



MID-TERM REVIEW REPORT

IMPLEMENTATION OF THE NAGOYA PROTOCOL ON ACCESS TO GENETIC RESOURCES AND BENEFIT SHARING IN BHUTAN

UNDP PIMS: 5239 AND GEF PROJECT ID: 5448

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GEF OPERATIONAL FOCAL AREA/PROGRAM: BIODIVERSITY

EXECUTING AGENCY/IMPLEMENTING AGENCY PARTNER/AND OTHER
PROJECT PARTNER

NATIONAL BIODIVERSITY CENTRE
MINISTRY OF AGRICULTURE AND FORESTS

MENJONG SORIG PHARMACEUTICALS
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Abbreviations /Acronyms

ABS	Access and Benefit-Sharing
BAFRA	Bhutan Agriculture and Food Regulatory Authority
BTFEC	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	Division 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
JSNP	Jigme Singye National Park
KPI	Key Performance Indicators
LF	Log Frame
LIC	Local Indigenous Communities
LDC	Least Developed Countries
IBRD	International Bank for Reconstruction and Development
MSP	Menjong Sorig Pharmaceuticals
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 Initiation 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
SPSS	Statistical Package for Social Sciences
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

EXECUTIVE SUMMARY

Table 1. Project Information Table

Project Title	Implementation of the Nagoya Protocol on Access to Genetic Resources and Benefit-Sharing in Bhutan	
UNDP Project ID PIMS:5239	PIF Approval Date	03 October 2013
GEF Project ID PIMS:5448	CEO Endorsement Date	28 August 2014
ATLAS Award ID:00080806; Project ID: 00090375	Project Document, ProDoc. Signature Date [date project began]	22 September 2014
Country: BHUTAN	Date project manager hired	N / A
Region: SOUTH ASIA	Inception Workshop Date	October 2014
Focal area: Biodiversity	Mid -Term Review Completion Date	23 December 2016– 31 January 2017
GEF Focal Area Strategic Objective:	Planned Closing Date	24 September 2018
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 (MSP) & Bio- Bhutan
Project Financing	<i>At CEO Endorsement [US\$]</i>	<i>Spent/Realized finance/co- finance at MTR [US\$]2016</i>
GEF/NPIF	1,000,000	563,172.34
UNDP	106, 000	923,46.07
NBC	806,950	393,217
MoAF	494,800	329,873.30
MSP	579,300	289,641
BTFEC	631,182	586,315.30
NGS	200,000	105,666.70
Bio Bhutan	80,000	471,82.51
Chanel	105,436	152,484
PROJECT TOTAL COST	4,003,668	2,559,898.22

Brief Project Description

The project on Implementation of the Nagoya Protocol on Access to Genetic Resources and Benefit-Sharing in Bhutan was launched with the objective to develop and implement a national ABS framework, build national capacities and facilitate the discovery of nature-based products. It implements three synergistic outcomes: 1) An operational national regulatory and institutional framework on ABS with output 1.1, 1.2 and 1.3; 2) Strengthened stakeholder capacity and awareness for the implementation of the national ABS framework with output 2.1, 2.2, 2.3 and; 3) Best practice ABS processes are demonstrated recognizing the principles of biodiversity conservation, Prior Informed Consent (PIC) and Mutually Agreed Terms (MAT) including a fair and equitable sharing of benefits through ABS

agreements with output 3.1 and 3.2 demonstrated at 3 pilot sites: Dzedokha village in Lokchina Gewog under Chukka Dzongkhag; Namther in Langthel Gewog under Trongsa Dzongkhag and; Dagala Gewog under Thimphu Dzongkhag. The project is implemented by the National Biodiversity Centre (NBC) under the Ministry of Agriculture and Forests, Menjong Sorig Pharmaceutical (MSP) under the Ministry of Health and, Bio-Bhutan a private enterprise based in Thimphu.

Project Progress Summary

The project is on-track to achieve its objective by the end-of-the-project with an Interim ABS Policy 2015, Biodiversity Bill of Bhutan 2016 and Biodiversity Regulations in place in compliance with the NBSAP 2014 and Nagoya Protocol. The National and Local Governments institutional and personnel capacities were strengthened from low to moderate level in the Government agencies (NBC, MSP) and virtually none to moderate level in the private enterprise (Bio-Bhutan).

The outcome 1 has made a significant progress with the approval of an interim ABS Policy 2015. The Biodiversity Bill of Bhutan 2016 and Biodiversity Regulations are in place for approval. The MoAF has been designated as the National Competent Authority and NBC as the National Focal Point. The entry/exit points for genetic resources transaction and regulations in collaboration with BAFRA (phytosanitary) and the Ministry of Economic Affairs (patents), and internationally recognized certification of origin system are underway for implementation.

The outcome 2 has progressed satisfactorily as indicated by the ABS Institutional Capacity Scorecard and Biodiversity TT score of 71% and 64% from 33% and 34%, respectively at the baseline (2014). Awareness and capacity building measures implemented were: ABS sensitization to a wide range of stakeholders (parliamentarians, local governments, researchers, academia, businessmen and ABS pilot communities), perception studies, TK documentation, institutional visits, study tours and seminars, workshops and multi-media communication (posters, brochures, booklet); procurement and installation of bio-prospecting appliances; hands-on training on bio-prospecting technique to men and women extracting 423 crude extracts in collaboration with NGS, Japan and Chanel PB France, Agilent Technologies, Singapore and Prudent Medi-Tech International, Nepal and, Mae Fah Luang University in Thailand improving knowledge and skills for ABS implementation.

Under outcome 3, ABS processes and best practice demonstration with community protocols/ABS agreements in accordance with the principles of PIC, MAT with ILCs progressed at various levels of implementation. At Dzedokha in Lokchina Gewog under Chukka Dzongkhag, cultivation and management of *Zingiber cussumnar* is practised through the institutionalization of Dzedokha Phachaing Detshen and prototypes (massage oil and balm) developed in collaboration with a Philippines-based company. *Z. cussumnar* is a high-value medicinal plant traditionally used for curing joints and muscle pains and cold and cough treatment in children. At Namther in Langthel Gewog under Trongsa Dzongkhag, MSP in collaboration with the Namther Throgmen Tshogpa operationalizes a management plan for medicinal plants collection, harvest and benefit-sharing capitalizing on the long tradition of partnership between MSP and the communities resulting in the development of 5 prototypes. At Dagala under Thimphu Dzongkhag, Bio-Bhutan has progressed with *Rhododendron anthopogon* inventory in Soe, Naro/Lingshi and Dagala with the identification of Dagala as a pilot site, installation of distillation unit, hands-on training on sustainable

collection and harvest and, distillation technique resulting in the successful distillation of aroma oil and high-end soap development in collaboration with the DzomDagam Ngomen Tshogpa.

The overall budget utilization accounts for 64% (US\$ 2,559,898.22 against the total of US\$ 4,003,668 budgeted in the project document). As on December 2016, the cumulative GEF expenditures amount to US\$ 563,172.34 accounting for 56% disbursement against the budget allocation of US\$ 1,000, 000. As on September 2016, the project co-finance utilization accounts for 66% (US\$ 1,996,725.88 against a total budget of US\$ 3,003,668) which indicates cost-effective utilization leveraging the project outcomes.

MTR Ratings and Achievement Summary Table

Measure	MTR Rating	Achievement Description
Project Strategy	N / A	The project was designed to enhance the social and economic value of biodiversity conservation through a science-based approach to accessing genetic resources and benefit-sharing in a fair, equitable and sustainable manner in partnership with national and international pharmaceutical companies and ABS communities. The RF/LF goal reflects a country-driven and ownership approach with most assumptions met and negligible social and environmental risks to sustainability. The RF/LF, however, did not reflect gender-disaggregated indicators, which is incorporated in Table 3 for progress monitoring and reporting in the PIR.
Progress Towards Results	Objective: Satisfactory (S)	The project is on-track to achieve its objective by the end-of-the-project with an interim ABS Policy 2015, Biodiversity Bill of Bhutan 2016 and Biodiversity Regulations in place in compliance with the NBSAP 2014 and Nagoya Protocol. The national and local Governments institutional and personnel capacities were strengthened from low to moderate level in the Government agencies (NBC, MSP) and virtually none to moderate level in the private enterprise (Bio-Bhutan).
	Outcome 1: Highly Satisfactory (HS)	The outcome 1 has made significant progress in terms of approving an interim ABS Policy 2015. The Biodiversity Bill of Bhutan 2016 needs approval by the National Government and Biodiversity Regulations by the MoAF for ABS implementation.
	Outcome 2: Satisfactory (S)	The outcome 2 has progressed satisfactorily in the strengthening of institutional and personnel capacity of project implementing partners (NBC, MSP and Bio-Bhutan). Capacity building, however, needs to be further strengthened and awareness on ABS policy and regulatory framework should continue.
	Outcome 3: Satisfactory (S)	ABS protocols/agreements implementation by the ILCs viz; Dzedokha in Lokchina Gewog under Chukka, Dagala Gewog in Thimphu and, Namther in Langthel Gewog under Trongsa has progressed satisfactorily following the principles of PIC and MAT.
Project Implementation	Satisfactory (S)	Work planning, project-level monitoring and evaluation, stakeholder engagement, reporting, and communications have

and Adaptive Management		progressed satisfactorily without any prominent implementation problems. Adaptive management is exercised effectively in addressing minor management and finance issues leading to efficient and effective project implementation.
Sustainability	Likely (L)	Negligible risks to financial, institutional and Governance sustainability but needs minimization of an emerging socioeconomic and environmental risk to sustainability.

Concise Summary of Conclusion

The biodiversity threats, causes and impacts and opportunities addressed by the project are still relevant and priority of the RGoB. The project addresses unsustainable harvest of forest and agriculture-based genetic resources constrained by sub-optimal policy and regulatory instruments and limited institutional capacity and ABS experiences by enhancing the social and economic value of biodiversity through a science-based access to genetic resources and commercialization and monetary and non-monetary benefits-sharing in a fair, equitable and sustainable manner.

Overall, the project objective and outcomes are consistent with the national development priorities of the RGoB's 11th FYP and, in particular, MoAF's 11th FYP objective of Promoting Sustainable Management and Utilization of Natural Resources, UNDP programming priorities and SDG 15. The project strategy and design have synergy with similar GEF projects in Bhutan.

The project assumption at the objective and outcome 1, 2 and 3 levels are realistic and achievable with the exception that "adding additional staff to the bio-prospecting program and no staff turnover" has met with little success due to HRD ceiling in line with the RGoB's policy of compact and efficient civil service system.

The project, social and environmental and, financial, institutional and governance risks are negligible; however, an emerging socioeconomic and environmental risks to sustainability needs monitoring and reporting in the PIR.

Gender consideration was sufficiently raised during the project preparation; however, project RF/LF did not reflect the gender-disaggregated indicators under the relevant outcomes and outputs, which are incorporated in RF/LF for monitoring and reporting in the PIR.

The mid-term level and assessment showed that the project objective, outcome 1, 2 and 3 and many of their indicators has progressed significantly and are on-track to be achieved by the end-of-the-project.

The level of institutional and personnel capacity of NBC and MSP has increased from basic to a moderate level and Bio-Bhutan from virtually none to a moderate level.

At the three pilot sites, ABS processes and best practice demonstration have progressed moderately at various levels of implementation. ABS agreements/community protocols were operationalized following the principle of PIC and MAT with ILCs. At Dzedokha in Lokchina, Dzeodokha Phachaing Detshen was instituted and by-law operationalized with 48 households (48% women). *Z. cussumnar* - a high-value medicinal plant has been cultivated successfully by the community. MSP has built a successful ABS partnership with the

Namther Throgmen Tshogpa in Langthel under Trongsa in harnessing the medicinal plants by and for the communities. MSP has successfully developed 5 prototypes; i) Herbal Soap, ii) Herbal Cream, iii) Massage Oil, iv) Massage Candle and, v) Face Mask. Bio-Bhutan in partnership with the DzomDagam Ngomen Tshogpa has distilled oil successfully from the *Rhododendron anthopogon* leaves and massage oil and high-end soap developed for commercialization.

Project implementation and adaptive management have progressed smoothly with no major issues. Quarterly and annual work plans are output driven, budgeted and implemented on time. Monitoring and evaluation are regularly done, but the quality of reports is relatively poor and not inclusive of SES risks. Stakeholder engagement and communication continues and adaptive management exercised for management and finance/co-finance utilization leading to efficient and effective project implementation.

At the institutional level, good lessons were learned in the formulation of ABS policy and regulatory instruments, strengthening institutional and human resource capacity and better networking and linkages between the Government agencies, private national and international pharmaceutical companies and, ABS implementation communities. NBC and its implementing partners experienced ABS as a new concept and mechanism to access, utilize and share benefits from the research and commercialization of Bhutan's rich biodiversity. The project has capacitated MSP in the systematic data collection of medicinal and aromatic plants by areas, altitude, climate and uses and the development of 5 prototypes. MSP plans to up-scale the lessons learned for research and commercialization of high altitude medicinal plants e.g. Cordyceps. Bio-Bhutan affirms ABS as a business model converging commercialization, conservation and social interests and benefit-sharing to communities leveraging its mandate of corporate social responsibility. ABS implementation at the pilot sites has created employment and income opportunities for the poor communities.

Recommendation Summary Table

Project stage	Rec.#	Recommendation
Corrective actions for project design	R1	The outcome 2 assumption on “more staff will be added to the bio-prospecting program as projected in the 11 th FYP and there will be little or no turn-over of the staff” has met with little success due to the HRD ceiling in line with the RGoB policy of compact and efficient civil service system and contractual nature of the recruitment. The recruitment of 3 additional staff contracted using the Chanel co-finance has facilitated the implementation of project activities. It is recommended that this assumption be changed to <i>additional staff requirement to the bio-prospecting program will be recruited on contract using the Chanel co-finance.</i>
	R2	Although gender considerations were sufficiently raised during the project preparation, RF/LF indicators were not gender-disaggregated. In view of the nature of the project activities that benefits proportionately more women, the relevant indicators are gender-disaggregated for monitoring and reporting in the PIR. The M&E should also monitor the project benefits and impact (income and employment) by gender.
Implementation & monitoring	R3	Although the project, social and environmental risks are negligible, M&E should monitor the <i>moderate</i> risks identified

		in Table 2 including emerging socioeconomic and environmental risks to sustainability in the PIR.
	R4	The PIR report needs improvement in terms of quality and comprehensiveness. MTR strongly recommends that project M&E be strengthened to document the good lessons learned and best practice on the ABS actualization (commercialization and benefit-sharing) experiences in Bhutan towards the end-of-the-project. To complement PMU's monitoring capacity, the two project assistants should be trained on data collection, analysis and reporting.
Follow-up actions	R5	The Biodiversity Bill of Bhutan 2016 needs approval by the National Government for the legitimization of a legally binding ABS agreement between the parties.
	R6	NBC and MSP should strengthen bio-prospecting scoping/research and actualization capacity with an additional qualified and trained staff to sustain the project benefits.
	R7	ABS being a new concept and mechanism to access Bhutan's genetic resources and benefit-sharing from the research and commercialization, the project should continue its sensitization program on ABS concept, mechanism and policy and regulations to the public.
	R8	NBC and MSP should populate their websites with project news, views, progress reports and success stories.
Future directions to achieve project objective	R9	With the approval of the Biodiversity Bill of Bhutan 2016, the project should steer towards operationalization of a legally binding ABS agreement detailing regulations on resource sustainability assessment, harvesting and management, commercialization and monetary and non-monetary benefits sharing on a fair and equitable basis.
	R10	The ABS agreements/community protocols need to integrate quantitative resource inventories to estimate the production potential and cost-benefit/economic analysis as the basis for sustainable genetic resource management and determining proportion of the monetary benefit plough back to the communities.
	R11	As most genetic resources including in the three pilot sites are sourced from the natural forests, resource conservation should follow two-pronged strategy: i) Sustainable harvest, processing and marketing and, enforcement of regulations in the natural forests; ii) Domestication and cultivation in agricultural farms at the household level and degraded and barren areas at the community level of vulnerable medicinal and aromatic plants.
	R12	NBC, MSP and Bio-Bhutan should continue to forge and foster the partnership with national and international pharmaceutical companies concentrating on joint marketing, commercialization and benefit-sharing from the already developed prototypes Branding Bhutan.

1. INTRODUCTION

1.1 Project Background

Bhutan's unique geographical location at the intersection of the Indo-Malayan Realm and the Palearctic Realm combined with the altitudinal and microclimatic variation endowed a rich diversity of flora and fauna. The Flora of Bhutan records more than 5,600 species of vascular plants, out of which, 94% is native species and 105 species endemic to Bhutan (NBC, 2014). The flora and fauna are; pteridophytes (411 species of 27 families); mosses (282 species of 51 genera), 350 fungal species; more than 100 species of insect fungi; 287 lichens; close to 200 species of mammals including 27 globally threatened; 700 species of birds including 18 globally threatened; herpetofauna (61 amphibian species, 124 reptiles species); 586 species of butterflies; 91 species of freshwater fishes; agro-biodiversity (384 landraces of rice, 105 of maize, 36 of wheat, 10 of Sweet Buckwheat, 11 of bitter buckwheat, 32 of barley, 22 of amaranth, 36 of millet and, 230 relatives of wild crops). Accordingly, Bhutan has been recognized as one of the biodiversity hotspots in the eastern Himalayas.

Biodiversity is an integral part of social, cultural, spiritual, economic and environmental well-being of the Bhutanese economy. Biodiversity provides a range of provisioning, regulating and cultural values. For example, traditional medicines harnessed from more than 200 species of medicinal plants in the wild, form an integral part of the public health services. In the rural Bhutan, local people collect a wide range of biological resources for medicines, food and non-food uses e.g., Non-Wood Forest Product (NWFP).

Considering the high social, economic and environmental importance of biodiversity to Bhutanese population, the RGoB has accorded biodiversity conservation as one of the priorities of 11th FYP (2013-2018) and beyond for conservation, sustainable utilization and management of biological resources. The RGoB's commitment is echoed in 70.46% and 51.44% of the total geographical area under forest cover and protected areas (PAs), respectively in the country.

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 a rapid urbanization and modernization, unsustainable 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 exacerbated by externalities e.g., climate change.

To address the wide range of biodiversity threats and impacts, it is paramount to enhance the social and economic value of biodiversity conservation through a science-based access to genetic resources and commercialization and to accrue tangible and intangible national and local economic and environmental benefits sharing in a fair, equitable and sustainable manner. However, there are a number of challenges to achieving this long-term vision. The project on the Implementation of Nagoya Protocol on Access to Genetic Resources and Benefit Sharing in Bhutan was launched with the objective to develop and implement a national access and benefit-sharing (ABS) framework, build national capacities and facilitate the discovery of nature-based products. The project is midway through its implementation and, to fulfill the requirement of Global Environment Facility (GEF), the United Nations

Development Programme (UNDP) contracted to conduct the Mid-Term Review (MTR) of the project.

1.2 Purpose of MTR and Objectives

The purpose of MTR and its objectives in accordance with the MTR Terms of Reference (TOR) are:

- i) Assess progress towards the achievement of the project objectives, outcomes and outputs as specified in the Project Document;
- ii) Assess early signs of project success or failure with the goal of identifying the necessary changes to be made in order to set the project on-track to achieve its intended results;
- iii) Review the project's strategy and its risks to sustainability;
- iv) Identify and assist in the documentation of lessons and good practices from the project.

1.3 MTR Scope and Methodology

The MTR covers the project progress since its inception in October 2014 in terms of project strategy and design, implementation and adaptive management and sustainability issues and actions to achieve the end-of-the-project targets. It also assesses emerging lessons learned and good practice on ABS process from the project's pilot demonstration sites.

1.3.1 Approach and Methodology

A participatory, consultative and inclusive approach to MTR was undertaken in close collaboration and coordination with the Project Management Unit (PMU) housed in the NBC under the MoAF and its implementing partners; MSP under the Ministry of Health (MoH) and, Bio-Bhutan- a private enterprise under the private sector, UNDP Country Office (UNDP CO), UNDP-GEF Regional Technical Adviser and, local Government communities in the pilot sites. Following methods and tools were used to collect, collate and analyze the information to validate the findings of the project documents. The MTR was guided by an open-ended questionnaire adopted from the MTR TOR (Annex 4) and an additional questionnaire on gender mainstreaming designed by the consultant following the Guidance for *Conducting Mid-Term Review of the UNDP Supported GEF Financed Projects-Project-Level Monitoring* (UNDP/GEF Directorate, 2014). The Mid-Term Evaluative Matrix Template gives an overview of evaluative questions, sources, methods and tools (Annex 3).

1.3.1.1 Review of secondary information

The consultant reviewed all relevant project documents: PIF (Project Initiation Form), UNDP Initiation Plan, UNDAF, UNDP Strategic Plan 2014-2017, UNDP Environmental & Social Screening Procedures (SESP), Project Prodoc, Project Progress Reports, Project Implementation Reviews (PIRs) and, Project Financial Progress Reports. In addition, numerous PMU and relevant Government documents on development context were reviewed as deemed necessary (see the list of documents reviewed).

The consultant reviewed the project strategy and design in terms of the problems the project addresses and underlying assumptions and changes necessary to achieve the project's results; alignment of the project with sectoral and national development priorities, UNDAF/UNDP

programming priorities; NBSAP 2014 and Nagoya Protocol and; the extent broader environmental, social and economic goals and gender issues were factored in the project design.

The consultant critically reviewed the project's Result Framework (RF)/Log Frame (LF) and assessed how SMART (Specific, Measurable, Attainable, Relevant and Time-bound), the mid-term and end-of-the-project indicators were and, amended the targets and indicators, if necessary. The consultant also reviewed the gender-disaggregated indicators. The consultant reviewed the Progress towards Results, GEF Biodiversity TT and ABS Institutional Capacity Scorecard and populated the Progress towards Results Matrix (Achievement of outcomes against end-of-project target table) and compared the MTR Biodiversity and ABS TT to baseline TT and analyzed trends.

Using the data, the consultant completed the Mid-Term Level and Assessment and concluded whether the end-of-the-project target; a) has already been achieved (coloured green), b) is partially achieved or on target to be achieved by the end-of-the-project (coloured yellow). The consultant then completed the Achievement Rating column by assigning the rating for the project objective and outcomes based on the progress made towards the Mid-Term targets and end-of-the-project targets shown under the relevant indicators using the 6 point rating scale. Then, the consultant completed the Justification for rating column with a brief explanation why each rating was assigned by comparing the Mid-Term Level & Assessment column with the Mid-Term target and end-of-the-project target columns, using the target rating scale. Finally, the consultant rated the project results and description of the associated achievements in MTR Ratings and Achievement Summary Table.

1.3.1.2 Primary data collection

In consultation with the UNDP CO, MTR process commenced discussion with the NBC, MSP and Bio-Bhutan in accordance with the agreed travel itinerary (Annex 6). The heads and office bearers of these institutions were consulted and interviewed with the MTR questionnaires. In addition, the consultant conducted field missions to the project pilot sites; Dzedokha in Lokchina Gewog under Chhukha Dzongkhag, Dagala (Chamgang) under Thimphu Dzongkhag and Namther in Langthel under Trongsa Dzongkhag for interviews and direct observations and interaction with the ABS communities.

1.3.1.3 Participatory Rural Appraisal

Discussion with NBC, MSP and Bio-Bhutan revealed that their respective pilot sites are managed by genetic resource management groups. They are the primary beneficiaries, who make decisions on cultivation, harvesting, processing, marketing and benefit-sharing from access to a specific genetic resource. Key informants both men and women from the decision-making group (chairman, secretary, treasurer, members and non-members) were interviewed on ABS project awareness, training, social and economic benefits, decision-making, consensus on PIC and benefit-sharing, strengths, weakness and opportunities (Annex 4). A total of 18 project beneficiaries were interviewed constituting 12 women aged 36 ± 8 (SD) years and 6 men aged 35 ± 8 (SD) years. ABS implementation has progressed at various levels of implementation at the 3 pilot sites. Accordingly, lessons learned and emerging good practice were documented interviewing key informants, direct field observation and interaction with the ABS communities and taking digital photos.

1.3.2 Data analysis

Qualitative data solicited from the key informants were entered in Excel sheets and exported to the Statistical Package for Social Sciences (SPSS). Frequencies and percentages were calculated from the responses of the interviewees. The findings were illustrated with tables and graphs for communication under the relevant section of the MTR report.

1.3.3 MTR limitations

The field mission was only a snapshot of pilot ABS sites and did not allow the collection of details. The Dagala communities under pilot site II (2280-4713m) were consulted at a lower elevation (Chamgang) due to the transhumant herding lifestyle practiced during the winter. Nevertheless, the consultant used a triangulation approach to collecting a mix of data using participatory key informants, group interviews, direct observations and field visits and validated the information from the document reviews. The MTR findings are unbiased, rigorous and conducted in compliance with the United Nations Evaluation Group Ethical Guidelines for Evaluation (Annex 7).

1.3.4 MTR Report Structure

The MTR Report is structured into five sections. The executive summary gives the project information table, summarizes brief project description, project progress, MTR rating and achievement table and, concise conclusion and recommendation. The first section describes introduction, project background, the purpose of MTR and its objectives, MTR scope, approach and methodology, data analysis and MTR limitations. The second section describes the project and its background/development context, problems that the project addresses: threats and barriers targeted, project description and strategy, description of pilot sites, project implementation, project board and management arrangement, project timing, milestones and, stakeholders and their role. The third section describes the main findings on the project design and strategy, RF/LF, progress towards results and ratings. The fourth section describes the project implementation and adaptive management. The fifth section describes on the sustainability and the sixth section describes conclusion and recommendation followed by annexes.

