their TK

The project design was appropriate and very effective due to the engagement and commitment of the right stakeholders such as the PPD (responsible for overall policy, planning and legal mandate of the MoAF); the GNHC (responsible for national level policy screening and donor coordination); the MTAC (with agreed responsibility for scientific and technical inputs) and local communities where actual resource and indigenous knowledge belongs. The project design also included participation by Menjong Sorig Pharmaceuticals Corporation Ltd, a state owned enterprise and Bio Bhutan, a private enterprise. These partners were already engaged in ventures involving biodiversity related products and had had some level of expertise and experience in working with communities on biodiversity product sourcing well ahead of project inception. The project takes off on past results achieved by the GEF/UNDP supported Integrated Livestock and Crop Conservation project (ILCCP) including the draft of the national ABS Policy.

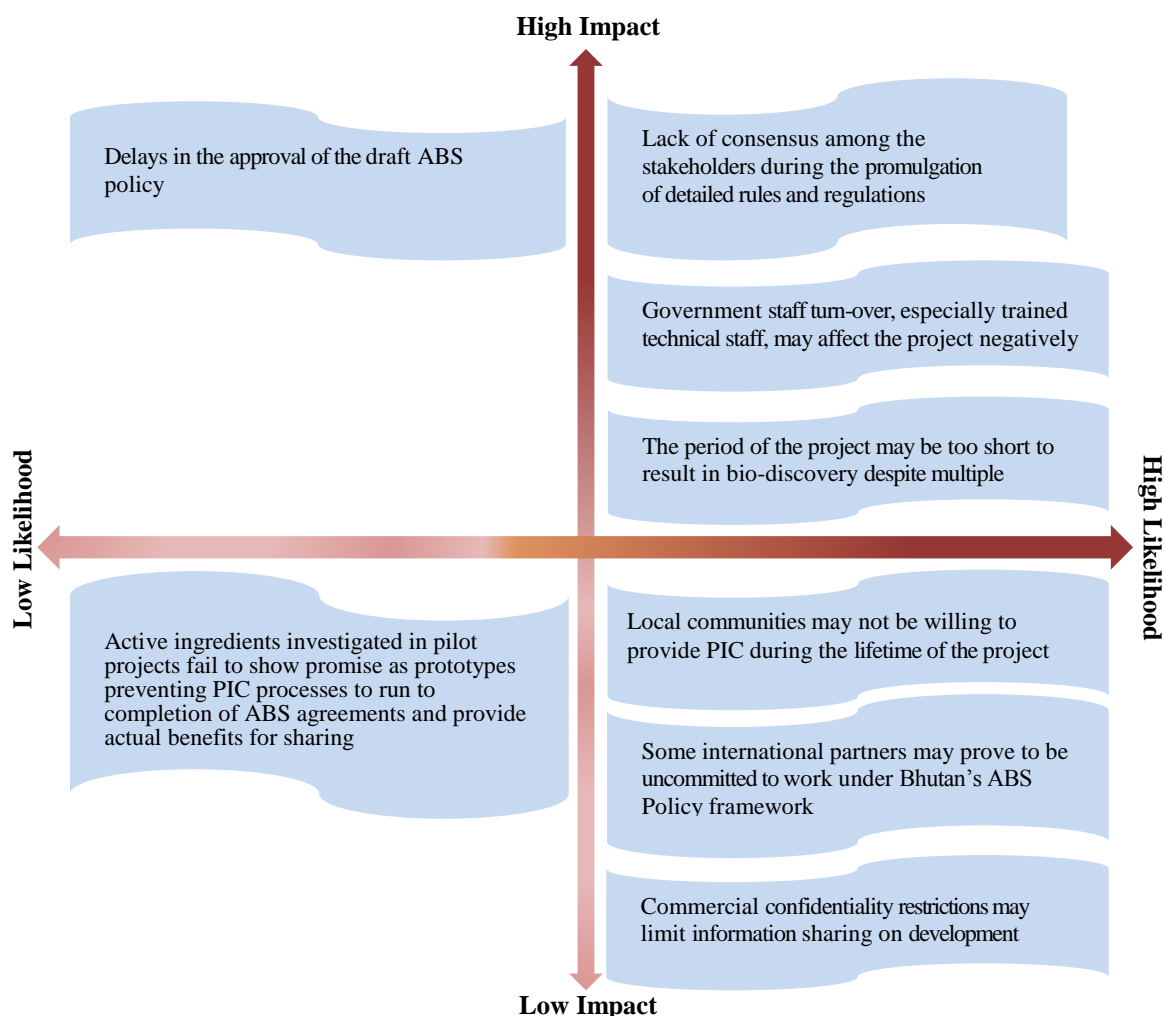
Stakeholders were well identified of a broad based representation with appropriate context at the local, national and international levels comprising of; Project Steering Committee (PSC) representing the Ministry of Agriculture and Forests, the Gross National Happiness Commission Secretariat, the Department of Forests and Park Services, the Department of Agriculture, Department of Traditional Medicines Services, Bhutan Trust Fund for Environmental Conservation, UNDP and the National Biodiversity Centre; the Technical Advisory Group (TAG) with representation from Department of Agriculture, Department of Forests and Park Services, Department of Livestock, Department of Agriculture Marketing and Cooperatives, Policy and Planning Division of the MoAF, Council for RNR Research of Bhutan (not in existence any more), Menjong Sorig Pharmaceuticals Corporation Ltd, then Intellectual Property Division (now Department of Intellectual Property) of the Ministry of Economic Affairs, and NBC. The TAG also represents the existing Scientific Review Committee established for the reviewing the Access proposals/ABS Agreements.

The project development was done through national stakeholder consultations and in close cooperation among the Ministry of Agriculture and Forests, the National Biodiversity Centre, Menjong Sorig Pharmaceuticals Corporation Ltd, Bio-Bhutan and the UNDP. Discussions were held with the local communities of pilot sites, the Gewog Administrations and Dzongkhag Administrations relevant to the pilot sites. The engagement of the project stakeholders and throughout the project enabled stakeholder buy-in of the project activities. The identification of local partners – the NBC, the MSPCL and Bio-Bhutan and international partners such as the Nimura Genetics Solutions, Life GmBH, Mae Fah Lhung University, Primavera, Institute for Market Ecology as well as the relevant government departments and the communities and played a great role in enabling smooth implementation of project activities as well as in pursuing collaboration in product development based on the genetic resources and traditional knowledge.

3.1.2 Risks and Assumptions

Risks outlined in the LogFrame for each outcome were clearly identified and assessed as follows.

Figure 1: Project's Risks Map



The outlined risk mitigation measures were all implemented and none of the risks that were outlined have triggered any cause of concern. However, the project design did not identify possible delay in the enactment of the Biodiversity Act of Bhutan, 2003 as a risk factor. The views that enactment of the revised Biodiversity Bill should have been included as an indicator by itself with identified risks. While the delay in enactment of the act has not caused serious constraint to delivery of the project outputs, it has implications on implementation of the Biodiversity Rules and Regulation. Therefore, the post project termination phase should focus getting the Biodiversity Bill enacted at the earliest.

The following assumptions are included in the project LogFrame;

- The Royal Government of Bhutan is fully committed to the conservation and sustainable use of the country's biological resources and the introduction of a national framework for ABS.

The ABS policy is approved and under implementation. The Biodiversity bill is ready for enactment and the Rules and Regulations are finalized to be implemented upon enactment of the bill. An ABS toolkit has been approved and published. These speak for the commitment of RGOB and the assumption addressed.

- MoAF and Royal Civil Service Commission are supportive of the staffing structure required for establishing and operationalizing the institutional mechanisms required for ABS implementation.
- More staff will be added to the bio-prospecting program as projected in the 11-Five-Year Plan, and there will be little or no turnover of trained staff.

The approved strength of the Bio-exploration and Research Division of NBC for the 11th Five-Year Plan as per records of Human Resources Division of MoAF stands at four officials comprising of three Biodiversity Officers and one Biodiversity Supervisor. These positions have all been filled and there has not been any staff turnover during the project implementation period. This has been supplemented by three project employed staff on contract through the Chanel co-financing and the NPIF project. With the recruitment of project staff, the limited staff issue has been addressed, facilitating a smooth implementation of the project activities. The RCSC has committed to deploying one assistant staff in the 12 Fiver Year Plan.

- Key stakeholders related to component 3 are willing to participate in this project and there is consensus to go ahead with the ABS agreements

The communities of Dzedokha in Loggchina Gewog, Dagala Gewog and Namther of Langthel Gewog have all, upon series of awareness programs, trainings and negotiations have provided PIC and signed ABS agreements. The NBC, Bio-Bhutan and MSPCL and have signed the ABS agreements with the respective communities. The assumptions for each outcome were clearly identified and found to be logical and practical.

3.1.2 Lessons from other relevant projects incorporated into project design

The project document does not include a specific chapter to highlight the lessons from other projects that have been incorporated into project design. However, the section pertaining to legal and policy context points out that the experience since enactment of the Biodiversity Act of Bhutan, 2003 in 2003 the adoption of Nagoya Protocol in October 2010 have given rise to the need for a comprehensive national policy on access to genetic resources and benefit-sharing (ABS) due to which the project design has included the development of national ABS policy. The ProDoc also indicates that the inclusion of the need to revise the Biodiversity Act of Bhutan, 2003, 2003 and formulation of new Biodiversity Rules and Regulations are included in the project design in order to align with the ABS policy and Nagoya Protocol.

The section also indicates that the need to develop comprehensive policy, legal and institutional frameworks for research and sustainable commercial utilization of genetic resources and associated traditional knowledge are included in the project design based on the lessons learnt

in the process of aligning the Biodiversity Act of Bhutan, 2003ion Plans and with the Aichi targets though the NBSAP, 2014.

The ProDoc also spells out that lessons learnt since the start of bio-prospecting program in 2009 included the need to strengthen technical and legal expertise, laboratory capacities, strengthening of institutional set up and the need to incorporate PIC process and MAT in the management of traditional knowledge to ensure that the holders of TK will be able to derive tangible and fair benefits from ABS deals. The needs identified through these lessons from the past have been incorporated in the project design.

Although, the ProDoc does not make specific mention, the project has drawn lessons from the experiences of community forest and NWFP management groups from the Social Forestry and Extension Division for the engagement of communities in the pilot ABS agreements through farmer group formation.

3.1.3 Planned stakeholder participation

The ProDoc reports that stakeholder consultations were pursued with a wide range of stakeholders at the PPG Inception workshop with participation of government agencies, Bhutanese private sector, international companies, civil society and UNDP. Following this a joint working session and bilateral meetings were held with the executing partners and key stakeholders at national level. The first draft project document was circulated to the key stakeholders for review followed by participation of all stakeholders at the Final PPG Workshop. During project preparation, a stakeholder analysis was undertaken in order to identify key stakeholders, assess their interests in the project and define their roles and responsibilities in project implementation. The list of key stakeholders associated with establishing a national ABS framework in Bhutan is presented in table 1 of the ProDoc.

The project design includes a list of key stakeholders to be involved in project implementation, broken down by Outcome and Output which is presented in Table 6 of the ProDoc. The effective implementation of these stakeholder engagement list should ensure adequate engagement of different key stakeholders. The project design and preparation was participatory and inclusive, in line with UNDP's and GEF's requirements

Table 3: Distribution of respondents by status of community involvement in project planning/designing.

Dzongkhag	Gewog	Fully	Partially	Not at all
Chhukha	Loggchina	7	0	0
Thimphu	Dagala	6	6	4
Trongsa	Langthel	8	1	0
Total		21	7	4

Source (TE consultation with pilot project beneficiaries).

3.1.4 Replication approach

The ProDoc states that the ABS agreements piloted in the project and trial products that are produced will be scaled up under the national program. The Terminal Evaluation has reviewed the 12 FYP of the Ministry of Agriculture and Forests including that of the NBC. The review has assessed that ABS initiatives are included in the 12 FYP, and the MoAF has allocated a budget of US\$ 314,285 for continuation of facilitating ABS agreements and bioprospecting.

The ProDoc also mentions that the outcomes of the project will be made available for replication through the dissemination of project results, lessons learned and experiences including demonstration of best practices in the development of ABS agreements and PIC processes by making project information available through NBC's website as well as RGoB's participation in international fora including CBD events. The sharing of benefits with ILCs through ABS agreements is likely to incentivize involvement in ABS processes by other communities and enhance the uptake of ABS-based community-level conservation projects in Bhutan.

3.1.5 UNDP comparative advantage

In general UNDP comparative advantage lies in its holistic, cross-sector approach to human development. The UN continues bear a broad coverage of technical expertise access to global knowledge networks. Having worked with the Royal Government and the people of Bhutan since 1973, the UNDP has good understanding of the Bhutan context is well aware of the national priorities. The UNDP areas of focus cover a wide range of programs covering economic integration and Innovation, Inclusive Governance, Climate Change Mitigation and Energy, Climate Change Adaptation and Disaster Risk Reduction and support to SDG implementation based on country-level experience, lessons learned, consultations with partners, and established inter-governmental agreements. UNDP CO has the adequate administrative capacity for implementation of this ABS Project.

The UNDP Country Office (CO) has assigned an experienced biodiversity conservation programme manager within the Environment and Livelihood Portfolio, guided by the head of the Portfolio and supported UNDP Regional Technical Adviser based in Bangkok Regional Hub.

3.1.6 Linkages between project and other interventions within the sector

The project strategy and design incorporated synergies from other GEF initiatives in the country. The IBRD/GEF-financed project on Sustainable Financing for Biodiversity Conservation and Natural Resource Management has three components: i) Enhanced Operational Effectiveness and Bhutan Trust Fund for Environmental Conservation (BT FEC); ii) Improved Conservation Management of the High Altitude northern area landscapes (protected areas and associated alpine meadows, forest and agricultural ecosystems) and; iii) Mainstream Conservation and Sustainable Forest and Natural Resources Management Approaches in policy, strategy and plans. The ABS project outcome 1 & 2 complements the component 2 of the IBRD/GEF Project by improving the ABS communities' capacity building in sustainable harvest, processing and distillation of rhododendron oil from the high alpine forests of Dagala. BT FEC is also a member of the ABS Project Steering Committee, which provides a platform for sharing the lessons learned from the IBRD/GEF project.

The UNEP/GEF supported to GEF Eligible Parties (LDCs and SIDs) for the revision of NBSAPs and the Development of the 5th National Report to CBD Phase I aimed at revising the NBSAP and developing the Fifth National Report to CBD. NBC/MoAF as the national implementing agency for these projects, CBD obligations and ABS implementation in compliance with Nagoya Protocol are fully incorporated in the NBSAP 2014 and progress reported to CBD on a regular basis.

The UNEP/GEF BS: Implementation of National Biosafety Framework (NBF) of Bhutan aims to make the biosafety framework operational for the benefit of the people of Bhutan and environment consistent with the provision of the Cartagena Protocol and the Constitution of the Kingdom of Bhutan. NBC as a national ABS implementing agency and a member of the Technical Working Group for NBF implementation ensure coordination on biosafety requirements. The entry/exit point establishment under ABS project outcome 1 in collaboration with BAFRA (phytosanitary/Compliance) and Ministry of Economic Affairs (patents) was incorporated in the project design.

GEF Small Grants Programme on Promotion of Economic Opportunities for Women through Community-Based Medicinal Herb Cultivation, Local Stewardship of Alpine Ecosystems through Incentive-Based Bio-Cultural Diversity Conservation in Dagala has synergies with ABS project. Further, the representation of GNHC, MoAF and UNDP CO on both the SGP Steering Committee and ABS Project Steering Committee ensures coordination between these projects. ABS being a new concept in Bhutan, the project endeavours to learn from the experiences of other developing countries in the Asia Pacific region. The Project Steering Committee and Technical Advisory Committee members visited Japan, Thailand, Philippines, Singapore and Malaysia to learn from ABS, bio-prospecting and product development experiences and promoting regional networking including sharing of Bhutan's ABS experiences.

3.1.7 Management arrangements

The ABS Project was designed for implementation under the National Execution (NEX) model agreed between the UNDP and Royal Government of Bhutan (RGoB) whereby the government assumes full ownership and responsibility for the formulation and effective management (execution) of all aspects of the UNDP-assisted project and the national authority remains accountable to UNDP for production of the outputs, achievement of objectives, use of resources provided by UNDP, and financial reporting. The UNDP in turn remains accountable for the use of resources to the UNDP Executive Board and the project donors. The management arrangements were specified as follows:

- Project Steering Committee for high level guidance and oversight of the project -Chaired by the Secretary of the Ministry of Agriculture and Forests and members from GNHCS, DoFPS, DoA, MSPCL BTFEC, UNDP and from the private sector. The NBC serves as the secretary to PSC.
- Technical Advisory Group to support the project management - chaired by the Program Director of NBC/ National Project Director and comprising of members from .the existing Scientific Review Committee established for the ABS Agreements which includes experts

from the DoA, DoFPS, DoL, DAMC, PPD CoRRB, MSPCL, IPD and NBC with provision for additional members that can be drawn from Bio Bhutan and UNDP-CO.

- Project Management Unit comprised of;
 - National Project Director (Program Director of the NBC) for operational direction, supervision and management of the project.
 - National Project Manager (head of the Bio-prospecting Division at NBC) for coordination, monitoring and reporting of project activities.
 - National Project Support Officer for project administration and day-to-day support to project management as well as for the coordination of communication and awareness-raising activities planned under the project. An additional staff, with development management and/or development communication background, was recruited for this position on a contract basis for the full duration of the project (GEF financed); □
 - National Project Accountant (accountant with the NBC) for management of project funds and expenditures.
 - For pilot project, NBC to be directly responsible for one pilot ABS agreement under project outcome 3 and Menjong Sorig Pharmaceuticals Corporation Ltd and Bio Bhutan as implementing agencies for the other two pilot ABS agreements with coordination support and operational oversight from the NBC.

