United Nations Development Programme
Country: Bhutan

PROJECT DOCUMENT

Project Title:	**Implementing the Nagoya Protocol on Access to Genetic Resources and Benefit Sharing in Bhutan**
UNDAF Outcome(s):	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

UNDP Strategic Plan Environment and Sustainable Development Primary Outcome: Growth and development are inclusive and sustainable incorporating productive capacities that create employment and livelihoods for the poor and excluded

Expected CP Outcome(s): 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

Executing Entity/Implementing Partner: National Biodiversity Centre (NBC), Ministry of Agriculture and Forests
Implementing Entity/Responsible Partners: Line agencies, private sector, local governments

Brief Description: Bhutan's unique biogeographic 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 km^2 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 unfragmented 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 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.

Programme Period:	48 months
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Project ID:	00090375
PIMS #	5239
Start date:	October 2014
End Date	September 2018
Management Arrangements	NIM
PAC Meeting Date	July 18, 2014

Total resources required	**$ 4,003,668**
UNDP managed funds	$ 1,106,000
Regular (UNDP TRAC)	$ 106,000
GEF / NPIF	$1,000,000
Other (partner managed resources)	$ 2,897,668
• **Government:**	
• NBC $806,950	
• MoAF $494,800	
• MSP $579,300	
• BTFEC $631,182	
• **Other**	
• NGS $200,000	
• Bio Bhutan $80,000	
Chanel $105,436	

Agreed by (Government):

Date/Month/Year

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Date/Month/Year

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Acronyms

ABS	Access and Benefit-sharing
APR	Annual Progress Report
ARR	Annual Review Report
ASEAN	Association of South East Asian Nations
AWGNCB	ASEAN Working Group on Nature Conservation and Biodiversity
AWP	Annual Work Plan
BAFRA	Bhutan Agriculture and Food Regulatory Authority
BPPL	Bhutan Pharmaceutical Private Limited
BTFEC	Bhutan Trust Fund for Environmental Conservation
CAs	Competent Authorities
CBD	United Nations Convention on Biological Diversity
CBO	Community-based Organisation
CDR	Combined Delivery Report
COP	Conference of the Parties
CoRRB	Council of RNR Research and Regional RNR Research and Development Centres
CP	Country Programme
CPAP	Country Programme Action Plan
CSO	Civil Society Organization
DoFPS	Department of Forests and Park Services
EA	Executing Agency
FAO	United Nations Food and Agriculture Organisation
GCCA	Global Climate Change Adaptation Project
GNHC	Gross National Happiness Commission
GR	Genetic Resources
GRPI	Strengthening National Capacities in implementing the ITPGRFA in Bhutan (project)
ILC	Indigenous and Local Communities
ITPGRFA	International Treaty on Plant Genetic Resources in Food and Agriculture
MAT	Mutually Agreed Terms
MoAF	Ministry of Agriculture and Forests
MSP	Menjong Sorig Pharmaceuticals
NBC	National Biodiversity Centre
NEC	National Environment Commission
NGOs	Non-Governmental Organisations
NIM	National Implementation Modality
NPD	National Project Director
NPIF	Nagoya Protocol Implementation Fund
Nu	Ngultrum (Bhutan currency; USD1 = 60 Nu)
NWFP	Non Wood Forest Products
PIC	Prior Informed Consent
PIR	Project Implementation Report
PM	Project Manager
PMU	Project Management Unit
PPG	GEF Project Preparation Grant (project development phase)
PSC	Project Steering Committee
QPL	Quantum Pharmaceuticals Limited
R&D	Research and development
RGoB	Royal Government of Bhutan
RNR RDC	Renewable Natural Resources Research & Development Centre
RSPN	Royal Society for the Protection of Nature
RTA	Regional Technical Advisor

S

SBAA	Standard Basic Assistance Agreement
SRF	Strategic Results Framework
TAG	Technical Advisory Group
TK	Traditional Knowledge
UN	United Nations
UNDP	United Nations Development Programme
UNDP-CO	UNDP Country Office
UNDP/GEF RCU	UNDP/GEF Regional Coordination Unit
UNEP	United Nations Environment Programme
WCD	Wildlife Conservation Division (of DoFPS)
WIPO	World Intellectual Property Organization

SECTION I: Elaboration of the Narrative

PART I: Situation Analysis

INTRODUCTION

1. Flanked by giant neighbours – China to its north and India to its south, east and west – Bhutan is located in the Eastern Himalaya, a region recognized as a global biodiversity hotspot. With a projected population of 745,153 for 2014[1] and a geographical area of 384,394 km^2, the country is one of the smallest in Asia. The terrain is one of the most rugged in the world, characterized by huge variations in altitude. Within the 220 km between the northern and southern borders, the altitude ranges from 150 meters in the southern foothills to more than 7,500 meters in the northern highlands, and nearly 95% of the country is above 600 meters[2].

2. The Bhutanese are still by and large an agrarian society. 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 Bhutanese people have lived in harmony with their surrounding natural environment for centuries, harvesting nature's bounty for shelter, food, medicine, and many other purposes based on traditional norms and practices of sustainability. Bhutan in the past was referred to "Lhomenjong", which means the southern land of medicinal herbs, denoting the country's wealth of medicinal plants. The ethno-botanical uses, even to this day, remain significant. Traditional medicines form an important part of the public health services system. More than 200 species of medicinal plants from the wild are still in use for production of traditional medicines by Menjong Sorig Pharmaceuticals, the erstwhile Pharmaceutical and Research Unit of the Institute of Traditional Medicines (now the Department of Traditional Medicines). In many villages, local people collect forest foods such as ferns, mushrooms, wild greens, tubers, bamboo shoots, and orchids to supplement their own dietary needs as well as for sale in urban markets. Also popular among Bhutanese for religious offering is incense stick and powder made from a combination of extracts from numerous aromatic plant species. Many of these uses stem from an intimate local knowledge about plants, and their parts and uses, passed down from generation to generation.

3. This project has been conceived to enable the people and government of Bhutan to harness the potential economic benefits of their country's rich biological diversity in a sustainable manner, and to share these benefits in a fair and equitable manner among people and entities that have a direct stake in the resources in the form of business, employment, research, technology transfer and capacity development opportunities. These new opportunities will strengthen the social and economic rationale for the conservation and sustainable use of biological resources, in keeping with the global objective of biodiversity conservation as expressed through the Convention of Biological Diversity, and the national objective of environmental sustainability as embedded in the Bhutanese development philosophy of Gross National Happiness. It also corresponds with the vision of the

[1] Population data from the Population and Housing Census of Bhutan 2005 form the baseline for population projections made for the period 2006-2015 by the National Statistics Bureau, Royal Government of Bhutan.
[2] Atlas of Bhutan: Land Cover and Area Statistics, Ministry of Agriculture and Forests, 1995.

Economic Development Policy of Bhutan, 2010, which is one of a green and self-reliant economy based on diversification of economy with minimal ecological footprint and harnessing of, and value addition to, natural resources in a sustainable manner among other things.

CONTEXT AND GLOBAL SIGNIFICANCE

Biodiversity context

4. Bhutan is located at the intersection of two major biogeographic realms, the Indo-Malayan Realm characterized by the tropical and sub-tropical ecosystems of the southern foothills and lowlands; and the Palearctic Realm, represented by the alpine and temperate mountains and valleys in the northern and central regions. This distinctive biogeographic location combined with extreme altitudinal range and micro-climatic conditions have given rise to an outstanding diversity of flora and fauna.

5. Corresponding with variations in altitude and climatic conditions ranging from hot and humid sub-tropical conditions in the southern foothills to cold and dry tundric conditions in the northern mountains, the country supports a wide range of ecosystems and vegetation zones. Broadly speaking, the country can be divided into three distinct eco-floristic zones. The alpine zone comprises areas above 4,000 m with no tree cover, only scrub vegetation and meadows. The temperate zone, lying between 2,000 and 4,000 m, contains temperate conifer and broadleaf forests. The subtropical zone, which lies between 150 and 2,000 m, contains tropical and subtropical forests interspersed with patches of grasslands in the lower lands.

6. More than 5,600 species of angiosperms and gymnosperms have been recorded in the country. These include 369 species of orchids and 46 species of rhododendrons[3]. Of the recorded plant species, 105 are said to be endemic to Bhutan, found nowhere else in the world. The Bhutanese flora is considered to be of immense scientific value not only due to the high level of diversity but also because of the relatively good state of preservation compared to other Himalayan regions. Many of the plant species potentially have enormous commercial and scientific values.

7. Close to 200 species of mammal are known to occur in the country[4]. Although there are relatively few endemic mammal species, the high species richness combined with the availability of well-preserved habitats across various altitudinal and climatic zones together make for what is probably the only example of an intact faunal assemblage in the Eastern Himalaya. This ecological integrity provides preconditions in Bhutan for a prime sanctuary for numerous Palearctic and Indo-Malayan mammal species. These species include a number of globally threatened mammals such as the tiger, snow leopard, clouded leopard, red panda, Bhutan takin, golden langur, capped langur, Asian elephant, and Himalayan musk deer.

[3] Some plant taxonomists reckon that there will be more than 7,000 species of vascular plant in the country. NJ Pearce and PJ Cribb, who authored *The Orchids of Bhutan* published by the Royal Botanic Garden Edinburgh and the Royal Government of Bhutan in 2002, have estimated that an additional 200 or more species of orchids alone are likely to be discovered in the country in future.

[4] Mammals of Bhutan by Wangchuk T et al, 2004.

8. Bhutan has outstanding bird diversity: 690 species have been recorded and many more are likely to be found in the future[5]. On a global scale, the country is recognized as forming a part of several globally important bird regions. It is a part of the Sino-Himalayan mountain forests, Indo-Burmese forests, Indo-Gangetic grasslands, South Asian arid habitats, and Tibetan plateau wetlands – all categorized as globally important bird regions by BirdLife International.

9. The global significance of Bhutan's biological diversity is accentuated by the fact that several species that are threatened elsewhere are provided with a safe refuge in the country. An inter-connected population of 115 tigers is conservatively estimated to be found in Bhutan living in contiguous natural habitats spanning a total area of 10,714 km^2 ranging from the tropical forests and grasslands at 100 masl to the northern alpine forests up to 4,100 masl – a unique conservation situation that exists nowhere else. Similarly, around 4,000 golden langurs, which outside Bhutan are known to be found only in a few pockets of forests in the neighboring Indian state of Assam, live in the vast contiguous forest habitats of Jigme Singye Wangchuck National Park and Royal Manas National Park in Bhutan. Populations of black-necked crane are well protected legally and culturally, with natural habitats such as Phobjikha valley witnessing a remarkable increase in crane numbers over the past 25 years – from 120 in the 1987/88 to around 350 in 2005/06, and to 422 in 2013/14.

Legal and policy context

10. The conservation of biodiversity is enshrined in the **Constitution of the Kingdom of Bhutan**. Article 1.12 of the Constitution states that "the rights over mineral resources, rivers, lakes and forests shall vest in the State and are the properties of the State, which shall be regulated by law." In Article 5.1, it goes on further to state that "Every Bhutanese is a trustee of the Kingdom's natural resources and environment for the benefit of the present and future generations and it is the fundamental duty of every citizen to contribute to the protection of the natural environment, conservation of the rich biodiversity of Bhutan and prevention of all forms of ecological degradation including noise, visual and physical pollution through the adoption and support of environment friendly practices and policies." In addition, Article 5.3 mandates enactment of legislation to ensure sustainable use of natural resources and maintain intergenerational equity, and reaffirm the sovereign rights of the State over its own biological resources.

11. Environmental sustainability is one of the cornerstones of Bhutan's **Gross National Happiness** (GNH) development philosophy. *Bhutan 2020*, the country's vision document with a twenty-year perspective to maximize GNH emphasizes that "development must be pursued within the limits of environmental sustainability and carried out without impairing the biological productivity and diversity of the natural environment." The document also recognizes that "the rich biodiversity may have a unique role to play at the global level in maintaining the genetic materials required to guarantee food supplies for a growing world population as well as in the development of new pharmaceutical products. Our rich biodiversity may confer upon us a distinct comparative advantage in the development of new and clean industries based upon bio-prospecting and genetic engineering industries

[5] Inskipp C et al (1999) recorded 616 species. Subsequent field surveys have recorded additional species, expanding the list of recorded bird species to 690 as of January 2014. The expected number is cited at more than 770 in a number of reports.

that could help to place Bhutan in the vanguard of scientific advance for the benefit of humankind."

12. The **Bhutan Forest Act of 1969** was the first modern legislation to be enacted in the country. This indicates the high level of importance that the country attached to its forest resources and the need to safeguard them right from the early stage of modern development in the country. Prior to the enactment of the Bhutan Forest Act 1969, the ***Thrimzhung Chenmo*** or the "Mother Act", which covered certain legal provisions protecting forests and wildlife, provided the legal means to protect the natural environment.

13. The enactment of **Forest and Nature Conservation Act of Bhutan, 1995,** repealed the Bhutan Forest Act of 1969. The objective of the 1995 Act is to "provide for the protection and sustainable use of forests, wildlife and related natural resources of Bhutan for the benefit of present and future generations". It covers forest management, prohibitions and concessions in government reserved forests, forestry leases, social and community forestry, transport and trade of forestry produce, protected areas, wildlife conservation, soil and water conservation, and forest fire prevention. The implementation of the Act is aided by the Forest and Nature Conservation Rules of Bhutan, which were first promulgated in 2000 and revised in 2005.

14. **The Biodiversity Act of Bhutan 2003** was largely enacted in response to the concern of unregulated access to genetic resources in the country and in realization of the value of biological and genetic resources in the development of products, substances and compounds that have medicinal, industrial and agricultural and related applications. This Act asserts the sovereignty of the country over its genetic resources and the need to promote conservation and sustainable use of biodiversity resources as well as equitable sharing of benefits arising from sustainable use, and the need to protect local people's knowledge and interests related to biodiversity. It stipulates the conditions for access to genetic resources and benefit-sharing from their utilization, outlines a *sui generis* system for protection of plant varieties, and lays down the conditions and procedures for the protection of traditional knowledge on genetic resources and their uses.

15. However, experience since 2003 and the adoption of Nagoya Protocol in October 2010 have given rise to the need for a comprehensive national policy on access to genetic resources and benefit-sharing (ABS) to guide the implementation and review, if and when necessary, of the Biodiversity Act of Bhutan. In this respect, a draft ABS policy has been developed by the National Biodiversity Centre (NBC) based on a series of stakeholder consultations. The draft policy hasbeen reviewed by the Policy and Planning Division of the Ministry of Agriculture and Forests and submitted to the Gross National Happiness Commission for final review and then to the Cabinet for approval.

16. In order to aid the implementation of the ABS policy and the Biodiversity Act of Bhutan 2003, promulgation of detailed regulations and institutional procedures will be required. The drafting of Biodiversity Rules and Regulations was initiated subsequent to the enactment of the Biodiversity Act of Bhutan. However, it was not pursued in a major way due to the absence of a national ABS policy. Therefore, one of the key tasks upon adoption of the ABS policy will be to revisit the Biodiversity Act of Bhutan for amendments, if necessary, and re-initiate the process of formulation of the Biodiversity Rules and Regulations in line with the approved ABS policy and Nagoya Protocol.

17. Bhutan's biodiversity conservation efforts are molded by a good marriage between its national policies and commitments to international agreements. The country signed the **Convention on Biological Diversity** (CBD) at the United Nations Conference on Environment and Development at Rio de Janeiro in June 1992, and followed up with its ratification in August 1995. The CBD recognizes that biological diversity is the sovereign right of a nation as opposed to the view that biological resources are the common heritage of mankind. Thus nations have the full right over biological resources within their boundaries and can regulate the access to these resources. One of the three objectives of the CBD, as set out in its Article 1, is the *"fair and equitable sharing of the benefits arising out of the utilisation 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 15 of the CBD provides the framework relating to the rights and obligations regarding access to genetic resources and their subsequent use, for which national governments are obliged to take legal, administrative or policy implementing measures.

18. As a party committed to the CBD and driven by its own national agenda of pursuing ecologically balanced and environmentally sustainable development, the country first prepared the **Biodiversity Action Plan of Bhutan** (BAP I) in 1998 followed by updated versions, BAP II in 2002 and BAP III in 2009. These documents have consistently recognized bio-prospecting as one of the important measures for the conservation and sustainable use of biological resources and stressed the need to develop comprehensive policy, legal and institutional frameworks for research and sustainable commercial utilization of genetic resources and associated traditional knowledge. The National Biodiversity Centre is currently updating the BAP to align the national plan with the Aichi targets and establish national targets and indicators.

19. The country is also now a Party to the **Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits arising from their Utilization**, having signed it in September 2011 and ratified in September 2013.

Institutional Context

20. As the national focal agency for biodiversity conservation, the National Biodiversity Centre (NBC), under the Ministry of Agriculture and Forests, is spearheading the process of exploration of biological resources and working on establishment of national mechanisms and programmes for the implementation of the ABS regime. It functions as the authorized agency for facilitation of agreements for ABS and material transfers in accordance with the Biodiversity Act of Bhutan 2003 and the draft ABS policy. In this regard to this function, it coordinates a Scientific Review Committee to review ABS agreement proposals. This Committee is made up of experts from the Department of Agriculture, Department of Forests and Park Services, Department of Livestock, Department of Agriculture Marketing and Cooperatives, Policy and Planning Division of the Ministry of Agriculture and Forests, Council for RNR Research of Bhutan, Institute for Traditional Medicine Services, Intellectual Property Division of the Ministry of Economic Affairs, and NBC.

21. The NBC is a relatively young institution, established in 1998, but has well-developed facilities which include the National Herbarium, National Gene Bank, and the Royal Botanical Garden. It also serves as the focal point for biodiversity information and has just initiated the Bhutan Biodiversity Portal at www.biodiversity.bt. Existing capacity within

NBC for bio-prospecting and implementation of ABS regime include: capacity to carry out extraction techniques such as solvent extraction, aqueous extraction, and essential oil extraction; capacity for documentation of traditional knowledge associated with Bhutanese genetic resources; and moderate capacity to carry out bio-activity tests and execute material transfer and contract agreements. Under the overall guidance and oversight of the Programme Director of NBC, the bio-prospecting programme is run by four NBC staff in conjunction with other responsibilities. Other key institutions with a role in biodiversity conservation and bio-prospecting include:

22. **Department of Forests and Park Services:** Established in 1952, the DoFPS is the country's oldest government department. It is the overall authority for the management of forest resources and wild biodiversity. Within the DoFPS, the Wildlife Conservation Division has the direct responsibility for in situ conservation of wild biodiversity through creation and management of protected areas, buffer zones and biological corridors. For field operations, the WCD coordinates and technically backstops conservation management plans and programmes in protected areas which include five national parks, four wildlife sanctuaries and a strict nature reserve Outside the protected areas, the DoFPS implements field programmes and activities for the protection and management of forests and wildlife resources through a countrywide network of 12 territorial forestry divisions with the technical support of a centrally-based group of five functional divisions.

23. **Council of Renewable Natural Resources Research of Bhutan** coordinates RNR research at the national level and ensures an integrated approach to RNR research programming and technology generation. It provides guidance and management of the research programmes and activities carried out by the regional RNR-Research and Development Centers located at Yusipang (Thimphu), Bajo (Wangdue Phodrang), Jakar (Bumthang) and Wengkhar (Mongar). The research programmes focus on forest management, field crops, livestock development, horticulture, plant protection, soil and soil fertility, water management, and farming systems. The RNR-RDCs are involved in research programmes on non-timber forest products, including aromatic and medicinal plants.

24. **Bhutan Agriculture and Food Regulatory Authority** serves as the National Food Inspectorate, regulates the quality of agricultural, livestock and forestry products as per the Food Safety Standards, monitors and regulates the movement (including export and import) of plant and animal resources to prevent or control diseases, implements the Plant Quarantine Act and Seeds Act in conjunction with other relevant agencies, and maintains and disseminates information on communicable diseases and non-traditional pests. It also takes lead on biosafety issues and has developed the draft National Biosafety Act for review and endorsement by the National Cabinet for onward submission to the National Parliament for ratification.

25. **Menjong Sorig Pharmaceuticals**, formerly the Pharmacy and Research Unit of the Institute of Traditional Medicines under the Ministry of Health, is dedicated to the promotion and production of traditional medicines as an integral part of the public health care system. It has the mandate to engage in production and supply of traditional medicines as a core business, collect and procure medicinal raw materials, conduct scientific research and standardize medicinal ingredients and products, quality control, and produce and market health promoting herbal products to generate funds for financial sustainability.

26. **Royal Society for the Protection of Nature** is a non-governmental organization founded in 1987. The NGO works on the conservation of nature through environmental education and advocacy, field research, and community-based projects that integrate sustainable livelihoods and nature conservation.

27. **Bhutan Trust Fund for Environmental Conservation** is an autonomous grant-making organization established in 1992 by RGoB with funding endowments of US$ 20 million from GEF, UNDP, WWF and a group of bilateral donors. It uses its annual investment income accrued from its capital endowment to finance conservation projects including research on flora and fauna, and traditional knowledge of environmental resources and conservation practices. The current inverstment portoflio of BTF stands at US$ 44.18 million and it has to date provided over 120 grants amounting to US$ 2.65 million.

THREATS, ROOT CAUSES AND IMPACTS

28. In common with many other developing countries in the region and elsewhere, Bhutan faces a wide range of issues that threaten its biological diversity and ecological security. These threats emanate from the transition from a subsistence-based agrarian economy to a consumption-based cash economy, competing land-use from urbanization and infrastructure development, poaching of wild plants and animals especially in the bordering areas, localized overharvesting of timber, fuel wood and non-wood forest products, human-wildlife conflicts, and climate change.

29. Although the country's natural environment is relatively pristine, the globally significant genetic diversity of Bhutan is under increasing threat. Overharvesting of non-timber forest products is a serious concern, in particular for medicinal and aromatic plants, forest foods such as mushrooms, ferns and wild greens, bamboo, cane and plant bark and pulp for local handicrafts. For instance, bamboo and cane in the Monpa area of Jigme Singye Wangchuck National Park, which were once abundantly available in the immediate vicinity of the villages, now have to be collected from three to four hours of walking distance. Wildlife poaching and trade are prevalent along the remote borders. The main species targeted for poaching are musk deer and Chinese caterpillar fungus that are both valued for their medicinal properties and have a lucrative market for use in oriental medicines. Per capita extraction rates for fuel wood[6] and timber for construction are among the highest in the region, leading to forest degradation in areas near human settlements. There is a serious concern that the increasing demand for timber fueled by growing construction activities for development of hydropower power projects, public infrastructure, and real estates will lead to unsustainable forest harvesting and biodiversity loss. Localized deforestation is visible in certain parts of the country, where population densities are high and forest use is intense such as in a number of villages in the eastern and southern parts of the country. Moreover, selective harvesting of certain preferred species such as *Quercus* spp for fuelwood is highly likely to have caused attrition of species.

30. Forest fire has persisted as a recurrent and widespread phenomenon, and in the event of prolonged dry spells during winters and soaring temperatures in the spring (April-May), the

[6] Per capita fuel wood consumption rate remains still high but has decreased over the years because of increased access to electricity, electrical cooking appliances, and other cooking fuels (liquid petroleum gas and kerosene).

risk of forest fire becomes very high. Forest fire records maintained by the Department of Forests and Park Services (DoFPS) reveal that more than 70,000 hectares of forests have been razed by wild fires between 2000/01 and 2011/12 seasons.

31. The second (SAR 1990), third (TAR 2001) fourth (AR4) assessment reports produced by the Inter-governmental Panel on Climate Change (IPCC) indicate that mountainous countries such as Bhutan are likely to be among the countries most vulnerable to the adverse impacts of climate change. Simulated exercises using climate models for projection of long-term climate scenarios, carried out as a part of Bhutan's Second National Communication to the UNFCCC, suggest that the mean annual temperature for the 2010-2039 is projected to increase by 0.8^{o}C to 1.0^{o}C compared to the 1980-2009 climate and that mean annual precipitation is projected to increase by 6 per cent for the 2010-2039 period but with more intense and concentrated rainfall in the monsoon season and generally drier winter season. The projected increase in frequency and intensity of extreme rainfall events will exacerbate surface runoff and erosion. Saturated soils and highly weathered rock will be increasingly prone to landslides and flash floods in the wet season. On the other hand, reduced precipitation during winters would cause droughts, impacting livelihoods and increasing the risk of loss of biodiversity and agricultural crops, as well as forest fires. Although no definitive patterns of climate change impacts on biodiversity have been observed in Bhutan yet, rising temperature and change in rainfall patterns are showing preliminary signs of altering the structure of ecosystems and status of species distribution and population, creating conditions conducive for spread of invasive species, increasing forest fire risks, and increasing incidents of pests and diseases in both wild and agro-biodiversity. The attrition and loss of biodiversity will inadvertantly lead to erosion of traditional livelihoods, knowledge and practices assocauted with biodiversity[7].

32. Land conversion, although relatively small scale, is also an issue in the country, including clearance of forests for infrastructure development, agriculture, urbanization, mining and quarrying activities, and the construction of dams and transmission lines for hydro-electricity. The pollution of air, water and land due to industrial development, and land degradation from mining are major threats to biological diversity in the southern part of the country in particular.

33. Root causes include population growth at the rate of 1.3 % per annum which will double the current population by 2059 if the current trend continues. Migration of populations from areas with low level of economic activities to areas with a high level of economic activities also exacerbates human pressure on biodiversity in the destination areas. Net lifetime rural-urban migration was estimated at 91,778 (i.e. 14.5% of the population)[8] . Athough the poverty rate has been reduced significantly over the years, from 31.7% of the population in 2003, to 23.1% in 2007 and 12% in 2012, it still remains a major issue and an underlying cause of unsustainable practices. Poverty is predominantly a rural phenomenon with 30.9 % of the rural population living below the total poverty line, compared to 1.7% in the urbanized areas. Increasing affluence and modernizing lifestyle of the Bhutanese has increased consumption of natural resources and products. Consumer demands for cheaper agricultural produce has also led farmers to grow high-yielding, but often imported varieties of crops such as paddy rice, maize and wheat.

[7] Biodiversity Persistence and Climate, Thematic Paper presented at the Bhutan 2011 Climate Summit for a Living Himalayas.
[8] Population and Housing Census of Bhutan 2005

34. While initiatives are underway to develop a system of green national accounting, these remain preliminary and will take some time to materialize into a functional system. So, in the interim, the lack of economic valuation of biological resources and ecosystem services through existing national accounting systems for economic planning processes is a key constraint for the effective conservation of biodiversity. This includes the actual and potential economic benefits from the commercial exploration and exploitation of biological and genetic resources. There is also a lack of information on the value and quantity of biological resources that can be utilized through ABS processes to derive monetary and non-monetary benefits.

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

LONG-TERM SOLUTION AND BARRIERS TO ACHIEVING THE SOLUTION

36. In response to the wide range of threats facing the country's biodiversity, it is paramount to enhance the social and economic rationale for biodiversity conservation through, among other things, the commercial utilization of genetic resources and benefit-sharing from such utilization. This project will focus on the long-term solution of enabling the people and government of Bhutan to access genetic resources based on sound science, including that emanating from traditional knowledge, and to accrue tangible national and local economic benefits from their commercial utilization in a fair, equitable and sustainable manner. The benefits may be accrued in the form of business, employment, research, technology transfer and capacity development opportunities.

37. This approach will provide a rationale for the conservation and sustainable use of the biological resources that contain the genetic material, representing a paradigm shift from the business-as-usual situation described above, to one in which biodiversity-rich nations such as Bhutan are fully and equitably involved in bio-prospecting research processes with the primary goal of promoting people-centric conservation and sustainable use. The ultimate goal is to contribute to Article 5 of the Constitution of Bhutan mandating the maintenance of 60% of forest cover in perpetuity and the Gross National Happiness objectives of equitable socio-economic development and environmental sustainability.

38. There are, however, a number of barriers to achieving the long-term solution. The key barriers include:

39. ***Sub-optimal national regulatory and institutional framework:*** Although Bhutan enacted the Biodiversity Act of Bhutan in 2003, providing the legal framework for bio-prospecting and ABS, progress has been slow due to suboptimal national regulatory and institutional mechanisms for implementation. This included the absence of ABS policy, rules and regulations, and comprehensive institutional mechanisms. A draft ABS policy has been formulated but is yet to be approved by the Royal Government of Bhutan, although the country ratified the Nagoya Protocol in 2013. Limited awareness of the benefits of an ABS policy and bio-prospecting program is a key impediment at all levels. This is anticipated to require policy-level advocacy and sensitization and targeted awareness-raising in academia and private sector organizations as well as among local governments and their constituent communities. Once an approved ABS policy is in place, rules and regulations for the implementation of the ABS policy and the Biodiversity Act of Bhutan will need to be formulated, clearly articulating the procedural requirements and institutional mandates and functions.

40. ***Limited institutional and individual technical capacities:*** The National Biodiversity Centre under the Ministry of Agriculture and Forests is the national focal agency for the implementation of CBD and the Nagoya Protocol. The NBC is a relatively new organization, established only in 1998, and the bio-prospecting program was started only in 2009. Consequently, there is 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 international, national and local levels. There is an urgent need for strengthening the institutional set up of the NBC and individual capacity to enable implementation of the ABS policy, ensuring sufficient competence for monitoring bio-prospecting projects and facilitating value addition to biological resources in the country. The documentation of traditional knowledge associated

with genetic resources needs to be accelerated to aid the Prior Informed Consent (PIC) process and establishment of Mutually Agreed Terms (MAT) to ensure that the holders of TK will be able to derive tangible and fair benefits from ABS deals. Existing bio-prospecting facilities are rudimentary and not sufficient to carry out bio-activity tests and analyses of genetic materials to the level of acquiring research results that can add value for potential commercialization.

41. Furthermore, institutes such as Menjong Sorig Pharmaceuticals have more than moderate expertise in various aspects of bio-prospecting as a result of their experience in the area of pharmaceutical research and production of traditional medicines over the past 10-20 years. However, the utilization of existing expertise is constrained by the lack of access to technology (new science and equipment) and funds for researching and developing commercially potential products based on the principles and practices of ABS. The technical capacity for ABS-based enterprises in the private sector is basically non-existent.

42. ***Lack of experience in developing and implementing ABS agreements:*** A few bio-prospecting activities are on-going at a preliminary level and companies have indicated formal interests in accessing biological resources of Bhutan. However, given that ABS is a recent initiative and experience of NBC and other stakeholders is limited and basic in this new area, there is limited expertise in actually developing ABS agreements that are fully compliant with the Nagoya Protocol. Without model agreements based on consultative processes, essentially including PIC and MAT, and realisation of actual benefits to the country and concerned communities which can be replicated and up-scaled, the development and establishment of a fully functional national ABS regime will be slow, compromising economic opportunities for the conservation of vital genetic resources.

INTRODUCTION TO PROJECT SITE INTERVENTIONS

43. The sites for the three pilot demonstration projects in Component 3 of the project are distributed across different districts of Bhutan, as indicated in **Figure 1**. Brief profiles for each of the pilot sites are given below.

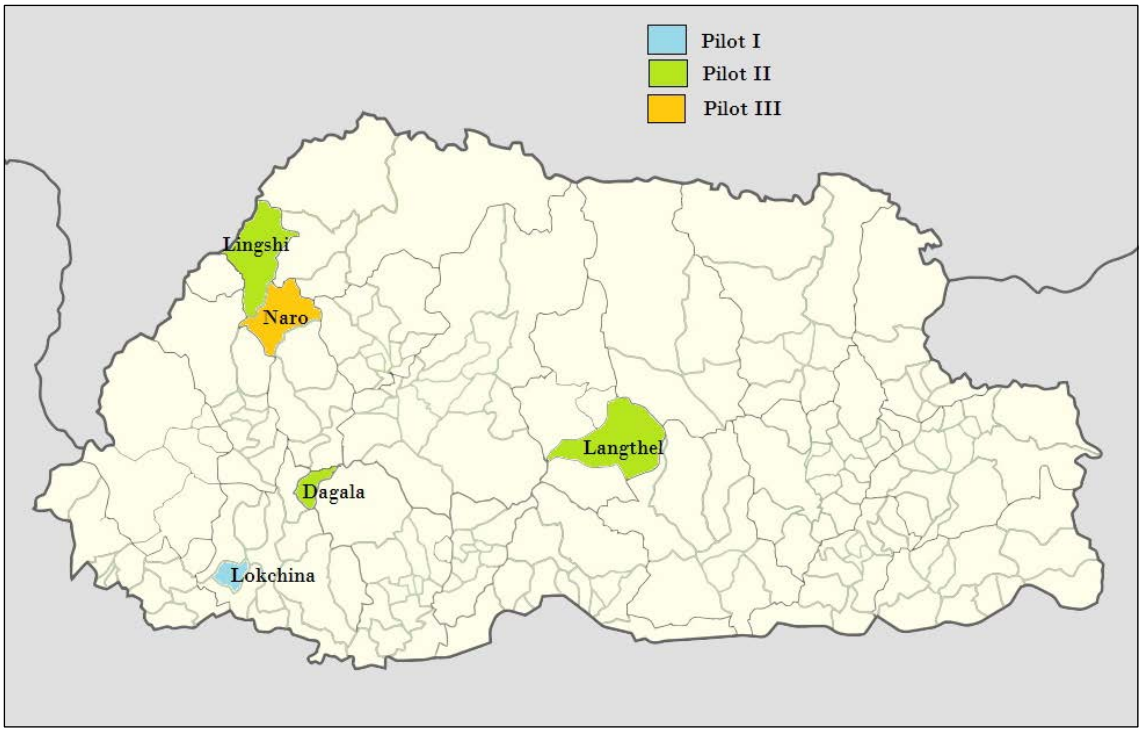

Figure 1: Locations of the Pilot ABS Sites

Pilot I

44. This pilot will be implemented in Lokchina gewog[9] under Chhukha dzongkhag[10], in the west southern part of the country (**see Fig 1**). The gewog is made up of five chiwogs[11]. There are about 400 households, with a total population of 2,672 people as of 2005 (Population and Housing Census of Bhutan 2005). 48% are female population. The population of the area is stable or slightly increasing, with no significant emigration from the villages at this time. Three of the chiwogs are connected by roads, while two have no road access. The roads are, however, rendered un-pliable during the monsoons.

45. The altitudinal range is about 800 – 1800m above sea level. The climate is subtropical, with hot and humid summers and cool and dry winters. Forest resources are widely used for subsistence, such as timber for construction and firewood, plus a wide range of plants taken for other domestic uses. There are seven community forests in the gewog, which caters to the basic community needs such as house-building timber, fuelwood, fodder, and poles. Conservation threats are currently limited.

46. The main livelihoods in the area are agriculture- based with cardamom and ginger as the main cash crops and maize, paddy and millet the major subsistence crops. Oranges have declined recently due to a bacterial disease. Livestock rearing is practiced as a subsidiary livelihood and it is common for households to maintain a few livestock (mainly cattle and goats).

47. Cultivation of *Zingiber cassumnar* in the backyard or homestead garden is practiced by a few households. According to the local people, the plant is not found in the wild around

[9] A gewog is an administrative block made up of few to many chiwogs.
[10] A dzongkhag is a district. There are altogether 20 dzongkhags in the country. The number of gewogs in a dzongkhag ranges from 4 (Bumthang and Gasa dzongkhags) to 17 (Mongar dzongkhag).
[11] A chiwog is a large village or a cluster of a few hamlets.

their area and has been cultivated around homes since they can remember (three generations or probably longer). Current usage is declining as road access has enabled villagers to obtain commercial medicines, and the plant appears to be disappearing from homesteads as a result. It is likely that its local use and cultivation will cease altogether within the next generation.

Pilot II

48. Sites for pilot II include: (a) Lingshi and Dagala gewogs in Thimphu dzongkhag for sourcing *Rhododendron anthopogon* (dwarf rhododendron); and (b) Langthel gewog in Trongsa dzongkhag for sourcing *Acorus calamus* (sweet flag), *Sapindus rarak* (soapnut tree), and *Phyllanthus emblica* (Himalayan gooseberry). Most of the identified sites/communities for this pilot project concern Menjong Sorig Pharmaceuticals' (MSP) existing network of collectors and communities for traditional medicines.