2 PROJECT DESCRIPTION AND BACKGROUND CONTEXT

2.1 Development context

The project objective and scope are relevant to the following national development policies, priorities and programmes of the Royal Government of Bhutan.

Constitution of the Kingdom of Bhutan: The article 5 of the Constitution stipulates that ‘every Bhutanese is a trustee of the Kingdom’s natural resources and environment for the benefit of present and future generations.’ It charges the RGoB and individuals to; i) protect, conserve and improve the pristine environment and safeguard the biological diversity of the country, ii) prevent pollution and ecological degradation, iii) secure ecologically balanced sustainable development while promoting justifiable social and economic development and, iv) ensure a safe and healthy environment (RGoB, 2008). The constitution also charges to ensure a minimum of 60% of the total geographical area under forest cover at all time.

Gross National Happiness (GNH) is an overarching policy of Bhutan's development pathways (GNHC, 2013). It articulates that spiritual and cultural development is central to social, economic and environmental development. GNH has four pillars; i) Sustainable and Equitable Socioeconomic Development, ii) Preservation and Promotion of Culture, iii) Conservation and Sustainable Utilization and Management of the Environment and, iv) Promotion of Good Governance.

The RGoB's 11th FYP 2013-2018 aims to achieve Self-Reliance and Inclusive Green Socio-Economic Development (GNHC, 2013). It seeks to achieve the national development outcome through progress on sixteen National Key Results Areas (NKRAs). To achieve the NKRAs, there are Sector Key Result Areas (SKRAs) and Dzongkhag Key Result Areas (DKRAs) measured through their respective KPIs (Key Performance Indicators). The project contributes towards achieving the following NKRAs:

- NKRA 1: Sustained economic growth;
- NKRA 2: Poverty reduced and MDG Plus achieved;
- NKRA 6: Indigenous Wisdom, Arts and Crafts Promoted for Rural Livelihood;
- NKRA 7: Carbon neutral/green & climate resilient development;
- NKRA 8: Sustainable utilization and management of natural resources;
- NKRA 12: Democracy and Governance Strengthened;
- NKRA 13: Gender-friendly Environment for Women's Participation.

Economic Development Policy 2010 (EDP)

The Economic Development Policy launched in 2010 enhances the productive capacity of the economy and provide strategic direction for economic development by 2020. It envisions promoting a green and self-reliant economy sustained by an information technology enabled knowledge-based society. The strategies are; diversification of economic base with minimum ecological footprint, harnessing and value-addition to natural resources in a sustainable manner, increasing and diversification of exports, promoting organic and industries branding Bhutan and reduction of fossil fuels.

The MoAF 11th FYP 2013-2018

The Renewable Natural Resources (RNR) Sector key objectives are; i) Enhanced Food and Nutrition Security, ii) Improve Rural Livelihood, iii) Accelerate and Sustain RNR Sector Growth, and iv) Promote Sustainable Management and Utilization of Natural Resources (GNHC, 2013; MoAF, 2013c). The project contributes to RNR Sector SKRAs:

- Generate additional rural employment opportunities and increase mean annual rural household cash income;
- Accelerate RNR Sector Growth through Commercial Farming;
- Enhance Conservation of Plant and Animal Genetic Resources and Natural Heritage Sites;
- Enhance Sustainable Land and Biodiversity Resource Management.

The RNR sector strategies are targeted and commodity focused approach, a transition from subsistence to commercial agriculture, enabling environment and promotion of private sector participation and contract farming.

National Biodiversity Strategies and Action Plan (NBSAP) 2014 (NBC, 2014a) identifies issues, threats, gaps and opportunities for biodiversity conservation. Guided by the review of erstwhile Biodiversity Action Plans, national development priorities and Aichi Biodiversity Targets have identified 20 national targets through a multi-stakeholder consultative process: The relevant targets are:

- National Target 1: By 2018, at least 60% of the population is aware of the values of biodiversity and steps they can take to conserve and use it sustainably;
- National Target 2: By 2018, national capacity is established for valuation of biodiversity and ecosystem services to integrate into the national development planning and policy making process and national accounting system, as appropriate;
- National Target 4: By 2020, relevant stakeholders adopt the principle of sustainable production and consumption of natural resources and have kept the impacts of use of natural resources well within safe ecological limits;
- National Target 7: Areas under agriculture and forestry including rangeland are managed through the adoption of sustainable management practices, ensuring conservation of biological diversity;
- National Target 10: By 2020, potential impacts of climate change on vulnerable ecosystems identified and adaptation measures strengthened;
- National Target 12: By 2020, the information on conservation status of prioritized taxonomic groups is made available and actions are taken to improve the status of prioritized species;
- National Target 13: By 2020, the genetic diversity of key cultivated plants and domesticated animals, including that of wild crop relatives are documented and conserved;
- National Target 16: By 2015, the Nagoya Protocol implemented through National ABS legislative, Administrative, and Institutional Framework consistent with the Nagoya Protocol;
- National Target 17: By 2015, the revised National Biodiversity Strategy and Action Plan is adopted as a national guiding document for effective biodiversity management;
- National Target 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;
- National Target 19: By 2020, science-based knowledge and technologies related to biodiversity are generated, improved, made accessible and applied where appropriate.

National Forest Policy is an overarching policy for forest management and nature conservation (MoAF, 2011). The project contributes directly towards the goal of Bhutan's forest resources and biodiversity is managed sustainably to produce a wide range of social, economic and environmental goods and services for the equitable benefit of all citizens and natural environment while still maintaining a minimum of 60% of the land under forest cover. It will also contribute towards the policy objectives:

- Manage Bhutan's forests for sustainable production of economic and environmental goods and services and to meet the long-term needs of society;
- Manage Bhutan's production forests for sustainable supply of timber, other forest products and environmental goods and services and to meet the long-term needs of society;
- Maintain species persistence and ensure long-term sustainability of Bhutan's biodiversity, ecosystem services, natural habitats and cultural heritage through a

network of protected areas, biological corridors and management of other parts of the forest landscape for positive environmental outcomes;

- Empower rural communities to manage forests sustainably for socioeconomic benefits, poverty reduction and to contribute to overall sustainable forest management at national level.

Convention on Biological Diversity (CBD)

Bhutan signed the CBD in 1992 and became a party in 1995. CBD Article 1 states “conservation of biological diversity, the sustainable use of its components and the fair and equitable sharing of the benefits arising out of the utilization of genetic resources, including by appropriate access to genetic resources and by appropriate transfer of relevant technologies taking into account all rights over those resources and to technologies, and by appropriate funding.” Article 6 charges conservation and sustainable use of genetic resources by developing national strategies, plans and programs consistent with the convention. Article 15: Access to genetic resources charges the contracting party to take legislative, administrative, or policy measures, as appropriate, in accordance with article 16 and 19 and, where necessary through the financial mechanism, established by article 20 and 21 with the aim of sharing in a fair and equitable way of research and development and benefits arising from the commercial and other utilization of genetic resources with the contracting party providing such resources.’

Nagoya Protocol

Bhutan signed Nagoya Protocol in September 2011 and ratified in 2013. The project directly implements the protocol objective of “fair and equitable sharing of benefits arising from the utilization of genetic resources, including by appropriate access to genetic resources and by appropriate transfer of relevant technologies taking into account all rights over those resources and to technologies, and by appropriate funding, thereby contributing to the conservation of biological diversity and the sustainable use of its components.”

2.2 Project Description and Strategy

The project was launched with the objective to develop and implement a national ABS framework, build national capacities and facilitate the discovery of nature-based products. It implements three synergistic outcomes: i) an operational national regulatory and institutional framework on ABS; ii) strengthened stakeholder capacity and awareness for the implementation of the national ABS framework; and, iii) 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. The project objective is being achieved through the implementation of three synergistic outcomes with outputs:

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, amended Biodiversity Act 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:

- 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.

2.3 Project Implementation Arrangement

The project is implemented by the National Biodiversity Centre under the Ministry of Agriculture and Forests in collaboration with its implementing partners; Menjong Sorig Pharmaceuticals, Department of Traditional Medicine Services under Ministry of Health and Bio-Bhutan-a Private Sector Enterprise (Fig. 1). The Project Steering Committee (PSC) provides high-level management decisions and guidance required for implementation of the project including endorsement and approval of annual work plans and any other matters outside the purview of the project management.

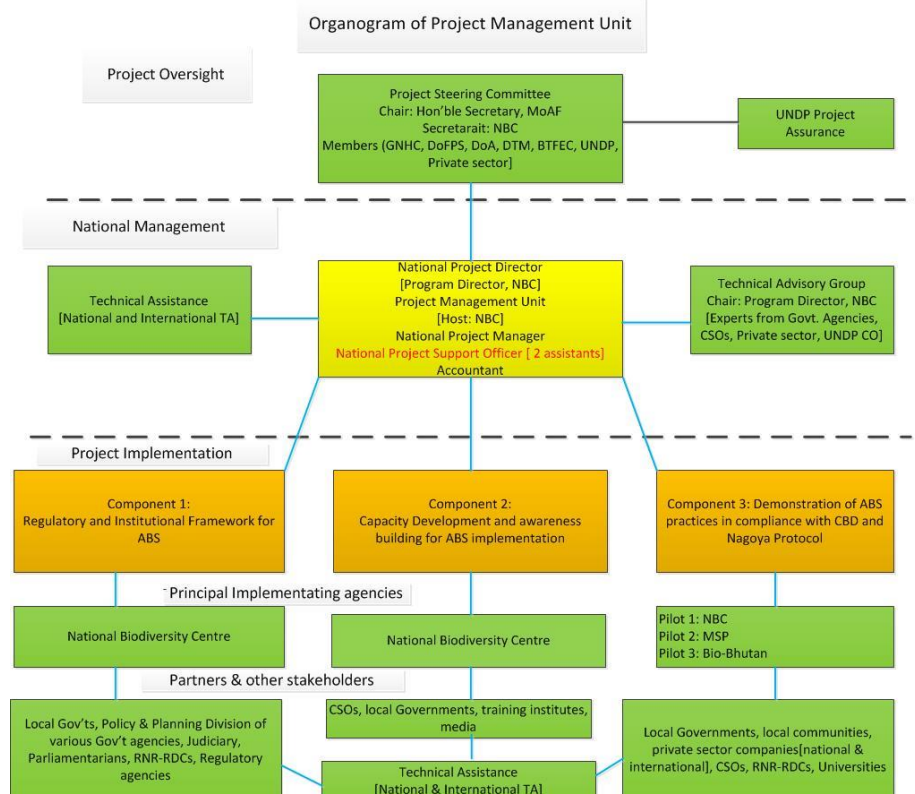


Figure 1. Organogram of Project Management

The Secretary, MoAF chairs the PSC Meeting, which consists of senior representatives from GNHC Secretariat, Department of Forest and Park Services (DoFPS), Department of Agriculture (DoA), Department of Traditional Medicines (DTMS), Bhutan Trust Fund for Environmental Conservation (BTFEC), UNDP CO and Bio-Bhutan. The Programme Director of NBC is the Project Director and Member Secretary to the PSC.

At the operational level, the project is technically guided by a Technical Advisory Group (TAG) chaired by the Project Director. The TAG consists of multi-disciplinary professionals primarily members of the existing Scientific Review Committee established for the ABS Agreements. They include experts from the DoA, DoFPS, Department of Livestock (DoL), Division of Agriculture Marketing and Cooperatives (DAMC), Policy and Planning Division (PPD) of the MoAF, MSP, Intellectual Property Division of Ministry of Economic Affairs and NBC. Additional members are Bio-Bhutan and UNDP CO. The key responsibilities are: to ensure the technical soundness of the planned activities; promote inter-institutional coordination and synergy; guidance and/or clarification on technical and inter-institutional issues; ensure the project activities are directed towards outcomes and outputs, and review and endorse proposals for ABS schemes.

Project Management Unit: The PMU is responsible for overall coordination with other implementing partners for the delivery of project outcomes, outputs, and activities to achieve the project objective in a timely and cost-effective manner. PMU consists of a National Project Director responsible for the operational direction, supervision and management of the project. The National Project Manager (NPM) is the head of Bio-Prospecting Division under the NBC responsible for coordination, monitoring and reporting of project activities. The NPM is supported by the Project Support Officer (PSO) responsible for project administration and day-to-day management including coordination of communication and awareness-raising activities and the Project Accountant responsible for the management of project funds and expenditures. The PMU is directly responsible for the implementation of all the activities pertaining to project outcome 1 and 2 with output 1.1, 1.2, 1.3, 2.1, 2.2 and 2.3 and ABS pilot scheme implementation under output 3.1.1 and output 3.2 of outcome 3.

MSP is responsible for the implementation of pilot ABS site II (Fig. 2) as output 3.1.2 under outcome 3. Bio-Bhutan is responsible for the implementation of pilot ABS site III as output 3.1.3 under the outcome 3. The project commissioned in October 2014 and closes on September 2018 as planned in the project document. The 3 pilot demonstration sites for ABS implementation are: 1) Dzedokha village in Lokchina Gewog under Chukka Dzongkhag; 2) Dagala Gewog under Thimphu Dzongkhag; and, 3) Namther and Dangdung villages in Langthel Gewog under Trongsa Dzongkhag.

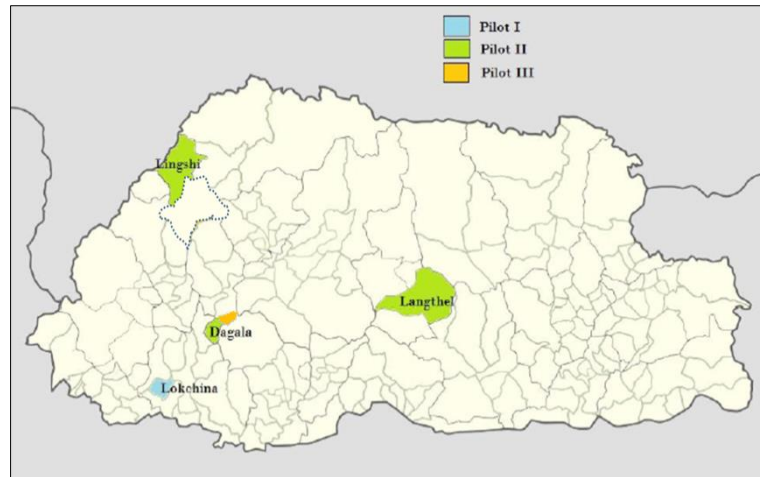


Figure 2. Pilot ABS sites under the project

Pilot Site I

The Dzedokha village in Lokchina Gewog under Chukka Dzongkhag is located in the south west of the country. It is populated with 400 households with an estimated population of 2,672 persons (NSB, 2005), out of which, 84% were women. Dzedokha is accessible by a farm road during winter; however, during monsoon, the road is not motorable due to landslides. The altitude ranges from 800-1800m above sea level. The climate is sub-tropical with hot and humid summers and cool and dry winters. Forest resources are used for construction timber and firewood for cooking and a wide array of other plants for domestic use. There are 7 community forests catering to the subsistence needs such as timber, fuel wood, fodder and, poles. The economy is agriculture-based with cardamom, ginger and orange as the main livelihood sources.

Pilot Site II

The Namther village in Langthel Gewog under Trongsa Dzongkhag is the II ABS pilot site administered by MSP. Langthel Gewog consists of 5 chiwogs and 20 villages with 424 households with a total population of 2,637 (71% women). The Gewog covers 508 km² with 78% forest cover. The economy is subsistence-oriented with agriculture as the main livelihood. MSP collaborates with Namther Throgmen Tshogpa and Dangdung Menrig Tshogpa consisting of 40 and 30 households, respectively in the implementation of ABS pilot activities. The Trongsa- Gelephu highway passes through the two villages transforming the subsistence economy to a cash-earning economy with roads, electricity, communication, education, and basic health units in place. The rapid change in the pace of development fueled by the Mangdechu Hydroelectric Project is likely to bring about the negative impact to the local environment endowed with rich biological resources. The communities have a long tradition of collection and use of 47 different medicinal plants as an active ingredient in the production of traditional medicines (Dorji, 2015). In view of the importance of medicinal plants to the communities, MSP has identified Namther and Dangdung villages in Langthel Gewog as pilot sites under the project for conservation and sustainable utilization of medicinal plants.

Pilot Site III

The Dagala Gewog is the third ABS pilot site administered by Bio-Bhutan. Located in the south of Thimphu Dzongkhag, Dagala Gewog covers an area of about 85km² with an altitude ranging from 2280-4713 meters above sea level. There are 41 households scattered in the landscapes and transhumant herding is the livelihood of the communities. The Dagala communities collect many medicinal herbs, including *Rhododendron anthopogon* flowers for making traditional medicine and leaves as an ingredient for the manufacture of incense. Other important medicinal plants collected are *Nardostachys grandiflora* and, *Picrorhizza sp.*

2.4 Project timing and milestones

The project implementation timing and milestones since the inception workshop are given below (NBC, 2014b; 2016c).

Timeline	Milestones
PMU 22 September 2014	Signing of the Project Document on Implementation of the Nagoya Protocol on Access to Genetic Resources and Benefit-Sharing in Bhutan
30 October 2014	PSC constituted and First PSC Meeting held in conjunction with the Project Inception Workshop
30 October 2014	The meeting endorsed PSC, Technical Advisory Group/Scientific Review Committee and PMU and their role & responsibilities and frequency of PSC meeting (once a year)
30 October 2014	Approval of Annual Work Plan and Budget (October-December 2014 and January 2015-June 2016 Rolling Work Plan) and Project Work Plan 2014-2018
30 October 2014	Project Managers of Implementing Partners identified and MOU on Implementation modalities signed between NBC and MSP and Bio-Bhutan
04 December 2014	Project Support Officer recruited in the PMU by NBC
2014 - 2015	ABS awareness, TK documentation, procurement of furniture and equipment for PMU and community mobilization in the ABS pilot sites
2014 – 2015/6	ABS Policy approved on 7 th August 2015, 1 st draft Biodiversity Bill of Bhutan 2016 completed and drafting of the Biodiversity Regulations commenced
2014 - 2015	Formed Dzedokha Farmers' Group and introduced them on the Farmers' Group Concept and cultivation of <i>Zingiber cussumnar</i> under the pilot site I
2014 - 2015	NBC and MSP and Bio-Bhutan staff trained and exposed to ABS concept and mechanism and bio-prospecting technique
2014 - 2015	NBC completed ABS Perception Baseline Study
2014 - 2015	HPLC equipment procured and installed with UNDP support
2014 - 2015/6	TK Documentation and Development of TK Database started
2014 - 2015/6	Conducted ABS sensitization programs and TK documentation in 67 Gewogs
MSP 2014 – 2015	Successful signing of MOU between DTMS and Mae Fah Luang University, Thailand on ABS
2014 – 2015	Conducted Seminar on Cosmetics and Toiletry as well as training of 30 participants on Toiletry and Fragrance Science in collaboration with Mae Fah Luang University
2014 – 2015/6	Six officials trained in the development of creams, essences and fragrances in collaboration with Mae Fah Luang University; progress on trial production and R&D; Products under trial production: Essence & Fragrance: Massage oil, Candle, Room freshener; Cosmetic and Toiletries: Herbal Soap, Peel-off face mask, Lip Balm, Anti-wrinkle and Anti-Fungal Balm.
2014 – 2015/6	3 ABS consultations and sensitization held with Dagala, Dangdung and Namther Communities following PIC with ILCs; the Management plan was drawn and operational
2014 – 2015/6	Signing of Scoping Agreement with NBC as per an Interim ABS Policy 2015
2016	Conducted workshop and study tour for the Lingshi Community groups on ABS regime, sustainable collection and post-harvest handling.
Bio-Bhutan 2014 - 2015	Field reconnaissance and inventory of <i>Rhododendron anthopogon</i> in Soe, Naro, Lingzhi and Dagala and identification of Dagala as pilot site
2014 – 2015/6	Conducted ABS awareness; Resource Assessment and Development of manuals/guidelines on sustainable harvest and distillation of <i>R. anthopogon</i> to Dagala communities in collaboration with technical assistance from Nepal

2014 – 2015	Successful completion of capacity building Study Tour to Nepal on Essential Oils for the Dagala Farmers Group representatives and Bio-Bhutan staff
2014 – 2015	Trial Production and Signing of Scoping Agreement with NBC as per an Interim ABS Policy 2015

2.5 Project stakeholders

Outcome/outputs	Stakeholder	Role in the project
Outcome 1: An operational national regulatory and institutional framework on ABS		
Output 1.1: An approved national ABS Policy in place and disseminated	PPD/Ministry of Agriculture and Forests	Review of draft ABS Policy and endorsement for submission to GNHC and Lhengyel Zhuntshog (Cabinet) for onward review and final approval.
	Gross National Happiness Commission	Review of draft ABS Policy and feedback and securing final approval of Lhengyel Zhuntshog.
	Scientific Review Committee [DoA, DoFPS, DoL, DAMC, PPD of MoAF, MSP, Intellectual Property Division of MoEA and NBC	Review of the comments from MoAF and GNHC and input to NBC to address these comments.
	Lhengyel Zhuntshog	Review and Approval.
Output 1.2: Biodiversity Rules and Regulations Developed and Promulgated in compliance with the interim ABS Policy, Biodiversity Act and Nagoya Protocol	PPD of all relevant Govt. Ministries and agencies, representatives from the Parliamentary Environment Committee, representatives from the Central Judiciary, CSO (RSPN, Tarayana Foundation), Private Sector and Academia, Regulatory agency (BAFRA & DoFPS)	Review of, and feedback on, the process, plan and skeletal framework for the Biodiversity Regulations at the National Inception Workshop, and subsequently review of, and feedback on, iterative draft of the Biodiversity Regulations circulated in hard copy as well as final draft presented at the National Consultation
	Dzongkhag officials from agriculture, forestry, livestock development and environment sectors, Dzongkhag, judiciary, protected area management authorities, researchers in the natural resources management, academia from colleges and training institutes, and local business community involved in biodiversity use.	Participation and inputs at the regional consultative workshops on the formulation of Biodiversity Regulations.
	Regional RNR Research and Development Centres (Yusipang, Bajo, Jakar & Wengkhar)	Collaboration in the organization of regional consultative workshops on the Biodiversity Regulations.
Outcome 1.3: Institutional mechanism for ABS established and operational	BAFRA, DoFPS, and other relevant regulatory agencies	Coordination and collaboration in setting up an institutional mechanism for the implementation of Biodiversity Regulations for ABS implementation.
Outcome 2: Strengthened stakeholder capacity and awareness supports an implementation of the national ABS framework.		
Output 2.1: Upgraded facility and staff skills for bio-prospecting laboratory work and TK documentation	Menjong Sorig Pharmaceuticals (besides NBC)	Recipients of training on bio-prospecting laboratory techniques for the bio-activity test up to the level of fractionation, and subsequent technical cooperation in bio-prospecting laboratory work.
	Regional RNR Research and Development Centres	Technical cooperation and information/knowledge-sharing.
	Local Governments (Dzongkhag	Mobilization of local communities for

	and Gewog Administrations)	TK survey and documentation.
	Local communities	Holders of TK.
Output 2.2: Improved technical capacity for implementing ABS activities	Training institute (College of Natural Resources and Ugyen Wangchuck Institute for Conservation and Environment	Collaboration in organizing training programs related to ABS.
Output 2.3: Increased awareness of ABS and associated national regulatory and institutional framework for a wide range of people	Training institute (College of Natural Resources and Ugyen Wangchuck Institute for Conservation and Environment)	Potential collaboration in organizing sensitization programs related to ABS.
	Regional RNR Research and Development Centres	Potential collaboration in organizing sensitization programs related to ABS.
	Civil Society Organization (RSPN and Tarayana Foundation)	Potential collaboration in organizing sensitization programs related to ABS.
	Local Governments (Dzongkhag and Gewog Administrations)	Mobilization of local communities for sensitization programs.
	Media agencies (Bhutan Broadcasting Services and press companies)	Planning and dissemination of mass media program on ABS.
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 through ABS agreements.		
Output 3.1: Three pilot ABS agreements/schemes compliant with the approved ABS Policy and Nagoya Protocol developed and operationalized.	National Biodiversity Centre	Implementation of one of the pilots ABS agreements/schemes.
	Menjong Sorig Pharmaceuticals	Implementation of one of the pilots ABS agreements/schemes.
	Bio-Bhutan	Implementation of one of the pilots ABS agreements/schemes.
	Nimura Genetic Solutions	Potential international collaborators for the pilot ABS agreements/schemes.
	Quantum Pharmaceutical Limited	Potential international collaborators for the pilot ABS agreements/schemes.
	Primavera Life, GMBH, Germany	Potential international collaborators for the pilot ABS agreements/schemes.
	Local Governments (Dzongkhag and Gewog Administrations)	Mobilization of local communities and facilitation of participatory planning for the pilot ABS agreements/schemes.
Output 3.2: Knowledge resources emanating from Bhutan's experience of ABS are developed and disseminated	Private Consulting Firms	Knowledge resource development research and studies.
	Regional RNR-RDCs	Potential collaboration in knowledge resource development research and studies.
Project Management and Co-financing		
National Biodiversity Centre, MoAF	The PMU will be housed in the NBC for the overall project management and coordination, including monitoring of project progress and reporting of project implementation. NBC will coordinate disbursement of funds to other implementing partners as per approved Annual Work Plan.	
Gross National Happiness Commission Secretariat	Overall monitoring of the UNDP/GEF/NPIF funds and ensure that project is in accordance with the national policies.	
UNDP CO and A/P Regional Office	Oversight and monitoring of the GEF International Implementing Agency, backstopping in monitoring and evaluation matters, coordination of delivery of UNDP/GEF/NPIF funds and Co-financing.	
Bhutan Trust Fund for Environmental Conservation	Co-financing via related projects.	
European Union RNR Sector Support Project	Co-financing via NBC implementation of the project.	
Chanel, Nimura Genetic Solutions, BBPL	Co-financing via private sector investments and in-kind support under NBC agreements.	
GRPI, ITPGRFA, GCCA	Co-financing via NBC implemented project	

3 FINDINGS

3.1 Project Strategy and Design

3.1.1 Problems that project addresses: threats and barriers targeted

The project addresses the biodiversity threats, root causes and impacts, which are relevant and priority for the RGoB. Bhutan faces a wide range of issues that threatens its biological wealth and ecological integrity. These threats emanate from human-induced disturbances on land use and land cover changes from rapid urbanization and modernization, unsustainable harvesting of genetic resources fueled by a transition from subsistence-based agrarian economy to consumption-based cash economy exacerbated by externalities e.g., climate change.