3.2 Project Implementation

The project document details out the project outcomes and outputs in the Project Logical Framework describing Indicators of Achievement, Means/Source of Verification and Assumptions/Risks, which provide a useful mean for the evaluators to assess the effectiveness and efficiency of project implementation.

3.2.1 Adaptive management

The project has deployed a number of adaptive management measures, most significant measures are:

- Due to the low level of understanding of ABS among the stakeholders, the project conducted number of awareness and sensitization programs at different levels (ministry, district and community) to orient them ABS framework. As result of these initiatives, stakeholders including the community beneficiaries now understand and appreciate the ABS regime. However, the awareness programs need to be continued in partnership with relevant actors to reach the remaining communities/Gewogs to ensure the sustainable usage of the natural resources. The project covered all 2015 gewogs in the country and awareness on ABS were done also through seminars in Academic institutions such as College of Natural Resources, Gaeddu College of Business Studies, Royal Thimphu College, Paro College of Education and Royal Institute of Tourism and Hospitality.
- There was a difficulty in communicating with TK holders in local dialect. Therefore, the project used the services of local translators, elders/influential person and unemployed youth in the locality to communicate with TK holders where felt necessary (PIR, 2016).

- Due to the higher level of community interest and availability of *Rhododendron anthopogon* in Dagala as compared to low density and infeasible coverage of resources in Lingshi/Naro, the pilot site for ABS agreement with the Bio-Bhutan was changed from Lingshi/Naro to Dagala with the endorsement of the steering committee (PIR, 2016).
- Due to the higher level of community interest and availability of *Rhododendron anthopogon* in Dagala as compared to low density and infeasible coverage of resources in Lingshi/Naro, the pilot site for ABS agreement with the Bio-Bhutan was changed from Lingshi/Naro to Dagala with the endorsement of the steering committee (PIR, 2016).
- UNDP Bhutan initiated the procurement of R & D equipment for MSPCL to develop the new products in April 2015. However, it took almost a year to deliver the equipment due to changes in actual requirements, specifications and quantities were affected by budget restrictions and end-user requirements. These requirements had to be revised multiple times (PIR, 2016) and the project procured technical assistance from Nepal.
- The project logframe sets the milestone for ABS Policy to be approved within the first year of the project. However, due need for reality/ground testing of the policy before actual endorsement, the draft ABS policy was approved as an interim Policy in 2015 till the formal approval from the cabinet in June 2017 after reality testing of the policy.

3.2.2 Partnership arrangements

At the national level the project has conducted extensive consultation with key stakeholders during project development phase. During project implementation, the Project Steering Committee that consisted of representation from relevant Government agencies, private sectors, other institutions and the UNDO CO, took active actions and met regularly to review implementation progress, endorse work plans, provide guidance and assist in the resolution of any issues experienced during implementation.

At the local level the project partnered with the communities of three different Pilot ABS schemes in Dagala village under Thimphu district, Dzedokha village in Chhukha district and Namther village in Trongsa district engaging directly with the indigenous people of Bhutan.

With the private sector, the project partnered with Bio Bhutan, a private company well known for its works on essential oils of lemon grass, through engagement in ABS agreement together with the community of Dagala; under the project, Bio Bhutan is working with Dagala community for development of natural products from *Rhododendron anthopogon*. MSPCL, a government entity when the project started, is now a State Owned Corporate Enterprise registered with the Companies Act of Bhutan. The project partnered with this corporate entity through ABS agreement with the community of Namther and Lingshi. Further, the project also engaged other private firms for printing and publication as well as consultancy works. Some of the designing and printing works were carried out by Bhutan Himalayas Audio Visuals, Rigpa Printing and Publications, Kuensel Corporation, Image Arts, etc. Garuda Legal Consultancy, Mid-way Consultancy and Wang Consultancy were some of the consulting firms that the project engaged during the project period/duration for different consultancy works.

At the international level, the project partnered with international companies such as Fridjof Nansen Institute, Nimura Genetic Solutions, Agilent Technologies, Mae Fah Lhung University, Primavera, Institute for Market Ecology, etc. in the R&D field for natural product development.

Such active and effective partnership arrangement contributed to the success of the project in achieving the expected project results.

3.2.3 Feedback from M&E activities used for adaptive management

The implementation of activities under the Project were timely monitored by PMU and UNDP CO through inception reports, periodic/quarterly standard progress report, Annual Performance Reports, Project Publications, back to office reports and field visit report. Project activities and its annual targets were part of the Annual Performance Agreement of the NBC that are signed with the Prime Minister's Office and the progress were being monitored on quarterly basis as per the established government performance system. These reports were submitted periodically, and monitoring and evaluation activities were conducted in accordance with UNDP and GEF protocols and were included in the work plans and budgets accordingly. For the purpose of assessing feedback and M&E activities, the project PIR and MTR were considered as the main references.

The project undertook a voluntary mid-term review in 2017. The MTR of the project identified;

- Limited staff with the bio-prospecting program as an issue
- Lack of gender disaggregated indicators under relevant project outcomes
- The need to improve project PIRs as social and environmental risk was not covered in the PIRs
- The need to expedite approval of the Biodiversity Bill, 2016
- The need for MSPCL and NBC to populate their websites with project news, views, progress reports and success stories

On the issue of limited staff, the ProDoc has provisioned for one additional staff for development management on a contract basis for the full duration of the project through project resources. To enable adequate staff at the technical level, the project management has converted this provision to two staff at the technical level and also recruited three contract staff through co-financing of Chanel.

On gender disaggregated data, the project has presented gender data for its awareness programs and trainings in PIRs for 2017 and 2018

On the need to improve project PIRs, the project has included a section on social and environmental risk/safeguards in its PIR for 2018.

On the need to expedite approval of the Biodiversity Bill, 2016 the project has carried out a Regulatory Impact Assessment of the bill which was submitted to the cabinet. The project also facilitated seeking comments from the Office of Attorney General and their comments were incorporated in the bill enabling the bill to be fully prepared in terms of protocols for submission to the Parliament

On the need for MSPCL and NBC to populate their websites with project news, views, through ABS agreement with Lokchin Community is posted on the website. However, the website does not have an *archive* to assess other information on ABS that may have been posted. The project was extended until December 2018, as suggested by the PMU. No major recommendations were made in the PIRs.

3.2.4 Project Finance

At mid-December 2018, the disbursement of the GEF resources stood at USD 999,911 which is approximately 100 % of the total GEF resources. The good rate of disbursement reflects a smooth progress in project implementation. A summary of the project financing is presented in table 4 below.

Table 4: Annual project disbursements and the budgeted amount in the project document for the GEF/NPIF finance

Out-comes	Project Budget in the Project Document (million US\$)					Disbursements (million US\$)				
	2014/15	2016	2017	2018	Total	2014/15	2016	2017	2018	Total
Outcome 1	0.052	0.023	0.009	0.005	0.090	0.046	0.032	0.014	0.017	0.109
Outcome 2	0.070	0.170	0.023	0.026	0.290	0.093	0.065	0.073	0.003	0.235
Outcome 3	0.108	0.150	0.130	0.142	0.530	0.096	0.193	0.106	0.118	0.513
Project Management	0.029	0.019	0.021	0.021	0.090	0.017	0.011	0.022	0.031	0.080
Exchange rate (Gain/Loss)						0.001	0.002	0.002	0.003	0.004
Asset retirements						0.058	0.000	0.000	0.000	0.058
Total	0.260	0.363	0.183	0.194	1.000	0.311	0.304	0.213	0.172	1.000

At the time of TE, the final Audit report was not available for cross-reference of the financial and expenditure records. However, there were no audit memos issued to the management indicating that all project expenses were made in proper order and in line with either the approved work plan and budget approvals of the PSC.

For project co-financing, the initially budgeted amounts versus the actually realized co-financing, as reported by the project management, are presented in table 5.

Table 5: Co-financing realized by outcomes

Out-comes	Commitment (US \$)	Co-finance realized (US\$)				
		2014 - 2015	2016	2017	2018	Total
Outcome 1	539,750	303,362	303,362	173,948	173,948	954,620
Outcome 2	1,218,000	327,139	303,362	225,448	181,948	1,037,897
Outcome 3	1,067,000	345,465	345,465	226,641	227,654	1,145,225
Project Management		30,139	12,611.97	25,824	18,886	87,461
Exchange rate (Gain/Loss)		822.94		-16.48		806
Asset retirements		24,994				24,994
Total		1,031,923	964,802	651,844	602,435	3,251,004

Source; UNDP CO on grants from UNDP and PMU on other sources

Table 6: Project co-financing realized at the time of the final evaluation versus the budgeted amount in the project document

Co-financing (type/s source)	UNDP own financing (mill. US\$)		Government - MOAF/NBC (mill. US\$)		Partner Agency - BTSEC/MSPCL/Bio- Bhutan/Chanel/NGS (mill. US\$)		Total (mill. US\$)	
	Planned	Actual	Planned	Actual	Planned	Actual	Planned	Actual
Grants	106,000	181,551			631,915	631,915	737,915	813,466
Loans/Concessions								
In-kind support			1,301,750	1,202,476	964,736	1,235,062	2,266,486	2,437,538
Other							0	0
Totals	106,000	181,551	1,301,750	1,202,476	1,596,651	1,866,977	3,004,401	3,251,004

Source; UNDP CO on grants from UNDP and PMU on other sources

Financial planning and management were consistent with UNDP/GEF procedures. Allocation and schedule of disbursement were well defined from inception workshop to terminal evaluation. Funds were allocated to various partners for the execution of specific intervention/activities. An adequate and detailed financial reporting (according to UNDP/GEF) was presented. There was no re-allocation of funds requested and implemented by partners.

There was adequate flow of funds. Funding did not seem to have affected operation and overall project performance. All budgeting and co-financing targets were met. The project has been successful in completing all planned project activities and achieving the expected project results within the allocated budget. The evaluators consider that the financial resources were used prudently and followed strictly the financial rules and regulations of both the IA (UNDP) and the RGOB.

3.2.5 Monitoring and evaluation: design at entry and implementation

The M&E plan laid out in the ProDoc includes inception report, project implementation reviews, quarterly and annual review reports, and mid-term review and final evaluation in accordance with established UNDP and GEF procedures.

The project document contained a Monitoring and Evaluation Plan and Budget that would be conducted in accordance with established UNDP and GEF policies and procedures, in compliance with GEF-4 indicators. M&E activities, lead responsible parties, budget and timeframe were clearly identified in the Monitoring and Evaluation section of the project document. The logframe for each of the components of the project contains detailed indicators of achievement, means of verification, and assumptions and risks that provide milestones for measuring project implementation progress and performance.

The Monitoring evaluation plan includes a mandatory quarterly Combined Delivery Report (CDR) summarizing all project expenditures which were in order at the UNDP CO. A Monitoring Plan and SMART indicators were included in the project document, in line with GEF-UN Environment guidelines. Monitoring and evaluation activities were allocated US\$ 112,000 or 11% of the GEF grant.

During project implementation, both UNDP as the IA and NBC as the EA undertook effective and timely monitoring and evaluation activities through quarterly and annual reports by the project team provided to the Project Steering Committee. The required reports – PIRs and CDRs were submitted on time and met GEF-UN Environment guidelines. The reports of all PSC and TAG meetings are on file and well documented; the meetings were well attended and offered a venue for discussions on institutional responsibilities, information flows and project work plans that have guided project implementation. The quality and detail of the documentation underlies good knowledge management on the part of PMU. The UNDP-GEF Regional Technical Adviser supported the project monitoring through the UNDP Country Office Programme Officer, who offered advice and guidance both on an *ad hoc* basis and on the PIR, MTR and TE.

Based on the above evaluation, the Monitoring and Evaluation Design at entry and implementation is rated as Satisfactory (S).

3.2.6 UNDP and Implementing Partner implementation/execution

The project was implemented based on the National Execution (NEX) Modality. There was no change in the project management arrangements from what was originally planned in the ProDoc.

There were no changes to the project's design and the implementation process was based on the results framework of the project document. There were adjustments to activities and budget lines in response to changing circumstances and with approval of the PSC, where necessary. However, these adjustments did not affect the expected deliverables or project budget and focus on project results has been maintained as can be seen from PIRs. This reflected the project's good design as well good adaptive management and project ownership on the part of the PMU.

The UNDP-GEF Regional Technical Adviser has had systematic oversight on the project implementation through the annual PIRs, including comments and recommendations on the project progress. There were no major operational issues faced by the project except for the delay of enacting the biodiversity bill which missed the consideration of the second parliament. However, this is not within the control the PMU or the Ministry. Moreover, all due diligence process for the bill have been completed and the bill is ready for consideration by the next parliament.

Few minor implementation issues such as delay in budget re-appropriation, transportation problem, difficulty in communication in local dialects during TK documentation, issues related to lack of awareness on ABS, delay in the procurement of the equipment/distillation unit for Bio-Bhutan were all sorted out by the PMU through the PSC with the support of UNDP CO. The

difficulties in procurement through the RGOB procurement norms were resolved through the Global LTA based procurement of lab equipment for NBC and MSP through and procurement of constant for study on gender and ABS awareness were coordinated by UNDP CO. The delivery of project outputs were hampered.

PIRs were reviewed by the UNDP CO, as well as by the UNDP regional office which included review of project progress by outcomes, risk management, gender as well as social and environmental standards. For all years of project implementation, the ratings have been consistently satisfactory. Therefore, the evaluation has rated the project implementation and execution as Satisfactory (S).

3.3 Project Results

3.3.1 Overall results

The project results achieved as of October 2018 during the end of the project as compared with the targets of the Project Results Framework are summarized below.

Project Objective; The project's objective was to develop and implement a national ABS framework, build national capacities and facilitate the discovery of nature based products. The target for this objective was to have a National ABS Policy approved, and regulatory and institutional frameworks developed and operationalized.

End of Project Target 1: National ABS Policy approved, and regulatory and institutional frameworks developed and operational.

Based on the approved national ABS policy which has been put in place by the project, a functional system for equitable access and benefit sharing as well as for sustainable utilization of biological resources and for use of TK is operational and is in compliance with the Nagoya Protocol. While the Biodiversity Bill is yet to be passed by the Parliament, Rules and Regulations have been framed and can be implemented as soon as the bill is passed.

The level of awareness, technical capacity for governance and management of ABS as well as the institutional and organizational arrangements have been put in place. The level of institutional and personnel capacity for implementation of the national ABS framework as indicated by an increase in the GEF ABS Tracking Tool has increased from 33.33% at the start of the project to 98% at the end of the project from 33.3% at the start of the project (see Annex 7 for the national ABS capacity institutional score card). Level of institutional and personnel capacity for implementation of the national ABS framework as indicated by an increase in the GEF ABS Tracking Tool score has increased to 98% at the end of the project from 33.3% at the start of the project.

The outcomes of the project that contribute to realization of the objective have been achieved. The framework for ABS developed through the project can be applied to all biological resources and TK to enable sustainable harvesting as well as for use of TK for commercial purposes.

Outcome 1: An operational national regulatory and institutional framework on ABS.

Output 1.1: National ABS Policy approved and disseminated.

The draft ABS policy was in place as a baseline at the start of the project. After several rounds of stakeholder consultations and expert review it was presented to Environmental Committee of the National Assembly, National Council & GNHC to seek their feedback and guidance before it was approved by the Government. In order to maintain the project momentum on ABS regulations, the draft ABS policy was initially approved as an Interim Access and Benefit Sharing (ABS) Policy of Bhutan in August 2015. The Interim Policy was later formally endorsed by the Prime Minister as the National Access and Benefit Sharing (ABS) Policy of Bhutan in June 2017.

The approved National ABS policy was published both in Dzongkha and English. Over 2000 copies of the Policy document were distributed to central and local government agencies, research and academic institutes, private sector companies, members of the legislative bodies and other stakeholders. Electronic copy of the policy was posted on the websites of the GNHC, NBC and the MoAF. The delivery of this outputs is considered satisfactory.

Output 1.2: Biodiversity Rules and Regulations encompassing ABS implementation promulgated and disseminated.

The baseline condition for this output comprises of the Biodiversity Act of Bhutan, 2003 of Bhutan, 2003. However, in order that the Biodiversity Act of Bhutan, 2003 of Bhutan, 2003 is aligned with the new national ABS policy and Nagoya Protocol—such as in the case of having designated Competent Authorities for ABS, definition & formalization of monitoring and enforcement of ABS permits- the act was revised. It has been called the Biodiversity Bill, 2016.

The rule and regulations for the above Bill were drafted to be finalized as soon as the Bill is passed by the Parliament. The new Bill and its regulations would ensure the sustainable use and equitable sharing of benefits to rural communities from Bhutan's biological resources.

However, upon completion of the review of the bill by the Office of Attorney General, incorporation of their feedback and completion of the Regulatory Impact Assessment (RIA) Report, the cabinet had decided not to submit any new Bill to the Parliament in the last year of their term unless the Bills are of an urgent nature, concerning the national security.