49. Lingzhi Gewog is the remotest gewog in the Thimphu dzongkhag. Lingzhi has nine chiwogs with a total of 76 households and a population of 495 as of 2005 (Population and Housing Census of Bhutan 2005). Females make up 44% of the population. The gewog covers an area of 386 km^2 and the entire gewog is inside Jigme Dorji Wangchuck National Park, the country's largest protected area. It is in the alpine region, with elevation ranging from about 3,445 meters to 6,782 meters above sea level. Native pasturelands dominate the land use in the gewog. As the gewog is in the alpine region, there are few crops farmed. Yak rearing is the main economic activity and source of livelihood for the people, constituting more than 90% of the total livestock population. Seasonal migration with yak herds along with the remoteness of the gewog makes it difficult as well as expensive for the effective delivery of public services. Connectivity is limited to a network of a few mule tracks and foot trails. Menjong Sorig Pharmaceuticals MSP has been collecting high altitude medicinal plants from local communities in Lingshi gewog and the adjoining Naro and Soe gewogs for the past three decades.

50. Dagala Gewog is another area where MSP have collected some of the materials for use in their regular production of traditional medicine. MSP started involving this community a couple of years ago as an alternate source of raw materials in order to reduce pressure on the Lingzhi site. Dagala gewog covers an area of about 85 sq. km with altitude ranging from 2,280 to 4,713m above sea level. The gewog has 41 households scattered all over the Dagala range. The people in the gewog derive their livelihood and income solely from yak herding. The population move from place to place herding yaks and though their relative income is high, the general quality of life is poor. The continuing seasonal migrations with herds pose considerable problems in delivering services to the people in the gewog.

51. In Langthel gewog in Trongsa dzongkhag, MSP works closely with two community groups under the Langthel gewog, Namther Throgmen Tshogpa and Dangdung Menrig Tshogpa. The former has about 40 members while the latter has about 30 members. All these members have been trained in species identification and sustainable collection methods with technical support from the RNR-RDC Jakar and MSP.

52. Langthel gewog consists of 5 chiwogs and 20 villages with 424 households and a population of 2,637 (71.48% females)[12]. The gewog covers an area of 508 km^2 and part of it to the west falls inside Jigme Singye Wangchuck National Park. The gewog has 78%

[12] Source: Trongsa 11th Five Year Plan

forest cover. Paddy, maize, and wheat are the main cereal crops, while oranges, banana and guava are grown for cash income. The Trongsa-Gelephu highway runs through the gewog connecting many villages and plays a vital role in the local economic development. Despite the highway, most of the villages still remain remote due to lack of feeder and farm roads. Ethnic Monpas, who are believed to be the first inhabitants of the country, can be found to live in three hamlets (Jangbi, Womling and Phungzor) in the lower part of the gewog.

Pilot III

53. Bio Bhutan has identified Naro gewog in Thimphu dzongkhag as the proposed site for their ABS pilot. Naro gewog with an area of 277 km^2 is to the south of Lingshi gewog. Like Lingshi gewog, the entire gewog is in the alpine zone and falls inside Jigme Dorji Wangchuk National Park. Elevation ranges from about 3,800 meters to nearly 5,500 meters above sea level. The gewog consists of 56 households with a population of 189 as per the Population and Housing Census of Bhutan 2005. Only 34% of the population are women. The local people derive their livelihood and income primarily from yak herding. They move from place to place herding yaks and though the relative income of the people is high, living standards are generally poor. Mule tracks and foot trails are the only transport infrastructure. The gewog does not have electricity either.

54. *Rhododendron anthopogon,* an evergreen shrub, grows naturally on the moist open slopes and hill sides. People collect leaves as a fragrant ingredient to be burnt as an incense offering to appease local spirits and to sanctify the environment. The leaves are also traded, albeit informally, with communities in the lower valleys of Thimphu and Paro.

STAKEHOLDER ANALYSIS

55. During project preparation, a preliminary stakeholder analysis was undertaken in order to identify key stakeholders and their roles in project implementation. The table below outlines the stakeholders and their roles. See PART IV: Stakeholder Involvement Plan for further information.

Table 1. Roles and Responsibilities of Stakeholders in Project Implementation

Stakeholder	Type	Anticipated Role in Project
National Biodiversity Centre (Ministry of Agriculture and Forests)	Government research and development agency	Lead implementing agency for CBD and Nagoya Protocol, nodal agency for biodiversity conservation, and hosts the national bio-prospecting program. It houses the National Herbarium, Gene Bank and Botanical Garden. It acts as the focal agency for development of policies and legal frameworks for conservation and sustainable utilization of biological resources. It also serves as the national repository for germplasm and botanical collections, as well as the national focal agency to regulate access to biological resources of the country, ensuring equitable sharing of the benefits arising from access. The NBC will be the principal implementing partner for the project with the Bio-prospecting Division of NBC serving as the project management unit.
Gross National Happiness Commission	Cross-sector government policy and planning body	GNHC is responsible for coordinating the implementation of the five year plans as well as being the official organisation through which all aid is channelled into the country. GNHC is the GEF focal agency, and hence, all co-financing from government sources for this project will be coordinated by

		GNHC and joint investment planning will be ensured through the window that GNHC provides. As the apex policy and planning coordination body and GEF Operational Focal Point, GNHC will provide overall monitoring of delivery of GEF/NPIF financing and other external project assistance.
Department of Forests and Park Services	Government department	The DoFPS is mandated to sustainably manage Government Reserved Forests, and are responsible for managing and conserving the country's rich biodiversity. DoFPS facilitates empowerment of rural communities for the stewardship and management of biological resources and NWFPs for income generation and livelihood. DoFPS will provide technical guidance and support in matters related to management and use of forest products, including those sourced from community forests and non-timber forest products management schemes. Also, guidance on matters related to trade in wild plants and animals and their products within the legal framework of the Forest and Nature Conservation Act 1995 and CITES.
Department of Agriculture	Government department	Technical guidance and support in matters related to domestic propagation of medicinal and aromatic plants, and spices
Department of Agricultural Marketing and Cooperatives	Government department	Support for formation of, and/or coordination with, farmers' groups and cooperatives, based on Cooperatives Act of Bhutan (Amendment 2009) and accompanying regulations and guidelines
National Environment Commission (NEC)	Government body with overall coordinating and policy-making authority for environmental management	NEC is mandated to coordinate all government agencies on all issues related to environment, including biodiversity conservation and climate change. It is also the focal agency for Bhutan for global environmental conventions such as UNFCCC, UNCCD and UNCBD.
Menjong Sorig Pharmaceuticals Limited	Government corporate body for research and production of traditional medicines	MSP is an autonomous body under the Ministry of Health which provides traditional Medicinal Services to the people. It also conducts research on Traditional medicines which comprises part of the health care system. Through this project, NBC will be working closely with MSP on collaborative research and knowledge-sharing on genetic resources of pharmaceutical value, and MSP will lead a pilot project under Component 3.
Council of RNR Research and Regional RNR Research and Development Centres	Government research institutes in the areas of forestry, agriculture, and livestock development	CoRRB is the apex coordination and oversight body for research programs in the RNR sector and is a member of the Scientific Review Committee for ABS. It will have a potential role in collaborative research and knowledge-sharing on animal and plant genetic resources of commercial value
Bhutan Food and Agriculture Regulatory Authority (BAFRA)	Government regulatory agency	An agency which regulates the entry and exit of Bhutanese genetic resources from the country. It is also responsible for issuing certificates of origin and phyto-sanitary certificates for the export of genetic resources. It conducts monitoring and regulation of the movement of plant and animal resources, including import and export, to prevent or control diseases. BAFRA will have a role in the implementation of the Biodiversity Rules and Regulations once promulgated.
Royal Society for the Protection of Nature	Civil society organization	RSPN is a non-profit organization with nation-wide operations. The RSPN promotes conservation, education, outreach, sustainable ecotourism, alternative energy, and gender equity. RSPN's role in the project will involve conservation education and advocacy, community mobilization.
Tarayana Foundation	Civil society organization	Community mobilization and formation of local self-help groups for sustainable livelihoods

Bhutan Pharmaceuticals Private Ltd (BPPL), Bio Bhutan, etc.	National private sector companies	Project implementation partners and beneficiaries, in particular, under Component 3 to pilot ABS agreements for collaborative research and knowledge-sharing, commercial utilization, co-financing, capacity development, benefit-sharing. BPPL was the first private company in the country to venture into research of Bhutanese biological resources. Bio Bhutan is a private Bhutanese firm registered with the Ministry of Economic Affairs since 2005. They develop, manufacture and market natural and organic certified products from Bhutan. Their vision is to link local cooperatives, community forest management-, NWFP- and women's group to markets with quality, natural and organic products, while making use of the local available resources and promoting local livelihoods. Bio Bhutan's role in this project will be to lead the implementation of a pilot project under Component 3. Bio Bhutan is a private company
Nimura Genetic Solutions, Quantum Pharmaceuticals Ltd, Yves Rocher, Chanel, Shin Nippon Biomedical Laboratories, etc.	International companies	Project implementation partners, co-financiers and beneficiaries, in particular, under Component 3 to pilot ABS agreements for collaborative research and knowledge-sharing, commercial utilization, co-financing, capacity development, benefit-sharing. The companies can play an important role in building national capacities in bio-prospecting and in developing collaborations for research and commercialisation of products from Bhutanese genetic resources, building on their existing experience. They will participate in the piloting of ABS agreements/ deals under Component 3 of the project.
National Council and National Assembly	Apex legislative bodies	Review and ratification of national laws and international conventions, with a dedicated parliamentary committee for environment
Dzongkhag and Gewog Administrations	Local government bodies	Support for rural extension services and community mobilization, and facilitation of benefit-sharing agreements with local communities
Rural communities	-	Immediate users and custodians of biological resources, traditional knowledge practitioners, and primary beneficiaries of ABS
Academia	-	Academicians will provide technical expertise and support in the implementation of the project through collaborative research, knowledge management and capacity building.
Bhutan Trust Fund for Environmental Conservation	Independent grant-making organization	The Bhutan Trust Fund for Environmental Conservation is an independent grant-making organization that uses its annual investment income to finance conservation activities. Grants are awarded to eligible Bhutanese individuals and institutions for biodiversity conservation, and community livelihood initiatives including research for discovery and inventories of flora and fauna and traditional knowledge related to conservation. It will be one of the project cofinancing agencies.
UNDP	UN agency	At the request of the Government, UNDP will serve as the GEF Implementing Agency (IA) for the project. In this role, UNDP will oversee project execution and provide technical quality assurance. The project assurance and support functions will be provided by the UNDP Bhutan Country Office as well as UNDP Asia-Pacific Regional Centre. As GEF Implementing Agency, UNDP will coordinate and monitor the delivery and utilization of GEF/NPIF funds and co-financing.

BASELINE ANALYSIS

Component 1. An operational national regulatory and institutional framework on ABS

56. The Royal Government of Bhutan (RGoB) has been making enormous efforts to conserve forests and natural biodiversity by implementing a wide range of conservation plans and programmes, including the National Biodiversity Action Plan, first produced in 1998 and subsequently updated in 2002 and 2009. The Constitution of the Kingdom of Bhutan mandates the maintenance of a minimum forest cover of 60% for perpetuity. The current forest cover is over 70% with more than 51% secured as protected areas and biological corridors. The National Biodiversity Centre (NBC) was established in 1998 under the Ministry of Agriculture and Forests (MoAF) as an implementing agency of the Convention on Biological Diversity (CBD) and to coordinate biodiversity conservation and sustainable use programmes in the country. The current annual operational budget for the NBC is US$ 429,074. In order to strengthen research on the country's genetic diversity, NBC has preserved more than 10,000 dry specimens of Angiosperms, Gymnosperms, Pteridophytes and Byrophytes in its herbarium. The National Gene Bank offers an *ex-situ* conservation facility for plant genetic resources for food and agriculture. It holds a total of 1,268 accessions of cereals, legumes, oil seeds and vegetables, as well as over 3,500 doses of semen from local poultry and sheep breeds for research and long term use. The national biosafety framework was also established in 2006 in response to the need for a framework focusing on the safe transfer, handling and use of modern biotechnology products.

57. NBC has also established the Bhutan Access and Benefit Sharing (BABS) Fund, as a mechanism to channel the monetary benefits obtained mainly from ABS collaborations. The BABS fund has been supporting local communities in sustainable utilization of biological resources and will continue this support in future ($100,000).

58. The MoAF will play a critical role in supporting the project through PPD MoAF, BAFRA and SFED. MoAF also supports a number of related projects, such as the participatory forestry management project, bamboo for sustainable construction and rural value chain development in Bhutan: A Pilot Project, Market Access and Trade Facilitation Support – Phase III, Payment for Environment Services, Strengthening Agricultural Marketing & Trade, Decentralized Rural Development Project, MAGIP and Remote Rural Communities Development Project. All the above mentioned projects work closely with rural communities and involve work on Bhutan's biological resources ($494,800)

59. The Bhutan Trust Fund for Environmental conservation was established in 1992 with an endowment of US$ 20 million, as a collaborative venture between the RGoB, UNDP, and World Wildlife Fund (WWF). It funds conservation projects including discovery and inventories of flora and fauna and traditional knowledge in the areas of environmental conservation. With an investment portfolio of US$ 44.18 million, the Fund has to date provided over 120 grants amounting to US$ 2.65 million. BTFEC supported projects for the survey and documentation of natural resources are very relevant to the present project, including a bioprospecting project, a comprehensive assessment of climate change impacts on endemic plant diversity in Bhutan, and an inventory and documentation of invertebrates (grants totaling $565,500).

60. As the key agency for coordinating biodiversity activities in the country, the NBC is spearheading and coordinating the process of exploration of biological resources and working on establishing national mechanisms for the implementation of the ABS regime. The NBC is the authorized agency that facilitates ABS agreements and Material Transfer Agreements as per the Biodiversity Act (2003) and the draft ABS policy.

61. The draft National ABS policy was developed by the NBC, covering the utilization of Bhutanese genetic resources and traditional knowledge associated with biological resources when used for commercial and/or research purposes. The draft policy has been reviewed by the Ministry of Agriculture and Forests and has been submitted to the Gross National Happiness Commission for onward review and final approval by the Lhengyel Zhuntshog (Council of Ministers)[13]. As the implementing agency for the CBD objectives and also as the National Focal point for the International Treaty on Plant Genetic Resources for Food and Agriculture as well as for the Commission on Genetic Resources for Food and Agriculture, the centre is working closely on harmonisation of mechanisms to address ABS issues under all the legal instruments as well as harmonisation of conservation plans and strategies in the country. The NBC is also currently updating the National Biodiversity Strategic Action Plan to align the national plan with the Aichi targets and establish national indicators and targets. It has translated the Nagoya Protocol into the Dhzongka language and printed copies for dissemination. International legal advice has supported the drafting of the national ABS policy, on ABS agreements and capacity building workshops and seminars ($134,400).

62. NBC's related projects include the GRPI (1 & 2) supported by Bioversity international and is implemented by NBC. Some of the actvities of the project is to formulate comprehensive policies on Agro-biodiversity and Access and Benefit Sharing, Enhance education and public awareness on ITPGRFA, MLS, Nagoya Protocol on ABS and establish national mechanism and capacity for effective implementation of ITPGRFA and MLS in harmony with other international instruments ($63,750). NBC are also implementing a Rice Project supported by the Benefit-sharing Fund of the International Treaty on Plant Genetic Resources for Food and Agriculture ($30,000). The project activities include conducting regional biodiversity fairs and farmer education and awareness programs, and field activities involving farmers participation and consultation. NBC's involvement in the EU RNR SSP project includes development of capacity to promote sustainable use of biological resources through bioprospecting initiatives by training staff in basic plant extraction techniques ($12,400). The GCCA project is also being implemented by NBC. Its priority plan of actions are to: ensure sustainable management and utlization of biodiversity, and conserve agrobiodiversity to promote adaptation to climate change. Some of the related activites are to coordinate inventory and documentation of horticultural crop diversity and crop wild relatives and research, enhance the capacity of local communties to adapt to changing climate through promotion of adapted crop varieties, and innovative support for on-farm conservation of locally adapted varieties in selected sites, conduct comprehensive assesment of invasive plants and develop recommendations for management ($5,500).

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

63. A certain degree of national capacity has been built through NBC's Bioprospecting programme and early implementation of the ABS regime. The baseline capacity of the NBC Bioprospecting programme includes some experience of the following subjects:

[13] See: http://en.wikipedia.org/wiki/Lhengye_Zhungtshog

- *Carrying out extraction techniques like solvent extraction, aqueous extraction and also essential oil extraction.*
- *Carrying out bio-activity tests - but needs further capacity building. At present, the extract library at NBC holds 250 crude extracts that have been identified for bio-activity tests.*
- *Preliminary experience of drafting and executing ABS agreements. Three MoAs/ MoUs have been entered into with various private enterprises and additionally four proposals are in the early stage of consideration for potential ABS collaboration.*
- *Documenting Traditional Knowledge associated with Bhutanese Genetic Resources. TK documentation by NBC is currently ongoing in 16 gewogs across eight dzongkhags[14]. This has included survey and documentation of traditional knowledge on the use of Z. cassumunar in Lokchina gewog in Chukha dzongkhag in SW Bhutan, including Prior Informed Consent (PIC). This will be followed up during pilot project 1 in component 3. The NBC has carried out basic screening and extraction processes and the extract has been stored in their extract library. A herbarium specimen has also been preserved at NBC.*

64. The NBC will invest US$ 593,500 for the four years of project implementation including salary, transportation, travelling and daily allowances, facility running costs (capital and recurrent) and capacity building of staff.

65. The NBC initiated the Bio-prospecting Program in the 10th Five-Year Plan with funding support from the BTFEC. Through a five-year Memorandum of Agreement on Technical Collaboration between RGoB and Nimura Genetic Solutions (NGS) in 2009 for collaborative research of the screening of natural resource, NGS has been supporting the establishment of the bio-exploratory laboratory at the NBC through provision of technology and the business know-how to strengthen the Bio-prospecting Programme. NGS has so far invested approximately US$ 300,000 for technology transfer in research and development and collaborative research on Bhutanese Star Anise. It is expected that NGS will continue to invest a minimum of US$ 200,000 in the coming four years through direct technical support for Bhutan, in addition to investment in Japan related to this support. The support will include transfer of technology related to research and development including DNA extractions, sequencing etc. It will also include support for the development of Nagoya Protocol compliant agreements, and the identification of potential buyers/partners from various industries such as pharmaceuticals, cosmetics, health food, chemicals and energy.

66. There are also few other collaborative initiatives between the NBC and private sector companies within and outside the country, since the inception of the Bio-prospecting Programme. NBC has an ABS agreement with Bhutan Pharmaceutical Private Limited (BPPL), a private national company, on *Ophiocordyceps sinensis* and other insect fungi which grants BPPL non-exclusive access to *O. sinensis* and other insect fungi for research and product development. The collaboration with BPPL was initiated in 2009 and later renewed and amended into an ABS agreement in 2011 to develop national capacity in the field of biotechnology and bio-discoveries. Through this project, NBC is working on strengthening its own capacity as well as that of BPPL, in order to enable the establishment of fair mechanisms and identify opportunities to strengthen the engagement of the country's private sector in research and commercialisation of genetic resources (investment of $272,800).

[14] For further information on these Bhutanese administrative terms see: http://en.wikipedia.org/wiki/Gewogs_of_Bhutan

67. NBC has also entered into a Memorandum of Agreement with an international company, Quantum Pharmaceuticals Limited (QPL). NBC established the Bhutan Access and Benefit Sharing (BABS) Fund[15] with the first payment received from the sale of orchid (*Cymbidium erythraeum*) flowers to QPL, Switzerland as one of the ingredients for the production of a cosmetic product called REDEEM (the world's first anti-aging plasma) in a collaborative undertaking with the MoAF. The BABS Fund has since collected a total of US$ 12,727 from the sale of orchids. Royalties from the sales of the products, scoping fees, and other funds generated by ABS activities are to be channeled into the Fund. The Fund focuses directly on communities and conservation activities and has supported a number of community level projects for orchid propagation in order to promote community income generation and strengthen the capacity of farmers in orchid propagation and management while discouraging collection of orchids from the wild. The principle behind the establishment of the Fund was to operationalize the ABS regime in a small way to accrue experience and strengthen national capacities to understand and learn from the challenges and positive contributions that such an initiative involves. The aspiration is to channel funds through bio-prospecting initiatives in the future to the communities as well as the BABS fund so that there is a sustained financing mechanism for conservation as well as the relationship between communities and conservation is strengthened.

68. Existing collaborations with NBC include Chanel, which has committed to support the strengthening of national capacities in the field of bioprospecting and at the same time fund research in Bhutan ($178,200). The RGoB is also in discussion with Yves Rocher (France) to enter into a scoping agreement for possible collaboration in genetic resources exploration for cosmetic use.

Component 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.

Pilot 1 Baseline

69. This pilot project is being led by the National Biodiversity Centre (NBC), the focal agency for inventory and documentation of traditional knowledge (TK) associated with biological resources within the country. Documentation of Traditional Knowledge associated with Bhutanese Genetic Resources by NBC is currently ongoing in 16 gewogs across eight dzongkhags[16]. This has included survey and documentation of traditional knowledge on the use of *Zingiber cassumunar* in Lokchina gewog in Chukha dzongkhag in SW Bhutan. The TK documentation has been carried out based on the standard TK format, which includes Prior Informed Consent (PIC). Consultations with local communities have revealed that local healers used parts of *Z. cassumunar* in relieving joint pains. NBC plans to conduct further visits before project implementation begins in order to identify households with potential to participate in the pilot project, and to further document the status of the resource.

70. The NBC has carried out basic screening and extraction processes and the extract for *Z. cassumunar* has been stored in their extract library. A herbarium specimen has also been

[15]BABS was set up to channel the benefits acquired from the access and utilization of genetic resources into local communities and conservation activities. The fund is managed by the NBC. It currently receives upfront payments in the form of scoping fees and deposits as well as revenue from the sales of products. However, it currently does not receive royalties at this stage. The primary beneficiaries of the Fund are communities in general and in particular the communities where the GR or TK has been accessed.

[16] For further information on these Bhutanese administrative terms see: http://en.wikipedia.org/wiki/Gewogs_of_Bhutan

preserved at NBC. The RNR Research and Development Centre at Wengkhar (Eastern Bhutan) has carried out preliminary cultivation trials of this species with encouraging results.

71. Through a five-year Memorandum of Agreement on Technical Collaboration between RGoB and Nimura Genetic Solutions (NGS) in 2009 for collaborative research of the screening of natural resource, NGS has been supporting the establishment of the bio-exploratory laboratory at the NBC through provision of technology and the business know-how to strengthen the Bio-prospecting Programme. NBC has also entered into a Memorandum of Agreement with an international company, Quantum Pharmaceuticals Limited (QPL). A recent meeting was held between NBC and QPL, who have shown interest in the product related to this pilot project. Agreement was reached on signing a scoping agreement to enable QPL to carry out further work on the plant in terms of validating the TK associated with this plant. The transfer of the material will be done on execution of a Material Transfer Agreement and will be in September 2014, when QPL will visit Bhutan again. Based on the scoping results, an ABS agreement will follow which will have to secure fair and equitable sharing of benefits for the communities, the RGoB as well as the User.

Pilot 2 Baseline

72. Menjong Sorig Pharmaceuticals (MSP) under the Ministry of Health is leading one of the pilot projects. The MSP is mandated to research and produce traditional medicines for supply to government hospitals and health care facilities as a part of Bhutan's public healthcare system. The MSP envisages to expand its currently limited commercial ventures by expanding into research and development of other potential bio-products. MSP will be supporting this project through inputs on research, capacity building, etc ($579,281). Their work will also contribute towards other pilots and also Output 2.3 since their lab has good facilities for research.

73. In terms of baseline work specifically relevant to pilot project 2, extracts for development of topical anti-fungal cream/ powder from *R. anthopogon*, hand sanitizer from *A. calamus*, and soap and shampoo from *S. rarak* have been identified and basic screening processes have been completed. Authenticated herbarium specimens of these plants have been preserved as they are used in the production of traditional medicines. Laboratory trial production of soap from *R. anthopogon* has been done using rudimentary techniques and basic packaging design and labeling have also been done. The costs incurred for basic screening and identification processes for the development of topical anti-fungal cream from *R. anthopogon*, hand sanitizer from *A. calamus*, and soap and shampoo from *S. rarak* including species authentication, specimen collection for the herbarium, laboratory trial production of soap and basic designing for packaging and labelling is estimated to be around $15,500.

74. With regards to Himalayan gooseberry, community contracts with non-wood forest products (NWFP) group exist for supply of raw materials for use in production of traditional medicines. The aim is to diversify products from the use of Himalayan gooseberry and MSP has envisaged that the development of anti-wrinkle cream has very high potential. A literature study has been conducted on the use of Himalayan gooseberry for use in anti-wrinkle cream, which is known for its high vitamin C content and anti-oxidant properties.

75. As this pilot project is being led by MSP, most of the identified sites/communities for this pilot project concern MSP's existing network of collectors and communities for traditional medicines. Thus the pilot project will build on existing relationships, with the aim of taking these to a new level in line with the Nagoya Protocols requirements for PIC, MAT and benefit-sharing under ABS agreements.

76. This will include Lingzhi Gewog, the remotest gewog in the Thimphu dzongkhag, where most of the identified sites/communities for this pilot project concern Menjong Sorig Pharmaceuticals' (MSP) existing network of collectors and communities for traditional medicines. Dagala Gewog is another area where MSP have collected some of the materials for use in their regular production of traditional medicine. MSP started involving this community a couple of years ago as an alternate source of raw materials in order to reduce pressure on the Lingzhi site. In Langthel gewog in Trongsa dzongkhag, MSP works closely with two community groups under the Langthel gewog, Namther Throgmen Tshogpa and Dangdung Menrig Tshogpa. The former has about 40 members while the latter has about 30 members. All these members have been trained in species identification and sustainable collection methods with technical support from the RNR-RDC Jakar and MSP.

Pilot 3 Baseline

77. This pilot project is being led by Bio Bhutan, who have extensive experience of collaborating with local communities in the production of essential oils and products such as soaps. Bio Bhutan enterprise is a private Bhutanese firm registered with the Ministry of Economic Affairs since 2005. They develop, manufacture and market natural and organic certified products from Bhutan. Bio Bhutan‘s vision is to link local cooperatives, community forest management, NTFP and women‘s groups to markets with quality, natural and organic products, while making use of the local available resources and promoting local livelihoods. Bio Bhutan has done a literature study and has the experience and technical know-how for the extraction of essential oils using steam distillation. The company is already applying this technology for the extraction of essential oil from lemon grass and Artemisia. It focuses on organic products, and its products receive IMO control certification administered by the Institute for Marketecology, a Swiss-based quality assurance agency recognized by the European Union.

78. Bio Bhutan has extensive experience of working with local communities in a development context, through past projects supported by development assistance funding including from Helvetas and Bhutan-Costa Rica Cooperation on Development of Organic Soap. For two years, a team of Bio Bhutan employees, consultants from Thailand and Bhutan taught communities in eastern Bhutan about sustainable collection practices for lemongrass, book-keeping, community organisation and soap making. With funds from the RGoB, UNDP and the project, a soap- manufacturing unit was constructed in Sherichu at the premises of the Lemon Grass Cooperative. Through leading a pilot project in Component 3, Bio Bhutan intends to extend the range of its scented personal care products that will also contribute towards supporting community livelihoods ($80,000).
79. Bio Bhutan plans to collaborate with Primavera[17], a European company with whom they have existing collaboration on other products, to secure technical assistance in carrying out product tests and developing overseas markets for the products (as has been done for other products over the past four years).

[17] http://www.primaveralife.com/en/

PART II: Strategy

PROJECT RATIONALE AND POLICY CONFORMITY

Fit with the GEF Focal Area Strategy and Strategic Programme

80. The project is consistent with the eligibility criteria and priorities of the Nagoya Protocol Implementation Fund (NPIF) as it will support the Royal Government of Bhutan to develop the national ABS framework and capacity, promoting bio-prospecting, bio-products discovery and technology transfer with prior informed consents and on mutually agreed terms. In addition the project will facilitate private sector engagement and projects targeting investments in the in-situ conservation and sustainable use of genetic resources. Lessons from this project will be used to update ABS laws and regulations as required and to improve the capacities in Bhutan to facilitate ABS agreements and handling issues under the Nagoya Protocol.

81. The project also addresses the GEF 5 BD4 Focal Area objective – Build capacity on access to genetic resources and benefit sharing, contributing directly towards Outcome 4.1 Legal and regulatory frameworks, and administrative procedures established that enable access to genetic resources and benefit sharing in accordance with the CBD provisions and Output 4.1 Access and benefit-sharing agreements (number) that recognize the core ABS principles of Prior Informed Consent (PIC) and Mutually Agreed Terms (MAT) including the fair and equitable sharing of benefits. See the GEF Tracking Tool for ABS frameworks in **Annex 1**. The project will strengthen and operationalize the national policy, legal and regulatory framework for ABS, build capacity for its implementation through a range of training, awareness-building and supportive information management and guidance outputs, and demonstrate best practice ABS processes recognizing the principles of Prior Informed Consent (PIC) and Mutually Agreed Terms (MAT) including the fair and equitable sharing of benefits.

Rationale and summary of GEF/NPIF Alternative

82. This Project aims to strengthen the conservation and sustainable use of biological resources in Bhutan through development of the national framework for the implementation of Access and Benefit Sharing under the Nagoya Protocol, including raising national capacity to the stage of implementation-readiness and facilitating the discovery of nature-based products

83. **In the baseline scenario**, the Royal Government of Bhutan has identified the development of a national ABS framework consistent with the Nagoya Protocol's provisions as a priority and is investing in efforts to develop its national biotechnology industry beyond existing traditional medicine production for domestic use, as well as the systematic documentation and protection of traditional knowledge. There are a limited number of ongoing investments in bio-prospecting from the National Biodiversity Centre, the Ministry of Health's traditional medicine program, and local and international companies. However, the great potential for the productive use of Bhutan's exceptional genetic resources associated with its mountain landscapes and diversity of forest types, remains largely undeveloped and potential income to both the government and poor rural communities are unrealized.

84. In addition, while existing bioprospecting activities are consistent with the requirements of existing legislation, there remain gaps in the current legal and regulatory framework that do not allow full implementation of the provisions of the CBD and the Nagoya Protocol for PIC processes and ABS agreements involving MAT and mechanisms for the equitable sharing of benefits.

85. In the absence of this project, Bhutan would still work towards the implementation of its obligation under Article 15 of the CBD, but the process would take considerably longer, and it would be more difficult to achieve the international technical standards for best practice required by the ABS objectives of the CBD and Nagoya Protocol. Investment by international biotechnology companies would be less likely in the absence of a clear legal framework and national capacity for effective governance of the sector. In addition, ILCs in particular may not gain from bio-prospecting activities, although their surrounding biological resources and traditional knowledge may be utilized. The Royal Government of Bhutan therefore aims to ensure that all parties, including the national and local governments and ILCs stand to benefit through the fair and equitable distribution of benefits from bio-prospecting. Efforts to date have been inadequate to remove the existing barriers to the introduction of an effective national ABS regime that will contribute towards biodiversity conservation and encourage sustainable use of biological resources, therefore the threat of ecosystem degradation remain, which may reduce future bio-discovery prospects.

86. **In the GEF/NPIF alternative scenario:** The project aims to develop and implement the national ABS framework, build national capacities and facilitate the discovery of nature-based products. The project will remove the aforementioned barriers and develop necessary capacity within the NBC and other stakeholders. The project will also enable smooth and successful agreements on different products from Bhutanese genetic resources, ensuring full compliance with the provisions of the Nagoya Protocol. The project will enable Bhutan to successfully implement the Nagoya Protocol, strengthening the Bioprospecting Programme and upgrading the NBC laboratory as well as technical capacity to carry out isolation and identification of bio-active compounds, legal expertise to enter into negotiations and execute ABS agreements, and demonstrate the equitable involvement of local communities in bio-prospecting activities through ABS agreements.

87. Intensive awareness raising and capacity building efforts will ensure that all concerned stakeholders understand the principles behind the ABS regime, the requirements for its implementation, and the potential benefits that can be realized to different parties. The project will also facilitate the reinvestment of benefits from ABS agreements back into biodiversity conservation and supporting ILCs through official mechanisms. The competent authorities, checkpoint authorities and other stakeholders will be brought rapidly to implementation readiness, and through the pilot projects, the inclusion of appropriate PIC, MAT and ABS agreements in bio-prospecting and product development processes will be demonstrated. The results and lessons learned from the project *w*ill also be shared, contributing to global best practices on ABS. These in turn can also provide useful guidance to the ongoing regional and global processes related to ABS. Overall, the project will ensure that the national economy, business community and local communities all stand to gain from the further development of Bhutan's biotechnology industry, including its participation in international partnerships and foreign investment.

PROJECT GOAL, OBJECTIVE, OUTCOMES AND OUTPUTS/ACTIVITIES

88. **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.

89. Despite positive baseline efforts, the absence of fully-developed and functional ABS framework and limited institutional and personnel capacity for implementation of a national ABS regime that is compliant with Nagoya Protocol inhibit the realization of the global objective of ensuring ABS and contributions from the sustainable use of biological resources for biodiversity conservation and for meeting the CBD's Aichi targets. Consequently, the Royal Government of Bhutan has requested support from the GEF and UNDP to embark on a project to alleviate the aforesaid barriers and create enabling policy and institutional conditions for implementation of ABS program and activities in compliance with the Nagoya Protocol

90. The project objective will be achieved through the implementation of three inter-connected components. Component 1 addresses the need for a strengthened national regulatory and institutional framework on ABS. The operationalisation of this framework will be supported by development of institutional and personnel capacity for the implementation of the ABS programs and activities and enhancing the awareness of stakeholders including the private sector, local governments and communities, academia, parliamentarians and law-enforcement agencies in Component 2; and through demonstration of pilot ABS agreements for bio-prospecting activities in Component 3, which will provide experience and lessons to inform refinement of the framework and implementation processes including model PIC, MAT and benefit-sharing mechanism. The three components will result in the following project outcomes:

    Outcome 1: An operational national regulatory and institutional framework on ABS. 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 Nagoya Protocol and based on an extensive consultation process, and establishment and operationalization of institutional framework in accordance with the requirements of the Biodiversity Rules and Regulations.

    Outcome 2: Strengthened stakeholder capacity and awareness for implementation of the national ABS framework. The second component will involve upgrading of the bio-prospecting laboratory facility and the skills of the lab technicians to use the upgraded facility, 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. It will also include a series of advocacy and sensitizations workshops and mass media programs to raise awareness of ABS among various groups using well-developed communication materials.

    Outcome 3: Best practice ABS processes (3) 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. 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 the three different institutions: National Biodiversity Center, a fully 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. Knowledge resources encapsulating the best practices and experiences from the ABS processes will be developed through studies and knowledge-sharing forums.

91. In addition, implementation of the project is supported by monitoring and evaluation inputs in order to achieve effective and efficient project implementation based on results-based management. This will include assessment of awareness levels on specific subjects in order to substantiate related SRF indicators.

92. The project's Stakeholder Involvement Plan (see Section IV, Part IV) provides details of stakeholder organizations and their roles in project implementation, including mechanisms for participation. This includes central government agencies concerned with ABS implementation (NBC) and other bodies concerned with bioprospecting, the use of traditional knowledge and development of related products such as traditional medicines, cosmetics, nutritional products, etc, (including Menjong Sorig Pharmaceuticals and others); other responsible authorities for ABS implementation (such as BAFRA); ILC representatives and social and environmental NGOs involved in ABS issues; research and academic institutions involved in bio-prospecting and related research; and private sector organizations and businesses involved in developing biotechnology products.