Conversion of forest land to non-forests due to rapid infrastructure development such as hydropower and transmission lines, road network and commercial horticultural expansion, and mining and quarrying are persistent conservation challenges. Unsustainable harvest of forest-based genetic resources (wood, NWFPs, high-value medicinal and aromatic plants, forest foods and others) lead to degradation of forests quality and loss of species. As a result, increasing scarcity in the collection of forest products necessitates long distance travel by local communities. For example, bamboo and canes, mushrooms and ferns, which were once abundantly available near villages in the past, have to be collected from far-flung places taking hours of walk. Illegal wildlife poaching and trade is prevalent, particularly along the transboundary landscapes. The key animal species poached are; musk deer, tigers, leopards, and *Ophiocordyceps sinensis* (Cordyceps) that have high value and lucrative oriental markets. Forest fires are common and widespread and risky in the event of a prolonged drought spells and soaring temperatures, particularly in the inner dry valleys of Bhutan. The consequences are burning of wild plants and animals resulting in habitat degradation and fragmentation pushing species to the brink of extinction. The underlying challenges are the exponential population growth and climate change. With the growth rate of 1.3% per annum, the current population is projected to be doubled by 2059 (UNDP/GEF/RGoB, 2014). Climate change increases temperature and precipitation anomalies increasing the risk of loss of wild and agro-biodiversity at genes, species and ecosystem level.

To address the wide range of biodiversity threats and impacts, the project document rationalizes to enhance the social and economic value of biodiversity conservation through a science-based access to genetic resources and commercialization and benefits-sharing in a fair, equitable and sustainable manner. However, the challenges highlighted to achieving the long-term vision are sub-optimal national policy and institutional framework. Although Bhutan enacted the Biodiversity Act of Bhutan in 2003 providing the legal framework on bio-prospecting and ABS progress was slow due to the non-existent of ABS policy and regulatory framework to concretize a legally binding ABS mechanism between providers and users of genetic resources. Bhutan has limited technical and legal expertise, experience and capacity (including laboratory facilities) for establishing and managing a comprehensive ABS regime in coordination and collaboration with stakeholders at the national, local and international level. Strengthening the institutions and technical capacity to implement ABS policy, ensuring competence for monitoring bio-prospecting projects and value-addition of rich genetic resources is still a priority. In this context, access to the state-of-the-art biotechnology and capacity building for research and developing commercially important nature-based products is crucial. ABS is a new concept and national stakeholders virtually lack experience

and expertise in the operationalization of the ABS agreements in compliance with the Nagoya Protocol (CBD, 2011).

The Project document is well written, structured and comprehensively discusses the current and future biodiversity threats, root causes and barriers targeted in the section 3.1.1.

In order to address these issues, the project's alternative approach is to enhance the social and economic value of biodiversity through a science-based access to genetic resources for research and commercialization and tangible and intangible benefits-sharing in a fair and equitable basis and concomitantly conserve biodiversity.

The project approach outlines complementary and synergistic pathways to achieve research, commercialization and conservation goals. To realize the goal, the project document underscores challenges due to sub-optimal national policy and institutional framework, limited institutional and technical capacity and, lack of experience in developing and implementing ABS agreement of the national and local project stakeholders.

The project objective of developing a policy and regulatory framework, building national capacities of implementing partners for the research and commercialization of nature-based products is highly relevant. To achieve the objective, the outcome 1: output 1.1, 1.2, 1.3 and outcome 2 output 2.1, 2.2, 2.3 and outcome 3 output 3.1 and 3.2 are highly relevant. These outcomes and *only..if* their respective assumptions hold true, the project objective is likely to be achieved. Hence, it is important to examine the *zig-zag* horizontal logic using the objective and outcomes and their corresponding assumptions check. The project RF presents important assumptions against each outcome to achieve the project objective.

The project objective and *only..if* the assumption on “Government is fully committed to the conservation and sustainable use of the country's biological resources and the introduction of national ABS framework” is met, then, the project goal of contributing to conservation and sustainable use of globally significant biodiversity in Bhutan is realizable. This assumption is still valid as the RGoB is committed to achieving the conservation and sustainable use of country's biological wealth under the NBSAP 2014, MoAF and RGoB's 11th FYP.

Similarly, the outcome 1, 2 and 3 *only.. if* the assumption of “MoAF and Royal Civil Service 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 programme as projected in the 11th FYP and there will be little or no turnover of staff and, key stakeholders are willing to participate in this project and there is consensus to go ahead with the ABS agreements,” respectively, then, the project objective is achievable. “More staff will be added to the bio-prospecting program as projected in the 11th FYP and there will be little or no turn-over of the staff” has met with little success due to the HRD ceiling in line with the RGoB policy of compact and efficient civil service system and contractual nature of recruitment. The PMU is manned by 5 officials and staff (Project Director, Project Manager, Project Accountant and 2 assistants) who have twin responsibilities with the ABS project and RGoB. The 3 additional staff (2 lab assistants and 1 ABS assistant) for the bio-prospecting program was contracted using the Chanel co-finance on a conditional basis, however, preventing staff turn-over has become an uphill task. In view of the difficulty in meeting this assumption, it is recommended to change to *additional staff requirement to the bio-prospecting program will be recruited on contract using the Chanel co-finance* (see Fig. 3).

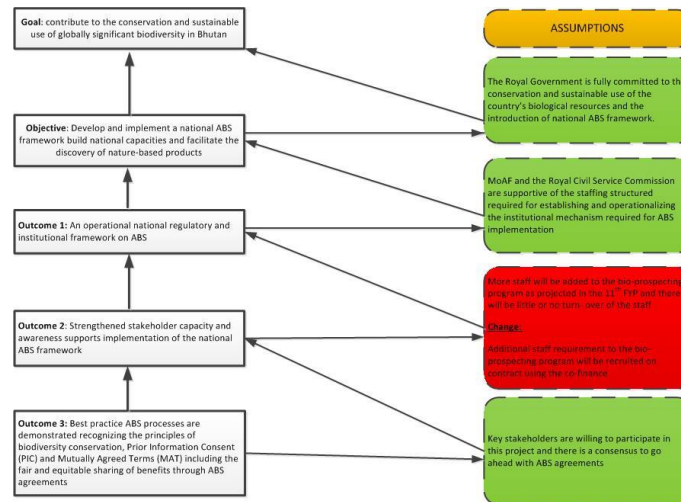


Figure 3. Project strategy and assumption check

3.1.2 Relevance and Country-Ownership

Overall, the project is consistent with the national development policies, programmes and priorities of the RGoB. The project contributes to Article 5 of the Constitution of the Kingdom of Bhutan to; i) protect, conserve and improve the pristine environment and safeguard the biological diversity of the country, iii) secure ecologically balanced sustainable development while promoting justifiable social and economic development and the constitutional mandate of minimum of 60% forest cover.

The project’s goal of conservation and sustainable use of globally significant biodiversity is aligned with the 4 GNH pillars. The access to genetic resources and benefit-sharing through research and commercialization and benefit-sharing on a fair and equitable basis contribute to Sustainable and Equitable Socioeconomic Development; ABS awareness and traditional knowledge (TK) documentation contributes to Preservation and Promotion of Culture; access to genetic resources and sustainable harvest and cultivation contributes to Conservation and Sustainable Utilization and Management of the Environment and the outcome 1 on enabling ABS policy and regulatory framework contributes to promotion of Good Governance in natural resources management.

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.

The project contributes to EDP strategy of diversification of the economic base with a minimum ecological footprint, harnessing and value-addition of natural resources in a

sustainable manner and the Ministry of Health's SKRA: Traditional Medicine Services strengthened in a sustainable manner.

The project directly contributes to RNR Sector 11th FYP goal of Green Economic Growth, inclusive social development, poverty alleviation and climate-smart sustainable management and utilization of natural resources through its SKRAs: Sustainable Management of Natural Resources, Enhance employment and Cash income, and Conservation of Plant and Animal Genetic Resources and Natural Heritage Sites and its KPI inventory of traditional knowledge related to biological resources. The project is also in line with the RNR Sector strategies of commodity focused approach, a transition from subsistence to commercial agriculture, enabling environment and promotion of private sector participation.

The project goal is aligned with the National Forest Policy of forest resources and biodiversity is managed sustainably to produce a wide range of social, economic and environmental goods and services for the equitable benefit of all citizens and natural environment while still maintaining a minimum of 60% of the land under forest cover.

The ABS project directly implements the NBSAP 2014 national targets. National Target 16: By 2015, the Nagoya Protocol is implemented through National ABS legislative, Administrative, and Institutional Framework consistent with the Nagoya Protocol. The project outcome 1 and output 1.1, 1.2 and 1.3 directly contribute to achieving this national target. Under the project outcome 2, output 2.1 and output 2.3 contribute to achieving the national targets 13 & 18. Target 19: By 2020, science-based knowledge and technologies related to biodiversity are generated, improved, made accessible and applied where appropriate is being achieved through project outcome 3 documenting good lessons learned and best ABS practice.

The project directly contributes to NBC's outcome 001: conservation and sustainable utilization of biodiversity enhanced and output 004: enabling legal and policy environment for biodiversity conservation and sustainable use program developed (UNDP, 2014). 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.

3.1.3 UNDP Programming Priorities

The project's rationale is aligned with the UNDAF outcome 1: By 2018, sustainable and green economic growth that is equitable, inclusive, climate and disaster resilient and promotes poverty reduction, and employment opportunities particularly for vulnerable groups enhanced and its output 1.1, 1.3, 1.5, and 1.6. The project outcome 1 and output 1.1, 1.2 & 1.3 also contribute to UNDAF theme 4: Governance and Human Rights, priority 4, outcome 4.1 and 4.3. The project is aligned with the UNDP Strategic Plan 2014-2017 outcome 1: Growth and Development are inclusive and sustainable, incorporating productive capacities that create employment and livelihood for the poor and excluded; and outcome 4: Faster progress is achieved in reducing gender inequality and promoting women's empowerment.

3.1.4 Synergy with other GEF initiatives

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 (BTFEC); 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. BTFEC 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) 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.

3.1.5 Stakeholder Participation and Gender consideration

The Stakeholder Involvement Plan during the project preparation phase was consultative and participatory with a multi-stakeholder participation process. The project's key decision-making stakeholders consulted were; central Government Agencies concerned with the ABS implementation (GNHC, MoAF, NBC, MSP), regulation of biological materials (DoFPS and BAFRA), community representatives, and social and environmental NGOs (Tarayana Foundation/RSPN), national and international research institutions involved in the bio-prospecting programme e.g. NGS Japan, universities and private sector agencies in developing bio-products (Bio-Bhutan).

The project preparation phase identified gender concerns and emphasized the importance of gender mainstreaming under the section National Benefits of the project document. The section highlights that Bhutan is an agrarian economy, where women play a predominant role in the collection of edible plants, firewood and livestock fodder from the forests. The document cited case studies on the preferences and utilization of biological resources between men and women. For instance, the women's criteria for choosing wild plants include ease of collection, processing and preservation and value for households while men consider the volume and commercial value.

The project document cited that women in the RNR sector make up 37.3% whereas men make up 22.6% of the labour force market (the National Labour Force Survey 2012). The project recognizes the dominant role of women in accessing and utilization of the Bhutan's genetic resources and emphasizes ABS approach to take into account information and insights from both men and women. At the local level, the project benefits proportionately more women than men. Considering the gender concerns, the project mentioned of particular attention to the participation of women through employing inclusive approaches and processes in the implementation of planned project activities. For instance, community activities in the ABS pilot sites and benefit-sharing are to be gender disaggregated to benefit proportionately more women. The Stakeholder Involvement Plan mentions gender issues were specifically considered during the national consultation and the design of pilot project outputs.

The project gender strategy recognizes the role of men and women in the Bhutanese context. It cited CBD preamble recognizing the "vital role that the women play in the conservation and sustainable use of biodiversity" and affirms "the need for full participation of women at all levels of policy-making and implementation of biological diversity conservation." Thus, the project strategizes to employ inclusive approaches and processes in the implementation of project activities. For example, an interim ABS Policy 2015 formulation process was multi-stakeholder-driven, consultative and participatory. Similarly, the Biodiversity Bill of Bhutan 2016 and the Biodiversity Regulations was drafted in consultation with relevant stakeholders.

At the implementation level, ABS awareness and training recipients were gender-disaggregated. Gender disaggregated study on attitude and behaviour towards the project activities and benefit-sharing is planned during 2017/18.

Although gender concerns were sufficiently raised in the project preparation phase, project RF/LF did not reflect the gender-disaggregated indicators under the relevant outcomes and outputs. The consultant's review of indicators "SMART" check revealed that indicators were gender insensitive. Accordingly, indicators that need to be monitored for measuring progress towards outcomes and outputs are gender-disaggregated (see Table 2). The project's M&E should examine the benefits of ABS activities and impact on men and women separately. Gender considerations were also sufficiently discussed and emphasized during the PSC meetings to be mainstreamed into project activities.

3.1.6 Examination of project and social and environmental risks

The appropriateness of the project's risks identified in the project document was examined in terms of their risk rating in accordance with the UNDP Social and Environmental Screening Procedures (SESP) and up-to-date minimization, mitigation and management measures (Table 2). The project document identified some minor project risks during the project design

phase. For example, moderate risks identified were “lack of consensus among the stakeholders during the promulgation of detail rules and regulations” at the objective level. The risk rating applied is appropriate at the project preparation phase but the level of risk has been reduced to low by MTR period. Since the project inception, PMU has embarked on a multi-stakeholder (parliamentarians, researchers, farmers, academia, and businessmen) ABS awareness and advocacy program through seminars, workshops, institutional visits, study tours and training of NBC staff and implementing partners (MSP and Bio-Bhutan). As a result, the ABS awareness level has been elevated from low to the moderate level and the risk has been reduced to low. However, the awareness and sensitization program should continue as the ABS concept is relatively new, not only to implementing partners but the public at large in Bhutan.

Under the project outcome 2, the moderate risk of “Government staff turnover, specially trained technical staff, may affect the project negatively” will remain so due to none flexibility in the staff recruitment over and above of HRD ceiling in line with the RGoB policy of maintaining compact and efficient civil service system. Staff turn-over did happen, especially trained staff, but have not affected the project much in terms of implementation. Staff turnover was discussed in the PSC and the committee endorsed replacement of the project focal points and urged the implementing partners to retain the project focal persons as far as possible to ensure the continuity. PMU recruited an additional staff (2 assistants who substituted the Project Support Officer) from the Chanel co-finance on a conditional basis as an adaptive management response to mitigate the risk.

Under outcome 3 “some international partners may prove to be uncommitted to work under Bhutan’s ABS Policy framework.” The risk rating applied is inappropriate and moderate. International companies like NGS, Japan and Philippines-based Company have shown their interests in principle and additional 44% funding commitment from the Chanel to NBC is a clear demonstration of their interests to work under the ABS Policy 2015. However, monetary and non-monetary benefits-sharing depends on the several conditions (e.g. commercialization, markets and cost-benefits) and varying ABS modalities can emerge.

The Social and Environmental Risks identified in the project document (NBC, 2014c) were: “will the ABS project have variable impact on men and women’s ability to use, develop and protect natural resources; 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.”

To address these SESP risks, the project’s outcome 3 ensures that ABS agreements or 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 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 barks, leaves 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 addresses the risk by promoting commercialization and benefit-sharing from the genetic resources to benefit rural women as custodian of genetic

resources across the pilot sites. The SES risks, though negligible, needs monitoring of the moderate category risks for minimization, mitigation and management, if unavoidable.

Table 2. Appropriateness of Project Risks identified in the Project Document and minimization, mitigation and management measures

Project level	Project / SESP Risk	Risk rating at project preparation phase	Risk rating at MTR	Risk minimization, mitigation and management measures
Objective	Potential delay in the approval of draft ABS Policy would delay the development and operationalization of the regulatory and institutional framework	Impact: <i>High</i> ; Probability: <i>Low</i> ; Risk: Low	Impact: <i>Moderate (3)</i> ; Probability: <i>Low (1)</i> ; Risk: Low	The risk rating applied is appropriate but mitigated during implementation through extensive multi-stakeholder consultation with National and Local Governments on ABS Policy formulation, review, feedback and finalization as Interim ABS Policy 2015, Biodiversity Bill of Bhutan 2016, and Biodiversity Regulations in place in compliance with NBSAP 2014 and Nagoya Protocol.
	Lack of consensus among the stakeholders during the promulgation of detail rules and regulations	Impact: <i>high</i> ; Probability: <i>moderate</i> ; Risk: Moderate	Impact: <i>Moderate (3)</i> ; Probability: <i>Low(2)</i> ; Risk: Low	The risk rating applied is appropriate at the inception but reduced to low by MTR period due to multi-stakeholder (parliamentarians, researchers, farmers, academia, business) ABS awareness and advocacy program through numerous seminars, workshops, training. Etc.
Outcome 1	Potential delay in the approval of draft ABS Policy would delay the development and operationalization of the regulatory and institutional framework	Impact: <i>High</i> ; Probability: <i>Low</i> ; Risk: Low	Impact: <i>Moderate (3)</i> ; Probability: <i>Low (1)</i> ; Risk: Low	The risk rating applied is appropriate but mitigated during implementation through extensive multi-stakeholder consultation with National and Local Governments on ABS Policy formulation, review, feedback and finalization as Interim ABS Policy 2015, Biodiversity Bill of Bhutan 2016, and Biodiversity Regulations in place in compliance with NBSAP 2014 and Nagoya Protocol.
	Lack of consensus among the stakeholders during the promulgation of detail rules and regulations	Impact: <i>high</i> ; Probability: <i>moderate</i> ; Risk: Moderate	Impact: <i>Moderate (3)</i> ; Probability: <i>Low(2)</i> ; Risk: Low	The risk rating applied is appropriate at the inception but reduced to low by MTR period due to multi-stakeholder (parliamentarians, researchers, farmers, academia, businessmen) ABS awareness and advocacy program through several seminars, workshops, training, etc.
Outcome 2	Government staff turn-over, especially trained technical staff, may affect the project negatively	Impact: <i>Moderate</i> ; Probability: <i>Likely</i> ; Risk: Moderate	Impact: <i>Moderate (3)</i> ; Probability: <i>Moderately likely (3)</i> ; Risk: Moderate	The risk rating applied is appropriate and moderate. Staff turn-over is likely especially trained staff but have not affected the project much. Additional staff recruitment (2 assistants substituted Project Support Officer) from Chanel co-financing on conditional end-of-the-project stay period is in place.
Outcome 3	Commercial confidentiality restriction may limit information sharing on development process	Impact: <i>Low</i> ; Probability: <i>Moderately likely</i> ; Risk: Low	Impact: <i>Low</i> ; Probability: <i>Moderately likely</i> ; Risk: Low	The risk rating applied is appropriate but low. Implementing partners (NBC, MSP and Bio-Bhutan) have achieved prototypes development (oil, balms, soap, perfume sprays) but commercialization and benefit-sharing through ABS agreements between parties is yet to take place. International partners like NGS have indicated willingness to cooperate with ABS Policy. Nevertheless, project outcomes focus on ABS processes and not on commercial products <i>per se</i> .
	Active ingredients investigated in pilot projects fail to show promise for commercialization	Impact: <i>Moderate</i> ; Probability: <i>Unlikely</i> ; Risk: Negligible	Impact: <i>Moderate(3)</i> ; Probability: <i>Unlikely (2)</i> ; Risk: Low	The risk rating applied is appropriate but low. Implementing partners (NBC, MSP and Bio-Bhutan) have achieved prototypes development (oil, balms, soap, perfume sprays) but commercialization and benefit-sharing through ABS agreements between parties is yet to take place. International partners like NGS have indicated a willingness to cooperate with ABS Policy. Nevertheless, project outcome focuses on ABS processes and mechanism and not on commercial products <i>per se</i> .
	Period of project may be too short to result in bio-discovery despite multiple agreements	Impact: <i>Moderate</i> ; Probability: <i>Moderately likely</i> ; Risk: Moderate	Impact: <i>Moderate</i> ; Probability: <i>Likely</i> ; Risk: Moderate	The risk rating applied is appropriate but reduced to low. The period of project is not short for prototypes development as evidenced from MSP but for commercialization and entering legally binding ABS agreements on monetary benefit-sharing depends on markets and cost-benefit analysis.
	Local communities may not be willing to provide PIC during the lifetime of the project	Impact: <i>Moderate</i> ; Probability: <i>Moderately likely</i> ; Risk: Moderate	Impact: <i>Moderate</i> ; Probability: <i>Slight</i> ; Risk: Low	The risk rating applied is appropriate but reduced to low now. Local communities are willing to provide PIC and enter legally binding ABS agreement depending on the commercialization success of the prototypes developed and benefits arising out of it.
	Some international partners may prove to be uncommitted to work under Bhutan's ABS policy framework	Impact: <i>Moderate</i> ; Probability: <i>Moderately likely</i> ; Risk: Moderate	Impact: <i>Moderate</i> ; Probability: <i>Moderately likely</i> ; Risk: Moderate	The risk rating applied is appropriate and moderate. International companies like NGS, Japan and Philippines-based company have shown their interests in cooperation. Additional funding from Chanel to NBC is a clear demonstration of their interests and commitment to work under Bhutan's ABS Policy. However, monetary and non-monetary benefit-sharing depends on several conditions (e.g. commercialization, markets and cost and benefit analysis) and varying ABS modalities.

3.2 Progress Towards Results

The project RF/LF baseline and end-of-the-project indicators and assessment in terms of SMART¹ have been examined in Table 3. Most indicators are specific, measurable, attainable, realistic and on-track to be achieved by the end-of-project. However, the nature of the project activities is such that women are extensively involved in the implementation of project activities (women dominant user groups in Zingiber cultivation at Dzedokha in Lokchina, harvesting and processing of medicinal plants in Namther in Langthel, Trongsa and Rhododendron oil extraction in Dagala, Thimphu) has rich traditional knowledge on Bhutan's genetic resource availability, collection, harvest, cultivation and management and could proportionately benefit. The ABS project can usher greater positive impact on women's access to genetic resources and benefit-sharing by catalyzing income generation and gender equality and women's empowerment.

For example, under the outcome 2, the indicators on the number of staff with knowledge and skills in specific bio-prospecting laboratory technique using the upgraded facility; percentage of parliamentarians, researchers, academia, local governments and communities, private sector groups and other groups targeted by the project awareness campaign that are aware of the national ABS policy and associated regulatory and institutional framework and; under outcome 3 indicators: number of PIC processes with ILCs implemented in accordance with the planned PIC/community protocol; and percentage of population of ILCs participating in the pilot projects aware of existence, use and option value of the biological resources under their stewardship needs gender disaggregation, monitoring and reporting in the PIR.

The project has already progressed on gender disaggregated reporting on the implementation of certain project activities. For example, PIR (NBC, 2016a) reported that 8 PMU & MSP and Bio-Bhutan laboratory officials (4 men; 4 women) were trained on natural product extraction techniques in 2015 & 2016 in collaboration with NGS, Japan and Chanel PB, France; 31 officials (12 women, 19 men) with 15 from PMU and 16 from MSP and Bio-Bhutan were oriented on the full cycle of ABS regime management through institutional visits, study tours and seminars/workshops improving their knowledge and skills on ABS implementation. This indicator has been surpassed (124% achievement, see Table 3 &4) but additional sensitization will continue as deemed necessary. In view of significant accomplishment, this target needs revision. It is likely that another 20 participants will be trained on the full cycle of ABS regime and the-end-of-the-project target has been revised to a total of 50 participants (see Table 3 for changes).

