



# BIODIVERSITY ACTION PLAN



FOR BHUTAN 2002



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藏书章

Ministry of Agriculture  
Royal Government of Bhutan

## Acknowledgements

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**TASHICHHODZONG**  
THIMPHU, BHUTAN

Thursday, 04 April 2002

**HER MAJESTY THE QUEEN**

## **FOREWORD**

Biological resources, especially plants, have always been important for Bhutanese. These resources have been conserved in their ecosystems by local communities who utilised them. The huge genetic resource base our country has, due to its diverse agro-ecological zones spanning from subtropical forest to alpine meadows, is one of our most precious patrimonies. Indeed, it is of global importance now. The global interdependence of genetic resources is apparent from the introduction of exotic varieties into our country and our country's contribution to germplasm and herbarium collections to several institutions abroad.

There is abundant biological diversity both on-farm and in the 'wild'. It is pleasing to note that the strategies for the conservation of biodiversity have given equal importance to both. Farmers in our country have bred impressive varieties of crops, fruits, vegetables to find the characteristics most suitable for local culture and environment. Some of the varieties are best suited to marginal areas where main varieties can scarcely be cultivated. Close to five hundred landraces of rice grown by our farmers is proof of the genetic variations that the farmers have selected and adapted. In addition, significant portion of foods, fodder, and indigenous medicines in our country comes not only from domesticated farmer-bred varieties or species, but from the yearly harvest of plants from the 'wild'. A good deal of self-sufficiency in food and fodder in rural societies are met out of the biodiversity found in nature. The dependence on wild relatives is also true in the case of the most important livestock in our country: *jatsha*, *jatsham*





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*jatsham* and other *mithun* cross breeds. Those who breed livestock in our country know that to develop good dairy cattle, the genetic materials in the wild must continue to be available.

Generations of local communities have contributed to the knowledge about development of breeds and varieties of food crops, as well about wild plants and animals. The transmission of this accumulated, indigenous knowledge, which exists mostly in vernacular form, is equally important for the conservation of biodiversity and uses of biomaterials. Conservation of biodiversity can be strengthened hand in hand with enhancement of indigenous knowledge about biomaterials we have traditionally used.

With the explosion in biotechnologies, the potential uses of biomaterials are far greater than what were possible in the past. Genetic materials are being incorporated into commercial products, and a considerable and increasing part of the global economy is based on biotechnological products. For our country, too, biotechnology holds bright prospect, and we must move in that direction as quickly as possible. The golden bridge linking development and conservation is biotechnology.

In the context of conservation, this updated biodiversity action plan represents a serious and ambitious effort made by our country. May the merit of this publication benefit both man and animal, who ultimately depend, directly or indirectly, on the diversity of plantlife.

  
Dorji Wangmo Wangchuck







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## Acronyms

<b>ACC:</b>	Annual Allowable Cut
<b>ADB:</b>	Asian Development Bank
<b>BAP:</b>	Biodiversity Action Plan
<b>BFI:</b>	Bhutan Forestry Institute
<b>BIBIS:</b>	Bhutan Integrated Biodiversity Information System
<b>BMB:</b>	Biodiversity Management Board
<b>BTF:</b>	Bhutan Trust Fund
<b>BUCAP:</b>	Biodiversity Use and Conservation in Asia Programme
<b>BWS:</b>	Bomdiling Wildlife Sanctuary
<b>CARD:</b>	Centre for Agriculture Research and Development
<b>CBD:</b>	Convention on Biological Diversity
<b>CBNRM:</b>	Community-Based National Resource Management
<b>CDM:</b>	Clean Development Mechanism
<b>CGIAR:</b>	Consultative Group on International Agricultural Research
<b>CIAT:</b>	The International Centre for Tropical Agriculture
<b>CLSD:</b>	Crop and Livestock Services Division (now DALSS)
<b>COP:</b>	Conference of Parties
<b>CSO:</b>	Central Statistical Office
<b>DALSS:</b>	Department of Agriculture and Livestock Support Services
<b>DANIDA:</b>	Danish Development Assistance
<b>DFES:</b>	Dzongkhag Forestry Extension Services
<b>DFS:</b>	Department of Forestry Services
<b>DOT:</b>	Department of Tourism
<b>DRDS</b>	Department of Research and Development Services
<b>DSC:</b>	Druk Seed Corporation
<b>DYT:</b>	Dzongkhag Yargye Tshogchung (District Development Committee)
<b>EIA:</b>	Environmental Impact Assessment
<b>EU:</b>	European Union
<b>FAO:</b>	Food and Agricultural Organization
<b>FCB:</b>	Food Corporation of Bhutan
<b>FED:</b>	Forest Extension Division
<b>FSD:</b>	Forestry Services Division (now DFS)
<b>FMU:</b>	Forest Management Unit
<b>FYM:</b>	Farm Yard Manure
<b>FPUD:</b>	Forest Protection and Utilization Division
<b>FRDD:</b>	Forest Resource Development Division