93. Activities under the three outcomes will be focused at two main levels of intervention: (i) the national level, in order to establish the national regulatory and institutional framework, and develop national capacity for governance of the framework and technical support measures for its implementation; and (ii) district / local level, to demonstrate pilot ABS activities in the field in collaboration with ILCs and other stakeholders, including international companies, and to raise awareness and understanding of ABS processes and their regulatory framework.

Outcome 1: An operational national regulatory and institutional framework on ABS
Total cost USD629,750 GEF/NPIF USD90,000; Cofinancing USD539,750

94. This outcome will support policy level decision-making activities to expedite the approval of the draft ABS policy. The draft ABS policy is fully compliant with the Nagoya Protocol, with necessary provisions including protection of traditional knowledge (TK), mutually agreed terms (MAT) and prior informed consent (PIC) including protocol for PIC. However, there is still a need to enhance understanding of the ABS regime and inherent benefits and challenges among decision-makers. Subsequent to the approval of the ABS policy, the project will support the development, promulgation and dissemination of Biodiversity Rules and Regulations for implementation of ABS activities in compliance with the approved ABS Policy and Nagoya Protocol. In addition, institutional mechansims for ABS implementation will be fully established and made operational in accordance with the requirements of the approved ABS policy and Biodiversity Rules and Regulations.

95. The outputs and activities proposed to achieve this outcome are described below.

Output 1.1: An approved national ABS policy in place and disseminated
The project will prioritize the achievement of this output, as the establishment of regulatory and institutional mechanisms will depend on the approval of the ABS policy. The following activities will be carried out to realize this output:

96. A consultative workshop will be held to address the comments on the draft ABS policy from Gross National Happiness Commission. The draft ABS policy has been reviewed by the Policy and Planning Division of the Ministry of Agriculture and Forests and submitted to the GNHC. As is the standard practice, the draft policy will be subjected to GNH screening and comments are anticipated based on past policy review experience. The workshop will involve members of the ABS Scientific Review Committee and other participants depending on the nature of comments received from the GNHC. At this workshop, NBC will elicit inputs to address the comments provided by the GNHC and, based on these inputs, revise the ABS policy.

97. Upon completion of the revised ABS policy, NBC will organize a high-level presentation of the policy for the Lhengyel Zhuntshog and GNHC focusing on how key issues and comments have been addressed. This presentation is expected to provide the opportunity to clarify lingering issues that the Lhengyel Zhuntshog and GNHC may have and expedite the approval of the ABS policy.

98. The approved ABS policy will be translated into Dzongkha and 800 copies of the ABS policy document will be published in bilingual (Dzongkha and English) format for circulation to central government ministries and their line agencies, local governments, research and academic institutes, private sector companies, and members of the legislative bodies. An electronic PDF copy of the ABS policy will be posted on the websites of the NBC and the Ministry of Agriculture and Forests as well as on that of the Gross National Happiness Commission.

Output 1.2: Biodiversity rules and regulations developed and promulgated in compliance with the approved ABS policy, Biodiversity Act and Nagoya Protocol

99. Biodiversity rules and regulations will be developed and promulgated to implement the Biodiversity Act in alignment with the ABS policy and Nagoya Protocol through the following series of activities:

100. Drafting of the preliminary framework of biodiversity rules and regulations by NBC with the technical assistance of the national ABS expert, and international ABS consultant as necessary. The detailed process for the development, review and approval of the regulations will also be prepared. A national inception workshop (different from the project inception workshop) will be organized to introduce the context and rationale, skeletal structure and elements of the biodiversity rules and regulations and process action plan for formulation, and elicit preliminary inputs. This workshop will basically involve officials dealing with policy, planning and legal matters in relevant ministries and their line agencies as well as representatives from the judiciary, parliament, academia and private sector companies.

101. The above workshop will be followed by a series of four regional consultative workshops covering eastern, east-central, west-central and western regions. These workshops will be conducted in coordination with the regional RNR Research and Development Centers that respectively cover the above regions. The workshops will progressively build the rules and regulations whilst also capturing regional perspectives and insights. Target participants will include agriculture, forestry, livestock development, and environment officials from the dzongkhags (districts), district judiciary, protected area management authorities, researchers in the area of natural resources management, academicians from colleges and training institutes, and local business community involved in biodiversity use.

102. The results of the national inception workshop and the regional consultative workshops will be analyzed and consolidated into draft Biodiversity Rules and Regulations. A national consultation, involving all key stakeholders, will be organized to present the draft Biodiversity Rules and Regulations and elicit feedback. This will lead to revision and finalization of the draft Biodiversity Rules and Regulations.

103. A presentation session will be organized to present the final draft Biodiversity Rules and Regulations to the Honorable Minister of Agriculture & Forests, senior members of the Ministry of Agriculture & Forests, which will include the heads of the technical Departments and the Policy and Planning Division and RNR-GNH Committee members as well as members of the Parliamentary Committee for Environment. Following this session, changes to the final draft Biodiversity Rules and Regulations will be made, if necessary, and submitted to the MoAF for approval.

104. The approved Biodiversity Rules and Regulations will be published in bilingual (Dzongkha and English) format and 1,500 copies will be printed for circulation to central government ministries and their line agencies, local governments, research and academic institutes, private sector companies, members of the legislative bodies, and judiciary at the national and district levels. An electronic PDF copy will be posted on the websites of the NBC and the Ministry of Agriculture and Forests.

105. A national consultant with legal expertise will be recruited to support NBC in undertaking the consultative process for promulgation of the Biodiversity Rules and Regulations, consolidating and analyzing the information derived from the consultative process, and putting together iterative drafts of Biodiversity Rules and Regulations up until the final draft stage. Additionally, an international expert with experience in ABS legislation will be recruited to provide intermittent guidance and inputs to the national consultant in the drafting of the Biodiversity Rules and Regulations.

Output 1.3: Institutional mechanisms for ABS established and operational

This output will be implemented largely in Years 3 and 4 after the completion of the preceeding outputs. Authorized agency, competent authorities and other institutional roles and functions will be assigned in keeping with the institutional requirements specified in the approved ABS Policy, Nagoya Protocol and approved Biodiversity Rules and Regulations. In this respect, an Executive Order will be secured from the highest government authority to officially declare and operationalize the institutional arrangements.

106. An initial network of checkpoints will be designated and mandated to monitor and regulate the movement of genetic materials in compliance with the approved Biodiversity Rules and Regulations and Nagoya Protocol. This will involve sensitization and coordination meetings with relevant regulatory agencies such as the Bhutan Agriculture and Food Regulatory Authority and the Department of Forests and Park Services.

107. A national system of internationally-recognized certification of compliance and origin will be developed and institutionalized. This will involve consultations with relevant agencies and building an inter-institutional mechanism for the implementation of the system.

Outcome 2: Strengthened stakeholder capacity and awareness supports implementation of the national ABS framework
Total USD1,508,000; GEF/NPIF USD290,000; Cofinancing USD1,218,000

108. This component will focus on building the institutional and staff capacity of the NBC and key partner agencies for bio-prospecting and managing ABS agreements in compliance with the approved ABS Policy and Nagoya Protocol. Emphasis will also be placed upon monitoring of bio-prospecting projects and facilitating value addition to genetic/biological resources in the country. Capacity improvement will be gauged using the UNDP ABS Capacity Scorecard which has been developed specifically for ABS projects. The project, with co-financing, will also upgrade the existing bio-prospecting laboratory for bio-activity tests up to the level of fractionation and strengthen TK documentation.

109. The capacity-building activities in Outputs 2.1 and 2.2 will increase national capacity to add value to GR in the country through the isolation and identification of bio-active compounds with the support of TK as well as based on the collaborator's GR of interest along with legal expertise. This value addition will expedite the process of bioprospecting as well as make a wider range of options available to all potential collaborators including international companies. To achieve Output 2.3 on awareness-raising, a series of sensitization workshops and mass media events will be carried out over the four years. The target audience will include parliamentarians, government policy-makers, scientists, researchers, local governments and communities, academia, the private sector, and civil society groups.

110. The outputs and activities necessary to achieve this outcome are described below.

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

111. The following activities are listed for this output:

112. The existing bio-prospecting laboratory at NBC will be upgraded, with co-financing, with the capability to carry out bio-activity tests and analyses up to the level of fractionation. This will entail co-financed procurement and installation of equipment for high performance liquid chromatography (HPLC), gas chromatography (GC), and Atomic Absorption Spectro-photometry (AAS) supplemented with basic bio-assay equipments and reagents, and column/ thin-layer chromatography sets.

113. Subsequent to the upgradation of the bio-prospecting laboratory, training will be provided to a group of 4-6 lab technicians from NBC and Menjong Sorig Pharmaceuticals to enhance their knowledge and skills for the application of techniques for screening and bio-activity tests and analyses up to the level of fractionation. This would involve hiring the services of a qualified bio-prospecting lab expert from a regional/ international institute for training the Bhutanese technicians.

114. Field exercises will be carried out for additional TK documentation, covering all 20 dzongkhags across the country by the end of the ongoing 11th Five Year Plan (2018). NBC is in the process of documenting TK for 16 gewogs in 8 dhzongkags. In this respect, the NBC is in the process of developing a strategy and approach framework to carry out TK documentation. Activities for TK documentation will, in general, involve community meetings for awareness and sensitization on ABS and TK documentation, identification of TK holders, and consultations with individual TK holders to document TK.

115. Equipped with a better laboratory facility and laboratory skills, NBC will enhance its bio-activity tests from the existing level of simple extraction to the level of fractionation of active compounds, thus adding value for potential commercialization. Collection of herbarium and lab specimens of the genetic materials will be expanded, leading to the accumulation of at least 1,250 extracts (simple extraction) and fractionation of 25 active compounds by the end of the project.

Output 2.2: Improved technical capacity for implementing ABS activities

116. A toolkit for ABS regime management, based on review of internationally recommended standards and practices and reflecting on the initial experience of ABS work in Bhutan, will be developed by NBC with international technical support. The toolkit will among other things outline the ABS concept and its relevance, basic pre-conditions for ABS, fundamental structure of ABS and requisite standards, consultation, negotiation and decision-making processes, NP-compliant templates for community contracts, and implementation modalities including monitoring and evaluation. This will clarify the rules and procedures for NBC and genetic resource providers and users, and elaborate the mechanisms and methodologies for ABS operationalization in line with the ABS rules and regulations in Output 1.2 and the institutional framework operationalized in Output 1.3.

117. A two-week international training program on the full cycle of ABS regime management will be designed and conducted with the technical assistance of a group of international trainers using the ABS regime management toolkit as the primary training resource. This training will be primarily targeted at Bhutanese individuals from relevant agencies but also seek to draw international participants on a fee basis. The fees accrued from the international participants will be channeled into the Bhutan ABS Fund. Collaboration will be sought from training institutes such as Ugyen Wangchuck Institute for Conservation and Environment and College of Natural Resources in organizing the training program. NBC will also enhance their staff structure to strengthen their capacity for ABS implementation, supported by cofinancing.

118. An institutional visit will be organized for a group of Bhutanese representing relevant government agencies and private sector companies to observe bioprospecting and bio-products development activities and study market potential to countries in South Asia/South-east Asian region. This visit will directly feed into a number of the project

outputs, including outputs 2.1, 2.3, 3.1 and 3.2. The participants will focus in particular on successful ABS agreements, product development initiatives, successful collaboration, experiences in community empowerment through ABS regime and also visit potential companies for possible collaboration. The participants will submit and present a comprehensive report describing the key findings, learnings and recommendations from the visit. In this respect, an echo-seminar will be organized to present the key findings, learnings and recommendations up on their return. In addition, the report will be disseminated to key project stakeholders and other relevant agencies. The possibility of an exchange arrangement with participants in the UNDP/GEF ABS project in Malaysia will be considered

Output 2.3: **Increased awareness of ABS and associated national regulatory and institutional framework among a wide range of stakeholders**

119. A series of six training seminars – two each year in the second, third and fourth years of the project – will be conducted. These training seminars will target parliamentarians, local government leaders, community-based groups such as those pertaining to community forestry and non-timber forest products management, local healers, researchers, academicians, and regulatory personnel among others. Where appropriate and practicable, these seminars will be organized in coordination and collaboration with training/ educational institutes such as the Ugyen Wangchuck Institute of Conservation and Environment and the College of Natural Resources. Modules and materials will be developed for these seminars taking into account the target participants, covering among other things the key principles and salient features of Nagoya Protocol.

120. Awareness-raising will also be pursued through mass media (TV, radio and press) and participation in public events (fairs and exhibitions). Communication and awareness-raising materials will be designed and produced for use in mass media and at public events. These may include documentary video, radio jingle, print advertisement, pamphlet, poster, sticker, etc. Subcontracted awareness surveys will be conducted as part of the project's M&E programme to establish baseline and project completion awareness levels (see **Annex 4** for the proposed methodology).

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
Total USD1,597,000; GEF/NPIF USD530,000; Cofinancing USD1,067,000

Output 3.1: Three pilot ABS agreements / schemes compliant with the approved ABS Policy and Nagoya Protocol developed and operationalized

121. This component will provide targeted support in piloting ABS agreements that demonstrate compliance with the requirements of the Nagoya Protocol. Three pilot ABS agreements will be developed and managed: one by the NBC, the second by Menjong Sorig Pharmaceuticals, and the third by Bio-Bhutan. The NBC, as the overall authorized agency for ABS, will oversee and provide guidance on the development and implementation of the pilot ABS agreements. The project will support the three organizations to collaborate with international organizations in the fields of research and development and market assessment for potential products derived from genetic resources. Based on the research

results, the project will support the development of actual products. NPIF funding will cover screening of potential genetic resources and identification of the prioritized genetic resources, consultations, negotiations and drafting of the new ABS agreements, through a process that includes local community consultations and their active engagement in defining the local level benefit-sharing modalities, and supporting community protocol development where indicated. NPIF funding will be used to facilitate consultations and negotiations between local, national and international stakeholders; technical support for collections and laboratory analysis and processing (to be co-financed by the private sector and the government), and for providing technical assistance in the legal field as well as for biochemical analysis. Cost for actual product development and marketing will be borne by co-financing. A strong focus of NPIF support will be placed on building strong technical and legal capacity based on experiential learning to put Bhutan on a footing that enables the country to negotiate fair benefit-sharing for the country, both at the national and local levels, while ensuring that the government will gain a positive reputation as a reliable partner as a resource provider.

122. The ventures to be supported by the project include identification of genetic resources and resource providers in a process including consultation meetings, negotiation of mutually agreed terms (MAT) and the drafting and finalisation of ABS agreements. Up to three prior informed consent (PIC) processes will also be supported with indigenous and local communities (ILCs) with clear benefit sharing provisions. At least three trial products of natural/manufacturing/cosmetic products will be produced (one from each pilot project). The project will develop the capacity of stakeholders for the sustainable harvesting and the preliminary processing of genetic resources, which will be co-financed by the private sector contributions.

123. In order to identify at least three lead compounds, the project will consolidate the TK reserves and make full use of them to focus on potential GR which already have a known history of use and efficacy to be isolated and identified at the bio-active compound level. NBC has a collection of 250 extracts backed with TK which the project will build on (through TA provided in Component 2), providing the foundation for the analysis of additional 1,250 biological extracts in search of properties for the development of manufacturing, cosmetic and pharmaceutical products. It is expected that about 25 active compounds will be purified and their structure elucidated in facilities of project partners as candidates for developing potential trial products. The NPIF support will facilitate transfer of necessary knowledge and technology from the international companies to Bhutanese companies, allowing the latter to discover new enzymes and other genetic resources for use in various biochemical applications.

124. Over the project period, three pilot ABS agreements/ schemes that are compliant with the Nagoya Protocol will be developed and implemented. The three pilot ABS agreements will be implemented, led by three different types of institution:

- The National Biodiversity Centre, a fully 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 for supply to national public health system but is also involved in development and production of commercial bio-products for pharmaceutical and therapeutic use;
- Bio-Bhutan, a fully private enterprise involved in the development and production of bio-products involving local community groups.

Pilot I:

125. This pilot will focus on accessing traditional knowledge and genetic materials associated with the use of *Zingiber cassumunar* (also known by its synonym *Z.montanum;* local name: Phachyang) for potential commercialization, to be implemented by the National Biodiversity Centre. The pilot project will result in the development of a trial product. Since there is already TK associated with the use of this plant for alleviating joint pain in the local communities, what this pilot will do is to validate the TK associated with this plant and develop a product for external use similar to something like Tiger balm. Since it will not be a pharmaceutical product, the research and development work by NBC will test and determine efficacy, allergic reactions and toxicities with regard to the product.

126. The National Biodiversity Centre has carried out survey and documentation of traditional knowledge on the use of *Z. cassumunar* in Lokchina gewog in Chukha dzongkhag in SW Bhutan. The TK documentation has been carried out based on the standard TK format, which includes Prior Informed Consent (PIC). Consultations with local communities have revealed that local healers used parts of *Z. cassumunar* in relieving joint pains. The NBC has carried out basic screening and extraction processes and the extract has been stored in their extract library. Herbarium specimen has also been preserved at NBC. The RNR Research and Development Centre at Wengkhar (Eastern Bhutan) has carried out preliminary cultivation trials with encouraging results. The RNR RDC will provide corresponding technical advice to NBC in support of the implementation of this pilot project.

127. Through the project NBC plans to carry out further activities in two phases:

<u>Scoping phase (first two project years)</u>

128. This phase will commence with consolidation of ongoing discussions with potential international companies, such as Quantum Pharmaceuticals Limited and Nimura Genetic Solutions, who have shown interest in collaborative research, product development and technology transfer for pain relief herbal products. Agreement has recently been reached on signing a scoping agreement to enable QPL to carry out further work on the plant in terms of validating the TK associated with this plant. The transfer of the material will be done on execution of a Material Transfer Agreement and will be in September 2014, when QPL will visit Bhutan again. Based on the scoping results, an ABS agreement will follow which will have to secure fair and equitable sharing of benefits for the communities, the RGoB as well as the User. Collaborative research will be aimed at confirming the traditional claim of relieving joint pains using *Z. cassumunar* through bio-activity tests and evaluating the safety, quality and efficacy of the target bio-product. An initial market assessment will also be carried out during this phase.

129. Concurrently, a programme of sensitization and consultation meetings will be conducted with local communities in Lokchina gewog to raise their awareness about ABS and develop a preliminary common framework for an ABS agreement highlighting the ongoing status of the work, key issues, foreseen benefits and potential roles and obligations of different actors envisaged and to elicit their perception, views and interest in engaging in the ABS negotiations.

Actualization (3rd and 4th project years)

130. Based on the results of the scoping phase, the project will move towards actualization of an ABS agreement involving three parties – the local communities from where the TK and genetic resources are sourced, the international collaborator and NBC.

131. Major attention will be given to developing a locally-driven community protocol describing the source communities and articulating their essential values and principles of engagement based on customary, national and international rights and responsibilities over the genetic resources, including their conservation and sustainable use. Furthermore, consultations will be carried out with local communities to develop a social set-up for the community to function as a group, with proactive consideration of the involvement of women. This will include developing a by-law for the functioning of the local group(s) and setting up mechanisms for sharing benefits in a fair and equitable manner within the local community(ies).

132. Meetings will be held to facilitate informed consultations and negotiations between the concerned parties leading to a tri-partite ABS agreement, articulating the objectives of the collaboration, roles, rights and responsibilities of all the parties, mutually agreed terms for access to genetic resources and benefit sharing between providers and users of the genetic resources and associated traditional knowledge.

Pilot II

133. The second pilot aims to develop one bio-product from *Phyllanthus emblica* (Himalayan gooseberry) for pharmaceutical use from access to selected genetic resources and to establish a benefit-sharing mechanism for the commercialization of the bio-product – an anti-wrinkle cream. This pilot will be implemented by Menjong Sorig Pharmaceuticals (MSP), under the Ministry of Health. MSP will collaborate with the institute of Cosmetic science in the Mae Fah Luang University (MFU) in Thailand for TA in the development of the anti-wrinkle cream. Community contracts with non-wood forest products (NWFP) group exist for supply of raw materials for use in production of traditional medicines, which will be applied to provide Himalayan Gooseberry. The aim is to diversify products from the use of Himalayan gooseberry and MSP has envisaged that the development of anti-wrinkle cream has very high potential. A literature study has been conducted on the use of Himalayan gooseberry for use in anti-wrinkle cream, which is known for its high vitamin C content and anti-oxidant properties.

134. MSP also has strong interest in pursuing the development of other personal care and therapeutic products, through which is will focus on accessing, and sustainable use of, *Rhododendron anthopogon* (dwarf rhododendron), *Acorus calamus* (sweet flag) and *Sapindus rarak* (soapnut tree), with the aim to developing prototype therapeutic/ personal care products for commercialization, also with TA from the institute of Cosmetic science in the MFU. Extracts for development of topical anti-fungal cream/ powder from *R. anthopogon*, hand sanitizer from *A. calamus*, and soap and shampoo from *S. rarak* have been identified and basic screening processes have been completed. Authenticated herbarium specimens of these plants have been preserved as they are used in the production of traditional medicines. Laboratory trial production of soap from *R. anthopogon* has been done using rudimentary techniques and basic packaging design and labeling have also been done.

135. With support from GEF/NPIF, MSP proposes to carry out the following activities with regards to the development of anti-wrinkle cream from *P. emblica* (Himalayan gooseberry), and as far as possible to progress topical anti-fungal cream/ powder from *R. anthopogon*, hand sanitizer from *A. calamus*, soap and/or shampoo from *S. rarak*:

- Evaluation tests (in vitro and in vivo tests wherever necessary such as skin reaction for allergy, irritation etc) to determine the safety and efficacy levels of the bio-products and additional laboratory tests to establish product stability and quality parameters;
- Study the various possible formulations to determine the optimal form for the products (eg anti-wrinkle creams or pastes, antifungal foot creams or powder etc)
- Procurement of TA support for identification of appropriate technology and technology transfer through collaborative research and training.
- Procurement of appropriate technology for the testing and production of identified products.
- Develop products labels and designs adhering to the target markets (domestic and international)
- Market studies and development of at least two prototype bio-products that have the most potential for commercialization in the domestic market;
- Sensitization and awareness-raising of source communities on ABS;
- Consultations with source communities to develop community contracts (with new groups) and renewed community contracts (with existing groups). The community contracts will define the roles, rights and responsibilities of the local community groups and specify the benefits and benefit-sharing mechanisms. The community contracts will be formalized and executed through ABS agreements (MSP will provide a buy-back guarantee for the communities' produce);
- Draw clear terms of collaboration with potential partners outside for the economic benefit sharing of the outcome of the collaboration.
- Community training on the sustainable harvesting of the raw materials, including provision of necessary tools.

  Note: For this pilot project we would like to identify Anti-wrinkle cream from Himalayan Gooseberry and antifungal cream/powder from R. Anthopogan if the number of products stated in the earlier document is considered too ambitious. We would like to however, submit here that the targets are achievable as the works are at various stages of R & D for the identified products.

Pilot III

136. The third pilot will be implemented by Bio Bhutan[18], a private enterprise, and will pertain to accessing *Rhododendron anthopogon* for extraction of essential oil for development of personal care products. Although this species is also being investigated in Pilot 2, different source areas and companies are involved, and the product development will extend baseline experience, so there is no overlap.

[18] See: http://biobhutan.com/

137. As indicated in the ADB discussion paper 106: Market-based Certification and Management of Non-Timber Forest Products in Bhutan: Organic Lemongrass Oil, Poverty Reduction, and Environmental Sustainability", successful extraction and trade of essential oils can provide substantial income to rural communities in remote locations of Bhutan, e.g. lemongrass oil. While the extraction of lemon grass in eastern Bhutan has a long tradition in Bhutan, high value essential oils such as *R anthopogon* has not been extracted in Bhutan at all and constitute an untapped opportunity for remote villages at high elevations.

138. Unlike other *Rhododendron* species, *R. anthopogon* has fragrant leaves, and the essential oil can be extracted from flowers, leaves and twigs. The oil is non-toxic, non-irritant and has longer shelf-life, making it an ideal ingredient of pharmaceutic and cosmetic products. In the international trade essential oil from *R. anthopogon* is recognized as one of the high value essential oils. Currently, the extraction and marketing of *R. anthopogon* essential oil is mentioned to occur mainly in Nepal.

139. During the project, identification of appropriate distillation technology for *Rhododendron anthopogon,* and high quality oil that meets international standard will be produced through research and development activity (Essential oil from *R anthopogon* is in itself a new product).

140. The following activities (Research and development steps) are proposed through the project to develop at least two prototype products, including one new prototype product:

1. Resource inventory and project sites identification: Naro, Lingshi and Dagala (in coordination with Dzongkhag Forest Office, NBC and other relevant agencies), considering the availability of *R. anthopogon,* the accessibility in terms of infrastructure, and human resources available and interest from community.
2. Based upon the resource inventory, suitable extraction equipment (distillation unit) will be identified or fabricated in consultation with partners in Nepal[19] where *R. anthopogon* distillation has been developed.
3. Laboratory trials will be conducted on extraction method (duration of distillation, correlation of harvest stages and essential oil yield, quality of essential oil from different localities in coordination with NBC and other relevant agencies.
4. Trial distillation at field level in order to determine the yield and quality of *R. anthopogon* oil in-situ.
5. Training of community members in distillation technology involves a field visit to Nepal or other places in order to learn distillation technology or else the visit of consultants from Malé International.
6. Trial marketing of *R. anthopogon* in the international market in cooperation with the trading partner Primavera Life GmbH in Germany www.primaveralife.com and the certification agency IMO (Institute of Market Ecology: www.imo.ch
7. Development of community contracts encompassing PIC process, MAT and benefit sharing.

[19]Malé International in Kathmandu/Nepal: http://www.male.com.np

8. The community contracts will define the roles, rights and responsibilities of the local community groups and specify the benefits and benefit-sharing. The community contracts will be formalized and executed through ABS agreements;
9. Development of training materials and training of communities in sustainable harvesting techniques and oil distillation.
10. Product screening and development (2 products) from *R anthopogon* oil with technical support (regional and international) from partners and other relevant experts.
11. Development of product dossier and registration by Bio Bhutan
12. Commercialization of products with support from international partners.

141. Bio Bhutan plans to collaborate with Malé International in Nepal (http://www.male.com.np) for the identification of appropriate destillation tecnology. Malé International have developed distillation technology for Rhododendron anthopogon and considerable experience with the processing and trade of Rhododendron essential oil to European markets. Links between Bio Bhutan and Malé International are well established.

142. For product development, Bio Bhutan plans to work with Primavera Life GmbH, a reputed Germany based company specialized on products based on organic certified essential oils. Bio Bhutan has existing collaboration on other products, to secure technical assistance in carrying out product tests and developing overseas markets for the products (as has been done for other products over the past four years).

143. The Institute for Market Ecology (IMO), a leading certification agency based in Switzerland has been carrying out third party inspection of lemon grass according and shall be assisting with the certification of Rhododendron anthopogon oil.

Output 3.2: Knowledge resources emanating from Bhutan's experience of ABS are developed and disseminated.

144. The subject of ABS is relatively new to Bhutan and global experience in ABS is also limited currently. In view of this, knowledge resources development and dissemination is seen as extremely important, and will make full use of NBC and MoAF websites for online information dissemination. This project will carry out the following activities to develop and disseminate knowledge resources emanating from Bhutan's experience:

- Comparative study of Bhutan's ABS policy approaches and practices in relation to those in other countries to inform future development of policy and management practices;
- Gender-differentiated study on attitudes and behaviours towards ABS practices in Bhutan;
- Analysis of best practices and lessons from ABS processes and activities in Bhutan supported with specific location- and/or theme-based case studies;
- A national ABS seminar towards the end of the project to take stock of the experiences of ABS implementation, disseminate best practices and lessons, and deliberate on the way forward. The proceedings would be published online and in hard copy by NBC.
- Bhutanese project participants will also organize a side event at a CBD COP or intersessional meeting on ABS, as a means of disseminating experiences and lessons learned to a wider global audience, and will attend other ABS-related regional/

international workshops, seminars and conferences to facilitate sharing of information and experience, and establishment of institutional contacts for potential collaboration.

PROJECT INDICATORS

145. The project indicators contained in Section II / Part II (Strategic Results Framework) include only impact (or 'objective') indicators and outcome (or 'performance') indicators. They are all 'SMART'[20].

146. The project may, however, need to develop a certain number of process-oriented indicators to compose the 'M&E framework' at the demonstration project level. For this reason, M&E requirements will be included for each of the demonstration projects as an integral part of the agreements for their implementation. These indicators are expected to feed into the project's overall M&E framework. It is envisaged that the project's overall M&E framework will build on UNDP's existing M&E Framework for biodiversity programming.

147. The organisation of the logframe is based on the general assumption that: *if* (Outcome 1) an operational national regulatory and institutional framework on ABS is established; and *if* (Outcome 2) there is increased national capacities and awareness for implementation of the national ABS framework; *and if* (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; *then* (Project Objective) the national ABS framework will be implemented, national capacities developed and the discovery of nature-based products facilitated. This logic is based on the barrier and root-cause analysis carried out during project preparation (refer to Section I, Part I, chapter '

[20] Specific, Measurable, Achievable, Relevant and Time-bound.

148. Long-term solution and barriers to achieving the solution').

149. In turn, the choice of indicators was based on two key criteria: (i) their pertinence to the above assumption; and (ii) the feasibility of obtaining / producing and updating the data necessary to monitor and evaluate the project through those indicators The following are therefore the project's key indicators:

Table 1. Elaboration on Project Indicators

INDICATOR	**EXPLANATORY NOTE**
At objective level: To develop and implement a national ABS framework, build national capacities and facilitate the discovery of nature-based products	
1.Existence and use of regulatory and institutional frameworks for implementation of ABS in compliance with the Nagoya Protocol	The end of project target is: the National ABS Policy has been approved, and regulatory and institutional frameworks developed and operationalized. This information will be available from the following sources: ▪ Officially approved ABS Policy document; ▪ Officially approved Biodiversity Rules and Regulations document; ▪ 11th Five-Year Plan Review Reports ▪ Websites of NBC, MoAF and GNHC; ▪ Periodic progress reports and project evaluation reports
2.Level of institutional and personnel capacity for implementation of the national ABS framework as indicated by an increase in the NPIF ABS Tracking Tool score	The end of project target is: improved institutional and personnel capacity indicated by an increase of at least 25% over the NPIF ABS Tracking Tool baseline score (see **Annex 1** of the prodoc). The Tracking Tool is self-explanatory. Scores for each question were summed and divided by the total possible score (some questions may not be applicable) in order to reach the total percentage score. The scorecard should be completed including explanatory notes at project midterm and completion in order to assess progress. Supporting information will be available in project progress reports and evaluation reports; training reports; and key informant interviews.
At outcome 1 level: An operational national regulatory and institutional framework on ABS	
1.1.Approval of ABS policy and Biodiversity Rules and Regulations, and their use in establishing the institutional mechanisms for ABS implementation	The end of project target is: ABS Policy approved within the first year of the project, followed by promulgation of the Biodiversity Rules and Regulations encompassing ABS implementation in the second year. Supporting information will be available from: ▪ Officially approved policy and regulatory documents; ▪ Websites of NBC, MoAF and GNHC; ▪ Periodic progress reports; ▪ Project evaluation reports; ▪ Workshop and meeting reports
1.2. Operational national ABS institutional framework indicated by: ☐ Existence, and the number, of Competent Authorities designated at national (and sub-national) level ☐ Number of exit/ entry points designated for checking ABS information/ permits	The end of project target is: Competent authorities designated at national level and, if necessary, at sub-national level based on the approved Biodiversity Rules and Regulations; a network of 4-5 exit/entry points designated for checking ABS information/ permits; and a system of internationally-recognized certification of origin and compliance in place and operational. Supporting information will be available through: ▪ Inter-agency coordination meeting reports; ▪ Periodic progress reports; ▪ Project evaluation reports; ▪ Official correspondence and government circulars; ▪ Internationally-recognized certificate of origin and compliance

INDICATOR	EXPLANATORY NOTE
☐ Existence of a system of internationally-recognized certification of origin and compliance and issuance of certificates	
At outcome 2 level: Increased national capacities and awareness for the implementation of the national ABS framework	
2.1. Increased technical capacity for bio-prospecting laboratory analysis indicated 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	The end of project target is: Laboratory facility and staff skills will be upgraded for bio-activity tests up to the level of fractionation. Supporting information will include: ▪ Direct observation of laboratory facility by technical experts ▪ Interviews with laboratory staff ▪ Project progress reports and evaluation reports
2.2. Number of crude extracts identified for bio-activity tests and number of compounds fractionated	The end of project target is: 1,250 crude extracts preserved in NBC's extract library; 25 compounds fractionated from the extracts for development of trial products. Supporting information includes: ▪ Laboratory reports ▪ Direct observation of the extract library ▪ Project progress reports and evaluation reports
2.3. Number of staff at NBC and partner agencies with improved knowledge and skills on the full cycle of ABS regime management	The end of project target is: At least 25 staff in NBC and partner agencies have improved knowledge and skills for the full cycle of ABS regime management. Evaluation forms should be completed by all participants at the end of each training session to check whether training objectives were achieved, and the results summarized in project reports to assess their effectiveness. Supporting information will be available from: ▪ Project progress reports and evaluation reports ▪ Training evaluation reports ▪ Interviews with training recipients
2.4. Percentage of parliamentarians, researchers, academia, local governments and communities, private sector companies, and other groups targeted by the project awareness campaign that are aware of the national ABS policy and associated regulatory and institutional frameworks	The end of project target is an increase of at least 50% over the baseline survey results from the first year of the project. See **Annex 4** for the proposed methodology to be used to establish baselines for each awareness activity during Year One, and to assess progress by the end of the project through repeat survey in Year Four.
At outcome 3 level: 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	

INDICATOR	EXPLANATORY NOTE
equitable sharing of benefits.	
3.1. Number of pilot ABS agreements developed and operationalized for initial commercialization of trial products incorporating PIC, MAT and fair and equitable benefit sharing provisions	The end of project target is: At least three pilot ABS agreements developed and operationalized for initial commercialization of at least three trial products incorporating PIC, MAT and fair and equitable benefit sharing provisions. The contents of these ABS agreements should be checked for consistency against the CBD/Nagoya Protocol requirements. The agreements should also include *in situ* and/or *ex situ* conservation measures to ensure the security of the concerned biological resources. Supporting information includes: ▪ ABS agreement documents for three pilot projects ▪ Project progress reports and evaluation reports
3.2. Number of PIC processes with ILCs implemented in accordance with the planned PIC/community protocol	The end of project target is: At least three PIC processes with ILCs implemented in accordance with the planned PIC/community protocol. PIC processes will be carried out by all three pilot projects in this component as an integral part of project implementation, seeking to demonstrate best practice approaches, although only one pilot directly involves the application of TK (pilot 1). Supporting information includes: ▪ ABS agreement documents ▪ Project progress reports and evaluation reports
3.3. Percentage of the population of ILCs participating in the pilot projects aware of the existence, use and option values of the biological resources under their stewardship.	The end of project target is: 80% awareness level among participating communities. Structured assessments involving interviews and /or questionnaires will be conducted for targeted ILCs at the start of the pilot projects to determine baselines, and repeated at project completion in Year Four in order to determine measurable changes in knowledge attitudes and practices as a result of awareness activities conducted as an integral part of the pilot projects. Supporting information includes: ▪ Awareness surveys of the participating ILCs ▪ Project progress reports and evaluation reports

RISKS AND ASSUMPTIONS

150. The project strategy, described in detail within this project document, makes the following key assumptions in proposing the GEF/NPIF intervention:

- Baseline conditions in the selected areas can be extrapolated with high confidence level to other biodiversity rich areas and lessons learnt can be successfully disseminated.

- Increased awareness and capacity will lead to a change in behaviour with respect to the conservation of biodiversity in Bhutan.

- Access and benefit sharing of biological resources will gradually become a national priority for Bhutan as knowledge and information is made available.