The ABS awareness workshops and TK documentation were organized in 100 Gewogs covering 9,421 participants (5,374 women and 4,047 men). Gender mainstreaming in the project's RF/LF and its subsequent monitoring and reporting can catalyze broader beneficial development effects in line with the Government policy of mainstreaming gender equality and women's empowerment, income generation, and good governance and poverty reduction in the 12th FYP. The development of ABS policy and regulatory framework are milestones that safeguard and regulate genetic resources for commercial, social and environmental gains contributing the GNH pillars of environmental sustainability and balanced and equitable socio-economic development. ABS awareness, TK documentation and perception studies contribute to the preservation of cultural heritage. The end-of-the-project indicators are all SMART and progress made on some indicators has been significant. The PIR progress

¹ Specific, Measurable, Attainable, Relevant and Time-Bound

validated from a field mission shows that 3 community protocols are in place in line with PIC, MAT process with ILCs implemented at Dzedokha, Dagala and Namther surpassing the end-of-the-target by 200% (see Table 3).

The project objective, outcomes and outputs are clear, realistic and attainable within the-end-of-the-project. However, it is too early to determine the end-of-the-project closing, which depends on the implementation progress. The outcome 1 and its output 1.1, 1.2 and 1.3 has progressed significantly. An interim ABS Policy 2015 and Biodiversity Bill of Bhutan 2016 (MoAF, 2016a) are in place harmonized with the NBSAP 2014 and Nagoya Protocol. The Biodiversity Bill of Bhutan 2016 will be submitted to the Government in the upcoming winter session of 2017 for approval; and Biodiversity Regulations operationalized subsequently for ABS implementation. ABS Institutional Capacity Scorecard and Biodiversity Tracking score increased to 71% and 64% compared to 33% and 34%, respectively at the baseline making significant progress in strengthening institutional and personnel capacities.

The outcome 2 and its output 2.1, 2.2 and 2.3 have progressed satisfactorily as well. PMU procured High-Performance Liquid Chromatography and water deionizer (1 set each), Soxhlet and Clevenger apparatus (2 sets each) laboratory equipment installed and operational. PMU trained 7 technical staff (4 men; 3 women) on bio-prospecting techniques using the equipment. They are competent in the screening of compounds up to a level of fractionation of plant extracts using the upgraded facilities. Further, 8 PMU & MSP and Bio-Bhutan laboratory officials (4 men; 4 women) were trained in natural product extraction techniques in 2015 & 2016 in collaboration with NGS, Japan and Chanel PB, France, respectively. Hands-on training on chromatography and spectroscopy applications was conducted for 30 stakeholders in collaboration with Agilent Technologies, Singapore and Prudent Medi-Tech International, Nepal. NBC identified 714 plant samples, out of which 423 crude extracts, which will be further screened for active compound in early 2017. 31 officials (12 women, 19 men) with 15 from PMU and 16 from MSP and Bio-Bhutan were oriented on the full cycle of ABS regime management improving their knowledge and skills for ABS implementation.

An interim ABS policy was presented to the Environmental Committee of the National Assembly and National Council and, GNH Committee seeking feedback and guidance before approval by the Government.

The baseline perception study on ABS awareness was conducted in 2015. The study covered 346 respondents (321 farmers, business and local governments at Dagala, Lingshi, Langthel, Lokchina and Soe/Naro including 16 parliamentarians and 9 researchers. Baseline findings indicate that 92% of the respondents were unaware of ABS regime. The level of understanding ranged from high among the parliamentarians and researchers to low among local government and farmers. Two seminars for 46 government officials and researchers and 28 academicians were also conducted.

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 have progressed moderately in the pilot sites. Three pilot ABS model: 1) Government to communities in Lokchina and Namther, and Government to Private (Bio-Bhutan) and Community have been operationalized successfully by drawing community protocols and agreements in line with the principles of PIC and MAT. An article on ABS bio-prospecting “A Greening Reality” published in the Happiness Booklet in February 2016.

Posters and brochures (both in English and Dzongkha-national language) were distributed to the participants. These achievements clearly indicate that the project outcomes and outputs are clear and achievable by the end-of-the-project.

Table 3. Baseline and End-of-the-Project's indicators SMART check and revision where targets have been already achieved by MTR period

Objective/ outcome	Baseline indicators	End-of-the-project
Objective	<ul style="list-style-type: none"> Existence and use of regulatory and institutional framework for implementation of ABS in compliance with Nagoya Protocol (SMART) 	<ul style="list-style-type: none"> National ABS Policy approved and regulatory and institutional framework developed and operationalized (SMART).
	<ul style="list-style-type: none"> The level of institutional and personnel capacity for implementation of the national framework as indicated by an increase in the GEF ABS Institutional Capacity Scorecard (SMART). ABS Institutional Capacity Scorecard: 34 out of a possible 69 = 33.33% and BD Tracking Tool score: 16 out of a possible 47 = 34% with basic to moderate capacity in Government (NBC, MSP) and virtually none in private sector (Bio-Bhutan). 	<ul style="list-style-type: none"> Improved institutional and personnel capacity indicated by an increase of at least 25% over the GEF ABS Institutional Capacity Scorecard baseline score (SMART)
Outcome 1	<ul style="list-style-type: none"> Approval of ABS Policy and Biodiversity Regulations and their use in establishing the institutional mechanism for ABS implementation (SMART) 	<ul style="list-style-type: none"> ABS Policy approved within the first year of the project followed by the promulgation of the Biodiversity Regulations encompassing ABS implementation in the second year(SMART)
	Operational national ABS institutional framework indicated by: <ul style="list-style-type: none"> Existence and the number of competitive authorities designated at (national and sub-national level)(SMART) Number of exits/entry points designated for checking ABS information/permits (SMART), Existence of system of internationally recognized certification of origin, compliance and issuance of certificates (SMART) 	<ul style="list-style-type: none"> Competent authorities designated at the national level and if necessary at the sub-national level based on approved Biodiversity Regulations (SMART), A network of 4-5 exits/entry points designated for checking ABS information/permits (SMART), System of internationally recognized certificate of origin and compliance in place and operational(SMART)
Outcome 2	Increased technical capacity for bio-prospecting laboratory analysis by: <ul style="list-style-type: none"> Type and number of equipment procured and installed at the NBC bio-prospecting laboratory facility (SMART); Number of staff with knowledge and skills in specific bio-prospecting laboratory techniques using the upgraded facility (gender disaggregated); Number of crude extracts identified for bio-activity tests and number of compounds fractionated from the extracts (SMART). 	<ul style="list-style-type: none"> Laboratory facility and staff skills will be upgraded bio-activity tests up to a level of fractionation (SMART); 1, 250 crude extracts are preserved in NBC extract library (SMART); Achievement 54% (250 baseline +423 crude extracts up to MTR period) 25 compounds fractionated from the extracts for development of trial products (SMART)
	<ul style="list-style-type: none"> Number of NBC staff and partner agencies with improved knowledge and skills on the full cycle of management (gender disaggregated) 	<ul style="list-style-type: none"> At least 50 staff in NBC and partner agencies have improved knowledge and skills on the full cycle of ABS regime management (target revised to 50 in view of MTR progress of already 31 and 25 at the end-of-the-project target) which is 124% achievement (SMART)
	<ul style="list-style-type: none"> Percentage of parliamentarians, researchers, academia, local governments and communities, private sector groups and other groups targeted by the project awareness campaign that is aware of the national ABS policy and associated regulatory and institutional framework (gender disaggregated) 	<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 (SMART)
Outcome 3	<ul style="list-style-type: none"> Number of pilot ABS agreements developed and operationalized for initial commercialization of trial products (SMART) 	<ul style="list-style-type: none"> At least 3 ABS agreements developed and operationalized for initial commercialization of 3 trial products incorporating PIC, MAT and fair and equitable sharing provisions. The agreements should also include <i>in-situ</i> and <i>ex-situ</i> conservation measures for the concerned biological resources (SMART).
	<ul style="list-style-type: none"> Number of PIC processes with ILCs implemented in accordance with the planned PIC/community protocol (gender disaggregated) 	<ul style="list-style-type: none"> At least one PIC process with ILCs implemented in accordance with the planned PIC /community protocol(SMART) Achievement 200% (Dzedokha + Dagala + Namther)
	<ul style="list-style-type: none"> Number of knowledge resources developed and disseminated(SMART) 	<ul style="list-style-type: none"> At least 3 studies on ABS carried out, published and disseminated (SMART) National seminar on ABS experience conducted in Bhutan (SMART)
	<ul style="list-style-type: none"> Percentage of population of ILCs participating in the pilot projects aware of existence, use and option value of the biological resources under their stewardship (gender disaggregated) 	<ul style="list-style-type: none"> At least 80% awareness level among the participating communities (SMART)

Table 4. Strategic Result Framework/Log frame with gender disaggregated indicators

The project's goal is to contribute to the conservation and sustainable use of globally significant biodiversity in Bhutan					
Objective/outcome	Indicator	Baseline	End-of-project target	Source of information	Risks and Assumptions
Develop and implement a national ABS framework, build national capacities and facilitate the discovery of nature-based products	Existence and use of regulatory and institutional framework for implementation of ABS in compliance with Nagoya Protocol	Draft ABS Policy in place and under review and interim institutional measures in place in anticipation of approval of draft ABS Policy, Biodiversity Act in place but there are no rules and regulation detailing procedures and institutional mechanism for implementation	National ABS Policy approved and regulatory and institutional framework developed and operationalized	ABS Policy document, Biodiversity Regulations document, 11 th FYP review reports Websites of NBC, MoAF and GNHC, Periodic progress reports, Periodic Evaluation Reports	<u>Risks:</u> Potential delay in the approval of draft ABS Policy would delay the development and operationalization of the regulatory and institutional framework Lack of consensus among the stakeholders during the promulgation of detail rules and regulations <u>Assumption:</u> The Royal Government is fully committed to the conservation and sustainable use of the country's biological resources and the introduction of national ABS framework.
	Level of institutional and personnel capacity for implementation of the national framework as indicated by an increase in the GEF ABS Tracking	34 out of a possible 49 = 33.33% Basic to moderate capacity within government agencies but virtually no capacity in the private sector	Improved institutional and personnel capacity indicated by an increase of at least 25% over the GEF Tracking tool baseline score	Periodic progress reports, Project evaluation reports, Training reports, Key Informant Reports	
Outcome 1: An operational national regulatory and institutional framework on ABS Output 1.1: National ABS policy approved and disseminated Output 1.2: Biodiversity rules and regulations developed and promulgated in compliance with the approved ABS policy, Biodiversity Act and Nagoya Protocol Output 1.3: Institutional mechanisms for ABS established and operational					
	Approval of ABS Policy and Biodiversity Regulations and their use in establishing the institutional mechanism for ABS implementation	Draft ABS Policy in place, Biodiversity Regulation not promulgated and existing institutional mechanism are interim and basic	ABS Policy approved within the first year of the project followed by the promulgation of the Biodiversity Regulations encompassing ABS implementation in the second year	Approved policy and regulatory document; Website of NBC, MoAF and GNHC, Periodic progress reports,	<u>Risks:</u> Potential delay in the approval of draft ABS policy would delay the development and operationalization of the regulatory and institutional framework Lack of consensus among the stakeholders during the promulgation of detailed rules and regulations <u>Assumption:</u> MoAF and the Royal Civil Service Commission are supportive of the staffing structured required for establishing and operationalizing the institutional mechanism required for ABS implementation
	Operational national ABS institutional framework indicated by: Existence and the number of competitive authorities designated at (national and sub-national level) Number of exits/entry points designated for checking ABS information/permits, Existence of system of internationally recognized certification of origin, compliance and issuance of certificates	NBC designated as the National Focal Point based on the Government Executive Order No competent authorities designated at national & sub-national level No check points designated for checking ABS information/permits	Competent authorities designated at the national level and if necessary at the sub-national level based on approved Biodiversity Regulations, A network of 4-5 exits/entry points designated for checking ABS information/permits, System of internationally recognized certificate of origin and compliance in place and operational	Interagency coordination meeting reports, Periodic progress reports, Project Evaluation Reports, Official correspondences and Government circulars, internationally recognized certificate of origin and compliance	
Outcome 2: Strengthened stakeholder capacity and awareness supports implementation of the national ABS framework					

<p>Output 2.1: Upgraded facilities and staff skills for bio-prospecting laboratory work and TK documentation Output 2.2: Improved knowledge and skills among the staff of NBC and Partner agencies for ABS regime management encompassing the technical, legal and administrative and social aspects Output 2.3: Increased awareness among various stakeholders for supporting and participating in ABS initiatives</p>					
	<p>Increased technical capacity for bio-prospecting laboratory analysis by: Type and number of equipment procured and installed at the NBC bio-prospecting laboratory facility: Number of staff with knowledge and skills in specific bio-prospecting laboratory techniques using the upgraded facility, Number of crude extracts identified for bio-activity tests and number of compounds fractionated from the extracts</p>	<p>Existing laboratory facility and staff skills cover only crude extraction, 250 crude extracts are preserved in NBC extract library for bioactivity test and no compounds have been fractionated for development of trial products</p>	<p>Laboratory facility and staff skills will be upgraded bio-activity tests up to a level of fractionation; 1, 250 crude extracts are preserved in NBC extract library; 25 compounds fractionated from the extracts for the development of trial products</p>	<p>Direct observation of laboratory facility; NBC extracts library; Interviews of lab staff; Periodic progress reports; Project evaluation reports.</p>	<p><u>Risks:</u> Government staff turn-over, especially trained technical staff, may affect the project negatively <u>Assumption:</u> More staff will be added to the bio-prospecting program as projected in the 11th FYP and there will be little or no turn-over of the staff <u>Change:</u> Additional staff requirement to the bio-prospecting program will be recruited on contract using the Chanel co-finance</p>
	<p>Number of NBC staff and partner agencies with improved knowledge and skills on the full cycle of management (gender disaggregated)</p>	<p>Less than 20 staff have basic and partial knowledge and skills for ABS regime management</p>	<p>At least 25 staff in NBC and partner agencies have improved knowledge and skills for the full cycle of ABS regime management</p>	<p>Progress reports; Project evaluation reports; Training evaluation reports; Interviews of training recipients</p>	
	<p>Percentage of parliamentarians, researchers, academia, local governments and communities, private sector groups and other groups targeted by the project awareness campaign that is aware of the national ABS policy and associated regulatory and institutional framework (gender disaggregated)</p>	<p>The current level of awareness is expected to be extremely low as ABS concept is new. A baseline survey will be conducted for the identified target groups in the first year.</p>	<p>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</p>	<p>Baseline survey and end-of-the-project awareness (see annexe 4 for the methodology)</p>	
<p>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</p>					
	<p>Number of pilot ABS agreements developed and operationalized for initial commercialization of trial products</p>	<p>Two ABS agreements exists that pre-date to Bhutan's ratification of Nagoya Protocol</p>	<p>At least 3 ABS agreements developed and operationalized for initial commercialisation of 3 trial products incorporating PIC, MAT and fair and equitable sharing provisions. The agreements should also include <i>in-situ</i> and <i>ex-situ</i> conservation measures for the concerned biological resources.</p>	<p>ABS agreements; Periodic progress reports; Project evaluation reports</p>	<p><u>Risks:</u> Commercial confidentiality restriction may limit information sharing on development process Active ingredients investigated in pilot projects fail to show promise for commercialization</p>
	<p>Number of PIC processes with ILCs implemented in accordance with the planned PIC/community protocol</p>	<p>Some preliminary engagement with local communities is there but there is no full-fledged processes have been taken</p>	<p>At least one PIC process with ILCs implemented in accordance with the planned PIC /community protocol</p>	<p>ABS agreements; Periodic progress reports; Project evaluation reports</p>	<p>Period of project may be too short to result in bio discovery despite multiple agreements</p>

	Number of knowledge resources developed and disseminated	No Bhutan specific knowledge resources on ABS available	At least 3 studies on ABS carried out, published and disseminated; National seminar on ABS experience conducted in Bhutan	Study reports, Report of the national seminar, Periodic progress reports, Periodic evaluation reports	Local communities may not be willing to provide PIC during the lifetime of the project
	Percentage of population of ILCs participating in the pilot projects aware of existence, use and option value of the biological resources under their stewardship (gender disaggregated)	The current level of awareness expected to be extremely low with the possible exception of those communities already engaged in bio-exploitation initiatives. A baseline survey will be conducted for the identified communities in the first year	At least 80% awareness level among the participating communities	Awareness survey of the participating ILCs, Periodic progress reports, Periodic evaluation reports	Some international partners may prove to be uncommitted to work under Bhutan's ABS policy framework <u>Assumption:</u> Key stakeholders are willing to participate in this project and there is a consensus to go ahead with ABS agreements

3.3 Progress Towards Outcome Analysis

The Project Progress Towards Results Matrix in accordance with the *Guidelines in the Guidance for Conducting Midterm Reviews of UNDP-Supported, GEF-Financed Projects* is given in Table 5. Using the data, Mid-Term Level and Assessment showed that the project objective, outcome 1, 2 and 3 and their indicators have progressed significantly or on target to be achieved by the end-of-the-project (coloured yellow). Significant progress has been made in achieving the indicator on ABS policy and regulatory framework and their use in establishing the institutional mechanism for ABS implementation. This indicator progress has already achieved its end-of-the-project target as indicated by green coloured Mid-Term Level Assessment with Highly Satisfactory (HS) rating.

Similarly, the level of institutional and personnel capacity of PMU, MSP and Bio-Bhutan for implementation of the national ABS framework has been enhanced satisfactorily as indicated by the ABS Institutional Scorecard and Biodiversity TT score of 71% and 64% from 33% and 34%, respectively at the baseline. The ABS Scorecard progress, in particular, has exceeded the end-of-the-project target by 13% (MTR ABS Scorecard of 71% minus 58% (baseline scorecard of 33% plus end-of-the-project target increase of at least 25% over the baseline). Interview with the training recipients revealed that their confidence level in the bio-prospecting techniques including ABS regime has been enhanced with the necessary knowledge and skills. The other indicators under the respective outcomes and outputs are on-track to be achieved by the end-of-the-project period.

Table 5. Progress Towards Results Matrix

Project Strategy	Indicator ²	Baseline Level ³	Level in 1 st PIR	End-of-project Target	Mid-Term Level & Assessment ⁴	Achievement Rating ⁵	Justification for Rating
Objective: Develop and implement a national ABS framework, build national capacities and facilitate the discovery of nature-based products.	Existence and use of regulatory and institutional framework for implementation of ABS in compliance with Nagoya Protocol	Draft ABS Policy in place and under review and interim institutional measures in place in anticipation of approval of draft ABS Policy. Biodiversity Act 2003 in place but there are no rules and regulation detailing procedures and institutional mechanism for implementation	Interim ABS Policy 2015 approved; Biodiversity Bill of Bhutan 2016 finalized in consultation with National and Local Governments to harmonise with ABS Policy 2015 and Nagoya Protocol and will be submitted to Government for approval; and draft Biodiversity Regulations in place.	National ABS Policy approved and regulatory and institutional framework developed and operationalized	Interim ABS Policy 2015 in place and Biodiversity Bill of Bhutan 2016 harmonized with ABS Policy 2015 and Nagoya Protocol and will be submitted to the Government in the winter session of 2017 for approval; and Biodiversity Regulations in place for ABS implementation.	Satisfactory (S)	The project is on-track to achieve all most all the end-of-the-project targets without any major shortcomings. Minor shortcomings are well addressed through adaptive management.
	Level of institutional and personnel capacity for implementation of the national framework as indicated by an increase in the GEF ABS Institutional Scorecard score	ABS Institutional Scorecard 34 out of a possible 49 = 33.33% Basic to moderate capacity within government agencies but virtually no capacity in the private sector	Institutional and personnel capacity development through hands-on training on bio-prospecting technique, numerous seminar, workshop on ABS regime, institutional visits and collaboration between MSP and Mae Fah Lung University Thailand, study tours, TK documentation and time-series ABS perception studies	Improved institutional and personnel capacity indicated by an increase of at least 25% over the GEF ABS Institutional Scorecard baseline score	ABS Institutional Capacity Scorecard and Biodiversity Tracking score increased to 71% and 64% compared to 33% and 34%, respectively at the baseline (2014) making significant progress in strengthening institutional and personnel capacities through seminars, workshops, meetings, institutional visits, study tours and hands-on training on bio-prospecting techniques, TK documentation, ABS regime and perception studies		
Outcome 1: An operational national regulatory and institutional framework on ABS	Approval of ABS Policy and Biodiversity Rules and Regulations and their use in establishing the institutional mechanism for ABS implementation	Draft ABS Policy in place, Biodiversity Rules and Regulation not promulgated and existing institutional mechanism are interim and basic	Interim ABS Policy 2015 in place within the first year, Biodiversity Bill of Bhutan 2016 on the pipeline for approval and Biodiversity Regulations in place during the 2 nd year and ABS mechanism developed and implementation underway.	ABS Policy approved within the first year of the project followed by the promulgation of the Biodiversity Regulations encompassing ABS implementation in the second year	Interim ABS Policy 2015 in place within the first year, Biodiversity Bill of Bhutan is on pipeline for approval and Biodiversity Regulations in place during the 2 nd year and ABS mechanism developed and implementation underway.	Highly Satisfactory (HS)	This end-of-the-project target has been already met without major shortcomings.
	Operational national ABS institutional framework indicated by: Existence and the number of competitive authorities designated at (national and sub-national level)	NBC designated as the National Focal Point based on the Government Executive Order	MoAF has been designated as the National Competent Authority and NBC as National Focal Point with executive order	Competent authorities designated at the national level and if necessary at the sub-national level based on approved Biodiversity Rules and Regulations	MoAF designated as the National Competent Authority and NBC as the National Focal Point with executive order	Satisfactory (S)	

² Populate with data from the Log frame and scorecards³ Populate with data from the Project Document⁴ Colour code this column only⁵ Use the 6 point Progress Towards Results Rating Scale: HS, S, MS, MU, U, HU

	Number of exits/entry points designated for checking ABS information/permits	No competent authorities designated at national & sub-national level	Entry/exit points establishment are underway in 2017/18 in collaboration with BAFRA (phytosanitary) and Ministry of Economic Affairs (patents).	A network of 4-5 exits/entry points designated for checking ABS information/permit,	Entry/exit points establishment are implementation in collaboration with BAFRA (phytosanitary) and Ministry of Economic Affairs (patents) for biodiversity material transaction	Satisfactory (S)	
	Existence of system of internationally recognized certification of origin, compliance and issuance of certificates	No checkpoints designated for checking ABS information/permits	Internationally recognized certification of origin and compliance integrated into Biodiversity Bill 2016 and certification system underway.	System of internationally recognized certificate of origin and compliance in place and operational	Internationally recognized certification of origin, compliance and issue of certificates will be carried out in 2017/18 as reflected in the multi-year work plan. Measures are in place for executing MTA mandatory at exit points for any biodiversity material transaction except those traded as a commodity or for direct consumption.		
Outcome 2: Strengthened stakeholder capacity and awareness supports implementation of the national ABS framework	Increased technical capacity for bio-prospecting laboratory analysis by: Type and number of equipment procured and installed at the NBC bio-prospecting laboratory facility	Existing laboratory facility cover only crude extraction	PMU procured and installed High Performance Liquid Chromatography and water deionizer (1 set each), Soxhlet and Clevenger apparatus (2 sets each); MSP procured bio-prospecting equipment, Bio-Bhutan procured & installed distillation units	Laboratory facility and staff skills will be upgraded bio-activity tests up to a level of fractionation	PMU procured and installed High Performance Liquid Chromatography and water deionizer (1 set each), Soxhlet and Clevenger apparatus (2 sets each); MSP procured bio-prospecting equipment, Bio-Bhutan procured & installed distillation units		
	Number of staff with knowledge and skills in specific bio-prospecting laboratory techniques using the upgraded facility,	Staff skills cover only crude extraction	7 PMU technical staff (4 men; 3 women) trained on bio-prospecting technique using the equipment and competent on screening compounds; hands-on training on chromatography and spectroscopy applications conducted for 30 stakeholders, Bio-Bhutan trained staff/CFMG members on sustainable harvest & distillation techniques; 8 PMU & MSP and Bio-Bhutan lab technicians (4 men; 4 women) trained on natural product extraction technique in 2015 & 2016.	Staff skills will be upgraded bio-activity tests up to a level of fractionation	7 PMU technical staff (4 men; 3 women) trained on bio-prospecting techniques and competent on screening compounds; hands-on training on chromatography and spectroscopy applications conducted for 30 stakeholders, Bio-Bhutan trained staff/CFMG members on sustainable harvest & distillation techniques; 8 PMU & MSP and Bio-Bhutan lab technicians (4 men; 4 women) trained on natural product extraction techniques in 2015 & 2016.		
	Number of crude extracts identified for bio-activity tests and number of compounds fractionated from the extracts	250 crude extracts are preserved in NBC extract library for bioactivity test and no compounds have been fractionated for development of trial products	PMU identified 714 plant samples, out of which 423 crude extracts, which will be further screened for active compound in early 2017	1, 250 crude extracts are preserved in NBC extract library; 25 compounds fractionated from the extracts for development of trial products	NBC identified 714 plant samples, out of which 423 crude extracts, which will be further screened for active compound in early 2017.		