The project has completed the revision of the Biodiversity Act, 2003 and drafted the new bill and had undergone all due diligence prior to enactment by the parliament. The project also has the draft Rules and Regulations in place and is ready to be formalized after undergoing stakeholder consultation as soon as the bill is enacted by the parliament. While the Bill remains to be enacted by the Parliament, the national ABS policy has facilitated the operationalization of ABS framework. The delivery of this outputs is considered Highly Satisfactory

Output 1.3: Institutional framework compliant with the national ABS policy and regulations and Nagoya Protocol is in place and operational

While the NBC has been designated as the National Focal Point for Access and Benefit Sharing based on Government Executive Order, the baseline for this output is that there is no Competent Authorities designated at national/ sub-national levels and there are no official checkpoints designated for checking ABS information/ permits. Operationalization of the ABS framework required competent authorities to be designated at national level and a network exit/entry points designated for checking ABS information/ permits. It also required an operational system of internationally recognized certification of origin and compliance.

Based on the National ABS Policy and with support from the project, Head of MoAF (Secretary) is designated as the National Competent Authority and NBC is designated as the National Focal Point. The Department of Intellectual Property (DoIP), Ministry of Economic Affairs and Bhutan Agriculture and Food Regulatory Authority (BAFRA), MoAF are designated as the national checkpoints. BAFRA already has a network of check points across the country, and trade and transit check points are already in place in strategic locations. Through conduct of workshop on roles/modalities of checkpoints in collaboration with the UNCTAD as well as through capacity building ‘Webinar’ on ABS checkpoints in collaboration with Access and Benefit Sharing-Clearing House (ABS-CH), the capacity of check points has been put in place. As a result, movement of genetic materials is already being regulated in compliance with the ABS Policy, the Biodiversity Act of Bhutan and the Nagoya Protocol.

A national certificate “Certificate of Compliance” equivalent to Internationally-Recognized Certificate of Compliance (IRCC) has been developed and is ready to be formalized legally once the revised Biodiversity Bill is passed by the parliament. Therefore, the evaluation has assessed the delivery of this output as Highly Satisfactory.

Outcome 2: Increased national capacities and awareness for the implementation of the national ABS framework.

Output 2.1: Upgraded facility and staff skills for bio-prospecting laboratory work and TK documentation.

The baseline condition of the laboratory facility at NBC comprise of its capacity being limited to crude extraction. The laboratory did not have any capacity for fractionation of compounds for development of trial products and bio-prospecting. The plant extract library has the capacity for preservation of only 250 crude extracts. The project upgraded the national bioprospecting laboratory at NBC by procuring and installing the following equipment;

- High Performance Liquid Chromatography (1set)
- Water Deionizer (1 set),
- Soxhlet apparatus (2 sets)
- Clevenger apparatus (2 sets)

The project has supported 26 international trainings out of which 13 trainings were targeted for laboratory analysis, essential oil extraction, product development and plant extract library. A total of 69 individuals have been trained on these critical ABS management components comprised of 21 women and 48 men. A major proportion of international trainings (30%) were

dedicated staff from the NBC which is strategic as NBC will be the entity that will bear the main responsibility for carrying forward the national ABS movement in the country. Almost of 35% of all international training participants were women.

Out of 18 in-country trainings 8 trainings pertain to laboratory analysis, essential oil extraction, product development and plant extract library through which over 119 participants were trained comprising of 29 women and 80 men. Overall in-country trainings covered topics on sustainable harvesting and cultivation, development of by-laws and product development and has trained over 496 individuals, 44% of which comprised of women.

As a result, the national bioprospecting laboratory at NBC has the capacity to analyze crude plant extract to the level of fractionation and to carry out trial products development. By the end of the project, the laboratory has already developed more than 1250 crude extracts, overshooting the project target on crude extracts and 29 plants studied in detail to the level of fractionation with 29 active compounds being identified for further research and trial products development overshooting the project target of 25 compounds.

The plant extract library has been strengthened with new freezers for storage of plant extract, label printers for digitalizing labels of plant extracts and other accessories for upgrading the system. By the end of the project the plant extract library has more than 1250 crude extracts developed and preserved in the NBC's extract library. On account of delivery of all targets, the evaluation has assessed this output achievement as Highly Satisfactory.

Output 2.2: Improved knowledge and skills among the staff of NBC and partner agencies for ABS regime management encompassing technical, legal, administrative and social aspects.

The baseline condition for this output specifies that less than 20 staff have basic and partial knowledge and skills for ABS regime management. The PIR, 2018 reports that over 198 officials (89 female; 109 male) from NBC, Bio Bhutan, MSPCL and partner agencies attended awareness raising and capacity building events. NBC in collaboration with partner agencies developed ABS management toolkit for Bhutan, using their in-house capacity and lessons from the events.

Institutional & personal capacity of NBC and MSPCL improved from basic level at the start of the project to a level whereby capacity now exists in-house for bio-prospecting and full ABS regime management. The private sector had virtually no capacity for ABS management at the start of the project. At project closure, the Bio-Bhutan, a private company is a party to ABS agreement with one of the local communities and has developed 3 commercially oriented products based on genetic resources.

Out of 96 participants who participated in the various international trainings supported by the project, 56 participants were from partner agencies and relevant stakeholders who are engaged in the implementation of ABS mechanisms. The ABS institutional score card of at baseline of 33% has improved to 71% by MTR and at the closure of the project the ABS institutional score has improved to 98%.

The deliverables of the outputs have been clearly achieved and the TE rates this output as Highly Satisfactory.

Output 2.3: Increased awareness among various stakeholders for supporting and participating in ABS initiatives.

Baseline study, 2015 reported 91.7% of the respondents including farmers, businessman, local government office bearers, parliamentarians and researchers are were not aware on ABS.

The project organized 205 awareness workshops on ABS and TK in 205 Gewogs, covering 17,522 participants (M: 8989; F: 8473) starting from 2014 October till 2018. TK documentation completed in all 205 Gewogs and 20 districts and the NBC plans to develop TK protection strategy & make use of the TK data for bioprospecting works and product development in 12 FYP. More than 235 farmers participated in in-country training and workshops on ABS process from the 3 pilot project sites over the project period. The project conducted 10 seminars on biodiversity conservation and ABS catering to students, academia, policymakers, farmers' group and researchers (Samtse College of Education, Paro College of Education, Royal Thimphu College, Gaedu College of Business Studies, Royal Institute of Tourism and Hospitality, College of Natural Resources, Ugyen Wangchuck Institute of Conservation and Environmental Research, Field offices of Department of Forests and Park Services etc.) to create awareness on ABS regime.

In addition, the project developed 2 photo essays on the Pilot ABS Schemes highlighting the project's support, published success stories on the pilot schemes of the ABS project in the local newspaper – Business Bhutan and developed ABS communication posters highlighting the process of ABS for Bhutan which were reported to be published in the inflight magazine of the national airlines and in the Ministry's website. A midyear assessment on ABS awareness and its impact on gender in 2017 reported that “the project has succeeded in increasing the level of awareness among all target groups compared to the situation reported by the 2015 study.” An Access and Benefit Sharing Toolkit for the management of genetic resources and associated traditional knowledge in Bhutan is published and is available in public domain. 2000 copies of the toolkit has been printed and were distributed to central and local government agencies, research and academic institutes, private sector companies, members of the legislative bodies and other stakeholders

The TE rates this output as Highly Satisfactory.

Outcome 3: Best practice ABS processes are demonstrated recognizing the principles of biodiversity conservation, Prior Informed Consent (PIC) and Mutually Agreed Terms (MAT) including the fair and equitable sharing of benefits.

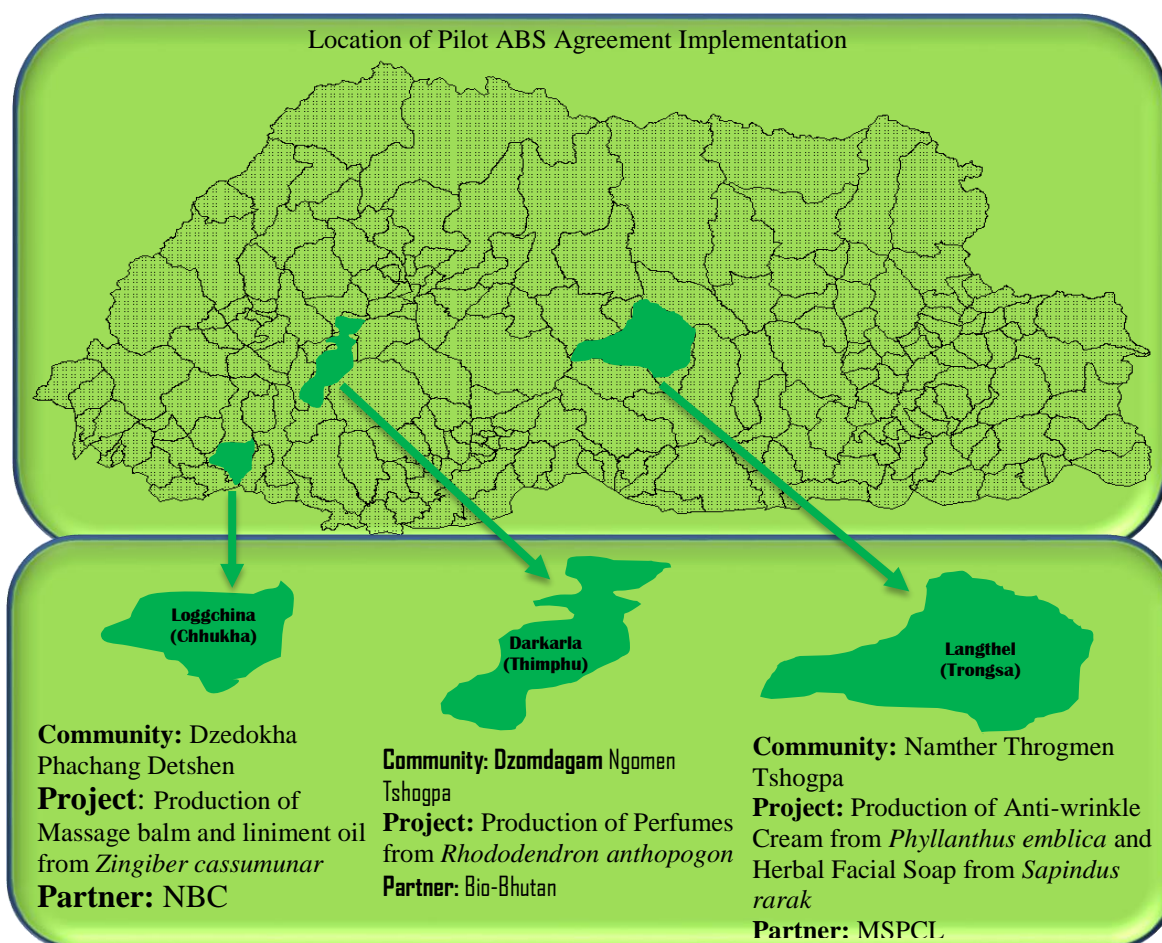
Output 3.1: Three pilot ABS agreements compliant with Nagoya Protocol developed and operationalized.

With the national ABS policy in place and upon development of required capacity for implementation of ABS regime in terms of technical capacity for research and product development; organizational arrangements; establishment of protocols and having created

adequate level of awareness, following three ABS agreements are under execution. These pertain to the project's pilot sites (See Figure 2 for location of the pilot sites).

1. Bipartite ABS agreement between NBC and the Dzedokha Phacheng Detshen holding TK related to a local ginger species (*Zingiber cassumunar*).
2. Tripartite ABS agreement between two government entities and the local community-MSPCL/NBC and communities of Namther Throgmen Tshogpa, Trongsa & Tserim Yugel Sngomen Tshogpa, Lingshi.
3. Tripartite ABS agreement between Bio Bhutan and Dzomdagam Ngomen Tshogpa in Dagala, & NBC.

Figure 2: Location of Project Pilot Sites



- a. Bipartite ABS agreement between NBC and the Dzedokha Phacheng Detshen holding TK related to a local ginger species (*Zingiber cassumunar*).

This pilot project, led by the NBC, is based on a traditional knowledge on local use of *Zingiber cassumunar* (locally known as Phachang) for easing joint pains by local healers as recorded by NBC's TK documentation in 2012. At the start of the project NBC had carried out basic screening and extraction processes and the extract stored in their extract library. Herbarium specimen has also been preserved at NBC. The RNR Research and Development Centre at Wengkhar (Eastern Bhutan) has carried out preliminary cultivation trials with encouraging results. The practice of using the plant for healing purpose was declining as road access has enabled villagers to obtain commercial medicines, and the plant appeared to be disappearing from homesteads as a result (ProDoc). Chukha Dzongkhag had a poverty rate of 11.2% in 2012 (11th Five Year Plan), just above the national average of 12%. Average annual household income in Loggchina Gewog was Nu. 67,438 in 2010, compared with the 2012 poverty line of Nu.20,448 per person per year.

Dzedokha Phacheng Detshen is a farmer group with 48 members out of which 23 are women. The group belongs to Dzedokha Chiwog which has a total population of 208 comprising of 97 females and 111 males (PHCB, 2017). The main cash crops of the community comprise of cardamom and ginger while their main staple crops are maize, paddy and millet.

With enhanced capacity of the national bio-prospecting laboratory and appropriate human capacity for product development and ABS regime management made conducive by the national ABS policy, the ABS agreement with the Dzedokha Phacheng Detshen has resulted in the development of 2 products - Zhinor massage balm & liniment oil. The trademark for the Zhinor has been successfully registered with DoIP, MoEA. As per the ABS agreement, the NBC avails access to their genetic resource and TK by way of PIC of the community, based on which the commercial products have been developed while the community avails economic benefits from the sale of *Zingiber cassumunar* cultivated by the farmer group members as well as a percentage of the earnings from the sale of the massage balm & liniment oil.

Average annual household income in Dzedokha based on the interviews by the TE from amongst member of the community group has increased to Nu. 80,917 per household in 2017 as compared to the Gewog average Nu. 67,438 in 2010 (ProDoc). The TE assess that about 5% of the increased average income is accrued from the sale of raw *Zingiber cassumunar* to the NBC.

The group members, during the field visit by the TE reported that only few households maintained one or two plants of *Zingiber cassumunar* near their homes in the past. As of 2018, every member household cultivated few decimals (1 decimal = 0.01 acres) of land and they estimate about the plant being cultivated in about 100 acres of member's homesteads. The cultivation is expected to increase in the near future as it is easier to maintain as compared to ginger and cardamom and the price of *Zingiber cassumunar* has been higher and more stable than the other crops.

Figure 3: *Zingiber cassumunar* grown by a group member at her homestead



- b. Tripartite ABS agreement between two government entities and the local community-MSPCL/NBC and communities of Namther Throgmen Tshogpa, Trongsa

The pilot initiative at Namther community of Langthel Gewog led by the MSPCL (now a corporate entity) and is based on access to selected genetic resources of the local Non Wood Forest Management Group. Initially, this initiative also included the nearby community of Dangdung. However, with the establishment of the head offices of Manghderychhu Hydropower Authority and associated economic opportunities, the Dangdung community pulled out.

The initiative with Namther communities is based on development of bio-product from *Phyllanthus emblica* (Himalayan gooseberry) and *Sapindus rarak* (soapnut tree), which are resources available within the locality. The community group comprising of 20 members, all women except one, have a NWFP management plan based on which sustainable harvesting of these resources is done. In addition, the community is known for their skills and knowledge in collection of medicinal plants, built over generations due to their association with the traditional medicine program of the Government since the 1960s.

Namther community has 5210 residents out of which 253 are females. While their staple crops comprise of maize, paddy and wheat and cash crops such as oranges, banana and guava. Their

major cash income comes from collection of medicinal herbs for traditional herbal medicine production.

Building upon the traditional expertise of the community in collection of medicinal herbs combined with the capacity development through the project, this tripartite ABS agreement has resulted in development of antiwrinkle cream (from Himalayan Gooseberry) and natural handmade soap (from soapnut fruit). The MSPCL has also developed a hand sanitizer from *R. anthopogon* together with the community group of Lingzhi (Tserim Yugel Sngomen Tshogpa).

As per the 5-year ABS agreement with communities, the MSPCL avails access to their genetic resource by way of PIC of the community, based on which the commercial products have been developed while the community avails economic benefits from the sale of genetic raw materials harvested by the farmer group members from their NWFP areas as well as 5% of the gross profit from the sale of products. The MSPCL would pay 2% of their gross profits to the BABS fund. The MSPCL has developed contacts with Pathanwin Co Ltd. in Thailand for cosmetic production collaboration and marketing.

The group members, during the field visit by the TE reported that harvesting of the plant materials is based on sustainable harvesting practices in accordance the training provided to the members by MSPCL and NBC. The group members reported an average household income of Nu 10,4000 annually from the sale of raw materials.

- c. Tripartite ABS agreement between Bio Bhutan and Dzomdagam Ngomen Tshogpa in Dagala, & NBC.

The pilot initiative of Dagala, led by Bio-Bhutan, was initially proposed to be take place in Soe and Naro. However, due to limited availability of raw materials and with community consent, it was moved to Dagala Gewog. The community groups comprise of members from all 5 Chiwogs of Dagala Gewog. The Chiwogs of Getela, Dungdro, Wangdro, Chamgang Toe and Chamgang Moe have 144 households all together out which 72 households are members of Dzomdagam Ngomen Tshogpa. All member households are migratory high altitude herders. Yak herding is their main source of livelihood and cash income. The pilot initiative in Dagala is based on the use of extracts from *R.anthopogon* leaves to develop bio-products through ABS agreement.

With enhanced capacity of Bio-Bhutan in essential oil extraction, product development, and coordination the resultant ABS agreement with the Dzomdagam Ngomen Tshogpa has resulted in the development of 3 products comprising of soap, massage oil and perfume.