134. During the PPG phase, project risks were updated based on those presented at the PIF stage. They were further elaborated and classified according to the UNDP/GEF Risk Standard Categories, and assessed according to criteria of 'impact' and 'likelihood' (see **Box 1** and **Table 2** below). These risks and the mitigation measures will be continuously monitored and updated throughout the project, and will be logged in ATLAS and reported in the PIRs. The UNDP Environmental and Social Screening Procedure (see **Annex 2** of the Project Document) has been applied during project preparation and did

not identify any significant environmental or social risks associated with the proposed project. In general, the project will contribute positively towards the conservation of biodiversity and maintenance of ecological stability, as well as towards an improved legal framework for ABS through which indigenous and local communities have increased potential to benefit from bio-prospecting activities, including improved prospects for preservation of their traditional knowledge. The PIC and MAT processes are also expected to provide opportunities for alleviating potential environmental and social risks that may be associated with the ABS agreements.

Box 1. Risk Assessment Guiding Matrix

		Impact				
Likelihood		CRITICAL	HIGH	MEDIUM	LOW	NEGLIGIBLE
	CERTAIN / IMMINENT	Critical	Critical	High	Medium	Low
	VERY LIKELY	Critical	High	High	Medium	Low
	LIKELY	High	High	Medium	Low	Negligible
	MODERATELY LIKELY	Medium	Medium	Low	Low	Negligible
	UNLIKELY	Low	Low	Negligible	Negligible	Considered to pose no determinable risk

Table 2. Project Risks Assessment and Mitigation Measures

Identified Risks	Category	Impact	Likelihood	Risk Assessment	Elaboration of Risks	Mitigation Measures
Delays in the approval of the draft ABS policy	Operational	High	Low	Low	The draft ABS policy has been reviewed by the Policy and Planning Division of the MoAF and submitted to the GNHC for final review and approval. In certain instances, the review and approval may take longer time than anticipated.	The project has built in workshops to review and address comments and issues that the GNHC may have, and a presentation session to present the revised ABS policy highlighting how the comments/ issues raised by the GNHC have been addressed and clarify any lingering issues that the GNHC may have. These activities are expected to contribute significantly towards expedited final approval of the ABS policy. Baseline review of the draft policy by MoAF has proceeded smoothly during the project preparation period.
Lack of consensus among the stakeholders during the promulgation of detailed rules and regulations	Operational	High	Moderately Likely	Medium	Differences of opinion over issues concerning access and benefit sharing regulations may impede the finalization and adoption of such regulations, delaying the	Focused awareness raising and educational efforts targeting key groups such as parliamentarians will assist full understanding and informed decision making.

Identified Risks	Category	Impact	Likelihood	Risk Assessment	Elaboration of Risks	Mitigation Measures
					introduction of the full ABS regime implementation	
Government staff turn-over, especially trained technical staff, may affect the project negatively	Operational	Medium	Likely	Medium	Government staff with strong knowledge of ABS related subjects may retire or move position during the project period, weakening capacity for project implementation.	The project will support strengthening of institutional capacity of the NBC as the government in charge of ABS issues. Project intervention will include review of staffing structure of NBC and its enhancement. This will reduce negative impact from possible staff turnover. A series of training sessions will be conducted strengthening knowledge and skills necessary for different stages of bio-prospecting processes and in negotiation of ABS agreements with users and communities. Moreover, the bio-prospecting facilities will be improved. The overall advancement of this subject area provides increased opportunity and incentives for staff to remain involved.
The period of the project may be too short to result in bio-discovery despite multiple agreements.	Operational	Medium	Moderately Likely	Low	Bio-prospecting processes take time to run full course, including field collection, extraction of isolates, analysis of active ingredients, purification and development of products. Achievement of product standards according to licensing authorities can be very demanding.	The project will build on already on-going collaboration, agreement and discussions as far as possible. The pilots will include negotiations over already discovered materials to ensure full demonstration of the ABS agreement. NBC and stakeholder capacity for traditional knowledge identification/documentation will be supported to facilitate biodiscovery. The project duration is set at 4 years to allow sufficient time to process different stages of biodiscovery and product development. Achievable intermediary products have been specified where appropriate.
Local communities may not be willing to provide PIC during the lifetime of the project	Operational	Medium	Moderately Likely	Low	The collection of biological material from areas under the custody of local communities, or which make use of their traditional knowledge require PIC. There is a	The Bioprospecting program has already initiated education and awareness–raising programs with local communities and TK holders. To date, they have covered 8 Dzongkags and 16 Gewogs and acquired PIC from over 100 TK holders for the

Identified Risks	Category	Impact	Likelihood	Risk Assessment	Elaboration of Risks	Mitigation Measures
					possibility that the local communities do not agree to sharing of their resources or TK, or the terms of any agreement.	documentation of TK. The program is confident that targeted efforts in educating the communities on the importance of TK preservation and utilisation based on PIC as well as the ABS regime will overcome this risk. The potential benefit sharing from exploitation of their biological resources or TK provides an incentive for cooperation.
Active ingredients investigated in pilot projects fail to show promise as prototypes preventing PIC processes to run to completion of ABS agreements and provide actual benefits for sharing	Operational	Medium	Unlikely	Negligible	The early screening of active ingredients during bio-prospecting for potential products does not guarantee that prototypes can be successfully developed, leading towards commercialization. An element of trial and error is involved.	The selection of pilot projects for inclusion in this project has been carefully based on the experience of the agencies involved, existing lines of research and development, and the application of traditional knowledge. Potentially, the screening process could be adjusted or expanded during implementation in order to reduce this risk.
Commercial confidentiality restrictions may limit information sharing on development process	Operational	Low	Moderately Likely	Low	The development of prototype and final commercial products through bio-prospecting processes requires a high degree of confidentiality in order to protect intellectual property rights, which may affect the amount of information that can be shared on pilot projects supported by this project.	Contracts for implementation of the pilot projects will specify what information can and cannot be made publicly available. In general, the demonstration focus of this project is on best practice PIC processes and benefit sharing agreements rather than the commercial products themselves, so this is unlikely to be of significant concern regarding the project outcomes.
Some international partners may prove to be uncommitted to work under Bhutan's ABS Policy framework	Operational	Medium	Moderately Likely	Low	The legal and policy measures in place and to be introduced with project support may prove to be a disincentive for international companies used to operating in unregulated environments for bioprospecting.	The identified private sector partners have already been in discussion with the NBC on their interest and are fully aware of the Biodiversity Act and ABS policy. ABS policy is clear about the need for thorough scoping before any companies are brought on board. The Policy sets out criteria for evaluating prospective partner companies and requires that they have demonstrated ethical and

Identified Risks	Category	Impact	Likelihood	Risk Assessment	Elaboration of Risks	Mitigation Measures
						environmental standards. The project will support strict implementation of the guidelines to avoid any problems arising during the actual biodiscovery and product development processes.

INCREMENTAL REASONING AND EXPECTED GLOBAL, NATIONAL AND LOCAL BENEFITS

151. This Project aims to develop the national ABS framework, build national capacities and facilitate the discovery of nature-based products. By doing so, it will assist the Royal Government of Bhutan to implement its obligations under CBD and the Nagoya Protocol, contributing towards the conservation and sustainable use of the country's outstanding biodiversity.

152. **The incremental approach of the proposed project is summarized as follows**: The Royal Government of Bhutan has identified the development of a national ABS framework consistent with the Nagoya Protocol's provisions as a priority and is investing in efforts to develop its national biotechnology industry beyond existing traditional medicine production for domestic use, as well as the systematic documentation and protection of traditional knowledge. There are a limited number of ongoing investments in bio-prospecting from the National Biodiversity Centre, the Ministry of Health's traditional medicine arm, and local and international companies. However, the great potential for the productive use of Bhutan's exceptional genetic resources associated with its mountain landscapes and diversity of forest types, remains largely undeveloped and potential income to both the government and poor rural communities are unrealized. In addition, while existing bioprospecting activities are consistent with the requirements of existing legislation, there remain weaknesses in the current legal and regulatory framework that do not fully implement the provisions of the CBD and the Nagoya Protocol for PIC processes and ABS agreements involving MAT and mechanisms for the equitable sharing of benefits.

153. **Without GEF investment in the proposed project**, Bhutan would still work towards the implementation of its obligation under Article 15 of the CBD, but the process would take considerably longer, and it would be more difficult to achieve the international technical standards for best practice required by the ABS objectives of the CBD and Nagoya Protocol. It would be more difficult to convince law-makers that the ABS policy and regulations are required, and to put in place appropriate institutional mechanisms. The lack of technical expert input towards the development of implementing regulations will affect their completion and quality, and supporting information sharing mechanisms and guidance materials may not be available. Inter-agency coordination for biotechnology development will remain weak, resulting in potential conflicts and confusion which may adversely affect investor confidence. Levels of awareness among decision makers, sectoral agencies, the commercial sector and ILCs amongst others concerning the potential benefits of an effective ABS regime will continue to remain low. Resources will not be available to

support the level of capacity building needed to bring the NCA, checkpoint authorities and other stakeholders to implementation readiness in the short term, and local experience and information-sharing on the development of PIC, MAT and benefit-sharing will remain inadequate. Bio-prospecting and use of traditional knowledge resources will continue to be weakly regulated, therefore ILCs across the country would remain at risk of losing out on the benefits associated with bio-prospecting and there will be little incentive for improving the security of biological resources at local level.

154. Investment by international biotechnology companies would be less likely in the absence of a clear legal framework and national capacity for effective governance of the sector. In addition, ILCs in particular may not gain from bio-prospecting activities, although their land and traditional knowledge may be utilized. The Royal Government of Bhutan therefore aims to ensure that all parties, including the national and local governments and ILCs stand to benefit through the fair and equitable distribution of benefits from bio-prospecting. Efforts to date have been inadequate to remove the existing barriers to the introduction of an effective national ABS regime that will contribute towards biodiversity conservation and encourage sustainable use of biological resources, therefore the threat of ecosystem degradation remains, which may reduce future bio-discovery prospects. Overall, the constituency and financial resources for biodiversity conservation will not advance beyond baseline levels.

155. **In the Alternative scenario enabled by the GEF,** the project aims to develop and implement the national ABS framework, build national capacities and facilitate the discovery of nature-based products. The project will support the finalization and approval of the National ABS Policy by Parliament, and the development, operationalization and promulgation of the Biodiversity Rules and Regulations encompassing ABS implementation. It will build the necessary capacity within the NBC and other related stakeholders for the implementation of the ABS framework. The national ABS institutional framework will be operationalized, including the designation of Competent Authorities at national (and sub-national) level, designation of exit/ entry points for checking ABS information/ permits, and establishment of a system of internationally-recognized certification of origin and compliance and issuance of certificates. NBC's technical capacity for bio-prospecting laboratory analysis will be increased through the installation of analytical equipment and upgrading staff knowledge and skills in specific bio-prospecting laboratory techniques. At least 1,000 crude extracts will be obtained and 25 active compounds isolated for development of potential trial products using NBC's upgraded analytical facilities. Staff of both NBC and partner agencies will be trained in the full cycle of ABS regime management. Intensive awareness raising and capacity building efforts will ensure that all concerned stakeholders understand the principles behind the ABS regime, the requirements for its implementation, and the potential benefits that can be realized to different parties. The project will also facilitate the reinvestment of benefits from ABS agreements back into biodiversity conservation and supporting ILCs through official mechanisms. Through the pilot projects, the inclusion of appropriate PIC, MAT and ABS agreements in bio-prospecting and product development processes will be demonstrated. The results and lessons learned from the project will also be shared and contribute to global best practices on ABS. These in turn can also provide useful guidance to the ongoing regional and global processes related to ABS.

156. **National benefits** will also include technology transfer, capacity building, increased knowledge and documentation of biological resources and traditional knowledge. Overall,

the project will enable the country to be brought to a state of readiness regarding implementation of the Nagoya Protocol. It will also increase Bhutan's attractiveness for biotechnology development and investment through the certainty, transparency and clarity of its ABS regime, mechanisms to facilitate access applications, facilitate the protection of its cultural heritage of indigenous traditional knowledge, and catalyze more effective financing and motivation for biodiversity conservation. These stakeholders whose capacity has been developed are expected to carry out the activities beyond the life of the project. These efforts will necessarily involve strong gender components, especially within the local context of indigenous and local communities.

157. As in many other agrarian economies, women in Bhutan play a predominant role as gatherers of edible plants, firewood and livestock fodder from the wild, home gardeners and plant domesticators, herbalists and seed custodians. Studies have shown that the preferences and utilization of biological resources between men and women are not always the same. For instance, women's criteria for choosing wild plants may include ease of collection, processing, and preservation, and household value. Men are more likely to consider the volume and commercial value. Therefore, it is important that ABS approaches take into account information and insights both from men and women.

158. In the renewable natural resources sector in Bhutan, women constitute the larger labour force. According to the National Labour Force Survey 2012 Report by the Ministry of Labour and Human Resources, women in the RNR sector make up 37.3 per cent of the labour share, whereas men make up 22.6 per cent. Therefore, at the local level, this project is expected to have somewhat more relevance to women. Keeping this in mind, the project will pay particular attention to the participation of women through employing inclusive approaches and processes in the implementation of the planned project activities. For instance, community activities for ABS pilots at the local levels will be gender-disaggregated using participatory approaches and benefit-sharing mechanisms will be designed to ensure that women are proportionately benefitted (see the **Stakeholder Involvement Plan** for further information).

159. In terms of impacts on local communities, the first pilot project will be implemented in Lokchina gewog (sub-district) under Chhukha dzongkhag (District), in the west of the southern part of the country (see Figure 1 in the project document). The gewog is made up of five chiwogs (large village or cluster of hamlets). There are about 400 households, with a total population of 2,672 people of which 48% are female. The population of the area is stable or slightly increasing. Access is limited, with three of the chiwogs connected by seasonally-accessible roads, while two have no road access. The altitudinal range is about 800 – 1800m above sea level, with a subtropical monsoonal climate. Cultivation of Zingiber cassumnar in the backyard or homestead garden is practiced by a few households. Current usage is declining as road access has enabled villagers to obtain commercial medicines, and the plant appears to be disappearing from homesteads as a result. It is likely that its local use and cultivation will cease altogether within the next generation. The pilot project will develop an additional income source for receptive households in these remote villages through the propagation of Z. cassumunar to supply raw material for extraction by NBC with technical assistance from their international partner. Chukha Dzongtag had a poverty rate of 11.2% in 2012 (11th Five Year Plan), just above the national average of 12%. However, incomes are much higher in the accessible urban areas (eg Phuentsholing town) than in the rural hinterland where this pilot project will be implemented. Average

annual household income in Lokchina Gewog was Nu. 67,438 in 2010, compared with the 2012 poverty line of Nu.20,448 per person per year.

160. The second pilot project will include communities in: (a) Lingshi and Dagala gewogs in Thimphu dzongkhag for sourcing Rhododendron anthopogon; and (b) Langthel gewog in Trongsa dzongkhag for sourcing Acorus calamus (sweet flag), Sapindus rarak (soapnut tree), and Phyllanthus emblica (Himalayan gooseberry). Most of the identified sites/communities for this pilot project concern Menjong Sorig Pharmaceuticals' (MSP) existing network of collectors and communities for traditional medicines. The pilot is consistent with the 11th Five Year Plan, which recognizes in the potential for interior Gewogs of Soe, Naro, Dagala and Lingzhi in Thimphu dzongkhag to enhance their income from sustainable harvesting of non-wood forest based products such as cordyceps and medicinal plants, besides livestock.

161. Lingzhi Gewog is the remotest gewog in the Thimphu dzongkhag. Lingzhi has nine chiwogs with a total of 79 households and a population of 541 as of 2012 (Eleventh Five Year Plan – Thimphu Dzongkhag, 2012). Females make up 45.8% of the population. The gewog covers an area of 386 km2 and the entire gewog is inside Jigme Dorji Wangchuck National Park, the country's largest protected area. It is in the alpine region, with elevation ranging from about 3,445 meters to 6,782 meters above sea level. Native pasturelands dominate the land use in the gewog. As the gewog is in the alpine region, there are few crops farmed. Yak rearing is the main economic activity and source of livelihood for the people, constituting more than 90% of the total livestock population. Seasonal migration with yak herds along with the remoteness of the gewog makes it difficult as well as expensive for the effective delivery of public services. Connectivity is limited to a network of a few mule tracks and foot trails. MSP has been collecting high altitude medicinal plants from local communities in Lingshi gewog and the adjoining Naro and Soe gewogs for the past three decades.

162. Dagala Gewog is another area where MSP have collected some of the materials for use in their regular production of traditional medicine. MSP started involving this community a couple of years ago as an alternate source of raw materials in order to reduce pressure on the Lingzhi site. Dagala gewog covers an area of about 85 sq. km with altitude ranging from 2,280 to 4,713m above sea level. The gewog has 128 households scattered all over the Dagala range, with a population of 625 (Eleventh Five Year Plan – Thimphu Dzongkhag, 2012). The people in the gewog derive their livelihood and income solely from yak herding. The population move from place to place herding yaks and though their relative income is high, the general quality of life is poor. The continuing seasonal migrations with herds pose considerable problems in delivering services to the people in the gewog.

163. Thimphu Dzongtag had a mean annual household income of Nu. 305,775 in 2012 and a poverty rate of only 0.5% in 2012 (11th Five Year Plan). However, the majority of the population are urban (in the capital city, Thimphu), and the remote communities involved in this pilot in Lingshi and Dagala gewogs have considerably lower incomes.

164. In Langthel gewog in Trongsa dzongkhag, MSP works closely with two community groups under the Langthel gewog, Namther Throgmen Tshogpa and Dangdung Menrig Tshogpa. The former has about 40 members while the latter has about 30 members. All these members have been trained in species identification and sustainable collection methods with technical support from the RNR-RDC Jakar and MSP. Langthel gewog

consists of 5 chiwogs and 20 villages with 424 households and a population of 2,637 (71.48% female). The gewog covers an area of 508 km² and part of it to the west falls inside Jigme Singye Wangchuck National Park. The gewog has 78% forest cover. Paddy, maize, and wheat are the main cereal crops, while oranges, banana and guava are grown for cash income. The Trongsa-Gelephu highway runs through the gewog connecting many villages and plays a vital role in the local economic development. Despite the highway, most of the villages still remain remote due to lack of feeder and farm roads. Ethnic Monpas, who are believed to be the first inhabitants of the country, can be found to live in three hamlets (Jangbi, Womling and Phungzor) in the lower part of the gewog. Trongsa Dzongtag had a poverty rate of 14.9% in 2012 (11th Five Year Plan), below the national average of 12%. Langthel gewog had a mean annual household income of Nu. 66,269 in 2010, compared with the 2012 poverty line of Nu.20,448 per person per year.

165. For the third pilot project, Bio Bhutan has identified Naro gewog in Thimphu dzongkhag as the potential site. Naro gewog, with an area of 277 km2, lies to the south of Lingshi gewog. Like Lingshi gewog, the entire gewog is in the alpine zone and falls inside Jigme Dorji Wangchuk National Park. Elevation ranges from about 3,800 meters to nearly 5,500 meters above sea level. The gewog consists of 56 households with a population of 300 (43% female) (Eleventh Five Year Plan – Thimphu Dzongkhag, 2012). The local people derive their livelihood and income primarily from yak herding. They move from place to place herding yaks and though the relative income of the people is high, living standards are generally poor. Mule tracks and foot trails are the only transport infrastructure. The gewog does not have electricity either. Rhododendron anthopogon, an evergreen shrub, grows naturally on the moist open slopes and hill sides. People collect leaves as a fragrant ingredient to be burnt as an incense offering to appease local spirits and to sanctify the environment. The leaves are also traded, albeit informally, with communities in the lower valleys of Thimphu and Paro. The installation and training of community groups in steam distillation technology for the extraction of essential oils will help to develop rural cottage industry as a source of additional income, with training, quality control and final product marketing facilitated by Bio Bhutan and their international partner.

166. **Global environmental benefits**: The project will achieve global environmental benefits through enhanced national contribution towards the achievement of the three objectives of the CBD (especially Objective 3 on ABS) and of the goals of its Strategic Plan. Specifically, the project will contribute significantly towards the conservation and sustainable management of Bhutan's outstanding biodiversity, including a large number of medicinal, aromatic and edible plants, which has evolved due to vast variations in topography and climatic conditions. The country's biodiversity forms a critical part of the Eastern Himalayas, which is recognized as a globally biodiversity hotspot and a globally important eco-region. The conservation significance of Bhutan's biodiversity is accentuated by the fact that they can be found in a contiguous natural state that only few other countries can match. By developing the national ABS framework and piloting Nagoya Protocol compliant ABS agreements, the project will facilitate sustainable and cost-effective use of the biological resources and ensure that the benefits will accrue to the nation and local communities, who maintain the natural environment within which the genetic resources occur and thrive. Thus, the project will play a critical role in safeguarding the country's biological resources and their genetic diversity.

COST-EFFECTIVENESS

167. The lack of a comprehensive national ABS framework and adequate capacity for its effective implementation are significant barriers impeding the development of an operational ABS regime regulating Bhutan's biological resources and associated traditional knowledge and the fair and equitable sharing of benefits from bio-prospecting development. These barriers also negatively affect conservation efforts, as the full value of Bhutan's diverse forests, wetlands, grasslands and mountain ecosystems cannot be realized and sectoral land uses such as agricultural development, urbanization and associated infrastucture development compete for priority over the maintenance of biodiversity and ecosystem services, foregoing future opportunities for bio-prospecting. The project's intervention aims to remove these barriers, allowing the biotechnology industry to develop, providing benefits including technology transfer to the state, commercial sector and ILCs, and strengthening the public motivation and economic rationale for biodiversity conservation.

168. Importantly, the development of the national ABS framework and demonstration of best practice PIC and ABS agreements embodying the principles of CBD and the Nagoya Protocol will also provide a secure and transparent environment for international investors, increasing Bhutan's attractiveness as a centre for research and development on genetic resources and associated biotechnology and for green and inclusive economic development in keeping with the country's Economic Development Policy 2010.

169. Finally, the strengthening of financial mechanisms for the management and reinvestment of ABS proceeds into conservation supported by this project will provide a sustainable source of income in the long term that will contribute towards the conservation of globally significant biodiversity, as well as increasing benefits to local communities. This approach, demonstrated for selected communities in Component 3, is likely to incentivize similar practices by other communities, and enhance the uptake of community-based conservation approaches in Bhutan.

PROJECT CONSISTENCY WITH NATIONAL PRIORITIES/PLANS:

170. The proposed project is fully in line with the country's national strategies and plans. Bhutan's Vision 2020, a strategy for Gross National Happiness with a 20-year perspective, places conservation of natural environment at its core and encourages the wise use of natural resources for sustainable development. The ongoing 11th Five-Year Plan (2013-2018) includes, *inter alia*, bioprospecting and documentation of traditional knowledge associated with biodiversity, strengthening the policy and legal framework for biodiversity, implementation of ABS activities, and mobilization of community groups for ABS to support the conservation and sustainable use of biodiversity.

171. In 2003, the RGoB enacted the Biodiversity Act of Bhutan, which explicitly protects indigenous rights over traditional knowledge and the involvement of indigenous communities in decision-making related to the use of traditional knowledge. In addition, Bhutan's third Biodiversity Action Plan 2009 has the 2nd objective dedicated to protection of species and genetic diversity in general but more especially realising additional benefits from its biodiversity and includes bio-prospecting as one of the various means for

achieving the benefits. The Action Plan is currently being revised to be more aligned with the Aichi Targets.

172. Furthermore, the Government developed the draft Access and Benefit Sharing Policy in 2012 to guide access to genetic resources and associated traditional knowledge and to ensure the fair and equitable sharing of benefits from their research and commercial utilization. The project aims to promulgate its official approval and support the development and adoption of implementing regulatory and institutional frameworks.

173. Bhutan became a member of the CBD in 1995 after ratification by the 73rd session of the National Assembly. Bhutan signed the Nagoya Protocol on Access to Genetic Resources in September 2011, followed by its ratification in September 2013.

COUNTRY OWNERSHIP: COUNTRY ELIGIBILITY AND COUNTRY DRIVENNESS

174. Bhutan signed the CBD in June 1992 and became a party in 1995. It has implemented its national obligations through a variety of national policy and legislative instruments, primarily the National Biodiversity Act (2003). Bhutan's commitment to biodiversity conservation is also evident from the country's participation in other biodiversity related conventions including the Ramsar Convention (since 2012), and CITES (since 2002). As a party committed to the CBD and driven by its own national agenda of pursuing ecologically balanced and environmentally sustainable development, the country first prepared the Biodiversity Action Plan of Bhutan (BAP I) in 1998 followed by updated versions, BAP II in 2002 and BAP III in 2009. These documents have consistently recognized bio-prospecting as one of the important measures for the conservation and sustainable use of biological resources and stressed the need to develop comprehensive policy, legal and institutional frameworks for research and sustainable commercial utilization of genetic resources and associated traditional knowledge. The National Biodiversity Centre is currently updating the BAP to align the national plan with the Aichi targets and establish national targets and indicators.

175. In the ABS context, Bhutan signed the Nagoya Protocol in September 2011 and ratified it in September 2013. Bhutan is also a party to the International Treaty on Plant Genetic Resources for Food and Agriculture (since 2003). Bhutan has actively participated in GEF supported projects and programmes at national, regional and global levels[21].

176. The use of local biological resources in traditional medicine as well as for food, incense and handicrafts is an ancient practice in Bhutan that is prevalent even to this day. This is closely linked to the country's religious and cultural traditions, thus the development of an appropriate national ABS framework has high relevance in terms of safeguarding national interests and regulating exploitation rates. As evident from the project baseline (see above), RGoB is making serious efforts to establish an appropriate regulatory and institutional framework for ABS related to its biological resources and associated traditional knowledge, and recognizes the potential value of the bio-prospecting industry.

[21] For details, see: http://www.thegef.org/gef/country_profile/BT?countryCode=BT&op=Browse&form_build_id=form--OfaXGLEVb8GukvpVsFTMAn3J4kKtkMqoKD6krMxxpI&form_id=selectcountry_form

SUSTAINABILITY AND REPLICABILITY

177. In Bhutan, there is a strong spiritual connection between the people and their natural environment, based on religious and social norms and practices. The project will aim to develop innovative products and schemes to further strengthen the ties between the people and the natural environment and work on empowering the rural communities to believe in and benefit from biodiversity conservation. The project is innovative in the national context, as ABS is a new emerging field and the project will enable the RGoB, private sector and local communities to take advantage of Bhutan's rich biological resources and sustainably use them as an asset for economic development in line with the national vision and policy of inclusive green socio-economic development. Also, while some commercial agreements have been developed for bioprospecting, these have yet to fully comply with the requirements of CBD for PIC, MAT and benefit sharing with ILCs and other stakeholders, so the proposed best practice pilot projects will truly be leading the way for future agreements, as well as providing the first steps towards more collaborative governance of natural resources.

178. Bio-prospecting has been recognized as a key conservation program in the Biodiversity Action Plan 2009 and it has been further integrated in the RGoB's 11th Five-Year Plan (2013-2018) reflecting the national commitment to sustain the program within the national policy and programming framework.

179. The environmental and social sustainability of project activities will be in compliance with the Environmental and Social Screening Procedure conducted during project preparation (see **Annex 2** for the ESSP summary). The ESSP identified no significant issues for this project that would result in negative environmental and social impacts. Overall, the project is expected to result in major long term positive impacts for biodiversity conservation in Bhutan and for the improved recognition and protection of ILCs' traditional knowledge and biological resources.

180. For example, one of the principles for bio-prospecting permitting is to ensure that exploitation of the biological resources is conducted in a sustainable manner, and this principle will, together with other elements, influence the PIC and MAT proccesses that will lead to the formulation of ABS agreements. Also the advancement of technology allows the development of synthetic compounds which could significantly reduce future reliance on raw materials. At a higher level, the project will remove barriers enabling the development of Bhutan's biotechnology industry, which is expected to lend major economic value and increased awareness of the importance of Bhutan's natural resources and biodiversity, providing strengthened arguments for conservation and sustainable use of these resources, in line with the third objective of CBD. Similarly, the ABS regime that the project aims to put into place will meet CBD requirements, ensuring the protection of traditional knowledge belonging to ILCs and the fair and equitable sharing of benefits from the development of biological resources among all concerned parties.

181. The project's financial sustainability is likely to be strong on two counts. First, the strengthening of financial mechanisms for the management of ABS proceeds and their reinvestment into conservation supported by this project will provide a sustainable source of income in the long term that will contribute towards the conservation of global significant biodiversity, as well as increasing benefits to local communities. Secondly, the project will remove barriers allowing the national biotechnology industry to develop, and

create a conducive environment for investment from international companies with an interest in bio-prospecting.

182. By installing a comprehensive national framework for ABS, including a national law, implementing regulations, institutional set up, supporting information management and capacity building for the competent authorities and related agencies, the project will demonstrate strong institutional sustainability under the leadership of the NBC. The NBC is funded by the RGoB and has primary mandate for implementing the National Biodiversity Act (2003) and hosts the national bioprospecting programme. ABS agreement pilots will provide opportunities to test and ensure the robustness of the enabling environment and capacity supported by the project. Bioprospecting is identified as one of the key programmes that will be strengthened in the 11th Five Year Plan (2013-2018) in line with the government's drive to promote sustainable use of biodiversity. Institutional sustainability is also underpinned by the fact that baseline activities have already included extensive consultation with stakeholders at all levels, including ILCs in key areas as well as related sectors, and that the project will support a continued inclusive and consultative approach supported by awareness raising measures in order to introduce the national ABS framework.

183. The ABS agreements piloted in the project and trial products that are produced will be scaled up under the national programme. The outcomes of the project will be made available for replication through the dissemination of project results, lessons learned and experiences including demonstration of best practices in the development of ABS agreements and PIC processes. This will be achieved through making project information available in a timely manner through NBC's website as well as RGoB participation in international fora including CBD events. The sharing of benefits with ILCs through ABS agreements is likely to incentivize involvement in ABS processes by other communities, and enhance the uptake of ABS-based community-level conservation projects in Bhutan.

PART III: Management Arrangements

Implementation Arrangements

Project Execution and Oversight

184. The project's implementation and execution arrangements will focus on maintaining strong collaboration and cooperation, and avoid duplication of effort, among ABS related initiatives in Bhutan during the four year implementation period. The National Biodiversity Centre (NBC) under the Ministry of Agriculture and Forests (MoAF) is the government institution responsible for the daily execution and coordination of the project and will serve as the government *Executing Agency* (EA). UNDP is the sole *GEF Implementing Agency* (IA) for the project.

185. The project will be nationally executed in accordance with the National Execution (NEX) Manual agreed between the UNDP and Royal Government of Bhutan (RGoB). National execution is an arrangement whereby the government, in principle, assumes full ownership and responsibility for the formulation and effective management, or execution, of all aspects of UNDP-assisted projects and programmes. It implies that all management aspects of the project are the responsibility of the national authority. However, the national

authority remains accountable to UNDP for production of the outputs, achievement of objectives, use of resources provided by UNDP, and financial reporting. UNDP Bhutan in turn remains accountable for the use of resources to the UNDP Executive Board and the project donors.

186. Oversight of project activities will be the responsibility of the Project Steering Committee (PSC). Day-to-day operational oversight will be ensured by UNDP, through the UNDP Country Office in Thimphu, and strategic oversight by the UNDP/GEF Regional Technical Advisor (RTA) responsible for the project. This oversight will include ensuring that the project practices due diligence with regard to UNDP's Environmental and Social Screening Procedure (see **Annex 2**). The structure of project management and oversight arrangements is shown in the organogram in Section IV Part II below.

Project Steering Committee

187. The project will be implemented over a period of four years beginning in the first quarter of 2015. At the policy and upstream management level, a **Project Steering Committee** (PSC) will be established to provide high-level guidance and oversight to the project. The PSC will be chaired by the Honorable Secretary of the Ministry of Agriculture and Forests, and the NBC will serve as the secretary to the Committee. Members will consist of senior representatives from the Gross National Happiness Commission Secretariat, Department of Forests and Park Services (MoAF), Department of Agriculture (MoAF), Department of Traditional Medicines (Ministry of Health), Bhutan Trust Fund for Environmental Conservation, UNDP, and from the private sector. The Committee will be responsible for high-level management decisions and guidance required for implementation of the project, including recommendations and approval of annual work plans and revisions. The PSC decisions are to be made in accordance to standards that ensure efficiency, cost-effectiveness, transparency, effective institutional coordination, and harmony with overall development policies and priorities of the Royal Government of Bhutan, UNDP and their development partners.

188. The PSC will meet at least once a year. Specific functions will include:

<u>At the initiation of the project:</u>

- Review and endorse the ToRs of the Project Management Unit
- Appraise the overall project plan;
- Review and approve the Annual Work Plan and budget for the first project year;
- Delegate any project assurance function as appropriate.

<u>After the initiation of the project:</u>

- Provide overall guidance and direction to the project, ensuring it remains consistent with national policies and the planned activities are in line with the project objectives and timeframe;
- Address project issues raised by the PMU for the PSC's attention and guidance;
- Appraise Annual Project Review Reports and offer recommendations for the subsequent Annual Work Plan;
- Review and approve Annual Work Plans and budgets;

- Commission Mid-term Evaluation of the project, appraise the MTE Report and provide direction to the project to address the recommendations emanating from the MTE Report;
- Review project progress reports submitted by the PMU and notify, or provide guidance to, the PMU for corrective actions should they find any issue with the project progress.

At the close of the project:

- Assure that all project deliverables have been produced satisfactorily;
- Commission the Terminal Evaluation of the project, and appraise and endorse the TE Report;
- Provide recommendations for follow-up actions;
- Notify operational completion of the project.

Technical Advisory Group

189. At the operational and programmatic level, the project will be supported by a **Technical Advisory Group** (TAG), chaired by the Program Director of NBC/ National Project Director. The TAG will primarily consist of the members of the existing Scientific Review Committee established for the ABS Agreements. They include experts from the Department of Agriculture, Department of Forests and Park Services, Department of Livestock, Department of Agriculture Marketing and Cooperatives, Policy and Planning Division of the MoAF, Council for RNR Research of Bhutan, Menjong Sorig Pharmaceuticals, Intellectual Property Division of the Ministry of Economic Affairs, and NBC. Additionally members will be drawn from Bio Bhutan and UNDP-CO. Such a multi-disciplinary group is deemed necessary especially given that ABS is a new subject and scientific, social and legal intricacies are expected during implementation.

190. The TAG will meet at least once in every six months and will have the responsibility for the following specific functions:

- Ensure that the planned activities are technically sound and in line with the project objectives and time frame;
- Promote inter-institutional coordination, where such coordination is necessary and where opportunities for synergy exist;
- Provide guidance, and/or clarifications, where technical and inter-institutional issues are confronted;
- Ensure that the project activities are carried out in accordance with the desired standards and norms;
- Review and endorse proposals for ABS schemes/ agreements. This process will exclude members should they belong to a proponent agency to prevent conflict of interest;
- Review and endorse ToRs for consulting tasks, participate in selection of project consultants, review consulting reports/ deliverables and provide feedback on them.

Project Management Unit

191. The NBC will house the project management unit (PMU). The PMU will be made up of the following positions (see Part III – Terms of Reference for Key Project Staff):

- **National Project Director** for operational direction, supervision and management of the project. This position will be held by the Program Director of the NBC (co-financed);

- **National Project Manager** for coordination, monitoring and reporting of project activities. The head of the Bio-prospecting Division at NBC will assume this responsibility (co-financed);

- **National Project Support Officer** for project administration and day-to-day support to project management as well as for the coordination of communication and awareness-raising activities planned under the project. An additional staff, with development managament and/or development communication background, will be recruited for this position on a contract basis for the full duration of the project (GEF financed);

- **National Project Accountant** for management of project funds and expenditures. An accountant with the NBC will be appointed as the Project Accountant (co-financed).