	Number of NBC staff and partner agencies with improved knowledge and skills on the full cycle of management	Less than 20 staff have basic and partial knowledge and skills for ABS regime management	31 officials (12 women; 19 men) with 15 from PMU and 16 from MSP, Bio-Bhutan oriented on the full cycle of ABS regime management through institutional visits, study tours and seminars/workshops improving their knowledge and skills /ABS implementation.	At least 25 staff in PMU and partner agencies have improved knowledge and skills for the full cycle of ABS regime management	31 officials (12 women; 19 men) with 15 from PMU and 16 from MSP, Bio-Bhutan trained on the full cycle of ABS regime.) This indicator has been surpassed (124% achievement) but additional sensitizations continue as deemed necessary.	Highly Satisfactory (HS)	This indicator has been surpassed (124%) the end-of-the-project target
	Percentage of parliamentarians, researchers, academia, local governments and communities, private sector groups and other groups targeted by the project awareness campaign that is aware of the national ABS policy and associated regulatory and institutional framework	The current level of awareness is expected to be extremely low as ABS concept is new. A baseline survey will be conducted for the identified target groups in the first year.	Interim ABS policy presented to Environmental Committee of the National Assembly and National Council (16 Parliamentarians, 9 researchers), GNHC seeking feedback and guidance before approval by the Government; ABS perception study as baseline conducted in 2015 covering 346 respondents (321 farmers, businessman and local government of Dagala, Lingshi, Langthel,Lokchina and Soe/Naro); Findings indicate 92% of the respondents were unaware of ABS with understanding level ranging from high to low (parliamentarians/researchers to local government/farmers). ABS awareness workshops and TK documentation organized in 100 Gewogs covering 9,421 participants (5,374 women and 4,047 men); 2 seminars for 46 government officials/researchers and 28 academia conducted.	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	Interim ABS policy presented to Environmental Committee of the National Assembly and National Council (16 Parliamentarians, 9 researchers), GNHC seeking feedback and guidance before approval by the Government; ABS baseline perception study was conducted in 2015 covering 346 respondents (321 farmers, business and local government of Dagala, Lingshi, Langthel,Lokchina and Soe/Naro); ABS awareness workshops and TK documentation organized in 100 Gewogs covering 9,421 participants (5,374 women and 4,047 men); 2 seminars for 46 government officials/researchers and 28 academia organized		PMU launched mass awareness and sensitization program within and outside project landscapes resulting in low to moderate level ABS knowledge in participants
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	Number of pilot ABS agreements developed and operationalized for initial commercialization of trial products	Two ABS agreements exists that pre-date to Bhutan's ratification of Nagoya Protocol	ABS agreements with five communities in Chukha, Thimhu, Trongsa and Paro completed. 3 pilot ABS model: i) Government to communities at Dzedokha, ii) Government to Private at Dagala and iii) Government to community at Namther initiated with community protocols; research on product development and prototype developed	At least 3 ABS agreements developed and operationalized for initial commercialisation of 3 trial products incorporating PIC, MAT and fair and equitable sharing provisions. The agreements should also include in-situ and ex-situ conservation measures for the concerned biological resources.	ABS agreements at the 3 pilot sites have progressed at various level of implementation. At Lokchina, NBC-led Dzedokha Phachhaing Detshen formed with by-laws with cultivation success; at Dagala, Thimphu Bio-Bhutan and DzomDagam Ngomen Tshogpa extracted Rhododendron oil successfully and at Namther, Trongsa MSP partnership with Namther Throgmen Tshogpa with by-law operational on medicinal herbs. Bio-Bhutan and MSP have developed 2 and 5 prototypes, respectively.	Satisfactory (S)	ABS implementation has progressed at various level in the pilot sites with commercialization yet to take place
	Number of PIC processes with ILCs implemented in accordance with the planned PIC/community protocol	Some preliminary engagement with local communities is there but there is no full-fledged processes have been taken	PIC processes with ILCs in accordance with the planned PIC/community protocol underway		At least one PIC process with ILCs implemented in accordance with the planned PIC /community protocol	3 ABS implementation with PIC processes with ILCs in accordance with the planned PIC/community protocol underway in 3 pilot sites	Highly Satisfactory (HS)

	Number of knowledge resources developed and disseminated	No Bhutan specific knowledge resources on ABS available	An article on ABS in bio-prospecting A Greening Reality published in Happiness Booklet in February 2016; Posters and brochures (in English and Dzongkha) distributed to the participants. 3 studies: i) comparison on ABS policy approaches and practices, ii) Gender disaggregated study on Community Behaviour and Attitude towards ABS and iii) Stock taking and analysis of best practices and lessons from Bhutan's ABS experiences planned in 2017/18.	At least 3 studies on ABS carried out, published and disseminated; National seminar on ABS experience conducted in Bhutan	Numerous posters and brochures (English and Dzongkha) distributed to the participants; an article on ABS in bio-prospecting A Greening Reality published in Happiness Booklet in February 2016; 3 studies: i) ABS policy approaches and practices, ii) Gender disaggregated study on Community Behaviour and Attitude towards ABS and iii) Stocktaking and analysis of best practices and lessons from Bhutan's ABS experiences planned in 2017/18. Two national seminars conducted	Satisfactory (S)	protocols
	Percentage of population of ILCs participating in the pilot projects aware of existence, use and option value of the biological resources under their stewardship	The Current level of awareness expected to be extremely low with the possible exception of those communities already engaged in bio exploitation initiatives. A baseline survey will be conducted in the identified communities in the first year	The current level of awareness is low as ABS is a new concept except those communities engaged in bio-exploitation initiatives. A baseline perception survey conducted in 2015 revealed that 90.6% of the communities are unaware of ABS.	At least 80% awareness level among the participating communities	A perception study with an objective to develop ABS baseline awareness conducted to (communities, local governments, researchers, and parliamentarians) The study targeted 321 (52% men and 48% women). Findings revealed that 90.6% of the participants are ABS unaware from low to moderate level.		

Figure 3 compares the progress on GEF Biodiversity TT and ABS Institutional Capacity Scorecard up to MTR period from the baseline.

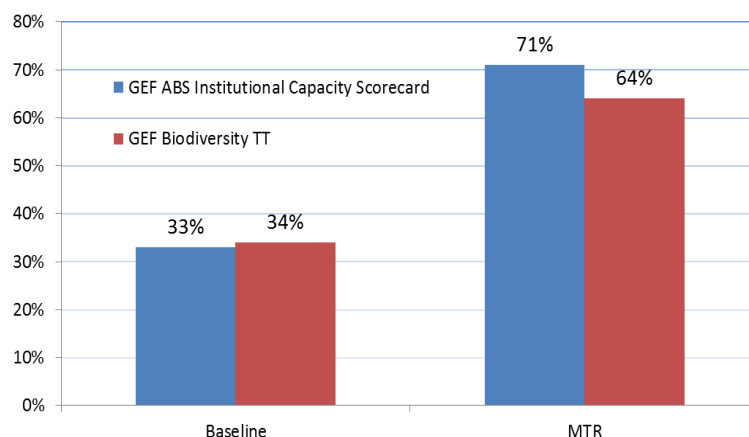


Figure 2. Comparison of GEF TT baseline and MTR

ABS Institutional Capacity Scorecard and Biodiversity TT score increased to 71% and 64% from 33% and 34%, respectively at the baseline 2014 indicating satisfactory progress in strengthening institutional and personnel capacities through seminars, workshops, meetings, institutional visits, study tours and hands-on training on bio-prospecting technique and including ABS awareness.

Table 6. MTR Ratings and Achievement Summary Table

Measure	MTR Rating	Achievement Description
Project Strategy	N/A	The project was designed to enhance the social and economic value of biodiversity conservation through a science-based approach to accessing genetic resources and benefit-sharing in a fair, equitable and sustainable manner in partnership with national and international pharmaceutical companies and ABS communities. The RF/LF goal reflects a country-driven and ownership approach with most assumptions met and negligible social and environmental sustainability risks. However, the RF/LF did not reflect gender-disaggregated indicators, which is incorporated for progress monitoring and reporting in the PIR.
Progress Towards Results	Objective: Satisfactory (S)	The project is on-track to achieve its objective of ABS policy and regulatory framework in place in accordance with the NBSAP 2014 and Nagoya Protocol. The National and Local Governments institutional and personnel capacities were strengthened from low to moderate level in the Government agencies (NBC, MSP) and virtually none to moderate level in the private sector (Bio-Bhutan). NBC has developed 2 prototypes (oil and balm) from Zingiber plant; MSP developed 5 prototypes (Herbal Soap, Herbal Cream, Massage Oil, Massage Candle and Face Mask) and Bio-Bhutan 2 prototypes (Rhododendron aroma oil and high-end soap).
	Outcome 1: Highly Satisfactory (HS)	The outcome 1 has made significant progress in terms of approving an Interim ABS Policy 2015, Biodiversity Bill of Bhutan 2016 and Biodiversity Regulations in place. MoAF has been designated as the National Competent Authority and NBC as the National Focal Point and entry/exit points for genetic resources transaction and regulations in collaboration with BAFRA (phytosanitary) and the Ministry of Economic Affairs (patents), and internationally recognized certification of origin system are underway for implementation.
	Outcome 2: Satisfactory (S)	The outcome 2 has progressed satisfactorily in strengthening of institutional and personnel capacity of implementing partners (NBC, MSP and Bio-Bhutan) indicated by the ABS Institutional Capacity Scorecard

		and Biodiversity TT (71% and 64% up to the MTR period compared to 33% and 34%, respectively from the baseline).
	Outcome 3: Satisfactory (S)	ABS implementation with ILCs viz; Dzedokha in Lokchina under Chukka, Dagala in Thimphu and, Namther in Langthel under Trongsa has progressed moderately with the operationalization of community protocols/ABS agreements in line with the principles of PIC and MAT.
Project Implementation and Adaptive Management	Satisfactory (S)	Work planning, project-level monitoring and evaluation, stakeholder engagement, reporting, and communications have progressed without any significant implementation problems. Adaptive management was exercised for minor issues on management and finance/co-finance utilization leading to efficient and effective project implementation.
Sustainability	Likely (L)	Negligible risks to financial, institutional and Governance, however; an emerging socioeconomic and environmental risk to sustainability needs monitoring and reporting in the PIR.

3.4 Project implementation issues and adaptive management

The 2nd PSC meeting discussed implementation issues and challenges such as low level of ABS awareness, delay in budget re-appropriation, and transportation vehicle problem in reaching the PMU and project sites and, difficulty in communication in local dialects during TK documentation (NBC, 2016b). ABS being a new concept in Bhutan, PMU should continue to promote ABS awareness through seminars, workshops and, training. Preliminary findings with the project beneficiaries, particularly the communities at the pilot sites revealed that they appreciate and support an ABS regime in view of catalyzing both monetary and non-monetary benefits. To communicate with TK holders in the local dialect, services of local guides, community elders and unemployed youths were used effectively. MSP and Bio-Bhutan experienced a delay in the procurement of the equipment/distillation unit due to change in specification and budget limit. These implementation issues were discussed in the PSC and prompt decisions were taken and equipment delivered on time. The ageing of the budget was one of the issues discussed in the PSC and PMU informed to be careful in not allowing the budget to remain unused. Budget re-appropriations were done on time based on the implementing partner's requisition. Taking cognizance of the interdependence between NBC and PMU in the delivery of project services, the PSC endorsed the procurement of a transportation vehicle, which however, did not materialize until the MTR period. Instead, PMU plans to repair the existing vehicle for easing the staff transportation and vehicles are hired on a need basis to implement the project activities in the pilot sites.

3.5 Project success and expansion of benefits

Within two years of implementation, the project has achieved significant milestones, which is commendable. The project objective is on-track to be achieved by the end-of-the-project with significant progress made in the achievement of its outcomes, outputs and activities. The outcome 1 has made significant progress in putting an Interim ABS Policy 2015 (MoAF, 2015), Biodiversity Bill of Bhutan 2016 (MoAF, 2016a) and Biodiversity Regulations (MoAF, 2016b) in place (Fig. 3). The policy discourses underwent extensive consultation with the national and local Governments including ABS communities. The MoAF has been designated as the National Competent Authority and NBC as the National Focal Point on biodiversity with the executive order from the Government.

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INSTITUTIONAL ARRANGEMENT	3	Competent National Authority
Competent National Authority	3	National Focal Point
Functions of Competent National Authority	3	Chairperson
National Focal Point	3	Awarards giving
Functions of the National Focal Point	3	CHAPTER 3
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Material Transfer Agreement	4	Minutes of the meetings
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Preservation, Documentation and Protection	4	Application for access to genetic resources
Community Protocol	4	Access Proposal
		Review of Access Proposal
		Prior Informed Consent
		Relationship with other Permits
		Resource Sustainability Assessment
		Access and Benefit Sharing Agreement
		Third Party Transfer
		Material Transfer Agreement
		CHAPTER 7

Figure 3. ABS Policy and Regulatory Framework

The institutional and personal capacity of implementing partners (NBC, MSP and Bio-Bhutan) has increased from a low level in the Government agencies (NBC & MSP) and virtually none in the private enterprise (Bio-Bhutan) to the moderate level. PMU, MSP and Bio-Bhutan's bio-prospecting capacity has been enhanced resulting in the extraction of 423 crude extracts up to a level of fractionation. Relevant bio-prospecting equipment has been procured by NBC, MSP and Bio-Bhutan and installed in their laboratory and field sites, respectively (Fig. 4, 5 & 6).



Figure 4. NBC bio-prospecting laboratory equipment



Figure 5. MSP bio-prospecting laboratory equipment



Figure 6. Bio-Bhutan bio-prospecting field equipment

Under the outcome 2, the parliamentarians, researchers, academia, national and local governments and communities and, private sector groups were targeted by the project in communicating ABS concept and mechanism through seminars, workshops, posters and bulletins (both in English and Dzongkha), institutional visits and study tours. Given the relatively new ABS concept and lack of ABS implementation experience in Bhutan, the project should continue to promote the ABS concept, processes and mechanism to a wide range of stakeholders.

At the three pilot sites, ABS implementation has progressed at various levels. The ABS agreements/community protocols were drawn and operationalized in accordance with the principle of PIC, MAT with ILCs. At Dzedokha in Lokchina under Chukka, Dzedokha Phachaing Detshen was instituted with by-law operationalized with 48 households (48% women) (Dorji, 2016). *Zingiber cussumnar* – a high-value medicinal plant has been successfully cultivated



Figure 7. Massage oil and balm from *Zingiber cussumnar*

by the community with good production potential. The prototypes (massage oil and massage Balm (Fig. 7) developed needs commercialization in collaboration with national and foreign companies, marketing and benefit-sharing to communities.

Similarly, MSP has built successful ABS partnership with the Namther ThrogmenTshogpa in Langthel Gewog under Trongsa in harnessing the medicinal plants by and for the communities. Management plan with by-law detailing resource collection, benefit-sharing and regulations are in place and operational. With the ABS awareness and training given on sustainable harvest, the community members are knowledgeable and skillful on medicinal plant species, collection and use. MSP has successfully developed 5 prototypes; i) Herbal Soap, ii) Herbal Cream, iii) Massage Oil, iv) Massage Candle and, v) Face Mask (Fig. 8). MSP plans to upscale the ABS experience to high altitude landscapes for the commercially

valuable medicinal plant (e.g. Cordyceps) generating income and employment to local communities.



Figure 8. MSP prototypes developed for commercialization

Bio-Bhutan has rich experience working with the rural communities across Bhutan, and Dagala communities, in particular, resulting in the successful extraction of oil from the *Rhododendron anthopogon* leaves. The process and technique of oil extraction were initiated from conducting resource inventories in Soe, Naro, Lingshi with the identification of resource potential in Dagala followed by the procurement and installation of distillation unit and imparting training to its staff and Dagala communities on sustainable harvest and management. With much effort, oil extraction and prototypes (aroma oil and high-end-soap) developed successfully (Fig. 9). Plans are prototypes commercialization in collaboration with Primavera Life, GMBH Germany and ploughing back benefit to communities through ABS agreements. Bio-Bhutan plans to upscale the experience in Himalayan Gooseberry (medicines), Turmeric (capsules), Zinger (herbal tea), Ruta (herbal tea), and Pipla (herbal tea).

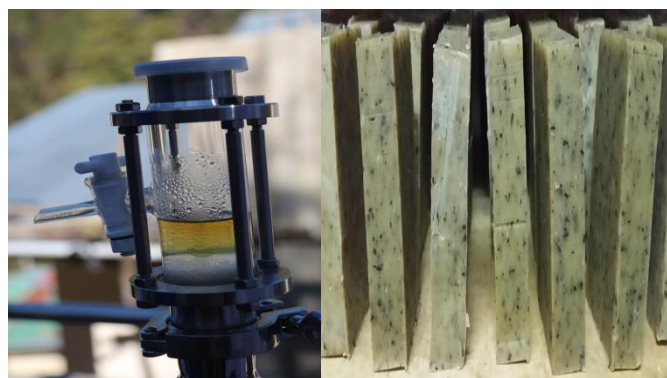


Figure 9. Bio-Bhutan prototypes developed for commercialization

4 PROJECT IMPLEMENTATION AND ADAPTIVE MANAGEMENT

4.1 Management Arrangements

The PMU executes the project in accordance with national implementation modalities and guidelines agreed between the UNDP CO and RGoB. PMU assumed full ownership and responsibility for the effective management and execution of all aspects of the project and

remain accountable to the UNDP CO. In line with the project document, and under the overall guidance and supervision of the Project Director, coordination, monitoring and reporting on project activities are shouldered by the NPM assisted by PSO and project accountant on managing the flow of project budget and expenditures. The responsibilities and reporting lines between NBC and MSP, Bio-Bhutan were agreed during the inception workshop and subsequently adhered during implementation. The project resources (fund, staff, and facilities) are effectively used to achieve the project outcomes and outputs through the implementation of activities on time. The PSO supports NPM in day-to-day activities. The PSO initially recruited by PMU during the project inception is now substituted by the 2 project assistants. MSP and Bio-Bhutan solicit PMU's guidance in the implementation of project related meetings and even participation in commodity harvesting activities.

Any significant implementation issues outside the purview of the PMU are put up to the PSC meeting for deliberation and decisions. Prompt decisions are taken in a transparent manner to support and expedite the implementation of project activities. For example, the PSC meeting deliberated at length on the installation of distillation unit by Bio-Bhutan and decision taken on the installation of a fixed unit in Thimphu. PMU also submits a list of issues that require PSC's endorsement. PMU implements the approved work plan and budget and, at times manages to re-appropriate some funds to implement important activities.

Bio-Bhutan executes its ABS activities on a regular basis in consultation with PMU. The execution of the project activities is managed by the General Manager (ABS Project Manager) and project accountant on finance. The annual work plan implementation is activity-intensive. Bio-Bhutan notes that RGoB and UNDP budgeting system offers little flexibility in the budget utilization. To address the constraint, adaptive management has rescued Bio-Bhutan on the timely implementation of their work plan activities.

MSP executes their ABS activities in accordance with the PMU's direction, guidelines and timeframe. The annual work plan implementation progress is reported in accordance with budget releases on a quarterly basis. To date, there are no major implementation issues. Occasionally, overlapping of funds arises, if improperly planned and owing to different financial calendars of RGoB and UNDP CO. However, such minor issues are effectively addressed through proper planning and adaptive management in consultation with PMU.

UNDP CO releases budget to PMU on a quarterly basis and provides technical backstopping in project implementation and monitoring on a need basis. Technical assistance includes; identification of training institutes outside Bhutan for the project staff, exploration of market potentials, products marketing, ABS agreements, and participation in the ABS policy discourses and one-time procurement of expensive laboratory facilities through UNDP Global Procurement Services. The quality of services provided by UNDP CO has been timely and adequate but needs improvement in quality monitoring and reporting guidance to the PMU. For example, the post-training benefits and impact were not included in the PIR.

4.2 Work Planning

The project start-up was on time to implement the activities. The Project Inception Workshop was held on 30 October 2014, where the Annual Work Plans (October-December 2014 and January 2015-June 2016) and Project Work Plan 2014-2018 was endorsed by the PSC (NBC, 2014b). The quarterly and annual work plans are discussed and agreed jointly by NBC, MSP and Bio-Bhutan for finalization and endorsement by the PSC. The PMU uses project RF/LF

as a management tool to collect, monitor and reports progress on indicators under the respective outcomes. Similarly, MSP and Bio-Bhutan follows PMU guidelines and timeframe and has not experienced any significant work planning and reporting difficulties. The project work plans and activities are output-driven, but lack gender-disaggregation activities.

4.3 Finance and Co-finance

The PMU utilizes the approved budget for quarterly and annual work plan implementation. The overall budget utilization accounts for 64% (US\$ 2,559,898.22 against the total of US\$ 4,003,668 budgeted in the project document) (Table 1&7). As on December 2016, the UNDP Combined Delivery Report by Activity shows that the cumulative GEF expenditures amount to US\$ 563,172.34 (56%) utilization against the budget allocation of US\$ 1,000, 000.

These expenditures indicated cost-effective project intervention to achieve the project outcomes (see Table 6). GEF financed expenditures are incurred under the outcome 1, 2, 3 activities implementation mostly and to a lesser extent on project management. PMU manages and controls the disbursement of budget to MSP and Bio-Bhutan, which concomitantly ensures accountability in monitoring and reporting.

Budget utilization is monitored using FACE forms/UNDP ATLAS Monitoring Reports and the annual audit reports by the Royal Audit Authority of Bhutan. The inception workshop endorsed internal adjustment of the budget by the PMU within the different project outcomes as long as within the approved budget limit. At times, the different RGoB and UNDP budget codes have delayed in the use of fund on time resulting in the supplementary arrangement.

As on September 2016, the project co-finance utilization accounts for 66% (US\$ 1,996,725.88 against a total budget of US\$ 3,003,668) which indicates cost-effective utilization leveraging the project outcomes (Table 8). For example, the Chanel contributed an additional 44% to the base fund. The increase in funding excludes their visit to Bhutan and other expenditures.

Bio-Bhutan requires an activity-intensive budget and, 2015 saw overutilization of budget in the procurement and installation of distillation unit primarily due to price escalation. Work plan 2016 experienced more budget utilization in the procurement of a fixed distillation unit and capacity building of Bio-Bhutan staff, which were met from their own share of the budget.

Table 6. GEF Project budget and expenditures

Project component	Budget at CEO endorsement (USD)	Total budget (USD)	October 2014–September 2016
Outcome 1: An operational national regulatory and institutional framework on ABS	GEF/NPIF: 90,000 Co-financing: 539,750	629,750	483,402.97
GEF/NPIF			779,86.27
BTFEC			160,000
NBC			737,50
MoAF			120,000
Chanel			280,00
NGS			236,66.70

Outcome 2: Strengthened stakeholder capacity and awareness supports implementation of the national ABS framework	GEF/NPIF: 290,000 Co-financing: 1,218,000	1,508,000	837,115.55
GEF/NPIF			144,167.55
UNDP			237,78.08
BTfEC			287,182
NBC			205,766
MoAF			100,000
MSP			100,000
Chanel			540,00
NGS			420,00
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	GEF/NPIF: 530,000 Co-financing: 1,067,000	1,597,000	582,479.77
GEF/NPIF			253,705.27
BTfEC			139,133.5
NBC			654,00
MoAF			867,98.30
MSP			189,641
Chanel			704,84
NGS			400,00
Bio-Bhutan			471,82.51
Other expenditures			227,257.24
GEF/NPIF			873,13.25
UNDP			685,67.99
NBC			483,01
MoAF			230,75
TOTAL			2,130,255.53

Table 7. Overview of project financing status

GEF and co-financing (USD million)	Budget at CEO endorsement (USD)	Realized/spent September 2016 (USD)
GEF/NPIF	1,000,000	563,172.34 ⁶
UNDP	106,000	92,346.07 ⁶
NBC	806,950	393,217
MoAF	494,800	329,873.3
MSP	579,300	289,641
BTfEC	631,182	586,315.3
NGS	200,000	105,666.7
Bio Bhutan	80,000	471,82.51
Chanel	105,436	152,484
PROJECT TOTAL COST	4,003,668	2,559,898.22

MSP utilizes the quarterly released budget in the execution of their annual work plan activities. The budget allocation for community consultations were sufficient, however, capacity building was inadequate. MSP exercised adaptive management to address the budget deficiencies e.g., shortening the duration of the training period to accommodate within the budget limit in collaboration with Mae Fah Luang University in Thailand. Except training, budget shortages for other activities were not experienced.

⁶ As per UNDP Combined Delivery Report by Activity up to December 2016

Table 8. Co-Financing Table

Note: This table should be completed by the MTR consultant with support from the project team

Sources of co-financing ⁷	Name of co-financier	Type of co-financing ⁸	Amount confirmed at CEO endorsement (US\$)	Actual amount spent/realized at stage of MTR (US\$) Until September 2016	Actual % of amount spent/realized
GEF Partner Agency					
Multilateral Agency	UNDP	Cash	106,000	92,346.07	87.1
National Government	NBC	In-Kind	806,950	393,217	48.7
National Government	MoAF	In-Kind	494,800	329,873.3	66.6
National Government	MSP	In-Kind	579,300	289,641	49.9
Autonomous body	BT FEC	Cash	631,182	586,315.3	92.8
Private-International	NGS, Japan	In-Kind	200,000	105,666.7	52.8
Private-Bhutan	Bio-Bhutan	In-Kind	80,000	471,82.51	58.9
Private-International	Chanel FB France	In-Kind	105,436	152,484	144.6
TOTAL			3,003,668	1,996,725.88	66.4⁹

4.4 Project Level Monitoring and Evaluation

The PMU uses the following M&E tools: Quarterly Progress Report (QPR), Project Implementation Review (PIR), Technical Reports, Project Publications and Finance Reports (FACE)/UNDP ATLAS Monitoring Reports, RGoB Audits (Annual), PSC and TAG Meetings and, Back-to-Office reports for progress reporting. The inception workshop agreed on the use of these monitoring tools with the project implementing partners. PMU monitors the implementation of project activities and progress on a quarterly basis through submission of QPRs, PIR on an annual basis, technical reports on resource inventories and consultancy on the contract basis. These monitoring tools are considered to be sufficient given the capacity of the PMU to monitor and manage the project activities.