The group members, during the field visit by the TE reported that traditionally the communities use *Rhododendron anthopogon* leaves as incense and was never used for any other purpose and people hardly cared about its sustainability. The members see the opportunity to sustainable use this natural resource a significant source of income and employment and as an eye opener to conserve the resource.

As per the 5-year ABS agreement with communities, the Bio-Bhutan avails access to their genetic resource by way of PIC of the community, based on which the commercial products have

been developed while the community avails economic benefits from the sale of genetic raw materials harvested by the farmer group members from their Gewog as well as 7% of the gross profit the sale of products of Bio-Bhutan. Bio-Bhutan would pay 2% of their gross profits to the BABS fund. Bio Bhutan and NBC revived dialogue with Thai China Co. Ltd., Thailand on exporting essential oils from Bhutan.

Given that the ABS agreements are under execution; that the communities do understand the concept of ABS and responsibilities of the parties involved; that the prototype products are already developed (See Figure 4) and that the communities have seen noticeable benefits in the form of enhanced income that will be sustainable as long as the genetic resource base is sustainable; the TE rates this output as Highly Satisfactory.

Figure 4: Bio-Products developed through the pilot ABS agreements



Output 3.2: Knowledge resources on ABS developed and disseminated

At the start of the project there were no Bhutan-specific knowledge resources on ABS available and the baseline study 2015, indicated that 90.6% of the communities are not aware of ABS. The level of awareness on the existence, use and option values of the biological resources was very low among the population of ILCs participating in the pilot projects.

In terms of knowledge resources on ABS the project has completed the documentation of TK across the country. It has developed an ABS toolkit. Communication materials that the project developed include 3 success stories on the pilot schemes of the ABS project, 2 photo essays on the Pilot ABS Schemes and numerous poster and communication materials. The downside is that these materials are not available on the website of NBC except for the ABS policy, draft bill and ABS toolkit.

Study on Access and Benefit Sharing Awareness and the Impact of ABS Project on Gender, 2017 showed a fair level of awareness among academia/researchers and good level of awareness among pilot communities & civil servants. The interaction and consultation by the TE with pilot project participants confirmed that the almost all respondents picked randomly reported that they are aware of ABS and the activities of the project activities (see table 7).

Table 7: Number of community respondents by status of ABS Project Awareness

Dzongkhag	Gewog	Total respondents		Aware		Not Aware	
		Aware	Not aware	Male	Female	Male	Female
Chhukha	Logchina	7	0	3	4	0	0
Thimphu	Dagala	15	1	9	6	0	1
Trongsa	Langthel	8	1	0	8	0	1
Total		30	2	12	18	0	2

Although a project has been successful in preparing knowledge products and in creating awareness, the difficulty in accessing such information can constrain further awareness. The project has also not produced any document on lessons learned from the project which can be applicable in upscaling and in design of similar projects in future. On this account the TE rates the delivery of this output as Moderately Satisfactory.

3.3.2 Relevance

- The project implemented significant components of Bhutan's NBSAP, the principal instruments for implementing the UNCBD. It implements National Target 16 of NBSAP (By 2015, the Nagoya Protocol is implemented through National ABS legislative, Administrative, and Institutional Framework consistent with the Nagoya Protocol) and Aichi Target 16 and Article 6 (conservation and sustainable use of genetic resources through national strategies, plans and programs) and articles 10, 15 of UNCBD. By way of TK documentation, the project also implements the NBSAP National targets 13 (By 2020, the genetic diversity of key cultivated plants and domesticated animals, including that of crop wild relatives are documented and conserved) & 18 (By 2020, TK and Customary Practices of communities, relevant to biodiversity conservation and sustainable use are documented and used, and where appropriate revived and protected). The project contributes to national target 19 of NBSAP (By 2020, science-based knowledge and technologies related to biodiversity are generated, improved, made accessible and applied where appropriate) and articles 10, 11, 20, 21 of UNCBD through execution of pilot ABS agreements and based on research & prototype product

development. The project has moved the national biotechnology industry beyond traditional medicine production for domestic use to the level of being able to produce biotechnology based products and the national policy ABS framework to the level of compliance with the Nagoya Protocol for PIC processes and ABS agreements involving MAT and mechanisms for the equitable sharing of benefits. Incremental cost arguments of the project have been delivered. The outputs of the project contribute to delivery of Program 8 (Implementing the Nagoya Protocol on Access and Benefit Sharing) of the GEF 6 biodiversity strategy's objective 3 (Sustainably use biodiversity). The UNDAF document of UNDP, UNDAF: Bhutan One Programme, 2014-2018 identifies, under its Sustainable Development outcome the following priorities;

- Policies and studies for integrated natural resource management, climate change adaptation/mitigation and poverty-environment nexus developed.
- The rural poor and under-employed have increased access to alternative income generation opportunities and improved sustainable agriculture practices.

The project contributes directly to delivery of these strategies identified by UNDAF.

At the national level, the project's goal is aligned with the conservation pillar of GNH (through enabled access to genetic resources); the Sustainable and Equitable Socioeconomic Development pillar of GNH (through benefit-sharing); the GNH pillar on Preservation and Promotion of Culture (through creating awareness on ABS, documentation and use of traditional knowledge) and to Good Governance pillar of GNH (through ABS policy, Biodiversity Act of Bhutan, 2003, its regulatory framework, PIC, MAT and ABS agreement, formation of community groups and capacity development).

In addition, project implemented a significant components of Bhutan's NBSAP, the project goal and objective are aligned with the 11th FYP's national development outcomes NKRA 1 (Sustained economic growth); Research and commercialization of genetic resources (3 ABS Agreements under execution) and with NKRA 6 (Indigenous Wisdom, Arts & Crafts Promoted for Rural Livelihood)

Through TK documentation, ABS awareness and policy advocacy program. The project's linkage with NKRA 8 (Sustainable utilization and management of natural resources) is evidence in the form of hands-on training on bio-prospecting technique and sustainable harvest, processing and marketing of traditional the products through ABS agreements. It also links with NKRA 12 (Democracy and Governance Strengthened) through enabling ABS policy and regulatory framework established. The project is country-driven as the PSC is chaired by the Secretary of the Ministry of Agriculture and Forests and project management has been led by the NBC with its in-house PMU bearing responsibilities for the operational direction, supervision, day-to-day monitoring and reporting on all project matters including coordination with the partner communities.

The project interventions and the timing implementation have been consistent with the national priorities and contributes significantly to UNCBD and GEF program priorities. It also meets the stakeholder needs and provides benefits the local communities. Therefore, the rating for relevance is Relevant.

3.3.3 Effectiveness & Efficiency

Despite the delay in project getting the Biodiversity Act of Bhutan, 2003 enacted, all outputs and outcomes have been delivered. The need for revision of the Biodiversity Act of Bhutan, 2003, 2003 was not clearly foreseen and the enactment of new revised act is not considered as a deliverable in the project design.

All outlined risk mitigation measures and assumption were all implemented and none of the risks that were outlined have triggered any cause of concern. However, upon realizing that the revision of the act was necessary, it should have been considered as a deliverable by the PSC which has not been done. The project effectiveness is rated as Satisfactory.

The project applied adaptive management based on emerging situations such as focused approach on awareness due to the low level of understanding of ABS among the stakeholders; engagement of local guides, elders/influential person and unemployed youth in the locality to communicate with TK holders to address difficulty in communicating with TK holders in local dialect; shift of the pilot site for ABS agreement with the Bio-Bhutan from Lingshi/Naro to Dagala due to better availability of *Rhododendron anthopogon* in Dagala as compared to low density and infeasible coverage of resources in Lingshi/Naro; use of TA from Nepal to advice on the complications related to specification of oil extraction equipment and facilitating interim approval to test the implementation issues of the ABS policy before formal endorsement.

The financial progress reports availability in CDR and all M&E reports submitted on time with adequate information. Inadequacies were addressed in subsequent reporting and discrepancies were not observed between planned and utilized financial expenditures. Co-financing funds leveraged observed to be higher than planned in the form of in-kind support from co-financing sources. The project was not only able to develop bio-products but also enabled linkages for collaboration for marketing of the products developed by the project. Hence efficiency of the project is rated as Highly Satisfactory.

3.3.4 Country ownership

The RGOB has adopted the National ABS policy which indicates the importance and ownership of the ABS approach. The Project Steering Committee is chaired by the Secretary of the Ministry of Agriculture and Forests. The project management is country-driven with NBC housing the PMU responsible for the operational direction, supervision, day-to-day monitoring and reporting following the inception workshop discussion and agreement on implementing partner's role in the project.

3.3.5 Mainstreaming

While the level of mainstreaming of the project and project results to the relevant Government strategies was already discussed in the section of relevance, UNDP-Supported, GEF financed projects Guidance for Terminal Evaluation calls for assessment as per the following table. The assessment indicates that the project has mainstreaming elements as defined by the guidance for evaluation.

Table 8: Assessment of Project Mainstreaming

Mainstreaming		ProDoc	TE
Reference to:		(Y/N)	(Y/N)
a.	UNDAF, CPD, and/or CPAP	Y	Y
b.	Poverty/environment nexus, sustainable livelihoods	Y	Y
c.	Crisis prevention and recovery	N	N
d.	Gender	Y	Y
<p>Comments and justifications:</p> <p>a. The UNDAF, Bhutan, 2014-2018 focuses on Sustainable Development, Essential Social Services, Gender Equality and Child Protection and Good Governance and Participation. The project contributes directly to three areas of UNDAF namely Sustainable Development, Gender Equality and Child Protection and Good Governance and Participation through the ABS agreements that provides for sustainable use of genetic materials, engagement of women and income generation to rural communities and by creating an enabling legal, policy and regulatory environment for implementation of ABS agreements,</p> <p>b. The project supports the livelihoods of far-flung rural communities that are less privileged, and do not have an easy access to modern developmental facilities. The implementation of the Nagoya protocol compliant ABS agreements generated employment and income opportunities for both men and women (SDG 1 and 8). Monetary benefits through the sale of the nature-based products leveraged children's education and basic necessities for the poor households of the communities.</p> <p>c. The project contributes to SDG 1: no poverty plus and SDG 8- decent work and economic growth as described under b; SDG 3: good health and well-being by way of enabling rural communities, on traditional medicines based in their indigenous knowledge, sustainable harvesting, processing, marketing and utilization of medicinal plants; SDG 5: gender equality – 35% of all ex-country training participants of the project were women and 44% of all in-country training participants were women; SDG 13: climate Action – whereby research and commercialization and the discovery of nature-based products and diversification builds the resilience of local communities against climate change and SDG 15: life on land – through conservation and use of Bhutan's genetic resources addressing a wide range of biodiversity threats and impacts by enhancing the social and economic value of biodiversity conservation.</p> <p>d. The project has prepared and implemented a SESP as reported in section 3.3.6</p>			

3.3.6 Sustainability

The project's social and environmental risks listed in the SESP were reviewed and updated during the mid-term evaluation. The Social and Environmental Risks identified in the project document were: "will the ABS project have variable impact on men and women's ability to use, develop and protect natural resources and other natural capital; human rights implication for vulnerable groups; and result in secondary or consequential development, which could lead to social and environmental effects, or generate cumulative impacts with other known existing or planned activities in the area."

The project's outcome 3 ensures that ABS agreements and community protocols are drawn and implemented jointly based on the principle of PIC, MAT with ILCs ensuring conditions on access to genetic resources including the sustainable harvest and benefit-sharing in a fair and equitable basis. The ABS agreements/community protocols regulatory provisions are fortified by the Biodiversity Regulations.

The risk of unsustainable harvest is being mitigated by providing training on sustainable harvest and collection, upgrading the knowledge and skills of resource collectors, who are primarily women beneficiaries and encouragement and promotion of domestication and cultivation, particularly of vulnerable plants whose leaves, fruits and rhizomes are partly or wholly collected.

The ABS project caters to the vulnerable groups, especially women with low socio-economic status imposed by the remoteness and lack of economic empowerment. The project addressed the risk by promoting commercialization of the nature based products and benefit-sharing from the genetic resources have been agreed through the ABS agreements to benefit rural women as custodian of genetic resources across the pilot sites.

Guidance for conducting terminal evaluations of UNDP-Supported, GEF financed projects considers sustainability to be the likelihood of continued benefits after the project ends. Consequently, the assessment of sustainability considers the risks that are likely to affect the continuation of project outcomes. The four areas for considering risks to sustainability are evaluated as follows;

a. Financial risks:

With the completion of the project, continued financing of the activities for bio-prospecting and ABS programs is expected since ABS is an approved program under the 12 FYP of MoAF. The plan has allocated a budget of US\$ 314,285 for continuation of facilitating ABS agreements and bioprospecting. In the upscaling phase of ABS, and the ABS agreements advance in commercial aspects, the ABS Fund is expected to grow through enhanced realization of processing fees for the Scoping Permit/Agreement under scoping agreements and the mandatory contribution from commercial profits to the ABS fund. This is will enable financing of ABS activities. Financial risk is rated as Likely (L) which indicates negligible risk to sustainability.

b. Socio-economic risks

The stakeholders such as the government entities, private sector, communities that are engaged in the ABS programs are aware of the value of ABS to individuals, organizations and to the natural environment. The adoption of the ABS policy within a span of about two years is a strong indication of the national ownership. The successful adoption and execution of three ABS agreements within a span of less than four years of introducing ABS concept indicates a strong support and ownership within the private sector, local communities and relevant stakeholders.

The project outcome has put in place mechanisms, thereby enabling the development of Bhutan's biotechnology industry which will provide economic value to the Bhutan's biological resources. The environmental and social screening of the project in the ProDoc has not assessed any risk as well. The project outcomes, instead, provide enhanced recognition and protection of ILCs' traditional knowledge and biological resources. Socio-economic risk, therefore is rated at Likely to indicate negligible risk to sustainability.

c. Institutional framework and governance risks:

The RGOB has adopted the National ABS policy. The revised Biodiversity Act of Bhutan, 2003 is ready for submission to the Parliament and its Rules and Regulations are already drafted. With the national framework for ABS, including a national law, implementing regulations, institutional set up, supporting information management and capacity building for the competent authorities and related agencies in place, the institutional arrangement for ABS is well founded.

The organizational set for ABS implementation is already established as part of regular government structure whose programs and activities are measured, monitored by linking with performance of individual officials through annual agreements with the office of the Prime Minister. The institutional and governance risk is rated at Likely (L) indicating negligible risk to sustainability.

d. Environmental risks:

The environmental and social screening of the project in the ProDoc has not identified any significant issues for this project that would result in negative environmental and social impacts. The project outcome creates an enabling environment for protection of biological resources and long term positive impacts for biodiversity conservation in Bhutan. The ABS regime allows enable exploitation of the biological resources in a sustainable manner, through ABS agreements. The environmental risk of the project is rated as Likely (L) indicating negligible risk to sustainability. Overall, the sustainability of the project outcomes is rated a Likely (L) to indicate negligible risk to sustainability.

Table 9: Assessment of Sustainability

Rating Project Performance	Rating
Criteria	
Sustainability: Likely (L); Moderately Likely (ML); Moderately Unlikely (MU); Unlikely (U). - 4 point scale	

Overall likelihood of risks to Sustainability:	4	L
Financial resources	4	L
Socio-economic	4	L
Institutional framework and governance	4	L
Environmental	4	L
Impact: Significant (S), Minimal (M), Negligible (N) - 3 point scale		
Environmental Status Improvement	2	M
Environmental Stress Reduction	3	S
Progress towards stress/status change	3	S
Overall Project Results (6 point scale)	5	S

3.3.7 Impact

The GEF-UNDP TE Guide requires the TE to assess the project in terms of its “impact,” in terms of verifiable improvements in ecological status and verifiable reductions in stress on ecological systems.

The policy and regulatory as well as the institutional framework for ABS put in place by the project provides a conducive environment at the national level to accord value to the biological resources of the country. This bears significant potential for sustainable utilization and conservation of the natural ecosystem.

At the grassroots and action level, the cultivation of *Zingiber cassumunar* used to be a practice whereby every household maintained few plants in the homestead in Dzedokha for healing treatment in the past. Over the years, the cultivation of the plant and use of it for healing purpose has been on the decline as mentioned in ProDoc. The project intervention has firstly created renewed acknowledgement by the locals in Dzedokha of its healing treatments and also enable the plant to be grown by every member of the farmers group. As of 2018, the cultivation of the plant has expanded to about 1 acre of land in total contributing to conservation of the indigenous knowledge as well as the abundant availability of the germplasm.

The farmer groups in pilot sites for collection of *Rhododendrons anthopogon*, *Phyllanthus emblica* (Himalayan gooseberry) and *Sapindus rarak* (soapnut tree) were taught on sustainable harvesting techniques by the NBC and project partners. They have also been provided with appropriate tools for harvesting. While concrete measurement of indicators contributing to the ecological systems is not demonstrated, the effort of the project will minimize impact on the survival of the plants and stress to the habitat of these plants.

The TK document contributes to the body of knowledge. NBC plans to develop TK protection strategy & make use of the TK data for bioprospecting works and product development in 12 FYP and the ABS agreements protects the rights of local communities over their indigenous knowledge. The impact of the project is rated as Significant.

4. Conclusions, Recommendations & Lessons

4.1 Conclusions

Conclusion 1: Overall project performance and results of the project were highly satisfactory. Project performance ranged from satisfactory to very satisfactory when assessed against the evaluation criteria. Concrete results were generated – all three project outcomes were fully realized. It was accompanied by efficiency use of project resources which were fully used.