Project Management for Pilot Projects

192. NBC will be directly responsible for the implementation of all the activities pertaining to project outcomes 1 and 2. It will be also responsible for implementation of a pilot ABS agreement under project outcome 3. Menjong Sorig Pharmaceuticals and Bio Bhutan will be the implementing agencies for the other two pilot ABS agreements with coordination support and operational oversight from the NBC.

193. Menjong Sorig Pharmaceuticals (MSP), a government company with the mandate for research and production of traditional medicines, has a team of 46 staff, both technical and non-technical. It is currently headed by the Deputy Chief Pharmacist and is made up of six sections, namely Administration and Management, Research and Development, Quality control/Quality Assurance, Marketing and Procurement, Production, and Maintenance and Engineering. Further information on MSP's activities are given in the Baseline Analysis.

194. Bio Bhutan, a private sector enterprise developing and producing bio-products with the involvement of local community group, is run by a small team of nine full-time staff, headed by a manager. Field operations are community-based and, therefore, run by the local community themselves. A company board comprising representative from Helvetas (as Swiss NGO that helped establish Bio Bhutan) and private individuals provide guidance and oversight to the company. Further information on Bio Bhutan's activities are given in the Baseline Analysis.

The management arrangements for the pilot projects will be entirely consistent and integrated with those for the overall project, including the project M&E Plan, reporting requirements and budget disbursement. The local management arrangements for each pilot project will be described in the related agreements between the partners, and are expected to include representation of principal stakeholders such as relevant government authorities, ILCs and other partners in their implementation. There will be equitable participation of women and ethnic minorities on local level committees and groups related to PIC negotiations, community co-management, and training and awareness activities. See PART IV: Stakeholder Involvement Plan for further details.

PART IV: Monitoring and Evaluation Plan and Budget

MONITORING AND EVALUATION

195. Project monitoring and evaluation will be conducted in accordance with established UNDP and GEF procedures and will be provided by the project team and the UNDP Country Office (UNDP-CO) with support from the UNDP/GEF Regional Coordination Unit in Bangkok. The Strategic Results Framework in **Section II Part I** provides performance and impact indicators for project implementation along with their corresponding means of verification. The M&E plan includes: inception report, project implementation reviews, quarterly and annual review reports, and mid-term review and final evaluation. The following sections outline the principal components of the M&E Plan and indicative cost estimates related to M&E activities (see **Table 3** below). The project's M&E Plan will be presented and finalized in the Project's Inception Report following a collective fine-tuning of indicators, means of verification, and the full definition of project staff M&E responsibilities.

Project Inception and Implementation

196. A Project Inception Workshop will be conducted within two months of the commencement of the project. This workshop will involve the full project team, implementation partners, co-financing partners, the UNDP-CO and representation from the UNDP Regional Technical Advisor, as well as UNDP HQ as appropriate.

197. A fundamental objective of this Inception Workshop will be to assist the project team to understand and take ownership of the project's goals and objectives, as well as finalize preparation of the project's first Annual Work Plan (AWP) on the basis of the project's strategic results framework (SRF). This will include reviewing the SRF (indicators, means of verification, assumptions), imparting additional detail as needed, and on the basis of this exercise finalize the AWP with precise and measurable performance indicators, and in a manner consistent with the expected outcomes for the project.

198. Additionally, the Project Inception Workshop will: (i) introduce project staff with the UNDP-GEF team which will support the project during its implementation, namely the CO and responsible UNDP/GEF Regional Technical Advisor; (ii) detail the roles, support services and complementary responsibilities of UNDP-CO and RCU staff vis à vis the project team; (iii) provide a detailed overview of UNDP-GEF reporting and monitoring and evaluation (M&E) requirements, with particular emphasis on the Annual Project Implementation Reviews (PIRs) and related documentation, the Annual Project Report (APR), Tripartite Review Meetings, as well as mid-term and final evaluations. Equally, the IW will provide an opportunity to inform the project team on UNDP project related budgetary planning, budget reviews, and mandatory budget rephasings.

199. The Workshop will also provide an opportunity for all parties to understand their roles, functions, and responsibilities within the project's decision-making structures, including reporting and communication lines, and conflict resolution mechanisms. The Terms of Reference for project staff and decision-making structures will be discussed again, as needed, in order to clarify for all, each party's responsibilities during the project's implementation phase.

Monitoring responsibilities and events

200. A detailed schedule of project review meetings will be developed by the project management, in consultation with project implementation partners and stakeholder representatives and incorporated in the Project Inception Report. Such a schedule will include: (i) tentative time frames for Project Steering Committee Meetings and (ii) project related Monitoring and Evaluation activities. Day-to-day monitoring of implementation progress will be the responsibility of the Project Manager based on the project's Annual Work Plan and its indicators. The Project Manager will inform the UNDP-CO of any delays or difficulties faced during implementation so that the appropriate support or corrective measures can be adopted in a timely and remedial fashion. The Project Manager will fine-tune the progress and performance/impact indicators of the project in consultation with the full project team at the Inception Workshop with support from UNDP-CO and assisted by the UNDP-GEF Regional Coordinating Unit. Specific targets for the first year implementation progress indicators together with their means of verification will be developed at this Workshop. These will be used to assess whether implementation is proceeding at the intended pace and in the right direction and will form part of the Annual Work Plan. Targets and indicators for subsequent years would be defined annually as part of the internal evaluation and planning processes undertaken by the project team.

201. Measurement of impact indicators related to global biodiversity benefits will occur according to the schedules defined in the Inception Workshop. The measurement of these will be undertaken through subcontracts or retainers with relevant institutions if necessary. Periodic monitoring of implementation progress will be undertaken by the UNDP-CO through quarterly meetings with the Implementing Partner, or more frequently as deemed necessary. This will allow parties to take stock and to troubleshoot any problems pertaining to the project in a timely fashion to ensure smooth implementation of project activities.

202. Annual Monitoring will occur through the Project Steering Committee Meetings (PSCM). This is the highest policy-level meeting of the parties directly involved in the implementation of a project. The project will be subject to PSCMs two times a year. The first such meeting will be held within the first six months of the start of full implementation.

203. The Project Manager in consultation with UNDP-CO and UNDP-GEF RCU will prepare a UNDP/GEF PIR/ARR and submit it to PSCM members at least two weeks prior to the PSCM for review and comments. The PIR/APR will be used as one of the basic documents for discussions in the PB meeting. The Project Manager will present the PIR/APR to the Project Steering Committee, highlighting policy issues and recommendations for the decision of the PSCM participants. The Project Manager also informs the participants of any agreement reached by stakeholders during the PIR/APR preparation on how to resolve operational issues. Separate reviews of each project component may also be conducted if necessary. The Project Steering Committee has the authority to suspend disbursement if project performance benchmarks are not met. Benchmarks will be developed at the Inception Workshop, based on delivery rates, and qualitative assessments of achievements of outputs.

204. The terminal PSCM is held in the last month of project operations. The Project Manager is responsible for preparing the Terminal Report and submitting it to UNDP-CO and UNDP-GEF RCU. It shall be prepared in draft at least two months in advance of the

terminal PSCM in order to allow review, and will serve as the basis for discussions in the PBM. The terminal meeting considers the implementation of the project as a whole, paying particular attention to whether the project has achieved its stated objectives and contributed to the broader environmental objective. It decides whether any actions are still necessary, particularly in relation to sustainability of project results, and acts as a vehicle through which lessons learnt can be captured to feed into other projects under implementation of formulation.

205. UNDP Country Offices and UNDP-GEF RCU as appropriate, will conduct yearly visits to project sites based on an agreed upon schedule to be detailed in the project's Inception Report/Annual Work Plan to assess first hand project progress. Any other member of the Project Board can also accompany. A Field Visit Report/BTOR will be prepared by the CO and UNDP-GEF RCU and circulated no less than one month after the visit to the project team, all Project Steering Committee members, and UNDP-GEF.

Monitoring & Reporting

206. The Project Management Unit in conjunction with the UNDP-GEF team will be responsible for the preparation and submission of the following reports that form part of the monitoring process. The first six reports are mandatory and strictly related to monitoring, while the last two have a broader function and the frequency and nature is project specific to be defined throughout implementation.

207. A Project Inception Report: will be prepared immediately following the Inception Workshop. It will include a detailed Annual Work Plan for the first year divided in quarterly time-frames detailing the activities and progress indicators that will guide implementation during the first year of the project. This Work Plan would include the dates of specific field visits, support missions from the UNDP-CO, the UNDP/GEF Regional Technical Advisor or consultants, as well as time-frames for meetings of the project's decision making structures. The Report will also include the detailed project budget for the first full year of implementation, prepared on the basis of the Annual Work Plan, and including any monitoring and evaluation requirements to effectively measure project performance during the targeted 12 months time-frame.

208. The Inception Report will include a more detailed narrative on the institutional roles, responsibilities, coordinating actions and feedback mechanisms of project related partners. In addition, a section will be included on progress to date on project establishment and start-up activities and an update of any changed external conditions that may effect project implementation.

209. When finalized, the report will be circulated to project counterparts who will be given a period of one calendar month in which to respond with comments or queries. Prior to this circulation of the Inception Report, the UNDP Country Office and UNDP/GEF Regional Technical Advisor will review the document.

210. The Annual Project Report (APR): is a UNDP requirement and part of UNDP's Country Office central oversight, monitoring, and project management. It is a self-assessment report by project management to the CO and provides input to the country office reporting process and the ROAR, as well as forming a key input to the Tripartite Project Review. An APR will be prepared on an annual basis prior to the Tripartite Project

Review, to reflect progress achieved in meeting the project's Annual Work Plan and assess performance of the project in contributing to intended outcomes through outputs and partnership work.

211. The format of the APR is flexible but should include the following:

- An analysis of project performance over the reporting period, including outputs produced and, where possible, information on the status of the outcome;
- The constraints experienced in the progress towards results and the reasons for these;
- The three (at most) major constraints to achievement of results;
- AWP, CAE and other expenditure reports (ERP generated);
- Lessons learned;
- Clear recommendations for future orientation in addressing key problems in lack of progress

212. The Project Implementation Review (PIR): is an annual monitoring process mandated by the GEF. It has become an essential management and monitoring tool for project managers and offers the main vehicle for extracting lessons from ongoing projects. Once the project has been under implementation for a year, a Project Implementation Report must be completed by the CO together with the project. The PIR can be prepared any time during the year (July-June) and ideally prior to the TPR. The PIR should then be discussed in the TPR so that the result would be a PIR that has been agreed upon by the project, the executing agency, UNDP CO and the concerned RC.

213. The individual PIRs are collected, reviewed and analysed by the RCs prior to sending them to the focal area clusters at the UNDP-GEF headquarters. The focal area clusters supported by the UNDP-GEF M&E Unit analyse the PIRs by focal area, theme and region for common issues/results and lessons. The TAs and PTAs play a key role in this consolidating analysis.

214. The focal area PIRs are then discussed in the GEF Interagency Focal Area Task Forces in or around November each year and consolidated reports by focal area are collated by the GEF Independent M&E Unit based on the Task Force findings.

215. The GEF M&E Unit provides the scope and content of the PIR. In light of the similarities of both APR and PIR, UNDP-GEF has prepared a harmonized format for reference.

216. UNDP ATLAS Monitoring Reports: A Combined Delivery Report (CDR) summarizing all project expenditures, is mandatory and should be issued quarterly. The Project Manager should send it to the Project Steering Committee for review and the Implementing Partner should certify it. The following logs should be prepared: (i) The Issues Log is used to capture and track the status of all project issues throughout the implementation of the project. It will be the responsibility of the Project Manager to track, capture and assign issues, and to ensure that all project issues are appropriately addressed; (ii) the Risk Log is maintained throughout the project to capture potential risks to the project and associated measures to manage risks. It will be the responsibility of the Project Manager to maintain and update the Risk Log, using Atlas; and (iii) the Lessons Learned Log is maintained throughout the project to capture insights and lessons based on good and bad experiences

and behaviours. It is the responsibility of the Project Manager to maintain and update the Lessons Learned Log.

Quarterly Progress Reports: Short reports outlining main updates in project progress will be provided quarterly to the local UNDP Country Office and the UNDP-GEF regional office by the project team.

217. Project Terminal Report: During the last three months of the project the project team will prepare the Project Terminal Report. This comprehensive report will summarize all activities, achievements and outputs of the Project, lessons learnt, objectives met, or not achieved, structures and systems implemented, etc. and will be the definitive statement of the Project's activities during its lifetime. It will also lay out recommendations for any further steps that may need to be taken to ensure sustainability and replicability of the Project's activities.

218. Periodic Thematic Reports: As and when called for by UNDP, UNDP-GEF or the Implementing Partner, the project team will prepare specific Thematic Reports, focusing on specific issues or areas of activity. The request for a Thematic Report will be provided to the project team in written form by UNDP and will clearly state the issue or activities that need to be reported on. These reports can be used as a form of lessons learnt exercise, specific oversight in key areas, or as troubleshooting exercises to evaluate and overcome obstacles and difficulties encountered. UNDP is requested to minimize its requests for Thematic Reports, and when such are necessary will allow reasonable timeframes for their preparation by the project team.

219. Technical Reports: are detailed documents covering specific areas of analysis or scientific specializations within the overall project. As part of the Inception Report, the project team will prepare a draft Reports List, detailing the technical reports that are expected to be prepared on key areas of activity during the course of the Project, and tentative due dates. Where necessary this Reports List will be revised and updated, and included in subsequent APRs. Technical Reports may also be prepared by external consultants and should be comprehensive, specialized analyses of clearly defined areas of research within the framework of the project and its sites. These technical reports will represent, as appropriate, the project's substantive contribution to specific areas, and will be used in efforts to disseminate relevant information and best practices at local, national and international levels.

220. Project Publications: will form a key method of crystallizing and disseminating the results and achievements of the Project. These publications may be scientific or informational texts on the activities and achievements of the Project, in the form of journal articles, multimedia publications, etc. These publications can be based on Technical Reports, depending upon the relevance, scientific worth, etc. of these Reports, or may be summaries or compilations of a series of Technical Reports and other research. The project team will determine if any of the Technical Reports merit formal publication, and will also (in consultation with UNDP, the government and other relevant stakeholder groups) plan and produce these Publications in a consistent and recognizable format. Project resources will need to be defined and allocated for these activities as appropriate and in a manner commensurate with the project's budget.

INDEPENDENT EVALUATIONS

221. Mid-Term Review: An independent Mid-Term Review of the project will be conducted at the mid point of the project. The Mid-Term Review will determine progress being made toward the achievement of outcomes and will identify course correction if needed. It will focus on the effectiveness, efficiency and timeliness of project implementation; will highlight issues requiring decisions and actions; and will present initial lessons learned about project design, implementation and management. Findings of this review will be incorporated as recommendations for enhanced implementation during the final half of the project's term. The organization, terms of reference and timing of the mid-term review will be decided after consultation between the parties to the project document. The Terms of Reference for this Mid-term review will be prepared by the UNDP CO based on guidance from the Regional Coordinating Unit and UNDP-EEG. The management response and the review will be uploaded to UNDP corporate systems, in particular the UNDP Evaluation Office Evaluation Resource Center (ERC). The relevant GEF Focal Area Tracking Tools will also be completed during the mid-term evaluation cycle.

222. Terminal Evaluation: Three months prior to the final Project Steering Committee meeting, an independent Terminal Evaluation will take place in accordance with UNDP and GEF guidance. The Terminal Evaluation will focus on the delivery of the project's results as initially planned (and as corrected after the Mid-Term Evaluation, if any such correction took place). It will look at impact and sustainability of results, including the contribution to capacity development and the achievement of global environmental benefits/goals. The Terms of Reference for this evaluation will be prepared by the UNDP CO based on guidance from the Regional Coordinating Unit and UNDP-EEG.

223. The Terminal Evaluation should also provide recommendations for follow-up activities and requires a management response which should be uploaded to PIMS and to the UNDP Evaluation Office Evaluation Resource Center (ERC).

224. The relevant GEF Focal Area Tracking Tools will also be completed during the final evaluation.

LEARNING AND KNOWLEDGE SHARING

225. Results from the project will be disseminated within and beyond the project intervention zone through a number of existing information sharing networks and forums. In addition, the project will participate, as relevant and appropriate, in UNDP/GEF sponsored networks, organized for senior personnel working on projects that share common characteristics. UNDP/GEF Regional Unit has established an electronic platform for sharing lessons between the project coordinators. The project will identify and participate, as relevant and appropriate, in scientific, policy-based and/or any other networks, which may be of benefit to project implementation though lessons learned. The project will identify, analyze, and share lessons learned that might be beneficial in the design and implementation of similar future projects. Identify and analyzing lessons learned is an on- going process, and the need to communicate such lessons as one of the project's central contributions is a requirement to be delivered not less frequently than once every 12 months. UNDP/GEF shall provide a format and assist the project team in categorizing, documenting and reporting on lessons learned.

BRANDING AND VISIBILITY

226. Full compliance is required with UNDP's Branding Guidelines and guidance on the use of the UNDP logo. These can be accessed at http://web.undp.org/comtoolkit/reaching-the-outside-world/outside-world-core-concepts-visual.shtml. Full compliance is also required with the GEF Branding Guidelines and guidance on the use of the GEF logo. These can be accessed at http://www.thegef.org/gef/GEF_logo. The UNDP and GEF logos should be the same size. When both logs appear on a publication, the UNDP logo should be on the left top corner and the GEF logo on the right top corner. Further details are available from the UNDP-GEF team based in the region.

AUDIT CLAUSE

227. The Government will provide the Resident Representative with certified periodic financial statements, and with an annual audit of the financial statements relating to the status of UNDP (including GEF) **FUNDS** according to the established procedures set out in the Programming and Finance manuals. The Audit will be conducted according to UNDP financial regulations, rules and audit policies by the legally recognized auditor of the Government, or by a commercial auditor engaged by the Government.

228. The project will be audited at least once in its lifetime. In keeping with the NEX manual, the Royal Audit Authority (RAA) will be responsible for carrying out audit(s) of the project. The RAA will use its own auditors to carry out the project audit(s). However, in instances if such arrangement is not feasible, project audit may be carried out by an external auditor engaged by the RAA. The RGoB will be responsible for covering the cost of project audit. However, UNDP may exceptionally approve the use of project funds if the audit is carried out by an external auditor. In such case, the project must include adequate financial provision for the audit in its budget. The RAA, however, will remain the responsible agency for the project audit.

229. The Ministry of Finance (MoF) and UNDP will be responsible for initiating, facilitating and coordinating the audit process. The MoF, in consultation with UNDP, will schedule the project for audit and include it in the list of the projects to be audited in a given year when an audit of the project is due or deemed necessary. The MoF and UNDP will convey, well in advance, the schedule of the project audit to the PMU and other national project implementing authorities and to the RAA for necessary action. The RAA will conduct the project audit in the manner prescribed in the RGoB's "General Auditing Rules and Regulations of Bhutan" and in conformity with UNDP Guidelines and internationally accepted common auditing standards[22]

Table 3. M&E Activities, Responsibilities, Indicative Budget and Time Frame

Type of M&E activity	Responsible Parties	Budget US$ (excluding project team staff time)	Time frame
Inception Workshop (IW)	PMU UNDP CO UNDP HQ	4,000	Within first two months of project start up
Inception Report	PMU UNDP CO	Included in the workshop	Immediately following IW

[22] International Standards on Auditing published by the International Federation of Accountants.

		budget	
Measurement of Means of Verification for Project Outcome Indicators	PMU will oversee the hiring of specific studies and institutions, and delegate responsibilities to relevant team members. Includes subcontracted awareness assessments at start and end of project (see **Annex 4**)	Tbd Indicative cost 21,000	Start, mid and end of project
Measurement of Means of Verification for Project Progress and Performance (measured on an annual basis)	Oversight by UNDP CO/GEF Regional Technical Advisor and Project Director. Measurements by national implementing agencies at central and local levels	Tbd Indicative cost 8,000	Annually prior to APR/PIR and to the definition of annual work plans ($2,000 / year)
APR and PIR	PMU UNDP-CO UNDP-GEF	None	Annually
CDRs	PMU	None	Quarterly
Project Steering Committee Meetings	PMU UNDP CO	8,000	Following Project IW and subsequently at least once a year
Technical Advisory Group Meetings	PMU UNDP CO	8,000	At least twice a year during project duration
Periodic status reports	PMU	3,000	To be determined by the PMU and UNDP CO
Technical reports	PMU Hired consultants as needed	Tbd	To be determined by the PMU and UNDP-CO
Mid-term External Evaluation	PMU UNDP- CO UNDP-GEF Regional Technical Advisor External Evaluators (i.e. international/ national consultants)	20,000	Two years after project implementation (project mid-point).
Terminal Evaluation	PMU UNDP- CO UNDP-GEF Regional Technical Advisor External Evaluators (i.e. international/ national consultants)	25,000	At the end of project implementation
Terminal Report	PMU UNDP-CO	None	At least one month before the end of the project
Lessons learned / Knowledge Management	PMU UNDP-GEF Regional Technical Advisor (suggested formats for documenting best practices, etc)	15,000	Annually – Y1 $1000; Y2 $4000; Y3 $5000; Y4 $5,000
Audit	UNDP-CO Project team	None	Annual government cofinanced audit by Royal Audit Authority; one audit through UNDP CO
Visits to field sites	UNDP Country Office UNDP-GEF Regional Technical Advisor (as appropriate) PMU, National Implementing Agencies		As and when necessary. Cofinanced by UNDP CO
TOTAL INDICATIVE COST Excluding project team staff time and UNDP staff and travel expenses		**$112,000**	

PART V: Legal Context

230. This Project Document shall be the instrument referred to as such in Article I of the Standard Basic Assistance Agreement between the Royal Government of Bhutan and the United Nations Development Programme, signed by the parties on 14th July 1978. The host country-implementing agency shall, for the purpose of the Standard Basic Assistance Agreement, refer to the government co-operating agency described in that Agreement.

231. The UNDP Resident Representative in Bhutan is authorized to effect in writing the following types of revision to this Project Document, provided that he/she has verified the agreement thereto by the UNDP-EEG Unit and is assured that the other signatories to the Project Document have no objection to the proposed changes:

a) Revision of, or addition to, any of the annexes to the Project Document;

b) Revisions which do not involve significant changes in the immediate objectives, outputs or activities of the project, but are caused by the rearrangement of the inputs already agreed to or by cost increases due to inflation;

c) Mandatory annual revisions which re-phase the delivery of agreed project inputs or increased expert or other costs due to inflation or take into account agency expenditure flexibility; and

d) Inclusion of additional annexes and attachments only as set out here in this Project Document.

SECTION II: STRATEGIC RESULTS FRAMEWORK (SRF) AND GEF INCREMENT

PART I: Strategic Results Framework, SRF (formerly GEF Logical Framework) Analysis

Project Title: Implementing the Nagoya Protocol on Access to Genetic Resources and Benefit-sharing from their Utilization in Bhutan

Project's Development Goal: 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
Objective: To 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 frameworks for implementation of ABS in compliance with the Nagoya Protocol	Draft ABS policy in place and under review, and interim institutional measures in place in anticipation of the approval of draft ABS policy. Biodiversity Act in place but there are no rules and regulations detailing procedures and institutional mechanisms for implementation	National ABS Policy approved, and regulatory and institutional frameworks developed and operationalized	▪ ABS Policy document; ▪ Biodiversity Rules and Regulations document; ▪ 11th Five-Year Plan Review Reports ▪ Websites of NBC, MoAF and GNHC; ▪ Periodic progress reports ▪ Project evaluation reports; ▪	<u>Risks:</u> Potential delay in approval of the draft ABS Policy would delay the development and operationalization of the regulatory and institutional frameworks. Lack of consensus among the stakeholders during the promulgation of detailed rules and regulations <u>Assumption:</u> The Royal Government of Bhutan is fully committed to the conservation and sustainable use of the country's biological resources and the introduction of
	Level of institutional and personnel capacity for implementation of the national ABS framework as indicated by an increase in the GEF ABS Tracking Tool score[23]	34 out of a possible 69 = 33.33% Basic to moderate capacity within government agencies but virtually no capacity in	Improved institutional and personnel capacity indicated by an increase of at least 25% over the GEF ABS Tracking Tool	▪ Periodic progress reports; ▪ Project evaluation reports; ▪ Training reports; ▪ Key informant interviews	

[23] See Annex 1 for the GEF ABS Tracking Tool baseline

Objective/ Outcome	Indicator	Baseline	End of Project target	Source of Information	Risks and assumptions
		the private sector.	baseline score		a national framework for ABS.
Outcome 1: An operational national regulatory and institutional framework on ABS	**Outputs:** Output 1.1: National ABS Policy approved and disseminated Output 1.2: Biodiversity Rules and Regulations encompassing ABS implementation promulgated and disseminated Output 1.3: Institutional framework compliant with the national ABS policy and regulations and Nagoya Protocol is in place and operational				
	Approval of ABS policy and Biodiversity Rules and Regulations, and their use in establishing the institutional mechanisms for ABS implementation	Draft ABS Policy in place, Biodiversity Rules and Regulations not promulgated, and existing institutional mechanisms are interim and basic	ABS Policy approved within the first year of the project, followed by promulgation of the Biodiversity Rules and Regulations encompassing ABS implementation in the second year.	▪ Approved policy and regulatory documents; ▪ Websites of NBC, MoAF and GNHC; ▪ Periodic progress reports; ▪ Project evaluation reports; ▪ Workshop and meeting reports	Risks: Potential delay in approval of the draft ABS Policy would delay the development and operationalization of the regulatory and institutional frameworks. Lack of consensus among the stakeholders during the promulgation of detailed rules and regulations Assumption: MoAF and Royal Civil Service Commission are supportive of the staffing structure required for establishing and operationalizing the institutional mechanisms required for ABS implementation
	Operational national ABS institutional framework indicated by: ▪ Existence, and the number, of Competent Authorities designated at national (and sub-national) level ▪ Number of exit/ entry points designated for checking ABS information/ permits ▪ Existence of a system of internationally-recognized certification of origin and compliance and issuance of certificates	NBC designated as the National Focal Point based on Government Executive Order; no Competent Authorities designated at national/ sub-national levels; no checkpoints designated for checking ABS information/ permits	▪ Competent authorities designated at national level and, if necessary, at sub-national level based on the approved Biodiversity Rules and Regulations ▪ A network of 4-5 exit/entry points designated for checking ABS information/ permits ▪ System of internationally-recognized certification of origin and	▪ Inter-agency coordination meeting reports; ▪ Periodic progress reports; ▪ Project evaluation reports; ▪ Official correspondences/ government circulars; ▪ Internationally-recognized certificate of origin and compliance	

Objective/ Outcome	Indicator	Baseline	End of Project target	Source of Information	Risks and assumptions
			compliance in place and operational		
Outcome 2: Increased national capacities and awareness for the implementation of the national ABS framework	▪ **Outputs:** Output 2.1: Upgraded facility 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 technical, legal, administrative and social aspects Output 2.3: Increased awareness among various stakeholders for supporting and participating in ABS initiatives				
	Increased technical capacity for bio-prospecting laboratory analysis indicated 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	▪ Existing laboratory facility and staff skills cover only crude extraction; ▪ 250 crude extracts are preserved in NBC's extract library for bio-activity test and no compounds have been fractionated for development of trial products	▪ Laboratory facility and staff skills will be upgraded for bio-activity tests up to the level of fractionation; ▪ 1,250 crude extracts preserved in NBC's extract library; ▪ 25 compounds fractionated from the extracts for development of trial products	▪ Direct observation of laboratory facility ▪ NBC extract library ▪ Interviews of lab staff ▪ Periodic progress reports ▪ Project evaluation reports	Risks: Government staff turn-over, especially trained technical staff, may affect the project negatively Assumption: More staff will be added to the bio-prospecting program as projected in the 11th Five-Year Plan, and there will be little or no turnover of trained staff
	Number of staff at NBC and partner agencies with improved knowledge and skills on the full cycle of ABS regime management	Less than 20 staff have basic and partial knowledge and skills for ABS regime management	At least 25 staff in NBC and partner agencies have improved knowledge and skills for the full cycle of ABS regime management	▪ Periodic progress reports ▪ Project evaluation reports ▪ Training evaluation reports ▪ Interviews of training recipients	

Objective/ Outcome	Indicator	Baseline	End of Project target	Source of Information	Risks and assumptions
	Percentage of parliamentarians, researchers, academia, local governments and communities, private sector companies, and other groups targeted by the project awareness campaign that are aware of the national ABS policy and associated regulatory and institutional frameworks	The current level of awareness is expected to be extremely low as the subject is new. A baseline survey will be conducted for the identified target groups in the first year[24].	▪ 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	Baseline survey and end-of-the project awareness surveys (see **Annex 4** for methodology)	
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.	**Outputs:** Output 3.1: Three pilot ABS agreements compliant with Nagoya Protocol developed and operationalized Output 3.2: Knowledge resources on ABS developed and disseminated				
	Number of pilot ABS agreements developed and operationalized for initial commercialization of trial products	Two ABS agreements exist that pre-date Bhutan's ratification of the Nagoya Protocol	At least three ABS agreements developed and operationalized for initial commercialization of at least 3 trial products incorporating PIC, MAT and fair and equitable benefit sharing provisions. The agreements should also include *in situ* and/or *ex situ* conservation measures for the concerned biological resources.	▪ ABS agreement documents ▪ Periodic progress reports ▪ Project evaluation reports	Risks: Commercial confidentiality restrictions may limit information sharing on development process Active ingredients investigated in pilot projects fail to show promise for commercialization The period of the project may be too short to result in bio-discovery despite multiple agreements. Local communities may not be willing to provide PIC during the lifetime of the project
	Number of PIC processes with ILCs implemented in accordance with the planned	Some preliminary engagement with local communities is there but	At least one PIC process with ILCs implemented in	▪ ABS agreement documents ▪ Periodic progress reports	

[24] See Annex 4 for the proposed Knowledge, Attitudes and Practices survey methodology

Objective/ Outcome	Indicator	Baseline	End of Project target	Source of Information	Risks and assumptions
	PIC/community protocol	no full-fledged processes have been undertaken	accordance with the planned PIC /community protocol	▪ Project 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 consensus to go ahead with the ABS agreements
	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 in Bhutan conducted towards the end of the project	▪ Study reports ▪ Report of the national seminar ▪ Periodic progress reports ▪ Project evaluation reports	
	Percentage of the population of ILCs participating in the pilot projects aware of the existence, use and option values of the biological resources under their stewardship.	Current levels of awareness expected to be extremely low as the subject is new, 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[25].	At least 80% awareness level among participating communities	▪ Awareness surveys of the participating ILCs ▪ Periodic progress reports ▪ Project evaluation reports ▪	

232. A detailed activity list and a chronogram of activities per output is under development and will be finalised upon project inception.

[25] See Annex 4 for the proposed Knowledge, Attitudes and Practices survey methodology

Part II: Incremental Cost Analysis

233. This Project aims to develop the national ABS framework, build national capacities and facilitate the discovery of nature-based products. By doing so, it will assist the Royal Government of Bhutan to implement its obligations under CBD and the Nagoya Protocol, contributing towards the conservation and sustainable use of the country's outstanding biodiversity.

234. **Baseline trends**: The Royal Government of Bhutan has identified the development of a national ABS framework consistent with the Nagoya Protocol's provisions as a priority and is investing in efforts to develop its national biotechnology industry beyond existing traditional medicine production for domestic use, as well as the systematic documentation and protection of traditional knowledge. There are a limited number of ongoing investments in bio-prospecting from the National Biodiversity Centre, the Ministry of Health's traditional medicine program, and local and international companies. However, the great potential for the productive use of Bhutan's exceptional genetic resources associated with its mountain landscapes and diversity of forest types, remains largely undeveloped and potential income to both the government and poor rural communities are unrealized. In addition, while existing bioprospecting activities are consistent with the requirements of existing legislation, there remain weaknesses in the current legal and regulatory framework that do not fully implement the provisions of the CBD and the Nagoya Protocol for PIC processes and ABS agreements involving MAT and mechanisms for the equitable sharing of benefits. Efforts to date have been inadequate to remove the existing barriers to the introduction of an effective national ABS regime that will contribute towards biodiversity conservation and encourage sustainable use of biological resources, therefore the threats of ecosystem degradation, deforestation and land conversion remain, forgoing the opportunity of future bio-discovery options.

235. **Without GEF investment in the proposed project**, the approval of the national ABS policy and development of the national ABS framework would take considerably longer, and it would be more difficult to achieve the international standards for best practice in ABS required by the CBD and Nagoya Protocol. It would be more difficult to convince upstream decison-makers that the ABS policy and regulations are required, and to put in place appropriate institutional mechanisms. The lack of technical expert input towards the development of implementing regulations will affect their completion and quality, and supporting information sharing mechanisms and guidance materials may not be available. Inter-agency coordination for biotechnology development will remain weak, resulting in potential conflicts and confusion which may adversely affect investor confidence.

236. Lack of capacity has been identified as a key constraint for the introduction of a national ABS regime across a wide range of stakeholders and at all levels – national, local / community and sectoral. Resources will not be adequate to support the level of capacity building needed to bring the NCA, checkpoint authorities and other stakeholders to implementation readiness in the short term, and local experience and information-sharing on the development of PIC, MAT and benefit-sharing will remain inadequate. Bio-prospecting and use of traditional knowledge resources will continue to be weakly regulated, therefore ILCs across the country would remain at risk of losing out on the benefits associated with

bio-prospecting and there will be little incentive for improving the security of biological resources at local level.

237. Levels of awareness among decision makers, sectoral agencies, the commercial sector and ILCs amongst others concerning the potential benefits of an effective ABS regime will continue to remain low. At the national level, there is little understanding of ABS issues among sectors other than those directly involved in the conservation and development of biological resources, and even then there is a need to ensure consistency in the vision and rationale behind ABS, given the emergence of relevant initiatives on Intellectual Property Rights (WIPO) and agricultural / plant genetic resources linked to other global instruments (ITPGRFA).

238. Existing agreements for bio-prospecting partnership have been weakly regulated, not necessarily taking account of the PIC, rights and needs of ILCs and other stakeholders, or include requirements for the equitable sharing of benefits. There is therefore a strong need for models of the consultative processes involved in development of ABS agreements, including PIC and MAT. Further, it is important that all players are able to understand the provisions and implications of such agreements, the sometimes complex issues involved, and ability to negotiate future benefit sharing in the event that commercial products are derived from the process.

239. Investment by international biotechnology companies would be less likely in the absence of a clear legal framework and national capacity for effective governance of the sector. In addition, ILCs in particular may not gain from bio-prospecting activities, although their land, genetic resources and traditional knowledge may be utilized. The Royal Government of Bhutan therefore aims to ensure that all parties, including the national and local governments and ILCs stand to benefit through the fair and equitable distribution of benefits from bio-prospecting. Efforts to date have been inadequate to remove the existing barriers to the introduction of an effective national ABS regime that will contribute towards biodiversity conservation and encourage sustainable use of biological resources, therefore the threat of ecosystem degradation remains, which may reduce future bio-discovery prospects. Overall, the constituency and financial resources for biodiversity conservation will not advance beyond baseline levels.

240. **Global environmental benefits**: The project intervention will achieve incremental global environmental benefits by directly addressing the GEF 5 BD4 Focal Area objective – Build capacity on access to genetic resources and benefit sharing, by contributing directly towards Outcome 4.1 Legal and regulatory frameworks, and administrative procedures established that enable access to genetic resources and benefit sharing in accordance with the CBD provisions and Output 4.1 Access and benefit-sharing agreements (number) that recognize the core ABS principles of Prior Informed Consent (PIC) and Mutually Agreed Terms (MAT) including the fair and equitable sharing of benefits. The project will establish the national legal and regulatory framework for ABS, build capacity for its implementation through a range of training, awareness and supportive information management and guidance outputs, and demonstrate best practice ABS processes (3) recognizing the principles of Prior

Informed Consent (PIC) and Mutually Agreed Terms (MAT) including the fair and equitable sharing of benefits.