Physical and financial progress monitoring and reporting of the project activities are aligned with the RGoB PlaMS reporting system. A key monitoring aspect of the project is that the project activities and its annual targets have been included in the Annual Performance Agreement of the implementing partners and their progress monitored through the established Government Performance System.

The quality of reports, however, is relatively poor and not comprehensive. For example, the PIR does not include the progress on monitoring of project/SES risks though negligible. The project document did not foresee the requirement of a role of project M&E officer. The PSO with a background in development communication as suggested in the project document has been difficult to materialize due to a shortage in the market.

MSP and Bio-Bhutan submits quarterly progress and summary reports at the end of the financial year to PMU (Bio-Bhutan 2015a&b). There is a sufficient M&E budget of USD 112,000 in the project document with provisions to hire consultants on a need basis for preparation of technical reports. A list of technical reports produced by the implementing partners is given below:

⁷ Co-financing source: Bilateral Aid Agency(ies), Foundation, GEF Partner Agency, Local, National Government, Civil Society Organization, Multi-lateral Agency(ies), Private

⁸ Type of co-financing: Grant, Soft Loan, Hard Loan, Guarantee, In-Kind, Other

⁹ Co-finance amount spent/realized up to September 2016 except UNDP and GEF/NPIF

1. Interim Access and Benefit-Sharing Policy of Bhutan 2015;
2. Biodiversity Bill of Bhutan 2016;
3. Biodiversity Regulations;
4. Report of: Institutional Visit to Malaysia, Singapore and Thailand to learn about Bio-Prospecting, Access and Benefit Sharing and Natural Product Development by NBC in collaboration with UNDP/GEF;
5. Report of Resource Inventory at Dagala Gewog, Thimphu Dzongkhag (12-21 June 2015);
6. Report of Resource Inventory at Naro under Lingzhi Dungkhag, Thimphu Dzongkhag (14-27 April 2015);
7. Report of Resource Inventory at Soe and Lingzhi, Thimphu Dzongkhag, May 2015;
8. A Field Study Report on Recruitment of Essential Oil Expert from Nepal and Visit at Dagala Project Site (19th December 2015 – 10th January 2016);
9. Report of Institutional and Field visit in Nepal to Study Distillation Technology of Essential Oil (20-26 September 2015);
10. Report of Trial Distillation of *R. anthopogon* Samples (July - September 2015);
11. Report of Community Group Coordination Meeting with Dagala Community at Chamgang Gewog Office, Thimphu Dzongkhag;
12. Report on Sustainable Harvest Quality Control and Distillation Methods Training on *Rhododendron anthopogon*;
13. Report on *Zingiber cussumnar* cultivation Training 27-30 April 2015, Dzedokha village, Lokching Gewog, Chukka Dzongkhag.
14. Report of the Technical Assistance to Assess and Conduct Baseline Study on Natural Fragrance Preparations and Applications.

4.5 Stakeholders' engagement

Stakeholder consultation and engagement is an integral part of the project's work plan implementation. PMU has extensively consulted and collaborated with the national and local Governments, including CSOs (RSPN/Tarayana Foundation) in the formulation, feedback and revision of an interim ABS Policy 2015, Biodiversity Bill of Bhutan 2016 and Biodiversity Regulations. The interim ABS policy was presented to the environmental committee of the National Assembly and National Council and GNH Committee sought feedback and guidance before approval by the Government.

ABS implementation in the pilot sites was participatory and inclusive following the principles of PIC and MAT with the election of executive members (Chairman, Secretary and Treasurer) following a democratic process. Farmers group viz; Dzedokha Phachaing Detshen at Dzedokha, Lokchina Gewog under Chukka, Namther Throgmen Tshogpa at Namther, Langthel Gewog under Trongsa and Jom-Dagam Ngyo Men Tshogpa in Dagala under Thimphu have been instituted and operationalized by the elected members. NBC-led ABS perception study interviewed 346 respondents (321 farmers, business and local government at Dagala, Lingshi, Langthel, Lokchina and Soe/Naro) including 16 parliamentarians and 9 researchers. ABS awareness workshops and TK documentation was conducted in 100 Gewogs consulting 9,421 participants (5,374 women and 4,047 men) and 2 seminars for 46 Government officials and researchers and, 28 academicians. The key informant's interview revealed that ABS pilot site beneficiaries were aware of the project objective and outcomes through inception workshop (55%), project related workshops and training (39%) and implementation of project activities (6%).

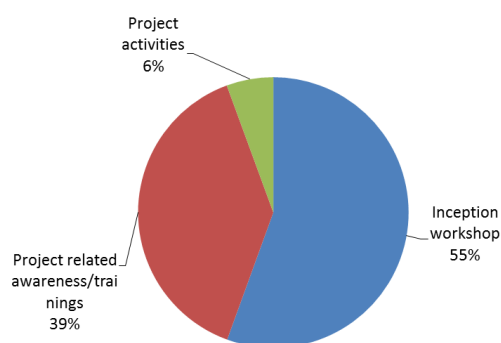


Figure 10. ABS awareness

Bio-Bhutan consulted and engaged the local Government and communities in conducting resource inventories of Rhododendron at Soe, Naro, Lingshi and Dagala. Both the local Government and CFMG members participated in the site selection, sustainable harvesting and management and installation of distillation units. Gender considerations were taken on board during the trial distillation with 14 men and 12 women from CFMG trained on the sustainable harvest and distillation know-how (5 men and 10 women). The active participation of local communities has led to building a good rapport between Bio-Bhutan and CFMG.

MSP has a long history of working with the rural communities on the collection, harvest and post-harvest practices of medicinal plants in Bhutan. MSP implemented two days of awareness workshop on an interim ABS Policy 2015 from 12-13 June 2015 with the Namther and Dang Dung communities, including officials from the local Government and Jigme Singye National Park (JSNP). The participants were briefed on the rationale, guiding principles, vision, scope and the objectives of the ABS Policy. The communities were also introduced to PIC and MAT processes while accessing genetic resources for research and commercialization. The key informant's interviews revealed that across the pilot sites, community group members played an active role in the decision-making as Chairman (11%), Secretary (17%), Treasurer (11%) and members (55%) and non-members (6%) in the management of different genetic resources (Fig. 11). MSP's 12 staff were trained in product development, cosmetics and toiletry and fragrance science in collaboration with Mae-Fah Luang University in Thailand and 52 community members (10 men and 42 women) trained on sustainable harvest and processing of medicinal plants.

The project collaborates with international and national companies on research and commercialization based on a Memorandum of Understanding (MoUs). NBC has a MoU between MSP, Bio-Bhutan and NGS Japan. MSP has a MoU with Mae Fah Luang University, Thailand and, Bio-Bhutan with Primavera Life GMBH, Germany. The project also engages private national firms for printing, publications and consultancies (e.g. Bhutan Himalayas Audio Visuals, Rigpa Printing and Publications, *Kuensel* Corporation, Image Arts and Garuda Legal/Mid-Way/Wang Consultancy).

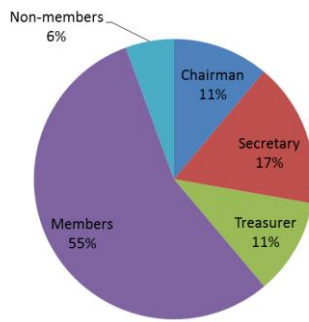


Figure 11. Decision-making role

4.6 Reporting

Adaptive management has been effectively used by Bio-Bhutan to address its budget deficiencies in the procurement and installation of distillation units and capacity building of its staff. The concept of oil extraction from the wild plant (*Rhododendron anthopogon*) emerged in December 2014, soon after the project inception. In 2015, plans were developed for resource inventory of *R. anthopogon* across western Bhutan. The project document outlines surveys in Soe, Naro and Lingshi. In collaboration with the Dzongkhag and farmers, surveys were undertaken throughout the year. Samples were collected and data analysis revealed that other than Dagala was not feasible due to low density and patchy nature of the resource availability. Bio-Bhutan in consultation with PMU and local Government selected Dagala due to its proximity to the road and abundant resource availability with a harvestable quantity of 10 MT/year and concomitantly generate income to Dagala communities, which have limited opportunities than Soe, Naro and Lingshi blessed with Cordyceps. Community consultations revealed the existence of Dzom-Dagam Ngyo Men Tshogpa (Community Forest Management Group) mandated for community Forests (CF) management in the 5 Gewogs with 57 households. Discussion triggered CFMG's interests in the integration of ABS concept in CF with their rich experience of managing the common pool resources. As the concept of Rhododendron oil extraction was new to Bhutan, Bio-Bhutan and the local community virtually lack the necessary knowledge and skills. To build the capacity, Bio-Bhutan staff in collaboration with CFMG (Chairman, Secretary and Treasurer) went to Nepal to learn the technique of harvest and distillation. Nepal had a rich experience of oil extraction in collaboration with Male International Company. After a weeklong exposure, the team imbibed the necessary knowledge and skills on the quantity of harvest, time and extraction technique critical to oil extraction.

Back home, trial distillation commenced using the already collected Rhododendron leaves of inventoried time. 200 kg capacity of lemon grass distillation units were procured from the eastern Bhutan and installed at Begana. Literature studies revealed that 1 kg of leaves yields 0.3 ml of oil unfolding low financial profitability. To confirm the oil yield, lab trials were conducted in collaboration with MSP confirming the same results. Beginning 2015, a technical expert was fielded from Nepal for resource inventories in Dagala, detailing the specification of distillation unit and distillation know-how. The lemon grass oil distillation units are not designed to extract oil from Rhododendron leaves. Thus, the consultant suggested a high-tech distillation unit, which invariably cost more and was financially unprofitable to be installed at Dagala due to the patchy nature of the Rhododendron forests and the migratory lifestyle of the communities. The suggestion was either to go for a mobile distillation unit (loaded on a truck) or a fixed distillation unit. However, the fixed unit costs USD 50,000 while the project planned budget was USD 15,000 (5,000 each for 3 units). A frantic budget versus distillation unit match search unfolded a China-based company

charging an affordable cost of USD 16,800. Bio-Bhutan consulted PMU to cover the additional costs. The proposal was put up to the PSC for approval of an additional budget USD 1,800. In 2016, PSC endorsed the budget and the unit was procured and installed by October. Two engineers from the same company also assisted Bio-Bhutan in the installation and distillation technique. The subsequent trial revealed that 48 kg of leaves yielded 60 ml oil at the rate of 1.25 ml/kg, which was a great success for Bio-Bhutan.

Next, training on sustainable harvest and distillation was imparted to Dagala CFMG with 30 households from 3 Gewogs in November 2016. However, 13 households (6 women and 7 men) were only trained in collaboration with the PMU. The subsequent trial of 80 kg leaves yielded 255 ml of oil in 8 hours. The harvest of matured leaves at the right time (1st week of November) was crucial for optimum oil yield. The distilled oil was subject to the active chemical ingredient analysis used in cosmetic and skin care products. The results were milestones for Bio-Bhutan and plans are for prototype development and diversification (high-end soap) and marketing in collaboration with the Primavera Life GMBH, Germany. Bio-Bhutan learned a valuable lesson, which needs internalization for sharing.

PMU exercised adaptive management in the annual budget allocation between project outcomes and activities, budget disbursement and the arrangement of transportation facility to project staff. MSP used adaptive management in reducing the training period to accommodate within the budget limit.

4.7 Communication

PMU communicates project's news and information through multi-media. While the project website is under construction on Facebook, following links have been used in the ABS communication and related information both within and outside the project landscapes (see Fig 12 & 13):

[https://www.thegef.org/gef/node/11386;](https://www.thegef.org/gef/node/11386)

[http://www.nbc.gov.bt/downloads/draft-biodiversity-bill;](http://www.nbc.gov.bt/downloads/draft-biodiversity-bill)

[http://www.nbc.gov.bt/news/international-seminar-on-traditional-knowledge-associated-with-genetic-resources.html;](http://www.nbc.gov.bt/news/international-seminar-on-traditional-knowledge-associated-with-genetic-resources.html)

[http://www.nbc.gov.bt/news/laboratory-training-on-different-methods-of-natural-product-extraction-focused-on-tlc-technique.html;](http://www.nbc.gov.bt/news/laboratory-training-on-different-methods-of-natural-product-extraction-focused-on-tlc-technique.html)

[http://www.undp.org/content/bhutan/en/home/presscenter/articles/2015/06/08/learning-to-make-the-best-of-bhutan-s-biodiversity.html;](http://www.undp.org/content/bhutan/en/home/presscenter/articles/2015/06/08/learning-to-make-the-best-of-bhutan-s-biodiversity.html)

<http://www.undp.org/content/bhutan/en/home/presscenter/articles/2015/06/17/using-ancient-traditions-to-break-new-economic-ground.html>

NBC and MoAF website with links to NPIF, posters, RNR Newsletters and, project bulletins



Figure 13. ABS seminar to students



Figure 12. NBC and MoAF websites with ABS news

and Charts (Fig. 14) with running success stories developed in collaboration with the private

consulting firms. The NBC and MSP website, however, is unpopulated with project news, views, and the progress and success stories. Posters and brochures on ABS process and mechanism were developed and disseminated to a wide range of stakeholders (Fig.15). A chapter on Happiness Magazine runs ABS stories and film is in the pipeline for mass communication. ABS being a new concept and mechanism in Bhutan, PMU endeavours to promote wider awareness through seminars such as ‘National Biodiversity Conservation and Sustainable Program with a special focus on Access and Benefit Sharing’ recently held at the Gaeddu College of Business Studies (GCBS) Chukkha on 10 November 2016 (Fig. 13). The seminar aimed at creating awareness on biodiversity conservation and its importance to students and college faculties. Key informant’s interview revealed that across the pilot sites, project beneficiaries were aware of the principle of PIC, MAT and consensus is building gradually on monetary and non-monetary benefit-sharing.

Bio-Bhutan communicates ABS through its Facebook reflecting project activities. They consider Facebook an effective channel of communication not only within the country but also outside e.g., Primavera, GMBH Germany. Posters, banners and booklets on sustainable harvest of *R. anthopogon* and distillation technique are under construction for communication in Dzongkha version of Facebook and booklets. Fixed line telephones and mobiles are effectively used to connect to local Government staff and community groups in the implementation and monitoring of project activities. As a result of successful communication, over 9,000 farmers in 100 Gewogs and 200 officers and researchers in the regional and national institutes including parliamentarians, academia and business are aware of the ABS concept, including ABS policy and regulations (NBC, 2016c). A wide variety of communication materials were published:

1. Implementing the Nagoya Protocol on Access to Genetic Resources and Benefit-Sharing in Bhutan;
2. ABS concept in Bhutan;
3. General Process for Access and Benefit-Sharing;
4. Material Transfer Agreement;
5. Realizing Benefits of Conservation to Communities through NPIF;
6. Documentation of Traditional Knowledge associated with ABS;
7. Access and Benefit-Sharing in Bio-Propecting – A Greening Reality;
8. Linking Communities for the Global Market for Traditional Knowledge Conservation;
9. Bhutan and ITPGRFA (International Treaty on Plant Genetic Resources for Food and Agriculture);
10. Traditional Knowledge Guided Approach Towards Natural Products and New Drugs Discovery;
11. Story from Dzedokha Village on Access and Benefit-sharing in Bhutan;
12. Story from Project Pilot Site: Access and Benefit-Sharing in Bhutan;
13. Documentation Process for Traditional Knowledge Associated with Biological Resources;
14. Rural Communities learn about access to genetic resources and benefit-sharing at Langthel, Trongsa;
15. Implementation status of the Global Plan of Action for the Conservation and Sustainable Utilization of Plant Genetic Resources for Food and Agriculture in Bhutan;
16. The History of the introduction and adoption of important food crops in Bhutan, Rice, Maize, Potato and Chilli;

17. Phenotypic and Genetic parameters for Milk Yield in Traditional Nublang cattle (*Bos indicus*) in Bhutan;
18. Journal of the Community Perspective on the On-Farm Diversity of the six major Cereals and Climate Change in Bhutan;
19. Animal Genetic Resources in Bhutan;
20. Plant Genetic Resources in Bhutan.



Figure 14. Posters and charts on ABS advocacy program and success stories



Figure 15. ABS sensitization program to communities, Governments and academia

4.8 Contribution to SDG Goals

The project rationalizes the conservation and use of Bhutan's genetic resources in response to addressing a wide range of biodiversity threats and impact in the country by enhancing the social and economic value of biodiversity conservation through a science-based approach and access to genetic resources and commercialization and benefits-sharing in a fair, equitable and sustainable manner contributing to the SDG 1. The project's outcome 1 on strengthening National ABS Policy and Regulatory Framework (interim ABS Policy, Biodiversity Bill of Bhutan 2016 and Biodiversity Regulations) are policy instruments that guides and regulates the use of biodiversity and conservation, thereby protecting, restoring and promoting

sustainable use of terrestrial ecosystems, sustainably managing forests, combating forest degradation, and most importantly halting the loss of biodiversity under the SDG 15. The project output 1.3 on the institutional mechanisms for ABS establishment and operationalization in the pilot sites ensures a mechanism for access to biodiversity and benefit-sharing arising from the use of genetic resources safeguarding the biodiversity threats.

Similarly, the project outcome 2 on strengthened institutional and personnel capacity and awareness for the implementation of the national ABS framework enhances the capacity building of national and local Governments, civil society organization, researchers, and academia and grass root level communities to protect, restore, and promote sustainable use of biological resources. The output 2.1 on up-gradation of facilities and staff skills for bio-prospecting laboratory work and TK documentation help conserve *ex-situ* conservation of biological resources in the wilderness, which would otherwise become extinct gradually in the event of natural resource dynamics exacerbated by emerging externalities e.g., climate change. Bio-prospecting work and TK documentation will lead to the protection of indigenous community ownership and rights and Bhutan's sovereign rights on the use of genetic resources catalyzing economic benefits from the commercialization and discovery of nature-based products.

The outcome 3 on pilot ABS regime with rural communities, who are the custodian of traditional medicines, sustainable harvest, processing, marketing and utilization complements good health and well-being (SDG 3) ensuring healthy lives and promotion of well-being for all ages of men, women and children. The traditional medicines are cheap and affordable to poor people of the Bhutanese society, who can't afford modern medicines. The project's emphasis on research and commercialization and discovery of nature-based products and diversification builds ILCs resilience against climate change contributing to SDG 13.

Gender-disaggregated capacity development, awareness and sensitization programs contribute to ensuring gender equality and women's empowerment. However, the project needs to measure the benefits and impacts by gender towards the end-of-the-project. In gender context, 4 women were trained in bio-prospecting technique in 2015 & 2016 in collaboration with NGS, Japan and Chanel PB, France; 31 officials (12 women; 19 men) were oriented on the full cycle of ABS regime through institutional visits, study tours and seminars/workshops improving their knowledge and skills. ABS awareness workshops and TK documentation were organized in 100 Gewogs covering 9,421 participants (5,374 women and 4,047 men). The fact that the project beneficiaries are proportionately more women, many of whom occupy decision-making positions in the different genetic resource management groups across the pilot sites empowers them to make rational social and economic decisions that benefit their lives should be encouraged.

5. SUSTAINABILITY

5.1 Financial risks to sustainability

The ABS concept is based on the principle of financial and economic sustainability with built in benefit-sharing mechanisms from research and commercialization of nature-based products. The Biodiversity Regulations has regulatory and market-driven financial mechanisms; up-front payment (access and scoping fees), milestone fees, payment of royalties, contribution to Bhutan's ABS fund and research funding in place (MoAF, 2016b). However, the project is far-from commercialization of already developed prototypes,

operationalization of regulatory instruments, ABS fund and benefit-sharing and sustaining the project activities financially.

Similarly, MSP recognizes ABS as a good concept to rationalize the economic value of genetic resources and concomitantly achieve conservation outcomes. Accordingly, MSP's approach to engaging with communities has changed from involvement to building community-driven joint venture partnership fortified by the long tradition of working with communities. MSP/DTMS demands are supplied by local collectors, who are paid based on quantity collected and price on a dry or wet basis. MSP revises the price once in three years to commensurate the cost of collection and price escalation. Future plans are to plough back benefits to the local communities through ABS funds from the commercialization of prototypes. At the community level, saving fund scheme is being operationalized as part of the management plan by-law. An annual fee of 10% of the total quantity collected by an individual is levied into the saving fund managed by the elected community members. Due to the limited amount collected, plough back on activities has not taken place, however, future scope exists. These financial and regulatory mechanisms are in place, but have not been practiced to reduce financial risk to sustainability.

5.2 Socioeconomic risks to sustainability

There are no major socioeconomic risks that jeopardize the sustainability of project outcomes. The project objective and outcomes are aligned with the national Government plans and priorities demonstrating ownership and accountability. PMU-led multidisciplinary, participatory and inclusive approach to the implementation of project activities has inculcated ABS awareness and accountability in the national and local Governments. At the pilot scale, however, Zingiber plant has to economically compete with other cash crops (cardamom, local ginger and oranges). Therefore, it is important that Zingiber prototypes are commercialized and benefits ploughed back to communities and production scaled-up. Key informant's interviews revealed that 61% of the project beneficiaries received employment and income generation benefits while 39% enhanced knowledge and skills from ABS implementation (Fig. 16).

MSP and Bio-Bhutan has a long tradition of working with rural communities in the sustainable harvest and commercialization of nature-based products e.g. Cordyceps, lemon grass through partnership built on a mutual basis. To Bio-Bhutan, ABS offers a potential business model that converge commercialization, conservation and social interests leveraging the mandate of Corporate Social Responsibility. MSP and Bio-Bhutan expect to upscale the valuable lessons learned to outside project landscapes in harnessing potential socioeconomic benefits to local communities.

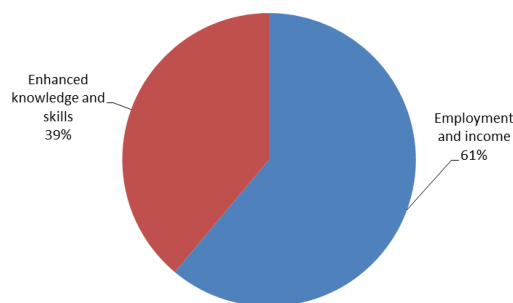


Figure 16. Socioeconomic benefits

5.3 Institutional Framework and Governance risks to sustainability

The Biodiversity Regulations charges mandatory non-monetary benefits; institutional and personnel capacity development, technology transfer, collaboration, cooperation and contribution in the education and training, and joint ownership of intellectual property rights under the ABS agreement (MoAF, 2016b). The approval of the Biodiversity Bill of Bhutan 2016 by the Government will strengthen a legally binding ABS agreement that enables sharing monetary and non-monetary benefits between the parties. At the pilot sites, ABS implementation is governed by the community protocols drawn on the principles of PIC, MAT with ILCs with by-law in operational. The by-law ensures collection of medicinal plants and benefit-sharing in a fair and equitable basis within communities and outside communities are strictly prohibited. Such regulatory and governance measures are in place to reduce governance risk to sustainability. To sustain the project benefits, the bio-prospecting capacity needs to be further strengthened with a qualified and trained staff in the future.

5.4 Environmental risks to sustainability

PMU experienced minor environmental issues such as difficulties in monitoring of Zingiber production owing to monsoon rain-induced road blocks in Dzedokha. The plant is cultivated in home gardens on a small scale. NBC has encouraged farmers to cultivate the plant from a few mother plants in 2015. A progressive farmer cultivated and distributed plant rhizomes to 38 households for further cultivation. Farmers were interested and 48 farmers (48% women) have cultivated the plant in 2016. According to farmer's opinion, the plant has a good production potential. A rhizome grown plant yielded 9 kg/year. January is the best harvest month when rhizome matures. A total production of 5,000 kg is expected from 48 households. Marketing and commercialization of the plant prototypes will place demand on large-scale production and thus, NBC should assess its production potential using crop-cuts.

MSP notes that sustainability of the collection of medicinal plants from the forest may emerge as a risk in the long-term. Preliminary data suggest that medicinal plants collected from Langthel, Lhuntse, Geylegphug and Zhemgang shows a declining supply (Fig. 17). Therefore, domestication and cultivation in agricultural farms, particularly of vulnerable medicinal plants need to be encouraged to communities (Fig. 19).