Conclusion 2: The combined result of all project outcomes has raised biodiversity conservation in Bhutan to a new level. The capacity for bioprospecting in-house has provided for the first time in Bhutanese conservation history the practical possibility to accord value to biological resources beyond traditional economic values of biodiversity such as timber, fodder and food.

Conclusion 3: The project has set a new trend in Bhutan's biotechnology industry which thus far has remained in the field of producing and herbal medicine by putting in mechanisms and capacities to develop science based bio-products.

Conclusion 4: By enabling benefits sharing mechanism policy framework the project has been able to introduce a new means of enabling sustainability to conservation efforts in the country.

Conclusion 5: Project implementation benefited from good design, strong country ownership. However, the project indicators lacked specific timelines of delivery.

Conclusion 6: The NBC managed the project effectively and efficiently with the oversight and right directives from the PSC and support from UNDP CO.

Conclusions 7: The establishment of a national institutional framework and organizational arrangements for ABS through the project is the first of its kind in Bhutan. It is through this experience that upscaling of ABS across the country would take place. However, the project has not been very effective in enabling ease of access to its knowledge and awareness products. The project has also not been successful in documenting lessons learned from the project which can be applicable in upscaling and in design of similar projects in future.

Conclusion 8: The project management had maintained all information pertaining the project. However, the effectiveness of internal information management is considered weak such as on details pertaining to training activities and participants.

Conclusion 9: The delay in enactment of the revised Biodiversity Bill has not affected the delivery of project outputs and outcomes. However, the Act is necessary for legitimacy for the policy, regulatory and organizational establishment.

4.2 Lessons

Lesson 1: For a project of very specific and technical nature as bioprospecting and ABS, capacity building in the form of technology transfer, equipment, human resource development and awareness are critical. For the project, without adequate focus on procurement of right equipment, transfer of technology in product development and laboratory process and human resource capacity development, the project outputs would not have been possible in addition to the enabling policy environment.

Lesson 2: Right partnership is critical. The project partners Bio-Bhutan and MSPCL had past experience in dealing with communities as well as with bio-products. They have the business interest and inclination for sustainable management of biological resources. Secondly, the international partners had the relevant skills, experiences and like-minded approach to get long and see through the project implementation. Together, the partners were not only able to deliver commercial bio-products but also were able to create a critical mass of expertise for the work to continue beyond the project.

Lesson 3: Awareness and education is critical to success of the project. The project had to conduct over 200 awareness sessions, covered 205 gewogs and provided awareness materials, sessions and platforms to policy makers, academicians and communities.

Lesson 4: The project design should be reviewed when changes in major deliverables arise. The inclusion of the Biodiversity Act of Bhutan, 2003 as a deliverable should have been included in a revised project design when the need of revisions of Biodiversity Act of Bhutan, 2003 2003 is ascertained.

4.3 Recommendations

Recommendation 1: While the duration of the project was adequate for the project scope, the nature and extent of economic benefits sharing, and its legit value needs to be assessed. Therefore, it is recommended to commission an economic analysis of the commercial aspects of the project outputs. Such an exercise should provide all costs involved, pricing, sales and profitability of the commercial products. It would also shed light in the appropriateness of the benefit sharing proportions defined in the pilot ABS agreements and how soon or late actual benefits would practically arise.

Recommendations 2: It is recommended to carry out documentation of lessons learnt in the upscaling implementation process to advice on upscaling.

Recommendation 3: It is recommended that the communication and awareness materials as well the report on experiences of pilot ABS may be made available online through the website of NBC to continue the good effort that the project has made in creating awareness and to promote bioprospecting.

Recommendation 4: It is recommended to pursue the consideration of the Biodiversity Bill by the Parliament at the earliest. However, due to the change in the Parliament, it is suggested that awareness and sensitization of Parliamentarians on ABS and on the bill be conducted prior to submitting the bill to the parliament. This recommendation is made to ensure understanding

of the bill in the right context before it is passed or is subjected to further delays. Hence, it may not be submitted to the first session of the 3rd Parliament.

5. Annexes

Annex 1: Terminal Evaluation Terms of Reference

INTRODUCTION

In accordance with UNDP and GEF M&E policies and procedures, all full and medium-sized UNDP support GEF financed projects are required to undergo a terminal evaluation upon completion of the implementation. These terms of reference (TOR) sets out the expectations for a Terminal Evaluation (TE) of the Implementing the Nagoya Protocol on Access to Genetic Resources and Benefit Sharing in Bhutan (PIMS 5239). The essentials of the project to be evaluated are as follows:



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PROJECT SUMMARY TABLE

Project Title:	Implementing the Nagoya Protocol on Access to Genetic Resources and Benefit Sharing (ABS) in Bhutan			
GEF Project ID:	5448		<u>at endorsement</u> (Million US\$)	<u>at completion</u> (Million US\$)
UNDP GEF Project ID (PIMS):	5239			
UNDP Award ID:	00080806	GEF/NPIF financing:	1,000,000	1,000,000
UNDP Project ID:	00090375			
Country:	Bhutan	IA/EA own:		
Region:	South Asia	Government:	2,512,232.00	2,512,232.00
Focal Area:	Ecosystems and Biodiversity	UNDP:	106,000.00	171,652.33
		Other:	385,436.00	385,436.00
FA Objectives, (OP/SP):	Objective BD4: Build Capacity on Access to Genetic Resources and Benefit-Sharing	Total co-financing:	3,003,668.00	3,069,320.33
Executing Agency:	National Biodiversity Centre (NBC), Ministry of Agriculture and Forests	Total Project Cost:	4,003,668.00	4,069,320.33
Other Partners involved:	Menjong Sorig Pharmaceutical Corporation Ltd. and Bio Bhutan	ProDoc Signature (date project began):		24 Sept 2014
		(Operational) Closing Date:	Proposed: 23 Sept 2018	Actual: 23 Sept 2018

OBJECTIVE AND SCOPE

Although Bhutan has a relatively good state of biodiversity because of its visionary leaders, it is threatened by overharvesting fueled by population growth and transformation from a subsistence economy to a consumer-based economy, competitive land uses for urbanization and infrastructure development, industrial and mining operations especially in the southern region, poaching along the porous borders with India and China, human-wildlife conflicts as result of crop and livestock depredation by wildlife, and climate change exacerbating the risks of forest fire, and pest and disease.

To counter the various threats to biodiversity, the country has planned various strategies for the conservation and sustainable use of biological resources for socio-economic development at national and local levels. One of the recent biodiversity programs includes bio-prospecting and Access to Genetic Resources and Benefit Sharing (ABS) mechanism. Four years ago, Bhutan did not have a fully functional regulatory and institutional framework for ABS, and the institutional and personnel capacity to carry out bio-prospecting beyond basic level and develop and manage ABS schemes that are compliant with Nagoya Protocol.

The ABS project was designed with the objective to develop and implement a national ABS framework, build national capacities and facilitate the discovery of nature-based products. It will focus on three components: (a) development and operationalization of a national regulatory and institutional framework for ABS; (b) capacity development and awareness-raising for the implementation of the national ABS framework; and (c) demonstration of best practices of ABS processes

The project has the following Project Goal, Objective, outcomes and outputs:

The project's goal is to contribute to the conservation and sustainable use of globally significant biodiversity in Bhutan. The project objective is to develop and implement a national ABS framework, build national capacities and facilitate the discovery of nature-based products.

The project objective would be achieved through the implementation of three inter-connected components as follow:

The first project component supported the formulation of the ABS policy, revision of the Biodiversity Act of Bhutan, 2003 2003, promulgation of the Biodiversity Rules and Regulations for ABS implementation in compliance with the approved ABS policy and the Nagoya Protocol through an extensive consultation process, and establishment and operationalization of an institutional framework in accordance with the requirements of the Biodiversity Rules and Regulations.

The second component supported upgrading of the bio-prospecting laboratory facilities and improving the technical skills of the lab technicians, staff training on ABS Regime Management based on the ABS toolkit and training course developed through a comparative assessment of best approaches and practices for ABS management relevant to Bhutan. Study tours for a group of Bhutanese were organized to observe and secure first-hand knowledge and insights on bio-prospecting and ABS activities in the South and South-East Asia regions. A series of advocacy and sensitization events and mass media programs were organized to raise awareness of ABS among various groups using well-developed communication materials.

The third component supported the development and operationalization of three pilot ABS agreements that are compliant with Nagoya Protocol. The pilots have been implemented by three different institutions: The National Biodiversity Centre, a government research and development institution which is also the national focal agency for ABS and Nagoya Protocol; Menjong Sorig Pharmaceuticals Corporation Ltd, a state-owned company with the mandate for research and production of traditional medicines; and Bio Bhutan, a private sector enterprise developing and producing bio-products with the involvement of local community groups. These institutes worked with international partners for analysis and product development. This component also involved the development and dissemination of knowledge resources emanating from the country's experience in ABS.

Each of the above components have outcomes that would have been realized through the delivery of specific outputs that are designed to produce certain outputs. These outcomes and their corresponding outputs are enumerated below:

Outcome 1: An operational national regulatory and institutional framework on ABS.

- Output 1.1: An approved national ABS policy in place and disseminated
- Output 1.2: Biodiversity rules and regulations developed and promulgated in compliance with the approved ABS policy, Biodiversity Act of Bhutan, 2003 and Nagoya Protocol
- Output 1.3: Institutional mechanisms for ABS established and operational

Outcome 2: Strengthened stakeholder capacity and awareness supports implementation of the national ABS framework

- Output 2.1: Upgraded facilities and staff skills for bio-prospecting laboratory work and TK documentation
- Output 2.2: Improved technical capacity for implementing ABS activities
- Output 2.3: Increased awareness of ABS and associated national regulatory and institutional framework among a wide range of stakeholders

Outcome 3: Best practice ABS processes are demonstrated recognizing the principles of biodiversity conservation, Prior Information Consent (PIC) and Mutually Agreed Terms (MAT) including the fair and equitable sharing of benefits through ABS agreements

- Output 3.1: Three pilot ABS agreements / schemes compliant with the approved ABS Policy and Nagoya Protocol developed and operationalized
- Output 3.2: Knowledge resources emanating from Bhutan's experience of ABS are developed and disseminated.

The TE will be conducted according to the guidance, rules and procedures established by UNDP and GEF as reflected in the UNDP Evaluation Guidance for GEF Financed Projects.

The objectives of the evaluation are to assess the achievement of project results, and to draw lessons that can both improve the sustainability of benefits from this project, and aid in the overall enhancement of UNDP programming.

EVALUATION APPROACH AND METHOD

An overall approach and method¹ for conducting project terminal evaluations of UNDP supported GEF financed projects has developed over time. The evaluator is expected to frame the evaluation effort using the criteria of relevance, effectiveness, efficiency, sustainability, and impact, as defined and explained in the [UNDP Guidance for Conducting Terminal Evaluations of UNDP-supported, GEF-financed Projects](#). A set of questions covering each of these criteria have been drafted and are included with this TOR ([Annex C](#)). The evaluator is expected to amend, complete and submit this matrix as part of an evaluation inception report, and shall include it as an annex to the final report.

The evaluation must provide evidence- based information that is credible, reliable and useful. The evaluator is expected to follow a participatory and consultative approach, ensuring close engagement with government counterparts, in particular the GEF operational focal point, UNDP Country Office, project team, UNDP GEF Technical Adviser based in the Bangkok Regional Hub and key stakeholders. The

¹ For additional information on methods, see the [Handbook on Planning, Monitoring and Evaluating for Development Results](#), Chapter 7, pg. 163

evaluator is expected to visit project sites in Loggchina under Chhukha Dzongkhag, Langthel under Trongsa Dzongkhag and Dagala under Thimphu Dzongkhag.

Interviews will be held with the following organizations and individuals at a minimum: National Biodiversity Centre, Menjong Sorig Pharmaceuticals Corporation Ltd, Bio Bhutan, Project Steering Committee Members.

The evaluator will review all relevant sources of information, such as the project document, project reports – including Project Implementation Report, project budget revisions, midterm review, progress reports, GEF focal area tracking tools, project files, national strategic and legal documents, and any other materials that the evaluator considers useful for this evidence-based assessment. A list of documents that the project team will provide to the evaluator for review is included in [Annex B](#) of this Terms of Reference.

EVALUATION CRITERIA & RATINGS

An assessment of project performance will be carried out, based against the expectations set out in the Project Logical Framework/Results Framework (see Annex A), which provides performance and impact indicators for project implementation along with their corresponding means of verification. The evaluation will at a minimum cover the criteria of: relevance, effectiveness, efficiency, sustainability and impact. Ratings must be provided on the following performance criteria. The completed table must be included in the evaluation executive summary. The obligatory rating scales are included in [Annex D](#).

Evaluation Ratings:			
1. Monitoring and Evaluation	rating	2. IA& EA Execution	rating
M&E design at entry		Quality of UNDP Implementation - Implementing Agency (IA)	
M&E Plan Implementation		Quality of Execution - Executing Agency	
Overall quality of M&E		Overall quality of Implementation / Execution	
3. Assessment of Outcomes	rating	4. Sustainability	rating
Relevance		Financial resources:	
Effectiveness		Socio-political:	
Efficiency		Institutional framework and governance:	
Overall Project Outcome Rating		Environmental:	
		Overall likelihood of sustainability:	

PROJECT FINANCE / COFINANCE

The Evaluation will assess the key financial aspects of the project, including the extent of co-financing planned and realized. Project cost and funding data will be required, including annual expenditures. Variances between planned and actual expenditures will need to be assessed and explained. Results from recent financial audits, as available, should be taken into consideration. The evaluator(s) will receive assistance from the Country Office (CO) and Project Team to obtain financial data in order to complete the co-financing table below, which will be included in the terminal evaluation report.

Co-financing (type/source)	UNDP own financing (mill. US\$)		Government (mill. US\$)		Partner Agency (mill. US\$)		Total (mill. US\$)	
	Planned	Actual	Planned	Actual	Planned	Actual	Actual	Actual
Grants								

Loans/Concessions								
• In-kind support								
• Other								
Totals								

MAINSTREAMING

UNDP supported GEF financed projects are key components in UNDP country programming, as well as regional and global programmes. The evaluation will assess the extent to which the project was successfully mainstreamed with other UNDP priorities, including poverty alleviation, improved governance, the prevention and recovery from natural disasters, and gender.

IMPACT

The evaluators will assess the extent to which the project is achieving impacts or progressing towards the achievement of impacts. Key findings that should be brought out in the evaluations include whether the project has demonstrated: a) verifiable improvements in ecological status, b) verifiable reductions in stress on ecological systems, and/or c) demonstrated progress towards these impact achievements.²

CONCLUSIONS, RECOMMENDATIONS & LESSONS

The evaluation report must include a chapter providing a set of conclusions, recommendations and lessons. Conclusions should build on finding and be based in evidence. Recommendations should be prioritized, specific, relevant, and targeted, with suggested implementers of the recommendations. Lessons should have wider applicability to other initiatives across the region, the area of intervention, and for the future.

IMPLEMENTATION ARRANGEMENTS

The principal responsibility for managing this evaluation resides with the UNDP CO in Bhutan. The UNDP CO will contract the evaluators and ensure the timely provision of per diems and travel arrangements within the country for the Evaluator. The Project Team will be responsible for liaising with the Evaluator to set up stakeholder interviews, arrange field visits, coordinate with the Government etc.

EVALUATION TIMEFRAME

The total duration of the evaluation will be 30 days, spread over July-August 2018, according to the following plan:

Activity	Timing	Completion Date
Preparation	3 days	1 st week of July (6 Jul 2018)
Evaluation Mission	14 days	3 rd week of July (20 Jul 2018)
Draft Evaluation Report	10 days	2 nd week of August (10 Aug 2018)
Final Report	3 days	4 th week of August (31 Aug 2018)

EVALUATION DELIVERABLES

The evaluator is expected to deliver the following:

² A useful tool for gauging progress to impact is the Review of Outcomes to Impacts (ROtI) method developed by the GEF Evaluation Office: [ROtI Handbook 2009](#)

Deliverable	Content	Timing	Responsibilities
Inception Report	Evaluator provides clarifications on timing and method	No later than 2 weeks before the evaluation mission (by 6 Jul 2018)	Evaluator submits to UNDP CO
Presentation	Initial Findings	End of evaluation mission (by 20 Jul 2018)	To project management, UNDP CO
Draft Final Report	Full report, (per annexed template) with annexes	Within 3 weeks of the evaluation mission (by 10 Aug 2018)	Sent to CO, reviewed by RTA, PCU, GEF OFPs
Final Report*	Revised report	Within 1 week of receiving UNDP comments on draft (by 31 Aug 2018)	Sent to CO for uploading to UNDP ERC.

*When submitting the final evaluation report, the evaluator is required also to provide an 'audit trail', detailing how all received comments have (and have not) been addressed in the final evaluation report. See [Annex H](#) for an audit trail template.

TEAM COMPOSITION

Since this is a medium size project, the evaluator will be a national consultant. The consultant shall have prior experience in evaluating similar projects. Experience with GEF financed projects is an advantage. The evaluator selected should not have participated in the project preparation and/or implementation and should not have conflict of interest with project related activities.