241. The project will achieve global environmental benefits through enhanced national contribution towards the achievement of the three objectives of the CBD (especially Objective 3 on ABS, and the Nagoya Protocol) and of the goals of its Strategic Plan. Specifically, the project will contribute significantly towards the conservation and sustainable management of Bhutan's outstanding biodiversity, including a large number of medicinal, aromatic and edible plants, which has evolved due to vast variations in topography and climatic conditions. The country's biodiversity forms a critical part of the Eastern Himalayas, which is recognized as a globally biodiversity hotspot and a globally important eco-region. The conservation significance of Bhutan's biodiversity is accentuated by the fact that they can be found in a contiguous natural state that only few other countries can match. By developing the national ABS framework and piloting Nagoya Protocol compliant ABS agreements, the project will facilitate sustainable and cost-effective use of the biological resources and ensure that the benefits will accrue to the nation and local communities, who maintain the natural environment within which the genetic resources occur and thrive. Thus, the project will play a critical role in safeguarding the country's biological resources and their genetic diversity.

242. **In the Alternative scenario enabled by the GEF,** the project aims to develop and implement the national ABS framework, build national capacities and facilitate the discovery of nature-based products. The project will support the finalization and approval of the National ABS Policy by the Gross National Happiness Commission and the National Cabinet, and the development, operationalization and promulgation of the Biodiversity Rules and Regulations encompassing ABS implementation. It will build the necessary capacity within the NBC and other related stakeholders for the implementation of the ABS framework. The national ABS institutional framework will be operationalized, including the designation of Competent Authorities at national (and sub-national) level, designation of exit/ entry points for checking ABS information/ permits, and establishment of a system of internationally-recognized certification of origin and compliance and issuance of certificates. NBC's technical capacity for bio-prospecting laboratory analysis will be increased through the installation of analytical equipment and upgrading staff knowledge and skills in specific bio-prospecting laboratory techniques. At least 1,000 new extracts will be identified and preserved for bio-activity tests and 25 active compounds fractionated for development of potential trial products using NBC's upgraded analytical facilities. Staff of both NBC and partner agencies will be trained in the full cycle of ABS regime management. Intensive awareness raising and capacity building efforts will ensure that all concerned stakeholders understand the principles behind the ABS regime, the requirements for its implementation, and the potential benefits that can be realized to different parties. The project will also facilitate the reinvestment of benefits from ABS agreements back into biodiversity conservation and supporting ILCs through official mechanisms. Through the pilot projects, the inclusion of appropriate PIC, MAT and ABS agreements in bio-prospecting and product development processes will be demonstrated. Knowledge resources on key aspects of ABS implementation, including best practices and lessons, will developed from the experience in

Bhutan and disseminated through publications and a national seminar. These in turn can also provide useful guidance to the ongoing regional and global processes related to ABS.

243. **System Boundary:** This project aims to develop and implement the national ABS framework, build national capacities and facilitate the discovery of nature-based products in Bhutan, thereby strengthening the conservation and sustainable use of biological resources. Geographically it covers the entire territory of Bhutan. The demonstration pilot project activities on ABS agreements in Component 3 are more localized, focusing on communities in the identified gewogs (see **Figure 1**) where the genetic resources will be accessed, based on baseline experience by the participating organizations. The specific ILCs will be confirmed during project implementation based on field investigations and the elaboration of detailed workplans for the pilot projects in Component 3. Baseline and incremental costs have been assessed over the four year life span of the project.

244. **Summary of Costs:** The Baseline associated with this project is estimated at US$11.5 million. The GEF Alternative has been costed at US$ 15.599 million. The total Incremental Cost to implement the full project is US$ 4.099 million. Of this amount, $1.095 million is requested from GEF. GEF funds have leveraged US$ 3.004 million in co-financing for the Alternative strategy. Costs have been estimated for four years, the duration of the planned project Alternative. These costs are summarized below in the incremental costs matrix.

Table 4. Incremental Cost Matrix

Cost/Benefit	Baseline (B)	Alternative (A)	Increment (A-B)
BENEFITS			
Global benefits	Weaknesses exist in the existing legal framework that does not require PIC, MAT, or ABS agreements involving equitable sharing of benefits. There is inadequate awareness and institutional capacity to implement a national ABS regime. Overall, the constituency and financial resources for biodiversity conservation will not advance beyond current baseline levels. Lack of tangible economic value attached to biodiversity rich ecosystems on government owned land	The project aims to establish a national policy and implementing regulations on ABS, and the institutional framework and supporting measures for their implementation. This national ABS framework will enable Bhutan to fully implement the Nagoya Protocol. Strategic awareness raising and capacity building will be conducted for target groups and a secure operational environment for investment in bioprospecting and product development established in order to facilitate development of the biotechnology industry and to generate revenue from ABS agreements for re-investment in biodiversity conservation. Demonstrated development of pilot ABS agreements exemplify practical implementation, with attention to the core ABS principles of Prior Informed Consent (PIC) and Mutually Agreed Terms (MAT) including the fair and equitable sharing of	The introduction of an effective national ABS regime will contribute towards biodiversity conservation and encourage sustainable use of globally significant genetic resources. Increased awareness of the existence, use and option values of biological resources among key audiences. Contributions towards the maintenance of globally significant biodiversity and ecosystem services

Cost/Benefit	Baseline (B)	Alternative (A)	Increment (A-B)
	inside and outside the PA system is a root cause for its conversion for other land uses. This forgoes future use options for genetic resource conservation.	benefits with ILCs and other stakeholders, combined with capacity building and awareness raising to enhance understanding of the value of biological resources and measures for their improved security	
National and local benefits	Bio-prospecting and use of traditional knowledge resources will continue to be weakly regulated and ILCs across the country at risk of losing out on national benefits associated with bio-prospecting. Inadequately regulated bio-prospecting may not take account of the PIC, rights and needs of ILCs and other stakeholders, or include any requirement for the equitable sharing of benefits or the capacity to subsequently monitor compliance with any such benefit sharing agreement. Loss of TK, and absence of incentives for sustainable land use will result in continued loss and degradation of biological resources.	The project will strengthen regulation of bioprospecting activities through the establishment of the national ABS framework, provision of training to NCA, CAs and checkpoint agencies on issues such as permitting processes, and develop supporting information management systems. Demonstration of PIC processes leading to ABS agreements and the fair and equitable sharing of benefits will ensure full involvement of ILCs.	Greater economic benefits to the government and other stakeholders from genetic resources enabled through the biotechnology industry, thereby providing incentives for biodiversity conservation; Communities that are holders of genetic resources and associated traditional knowledge are provided with livelihood options that result in economic benefits, thereby reducing pressures for unsustainable use of genetic resources and conversion of ecosystems; TK is protected; National development strategies and economic growth are supported, reducing poverty and poverty-associated threats to ecosystem integrity.
COSTS			
Outcome 1: An operational national regulatory and institutional framework on ABS	**Baseline:** **$1,000,000**	**Alternative:** **$1,629,750**	GEF: $90,000 COF: $539,750 **TOTAL** **$629,750**
Outcome 2: Increased national capacities and awareness for the implementation of the national ABS framework	**Baseline:** **$4,700,000**	**Alternative:** **$6,208,000**	GEF $290,000 COF: $1,218,000 **TOTAL** **$1,508,000**

Cost/Benefit	Baseline (B)	Alternative (A)	Increment (A-B)
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	**Baseline:** **$5,800,000**	**Alternative:** **$7,397,000**	GEF $530,000 COF: $1,067,000 **TOTAL** **$1,597,000**
Project Management			GEF $90,000 COF: $180,000 **TOTAL** **$270,000** **Agency Fees** **$95,000**
TOTAL COSTS	**Baseline:** **$11,500,000**	**Alternative:** **$15,599,750**	**Incremental Cost** **$4,099,750**

SECTION III: Total Budget and Workplan

Short Title: Implementing Nagoya Protocol in Bhutan

Award ID: 00080806

Project ID 00090375

Business Unit: BTN 10

Project Title: Implementing the Nagoya Protocol on Access to Genetic Resources and Benefit Sharing in Bhutan

PIMS#: 5239

Implementing Partners: National Biodiversity Centre (NBC), Ministry of Agriculture and Forests

GEF Outcome/ Atlas Activity	Implementing Agent	Fund ID	Donor Name	Atlas Budgetary Acct Code	Atlas Budget Description	Amount Year 1 (USD)	Amount Year 2 (USD)	Amount Year 3 (USD)	Amount Year 4 (USD)	Total (USD)	Budget Note
COMPONENT 1: Strengthened National Regulatory and Institutional Framework on ABS	NBC	62000	GEF	71200	International Consultants	13,000.00	0.00	0.00	0.00	**13,000.00**	1
				71300	Local Consultants	17,500.00	0.00	0.00	0.00	**17,500.00**	2
				71600	Travel	2,000.00	1,000.00	1,000.00	1,000.00	**5,000.00**	3
				74200	Audio-visual and printing production costs	8,000.00	18,000.00	0.00	0.00	**26,000.00**	4
				75700	Training, workshops	11,700.00	4,200.00	8,400.00	4,200.00	**28,500.00**	5
					Total	**52,200.00**	**23,200.00**	**9,400.00**	**5,200.00**	**90,000.00**	
COMPONENT 2: Capacity building and awareness raising for implementation of the National ABS Framework	NBC	62000	GEF	71200	International Consultants	33,300.00	71,200.00			**104,500.00**	6
				71600	Travel	4,500.00	6,200.00	6,200.00	4,500.00	**21,400.00**	7
				72100	Contractual Services - Company	7,000.00	0.00	0.00	5,000.00	**12,000.00**	8
				74200	Audio-visual and printing production costs	24,000.00	5,000.00	5,000.00	4,800.00	**38,800.00**	9
				75700	Training, workshops	1,500.00	87,800.00	12,000.00	12,000.00	**113,300.00**	10

					Total	**70,300.00**	**170,200.00**	**23,200.00**	**26,300.00**	**290,000.00**	
COMPONENT 3: Pilot ABS Agreements	NBC	62000	GEF	71400	Contractual Services - Individual	0.00	15,000.00	9,000.00	0.00	**24,000.00**	11
				71600	Travel	28,000.00	16,500.00	9,900.00	24,900.00	**79,300.00**	12
				72100	Contractual Services - Company	54,000.00	89,000.00	91,000.00	104,000.00	**338,000.00**	13
				72200	Equipment	15,000.00	0.00	0.00	0.00	**1,5000.00**	14
				72300	Materials and goods	5,000.00	5,000.00	5,000.00	0.00	**1,5000.00**	15
				74200	Audio-visual and printing production costs	0.00	6,000.00	9,000.00	6,000.00	**21,000.00**	16
				75700	Training, workshops	6,300.00	18,400.00	6,000.00	7,000.00	**37,700.00**	17
					Total	**108,300.00**	**149,900.00**	**129,900.00**	**141,900.00**	**530,000.00**	
PROJECT MANAGEMENT	NBC	62000	GEF	71300	Local Consultants	9,000.00	9,360.00	9,720.00	10,080.00	**38,160.00**	18
				71600	Travel	2,000.00	2,000.00	2,000.00	2,000.00	**8,000.00**	19
				72200	Equipment	6,000.00	0.00	2,000.00	0.00	**8,000.00**	20
				74200	Audio-visual and printing production costs	1,000.00	5,000.00	6,000.00	6,000.00	**18,000.00**	21
				74500	UNDP Cost Recovery Charges	6,180.00	1,125.00	0.00	1,685.00	**8,990.00**	22
				74500	Miscellaneous	5,000.00	2,000.00	1,000.00	850.00	**8,850.00**	23
					Total	**29,180.00**	**19,485.00**	**20,720.00**	**20,615.00**	**90,000.00**	
TOTAL PROJECT						**259,980.00**	**362,785.00**	**183,220.00**	**194,015.00**	**1,000,000.00**	

Summary of Funds					
Source	Year 1	Year 2	Year 3	Year 4	**Total**
GEF	259,980.00	362,785.00	183,220.00	194,015.00	1,000,000.00
Government (cash)	157,795.50	157,795.50	157,795.50	157,795.50	631,182.00
Government (in kind)	470,262.00	470,262.00	470,262.00	470,264.00	1,881,050.00
Private Sector	96,359.00	96,359.00	96,359.00	96,359.00	385,436.00
UNDP	26,500.00	26,500.00	26,500.00	26,500.00	106,000.00
Total	1,010,896.50	1,113,701.50	934,136.50	944,933.50	4,003,668.00

Budget Notes	
Component 1	
1	Output 1.2: International ABS legal expert (3 weeks at $3000) plus international flights, DSA and related costs for two visits ($4000); total $13,000
2	Output 1.2: National legal expert for promulgation of the Biodiversity Rules and Regulations with specific attention to implementation of ABS (14 weeks at $1250). Total: $17,500
3	Output 1.2: Vehicle hire for travel to organize and conduct regional workshops ($2,000); Output 1.3: Vehicle hire for field travel to coordinate with regulatory agencies to establish initial network of checkpoints for ABS permits, and subsequently to strengthen coordination ($3,000). Total: $5000
4	Output 1.1: Printing/ production of 800 copies of the approved ABS Policy in bilingual format ($8,000); Output 1.2: Printing/ production of 1500 copies of the approved Biodiversity Rules and Regulations in bilingual format ($18,000). Total $26,000.
5	Output 1.1: Workshops to review and address GNHC comments on the draft ABS Policy ($1000); Meeting to present the revised ABS policy to GNHC and other relevant policy-level decision makers ($500). Output 1.2: National Inception Workshop to initiate the process of formulating the Biodiversity Rules and Regulations ($1300); Regional consultative workshops ($6,900); National Consultation to present the draft Biodiversity Rules and Regulations and elicit feedback ($1300); Presentation of the final draft Biodiversity Rules and Regulations to the high-level decision makers in MOAF ($700). Output 1.3: Coordination meetings with relevant agencies to set up and operationalize the institutional mechanisms for implementation of the approved ABS policy and Biodiversity Rules and Regulations ($8400); Meetings with relevant agencies to strengthen coordination and collaboration in the implementation of the approved ABS policy and Biodiversity Rules and Regulations ($8400). Total: $28,500.
Component 2	
6	Output 2.1: International/ regional bio-prospecting lab expert for training Bhutanese lab technicians in bio-activity tests and bio-chemical analysis using the upgraded lab facility (3 weeks at $2500 = $7500), plus airfare, DSA and other travel costs ($3300); Output 2.2: International expert for development of toolkit and training course on ABS Regime Management (5 weeks at $3500 = $17500) plus airfare, DSA and other travel costs ($5,000); International experts/ trainers for training on ABS Regime Management (16 weeks at $3500 = $56,000) plus airfare, DSA and other travel costs for 4 experts ($15,200). Total: $104,500
7	Output 2.1: DSA for NBC staff for field travel for TK documentation ($14,400); vehicle hire for TK documentation ($7,000); Total $21,400

8	Awareness Assessment Subcontract: As part of the project's monitoring and evaluation system, knowledge, attitudes and practices (KAP) assessment surveys will be conducted targeting specific groups (parliamentarians, ILCs, researchers and relevant industries) that may use or benefit from ABS transactions to determine the project's impact on awareness levels. These would include baseline surveys at the start up of the awareness raising activities for specific target groups, and repeat surveys following the same methodologies at project completion. This work will be contracted to a service provider, with requirements to liaise closely with the project's implementing partners in the design and implementation of activities. The methodological approach is outlined in Annex 4. ($2,000 to elaborate the methodology; $5,000 for baseline assessments, analysis and reporting (Y1); $5,000 for final assessments, analysis and reporting (Y4); total $12,000).
9	Output 2.2: Printing/ production of ABS Regime Management Toolkit ($4000); Output 2.3: Printing/ production of awareness-raising and communication materials ($34,800); Total $38,800.
10	Output 2.1: In-country training of lab technicians in bio-activity tests and bio-chemical analysis using the upgraded facility ($1500); Output 2.2: Training on ABS Regime Management ($18,000); institutional visit to South / Southeast Asia on bio-prospecting, ABS, and bio-products development ($57,300); echo-seminar for the study tour group to present their observations, learnings and recommendations upon return from the study tour on bio-prospecting, ABS and bio-products development ($500); Output 2.3: Awareness and advocacy workshops on ABS ($36,000). Total: $113,300

Component 3

11	Contractual Services - individual - Output 3.1: Service contract (for legal services in negotiating and drawing ABS agreements for three pilots) $24,000.
12	Output 3.1: Estimated travel for project staff related to pilot projects, including international airfares for staff of NBC, MSP and BioBhutan to meet collaborators and assess market potential ($15,000); vehicle hire and DSAs for local travel for community consultations and fieldwork ($49,300). Output 3.2: Airfare, DSA and other travel costs to support Bhutanese participants for ABS-related Bhutan ABS side event at CBD COP ($15,000); Total: $79,300.
13A	Contractual Services - companies - Output 3.1: Advanced laboratory test and analysis of genetic materials, safety and efficacy tests, bioprospecting technical assistance, etc for three ABS pilots ($220,000)
13B	Contractual Services - companies - Output 3.2: Comparative Study of ABS Policy Approaches and Practices ($10,000)
13C	Contractual Services - companies - Output 3.2: Gender-differentiated Study on Community Behavior and Attitude towards ABS ($15,000)
13D	Contractual Services - companies - Output 3.2: Stock-taking and Analysis of Best Practices and Lessons from Bhutan's ABS Experience ($15,000)
13E	Monitoring and evaluation costs (see Table 4 of CEO Endorsement and Prodoc Part IV for details), including: Contracted services for Mid term and Terminal Evaluations including: International Project Evaluators, National Project Evaluators and associated travel for evaluators (total $45,000); specific studies and monitoring associated with MoV for project indicators ($17,000); PSC and TAG meeting costs ($16,000). Total $78,000
14	Output 3.1: Steam distillation units (3 at $5,000 each) for establishment in communities under pilot 3 in order to distil essential oils from raw materials for sanitary product development ($15,000)
15	Output 3.1: Tools and implements for local communities in support of sustainable management of genetic resources at source ($15,000)
16	Output 3.1: Printing of bi-lingual community protocols and contracts for all 3 pilot projects ($9,000); Output 3.2: costs for final reports and case studies arising from demonstration projects ($12,000); Total: $ 21,000.

17	Output 3.1: Community training on ABS at pilot sites ($16,000); Community meetings for sensitization, mobilization, and consultations to draw up community protocols and contracts for all three pilots ($14,700); Output 3.2: National Seminar on Bhutan's ABS Experience: Policy Approach, Best Practices, Lessons Learnt and the Way Forward ($7,000); Total: $37,700.
Project Management Costs	
18	Project Support Officer ($750 x 12 months = $9,000 Y1; 780x12m = $9360 Y2; 810 x 12m=$9720 Y3; 840x12m=$10080 Y4). Total: $38,160. Other project management positions are cofinanced.
19	Travel associated with project management. Total: $ 8,000
20	Office equipment for project management unit, including computers (2), printer (1), fax (1), digital camera (1), IT accessories, software, etc. Total: $ 8,000.
21	Development and management of knowledge resources (case studies, best practices, lessons learnt, etc) - $1000 in Y1, $4,000 in Yr2,$5,000 Y3 and $5,000 Yr4 - including production, translation and printing of a project completion report in popular full colour format, documenting key project achievements, best practices and lessons learned. Preparation of project status reports ($3000). Total $18,000.
22	Estimated UNDP Direct Project Service/Cost recovery charges for international and national consultant recruitment services requested by NBC to UNDP for executing services as indicated in the Agreement in **Annex 3** of the Project Document. In accordance with GEF Council requirements, the costs of these services will be part of the executing entity's Project Management Cost allocation identified in the project budget In accordance with GEF Council requirements, the costs of these services will be part of the executing entity's Project Management Cost allocation identified in the project budget. DPS costs would be charged at the end of each year based on the UNDP Universal Pricelist (UPL) or the actual corresponding service cost. The amounts here are estimations based on the services indicated, however as part of annual project operational planning the DPS to be requested during the calendar year would be defined and the amount included in the yearly project management budgets and would be charged based on actual services provided at the end of that year. Total: $ 8,990.
23	Costs associated with inception meeting planning and reporting ($4,000). Contingency for possible exchange rate fluctuations and miscellaneous costs associated with project management operations ($ 4,850). Total: $ 8,850.

SECTION IV: ADDITIONAL INFORMATION

PART I: Other agreements

CO-FINANCING LETTERS

-- See separate file—

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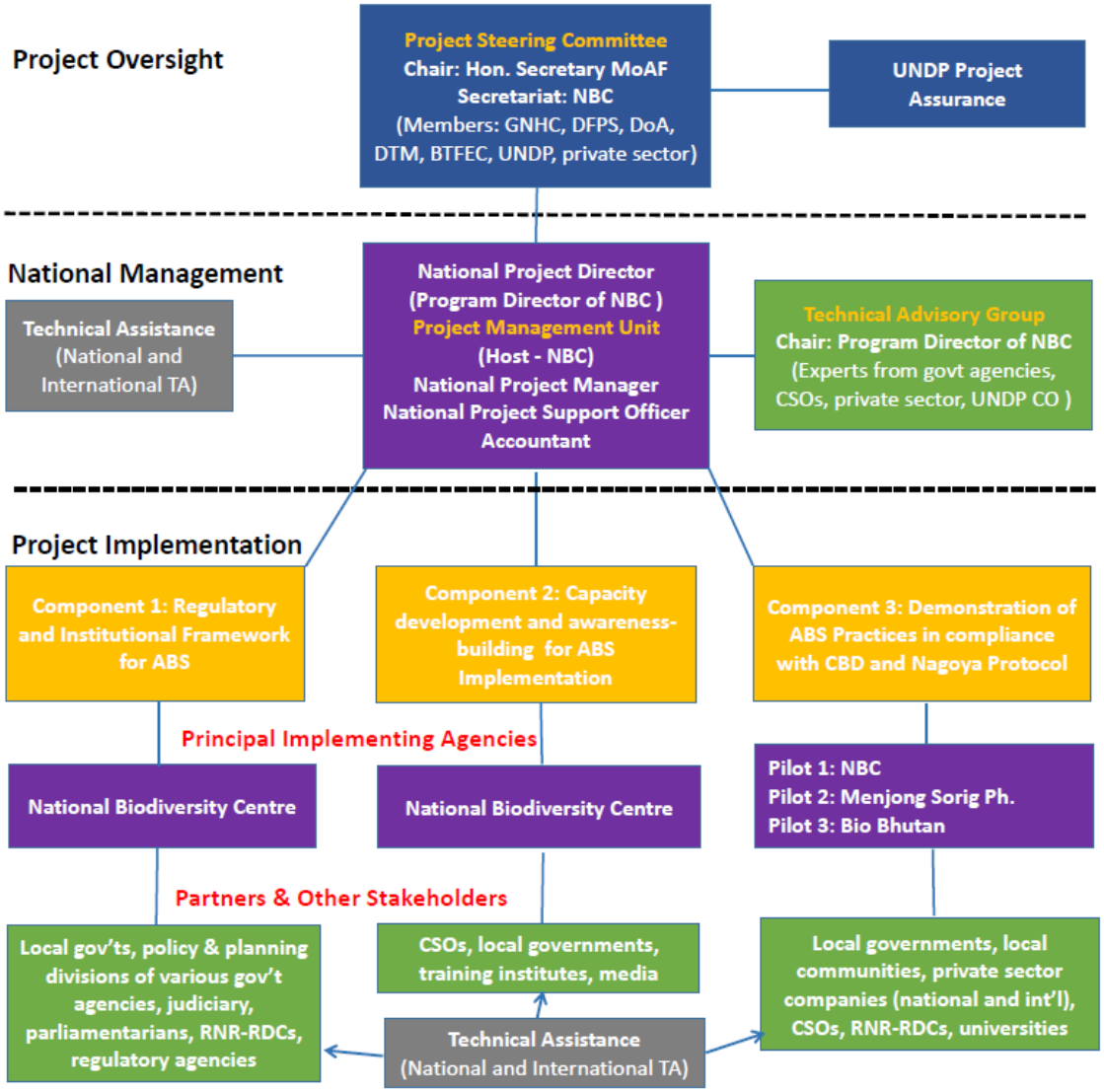
PART II: Organogram for Project Management Organization



PART III: Terms of Reference for key project staff

Note that the PMU will mainly consist of existing staff from NBC, except for the Project Support Officer which will need to be recruited by the project. Qualification requirements have not been included for these existing positions.

National Project Director
The Program Director of the NBC will assume the role of the National Project Director. This will be a cofinanced position. The NPD will have the responsibility for operational direction, supervision and management of the project. Specific responsibilities will include:

- Supervise and guide the national project manager and other project staff;
- Chair the Technical Advisory Group and provide guidance to the group;
- Ensure that RGoB inputs to the project are forthcoming in a timely and effective manner;
- Endorse annual work plans and budgets for review and approval by the PSC;
- Oversee timely submission of technical and financial progress reports in accordance with the requirements specified in the Project Document;
- Recruit and supervise project consultants, ensure the quality of consulting inputs is of the desired quality and in accordance with the approved ToR;
- Represent the project as the national focal point;
- Chair the Technical Advisory Group.

National Project Manager
The Head of the Bio-prospecting Division, NBC, will assume the role of the National Project Manager. This will be a cofinanced position. Under the overall supervision and guidance of the NPD, the NPM have the responsibility for the day-to-day management of the project. Specific responsibilities will include:

- Manage and coordinate the implementation of the project activities in accordance with the Project Document, Annual Work Plans and budgets;
- Prepare Annual Work Plans and budgets, and make revisions if and when necessary, in close coordination with other implementing partners;
- Monitor project progress and oversee the preparation of technical and financial progress reports in accordance with the requirements of the Project Document;
- Organize Project Steering Committee and Technical Advisory Group meetings, including the preparation and notification of agenda and circulation of documents necessary for these meetings at least a week in advance;
- Prepare and circulate the minutes of PSC and TAG meetings within a week after such meetings are held;
- Manage staff and consultants assigned to the project;
- Liaise with UNDP on day-to-day project management matters.

National Project Support Officer
A full-time GEF-financed Project Support Officer will be recruited to assist the NPM in the day-to-day management of the project. The PSO will also have the responsibility for planning and coordinating the implementation of the training and awareness-building activities (project

component 2), thus optimizing the use of the position on a full-time basis. Under the guidance and supervision of the NPM, the PSO will carry out the following tasks:

- Assist the NPM in day-to-day management and oversight of project activities;
- Consolidate and prepare technical and financial progress reports in accordance with standard reporting policies and procedures set by UNDP and GEF;
- Ensure compliance of planned project activities through visits to project sites;
- Coordinate with UNDP and the Ministry of Finance on timely release of funds required for planned project activities, and ensure timely expenditure reporting to trigger fund releases;
- Provide logistical support to consultants as required including travel arrangements and meetings with project stakeholders;
- Plan and coordinate the implementation of training and awareness-building activities (project component 2). This will include overseeing and coordinating the development of training, communication and awareness-raising materials, and coordinating with the media in the dissemination of audio-visuals and other communication products developed for awareness-building;
- Maintain all documents, including consulting reports and knowledge resource products emanating from, or relevant to, the project for record and reference.

The PSO will be recruited based on the following qualifications:

- A Bachelors degree, preferably in the field of development management and/or development communications, with at least three years of work experience preferably in a project management setting involving multi-lateral funding agency;
- Very good language skills in English (writing, speaking and reading) and in Dzongkha (speaking and reading);
- Aptitude for communication and awareness-raising work and prior work experience in this area will be an asset;
- Very good inter-personal skills;
- Proficiency in the use of computer software applications such as MS Word, MS Excel, and MS Publisher.

National Project Accountant

An accountant from the NBC will serve as the National Project Accountant. This will be a cofinanced position. The NPA will have the following specific responsibilities:

- Keep records of project funds and expenditures;
- Ensure project funds are used in compliance with the Project Document and RGoB financial rules and procedures;
- Validate and certify FACE forms before submission to UNDP;
- Provide necessary financial information as and when required for project management decisions;
- Provide necessary financial information in the event of Project Audit by the Royal Audit Authority.

OVERVIEW OF INPUTS FROM TECHNICAL ASSISTANCE CONSULTANTS

Table 5. Overview of Inputs from Technical Assistance Consultants

Consultant and Weekly Rate (USD)	Person-weeks	Tasks and Inputs
For Technical Assistance		
Outcome 1		
Local / National contracting		
National Consultant for Biodiversity Rules and Regulations US$1250/week	14 weeks input over 6 months	A national legal expert will be recruited to assist the NBC in the development of Biodiversity Rules and Regulations for implementation of ABS in compliance with the approved ABS policy and Nagoya Protocol (Output 1.2). Under the overall guidance and supervision of the NPD and in close communication with the NPM and international ABS law expert, the consultant will carry out the following tasks: ▪ Desk study of all policy and legal documents, essentially including the approved ABS Policy, Biodiversity Act 2003, Convention on Biological Diversity, and Nagoya Protocol, to appraise the policy and legal contexts within which the Biodiversity Rules and Regulations are to be framed [7 days]; ▪ Design and facilitate the National Inception Workshop to introduce the policy and legal contexts, provide the background and rationale, outline the skeletal framework of the Biodiversity Rules and Regulations, and describe the process plan for the development of the Biodiversity Rules and Regulations [3 days]; ▪ Prepare the detailed proceedings of the above National Inception Workshop essentially capturing all the comments/ inputs elicited from the participants [3 days]; ▪ Design and facilitate the regional stakeholders' consultative workshops for the Biodiversity Rules and Regulations, progressively documenting all the information, insights and views offered by the participants [24 days]; ▪ Consolidate the information, insights and views elicited from the regional stakeholders' consultative workshops into a comprehensive and well-structured report for record and reference [5 days]; ▪ Carry out consultations with key individuals in relevant agencies for additional information and insights, and clarifications. Draft the Biodiversity Rules and Regulations based on analysis of all the information derived from the regional consultative workshops and individual consultation, and desk study of relevant documents [20 days]; ▪ Design and conduct a National Consultation to present the draft Biodiversity Rules and Regulations [3 days]; ▪ Revise the draft Biodiversity Rules and Regulations and submit the final draft Biodiversity Rules and Regulations to the NBC for onward presentation to the Ministry of Agriculture and Forests for approval [5 days].
International ABS law expert US$ 3,000/ week	3 weeks over 6 months	An international ABS law expert will be hired to provide intermittent guidance in the formulation of the Biodiversity Rules and Regulations and to review the drafts of the rules and regulations and provide expert inputs (Output 1.2). Under the overall guidance and supervision of the NPD and in close

Consultant and Weekly Rate (USD)	Person-weeks	Tasks and Inputs
		communication with the NPM and national legal expert, the consultant will specifically carry out the following tasks: ▪ Guide the national expert in preparation for the Inception Workshop for formulation of the Biodiversity Rules and Regulations, participate in the Inception Workshop, and subsequently provide inputs to the national expert on specific issues that may require guidance [4 days]; ▪ Review drafts of the Biodiversity Rules and Regulations developed by the national expert and provide guidance and inputs especially with reference to international ABS legal standards and practices that may be relevant to Bhutan [7 days – home-based] ▪ Guide the national expert in preparation for the National Consultation on the draft Biodiversity Rules and Regulations, participate in the National Consultation, and subsequently provide inputs to the national expert on specific issues that may require guidance [4 days]
For Technical Assistance		
Outcome 2		
International / Regional and global contracting		
International Consultant for Design of ABS Regime Management Toolkit and Training Course US$3500/Week	5 weeks input	An international expert in ABS field, with training experience, will be hired by NBC to design a toolkit and training course on ABS Regime Management taking fully into account the requirements of the ABS Policy and Nagoya Protocol (Output 2.2). Under the overall guidance and supervision of the NPD and in close communication with the NPM, the international expert will carry out the following tasks: ▪ Carry out desk study of existing toolkits, guidelines, handbook, etc. on ABS Regime Management, and information on Bhutan relevant to making a situation analysis of the country's context and needs in the realm of ABS, leading to a comparative assessment of ABS management approaches and practices that may be relevant and necessary in Bhutan [5 days – home-based]; ▪ Conduct consultations with key individuals and agencies in Bhutan to elicit feedback on the comparative assessment of ABS management approaches and practices that may be relevant and necessary in Bhutan [5 days, in Bhutan] ▪ Based on the information derived from consultations with key individuals and agencies, design a toolkit with a balanced use of simple text and illustrations (e.g. flow diagrams) for ABS Regime Management. Concurrently, develop a training course detailing modules, topics, training approaches, list of required training aids and materials, and duration of each topic. The design and content of the training course will need to be attractive to draw international/ regional participants [15 days, in Bhutan].
International Consultants for Training on ABS Regime Management	4 weeks x 4 experts = 16 weeks over 3	A team of four international trainers in the field of ABS will be hired to conduct a two-week training course on ABS Regime Management (Output 2.2). This team will include the international expert who designed the toolkit and training course on ABS Regime Management as the lead trainer. The team will carry out the following specific tasks: ▪ Prepare lessons and training materials (e.g. PowerPoint slides, written

Consultant and Weekly Rate (USD)	Person-weeks	Tasks and Inputs
US$3500/week	months in Y2	handouts, and case studies) in advance of the modules and topics that are respectively assigned to them [5 days, home-based per expert]; and ▪ Conduct classroom and field activities as required by the design of the modules and topics that are respectively assigned to them [15 days in Bhutan per expert].
International/ Regional Bio-prospecting Laboratory Expert US$2500/Week	3 weeks in Year one	International/ regional bio-prospecting laboratory expert for training Bhutanese lab technicians in bio-activity tests and bio-chemical analysis using the upgraded laboratory facility in Year One (Output 2.1). The laboratory training expert will be required to carry out the following specific tasks: • Take stock of pre-training capacity in terms of equipment and personnel skills for bio-prospecting laboratory work [2 days]; • Prepare technical notes/ hand-outs for use in the training on bio-prospecting laboratory techniques [3 days]; • Conduct hands-on training sessions for a group of Bhutanese lab technicians on bio-prospecting laboratory techniques using the upgraded bio-prospecting laboratory facility [8 days]; • Prepare a training completion report describing the approach and processes used for the training and providing recommendations on effective utilization of the knowledge and skills imparted through the training [2 days].

Note: The above ToRs are provisional and will need to be reviewed and developed in more detail, where necessary, during project implementation.

PART IV: Stakeholder Involvement Plan

245. Stakeholder consultations were triggered with initial project design discussion with a wide range of stakeholders at the PPG Inception Workshop held on 19th February, 2014. Twenty-two participants, representing government agencies, Bhutanese private sector, international companies, civil society, and UNDP, took part in the workshop. Subsequently, a joint working session and bilateral meetings were held with the executing partners and key stakeholders at national level. The first draft project document was circulated to the key stakeholders for review. This was followed by a Final PPG Workshop on 11th June, 2014, during which the revised draft project document was presented in full to the project stakeholders. Consultations with local communities involved in the pilot projects are described in **Annex 5**. Generally, project design was a participatory process, in line with UNDP's and GEF's requirements. The project builds on earlier work led by the National Biodiversity Centre involving the consultation process to develop the draft national ABS policy, which involved a very wide range of stakeholders at all levels. Gender issues were specifically considered, both during national consultations and during the design of the pilot project outputs.

246. The key stakeholders include central government agencies concerned with the governance of ABS implementation (GNHC, MoAF and NBC); bodies concerned with traditional medicine and biotechnology development (including Menjong Sorig Pharmaceuticals, BBPL); regulation of biological materials (DoFPS and BAFRA); community representatives and social and environmental NGOs involved in community development and sustainable biodiversity use; research institutions involved in bio-prospecting and related research (e.g. universities); and private sector organizations and businesses involved in developing bio- products (NGS, BioBhutan, MSP, BPPL, etc).

247. During project preparation, a preliminary stakeholder analysis was undertaken in order to identify key stakeholders, assess their interests in the project and define their roles and responsibilities in project implementation. **Table 1** in the Stakeholder Analysis section lists the key stakeholders associated with establishing a national ABS framework in Bhutan. The involvement of stakeholders in project implementation, broken down by Outcome and Output, is given in **Table 6** below. A full Stakeholder Involvement Plan remains to be prepared upon project inception and this is already an identified activity.