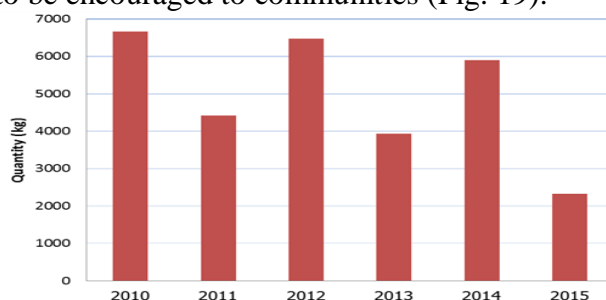


Figure 17. Medicinal plants supply trend

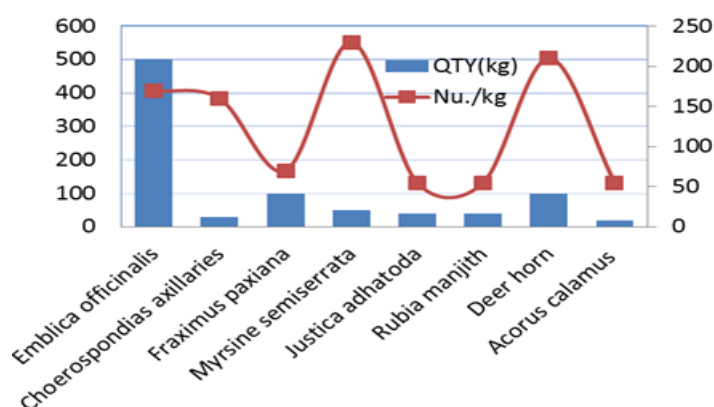


Figure 18. Medicinal plants from Namther

The record maintained by the Namther Throgmen Tshogpa revealed that 8 different types of medicinal plants are collected from nearby forests (Fig. 18). They are; *Emblica officinalis*, *Choerospondias axillaries*, *Fraximus paxiana*, *Myrsine semiserrata*, *Justica adhatoda*, *Rubia manjith*, Deer horn and *Acorus calamus*. In 2016, 500kg of *E. officinalis* (local name *Churo*) at Nu. 170/kg was supplied to MSP. The Namther community reported that *Emblica* fruiting is irregular (good fruiting take place once in alternate years) and affects availability. MSP's demands are met during the good harvest; however, when demand exceeds supply, members collect from far-flung places. Picking gooseberries require climbing ladders and women experience difficulties. Processing necessitates boiling of fruits in the hot water and, separation of seeds from fruits by hands without gloves leading to the development of cracks, which cures after a month's time. It is advisable to use gender-friendly ladders to pick fruits and gloves to protect wearing and tearing of palms. Recently, the project has distributed harvesting and processing tools to Lingshi, Namther and Dagala communities. It is reported that income from the medicinal plants ranged from a lowest of Nu. 400 to highest of Nu. 6,000 per household per year. MSP trained the communities on sustainable harvest and post-harvest practice to minimize environmental risks of unsustainable harvests.



Figure 20. Domestication of *Emblica officinalis*

Bio-Bhutan takes a proactive approach in addressing the shortage of *Rhododendron* leaves by mobilizing DzomDagam Ngomen Tshogpa on sustainable harvest. It is estimated that the forests have the potential to produce about 10 MT/year of *Rhododendron* leaves; however, their annual requirement is about 2 MT/year. The estimation is qualitative and lacks quantitative assessment of the resource using systematic inventories. Nevertheless, the Gangrim, Jatshadam and Kuenza Pang communities were trained on sustainable harvest and quality control from 5-8th November 2016 and steam distillation technique on 10 November 2016 at Gasabama including Bio-Bhutan staff (Bio-Bhutan, 2016). The training inculcated awareness on the importance of conservation and sustainable utilization of the resource including domestication and cultivation. Regulatory measures are also in place to ensure resource sustainability. The Biodiversity Regulations under Chapter 6 charges Resource

Sustainability Assessment in terms of the magnitude of the activity, biophysical change, biodiversity and environmental impacts, which remains to be operationalized through ABS agreements. Key informant’s interview revealed that 67% project beneficiaries were trained on sustainable harvest, 28% domestication and cultivation and 5% on awareness (Fig. 21).

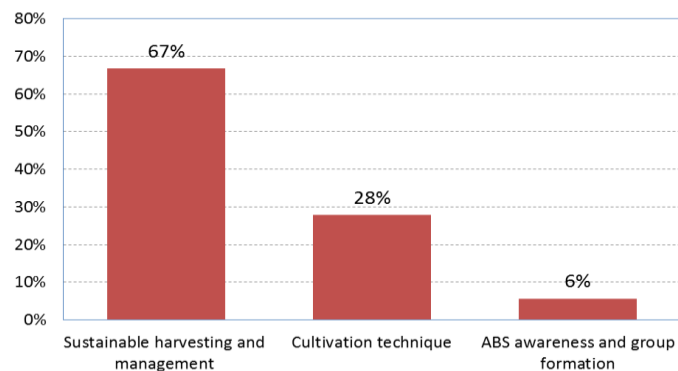


Figure 21. Training benefits to communities in ABS pilot sites

6. CONCLUSION AND RECOMMENDATION

6.1 Conclusion

It can be concluded that the biodiversity threats, causes, impacts and opportunities addressed by the project are still relevant and priority of the RGoB. The project addresses unsustainable harvest of forest and agriculture-based genetic resources constrained by sub-optimal policy and regulatory instruments and limited institutional capacity and ABS experiences by enhancing the social and economic value of biodiversity through a science-based access to genetic resources and commercialization.

Overall, the project objective and outcomes are consistent with the RGoB’s national development priorities and MoAF 11th FYP objective of Promoting Sustainable Management and Utilization of Natural Resources, UNDP programming priorities and SDG 15. The project strategy and design have synergy with similar other GEF initiatives in the country.

The project assumption at the objective and outcome 1, 2 and 3 level are realistic and achievable with the exception that “more staff will be added to the bio-prospecting program as projected in the 11th FYP and there will be little or no turnover of the staff” has met with little success due to HRD ceiling in line with the RGoB policy of compact and efficient civil service system.

The project and social and environmental risks and financial, institutional and governance risks are negligible, however, emerging socioeconomic and environmental sustainability risk needs monitoring and minimization.

Gender consideration was sufficiently raised during the project preparation; however, project RF/LF did not reflect the gender-disaggregated indicators, which were incorporated for progress monitoring and reporting in the PIR.

Mid-Term Level and Assessment showed that the project objective, outcome 1, 2 and 3 and many of their indicators has progressed satisfactorily and are on-track to be achieved by the end-of-the-project. Significant progress has been made in achieving the indicator on ABS policy and regulatory framework for ABS implementation and a number of NBC staff and

partner agencies with improved knowledge and skills on the full cycle of the ABS management regime and percentage of parliamentarians, researchers, academia, local governments and communities' awareness.

The level of institutional and personnel capacity of PMU and MSP has increased satisfactorily from a basic to moderate level and Bio-Bhutan from virtually none to a moderate level indicated by the ABS Institutional Scorecard and Biodiversity TT score of 71% and 64% from 33% and 34%, respectively at the baseline.

ABS processes and best practice demonstrated in the pilot sites has progressed moderately at various levels of implementation. ABS community protocols/agreements were conceptualized and operationalized in line with the principle of PIC, MAT with ILCs. At Dzedokha in Lokchina under Chukka, Dzedokha Phachaing Detshen was instituted and operational with 48 households. *Zingiber cussumnar* has been cultivated successfully by the community with good production potential. MSP has built successful partnership with Namther Throgmen Tshogpa in Langthel under Trongsa in harnessing the medicinal plants by and for the communities. Management plan detailing resource collection, benefit-sharing and regulations are in place and operational. MSP has successfully developed 5 prototypes; i) Herbal Soap, ii) Herbal Cream, iii) Massage Oil, iv) Massage Candle and, v) Face Mask. Bio-Bhutan in partnership with the DzomDagam Ngomen Tshogpa has distilled oil from the *R. anthopogon* leaves successfully and massage oil and high-end soap developed for commercialization in collaboration with Primavera Life, GMBH Germany.

Project implementation has progressed satisfactorily with no major issues. NBC, MSP and Bio-Bhutan exercised adaptive management to address minor issues. Work planning is output driven and quarterly planned, budgeted and implemented. Project-level monitoring and evaluation system are regular but the quality of reports is relatively poor and not inclusive of SES risks and monitoring capacity need to strengthen.

6.2 Lessons learned, weakness and opportunities

The successful formulation of ABS policy and regulatory framework, institutional and personnel capacity strengthening and better networking and linkages between Government agencies, national and international companies and ABS communities were good lessons distilled from the project implementation.

NBC and its implementing partners experienced ABS as a new concept and mechanism to access, utilize and share benefits from research and commercialization of Bhutan's rich biodiversity, which otherwise remain underutilized.

The project capacitated MSP in the systematization of medicinal and aromatic plants collection by areas, altitude, climate and use and development of 5 prototypes. MSP plans to upscale the valuable lessons learned to high altitude medicinal plants e.g. Cordyceps. However, the project period of 4 years is short given the long-term nature of benefit realization from resource harvest to development of prototypes and commercialization.

Bio-Bhutan affirms ABS as a business model converging commercialization, conservation and social interests, leveraging its mandate of corporate social responsibility. Bio-Bhutan's institutional and personnel capacity has strengthened from virtually none to a moderate level

resulting in the successful distillation of Rhododendron oil. The duration of bio-prospecting training was short and suggests longer duration particularly for product development.

The Dzedokha Phachaing Detshen leaned ABS as a pro-poor mechanism to accrue benefits to poor households, who can't afford to buy seeds & seedlings and planting tools to cultivate Zingiber plant. Capacity building through training and study tours has transformed their attitudes and perception towards ABS.

The Namther Throgmen Tshogpa learned that ABS implementation generated employment and income opportunities not only to men and women but also to children. Monetary benefits leveraged children's education and basic necessities for the poor households of the community.

The DzomDagam Ngomen Tshogpa acknowledges that ABS implementation has increased their knowledge and skills on sustainable harvest and distillation of oil from the Rhododendron leaves.

6.3 Recommendation

6.3.1 Corrective actions for design, implementation, monitoring and evaluation

- The outcome 2 assumption on “more staff will be added to the bio-prospecting program as projected in the 11th FYP and there will be little or no turnover of the staff” has met with little success due to the HRD ceiling in line with the RGoB policy of compact and efficient civil service system. The recruitment of 3 additional staff contracted from the Chanel co-finance has facilitated the implementation of the project activities. It is recommended that this assumption be changed to *additional staff requirement to the bio-prospecting program will be recruited on contract using the Chanel co-finance*.
- Although gender considerations were sufficiently raised during the project preparation, the RF/LF did not reflect the gender-disaggregated indicators under the relevant project outcomes. In view of the nature of the project activities that proportionately benefits more women, the gender-disaggregated indicator needs monitoring and reporting in the PIR. The M&E should also monitor the project benefits and the impact by gender.
- Although the project and social and environmental risks are negligible, M&E should monitor the *moderate* risks identified in Table 2 and emerging socioeconomic and environmental risks to sustainability.
- The PIR report needs improvement in terms of quality and comprehensiveness e.g. social and environmental risks. MTR strongly recommends that project M&E should be strengthened to document the lessons learned and best practice on the ABS actualization (commercialization and benefit-sharing) experiences in Bhutan towards the end-of-the-project. To complement PMU's monitoring capacity, the 2 project assistants should be trained in data collection, analysis and reporting.

6.3.2 Actions to follow-up or reinforce initial benefits

- The Biodiversity Bill of Bhutan 2016 needs to be expedited for its approval by the National Government for the legitimization of a legally binding ABS agreement between the parties.
- NBC and MSP should strengthen bio-prospecting research capacity with an additional qualified and trained staff to sustain the project benefits.
- NBC and MSP should populate its websites with project news, views, progress reports and success stories.
- ABS being a new concept and mechanism, the project should continue its sensitization program to further ABS concept, mechanism and policy and regulations to the public.

6.3.3 Proposal for future directions

- With the approval of the Biodiversity Bill of Bhutan 2016, the project should steer towards the operationalization of a legally binding ABS agreement between parties.
- The ABS agreements/community protocols need to integrate quantitative resource inventories to estimate the production potential and cost-benefit/economic analysis as the basis for sustainable genetic resource management and determining the proportion of the monetary benefit plough back to the communities.
- As most genetic resources including in the three pilot sites are sourced from the natural forests, resource conservation should follow a two-pronged strategy:
 - i) Sustainable harvest, processing and marketing and enforcement of rules and regulations from the natural forests;
 - ii) Domestication and cultivation in agricultural farms at the household level and degraded and barren areas at the community level of vulnerable medicinal and aromatic plants.
- NBC, MSP and Bio-Bhutan should continue to forge and foster a partnership with national and international pharmaceutical companies on research (scoping) concentrating on joint marketing, commercialization and benefit-sharing (actualization) of the developed prototypes Branding Bhutan by the end-of-the-project.

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Annexes

Annex 1. List of persons met

UNDP CO

Ms Niamh Collier-Smith, Deputy Resident Representative, UNDP Bhutan

Mr. Jigme Dorji, Portfolio Manager, Economic Integration and Innovation, UNDP

Project Management Unit

Dr Tashi Yangzom Dorji, Project Director, NBC

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Mr. Mani Prasad Nirola, Senior Biodiversity Officer, NBC

Tashi Pelyang, Project Assistant, NBC

Sonam Wangchuk, Project Assistant II, NBC

Ms Tashi Pelyang, Project Assistant II, NBC

Bio-Bhutan

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 Mr. Nobin Gurung, Account Officer, Bio-Bhutan

MSP, Ministry of Health

Mr. Samten, Research Officer, Menjong Sorig Pharmaceuticals, Ministry of Health

Project Steering Committee

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Ms Kezang Tshomo, Member, PSC, Coordinator of the National Organic Programme, Ministry of Agriculture and Forests

Dasho Kuenga Tshering, Director General, DTMS, Ministry of Health

Mr Sherub Tenzin, Head, MSP/Member, PSC from the DTMS, Ministry of Health

Mr. Ugyen, Member, PSC from Bio-Bhutan

Pilot Site I, Dzedokha village, Lokchina Gewog, Chukka Dzongkhag

Sree Man Ghalley, Men member, Dzedokha Phachaing Detshen

Nar Dhoj Ghalley, Men, Chairman, Dzedokha Phachaing Detshen

Fbib Rani Limbu, Women, Member, Dzedokha Phachaing Detshen

Man Kumara Rai, Men, Member, Dzedokha Phachaing Detshen

Eva Raj Ghalley, Men, Member, Dzedokha Phachaing Detshen

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Tandi Dorji, Men, Member, DzomDagam Ngomen Tshogpa

Annex 2. SWOT analysis with NBC, MSP, Bio-Bhutan and ABS communities

National Biodiversity Centre			
Strength	Weakness	Threats	Opportunities
The ABS Policy, Biodiversity Bill of Bhutan 2016 and draft Biodiversity Rules and Regulations are in place and institutional and personnel capacity in terms of reviewing and developing policy instruments in line with Nagoya Protocol, capacity building of	Work burden due to less staff and additional activities	Delay in the approval of amended Biodiversity Bill 2016	Approval of the Biodiversity Bill by the Parliament will back up legally binding ABS agreements between parties

NBC staff, better networking between Government, commercial companies and communities in ABS implementation			
	Changing participants in ABS trainings/workshops		Sanitization to new participants and recap to previous participants on ABS
MSP views ABS new concept offering opportunities for research and commercialization of genetic resources for providers and users	To realize ABS benefits, however, project period of 4 years is not enough	Delay in the approval of Biodiversity Bill creates a policy vacuum for ABS implementation	A project period of at least 10 years given the long-term nature of benefits realization
Government versus –private versus community partnership ABS model			MSP and Bio-Bhutan can sustain budgets for financing of post-project activities from product commercialization and diversification
Menjong Sorig Pharmaceuticals			
The ABS project has been useful to assist MSP in systematization of resource data on collection and availability by sites, altitude, climate and management, e.g. Survey done in Lingshi			
ABS creates employment opportunities for unemployed youths in the villages and generates income for the poor communities in line with the Government policy of employment.		Alternative income sources that are lucrative drives community participation e.g. Dangdung community's involvement in MHPA has led to low involvement in MSP activities	The lessons learned from ABS project could be scaled-up in high altitude medicinal plants access and commercialization and create employment opportunities to youth population and improve livelihood. E.g. Cordeyceps in Laya
Bio-Bhutan			
ABS project has been beneficial in catalyzing institutional and personnel capacity building of Bio-Bhutan staff in bio-prospecting including extraction of natural products	Duration for training (2 days) is too short to comprehend the subject matter		Long duration trainings particularly in product development
ABS is a new concept of business model converging commercialization and conservation through scoping and actualization and monetary and non-monetary benefits-sharing on a fair and equitable basis delivering the corporate social responsibility		Uncertainty in determining the monetary benefit sharing (%)	ABS agreement may be feasible in the long-term based on markets and commercialization of prototypes developed

Dzedokha			
Strength	Weakness	Threats	Opportunities
ABS- a pro-poor mechanism to deliver benefits to		Distant	

poorer households, who can't afford to buy seeds & seedlings and planting tools to cultivate and manage ginger production		benefits	
ABS awareness and capacity building through trainings and study tours transform attitude and perception of project beneficiaries			
Medicinal prototypes development and diversification of nature-based products from wild plants can sustain benefits flow to project beneficiaries and catalyze community development			Greater opportunities for children
Preservation and promotion of medicinal TK heritage and discovery of new medicines. For example, ginger is chopped into pieces, dried and boiling in hot water and drinking early morning helps to cure gastritis			
Dagala, Thimphu			
Increase in knowledge and skills on harvest, management of the resource and medicinal use of <i>Rhododendron anthopogon</i> oil		Declining availability of Rhododendron leaves	Generates employment and income to women and children and benefits both community and public
Namther, Langthel			
The project creates employment for men, women and children and earning income	Women are unable to climb trees to pick berries	Land owners not allowing to collect plants from their land, loss of biodiversity (Asparagus)	Monetary benefits from MSP supplements children's education, and buying basic necessities e.g. rice, oil
Enhanced knowledge and skills on medicinal plants (which plants to collect for which medicines)	MSP demands difficult to meet during off-season and low productivity period		

Annex 3. Midterm Review Evaluative Matrix Template

Evaluative Question	Indicators	Sources	Methodology
Project Strategy: To what extent is the project strategy relevant to country priorities, country ownership, and the best route towards expected results?			
Q1: How does the project objective, outcomes and outputs align with national development priorities of environmental sustainability, socio-economic development and good governance?	<i>Level of coherence between project design and development priorities; outcome and output progress; ABS environmental and social risk minimization, mitigation and management strategies</i>	Project documents national policies or strategies, data collected throughout the MTR mission, etc.)	Document analysis, interviews with project board and staff, interviews with NBC, MSP, Bio-Bhutan
Q2: How does the current management align with	<i>Clear responsibilities and reporting; transparent and</i>	PIR, Project reports	Interviews on current management vis-à-vis

Governance structures? Have changes been made and are they effective?	<i>timely decision-making</i>		project management setup with NBC
Progress Towards Results: To what extent have the objective and expected outcomes of the project been achieved thus far?			
To what extent the national ABS framework (policy and rules and regulations) develop and implemented, build national capacities and facilitate the discovery of nature-based products.	<i>Indicator 1: Status of ABS policy and rules and regulation and application; number of staff trained on ABS, by NBC, MSP, Bio-Bhutan; number of nature-based products developed</i>	Project documents (PIR, NBC, MSP and Bio-Bhutan reports)	Interviews with NBC, MSP and Bio-Bhutan
Outcome 1: To what extent the ABS policy and rules and regulations have been in place and operational?	<i>Indicator 2: Status of ABS policy and rules and regulations; application by NBC, MSP, Bio-Bhutan</i>	Project documents (PIR, NBC, MSP and Bio-Bhutan reports)	Interviews with NBC, MSP and Bio-Bhutan including field stakeholders including farmers' groups
Outcome 2: Strengthened stakeholder capacity and awareness supports implementation of the national ABS framework	<i>Indicator 3: Number of staff trained on ABS by NBC, MSP, Bio-Bhutan; bio-prospecting facilities; awareness training conducted by gender</i>	PIRs and training reports, annual reports of NBC, MSP and Bio-Bhutan reports)	Documents reviews, interviews with questionnaires with project beneficiaries (farmers group)
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	<i>Indicator 4: Application of ABS mechanism between service provider and users; mutually developed agreements for benefits sharing on fair and equitable basis</i>	PIRs of NBC, MSP, Bio-Bhutan; MAT	Document reviews, interviews with NBC, MSP, Bio-Bhutan and farmers' groups
Project Implementation and Adaptive Management: Has the project been implemented efficiently, cost-effectively, and been able to adapt to any changing conditions thus far? To what extent are project-level monitoring and evaluation systems, reporting, and project communications supporting the project's implementation?			
Management: Has the project implementation been cost-effective and adaptive to any changes?	<i>Timely and quality delivery of products services (reports, technical supports, communication, risk mitigation)</i>	PIR, Monitoring and evaluation reports	Document reviews, interviews with NBC
Work planning: Any delays in start-up and implementation, causes and resolution; work planning results-based?	<i>Project implementation on time and result-oriented work plans</i>	PIR, work plans, field-based reports	Document reviews, interviews with NBC, MSP and Bio-Bhutan
Finance and Co-finance: Any changes in budget allocation, timely funds flow and co-finance?	<i>Timely flow of funds</i>	Physical and financial progress reports, PLAMs	Budget progress reports, interviews with PMU and finance staff
M&E: Do monitoring tools provide useful and cost-effective information & M&E budget sufficient?	<i>Timely monitoring</i>	Monitoring reports (quarterly, annually)	Interviews on M&E with NBC, MSP and Bio-Bhutan, document reviews
Engagement: Do national, local Government, CSO, private agencies participate in project activities, decision-making and awareness-raising?	Project awareness and ownership	Project board meeting minutes, training and media reports	Document reviews and interviews with farmers' groups in Lokchina, Dagala and Langthel

Communication: Has there been sufficient communication on project objective, outcomes and activities through multi-media?	Project awareness	Project inception report, media reports	Document reviews, interviews with local staff and farmers' groups with questionnaires
Gender: Is gender concerns integrated into project design (RF gender disaggregated indicators) and implementation (activities, training, women's role in decision-making and benefit-sharing)?	Gender mainstreaming	Project documents, meetings, PIR	Document reviews, interviews with men and women using the key informant interviews
Sustainability: To what extent are financial, institutional, socio-economic, and/or environmental risks to sustaining long-term project results?			
Finance/economic: What are financial and economic sustainability means, once the GEF fund ends?	Continue financing	Financial reports, co-finance reports	Document reviews and interviews with NBC, MSP and Bio-Bhutan
Institutional: Do the ABS policy, rules and MTA ensure sustenance of project benefits?	Continue benefits	PIR, ABS Agreements	ABS policy, Biodiversity Bill 2016, agreements reviews and interviews with beneficiaries and farmers groups with questionnaires
Social: Are SESP social risks to sustainability mitigated?	Social benefits maximize	SESP monitoring report	SESP reviews and interviews with NBC, MSP and Bio-Bhutan
Environment: Are SESP environment risks to sustainability mitigated?	Environmental risk minimize	SESP monitoring report	SESP reviews and interviews with farmers' groups

Annex. 4. Terms of Reference (TOR) for Midterm Review of the Implementing the Nagoya Protocol on Access to Genetic Resources and Benefit Sharing in Bhutan

1. INTRODUCTION

The Midterm Review (MTR) of the UNDP-GEF Medium sized project entitled 'Implementing the Nagoya Protocol on Access to Genetic Resources and Benefit Sharing in Bhutan' implemented by the National Biodiversity Centre (NBC), Ministry of Agriculture and Forests, Menjong Sorig Pharmaceuticals (MSP), Department of Traditional Medicine Services and Bio-Bhutan, is planned to commence during the third quarter of 2016. The project started in October 2014 and will close by September 2018. The project is currently in its second year of implementation. In compliance with the requirement of the approved project document, this MTR process is being initiated at the mid-point of the project. This ToR sets out the expectations for this MTR. The MTR process must follow the guidance outlined in the document [Guidance for Conducting Midterm Reviews of UNDP-Supported, GEF-Financed Projects](#).

2. PROJECT BACKGROUND INFORMATION

Bhutan's unique bioGeographical location at the intersection of the Indo-Malayan Realm and the Palearctic Realm combined with extreme altitudinal range and micro-climatic conditions have given rise to an outstanding diversity of flora and fauna. More than 5,600 species of vascular plants, close to 200 species of mammal, and some 690 species of birds have been recorded in a country that is just 38,394 km² in Geographical size, the second smallest in all of South Asia. At the global level, the country forms the core of the Eastern Himalaya which is recognized to be a global biodiversity hotspot and a globally important eco-region. The global significance of the country's biodiversity is accentuated by the fact that they hitherto occur virtually un-fragmented over vast stretches of natural land as a result of limited human intrusion. There is a profound nexus between the country's biodiversity and its people. Sixty-nine per cent of the population live in the rural areas subsisting on an integrated farm-based livelihood system that combines crop agriculture, livestock rearing, and use of a wide range of forest products. The ethno-botanical uses, even to this day, remain significant. Traditional medicines, derived from more than 200 species of medicinal plants in the wild, form an important part of the

public health services system. In the rural areas, local people collect a wide range of biological resources for food, incense, energy, and handicraft production.

The country's biodiversity, although in a relatively good state, 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 ABS. However, the country currently does 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.

This project has been conceived 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 will be achieved through the implementation of three inter-connected components as follow:

The first project component will involve review and consultative processes for approval of the draft ABS policy, promulgation of the Biodiversity Rules and Regulations for ABS implementation in compliance with the approved ABS policy and the Nagoya Protocol and based on 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 will involve upgrading of the bio-prospecting laboratory facilities and improving the technical skills of the lab technicians, staff training on ABS Regime Management based on a toolkit and training course developed through a comparative assessment of best approaches and practices for ABS management relevant to Bhutan, and a study tour for a group of Bhutanese to observe and secure first-hand knowledge and insights on bio-prospecting and ABS activities in the South and South East Asia regions. It will also include a series of advocacy and sensitization events and mass media programs to raise awareness of ABS among various groups using well-developed communication materials.