The National Consultant should possess the following attributes:

- A Master's degree in Natural Resource Management, Biodiversity Conservation, Environmental Science, Sustainable Development, Development Studies or relevant discipline, or other closely related field.
- Work experience in relevant technical areas for at least 7 years;
- Knowledge of and/or experience with UNDP and/or GEF;
- Recent experience with result-based management evaluation methodologies;
- Experience applying SMART indicators and reconstructing or validating baseline scenarios;
- Project evaluation/review experiences within the United Nations system, GEF and/or other donor funded projects;
- Demonstrated understanding of issues related to gender and biodiversity related projects; experience in gender sensitive evaluation and analysis;
- Excellent communication skills;
- Evidence/demonstrable analytical skills.
- Project evaluation/review experiences within the United Nations system will be considered an asset;

The selection of the consultant will be based on the following criteria:

Criteria	Weight	Max. Point
Technical	70	
• Education qualification;		15
• Work experience in relevant technical areas for at least 7 years;		10
• Specific experience in M&E and GEF project evaluation;		15
• Experience with UNDP and other donor funded projects;		10

• Proposed methodology, approach and implementation plan		20
Sub-total A. (Technical)		70
Financial	30	30
Sub-Total B.(Financial)		30
Total (A+B)		100

EVALUATOR ETHICS\

Evaluation consultant will be held to the highest ethical standards and are required to sign a Code of Conduct (Annex E) upon acceptance of the assignment. UNDP evaluations are conducted in accordance with the principles outlined in the [UNEG 'Ethical Guidelines for Evaluations'](#).

PAYMENT MODALITIES AND SPECIFICATIONS

%	Milestone
10%	At submission and approval of inception report
40%	Following submission and approval of the 1 st draft terminal evaluation report
50%	Following submission and approval (UNDP-CO and UNDP RTA) of the final terminal evaluation report

APPLICATION PROCESS

Applicants are requested to apply online

(<http://www.bt.undp.org/content/bhutan/en/home/operations/jobs.html> by 1 July 2018. Individual consultants are invited to submit applications together with their CV for this position. The application should contain a current and complete C.V. in English with indication of the e- mail and phone contact. Consultants are also expected to submit a price offer indicating the total cost of the assignment (including daily fee, per diem and travel costs).

UNDP applies a fair and transparent selection process that will take into account the competencies/skills of the applicants as well as their financial proposals. Qualified women and members of social minorities are encouraged to apply.

Annex 2: Feld Itinerary of the TE

Date	Location/Travel	Activity	Teams Members
5/8/2018	Thimphu to Phuentsholing	Travel	<ul style="list-style-type: none"> ○ Mr. Jigme Dorji, UNDP ○ TE Consultant ○ Mr. Sonam, Photographer ○ Mr. Mani Prasad Nirola, NBC
6/8/2018	Phuentsholing	Met with the Chairman and Treasurer of Dzedokha Phaching Detshe in Phunetsholing as road connection to Lokchuna was disrupted	<ul style="list-style-type: none"> ○ Mr. Jigme, UNDP ○ TE Consultant ○ Mr. Sonam, Photographer ○ Mr. Mani Prasad Nirola, NBC
6/8/2018	Phuentsholing to Thimphu	Travel	<ul style="list-style-type: none"> ○ Mr. Jigme, UNDP ○ TE Consultant ○ Mr. Sonam, Photographer ○ Mr. Mani Prasad Nirola, NBC
9/9/2018	Thimphu to Dagala	Travel	<ul style="list-style-type: none"> ○ Mr. Jigme, UNDP ○ TE Consultant ○ Mr. Sonam, Photographer ○ Mr. Nobin Gurung, Bio Bhutan ○ Mr. Namgay, Bio Bhutan ○ Chairman and Secretary of Dagala Throgmen Tshogpa
10/9/2018	Dagala	Community Consultation with farmer group members from Dungdro and Yangdro	<ul style="list-style-type: none"> ○ Mr. Jigme, UNDP ○ TE Consultant ○ Mr. Sonam, Photographer ○ Mr. Nobin Gurung, Bio Bhutan ○ Mr. Namgay, Bio Bhutan ○ Chairman and Secretary of Dagala Throgmen Tshogpa

11/9/2018	Dagala	Site visit to Rhododendron anthopogon harvesting areas	<ul style="list-style-type: none"> ○ Mr. Jigme, UNDP ○ TE Consultant ○ Mr. Sonam, Photographer ○ Mr.Nobin Gurung, Bio Bhutan ○ Mr. Namgay, Bio Bhutan ○ Chairman and Secretary of Dagala Throgmen Tshogpa
12/9/2018	Dagala to Thimphu	Travel	<ul style="list-style-type: none"> ○ Mr. Jigme, UNDP ○ TE Consultant ○ Mr. Sonam, Photographer ○ Mr. Nobin Gurung, Bio Bhutan ○ Mr. Namgay, Bio Bhutan ○ Chairman and Secretary of Dagala Throgmen Tshogpa
15/9/2018	Chamgang	Community Consultation with farmer group members Chamgang and Getala	<ul style="list-style-type: none"> ○ TE Consultant ○ Secretary of Dagala Throgmen Tshogpa
17/9/2018	Thimphu to Langthel	Travel	<ul style="list-style-type: none"> ○ Mr. Sherab Tenzin, , MSPCL ○ TE Consultant
18/9/2018	Langthel	Community Consultation with farmer group members Namther	<ul style="list-style-type: none"> ○ Mr. Sherab Tenzin, Associate Director, MSPCL ○ TE Consultant
19/9/2018	Langthel to Thimphu	Travel	<ul style="list-style-type: none"> ○ Mr. Sherab Tenzin, MSPCL ○ TE Consultant
6/10/2018	Thimphu to Phuentsholing	Travel	<ul style="list-style-type: none"> ○ Mr. Jigme, UNDP ○ TE Consultant ○ Mr. Mani Prasad Nirola, NBC
7/10/2018	Phuntsholing to Loggchina and back	Community Consultation with farmer group members Dzedokha, Loggchina	<ul style="list-style-type: none"> ○ Mr. Jigme, UNDP ○ TE Consultant ○ Mr.Mani Prasad Nirola, NBC
8/10/2018	Phuentsholing to Thimphu	Travel	<ul style="list-style-type: none"> ○ Mr. Jigme, UNDP ○ TE Consultant

			○ Mr. Mani Prasad Nirola, NBC
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Annex 3: List of persons met

1. Dasho Rinzin Dorji, Hon'ble Secretary, MoAF and Chairperson of the project's PSC.
2. Mr. Juergen Nagler, Resident Representative a.i, UNDP CO
3. Dr. Tashi Yangzome Dorji, PD, NBC
4. Ms. Kezang Tshomo, PD, ARDC Yusipang and Member of Project's PSC
5. Mr.Thukten Choeda, CEO, MSPCL and Member of Project's PSC
6. Mr.Jigme Dorji, Portfolio Analyst, UNDP CO and joined field visits to Loggchina and Dagala during the TE.
7. Mr.Sherab Tenzin, Associate Director, MSPCL, DTMS and joined the field visit to Langthel during the TE.
8. Mr.Ugyen, MD, Bio Bhutan.
9. Mr.Nobin Gurung, Bio Bhutan, Project Focal Person and joined the field visit to Dagala during the TE
10. Mr. Namgay, Bio Bhutan, Extraction Plant in charge, and joined the field visit to Dagala during the TE
11. Mr. Dorji, Program Officer, BTFEC and Member of Project PSC
12. Mr.Chencho Dorji, Project Manager, NBC
13. Mr.Mani Prasad Nirola, Sr. BO, NBC and joined the field visit to Loggchina during the TE.
14. Ms Dago Pem, Secretary of Dagala Ngomen Tshogpa
15. Mr. Namgay Chairman of Dagala Ngomen Tshogpa
16. Members of Dagala Ngomen Tshogpa from Chiwogs of Getala, Dungdro, Wangdro and Chamgang (upper and Lower)
17. Chairman of Zetokha Phachang Derstshen, Loggchina
18. Ms. Phib Rani, Secretary of Zetokha Phachang Detshen, Loggchina
19. Dhurga Raj Ghaley, Treasurer of Zetokha Phachang Detshen, Loggchina
20. Members of Zetokha Phachang Detshen, Loggchina
21. Secretary of Namther Throgmen Tshogpa, Langthel
22. Aum Chechey (Yeshey Tshomo), Treasurer of Namther Throgmen Tshogpa, Langthel
23. Members of Namther Throgmen Tshogpa, Langthel
24. Mr. Sonam Dorji, Photographer, UNDO and joined field visit to Dagala and Loggchina during the TE

Annex 4: List of documents reviewed

1. GEF Project Information Form (PIF), Project Document, and Log Frame Analysis (LFA)
2. Project Inception Report
3. Implementing/Executing partner arrangements
4. List and contact details for project staff, key project stakeholders, including Project Boards, and other partners to be consulted
5. Mid Term Review (MTR) Report
6. Project Implementation Reports (PIRs)
7. Project budget and financial data
8. Project Tracking Tool, at baseline, at mid-term, and at terminal points
9. UNDP Development Assistance Framework (UNDAF)
10. UNDP Country Programme Document (CPD)
11. GEF focal area strategic program objectives
12. Quarterly progress reports and work plans of the various implementation task teams
13. Audit reports
14. Oversight mission reports (BTOR)
15. Financial and Administration guidelines used by Project Team
16. Project Board Meeting minutes
17. Study on Access and Benefit Sharing Awareness and the Impact of ABS Project on Gender
18. Evaluation Question Matrix
19. Questionnaire used and summary of results
20. Evaluation Consultant Agreement Form
21. Handbook on Planning, Monitoring and evaluation for Development Results, 2009
22. The UNDP evaluation policy, 2016
23. Project level Evaluation Guidance for Conducting Terminal Evaluation of UNDP-Supported, GEF Financed Projects, 2012.

Annex 5: Questionnaire used and summary of results

Community Members perceptions on the project

1. Respondent Age;
2. Respondent role in project:
3. Respondent Gender:
4. Household demography of respondent
 - a. Total members
 - b. Male
 - c. Female
5. Are you aware of the ABS project objectives, outcomes and outputs?
Yes ☐ No ☐
6. How did you know about the ABS project?
 - Project inception workshop;
 - Media (BBS/Radio/Kuensel/Gewog Information Centre/Word of Mouth
 - Awareness and project related training by NBC
 - Project activity(ies)
 - Gewog Administration
 - Farmers Group
 - Any other (specify)
7. What role do you play in decision-making/empowerment in the Tshogpa/Management Group?
 - Chairman
 - Secretary
 - Treasurer
 - Member
 - Non-member
 - Any others (specify)
8. What is the purpose of this project?
9. What is your objective for participation in the project?
10. What capacity building training(s) have you received from the project?
 - Awareness on ABS and group formation
 - Cultivation technique
 - Sustainable harvesting and management
 - Marketing
 - Distillation technique
 - Any others (specify)
11. What social and economic benefits have you received from the implementation of project activities so far?

- Employment
- Cash on daily wage basis (Amount-----)
- Training
- Enhanced traditional knowledge
- Payment for your local products (Amount-----)
- Any other (specify)

12. Are you aware of the ABS agreement between your community and Bio-Bhutan?

13. What are the salient features of the ABS agreement?

Perception questions		Fully	Partially	Not at all
14.	Do you think that you were adequately involved in the project planning/design?			
15.	Do you think that all your expectations were adequately captured in the project planning/design?			
16.	Do you think that implementation of the project has progressed or is progressing as per your expectation/plan?			
17.	Has the project result met or is meeting the community's expectations?			
18.	Do you face any problems during implementation of the project activities? If yes, complete section 4 to 7.	Yes	No	
19.	What are the problems faced during the implementation of the project activities?			
20.	Have you been reporting the problems to the concerned agency?			
21.	Have you been receiving solutions to your reported problems?			
22.	Have the solutions you received been helpful in addressing the problem?			

23. How do you think such a project should be organized in future?

24. What do you think would be the benefit to you in the long term;

- To households and individuals
- To the local resource (species-----)

- To local environment/landscape/forest
- To neighboring communities

Focused Group Discussion with pilot project community

1. Name of Community:
2. Location (Village, Gewog, Dzongkhag):
3. Resources used under the project;
4. Name of the farmer group
5. Objective of the farmer group
6. Number of members
 - a. Male
 - b. Female
7. What mechanism of benefit-sharing is agreed between you (provider) and user of genetic resources? Briefly describe here.
8. What has been the process for drawing the ABS agreement between you and the client?
9. What are some of the strengths, weakness, opportunities and threats of the project?
10. What are some of the success or failure lessons learned from the project?

Summary of Results

Profile

Gewog	No of Chiwogs	ABS activity (Prodoc)	Community chiwog	Chiwo g pop (PHCB 2017)	male pop (PHCB 2017)	female pop (PHCB 2017)	Nos. members	Male	Female	Lead Agency (PIR 2017)
Loggch ina	4	Zingiber cassumnar	Dzedokh a	208	111	97	48	23	25	NBC
Dagala	5	Rhododendr on anthopogon	All 5 Chiwogs	2043	1,339	704	72	42	30	Bio- Bhuta n

Langthel	4	Amla & Soapnut	Namther	521	268	253	20	1	19	MSP CL
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Community respondents demographic information (ABS Project)

Dzongkhag	Geog	Respondents by sex			Respondents by age group					Respondents by household size			
		Total	F	M	<26	26-35	36-45	46-55	>55	<4	4-7	8-10	>10
Chhukha	Logchina	7	4	3	2	3	2	0	0	0	6	1	0
Thimphu	Dagala	16	7	9	2	2	6	3	3	2	8	5	1
Trongsa	Langthel	9	9	0		3	2	3	1	2	4	1	2
Total		32	20	12	4	8	10	6	4	4	18	7	3

Number of community respondents by status of ABS Project Awareness

Dzongkhag	Geog	Total respondents		Aware		Not Aware	
		Aware	Not aware	M	F	M	F
Chhukha	Logchna	7	0	3	4	0	0
Thimphu	Dagala	15	1	9	6	0	1
Trongsa	Langthel	8	1	0	8	0	1
Total		30	2	12	18	0	2

Source of cash income

Total respondents	Cash income from either ABS local products or other sources	Cash income from ABS local products (Nu)	Cash income from others sources (Nu)	Total cash income from ABS local products and others sources (Nu)	Average cash earning from ABS local products and others sources (Nu)
7	6	23,500	462,000	485,500	80,917
16	11	88,340	940,000	1,028,340	93,485
9	8	82,950	0	82,950	10,369
32	25	194,790	1,402,000	1,596,790	63,872

Annex 6: Evaluation Question Matrix

Evaluative Criteria	Evaluations Questions	Indicators	Sources	Methodology
Relevance: How does the project relate to the main objectives of the UNCBD and GEF focal areas, and to the environment and development priorities at the local, regional and national levels for biodiversity conservation in Bhutanese?				
Relevance to UNCBD & other international convention objectives;	How does the project support the objectives of the UNCBD?	<p>The project implemented significant components of Bhutan's NBSAP, the principal instruments for implementing the Convention at the national level;</p> <p>National Target 16 of NBSAP (By 2015, the Nagoya Protocol is implemented through National ABS legislative, Administrative, and Institutional Framework consistent with the Nagoya Protocol) and Aichi Target 16 and Article 6 (conservation and sustainable use of genetic resources through national strategies, plans and programs) and articles 10, 15 of UNCBD.</p> <p>Indicators;</p> <ul style="list-style-type: none"> ○ National Access and Benefit Sharing (ABS) Policy of Bhutan adopted and under implementation ○ Biodiversity Act of Bhutan, 2003 2003 revised to harmonize with the Nagoya Protocol, the Treaty and the ABS policy of Bhutan 2015 and awaiting enactment by 	<p>Project document PIRs MTR report NBSAP, 2014 UNCBD Convention text (https://www.cbd.int/convention/articles/default.shtml?a=cbd-01)</p>	<p>Analysis of documents</p> <p>Discussion with project team, UNDP and other partners</p> <p>Desk review and review of websites of GEF, CBD and related conventions.</p> <p>Discussion with Project Director, Project Manager and Staff at NBC</p>

Evaluative Criteria	Evaluations Questions	Indicators	Sources	Methodology
		<ul style="list-style-type: none"> the Parliament ○ Biodiversity Rules and Regulations revised in line with the revised Act. ○ MOAF designated as the National Competent Authority ○ NBC designated as the National Focal Point ○ NBC designated as the ABS-CH Publishing Authority for ABS ○ DoIP, BAFRA and NBC designated as the national checkpoints • NBSAP National targets 13 (By 2020, the genetic diversity of key cultivated plants and domesticated animals, including that of crop wild relatives are documented and conserved) & 18 (By 2020, TK and Customary Practices of communities, relevant to biodiversity conservation and sustainable use are documented and used, and where appropriate revived and protected); • Indicators; <ul style="list-style-type: none"> ○ TK documentation completed in all 205 Gewogs and 20 districts • The project contributes to national target 19 of NBSAP (By 2020, science-based knowledge 		

Evaluative Criteria	Evaluations Questions	Indicators	Sources	Methodology
		<p>and technologies related to biodiversity are generated, improved, made accessible and applied where appropriate) and articles 10, 11, 20, 21 of UNCBD.</p> <ul style="list-style-type: none"> ○ Three ABS Agreements have been executed with the communities. All the executed ABS agreements followed the principle of PIC, MTA and the community protocol. ○ Based on research & prototype product development, 9 nature-based products developed and launched through the ABS agreements. • Contributes to the objective or UNCBD articles 16 and 19 <p>Indicators;</p> <ul style="list-style-type: none"> ○ Upgraded the national bioprospecting laboratory at NBC for bio-prospecting & laboratory analysis with necessary equipment. NBC is now competent for any screening of compounds within plant extracts using the upgraded facilities (29 plants studied in detail to the level of fractionation ; 29 		