Table 6. Involvement of stakeholders in project implementation

Outcome/ Output	**Stakeholder**	**Role in 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 the draft ABS policy and endorsement for submission to GNHC and Lhengyel Zhuntshog for onward review and final approval
	Gross National Happiness Commission	Review of the draft ABS policy and feedback, and securing final approval from the Lhengyel Zhuntshog
	Scientific Review Committee comprising representatives from DoA, DoFPS, DoL, DAMC, Policy and Planning Division of MoAF, CoRRB, MSP, Intellectual Property Division of MoEA, and NBC	Review of the comments from MoAF and GNHC, and inputs to NBC to address these comments
	Lhengyel Zhuntshog	Review and final approval
Output 1.2: Biodiversity Rules and Regulations developed and promulgated in compliance with the approved ABS policy, Biodiversity Act and Nagoya Protocol	PPDs of all relevant government ministries and line agencies, representatives from the Parliamentary Environmental Committee, representatives from the central judiciary, CSOs (specifically RSPN and Tarayana Foundation), private sector and academia, regulatory agencies (e.g. BAFRA and DoFPS)	Review of, and feedback on, the process plan and skeletal framework for the Biodiversity Rules and Regulations at the National Inception Workshop, and subsequently review of, and feedback on, iterative drafts of the Biodiversity Rules and 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 area of natural resources management, academicians 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 the Biodiversity Rules and Regulations
	Regional RNR Research and Development Centers (Yusepang, Bajo, Jakar, and Wengkhar)	Collaboration in organizing the regional consultative workshops for the Biodiversity Rules and Regulations
Output 1.3: Institutional mechanisms for ABS established and	BAFRA, DoFPS and other relevant regulatory agencies	Coordination and collaboration in setting up institutional mechanisms for the implementation of Biodiversity Rules and Regulations for ABS implementation

Outcome/ Output	Stakeholder	Role in Project
operational		
Outcome 2: Strengthened stakeholder capacity and awareness supports 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 bio-activity tests up to the level of fractionation, and subsequent technical cooperation in bio-prospecting laboratory work
	Regional RNR Research and Development Centers	Technical cooperation and information/ knowledge-sharing
	Local governments (Dzongkhag and Gewog Administrations)	Mobilization of local communities for TK survey and documentation
	Local communities	Holders of TK
Output 2.2: Improved technical capacity for implementing ABS activities	Training institutes (e.g. 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 among a wide range of people	Training institutes (e.g. 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 Centers	Potential collaboration in organizing sensitization programs related to ABS
	Civil society organizations (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 Service, and press companies)	Planning and dissemination of mass media programs on ABS
Outcome 3: Best Practice ABS Processes are Demonstrated		
Output 3.1: Three pilot ABS agreements/ schemes compliant with the approved ABS Policy and Nagoya Protocol developed and operationalized	National Biodiversity Center	Implementation of one of the pilot ABS agreements/ schemes
	Menjong Sorig Pharmaceuticals	Implementation of one of the pilot ABS agreements/ schemes
	Bio Bhutan	Implementation of one of the pilot ABS agreements/ schemes
	Nimura Genetic Solutions	Potential international collaborator for the pilot ABS agreements/ schemes
	Quantum Pharmaceuticals Limited	Potential international collaborator for the pilot ABS agreements/ schemes
	Primavera	Potential international collaborator for the pilot ABS agreements/ schemes
	Local governments (Dzongkhag and Gewog Administration)	Mobilization of local communities and facilitation of participatory planning for the pilot ABS agreements/ schemes
	Local communities	Local partners of pilot ABS agreements/ schemes, immediate custodians of genetic resources and associated TK, and targeted key beneficiaries of ABS
Output 3.2:	Private consulting firms	Knowledge resources development research and studies

Outcome/ Output	Stakeholder	Role in Project
Knowledge resources on ABS, emanating from Bhutan's experience, developed and disseminated	Regional RNR-RDCs	Potential cooperation in knowledge resources development research and studies
Project Management and Co-financing		
National Biodiversity Center, Ministry of Agriculture and Forests	The PMU will be housed in the NBC for overall project management and coordination, including monitoring of project progress and reporting of project implementation.	
Gross National Happiness Commission Secretariat	Overall monitoring of the delivery of UNDP/GEF/NPIF funds and ensuring that project is in accordance with national policies	
UNDP CO and A/P Regional Office	Oversight and monitoring as 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 implemented project	
Chanel, Nimura Genetic Solutions, BPPL	Co-financing via private sector investments and in kind support under NBC agreements	
GRPI, ITPGRFA, GCCA	Co-financing via NBC implemented projects	

248. Component 1 of the project will involve an extensive process of stakeholder engagement in the review and adoption of the draft national ABS policy and implementing regulations on ABS, the institutional framework and supporting measures for their implementation.

249. Component 2 primarily aims to improve the capacities of the National Competent Authority (NCA) and related agencies regarding the implementation of the national ABS policy and their obligations under the CBD, Nagoya Protocol and other related international treaties. The project will engage with these agencies to provide training and awareness raising to enable their understanding of the ABS rules and procedures, including granting of permits, assessment of access applications, core principles of PIC and MAT and their application, and rights and roles of ILCs; understand and keep abreast of negotiations at WIPO and FAO to ensure a coordinated national approach; negotiate ABS agreements; and monitor and track access. These will ensure better understanding of national and international provisions of ABS, and enhance the implementation of the proposed national ABS law at all levels.

250. In Component 3, the development of pilot ABS agreements that are compliant with Nagoya Protocol, with attention to the core ABS principles of Prior Informed Consent (PIC) and Mutually Agreed Terms (MAT) including the fair and equitable sharing of benefits, will be conducted through three pilot projects involving private sector company partnerships under the guidance and supervision of NBC. The three pilot ABS agreements will be implemented using three different types of institutions:

- By the National Biodiversity Centre, a fully government research and development institution which is also the national focal agency for ABS and Nagoya Protocol;

- By the Menjong Sorig Pharmaceuticals, a government company with the mandate for research and production of traditional medicines for supply to national public health system but is also involved in development and production of commercial bio-products for pharmaceutical and therapeutic[26] use;
- By Bio-Bhutan, which is a fully private enterprise and is involved in development and production of bio-products involving local community groups.

251. The first pilot project will focus on accessing traditional knowledge and genetic materials associated with the use of *Zingiber cassumunar* in relieving joint pains for potential commercialization and will be implemented by the National Biodiversity Centre. This will be based on their baseline work which involved the survey and documentation of traditional knowledge on the use of *Z. cassumunar* in Lokchina gewog in Chukha dzongkhag, including PIC. Through the project NBC plans to carry out further activities in two phases. First, a scoping phase that aims to establish collaboration with an international company for collaborative research, product development and technology transfer. Concurrently, sensitization and consultation meetings will be carried with local communities in Lokchina gewog to raise their awareness about ABS and the preliminary common framework for potential ABS agreement highlighting the ongoing status of the work, key issues, foreseen benefits and potential roles and obligations of different actors envisaged and elicit their perception, views and interest in engaging in the ABS negotiations. Based on the results of the scoping phase, the project will move towards actualization of an ABS agreement involving three parties – the local communities from where the TK and genetic resources are sourced, the international collaborator and NBC. Major attention will be given to developing a locally-driven community protocol describing the source communities and articulating their essential values and principles of engagement based on customary, national and international rights and responsibilities over the genetic resources. Furthermore, consultations will be carried out with local communities to develop a social set-up for the community to function as a group. This will include developing a by-law for the functioning of the local group(s) and setting up mechanisms for sharing benefits in a fair and equitable manner within the local community(ies). Meetings will be held to facilitate informed consultations and negotiation between the concerned parties leading to a tri-partite ABS agreement, articulating the objectives of the collaboration, roles, rights and responsibilities of all the parties, mutually agreed terms for access to genetic resources and benefit sharing between providers and users of the genetic resources and associated traditional knowledge.

252. The second pilot project will involve development of bio-products for personal care and therapeutic uses from access of selected genetic resources and institution of benefit-sharing mechanism from the commercialization of the bio-products. This pilot will be implemented by Menjong Sorig Pharmaceuticals (MSP), under the Ministry of Health. The MSP envisages to expand its currently limited commercial venture by getting into research and development of other potential bio-products. With regards to Himalayan gooseberry, community contracts with non-wood forest products (NWFP) group exist for supply of raw materials for use in production of traditional medicines. The idea is to diversify products from the use of Himalayan gooseberry, with anti-wrinkle cream having very high potential. This will require engagement with an international collaborator for capacity development and technology transfer, and MSP will scout for interested international collaborators. For the development of topical anti-fungal cream/ powder from *R. anthopogon*, hand sanitizer from *A. calamus*, and soap and shampoo from *S. rarak*, MSP will conduct sensitization and awareness-raising of source communities on ABS; consultations with source communities to develop community contracts (with new groups) and renewed community contracts (with existing groups) encompassing PIC process, MAT and benefit-sharing. The community contracts will define the roles, rights and responsibilities of the local community groups and specify the benefits and benefit-sharing. The community contracts will be formalized and executed

[26] Note: therapeutic products differ from pharmaceutical products in that they do not spread below the skin.

through ABS agreements; and community training on sustainable harvesting of the raw materials, including provision of necessary tools.

253. The third pilot will be implemented by Bio Bhutan, a private enterprise, and will pertain to accessing *Rhododendron anthopogon* for extraction of essential oil for development of personal care products. The project activities will include: community sensitization and awareness meetings, and assessment of community interest to participate in ABS collaboration; development of community contracts encompassing PIC process, MAT and benefit-sharing. The community contracts will define the roles, rights and responsibilities of the local community groups and specify the benefits and benefit-sharing. The community contracts will be formalized and executed through ABS agreements; and development of training materials and training of contracted communities in sustainable harvesting techniques and oil distillation.

254. The project proposes a mechanism to achieve broad-based stakeholder involvement in the project preparation and implementation processes. Stakeholder participation will include the following three components (see **Table 7**), with membership of each to be finalized during the project inception phase: Project Steering Committee (PSC), Technical Advisory Group (TAG) and Project Management Unit (PMU).

Table 7. Proposed members of the PSC, TAG and PMU

Project Steering Committee (PSC)	**Technical Advisory Group (TAG)**	**Project Management Unit (PMU)**
Chair: Hon. Secretary of Ministry of Agriculture and Forests Secretariat: NBC Members will consist of senior representatives from: the Gross National Happiness Commission Secretariat, Department of Forests and Park Services (MoAF), Department of Agriculture (MoAF), Department of Traditional Medicines (Ministry of Health), Bhutan Trust Fund for Environmental Conservation, UNDP, and from the private sector.	Chair: Program Director of NBC/ National Project Director. The TAG will primarily consist of the members of the existing Scientific Review Committee established for the ABS Agreements, including experts from: Department of Agriculture, Department of Forests and Park Services, Department of Livestock, Department of Agriculture Marketing and Cooperatives, Policy and Planning Division of the MoAF, Council for RNR Research of Bhutan, Menjong Sorig Pharmaceuticals, Intellectual Property Division of the Ministry of Economic Affairs, and NBC. Additional members will be drawn from Bio Bhutan and UNDP-CO. Other relevant stakeholders and technical experts to be determined by the PSC.	National Project Director (NBC) National Project Manager (NBC) National Project Accountant (NBC) National Project Support Officer (Contracted) Other contracted experts

255. The local management arrangements for each pilot project will be described in the related collaboration agreements between the pilot project executing partners, and are expected to specify representation of principal stakeholders including relevant government authorities, ILCs, commercial organizations and other partners in their implementation. There will be equitable participation of women

and ethnic minorities on local level committees and groups related to PIC negotiations, community co-management, training and awareness activities.

Long-term stakeholder participation

256. The project will provide the following opportunities for long-term participation of all stakeholders, with a special emphasis on the active participation of women and indigenous and local communities, and enhancement of inter-sectoral coordination for implementation of the proposed national ABS regime.

257. Decision-making – through the establishment of the Project Steering Committee. The establishment of the structure will follow a participatory and transparent process involving the confirmation of all key project stakeholders; conducting one-to-one consultations with all stakeholders; development of Terms of Reference and ground-rules; inception meeting to agree on the constitution of the PSC.

258. Capacity building – at systemic, institutional and individual levels – is one of the key strategic interventions of the project and will target all stakeholders that have the potential to be involved in implementation of the national ABS regime in Bhutan, including demonstration activities at the community level. Women and indigenous / minority groups will be proactively considered for capacity building activities based on specific needs assessments.

259. Communication - will include the participatory development of an integrated communication strategy. The communication strategy will be based on the following key principles:

- providing information to all stakeholders;
- promoting dialogue between stakeholders;
- promoting access to information.

260. The project's design incorporates several features to ensure on-going and effective stakeholder participation in the project's implementation. The mechanisms to facilitate involvement and active participation of different stakeholders in project implementation will comprise a number of different components:

i) Project inception workshop

The project will be launched by a multi-stakeholder workshop. This workshop will provide an opportunity to provide all stakeholders with the most updated information on the project, refine and confirm the work plan, and will establish a basis for further consultation as the project's implementation commences.

ii) Constitution of the Project Steering Committee

The Project Steering Committee's constituency will be constituted to ensure broad representation of all key interests throughout the project's implementation. The representation, and broad terms of reference, of the PSC are described in the Management Arrangements in Part III of the Project Document.

iii) Establishment of the Project Management Unit

The Project Management Unit will take direct operational responsibility for facilitating stakeholder involvement and ensuring increased local ownership of the project and its results. The PMU will be located in the NBC offices in Thimpu to ensure coordination among key stakeholder organizations at the national level during the project period.

iv) Establishment of local working groups

At the activity level, local or specialist working groups (e.g., legal review team, capacity development team, monitoring and evaluation team, community involvement team) will be established, as required, to

facilitate the active participation of affected institutions, organisations and individuals in the implementation of the respective project activities. Different stakeholder groups may take the lead in each of the working groups, depending on their respective mandates. There will be equitable representation of women and ethnic minorities in community level activities such as TK documentation, negotiation of ABS agreements, capacity building, livelihoods and awareness programmes.

v) Project communications

The project will develop, implement and annually update a communications strategy to ensure that all stakeholders are informed on an on-going basis about: the project's objectives; the project's activities; overall project progress; and the opportunities for stakeholders' involvement in various aspects of the project's implementation.

vi) Implementation arrangements

Demonstration activities in component 3 have specifically been designed to directly involve local stakeholders during implementation, and to ensure that they benefit from the capacity building, awareness raising and final outcomes (eg ABS agreements) of these activities.Women and indigenous groups will be proactively considered for participation in these demonstration activities.

vii) Formalizing cooperative governance structures

The project will actively seek to formalize cooperative governance structures for governance of ABS regulation at federal and state levels, to ensure on-going participation of stakeholders in the implementation of the proposed ABS regime.

Gender Strategy of the Project

261. In general, women in Bhutan (both in rural and urban areas) have social freedom and participation in household decision making. Demographically there are more women (51%) compared to men (49%). Life expectancy is 66.1 years for both men and women and maternal mortality rate is on the decline. Women play a key role in families and a matriarchal system is prevalent in many rural Bhutanese communities. This characteristic, however, is not reflected in the modern political system, where women's representation is currently very low - there are only three women representatives, including the country's first woman minister, in the National Assembly and two in the National Council. At the local level, women account for 7.3% of the elected local government functionaries in gewogs and 11.9% in thromdes (municipalities). However, over the years, women employment in the public and private sectors has seen marked improvements as a result of better education. Statistics maintained by the National Statistics Bureau show that girls made up 49.9A% of the students in schools as of 2011.

262. The Convention on Biological Diversity, in its preamble, recognizes "the vital role that women play in the conservation and sustainable use of biological diversity" and affirms "the need for the full participation of women at all levels of policymaking and implementation for biological diversity conservation".

263. As in many other agrarian economies, women in Bhutan play a predominant role as gatherers of edible plants, firewood and livestock fodder from the wild, home gardeners and plant domesticators, herbalists and seed custodians. Studies have shown that the preferences and utilization of biological resources between men and women are not always the same. For instance, women's criteria for choosing wild plants may include ease of collection, processing, and preservation, and household value. Men are more likely to consider the volume and commercial value. Therefore, it is important that ABS approaches take into account information and insights both from men and women.

264. In the renewable natural resources sector in Bhutan, women constitute the larger labor force. According to the National Labor Force Survey 2012 Report by the Ministry of Labor and Human Resources, women in the RNR sector make up 37.3% of the labor share, whereas men make up 22.6%. Therefore, at the local level, this project is expected to have somewhat more relevance to women. Keeping this in mind, the project will pay particular attention to the participation of women.

265. The project will employ inclusive approaches and processes in the implementation of the planned project activities. The draft ABS policy has been derived from a broad-based consultative process and the onward review and approval process will involve further consultations, which will provide opportunities to ensure that gender issues in the realm of ABS policy are adequately addressed. The Biodiversity Rules and Regulations for ABS implementation will also be derived through an extensive consultative process. The consultative process will be designed to ensure that issues related to gender and other vulnerable groups are discussed and addressed. This may involve focused group discussions or other appropriate method to capture gender issues during consultation meetings. Sensitization workshops and awareness-raising programs will be designed to ensure that at least 50% of the target participants are women. Activities geared towards mobilizing local communities into organized groups for ABS pilots will encourage women to participate and will aim to have at least one women functionary in each local committee set up for ABS pilots. Community activities for ABS pilots at the local levels will be gender-disaggregated using participatory approaches and benefit-sharing mechanisms will be designed to ensure that women are proportionately benefitted.

266. M&E studies will examine, and describe, the benefits and challenges of the project activities on men and women. The project will also carry out a study of gender-based behavior and attitude towards ABS as a part of knowledge resources development.

Coordination with related initiatives

267. The current project is the only planned national ABS project in Bhutan financed by GEF. As such, there are limited needs for coordination with other GEF financed projects, but linkages and synergies will be sought with the projects listed in **Table 8** below.

Table 8. Coordination and collaboration with related GEF financed initiatives

GEF Financed Initiatives / Interventions	How collaboration with the project will be ensured
#4579 - IBRD/GEF Sustainable Financing for Biodiversity Conservation and Natural Resources Management	This five-year project commenced in 2013. It is made up of three key components: (a) enhanced operational effectiveness and sustainability of the Bhutan Trust Fund for Environment Conservation; (b) improved conservation management of the high altitude northern areas landscape (including protected areas and associated alpine meadows, forests and agricultural ecosystems); (c) mainstreamed conservation and sustainable forest and natural resources management approaches in policy, strategy and plans through lessons learnt from the project. The BTFEC is the lead agency for the management and coordination of the project while the MoAF is the main agency for implementation of the activities pertaining to components 2 and 3. Particularly through component 2, which will execute grants for sub-projects in the high altitude northern areas landscape, the project will provide opportunities that build capacity for local communities in community-based management of genetic resources and bio-prospecting activities aligned with Nagoya Protocol requirements, thus contributing to the socio-economic benefits from the sustainable management of genetic resources. The national ABS regime is also intended to generate sustainable financing for biodiversity conservation in the long term, thus synergies with BTFEC initiatives will need to be sought for managing returns from bio-

GEF Financed Initiatives / Interventions	How collaboration with the project will be ensured
	prospecting under ABS agreements. Coordination with this project will be primarily achieved through the representation of BTFEC, MoAF, and GNHC (which is the national GEF operational focal point) on the Project Steering Committee.
#4513 – UNEP/GEF Support to GEF Eligible Parties (LDCs and SIDs) for the Revision of the NBSAPs and Development of 5th National Report to CBD – Phase 1	With the overall aim to integrate CBD Obligations into National Planning Processes through Enabling Activities, the main objective of this project is to enable GEF eligible LDCs and SIDs to revise the National Biodiversity Strategies and Action Plans (NBSAPs) and to develop the Fifth National Report to the CBD. The Project commenced in April 2012 and is due for completion in December 2014. NBC/MoAF, as the national implementing agency for both projects, will coordinate and ensure that ABS related progress and planning priorities are fully integrated into the NBSAP and reports to CBD.
#3850 – UNEP/GEF BS: Implementation of the National Biosafety Framework of Bhutan	This project, which was approved by GEF in January 2010, commenced in August 2010 and is scheduled to conclude in December 2014. Implemented by the Bhutan Agriculture and Food Regulatory Authority, MoAF, the main objective is to make the National Biosafety Framework fully operational for the benefit of the people and environment of Bhutan consistent with the provisions of the Cartagena Protocol and the Constitution of the Kingdom. As the responsible government agency for ABS implementation and as a member of the Technical Working Group for the implementation of the NBF, NBC will ensure coordination with biosafety requirements. Furthermore, BAFRA being on the ABS Scientific Review Committee will allow coordination between biosafety implementation and ABS.
UNDP/GEF Small Grants Programme: Project on Promotion of Economic Opportunities among Women through Community-based Medicinal Herb Cultivation	Implemented through the National Women's Association of Bhutan, this project supports rural women to mobilize into self-help groups and develop viable enterprises that generate income from sustainable production and commercial utilization of medicinal herbs. The project, which started in October 2011, is now nearing closure. The representation of GNHC, MoAF, and UNDP CO on both the SGP Steering Committee and this Project's Steering Committee will be utilized to ensure coordination and synergy between relevant SGP projects and this project.
UNDP/GEF Small Grants Programme: Project on Promotion of Traditional Tea Making through Conservation and Sustainable Use of Local Biological Resources	This SGP Project [2013-2014] supports a local community-based organization, Thrichu Goenpa, in Trashi Yangtse dzongkhag. It is aimed at reviving traditional tea making from local biological resources through sustainable commercial utilization backed by training in sustainable use, processing and product development. The representation of GNHC, MoAF, and UNDP CO on both the SGP Steering Committee and this Project Steering Committee will be utilized to ensure coordination and synergy between relevant SGP Projects and this project.
UNDP/GEF Small Grants Programme: Project on Enhancing Local Stewardship of Alpine Ecosystems through Incentive-based Bio-cultural Diversity Conservation in Dagala	This SGP Project [Nov 2013-Nov 2014] supports a local community-based organization, Dagala Ngamsung Thsogpa, in Dagala gewog (Thimphu dzongkhag). It is aimed at reducing pressure on fir forests for roofing shingles and fuelwood by promoting other sustainable roofing and heating alternatives, and promoting equitable sharing of benefits from ecosystem services such as tourism. Dagala gewog is one of the potential sites for the ABS Pilot II. Therefore, the approach and experience of the SGP project in working with local communities may be of value to this ABS project. The representation of GNHC, MoAF, and UNDP CO on both the SGP Steering Committee and this Project Steering Committee will be utilized to ensure coordination and synergy between relevant SGP Projects and this project.
UNDP/GEF Small Grants Programme: Project on	This SGP Project [2012-2015] is supporting Samdrup Chhoeling Community Forest Group in Chasilakha (Chhukha dzongkhag) to establish a community-based orchid conservation and propagation centre. The rationale is to reduce harvesting of orchids

GEF Financed Initiatives / Interventions	How collaboration with the project will be ensured
Establishment of Orchid Conservation and Propagation Centre	from the wild, promote utilization from sustainable sources through propagation and awareness-raising, and provide alternate income-generating opportunity. The representation of GNHC, MoAF, and UNDP CO on both the SGP Steering Committee and this Project Steering Committee will be utilized to ensure coordination and synergy between relevant SGP Projects and this project.

268. The project will also coordinate with non-GEF initiatives that contribute towards the project objective. One such project is the SNV financed initiative on Payment for Ecosystem Services (PES) in Bhutan. The current project was represented at the opening of the National Inception Workshop on PES on 15 February 2014, when discussions with key PES project contacts indicated possibilities for collaboration and sharing of experiences on benefit sharing arrangements with communities from both PES and ABS initiatives. The Watershed Management Division of MoAF are the lead national agency for the PES project.

PROJECT ANNEXES

Annex 1. GEF ABS Tracking Tool

National ABS Institutional Capacity Scorecard – Bhutan Baseline

Strategic Area of Support	Issue	Scorecard	Initial Evaluation	Evaluative Comments
1. Capacity to conceptualize and formulate policies, laws, strategies and programmes	The Access and Benefit-Sharing (ABS) agenda is being effectively championed / driven forward	0 -- There is essentially no ABS agenda; 1 -- There are some persons or institutions actively pursuing an ABS agenda but they have little effect or influence; 2 -- There are a number of ABS champions that drive the ABS agenda, but more is needed; 3 -- There are an adequate number of able "champions" and "leaders" effectively driving forwards an ABS agenda	1	Bio-prospecting program has been initiated in 2009, and a basic set of activities has become operational under the National Biodiversity Centre. A draft ABS policy has been completed and is under review for approval. The Biodiversity Act 2003 addresses ABS.
	There is a legally designated institution(s) responsible for ABS with the capacity to develop a national ABS framework (i.e., laws, policies and/or regulations)	0 -- There is no institution(s) responsible for ABS; 1 – The institution(s) has financial resources but has limited personnel and expertise; 2 – The institution(s) has financial resources and personnel but limited expertise; 3 – The institution(s) has sufficient financial resources, personnel and expertise.	1	Based on Gov't Executive Order, NBC is the designated institution for ABS but has limited financial resources, personnel and expertise.
2. Capacity to implement policies, legislation, strategies and programmes	There is a legally designated ABS institution(s) responsible for ABS that can facilitate the implementation of the national ABS framework.	0 – The institution(s) does not have the financial resources, personnel, and planning/management skills; 1 – The institution(s) has financial resources but has limited personnel and planning/management skills; 2 – The institution(s) has financial resources and personnel but limited planning/management skills; 3 – The institution(s) has sufficient financial resources, personnel and planning/management skills.	1	Based on Gov't Executive Order, NBC is the designated institution for ABS but has limited financial resources, personnel and planning/management skills.

Strategic Area of Support	Issue	Scorecard	Initial Evaluation	Evaluative Comments
	The ABS institution (s) is effectively led	0 – The ABS institution(s) has a total lack of leadership; 1 – The ABS institution(s) has weak leadership and provides little guidance; 2 – The ABS institution(s) has a reasonably strong leadership but there is still need for improvement; 3 – The ABS institution(s) is effectively led	2	There is leadership and guidance but there is a need for more partners and better coordination across institutions
	Human resources for ABS management are well qualified and motivated	0 -- Human resources are poorly qualified and unmotivated; 1 -- Human resources qualification is spotty, with some well qualified, but many only poorly and in general unmotivated; 2 – Human Resources in general reasonably qualified, but many lack in motivation, or those that are motivated are not sufficiently qualified; 3 -- Human resources are well qualified and motivated.	1	
	The ABS institution(s) is audited and publicly accountable	0 – The ABS institution(s) is not being held accountable and not audited; 1 – The ABS institution(s) is occasionally audited without being held publicly accountable; 2 – The ABS institution(s) is regularly audited and there is a fair degree of public accountability but the system is not fully transparent; 3 – The ABS institution(s) is highly fully audited, and publicly accountable.	3	As is the case with all gov't institutions, the ABS institution is audited annually and publicly accountable for government resource use
	Enforcement of ABS regulations	0 -- No enforcement of regulations is taking place; 1 -- Some enforcement of regulations is taking place but it is largely ineffective; 2 -- ABS regulations are regularly enforced but are not fully effective; 3 -- ABS regulations are highly effectively enforced.	1	The rules and regulations are yet to be promulgated but interim measures are in place for executing Material Transfer Agreements and ABS Agreements. MTAs are mandatory at exit points for any biodiversity material going out of the country excepting those traded as a commodity or for direct consumption.

Strategic Area of Support	Issue	Scorecard	Initial Evaluation	Evaluative Comments
	Individuals are able to advance and develop professionally	0 -- No career tracks are developed and no training opportunities are provided; 1 -- Career tracks are weak and training possibilities are few and not managed transparently; 2 -- Clear career tracks developed and training available; HR management however has inadequate performance measurement system; 3 -- Individuals are able to advance and develop professionally.	2	Career tracks are clear in terms of vertical movement. However training opportunities remain limited and cannot be planned effectively due to financial constraints/ uncertainties
	Individuals are appropriately skilled for their jobs	0 -- Skills of individuals do not match job requirements; 1 -- Individuals have some or poor skills for their jobs; 2 -- Individuals are reasonably skilled but could further improve for optimum match with job requirement; 3 -- Individuals are appropriately skilled for their jobs	2	There is need to build national expertise in keeping with the job requirements in specific areas of bio-prospecting.
	Individuals are highly motivated	0 -- No motivation at all; 1 -- Motivation uneven, some are but most are not; 2 -- Many individuals are motivated but not all; 3 -- Individuals are highly motivated	2	Motivation can be improved with better understanding of the ABS concept and benefits.
	There are appropriate mechanisms of training, mentoring, and learning in place to maintain a continuous flow of new staff	0 -- No mechanisms exist; 1 -- Some mechanisms exist but unable to develop enough and unable to provide the full range of skills needed; 2 -- Mechanisms generally exist to develop skilled professionals, but either not enough of them or unable to cover the full range of skills required; 3 -- There are mechanisms for developing adequate numbers of the full range of highly skilled ABS professionals	2	There is a need for TA support to build skilled professionals with the ability to multi-tasking and collaboration with relevant institutes including the academia
3. Capacity to engage and build consensus among all stakeholders	ABS has the political commitment	0 -- There is no political will at all, or worse, the prevailing political will runs counter to the interests of ABS; 1 -- Some political will exists, but is not strong enough to make a difference; 2 -- Reasonable political will exists, but is not always strong enough to fully support ABS; 3 -- There are very high levels of political will to support ABS.	2	Political will exists in general for conservation but the level of political awareness of ABS is low as it is a relatively new subject matter.

Strategic Area of Support	Issue	Scorecard	Initial Evaluation	Evaluative Comments
	Degree of public support on ABS issues	0 -- The public has little interest in ABS and there is no significant lobby for ABS; 1 -- There is limited support for ABS; 2 -- There is general public support for ABS and there are various lobby groups strongly pushing them; 3 -- There is tremendous public support in the country for ABS.	1	Limited support is due to general lack of awareness of ABS. With increased awareness, support is expected to improve.
	The ABS institution(s) is mission oriented	0 -- Institutional mission is not defined; 1 -- Institutional mission is poorly defined and generally not known and internalized at all levels; 2 -- Institutional mission well defined and internalized but not fully embraced; 3 – Institutional mission is fully internalized and embraced.	2	The ABS institution has a well-defined and internalized mission but the progress towards the mission is impeded by limited financial resources, personnel and expertise.
	The ABS institution(s) can facilitate the partnerships needed to achieve its objectives	0 – The ABS institution(s) operate in isolation; 1 – The ABS institution(s) has facilitated some partnerships but significant gaps and existing partnerships achieve little; 2 – The ABS institution(s) has facilitated many partnerships with a wide range of national and local agencies, private sector and NGOs but there are some gaps and partnerships, are not always effective and do not always enable efficient achievement of ABS objectives; 3 – The ABS institution(s) has facilitated effective partnerships with national and local agencies, private sector and NGOs to enable achievement of ABS objectives in an efficient and effective manner.	1	The role of the ABS institution as an executing agency and facility for MTA and ABS agreements is well recognized but partnerships are currently limited and need to be enhanced.
4. Capacity to mobilize information and knowledge	The ABS institution(s) has the information it needs to enforce the national legal/policy ABS framework and to facilitate ABS deals	0 -- Information is virtually lacking; 1 – The ABS institution(s) has access to some information, but is of poor quality, is of limited usefulness, or is very difficult to access; 2 – The ABS institution(s) has access to a lot of information which is mostly of good quality, but there remain some gaps in quality, coverage and availability; 3 – The ABS institution(s) has the information it needs to enforce the national legal/policy framework and facilitate ABS	1	

Strategic Area of Support	Issue	Scorecard	Initial Evaluation	Evaluative Comments
		deals.		
	Individuals from the ABS institution(s) work effectively together as a team	0 -- Individuals work in isolation and don't interact; 1 -- Individuals interact in limited way and sometimes in teams but this is rarely effective and functional; 2 -- Individuals interact regularly and form teams, but this is not always fully effective or functional; 3 -- Individuals interact effectively and form functional teams.	2	There is cohesion and good team work but this does not necessarily translate to effective results as personnel are limited in numbers and this often leads to multiple tasks beyond individual capacity.
5. Capacity to monitor, evaluate, report and learn	There is a legally designated institution(s) responsible for ABS and able to update the ABS national framework	0 – The institution(s) does not have the financial resources, personnel, and expertise; 1 – The institution(s) has financial resources but has limited personnel and expertise; 2 – The institution(s) has financial resources and personnel but limited expertise; 3 – The institution(s) has sufficient financial resources, personnel and expertise.	0	NBC is designated as the ABS institution but has limited financial resources, personnel and expertise
	ABS policy or law is continually reviewed and updated	0 -- There is no policy or law or it is old and not reviewed regularly; 1 -- Policy or law is only reviewed at irregular intervals; 2 – Policy or law is reviewed regularly but not annually; 3 -- Policy or law is reviewed annually.	1	ABS policy has been drafted and the Biodiversity Act is in place since 2003. The standard practice is to review policies and laws as and when necessary depending on evolving circumstances and emerging needs.
	Society monitors ABS projects	0 -- There is no dialogue at all; 1 -- There is some dialogue going on, but not in the wider public and restricted to specialized circles; 2 -- There is a reasonably open public dialogue going on but certain issues remain taboo; 3 -- There is an open and transparent public dialogue about the state of the ABS projects.	1	

Strategic Area of Support	Issue	Scorecard	Initial Evaluation	Evaluative Comments
	Institutions are highly adaptive, responding effectively and immediately to change promoted by implementation of the national ABS framework (i.e., laws, policies and/or regulations).	0 – There is no implementation of the national ABS framework at the moment; 1 -- Institutions do change but only very slowly; 2 -- Institutions tend to adapt in response to change but not always very effectively or with some delay; 3 -- Institutions are highly adaptive, responding effectively and immediately to change.	2	Institutions are fairly adaptive to changes driven by new policies but regular follow-ups are required for timely mobilization of information and reports.
	The ABS institution(s) has effective internal mechanisms for monitoring, evaluation, reporting and learning on ABS projects	0 -- There are no mechanisms for monitoring, evaluation, reporting or learning; 1 -- There are some mechanisms for monitoring, evaluation, reporting and learning but they are limited and weak; 2 -- Reasonable mechanisms for monitoring, evaluation, reporting and learning are in place but are not as strong or comprehensive as they could be; 3 -- Institutions have effective internal mechanisms for monitoring, evaluation, reporting and learning.	1	Mechanisms for monitoring and evaluation as well as reporting are in built in the projects; however due to lack of adequate human resources, continued monitoring of the projects/ proposals remains a challenge.
	Individuals from ABS institutions are adaptive and continue to learn	0 -- There is no measurement of performance or adaptive feedback; 1 -- Performance is irregularly and poorly measured and there is little use of feedback; 2 -- There is significant measurement of performance and some feedback but this is not as thorough or comprehensive as it might be; 3 -- Performance is effectively measured and adaptive feedback utilized	2	Performance evaluation is an institutionalized process with twice-yearly evaluations.

TOTAL SCORE: 34 out of a possible 69 = 33.33%

Annex 2. Environmental and Social Screening Procedure

QUESTION 1:

Has a combined environmental and social assessment/review that covers the proposed project already been completed by implementing partners or donor(s)?

Select answer below and follow instructions:

☒ →NO: Continue to Question 2 (do not fill out Table 1.1)

☐→YES: No further environmental and social review is required if the existing documentation meets UNDP's quality assurance standards, and environmental and social management recommendations are integrated into the project. Therefore, you should undertake the following steps to complete the screening process:

1. Use Table 1.1 below to assess existing documentation. (It is recommended that this assessment be undertaken jointly by the Project Developer and other relevant Focal Points in the office or Bureau).
2. Ensure that the Project Document incorporates the recommendations made in the implementing partner's environmental and social review.
3. Summarize the relevant information contained in the implementing partner's environmental and social review in Annex A.2 of this Screening Template, selecting Category 1.
4. Submit Annex A to the PAC, along with other relevant documentation.