The third component will support the development and operationalization of three pilot ABS agreements that are compliant with Nagoya Protocol and encompass the best practices of ABS processes. The pilots will be implemented by three different institutions: The National Biodiversity Center, a government research and development institution which is also the national focal agency for ABS and Nagoya Protocol; Menjong Sorig Pharmaceuticals, a government 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. Each will engage with international partners for analysis and product development. This component will also involve the development and dissemination of knowledge resources emanating from the country's experience in ABS.

Each of the above components will have outcomes that will be 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 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.

3. OBJECTIVES OF THE MTR

The MTR will assess progress towards the achievement of the project objectives and outcomes as specified in the Project Document, and assess early signs of project success or failure with the goal of identifying the necessary changes to be made in order to set the project on-track to achieve its intended results. The MTR will also review the project's strategy, its risks to sustainability. In addition, the MTR is expected to identify and assist in the documentation of lessons and good practices from the project.

4. MTR APPROACH & METHODOLOGY

The MTR must provide evidence based information that is credible, reliable and useful. The MTR consultant will review all relevant sources of information including documents prepared during the preparation phase (i.e. PIF, UNDP Initiation Plan, UNDP Environmental & Social Safeguard Policy, the Project Document, project reports including Annual Project Review/PIRs, project budget revisions, lesson learned reports, national strategic and legal documents, and any other materials that the consultant considers useful for this evidence-based review). The MTR consultant will review the baseline GEF tracking Tool for biodiversity focal area submitted to the GEF at CEO endorsement, and the midterm GEF focal area Tracking Tool that must be completed before the MTR field mission begins. The MTR team is expected to follow a collaborative and participatory approach¹⁰ ensuring close engagement with the Project Team, government counterparts (the GEF Operational Focal Point), the UNDP Country Office, UNDP-GEF Regional Technical Advisers, and other key stakeholders. Engagement of stakeholders is vital to a successful MTR.¹¹ Stakeholder involvement should include interviews with stakeholders who have project responsibilities, including but not limited to executing agencies, senior officials and task team/ component leaders, Project manager, key experts in the subject area, Project Board members including the Chair, project stakeholders, project beneficiaries, academia, local government and CSOs, etc.

Additionally, the MTR consultant is expected to conduct field missions to the project sites at Lokchina Gewog under Chhukha Dzongkhag, Dagala Gewog under Thimphu Dzongkhag and Langthel Gewog under Trongsa Dzongkhag.

The final MTR report should describe the full MTR approach taken and the rationale for the approach making explicit the underlying assumptions, challenges, strengths and weaknesses about the methods and approach of the review.

5. DETAILED SCOPE OF THE MTR

¹⁰ For ideas on innovative and participatory Monitoring and Evaluation strategies and techniques, see [UNDP Discussion Paper: Innovations in Monitoring & Evaluating Results](#), 05 Nov 2013.

¹¹ For more stakeholder engagement in the M&E process, see the [UNDP Handbook on Planning, Monitoring and Evaluating for Development Results](#), Chapter 3, pg. 93.

The MTR consultant will assess the following four categories of project progress. See the *Guidance for Conducting Midterm Reviews of UNDP-Supported, GEF-Financed Projects* for extended descriptions.¹²

I. Project Strategy

Project design:

- Review the problem addressed by the project and the underlying assumptions. Review the effect of any incorrect assumptions or changes to the context to achieving the project results as outlined in the Project Document.
- Review the relevance of the project strategy and assess whether it provides the most effective route towards expected/intended results. Were lessons from other relevant projects properly incorporated into the project design?
- Review how the project addresses country priorities. Review country ownership. Was the project concept in line with the national sector development priorities and plans of the country (or of participating countries in the case of multi-country projects)?
- Review decision-making processes: were perspectives of those who would be affected by project decisions, those who could affect the outcomes, and those who could contribute information or other resources to the process, taken into account during project design processes?
- Review the extent to which relevant gender issues were raised in the project design. See Annex 9 of *Guidance for Conducting Midterm Reviews of UNDP-Supported, GEF-Financed Projects* for further guidelines.
- If there are major areas of concern, recommend areas for improvement.

Results Framework/Log frame:

- Undertake a critical analysis of the project’s log frame indicators and targets, assess how “SMART” the midterm and end-of-project targets are (Specific, Measurable, Attainable, Relevant, Time-bound), and suggest specific amendments/revisions to the targets and indicators as necessary.
- Are the project’s objectives and outcomes or components clear, practical, and feasible within its time frame?
- Examine if progress so far has led to, or could in the future catalyse beneficial development effects (i.e. income generation, gender equality and women’s empowerment, improved governance etc...) that should be included in the project results framework and monitored on an annual basis.
- Ensure broader development and gender aspects of the project are being monitored effectively. Develop and recommend SMART ‘development’ indicators, including sex-disaggregated indicators and indicators that capture development benefits.

Progress Towards Results

Progress Towards Outcomes Analysis:

- Review the log frame indicators against progress made towards the end-of-project targets using the Progress Towards Results Matrix and following the *Guidance for Conducting Midterm Reviews of UNDP-Supported, GEF-Financed Projects*; colour code progress in a “traffic light system” based on the level of progress achieved; assign a rating on progress for each outcome; make recommendations from the areas marked as “Not on target to be achieved” (red).

Table. Progress Towards Results Matrix (Achievement of outcomes against End-of-project Targets)

Project Strategy	Indicator ¹³	Baseline Level ¹⁴	Level in 1 st PIR	Midterm Target ¹⁵	End-of-project Target	Midterm Level & Assessment ¹⁶	Achievement Rating ¹⁷	Justification for Rating
Objective:	Indicator (if applicable):							
Outcome	Indicator 1:							

¹² http://web.undp.org/evaluation/documents/guidance/GEF/mid-term/Guidance_Midterm%20Review%20_EN_2014.pdf

¹³ Populate with data from the Log frame and scorecards

¹⁴ Populate with data from the Project Document

¹⁵ If available

¹⁶ Colour code this column only

¹⁷ Use the 6 point Progress Towards Results Rating Scale: HS, S, MS, MU, U, HU

1:	Indicator 2:							
Outcome 2:	Indicator 3:							
	Indicator 4:							
	Etc.							
Etc.								

Indicator Assessment Key

Green= Achieved	Yellow= On target to be achieved	Red= Not on target to be achieved
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In addition to the progress towards outcomes analysis:

- Compare and analyse the GEF Tracking Tool at the Baseline with the one completed right before the Midterm Review.
- Identify remaining barriers to achieving the project objective in the remainder of the project.
- By reviewing the aspects of the project that have already been successful, identify ways in which the project can further expand these benefits.

iii. Project Implementation and Adaptive Management

Management Arrangements:

- Review overall effectiveness of project management as outlined in the Project Document. Have changes been made and are they effective? Are responsibilities and reporting lines clear? Is decision-making transparent and undertaken in a timely manner? Recommend areas for improvement.
- Review the quality of execution of the Executing Agency/Implementing Partner(s) and recommend areas for improvement.
- Review the quality of support provided by the GEF Partner Agency (UNDP) and recommend areas for improvement.

Work Planning:

- Review any delays in project start-up and implementation, identify the causes and examine if they have been resolved.
- Are work-planning processes results-based? If not, suggest ways to re-orientate work planning to focus on results?
- Examine the use of the project's results framework/ log frame as a management tool and review any changes made to it since project start.

Finance and co-finance:

- Consider the financial management of the project, with specific reference to the cost-effectiveness of interventions.
- Review the changes to fund allocations as a result of budget revisions and assess the appropriateness and relevance of such revisions.
- Does the project have the appropriate financial controls, including reporting and planning, that allow management to make informed decisions regarding the budget and allow for timely flow of funds?
- Informed by the co-financing monitoring table to be filled out, provide commentary on co-financing: is co-financing being used strategically to help the objectives of the project? Is the Project Team meeting with all co-financing partners regularly in order to align financing priorities and annual work plans?

Project-level Monitoring and Evaluation Systems:

- Review the monitoring tools currently being used: Do they provide the necessary information? Do they involve key partners? Are they aligned or mainstreamed with national systems? Do they use existing information? Are they efficient? Are they cost-effective? Are additional tools required? How could they be made more participatory and inclusive?
- Examine the financial management of the project monitoring and evaluation budget. Are sufficient resources being allocated to monitoring and evaluation? Are these resources being allocated effectively?

Stakeholder Engagement:

- Project management: Has the project developed and leveraged the necessary and appropriate partnerships with direct and tangential stakeholders?
- Participation and country-driven processes: Do local and national government stakeholders support the objectives of the project? Do they continue to have an active role in project decision-making that supports efficient and effective project implementation?

- Participation and public awareness: To what extent has stakeholder involvement and public awareness contributed to the progress towards achievement of project objectives?

Reporting:

- Assess how adaptive management changes have been reported by the project management and shared with the Project Board.
- Assess how well the Project Team and partners undertake and fulfil GEF reporting requirements (i.e. how have they addressed poorly-rated PIRs, if applicable?)
- Assess how lessons derived from the adaptive management process have been documented, shared with key partners and internalized by partners.

Communications:

- Review internal project communication with stakeholders: Is communication regular and effective? Are there key stakeholders left out of communication? Are there feedback mechanisms when communication is received? Does this communication with stakeholders contribute to their awareness of project outcomes and activities and investment in the sustainability of project results?
- Review external project communication: Are proper means of communication established or being established to express the project progress and intended impact to the public (is there a web presence, for example? Or did the project implement appropriate outreach and public awareness campaigns?)
- For reporting purposes, write one-page note that summarizes the project's progress towards results in terms of contribution to sustainable development goals advancement.

iv. Sustainability

- Validate whether the risks identified in the Project Document, Annual Project Review/PIRs and the ATLAS Risk Management Module are the most important and whether the risk ratings applied are appropriate and up to date. If not, explain why.
- In addition, assess the following risks to sustainability:

Financial risks to sustainability:

- What is the likelihood of financial and economic resources not being available once the GEF assistance ends (consider potential resources can be from multiple sources, such as the public and private sectors, income generating activities, and other funding that will be adequate financial resources for sustaining project's outcomes)?

Socio-economic risks to sustainability:

- Are there any social or political risks that may jeopardize sustainability of project outcomes? What is the risk that the level of stakeholder ownership (including ownership by governments and other key stakeholders) will be insufficient to allow for the project outcomes/benefits to be sustained? Do the various key stakeholders see that it is in their interest that the project benefits continue to flow? Is there sufficient public / stakeholder awareness in support of the long term objectives of the project? Are lessons learned being documented by the Project Team on a continual basis and shared/ transferred to appropriate parties who could learn from the project and potentially replicate and/or scale it in the future?

Institutional Framework and Governance risks to sustainability:

- Do the legal frameworks, policies, governance structures and processes pose risks that may jeopardize sustenance of project benefits? While assessing this parameter, also consider if the required systems/ mechanisms for accountability, transparency, and technical knowledge transfer are in place.

Environmental risks to sustainability:

- Are there any environmental risks that may jeopardize sustenance of project outcomes?

Conclusions & Recommendations

The MTR team will include a section of the report setting out the MTR's evidence-based conclusions, in light of the findings.¹⁸ Recommendations should be succinct suggestions for critical intervention that are specific, measurable, achievable, and relevant. A recommendation table should be put in the report's executive summary. See the *Guidance for Conducting Midterm Reviews of UNDP-Supported, GEF-Financed Projects* for guidance on a recommendation table. The MTR consultant should make no more than 15 recommendations total.

¹⁸ Alternatively, MTR conclusions may be integrated into the body of the report.

The MTR team will include its ratings of the project's results and brief descriptions of the associated achievements in a *MTR Ratings & Achievement Summary Table* in the Executive Summary of the MTR report. See Annex E for ratings scales. **No rating on Project Strategy and no overall project rating is required.**

Checklist for gender sensitive MTR

Project design and consideration

- Were gender issues (project impacts on women's groups, women-only activities) included in the project document?
- Were gender issues identified in the UNDP SESP and what mitigation measures planned?
- Does the project work plan, budget include gender-relevant outcomes, outputs and activities?

Project Implementation and monitoring

- Do the implementing agencies have the capacity to deliver benefits to or involve women?
- What are the gender balance of project management staff and project board?
- Did the project inception report, meetings, appraisal committee mention gender equality and women's empowerment?
- Are the project's result framework indicators disaggregated by sex and gender? How the data on these indicators are collected and are being monitored?

Strength, weakness and opportunities

- Finally, what are the strength, weakness and opportunities of the project?

Participatory Rural Appraisal

Key Informant Interviews

Questionnaires for beneficiary interview in the 3 pilot demonstration sites

1. Household demography

Interviewee:	Age:	Gender: M/F (<i>circle one</i>)
Pilot site:	Gewog:	Dzongkhag:

2. Are you aware of the ABS project objectives, outcomes and outputs? Yes No

3. How did you know about the ABS project?

- i. Project inception workshop ii. Media (BBS/Radio/Kuensel/Gewog Information Centre/Word of Mouth
- iii. Awareness and project related training by NBC iv. Project activity(ies) v. Any other (specify)

4. What capacity building training(s) have you received from NBC and its implementing partners (Bio-Bhutan and MSP) in connection with the project?

- i. Awareness on ABS and group formation ii. Cultivation technique iii. Sustainable harvesting and management
- iv. Marketing v. Distillation technique vi. Any others (specify)

5. What social and economic benefits have you received from the implementation of project activities so far?

- i. Employment ii. Cash on daily wage basis iii. Training iv. Enhanced traditional knowledge v. Any other (specify)

6. How many men and women are engaged in the activity/Tshogpa group?

Men:	Women:
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7. What role do you play in decision-making/empowerment in the Tshogpa/Management Group?

- i. Chairman ii. Secretary iii. Treasurer iv. Member v. Non-member vi. Any others (specify)

8. Are you willing to give Free, Prior and Informed Consent (FPIC) and consensus in ABS Agreement between you (providers) and user (commercial companies) of genetic resource?

- i) FPIC Yes No; ii) ABS consensus Yes No iii) monetary benefits Yes No

9. Is there are cultural and religious stereotypes constraints to women's participation, empowerment and benefit-sharing from ABS activities?

Group Discussion

Following the key informant interviews, open-ended group questions will be asked to the project beneficiary groups.

1. What mechanism of benefit-sharing is agreed between you (provider) and user of genetic resources? Briefly describe here.

2. What are some of the strengths, weakness, opportunities and threats of the project?

Strength	Weakness	Opportunities	Threats
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3. What are some of the emerging good success or failure lessons learned from the project? Briefly explain here.

Annex 5. Ratings Scale

Ratings for Progress Towards Results: (one rating for each outcome and for the objective)		
6	Highly Satisfactory (HS)	The objective/outcome is expected to achieve or exceed all its end-of-project targets, without major shortcomings. The progress towards the objective/outcome can be presented as “good practice”.
5	Satisfactory (S)	The objective/outcome is expected to achieve most of its end-of-project targets, with only minor shortcomings.
4	Moderately Satisfactory (MS)	The objective/outcome is expected to achieve most of its end-of-project targets but with significant shortcomings.
3	Moderately Unsatisfactory (HU)	The objective/outcome is expected to achieve its end-of-project targets with major shortcomings.
2	Unsatisfactory (U)	The objective/outcome is expected not to achieve most of its end-of-project targets.
1	Highly Unsatisfactory (HU)	The objective/outcome has failed to achieve its midterm targets, and is not expected to achieve any of its end-of-project targets.
Ratings for Project Implementation & Adaptive Management: (one overall rating)		
6	Highly Satisfactory (HS)	Implementation of all seven components – management arrangements, work planning, finance and co-finance, project-level monitoring and evaluation systems, stakeholder engagement, reporting, and communications – is leading to efficient and effective project implementation and adaptive management. The project can be presented as “good practice”.
5	Satisfactory (S)	Implementation of most of the seven components is leading to efficient and effective project implementation and adaptive management except for only few that are subject to remedial action.
4	Moderately Satisfactory (MS)	Implementation of some of the seven components is leading to efficient and effective project implementation and adaptive management, with some components requiring remedial action.
3	Moderately Unsatisfactory (MU)	Implementation of some of the seven components is not leading to efficient and effective project implementation and adaptive, with most components requiring remedial action.
2	Unsatisfactory (U)	Implementation of most of the seven components is not leading to efficient and effective project implementation and adaptive management.
1	Highly Unsatisfactory (HU)	Implementation of none of the seven components is leading to efficient and effective project implementation and adaptive management.
Ratings for Sustainability: (one overall rating)		
4	Likely (L)	Negligible risks to sustainability, with key outcomes on track to be achieved by the project’s closure and expected to continue into the foreseeable future
3	Moderately Likely (ML)	Moderate risks, but expectations that at least some outcomes will be sustained due to the progress towards results on outcomes at the Midterm Review
2	Moderately Unlikely (MU)	Significant risk that key outcomes will not carry on after project closure, although some outputs and activities should carry on
1	Unlikely (U)	Severe risks that project outcomes as well as key outputs will not be sustained

Annex 6. MTR Mission Itinerary

Timeframe	Activity	Persons to meet
23/11/2016	Sign the contract	UNDP CO, Mr Tashi Dorji
23/11/2016	Prep the MTR Team (handover of Project Documents)	UNDP CO, Mr Tashi Dorji
24–27/11/2016	Document review and preparing MTR Inception Report	Consultant

28-29/11/2016	Finalisation and submission of MTR Inception Report to UNDP CO	UNDP CO, Tashi Dorji
30/11/2016	MTR mission: stakeholder meetings and conduct interviews in Thimphu	PSC members, NBC, Dr Tashi Yangzome Dorji, Mr Chenchu Dorj other official/staff
01/12/2016	Stakeholder meetings and conduct interviews in Thimphu	MSP, Mr Dorji Tshering, Mr Sherab Tenzin
02/12/2016	Stakeholder meetings and conduct interviews in Thimphu	Bio-Bhutan, Mr Ugyen, Mr Nobin Gurung
03/12/2016	Work on report and preparation to conduct field missions	Consultant
04/12/2016	Travel to Lokchina, Chukka and halt	Consultant
05/12/2016	Meet Lokchina farmers group member (3 men/3 women) on <i>Ginger (Zingiber cassumnar)</i> cultivation and conduct interviews	Lokchina site, Chhukha
06/12/2016	Travel back to Thimphu and halt	Consultant
07/12/2016	Meet Dagala farmers group member (3 men/3 women) on dwarf <i>Rhododendron (Rhododendron anthopogon)</i> management and conduct interviews	Dagala site, Thimphu
08-10/12/2016	Continue work on the report in Thimphu	Consultant
11/12/2016	Travel to Langthel and halt	Consultant
12/12/2016	Meet Langthel farmers group members (3 men/3 women) on Himalayan Gooseberry (<i>Embllica officinalis</i>) management and conduct interviews	Langthel site, Trongsa
13/12/2016	Travel to Thimphu	Consultant
14-31/12/2016	Collate, analyze data and information writing and preparation of the MTR Report & presentation. Discuss and gather additional information needs(GEF Biodiversity TT/others) with NBC, MSP and Bio-Bhutan as and when necessary	Concerned person in NBC, MSP and Bio-Bhutan
02/01/2017	MTR wrap-up meeting with presentation of initial findings	Project stakeholders
03 – 08/01/2017	Incorporate MTR comments and submission of revised first draft report to UNDP CO and Project Manager	Consultant
09-15/01/2017	Receive management response from UNDP CO & PMU and revise second draft report with comments and suggestions	UNDP CO & NBC
16-19/01/2017	Submission of second draft report to UNDP CO and Project Manager and incorporation of final comments	UNDP CO & NBC
20-25/01/2017	Submission of third draft and incorporation of comments from UNDP/GEF RTA Bangkok Regional Hub	UNDP CO
26-30/01/2017	Incorporate feedback and finalisation of the MTR Report	Consultant
31/01/2017	Submission of the final report. Contract date of full MTR Report completion	UNDP CO

Annex 7. Signed UNEG Code of Conduct Form

ToR ANNEX D: UNEG Code of Conduct for Evaluators/Midterm Review Consultants¹⁴

Evaluators/Consultants:

1. Must present information that is complete and fair in its assessment of strengths and weaknesses so that decisions or actions taken are well founded.
2. Must disclose the full set of evaluation findings along with information on their limitations and have this accessible to all affected by the evaluation with expressed legal rights to receive results.
3. Should protect the anonymity and confidentiality of individual informants. They should provide maximum notice, minimize demands on time, and respect people's right not to engage. Evaluators must respect people's right to provide information in confidence, and must ensure that sensitive information cannot be traced to its source. Evaluators are not expected to evaluate individuals, and must balance an evaluation of management functions with this general principle.
4. Sometimes uncover evidence of wrongdoing while conducting evaluations. Such cases must be reported discreetly to the appropriate investigative body. Evaluators should consult with other relevant oversight entities when there is any doubt about if and how issues should be reported.
5. Should be sensitive to beliefs, manners and customs and act with integrity and honesty in their relations with all stakeholders. In line with the UN Universal Declaration of Human Rights, evaluators must be sensitive to and address issues of discrimination and gender equality. They should avoid offending the dignity and self-respect of those persons with whom they come in contact in the course of the evaluation. Knowing that evaluation might negatively affect the interests of some stakeholders, evaluators should conduct the evaluation and communicate its purpose and results in a way that clearly respects the stakeholders' dignity and self-worth.
6. Are responsible for their performance and their product(s). They are responsible for the clear, accurate and fair written and/or oral presentation of study limitations, findings and recommendations.
7. Should reflect sound accounting procedures and be prudent in using the resources of the evaluation.

MTR Consultant Agreement Form

Agreement to abide by the Code of Conduct for Evaluation in the UN System:

Name of Consultant: Mansi Ran Mukherjee

Name of Consultancy Organization (where relevant): Green Growth Consulting Pvt. Ltd.

I confirm that I have received and understood and will abide by the United Nations Code of Conduct for Evaluation.

Signed at UNDP Office (Place) on 23/11/2016 (Date)

Signature: Mansi Ran Mukherjee

Annex 8. Signed MTR Final Report Clearance Form

Annex 9. Annex in a separate file: Audited trail from received comments on the draft MTR report (separate file)

Annex 10. Mid-Term ABS Institutional Scorecard (separate file)

Annex 11. Mid-Term Biodiversity TT (Separate file)

Annex 9. Annex in a separate file: Audited trail from received comments on the draft MTR report (separate file)

Author	Comment / Feedback on the draft MTR Report	MTR team and response and action taken
UNDP CO	1. Generally, the report is very comprehensive, capturing the success works of the project. However, it lacks critical views which would be good for us to keep on toes to ensure the delivery of the project milestones for the reaming period.	Critical reviews were done on the project strategy and design (gender, SES risks, M&E, resource sustainability that have problems) The project needs clear direction to demonstrate outcomes and objective of Nagoya Protocol (necessary recommendations made) and not unnecessarily bogged down with critical comments implementation.
	2. Please be precise in your recommendations because we have to come up with a management response. For instance, we cannot revise the log frame to reflect the gender indicators in the original prodoc. But what we	Recommendations made are precise for improvement in design, monitoring, follow-up and future actions (directions). Minor changes and targets revised (where necessary). The indicators that need gender-

	could ensure is capture the gender disaggregated information in our report (e.g. Project Implementation Report).	disaggregation are incorporated in RF/LF to take into account in monitoring and reporting in PIR.
	3. A lot of editorial works are required. The paragraphs are too long and some of them run into pages and readers would easily get lost with these long narratives. Please rework on these and Madam PD has kindly agreed to edit it once we have the revised report.	Editorial works are done to the extent possible. Nevertheless, sentences are short and meanings clear. Long paragraphs have been reduced to make readable.
	4. Most of the narratives have been repetitive in different sections. Please rework on these without reflecting the same sentences all over again.	Repetitions avoided where possible. Some repetitions may occur due to same topics.
	5. Please update the annexures as per the TOR	TOR updated with code of conduct and audit trail template
PMU	Firstly, let me congratulate you on the well written report Ia. I don't have much to comment just few minor observations especially on the first few pages regarding the Biodiversity Bill and Regulations being in place and operational. I feel we might need to re-frame the sentence as to me it reads like it is endorsed and operational. I have highlighted it in yellow for your consideration	The word “operational” is deleted in paragraphs, where the description features but these regulatory instruments are in place.
MSP	Sorry for the delay. My DG was out of station for some time and was trying to get his feedback on the report. I do not have any major comment or feedback on the mid-term progress report. If it can add any value to the document, maybe you can include this "Report of the Technical Assistance to Assess and Conduct Baseline Study on Natural Fragrance Preparations and Applications" under a list of technical reports produced by the implementing partners. Additionally, during the last quarter of 2016, MSP through project's support had conducted workshop and study tour for the Lingshi Community groups on ABS regimen, Sustainable collection and post-harvest care. We have also purchased and distributed harvesting and collection tools to Lingshi, Namther and Dagala community groups.	The report features as serial no. 14 under the section 4.4; workshop and study tour to Lingshi community incorporated as milestone in section 2.4 and distribution of harvest tools (mentioned in the text under section 5.4 and earlier recommendation withdrawn) in the MTR report.