Evaluative Criteria	Evaluations Questions	Indicators	Sources	Methodology
		<p>active compounds are identified for further research and trial products development)</p> <ul style="list-style-type: none"> ○ Plant Extract Library at NBC strengthened (More than 1,250 crude extracts developed and preserved) ○ MSPCL's capacity strengthened with R&D and technical capacity to develop and produce herbal soap and sanitizer at a commercial scale. ○ Bio-Bhutan's capacity strengthened to extract essential oil from the Rhododendron anthopogon and develop nature based products 		
	Does the project support other international conventions?	<ul style="list-style-type: none"> ● The International Treaty on Plant Genetic Resources for Food and Agriculture <ul style="list-style-type: none"> ○ NBC has inventoried almost all available GRaTK in the country including ITPGRFA 	<p>Project document PIRs MTR report</p>	<p>Analysis of documents</p> <p>Discussion with project team, UNDP and other partners</p> <p>Discussion with Project Director, Project Manager and Staff at NBC</p>
	Extent to which the project is actually implemented in line with incremental cost argument	<ul style="list-style-type: none"> ● National biotechnology industry has moved beyond traditional medicine production for domestic use. The project has enabled local production of about 9 	<p>Project document PIRs MTR report</p>	<p>Analysis of documents</p> <p>Discussion with project team, UNDP and other partners</p>

Evaluative Criteria	Evaluations Questions	Indicators	Sources	Methodology
		<p>biotechnology based products.</p> <ul style="list-style-type: none"> • The ABS policy and revised biodiversity regulations enable full implementation of the provisions of the CBD and the Nagoya Protocol for PIC processes and ABS agreements involving MAT and mechanisms for the equitable sharing of benefits as compared to the draft policy of 2003 • ABS framework in place including capacity within the stakeholders for its implementation and full cycle of ABS regime management. • Although Bhutan has signed and joined the Nagoya Protocol on ABS in 2011, the government effort to align Genetic resources with Traditional Knowledge for exploitation of GR have begun in earnest only from the implementation of current project through which NBC has inventoried almost all available GRaTK in the country including ITPGRFA 		Discussion with Project Director, Project Manager and Staff at NBC
		<ul style="list-style-type: none"> • A national certificate “Certificate of Compliance” equivalent to Internationally-Recognized Certificate of Compliance (IRCC) has been developed • ABS toolkit developed 	National policies and strategies to implement the UNCBD, other international conventions, or related to environment more generally	

Evaluative Criteria	Evaluations Questions	Indicators	Sources	Methodology
		<ul style="list-style-type: none"> • Country experiences on ABS shared at national and international levels • 205 awareness workshops on ABS and TK have been organized in all 205 Gewogs (sub districts level), covering 17,522 participants • Awareness materials on ABS regime and process developed and disseminated 	GEF 6 Biodiversity Strategy	
Relevance to the GEF biodiversity focal area	How does the project support the GEF biodiversity focal area and strategic priorities?	<p>The project directly implements Program 8 (Implementing the Nagoya Protocol on Access and Benefit Sharing) of the GEF 6 biodiversity strategy's objective 3 (Sustainably use biodiversity) and contributes to the delivery of the program's output indicators (Outcome 8.1)</p> <ul style="list-style-type: none"> - Legal and regulatory frameworks, and administrative procedures established that enable access to genetic resources and benefit sharing in accordance with the provisions of the Nagoya and outcome indicator <p>National ABS frameworks operational score. Indicators;</p> <ul style="list-style-type: none"> ○ ABS framework for Bhutan developed 	<p>Project documents</p> <p>GEF 6 Program Directions</p> <p>GEF website (www.thegef.org)</p>	<p>Analysis of Documents</p> <p>Discussion with project team, UNDP and other partners</p> <p>Desk review and review of websites of GEF</p> <p>Discussion with Project Director, Project Manager and Staff at NBC</p>

Evaluative Criteria	Evaluations Questions	Indicators	Sources	Methodology
		<ul style="list-style-type: none"> ○ Capacity for bio-prospecting promoted through facilitation of bio-products development (massage balm and liniment by NBC using TK on use of Zingiber cassamunar; massage oil, natural soap and perfume developed by BioBhutan using Rhododendron anthopogon and hand wash and soap using) 		
Relevance to the RGoB's environment and sustainable development objectives	How does the project support the environment and sustainable development objectives of the Bhutan?	<ul style="list-style-type: none"> • The project's goal is aligned with the conservation pillar of GNH. <ul style="list-style-type: none"> ○ Enabling access to genetic resources and benefit-sharing contribute to the Sustainable and Equitable Socioeconomic Development pillar of GNH. ○ Creating awareness on ABS, documentation and use of traditional knowledge (TK) contributes to the GNH pillar on Preservation and Promotion of Culture. ○ ABS policy, Biodiversity Act of Bhutan, 2003, its regulatory framework, PIC, MTA and ABS agreement, formation of community groups and capacity development contributes to the Good Governance pillar 	<p>Project Documents</p> <p>National policies and strategies</p> <p>Key project partners</p> <p>11 FYP document and its final report</p>	<p>Documents analyses</p> <p>Interviews with UNDP and project partners</p>

Evaluative Criteria	Evaluations Questions	Indicators	Sources	Methodology
		<p>of GNH.</p> <ul style="list-style-type: none"> • In addition, project implemented to significant components of Bhutan's NBSAP, the principal instruments for implementing the Convention at the national level • The project goal and objective are aligned with the 11th FYP's national development outcomes NKRA 1 (Sustained economic growth) <ul style="list-style-type: none"> ○ Research and commercialization of genetic resources (3 ABD Agreements under execution) • Linkaghe with NKRA 6 (Indigenous Wisdom, Arts & Crafts Promoted for Rural Livelihood) <ul style="list-style-type: none"> ○ TK documentation, ABS awareness and policy advocacy program • Linkage with NKRA 8 (Sustainable utilization and management of natural resources) <ul style="list-style-type: none"> ○ Hands-on training on bio-prospecting technique and sustainable harvest, processing and marketing of traditional the products through ABS agreements • Linkage with NKRA 12 (Democracy and Governance Strengthened) 		

Evaluative Criteria	Evaluations Questions	Indicators	Sources	Methodology
		<ul style="list-style-type: none"> ○ Enabling ABS policy and regulatory framework established ● NKRA 13 (Gender-friendly Environment for Women's Participation) <ul style="list-style-type: none"> ○ Project products and services benefit more women as primary beneficiaries across the 3 pilot sites. ● The project is country-driven <ul style="list-style-type: none"> ○ The RGOB has adopted the National ABS policy. ○ PSC is chaired by the Secretary of the Ministry of Agriculture and Forests. ○ The project management has been led by the NBC with its in-house PMU bearing responsibilities for the operational direction, supervision, day-to-day monitoring and reporting on all project matters including coordination with the partner communities. 		
	What was the level of stakeholder participation in project design?	<ul style="list-style-type: none"> ● Involvement of government officials and other partners in the project design process <ul style="list-style-type: none"> ○ The project has consulted and collaborated with the national and local Governments, including 		

Evaluative Criteria	Evaluations Questions	Indicators	Sources	Methodology
		<p>CSOs (RSPN/Tarayana Foundation) in the formulation of ABS Policy 2015, Biodiversity Bill of Bhutan 2016, Biodiversity Regulation</p> <ul style="list-style-type: none"> ○ The ABS policy consultation were also held with environmental committee of the National Assembly and National Council as well as with RNR GNH Committee before approval by the Government. ○ ABS implementation in the pilot sites was participatory and inclusive following the principles of PIC and MAT with Farmers groups of pilot sites ○ Draft Biodiversity Bill development held national and regional consultations as well and was reviewed by the Office of Attorney General ○ More than 235 farmers participated in in-country training and workshops on ABS process from the 3 pilot project sites ○ Stakeholders such as the MoAF, PPD, GNHC, MTAC local communities, 		

Evaluative Criteria	Evaluations Questions	Indicators	Sources	Methodology
		MSPCL Bio-Bhutan and the UNDP were engaged from inception through project implementation		
Addressing the needs of target beneficiaries at the local	How does the project support the needs of relevant stakeholders?	<ul style="list-style-type: none"> • The project provided awareness to fill the lack of awareness, provided training for lack of technical capacity of stakeholders, provided technology and equipment to fill the gap of technology and equipment and through the ABS Agreements provides economic incentives for local communities for conservation of GR and TK. <ul style="list-style-type: none"> ○ For the Government to properly understand whether the Biodiversity bill is likely to achieve the desired objectives appropriately, a regulatory impact assessment report for the Bill has been submitted to the Cabinet Secretariat ○ 200 officers/researchers in regional and national organizations, parliamentarians, academician, businessmen provided with awareness workshops on ABS to enable better understanding and participate in ABS policy discussion in proper 		

Evaluative Criteria	Evaluations Questions	Indicators	Sources	Methodology
		<p>context</p> <ul style="list-style-type: none"> ○ Local legal consultant hired to assist in the development of ABS agreements for all the three pilot projects. ○ 39 officials (15 women & 24 men) from NBC, Bio-Bhutan and MSPCLL were trained to meet their need for technical skills in ABS management. ○ PSC & TAC members were provided exposure visits to Japan, Thailand, Singapore and Malaysia to share experiences and learn so they can provide informed decisions and guidance on the project. ○ More than 235 farmers from the 3 pilot projects were provided with training and workshops on ABS process, skills in sustainable management of biological resources, organic farming, pest, disease and weed management, quality control and post-harvest care, farmers group formation and management ○ Institutional & personal capacity of NBC and MSPCL improved from basic to moderate level. 		

Evaluative Criteria	Evaluations Questions	Indicators	Sources	Methodology
		<ul style="list-style-type: none"> ○ Institutional & personal capacity of Bio Bhutan improved from none to a moderate level ○ Pilot ABS Agreements highlight the GR and associated TK accessed, conditions of accessing the GR, products to be developed and marketed, benefit sharing mechanism & measure for sustainability of the accessed biological resources. 		
	Has the implementation of the project been inclusive of all relevant stakeholders?	<ul style="list-style-type: none"> ○ Stakeholders engaged in the project implementation range from local community members, local government officials, planning agencies, research agencies, central government agencies, parliamentarians, 		
	Were local beneficiaries and stakeholders adequately involved in project design and implementation?	<ul style="list-style-type: none"> ● Series of workshops conducted in the communities & at national level to assist the development of the ABS agreements ● 2 -day workshop with technical support from NBC and legal consultants conducted at Trongsa, Chhukha and Thimphu for the communities to assist them in developing their community protocol. Based on their 	<p>Project partners and stakeholders</p> <p>Needs assessment studies</p> <p>Project documents</p>	<p>Document analysis</p> <p>Interviews with relevant stakeholders</p>

Evaluative Criteria	Evaluations Questions	Indicators	Sources	Methodology
		community protocol, 3 PIC process successfully conducted with the above communities for the signing of ABS agreements.		
Internal coherence in the project design	Are there logical linkages between expected results of the project (log frame) and the project design (in terms of project components, choice of partners, structure, delivery mechanism, scope, budget, use of resources etc)?	<ul style="list-style-type: none"> • Outputs for each outcome, baseline indicators, indicators of achievement, means of verifications or source of information and assumptions/risks are clearly defined with SMART indicators. • The design considers an effective and logical strategy by way of defining progressive steps for legislative development; domestic research and development (R&D) and compound identification; development of ABS contracts and protection of and benefit sharing for indigenous and local communities. Activities such as awareness raising have been planned in parallel. • Relevant partners were identified <ul style="list-style-type: none"> ○ –MSPCL has past experience and right mandate for herbal medicine and bio-products ○ -Bio-Bhutan has experience working with communities and in plant extract such as lemon grass and other 	ProDoc	Document analysis

Evaluative Criteria	Evaluations Questions	Indicators	Sources	Methodology
		<ul style="list-style-type: none"> natural products. -The other partners from the government are all related to the institutional and policy development which is necessary for the project. -The international partners were critical and relevant in technology transfer product development. 		
	Is the length of the project sufficient to achieve project outcomes?	<ul style="list-style-type: none"> All project outputs delivered establish and strengthen laboratories, enhance equipment and human capacity combined with well thought out enabling policy environment, the project outputs and outcomes were achievable within the four-year period of implementation. All project outputs have been delivered 	MTR, PIRs, CDR, PSC Minutes	Document Analysis
Relevance with respect to other donor-supported activities	Does the GEF funding support activities and objectives not addressed by other donors?	<ul style="list-style-type: none"> The IBRD/GEF-financed project on Sustainable Financing for Biodiversity Conservation and Natural Resource Management supported Mainstream Conservation and Sustainable Forest and Natural Resources Management Approaches in policy, strategy and plans. These policy support do not cover ABS 	ProDoc	Document Analysis

Evaluative Criteria	Evaluations Questions	Indicators	Sources	Methodology
		<p>policy which is</p> <ul style="list-style-type: none"> • The UNEP/GEF supported to GEF Eligible Parties (LDCs and SIDs) for the revision of NBSAPs has identified actions areas for implementation of the Nagoya Protocol are fully in the NBSAP 2014. However it does not find the implementation. 		
	How do GEF-funds help to fill gaps (or give additional stimulus) that are necessary but are not covered by other donors?	<ul style="list-style-type: none"> • The project funds the gaps that are identified above 		
	Is there coordination and complementarity between donors?	<ul style="list-style-type: none"> • The IBRD/GEF-financed project on Sustainable Financing for Biodiversity Conservation and Natural Resource Management component on Mainstream Conservation and Sustainable Forest and Natural Resources Management Approaches in policy, strategy and plans. • The UNEP/GEF supported to GEF Eligible Parties (LDCs and SIDs) for the revision of NBSAPs and actions areas identified for implementation of Nagoya Protocol • The UNEP/GEF BS: Implementation of National Biosafety Framework (NBF) consistent with the provision of the Cartagena Protocol and biosafety requirements. 	<p>Documents from other donor supported activities</p> <p>Other donor representatives <i>f</i></p> <p>Project documents</p>	<p>Documents analyses <i>f</i></p> <p>Interviews with project partners and relevant stakeholders</p>

Evaluative Criteria	Evaluations Questions	Indicators	Sources	Methodology
		<ul style="list-style-type: none"> • GEF Small Grants Programme on Promotion of Economic Opportunities for Women through Community-Based Medicinal Herb Cultivation, Local Stewardship of Alpine Ecosystems through Incentive-Based Bio-Cultural Diversity Conservation 		
Relevant lessons and experiences for other similar projects in the future	Has the experience of the project provided relevant lessons for other future projects targeted at similar objectives?		Data collected throughout evaluation	Data analysis

Evaluative Criteria	Evaluations Questions	Indicators	Sources	Methodology
Effectiveness: To what extent have/will the expected outcomes and objectives of the project been/be achieved?				
Has the project been effective in achieving the expected outcomes and objectives?	- Has the project been effective in achieving its expected outcomes?	<ul style="list-style-type: none"> • National ABS Policy approved, and regulatory and institutional frameworks developed and operational. <ul style="list-style-type: none"> ○ National ABS policy which is aligned with Nagoya Protocol approved and under implementation ○ Biodiversity Act of Bhutan, 2003, 200 has been revised and new bill aligned with ABS policy is ready for submission to the Parliament ○ Rules and Regulations for the new Act drafted • Organizational arrangements for 	<ul style="list-style-type: none"> - Project team and relevant stakeholders - Data reported PIRs and MTR 	<ul style="list-style-type: none"> - Documents analysis - discussions with project team - Interviews with relevant stakeholders

		<p>implementation in place</p> <ul style="list-style-type: none"> ○ Competent Authority, Focal Agency and Check Point designated ● Institutional capacity in place to assess, plan and implement priority bioprospecting program in the 12 FYP <ul style="list-style-type: none"> ○ The national bioprospecting laboratory at NBC has the capacity to analyze crude plant extract to the level of fractionation and to carry out trial products development ○ Laboratory staff have been trained ● Community capacity has strengthened with awareness on ABS, PIC and MAT as well as on sustainable harvesting/cultivation techniques 		
How is risk and risk mitigation being managed?	<ul style="list-style-type: none"> - How well are risks, assumptions and impact drivers being managed? - What was the quality of risk mitigation strategies developed? Were these sufficient? - Are there clear strategies for risk mitigation related with long-term sustainability of the project? 	<ul style="list-style-type: none"> ● The outlined risk mitigation measures were all implemented and none of the risks that were outlined have triggered any cause of concern. The risk mitigation measures in the project have been implemented including RIA for the Biodiversity Bill ● However, the project design did not identify possible delay in the enactment of the Biodiversity Act of Bhutan, 2003 as a risk factor. The views that enactment of the revised Biodiversity Bill should have been included as an indicator by itself with identified risk since it has implications on implementation of the Biodiversity Rules and Regulation. 	<ul style="list-style-type: none"> - Project documents - UNDP, project team, and relevant stakeholders 	<ul style="list-style-type: none"> - Document analysis - Interviews

What lessons can be drawn regarding effectiveness for other similar projects in the future?	What lessons have been learned from the project regarding achievement of outcomes? What changes could have been made (if any) to the design of the project in order to improve the achievement of the project's expected results?	<ul style="list-style-type: none"> During the project implementation and upon realizing the need for revision of the Biodiversity Act of Bhutan, 2003, 2003, the enactment of the revised Biodiversity Act of Bhutan, 2003 should have been adopted as a project indicator 	- Data collected throughout evaluation	- Data analysis
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Evaluative Criteria	Evaluations Questions	Indicators	Sources	Methodology
Efficiency: Was the project implemented efficiently, in-line with international and national norms and standards?				
Was project support provided in an efficient way?	<ul style="list-style-type: none"> - Was adaptive management used or needed to ensure efficient resource use? - Did the project logical framework and work plans and any changes made to them use as management tools during implementation? - Were the accounting and financial systems in place adequate for project management and producing accurate and timely financial information? 	<ul style="list-style-type: none"> The project applied adaptive management based on emerging situations <ul style="list-style-type: none"> ○ Focused approach on awareness due to the low level of understanding of ABS among the stakeholders, ○ The difficulty in communicating with TK holders in local dialect was addressed by engaging local guides, elders/influential person and unemployed youth in the locality to communicate with TK holders 	<ul style="list-style-type: none"> - Project documents and evaluations - UNDP - Project team 	<ul style="list-style-type: none"> - Document analysis - Key interviews