<b>FYP:</b>	Five Year Plan
<b>GATT:</b>	General Agreement on Trade and Tariff
<b>GCR:</b>	Government of Costa Rica
<b>GDP:</b>	Gross Domestic Product
<b>GEF:</b>	Global Environment Facility
<b>GIS:</b>	Geographical Information System
<b>GPS:</b>	Global Positioning System
<b>GYT:</b>	Geog Yargye Tshogchung (Block Development Committee)
<b>HRD:</b>	Human Resource Development
<b>HYV:</b>	High-Yield Variety
<b>IARC:</b>	International Agricultural Research Centre
<b>IBRD:</b>	International Bank for Reconstruction and Development, World Bank
<b>ICDP:</b>	Integrated Conservation Development Programme
<b>ICIMOD:</b>	International Centre for Integrated Mountain Development
<b>ICPGR:</b>	International Commission on Plant Genetic Resources
<b>ICS:</b>	Information and Communication Services
<b>IEE:</b>	Initial Environmental Examination
<b>INBio:</b>	National Biodiversity Institute
<b>IPGRI:</b>	International Plant Genetic Resources Institute
<b>IRRI:</b>	International Rice Research Institute
<b>ITMS:</b>	Institute of Traditional Medicine Services
<b>IUCN:</b>	International Union for the Conservation of Nature
<b>JDNP:</b>	Jigme Dorji National Park
<b>JSWNP:</b>	Jigme Singye Wangchuck National Park
<b>LUPP:</b>	Land Use Planning Project
<b>MOA:</b>	Ministry of Agriculture
<b>MOHA:</b>	Ministry of Health and Education
<b>MTA:</b>	Material Transfer Agreement
<b>MTI:</b>	Ministry of Trade and Industry
<b>NBC:</b>	National Biodiversity Centre
<b>NBPGR:</b>	National Bureau of Plant Genetic Resources
<b>NCD:</b>	Nature Conservation Division
<b>NCS:</b>	Nature Conservation Section (now NCD)
<b>NEC:</b>	National Environment Commission
<b>NES:</b>	National Environment Strategy
<b>NGO:</b>	Non-Government Organization
<b>NORAD:</b>	Development Fund for Norway
<b>NRTI:</b>	Natural Resources Training Institute

<b>NTFP:</b>	Non-Timber Forest Product
<b>NWFP:</b>	Non-Wood Forest Product
<b>O &amp; M:</b>	Operation and Maintenance
<b>PA:</b>	Protected Area
<b>PBR:</b>	Plant Breeders Right
<b>PGR:</b>	Plant Genetic Resources
<b>PGRP:</b>	Plant Genetic Resources Programme
<b>PIC:</b>	Prior Informed Consent
<b>PLA:</b>	Participatory Learning and Action
<b>PPD:</b>	Policy and Planning Division
<b>PRA:</b>	Participatory Rural Appraisal
<b>PWS:</b>	Phibsoo Wildlife Sanctuary
<b>QCRS:</b>	Quality Control and Regulatory Services
<b>REID:</b>	Research Extension and Irrigation Division (now DRDS)
<b>RGOB:</b>	Royal Government of Bhutan
<b>RIM:</b>	Royal Institute of Management
<b>RMNP:</b>	Royal Manas National Park
<b>RNR:</b>	Renewable Natural Resources
<b>RNRRC:</b>	Renewable Natural Resources Research Centre
<b>RRA:</b>	Rapid Rural Appraisal
<b>RSPN:</b>	Royal Society for the Protection of Nature
<b>SDA:</b>	Sustainable Development Agreement
<b>SEA:</b>	Strategic Environment Assessment
<b>SEARICE:</b>	South East Asian Institute for Community Education
<b>SES:</b>	Socio-Economic Surveys
<b>SWS:</b>	Sakteng Wildlife Sanctuary
<b>TNP:</b>	Thrumshingla National Park
<b>TOR:</b>	Terms of Reference
<b>TRIPS:</b>	Trade Related Intellectual Property Rights
<b>UNDP:</b>	United Nations Development Programme
<b>UNFPA:</b>	United Nations Population Fund
<b>UNIDO:</b>	United Nations Industrial Development Organization
<b>UPOV:</b>	Union of the Protection of Varieties
<b>WCMC:</b>	World Conservation Monitoring Centre
<b>WTO:</b>	World Trade Organization
<b>WWF:</b>	World Wildlife Fund



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