Note: Further guidance on the use of national systems for environmental and social assessment can be found in the UNDP ESSP Annex B.

TABLE 1.1: CHECKLIST FOR APPRAISING QUALITY ASSURANCE OF EXISTING ENVIRONMENTAL AND SOCIAL ASSESSMENT	**Yes/No**
1. Does the assessment/review meet its terms of reference, both procedurally and substantively?	
2. Does the assessment/review provide a satisfactory assessment of the proposed project?	
3. Does the assessment/review contain the information required for decision-making?	
4. Does the assessment/review describe specific environmental and social management measures (e.g. mitigation, monitoring, advocacy, and capacity development measures)?	
5. Does the assessment/review identify capacity needs of the institutions responsible for implementing environmental and social management issues?	
6. Was the assessment/review developed through a consultative process with strong stakeholder engagement, including the view of men and women?	
7. Does the assessment/review assess the adequacy of the cost of and financing arrangements for environmental and social management issues?	

Table 1.1 (continued) For any "no" answers, describe below how the issue has been or will be resolved (e.g. amendments made or supplemental review conducted).

QUESTION 2:

Do all outputs and activities described in the Project Document fall within the following categories?

- ☐ Procurement (in which case UNDP's Procurement Ethics and Environmental Procurement Guide need to be complied with)
- ☐ Report preparation
- ☐ Training
- ☐ Event/workshop/meeting/conference (refer to Green Meeting Guide)
- ☐ Communication and dissemination of results

Select answer below and follow instructions:

- ☒ **NO** → Continue to Question 3
- ☐ **YES** → No further environmental and social review required. Complete Annex A.2, selecting Category 1, and submit the completed template (Annex A) to the PAC.

QUESTION 3:

Does the proposed project include activities and outputs that support *upstream* planning processes that potentially pose environmental and social impacts or are vulnerable to environmental and social change (refer to Table 3.1 for examples)? (Note that *upstream* planning processes can occur at global, regional, national, local and sectoral levels)

Select the appropriate answer and follow instructions:

- ☐ **NO** → Continue to Question 4.
- ☒ **YES** →Conduct the following steps to complete the screening process:
  1. Adjust the project design as needed to incorporate UNDP support to the country(ies), to ensure that environmental and social issues are appropriately considered during the upstream planning process. Refer to Section 7 of this Guidance for elaboration of environmental and social mainstreaming services, tools, guidance and approaches that may be used.
  2. Summarize environmental and social mainstreaming support in Annex A.2, Section C of the Screening Template and select "Category 2".
  3. If the proposed project ONLY includes upstream planning processes then screening is complete, and you should submit the completed Environmental and Social Screening Template (Annex A) to the PAC. If downstream implementation activities are also included in the project then continue to Question 4.

TABLE 3. 1 **EXAMPLES OF UPSTREAM PLANNING PROCESSES WITH POTENTIAL DOWNSTREAM ENVIRONMENTAL AND SOCIAL IMPACTS**	Check appropriate box(es) below
1. Support for the elaboration or revision of **global- level** strategies, policies, plans, and programmes. *For example, capacity development and support related to international negotiations and agreements. Other examples might include a global water governance project or a global MDG project.*	
2. Support for the elaboration or revision of **regional-level** strategies, policies and plans, and programmes. *For example, capacity development and support related to transboundary programmes and planning (river basin management, migration, international waters, energy development and access, climate change adaptation etc.).*	
3. Support for the elaboration or revision of **national-level** strategies, policies, plans and programmes. *For example, capacity development and support related to national development policies, plans, strategies and budgets, MDG-based plans and strategies (e.g. PRS/PRSPs, NAMAs), sector plans.*	X

TABLE 3. 1 EXAMPLES OF UPSTREAM PLANNING PROCESSES WITH POTENTIAL DOWNSTREAM ENVIRONMENTAL AND SOCIAL IMPACTS	Check appropriate box(es) below
4. Support for the elaboration or revision of **sub-national/local-level** strategies, polices, plans and programmes. *For example, capacity development and support for district and local level development plans and regulatory frameworks, urban plans, land use development plans, sector plans, provincial development plans, provision of services, investment funds, technical guidelines and methods, stakeholder engagement.*	X

QUESTION 4:

Does the proposed project include the implementation of *downstream* activities that potentially pose environmental and social impacts or are vulnerable to environmental and social change?

To answer this question, you should first complete Table 4.1 by selecting appropriate answers. If you answer "No" or "Not Applicable" to all questions in Table 4.1 then the answer to Question 4 is "NO." If you answer "Yes" to any questions in Table 4.1 (even one "Yes" can indicated a significant issue that needs to be addressed through further review and management) then the answer to Question 4 is "YES":

☐ **NO** → No further environmental and social review and management required for downstream activities. Complete Annex A.2 by selecting "Category 1", and submit the Environmental and Social Screening Template to the PAC.

☐ **YES** → Conduct the following steps to complete the screening process:

1. Consult Section 8 of this Guidance, to determine the extent of further environmental and social review and management that might be required for the project.
2. Revise the Project Document to incorporate environmental and social management measures. Where further environmental and social review and management activity cannot be undertaken prior to the PAC, a plan for undertaking such review and management activity within an acceptable period of time, post-PAC approval (e.g. as the first phase of the project) should be outlined in Annex A.2.
3. Select "Category 3" in Annex A.2, and submit the completed Environmental and Social Screening Template (Annex A) and relevant documentation to the PAC.

TABLE 4.1: ADDITIONAL SCREENING QUESTIONS TO DETERMINE THE NEED AND POSSIBLE EXTENT OF FURTHER ENVIRONMENTAL AND SOCIAL REVIEW AND MANAGEMENT		
1.	**Biodiversity and Natural Resources**	**Answer** (Yes/No/ Not Applicable)
1.1	Would the proposed project result in the conversion or degradation of modified habitat, natural habitat or critical habitat?	No
1.2	Are any development activities proposed within a legally protected area (e.g. natural reserve, national park) for the protection or conservation of biodiversity?	Possibly
1.3	Would the proposed project pose a risk of introducing invasive alien species?	No
1.4	Does the project involve natural forest harvesting or plantation development without an independent forest certification system for sustainable forest management (*e.g. PEFC, the Forest Stewardship Council certification systems, or processes established or accepted by the relevant National Environmental Authority*)?	No
1.5	Does the project involve the production and harvesting of fish populations or other aquatic species without an accepted system of independent certification to ensure sustainability (*e.g. the Marine Stewardship Council certification system, or certifications, standards, or processes established or accepted by the relevant National Environmental Authority*)?	No

TABLE 4.1: ADDITIONAL SCREENING QUESTIONS TO DETERMINE THE NEED AND POSSIBLE EXTENT OF FURTHER ENVIRONMENTAL AND SOCIAL REVIEW AND MANAGEMENT	
1.6 Does the project involve significant extraction, diversion or containment of surface or ground water? *For example, construction of dams, reservoirs, river basin developments, groundwater extraction.*	No
1.7 Does the project pose a risk of degrading soils?	No
2. Pollution	**Answer** (Yes/No/ Not Applicable)
2.1 Would the proposed project result in the release of pollutants to the environment due to routine or non-routine circumstances with the potential for adverse local, regional, and transboundary impacts?	No
2.2 Would the proposed project result in the generation of waste that cannot be recovered, reused, or disposed of in an environmentally and socially sound manner?	No
2.3 Will the propose project involve the manufacture, trade, release, and/or use of chemicals and hazardous materials subject to international action bans or phase-outs? *For example, DDT, PCBs and other chemicals listed in international conventions such as the Stockholm Convention on Persistent Organic Pollutants, or the Montreal Protocol.*	No
2.4 Is there a potential for the release, in the environment, of hazardous materials resulting from their production, transportation, handling, storage and use for project activities?	No
2.5 Will the proposed project involve the application of pesticides that have a known negative effect on the environment or human health?	No
3. Climate Change	
3.1 Will the proposed project result in significant[27] greenhouse gas emissions? *Annex E provides additional guidance for answering this question.*	No
3.2 Is the proposed project likely to directly or indirectly increase environmental and social vulnerability to climate change now or in the future (also known as maladaptive practices)? You can refer to the additional guidance in Annex C to help you answer this question. *For example, a project that would involve indirectly removing mangroves from coastal zones or encouraging land use plans that would suggest building houses on floodplains could increase the surrounding population's vulnerability to climate change, specifically flooding.*	No
4. Social Equity and Equality	**Answer** (Yes/No/ Not Applicable)
4.1 Would the proposed project have environmental and social impacts that could affect indigenous people or other vulnerable groups?	No
4.2 Is the project likely to significantly impact gender equality and women's empowerment[28]?	No

[27] Significant corresponds to CO_2 emissions greater than 100,000 tons per year (from both direct and indirect sources). Annex E provides additional guidance on calculating potential amounts of CO_2 emissions.

[28] Women are often more vulnerable than men to environmental degradation and resource scarcity. They typically have weaker and insecure rights to the resources they manage (especially land), and spend longer hours on collection of water, firewood, etc. (OECD, 2006). Women are also more often excluded from other social, economic, and political development processes.

TABLE 4.1: ADDITIONAL SCREENING QUESTIONS TO DETERMINE THE NEED AND POSSIBLE EXTENT OF FURTHER ENVIRONMENTAL AND SOCIAL REVIEW AND MANAGEMENT	
4.3 Is the proposed project likely to directly or indirectly increase social inequalities now or in the future?	No
4.4 Will the proposed project have variable impacts on women and men, different ethnic groups, social classes?	Yes
4.5 Have there been challenges in engaging women and other certain key groups of stakeholders in the project design process?	No
4.6 Will the project have specific human rights implications for vulnerable groups?	Yes
5. Demographics	
5.1 Is the project likely to result in a substantial influx of people into the affected community(ies)?	No
5.2 Would the proposed project result in substantial voluntary or involuntary resettlement of populations? *For example, projects with environmental and social benefits (e.g. protected areas, climate change adaptation) that impact human settlements, and certain disadvantaged groups within these settlements in particular.*	No
5.3 Would the proposed project lead to significant population density increase which could affect the environmental and social sustainability of the project? *For example, a project aiming at financing tourism infrastructure in a specific area (e.g. coastal zone, mountain) could lead to significant population density increase which could have serious environmental and social impacts (e.g. destruction of the area's ecology, noise pollution, waste management problems, greater work burden on women).*	No
1. Culture	
6.1 Is the project likely to significantly affect the cultural traditions of affected communities, including gender-based roles?	No
6.2 Will the proposed project result in physical interventions (during construction or implementation) that would affect areas that have known physical or cultural significance to indigenous groups and other communities with settled recognized cultural claims?	No
6.3 Would the proposed project produce a physical "splintering" of a community? *For example, through the construction of a road, powerline, or dam that divides a community.*	No
2. Health and Safety	
7.1 Would the proposed project be susceptible to or lead to increased vulnerability to earthquakes, subsidence, landslides, erosion, flooding or extreme climatic conditions? *For example, development projects located within a floodplain or landslide prone area.*	No
7.2 Will the project result in increased health risks as a result of a change in living and working conditions? In particular, will it have the potential to lead to an increase in HIV/AIDS infection?	No
7.3 Will the proposed project require additional health services including testing?	No
3. Socio-Economics	
8.1 Is the proposed project likely to have impacts that could affect women's and men's ability to use, develop and protect natural resources and other natural capital assets? *For example, activities that could lead to natural resources degradation or depletion in communities who depend on these resources for their development, livelihoods, and well-being?*	Yes

TABLE 4.1:	ADDITIONAL SCREENING QUESTIONS TO DETERMINE THE NEED AND POSSIBLE EXTENT OF FURTHER ENVIRONMENTAL AND SOCIAL REVIEW AND MANAGEMENT	
8.2	Is the proposed project likely to significantly affect land tenure arrangements and/or traditional cultural ownership patterns?	No
8.3	Is the proposed project likely to negatively affect the income levels or employment opportunities of vulnerable groups?	No
9.	**Cumulative and/or Secondary Impacts**	**Answer** (Yes/No/ Not Applicable)
9.1	Is the proposed project location subject to currently approved land use plans (e.g. roads, settlements) which could affect the environmental and social sustainability of the project? *For example, future plans for urban growth, industrial development, transportation infrastructure, etc.*	No
9.2	Would the proposed project result in secondary or consequential development which could lead to environmental and social effects, or would it have potential to generate cumulative impacts with other known existing or planned activities in the area? *For example, a new road through forested land will generate direct environmental and social impacts through the cutting of forest and earthworks associated with construction and potential relocation of inhabitants. These are direct impacts. In addition, however, the new road would likely also bring new commercial and domestic development (houses, shops, businesses). In turn, these will generate indirect impacts. (Sometimes these are termed "secondary" or "consequential" impacts). Or if there are similar developments planned in the same forested area then cumulative impacts need to be considered.*	Possibly

ANNEX A.2: ENVIRONMENTAL AND SOCIAL SCREENING SUMMARY
(to be filled in after Annex A.1 has been completed)

Name of Proposed Project: Implementing the Nagoya Protocol on Access to Genetic Resources and Benefit Sharing in Bhutan

A. Environmental and Social Screening Outcome

Select from the following:

☐ Category 1. No further action is needed

☐ Category 2. Further review and management is needed. There are possible environmental and social benefits, impacts, and/or risks associated with the project (or specific project component), but these are predominantly indirect or very long-term and so extremely difficult or impossible to directly identify and assess.

☒ Category 3. Further review and management is needed, and it is possible to identify these with a reasonable degree of certainty. If Category 3, select one or more of the following sub-categories:

☒ Category 3a: Impacts and risks are limited in scale and can be identified with a reasonable degree of certainty and can often be handled through application of standard best practice, but require some minimal or targeted further review and assessment to identify and evaluate whether there is a need for a full environmental and social assessment (in which case the project would move to Category 3b).

☐ Category 3b: Impacts and risks may well be significant, and so full environmental and social assessment is required. In these cases, a scoping exercise will need to be conducted to identify the level and approach of assessment that is most appropriate.

B. Environmental and Social Issues (for projects requiring further environmental and social review and management)

In this section, you should list the key potential environmental and social issues raised by this project. This might include both environmental and social opportunities that could be seized on to strengthen the project, as well as risks that need to be managed. You should use the answers you provided in Table 4.1 as the basis for this summary, as well as any further review and management that is conducted.

1.2 Are any development activities proposed within a legally protected area (e.g. natural reserve, national park) for the protection or conservation of biodiversity?

Yes – the project will support pilot projects that seek to demonstrate best practice in Prior Informed Consent processes and Access and Benefit Sharing agreements for bio-prospecting activities including the documentation, protection and application of traditional knowledge and sustainable propagation of source material (native plants). Some pilot activities will take place in legally protected areas such as Jigme Dorji Wangchuck National Park but these will be in compliance with the Forest and Nature Conservation Act 1995 and Forest and Nature Conservation Rules and Regulations 2002, which govern protected area management. The pilot activities will be overseen by government organizations involved in conservation and will have no negative impacts on conservation.

4.4 Will the proposed project have variable impacts on women and men, different ethnic groups, social classes?

Yes. The project aims to ensure the sharing of benefits to indigenous and local communities in various situations through its pilot projects aiming to demonstrate best practice Prior Informed Consent processes and Access and Benefit Sharing agreements. These pilots will generally benefit the concerned communities, most of whom are remote and have low socio-economic status. Women will be proactively considered for involvement in project-related activities with both participation and benefit-sharing arrangements to be at least proportionate to the local gender balance. See the Gender Strategy part of the Stakeholder Involvement Plan for further information.

4.6 Will the project have specific human rights implications for vulnerable groups?

Yes – but the implications are positive. The project aims to put in place a national framework for Access and Benefit Sharing (ABS) in Bhutan that embodies CBD requirements for Prior Informed Consent and Mutually Agreed Terms in ABS agreements, including the fair and equitable sharing of benefits. The project will also support the documentation, protection and application of traditional knowledge of indigenous and local communities, contributing both towards cultural survival and long term potential for commercial benefits.

8.1 Is the proposed project likely to have impacts that could affect women's and men's ability to use, develop and protect natural resources and other natural capital assets?

Yes. ABS agreements will include conditions on access to natural resources, although such conditions are normally imposed to control access by the resource user (bio-prospector), such as the quantity and frequency of collection by the resource user; and not to control the resource provider. Training will be provided in sustainable collection and propagation techniques. Prior Informed Consent processes undertaken during these pilot projects will ensure that such agreements are fair and equitable on Mutually Agreed Terms.

9.2 Would the proposed project result in secondary or consequential development which could lead to environmental and social effects, or would it have potential to generate cumulative impacts with other known existing or planned activities in the area?

Possibly. The successful development of commercial products through the pilot projects could lead to future increased demand for cultivating specific plants, etc. that are shown to provide economic benefits. However, one of the principles for bio-prospecting permitting is to ensure that exploitation of the biological resources is conducted in a sustainable manner, and this condition will be included by NBC in any related agreements. The risk of overharvesting may be mitigated by financially and technically supporting indigenous and local communities to propagate those resources needed.

C. Next Steps (for projects requiring further environmental and social review and management):
In this section, you should summarize actions that will be taken to deal with the above-listed issues. If your project has Category 2 or 3 components, then appropriate next steps will likely involve further environmental and social review and management, and the outcomes of this work should also be summarized here. Relevant guidance should be obtained from Section 7 for Category 2, and Section 8 for Category 3.

The project aims to put in place the national framework for ABS in Bhutan which is compliant to the provisions of the Nagoya Protocol under the Convention of Biological Diversity (CBD). The Nagoya Protocol provides a transparent legal framework for the effective implementation of one of the three objectives of the CBD: the fair and equitable sharing of benefits arising out of the utilization of genetic resources. As such, the project is designed to have an overall positive long term impact on Bhutan's natural environment and biological resources, adding value to the sustainable management of its rich mountain, forest and aquatic ecosystems. Therefore envisaged environmental and social impacts of the proposed project are largely positive.
The project will support pilot initiatives that seek to demonstrate best practice in Access and Benefit Sharing agreements for bio-prospecting and product development activities and Prior Informed Consent processes and Access. This will include documentation, protection and application of traditional knowledge and sustainable propagation of source material such as endemic plants. Some pilot activities will take place in protected areas.
The project also aims to ensure the sharing of benefits to local communities that are custodians of the genetic resources and traditional knowledge associated with the resources. These pilots are expected to generally benefit the concerned communities, most of whom are remote and have low socioeconomic status with limited livelihood options.

Environmental Impacts:
The most likely environmental concern relates to the potential for successful development of commercial products through the pilot projects that could lead to future increased demand for cultivating specific plants, etc. that are shown to provide economic benefits. However, one of the principles for bio-prospecting permitting is to ensure that exploitation of the biological resources is conducted in a sustainable manner, and this condition will be included by the government in any related bio-prospecting agreements and permits. The risk of overharvesting will be mitigated by financially and technically supporting local communities to grow and sustainably use those resources needed (as done in some baseline activities). In the longer term, the advancement of indigenous biotechnology - facilitated by the project's capacity development approach - will allow the development of synthetic compounds based on isolated active ingredients from natural plants which could significantly reduce future reliance on raw materials.

Social Impacts:
The Access and Benefit Sharing regime that the project aims to put into place will meet CBD requirements, ensuring the protection of traditional knowledge belonging to Bhutan's indigenous peoples and the fair and equitable sharing of benefits from the development of biological resources among all concerned parties, including gender consideration. This will be a significant improvement on the current situation, where no such protection exists.
The ABS agreements resulting from the pilot projects will be developed through Prior Informed Consent processes which will ensure proper consultation and recognition of indigenous peoples' concerns. These will include Mutually Agreed Terms relating to the access and use of the concerned resources.
As ABS agreements will include conditions on access to natural resources, such as quantity and frequency of harvests and use, which could negative affect, if not done properly, some segments of society. However, these conditions are normally imposed to control access by the bio-prospectors.

Women will be proactively considered for involvement in project activities (such as collecting samples of bio-resources, documentation of traditional knowledge, cultivation of plants for research and development, etc). Access and Benefit Sharing agreements are expected to include the fair and equitable distribution of benefits within concerned indigenous and local communities, with at least proportionate consideration of women in the communities.

D. Sign Off

Project Manager	**Date**
PAC	**Date**
Programme Manager	**Date**

Annex 3. Letter of Agreement for UNDP Direct Project Services

STANDARD LETTER OF AGREEMENT BETWEEN UNDP AND THE NATIONAL BIODIVERSITY CENTER FOR THE PROVISION OF SUPPORT SERVICES

1. Reference is made to consultations between officials of the National Biodiversity Center (hereinafter referred to as "NBC") and officials of UNDP with respect to the provision of support services by the UNDP country office for the project *"Implementing the Nagoya Protocol on Access to Genetic Resources and Benefit Sharing in Bhutan"*. UNDP and NBC hereby agree that the UNDP country office may provide such support services at the request of government through its institution designated in the relevant project support document or project document, as described below.

2. The UNDP country office may provide support services for assistance with reporting requirements and direct payment. In providing such support services, the UNDP country office shall ensure that the capacity of government-designated institution is strengthened to enable it to carry out such activities directly. The costs incurred by the UNDP country office in providing such support services shall be recovered from the administrative budget of the office.

3. The UNDP country office may provide, at the request of the designated institution, the following support services for the activities of the project:
(a) Identification and/or recruitment of project personnel;
(b) Procurement of goods and services;
(c) Identification and facilitation of training activities.

4. The procurement of goods and services and the recruitment of project personnel by the UNDP country office shall be in accordance with the UNDP regulations, rules, policies and procedures. Support services described in paragraph 3 above shall be detailed in an annex to the project support document or project document, in the form provided in the Attachment hereto. If the requirements for support services by the country office change during the life of a project, the annex to the project support document or project document is revised with the mutual agreement of the UNDP Resident Representative and the designated institution.

5. The relevant provisions of the Standard Basic Assistance Agreement between the Royal Government of Bhutan and the United Nations Development Programme in Bhutan signed on May 14, 1978 (the "SBAA"), including the provisions on liability and privileges and immunities, shall apply to the provision of such support services. The Government shall retain overall responsibility for the nationally managed project through its designated institution. The responsibility of the UNDP country office for the provision of the support services described herein shall be limited to the provision of such support services detailed in the annex to the project support document or project document.

6. Any claim or dispute arising under or in connection with the provision of support services by the UNDP country office in accordance with this letter shall be handled pursuant to the relevant provisions of the SBAA and the project support document or project document.

7. The manner and method of cost-recovery by the UNDP country office in providing the support services described in paragraph 3 above shall be specified in the annex to the project support document or project document.

8. The UNDP country office shall submit progress reports on the support services provided and shall report on the costs reimbursed in providing such services, as may be required.

9. Any modification of the present arrangements shall be effected by mutual written agreement of the parties hereto.

10. If you are in agreement with the provisions set forth above, please sign and return to this office two signed copies of this letter. Upon your signature, this letter shall constitute an agreement between the Government and UNDP on the terms and conditions for the provision of support services by the UNDP country office for the project.

Agreed by:

On behalf of UNDP

_____
Hideko Hadzialic
Resident Representative a.i
UNDP

Date:

On behalf of Royal Government of Bhutan

_____
Thinley Namgyel
Director
Gross National Happiness Commission

Date:

On behalf of the Implementing Partner

_____
Dr. Tashi Yangzome Dorji
Programme Director
National Biodiversity Center

Date:

Attachment

DESCRIPTION OF UNDP COUNTRY OFFICE SUPPORT SERVICES

1. Reference is made to consultations between National Biodiversity Center, the institution designated by the Royal Government of Bhutan and officials of UNDP with respect to the provision of support services by the UNDP country office for the nationally managed project on "*Implementing the Nagoya Protocol on Access to Genetic Resources and Benefit Sharing in Bhutan"*, Project No. 00090375.

2. In accordance with the provisions of the letter of agreement signed on [*insert date of agreement*] and the project document, the UNDP country office shall provide support services for the Project as described below.

3. Support services to be provided:

Support services (insert description)	Schedule for the provision of the support services	Cost to UNDP of providing such support services	Amount and method of reimbursement of UNDP
1. Recruitment of project support staff.	To be recruited during 2014 and 2015.	Fee for the services will be charged based on UPL or LPL.	As per Universal Price List (UPL) or Local Price List (LPL), total services fee is estimated not exceeding US$ 8,990.
2. Recruitment of four international consultants.	2014 and 2015.	UPL/LPL	
3. Procurement of goods.	As and when required.	UPL/LPL	
4. Recruitment of international & local consultants (Four) for MTR & Terminal Evaluation.	2016 and 2018	UPL/LPL	

4. Description of functions and responsibilities of the parties involved:

Description of functions and responsibilities of the parties involved is as per the project document. UNDP country office will provide the services as stated above upon the request of National Biodiversity Center. The reimbursement of the UNDP support cost will be recorded as per transactions based on the established UNDP Universal Price List (UPL) or Local Price List (LPL).

Annex 4. Knowledge, Attitudes and Practices (KAP) Assessment Approach

As part of the project's monitoring and evaluation system, knowledge, attitudes and practices (KAP) assessment surveys will be conducted as part of **Output 2.3** targeting specific groups (parliamentarians, researchers, relevant industries, specific districts and communities) that may use or benefit from ABS transactions in order to determine the project's impact on awareness levels concerning the national ABS law, CBD and the Nagoya Protocol; as well as on the values of biological resources among selected communities.

These will include baseline surveys at the start-up of the awareness raising activities for specific target groups, and repeat surveys following the same methodologies at project completion. This work will be contracted to a service provider, with requirements to liaise closely with the project's implementing partners in the design and implementation of activities.

1. Introduction

The purpose of a KAP survey is to understand the current status and gaps in the knowledge, attitudes and practices of the target groups on specific issues, so as to design intervention programs to enhance knowledge and change the attitudes and practices of the target groups towards desired goals. The planned KAP assessments for the present UNDP/GEF project aim to provide the project team and national stakeholders with a more detailed understanding of public opinion concerning ABS issues in Bhutan as well as the awareness level of communities, researchers and relevant industries regarding their rights or obligations in the ABS context.

The planned baseline KAP surveys will assess pre-project implementation levels of knowledge for specific target groups including the following subjects[29]:

For the targeted researchers and industries:

The knowledge about their obligations under the ABS laws, which are to follow the access procedures, to obtain PIC of, and to share benefits with the provider of biological resources and associated traditional knowledge, and compliance of ABS laws by their research counterparts; attitudes towards such additional obligations; attitudes towards benefit sharing and its implication on conservation and sustainable use of biodiversity; attitudes towards respecting the rights of indigenous and local communities; and practices that currently being undertaken for research and development on biological resources and associated traditional knowledge.

For the targeted communities:

Knowledge of their rights as enshrined in the ABS laws, the CBD and the Nagoya Protocol; attitudes towards the concept of ABS; attitudes towards the role played by ABS in biodiversity conservation and poverty alleviation; practices currently being undertaken when

[29] Note – these subjects should be reviewed and confirmed at the start of this activity

dealing with external actors; and understanding of the value (current and potential) of the natural resources under their stewardship in the ABS context.

For others:

The understanding of the concept of ABS; awareness towards the national ABS law, the CBD and the Nagoya Protocol; attitudes towards ABS; attitudes towards the role played by ABS in biodiversity conservation and poverty alleviation; and practices currently being undertaken by relevant stakeholders in accessing biological resources and associated traditional knowledge.

The results of the baseline surveys are intended to be used as indicators to measure project impacts on stakeholder perception and behaviour. They will also inform the design of the awareness programme for the project (see **Output 2.3**).

The same survey methodology will be applied to the same target groups at the end of the project following the completion of awareness activities in order to assess changes in levels of awareness and changes in attitudes and practices that may be attributable to the project's intervention. The results will be included in the project completion report and applied to the relevant indicator presented in the project's Strategic Results Framework.

2. Survey Methodology

Both qualitative interviews and quantitative surveys will be used to collect data.

The quantitative survey with questionnaires will be applied to collect data from the following target groups[30]:

- 50 officials from line ministries and related departments
- 25 elected representatives (Members of Parliament)
- 20 managers and technicians from biotechnology related enterprises
- 20 managers and staff from international, national and local NGOs, including both environment and social NGOs
- 20 journalists (both environment and non-environment journalists) and from media, with a focus on influential media
- 50 university staff and students, half in environment-related majors, and half in law-related majors.
- 100 respondents from rural communities: the communities should be selected in the pilot project areas

In addition, a qualitative interview guide will be developed for in-depth discussions with the representatives from the above target groups, focusing on understanding the information needs and their preferred information channels, so as to develop the communication strategy.

The surveys and interviews will be mainly carried out by face to face, supported by telephone and e-mail.

3. KAP Components

[30] Note: the target groups and sample sizes should be reviewed and confirmed during the project inception period

The survey questionnaires cover four components: Knowledge, Attitude, Practices, and Information Needs.

Knowledge. This part mainly includes the questions to ask the respondents fora self-assessment of their knowledge related to ABS and biodiversity conservation; understanding on the concepts; awareness of the policies and regulations related to ABS / biodiversity conservation; their obligation under the ABS laws, which is to follow the access procedures, to obtain PIC of, and to share benefits with the provider of biological resources and associated traditional knowledge, and compliance of ABS laws by their research counterparts; rights as enshrined in the ABS laws, the CBD and the Nagoya Protocol;

Attitudes. This part aims to record the respondents' opinions on the importance attached to biodiversity conservation, relationship between economic development (or poverty) and conservation, attitudes towards additional obligations to fulfill ABS requirements; attitudes towards respecting the rights of indigenous and local communities;

Practices. This part asks the respondents about their activities to conserve biodiversity, integration of biodiversity/ABS into development plans or enterprise strategies practices that currently being undertaken for research and development on biological resources and associated traditional knowledge; practices currently being undertaken when dealing with external actors;

Information Needs. This part mainly asks the respondents about their sources of information, suggestions for information dissemination, and information requirements.

4. Data Processing

The quantitative data will be inserted into excel spreadsheets, and descriptive statistics will be used to process the data. The percentage and means will be calculated. The data will be disaggregated among different target groups. The qualitative data will be analyzed by the main issues and themes arising, and used to supplement the quantitative data. The data results will be used to analyze the gaps in knowledge, attitudes and practices regarding ABS / biodiversity conservation, and to develop the project's communication strategies to increase national capacity and understanding of ABS issues. The results of these surveys will be used as indicators to measure project impacts on stakeholder perception and behaviour.

Annex 5. Consultations with Local Community Stakeholders

During the course of project preparation, areas were defined for the implementation of the three pilot projects in Component 3 of the project. These areas are known as gewogs (sub-districts), covering significant tracts of sparsely populated mountainous terrain with isolated villages and hamlets. While some villages are connected by basic roads, which may not be accessible during monsoon rains, others are only accessible on foot involving several days walking. Altitudes range from 800m to over 6,500m. In most cases, the project follows on from existing work by the pilot project protagonists in these areas, therefore previous engagement with local stakeholders is reflected where appropriate, as well as more recent consultations.

Pilot Project 1 – Lokchina gewog, in Chhukha dzongkhag

This pilot project is being led by the National Biodiversity Centre (NBC), with the area being selected based on a traditional knowledge survey conducted by NBC in 2012, as the focal agency for inventory and documentation of traditional knowledge (TK) associated with biological resources within the country, during which local use of *Zingiber cassumunar* for easing joint pains was recorded. The TK documentation was conducted following formal NBC communication with the head of Chhukha Dzongtag (District Administrator). As part of the survey mandate, NBC raised awareness among the local government leaders and general public of Lokchina, Dungna and Metakha gewogs on TK related activities. A general meeting was held in Lokchina Gewog centre involving Mr. Indralal Ghalley (Gup), Mr. Birkha Bahadur Limbu, Assistant to Gup, Mr. Sonam Dorji, Geog Livestock Officer and the communities of Lokchina Gewog, followed up by visits to individual communities to document TK.

Further to this initial TK documentation, during the project preparation period, UNDP consultants and NBC staff visited Chhukha dzongtag and Lokchina Gewog to consult with local representatives about the project plans and obtain further baseline information. On 13th June, a meeting was held with Mr Birkha Bahadur Limbu, Deputy Head (Gup) of Lokchina Gewog, and Mr Ugen Tsering, the Forestry Extension Officer for the Gewog in Phuentsholing. They were briefed on the GEF project and pilot project plans, and some background on the area was obtained, including information on population, livelihoods, income levels and use of natural resources (see the section Introduction to Project Sites for details). The same day, the group drove in to Lokchina Gewog, where discussions were held with one village head and several households concerning the project plans and current use of *Z. cassumunar*, which is evidently declining. NBC plans to conduct further visits before project implementation begins in order to identify households with potential to participate in the pilot project, and to further document the status of the resource.

Pilot Project 2 - (a) Lingshi and Dagala gewogs in Thimphu dzongkhag for sourcing Rhododendron anthopogon; and (b) Langthel gewog in Trongsa dzongkhag

This pilot project is being led by Menjong Sorig Pharmaceuticals (MSP). Most of the identified sites/communities for this pilot project concern MSP's existing network of collectors and communities for traditional medicines. Thus the pilot project will build on existing relationships, with the aim of taking these to a new level in line with the Nagoya Protocols requirements for PIC, MAT and benefit-sharing under ABS agreements.

Lingzhi Gewog is the remotest gewog in the Thimphu dzongkhag. Lingzhi has nine chiwogs with a total of 79 households and a population of 541 as of 2012. The gewog covers an area of 386 km^2 and the entire gewog is inside Jigme Dorji Wangchuck National Park, the country's largest protected area. It is in the alpine region, with elevation ranging from about 3,445 meters to 6,782 meters above sea level.

Lingzhi Gewog alongwith Soe and Naro have been MSP's collection sites for high altitude medicinal plants for decades. Until last year, only a group of 37 people were actively involved in regular collection. However, from 2014 onwards, the whole gewog will be involved in collecting MSP's raw materials requirements including one of the target species for this pilot project – Dwarf Rhododendron (*Rhododendron anthopogon).*

Dagala Gewog is another area where MSP have collected some of the materials for use in their regular production of traditional medicine. MSP started involving this community a couple of years ago as an alternate source of raw materials in order to reduce pressure on the Lingzhi site.

For sourcing three species for the pilot project *Acorus calamus* (sweet flag), *Sapindus rarak* (soapnut tree), and *Phyllanthus emblica* (Himalayan gooseberry), and for all their low altitude medicinal herb requirements, MSP works closely with two community groups under the Langthel gewog, Namther Throgmen Tshogpa and Dangdung Menrig Tshogpa under agreements dated April 2014 and January 2013 respectively. Namther thsogpa has about 40 members while Dangdung tshogpa has about 30 members. All these members have been regularly trained in species identification and sustainable collection methods with technical experts from RNR center and MSP.

Pilot Project 3 - Naro gewog in Thimphu dzongkhag

This pilot project is being led by Bio Bhutan, who have extensive experience of collaborating with local communities in the production of essential oils and products such as soaps (see baseline analysis). Bio Bhutan‘s vision is to link local cooperatives, community forest management, NTFP and women‘s groups to markets with quality, natural and organic products, while making use of the local available resources and promoting local livelihoods.

In view of the distribution and use of *Rhododendron anthopogon*, Bio Bhutan will engage with communities in Naro gewog, which lies entirely in the alpine zone and falls inside Jigme Dorji Wangchuk National Park. Elevation ranges from about 3,800 to nearly 5,500 masl. Naro Gewog falls under the administrative jurisdiction of the Lingzhi Drungkhag under Thimphu Dzongkhag. The gewog consists of 56 households with a population of 300. With no motor-able roads, transportation and movements within the gewog are fully dependent on mule tracks. Populations are primarily dependent on yak herding as source of their livelihood, because of which, seasonal migration with herds is a common practice. The gewog has no electricity. Bio Bhutan have discussed the potential use of *Rhododendron anthopogon* with the Gewog Forest Ranger in 2013 and during the PPG, and approached the Gewog Head on this matter, with further consultations in progress.