	<ul style="list-style-type: none"> - Were progress reports produced accurately, timely and responded to reporting - Was project implementation as cost effective as originally proposed (planned vs. actual) - Did the leveraging of funds (co-financing) happen as planned? - Were financial resources utilized efficiently? Could financial resources have been used more efficiently? - Was procurement carried out in a manner making efficient use of project resources? - How was results-based management used during project implementation? 	<ul style="list-style-type: none"> ○ Due to availability of Rhododendron anthopogon in Dagala as compared to low density and infeasible coverage of resoruces in Lingshi/Naro, the pilot site for ABS agreement with the Bio-Bhutan was changed from Lingshi/Naro to Dagala ○ TA from Nepal hired to advice on equipment for R&D. ○ The project logframe sets the milestone for ABS Policy to be approved within the first year of the project. Due to the delays in the having the ABS policy approved on account of extended time required for GNHC screening, the draft ABS policy was approved as an interim Policy in 2016 till completion of due diligence on GNH screening tool and formal approval from the cabinet. ● - Financial progress reports availability in CDR and all M&E reports submitted on time with adequate information. Inadequacies were addressed in subsequent reporting ● Discrepancies were not observed between planned and utilized financial expenditures ● Co-financing funds leveraged observed to be higher than planned. 	
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How efficient are partnership arrangements for the project?	<ul style="list-style-type: none"> - To what extent partnerships/linkages between institutions/organizations were encouraged and supported? - Which partnerships/linkages were facilitated? Which ones can be considered sustainable? - What was the level of efficiency of cooperation and collaboration arrangements? - Which methods were successful or not and why? 	<p>Project was not only able to develop bio-products but also enabled linkages for collaboration for marketing of the products developed by the project</p> <ul style="list-style-type: none"> o NBC, MSPCL & Bio Bhutan initiated marketing of the products within Bhutan and the region. o Conducted meetings with various business entities in India, Thailand and Singapore in 2018 to explore markets for the ABS products. o MSPCL revived contacts with Pathanwin Co Ltd. in Thailand for cosmetic production collaboration and marketing. o Bio Bhutan and NBC revived dialogue with Thai China Co. Ltd., Thailand on exporting essential oils from Bhutan and discussed on the logistical arrangements. 	<ul style="list-style-type: none"> - Project documents and evaluations - Project partners and relevant stakeholders 	<ul style="list-style-type: none"> - Document analysis - Interviews
Did the project efficiently utilize local capacity in implementation?	<ul style="list-style-type: none"> - Was an appropriate balance struck between utilization of international expertise as well as local capacity? - Did the project take into account local capacity in design and implementation of the project? - Was there an effective collaboration between institutions responsible for implementing the project? 	Use of expertise through international collaboration has resulted in critical mass of local capacity building for research, laboratory analysis, product development	<ul style="list-style-type: none"> - Project documents and evaluations - UNDP - Beneficiaries 	<ul style="list-style-type: none"> - Document analysis - Interviews

What lessons can be drawn regarding efficiency for other similar projects in the future?	<ul style="list-style-type: none"> - What lessons can be learnt from the project regarding efficiency? - How could the project have more efficiently carried out implementation (in terms of management structures and procedures, partner-ships arrangements etc...)? - What changes could have been made (if any) to the project in order to improve its efficiency? 		- Data collected throughout evaluation	- Data analysis
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Annex 7: National ABS Institutional Capacity Scorecard – End of Project

Strategic Area of Support	Issue	Scorecard	Initial Evaluation	Evaluation at TE	TE Evaluation Comments
1. Capacity to conceptualize and formulate policies, laws, strategies and programmes	The Access and Benefit-Sharing (ABS) agenda is being effectively championed / driven forward	<p>0) There is essentially no ABS agenda;</p> <p>1) There are some persons or institutions actively pursuing an ABS agenda but they have little effect or influence;</p> <p>2) There are a number of ABS champions that drive the ABS agenda, but more is needed;</p> <p>3) There are an adequate number of able "champions" and "leaders" effectively driving forwards an ABS agenda</p>	1	3	<p>The National Focal Point has the human and technical resources required to administer the implementation of the Nagoya Protocol</p> <p>Examples of private sector and communities being actively engaged through ABS agreement exist</p>

Strategic Area of Support	Issue	Scorecard	Initial Evaluation	Evaluation at TE	TE Evaluation Comments
	There is a legally designated institution(s) responsible for ABS with the capacity to develop a national ABS framework (i.e., laws, policies and/or regulations)	0) There is no institution(s) responsible for ABS; 1) The institution(s) has financial resources but has limited personnel and expertise; 2) The institution(s) has financial resources and personnel but limited expertise; 3) The institution(s) has sufficient financial resources, personnel and expertise.	1	3	NBC has financial as well as technical capacity.
2. Capacity to implement policies, legislation, strategies and programmes	There is a legally designated ABS institution(s) responsible for ABS that can facilitate the implementation of the national ABS framework.	0) The institution(s) does not have the financial resources, personnel, and planning/management skills; 1) The institution(s) has financial resources but has limited personnel and planning/management skills; 2) The institution(s) has financial resources and personnel but limited planning/management skills; 3) The institution(s) has sufficient financial resources, personnel and planning/management skills.	1	3	The National Focal Point, Competent National Authority and Checkpoints have been designated with both financial and human resources

Strategic Area of Support	Issue	Scorecard	Initial Evaluation	Evaluation at TE	TE Evaluation Comments
	The ABS institution (s) is effectively led	0) The ABS institution(s) has a total lack of leadership; 1) The ABS institution(s) has weak leadership and provides little guidance; 2) The ABS institution(s) has a reasonably strong leadership but there is still need for improvement; 3) The ABS institution(s) is effectively led	2	3	ABS institutions has leadership, personnel and policy environment
	Human resources for ABS management are well qualified and motivated	0) Human resources are poorly qualified and unmotivated; 1) Human resources qualification is spotty, with some well qualified, but many only poorly and in general unmotivated; 2) Human Resources in general reasonably qualified, but many lack in motivation, or those that are motivated are not sufficiently qualified; 3) Human resources are well qualified and motivated.	1	3	NBC as well as partner agencies have human resources as well as technology to move ABS forward

Strategic Area of Support	Issue	Scorecard	Initial Evaluation	Evaluation at TE	TE Evaluation Comments
	The ABS institution(s) is audited and publicly accountable	0) The ABS institution(s) is not being held accountable and not audited; 1) The ABS institution(s) is occasionally audited without being held publicly accountable; 2) The ABS institution(s) is regularly audited and there is a fair degree of public accountability but the system is not fully transparent; 3) The ABS institution(s) is highly fully audited, and publicly accountable.	3	3	As is the case with all gov't institutions, the ABS institution is audited annually and publicly accountable for government resource use and performance of each agency is assessed
	Enforcement of ABS regulations	0) No enforcement of regulations is taking place; 1) Some enforcement of regulations is taking place but it is largely ineffective; 2) ABS regulations are regularly enforced but are not fully effective; 3) ABS regulations are highly effectively enforced.	1	2	ABR regulation is in ready in the form of Biodiversity Rules and Regulations. However, the Biodiversity Bill, the legal basis for the regulations is yet to be enacted by the Parliament

Strategic Area of Support	Issue	Scorecard	Initial Evaluation	Evaluation at TE	TE Evaluation Comments
	Individuals are able to advance and develop professionally	0) No career tracks are developed and no training opportunities are provided; 1) Career tracks are weak and training possibilities are few and not managed transparently; 2) Clear career tracks developed and training available; HR management however has inadequate performance measurement system; 3) Individuals are able to advance and develop professionally.	2	2	Training of professionals for ABS is a priority for NBC. However, there is no structured plan for career advancement for ABS personnel at the moment
	Individuals are appropriately skilled for their jobs	0) Skills of individuals do not match job requirements; 1) Individuals have some or poor skills for their jobs; 2) Individuals are reasonably skilled but could further improve for optimum match with job requirement; 3) Individuals are appropriately skilled for their jobs	2	2	National expertise in keeping with the job requirements in specific areas of bioprospecting are in place. However, there is shortage of manpower to fill all the requirements

Strategic Area of Support	Issue	Scorecard	Initial Evaluation	Evaluation at TE	TE Evaluation Comments
	Individuals are highly motivated	0) No motivation at all; 1) Motivation uneven, some are but most are not; 2) Many individuals are motivated but not all; 3) Individuals are highly motivated	2	3	The existing staff handling ABS are motivated and fully understand about ABS concepts and way forward
	There are appropriate mechanisms of training, mentoring, and learning in place to maintain a continuous flow of new staff	0) No mechanisms exist; 1) Some mechanisms exist but unable to develop enough and unable to provide the full range of skills needed; 2) Mechanisms generally exist to develop skilled professionals, but either not enough of them or unable to cover the full range of skills required; 3) There are mechanisms for developing adequate numbers of the full range of highly skilled ABS professionals	2	2	Mechanisms generally exist to develop skilled professionals, but either not enough of them or unable to cover the full range of skills required;

Strategic Area of Support	Issue	Scorecard	Initial Evaluation	Evaluation at TE	TE Evaluation Comments
3. Capacity to engage and build consensus among all stakeholders	ABS has the political commitment	0) There is no political will at all, or worse, the prevailing political will runs counter to the interests of ABS; 1) Some political will exists, but is not strong enough to make a difference; 2) Reasonable political will exists, but is not always strong enough to fully support ABS; 3) There are very high levels of political will to support ABS.	2	2	Reasonable political will exists, but is not always strong enough to fully support ABS. Awareness among parliamentarians and decision makers on ABS is not high
	Degree of public support on ABS issues	0 -- The public has little interest in ABS and there is no significant lobby for ABS; 1 -- There is limited support for ABS; 2 -- There is general public support for ABS and there are various lobby groups strongly pushing them; 3 -- There is tremendous public support in the country for ABS.	1	2	Awareness on ABS among communities participating in ABS is high and there is keen interest among these communities to move things forward. Awareness have been created in all Gewogs of Bhutan. There is also interest expressed by private entities it participate in exploration and use of genetic resources

Strategic Area of Support	Issue	Scorecard	Initial Evaluation	Evaluation at TE	TE Evaluation Comments
	The ABS institution(s) is mission oriented	0) Institutional mission is not defined; 1) Institutional mission is poorly defined and generally not known and internalized at all levels; 2) Institutional mission well defined and internalized but not fully embraced; 3) Institutional mission is fully internalized and embraced.	2	3	NBC has clear vision, mission and strategies defined including future directions in terms of ABS

Strategic Area of Support	Issue	Scorecard	Initial Evaluation	Evaluation at TE	TE Evaluation Comments
	The ABS institution(s) can facilitate the partnerships needed to achieve its objectives	<p>0) The ABS institution(s) operate in isolation;</p> <p>1) The ABS institution(s) has facilitated some partnerships but significant gaps and existing partnerships achieve little;</p> <p>2) The ABS institution(s) has facilitated many partnerships with a wide range of national and local agencies, private sector and NGOs but there are some gaps and partnerships, are not always effective and do not always enable efficient achievement of ABS objectives;</p> <p>3) The ABS institution(s) has facilitated effective partnerships with national and local agencies, private sector and NGOs to enable achievement of ABS objectives in an efficient and effective manner.</p>	1	2	NBC collaborates with communities, private as well as Government entities. However, there is room for further awareness and networking with private organizations within as well as outside Bhutan

Strategic Area of Support	Issue	Scorecard	Initial Evaluation	Evaluation at TE	TE Evaluation Comments
4. Capacity to mobilize information and knowledge	The ABS institution(s) has the information it needs to enforce the national legal/policy ABS framework and to facilitate ABS deals	<p>0) Information is virtually lacking;</p> <p>1) The ABS institution(s) has access to some information, but is of poor quality, is of limited usefulness, or is very difficult to access;</p> <p>2) The ABS institution(s) has access to a lot of information which is mostly of good quality, but there remain some gaps in quality, coverage and availability;</p> <p>3) The ABS institution(s) has the information it needs to enforce the national legal/policy framework and facilitate ABS deals.</p>	1	3	NBC has documented TK in all Gewogs. The Biodiversity portal provides information on the biodiversity of Bhutan and the Clearing House is functional

Strategic Area of Support	Issue	Scorecard	Initial Evaluation	Evaluation at TE	TE Evaluation Comments
	Individuals from the ABS institution(s) work effectively together as a team	0) Individuals work in isolation and don't interact; 1) Individuals interact in limited way and sometimes in teams but this is rarely effective and functional; 2) Individuals interact regularly and form teams, but this is not always fully effective or functional; 3) Individuals interact effectively and form functional teams.	2	2	There is cohesion and good team work but this does not necessarily translate to effective results as personnel are limited in numbers and this often leads to multiple tasks beyond individual capacity.
5. Capacity to monitor, evaluate, report and learn	There is a legally designated institution(s) responsible for ABS and able to update the ABS national framework	0) The institution(s) does not have the financial resources, personnel, and expertise; 1) The institution(s) has financial resources but has limited personnel and expertise; 2) The institution(s) has financial resources and personnel but limited expertise; 3) The institution(s) has sufficient financial resources, personnel and expertise.	0	3	The National Focal Point, Competent National Authority and Checkpoints have been designated with both financial and human resources.

Strategic Area of Support	Issue	Scorecard	Initial Evaluation	Evaluation at TE	TE Evaluation Comments
	ABS policy or law is continually reviewed and updated	0) There is no policy or law or it is old and not reviewed regularly; 1) Policy or law is only reviewed at irregular intervals; 2) Policy or law is reviewed regularly but not annually; 3) Policy or law is reviewed annually.	1	2	The Biodiversity Bill is ready for enactment by the Parliament based on review of the Biodiversity Act of Bhutan, 2003, 2003. However, it is not reviewed annually.
	Society monitors ABS projects	0) There is no dialogue at all; 1) There is some dialogue going on, but not in the wider public and restricted to specialized circles; 2) There is a reasonably open public dialogue going on but certain issues remain taboo; 3) There is an open and transparent public dialogue about the state of the ABS projects.	1	1	There is some dialogue going on, but not in the wider public and restricted to specialized circles such as the relevant agencies

Strategic Area of Support	Issue	Scorecard	Initial Evaluation	Evaluation at TE	TE Evaluation Comments
	Institutions are highly adaptive, responding effectively and immediately to change promoted by implementation of the national ABS framework (i.e., laws, policies and/or regulations).	<p>0) There is no implementation of the national ABS framework at the moment;</p> <p>1) Institutions do change but only very slowly;</p> <p>2) Institutions tend to adapt in response to change but not always very effectively or with some delay;</p> <p>3) Institutions are highly adaptive, responding effectively and immediately to change.</p>	2	3	ABS institutions are in place and clear mechanisms developed.

Strategic Area of Support	Issue	Scorecard	Initial Evaluation	Evaluation at TE	TE Evaluation Comments
	The ABS institution(s) has effective internal mechanisms for monitoring, evaluation, reporting and learning on ABS projects	<p>0) There are no mechanisms for monitoring, evaluation, reporting or learning;</p> <p>1) There are some mechanisms for monitoring, evaluation, reporting and learning but they are limited and weak;</p> <p>2) Reasonable mechanisms for monitoring, evaluation, reporting and learning are in place but are not as strong or comprehensive as they could be;</p> <p>3) Institutions have effective internal mechanisms for monitoring, evaluation, reporting and learning.</p>	1	3	ABS is already part of the national program through which regular monitoring and reporting happens like any other national program

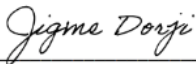
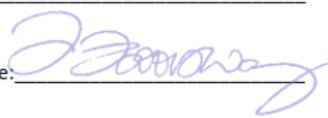
Strategic Area of Support	Issue	Scorecard	Initial Evaluation	Evaluation at TE	TE Evaluation Comments
	Individuals from ABS institutions are adaptive and continue to learn	0) There is no measurement of performance or adaptive feedback; 1) Performance is irregularly and poorly measured and there is little use of feedback; 2) There is significant measurement of performance and some feedback but this is not as thorough or comprehensive as it might be; 3) Performance is effectively measured and adaptive feedback utilized	2	3	Performance evaluation is an institutionalized process with twice-yearly evaluations.
INITIAL TOTAL SCORE: 34 out of a possible 69 = 33.33%				58	
TYOTAL SCORE at TE: 58 out of possible 69 =	98%				

Annex 8: Terminal Evaluation Audit Trail (submitted as a separate file)

Annex 9: Evaluation Report Clearance Form

ANNEX 9: EVALUATION REPORT CLEARANCE FORM

(to be completed by CO and UNDP GEF Technical Adviser based in the region and included in the final document)

Evaluation Report Reviewed and Cleared by	
UNDP Country Office	
Name: <u>Jigme Dorji</u>	
Signature: <u></u>	Date: <u>4 March 2019</u>
UNDP GEF RTA	
Name: <u>Lisa Farroway</u>	
Signature: <u></u>	Date: <u>6 March 2019</u>