# Facilitating the implementatin of Nagoya Protocol through Documentation of Traditional Knowledge Associated with Biological and Genetic Resources in China

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## Geographic and demographic information


| | |
|---|---|
| Country | People's Republic of China |
| Province | All the provinces besides Taiwan |
| District | Yunnan, Guangxi, Hunan, etc. |
| Size of geographical area | 9,600,000 km$^2$ |
| Number of indirect beneficiaries | 1.3 billion persons |
| Dominant ethnicity | Li, Miao, Yi, Zhuang, etc. |

| | |
|---|---|
| Size of project area | 9,600,000 km$^2$ |
| Number of direct beneficiaries | 1.3 billion persons |
| Geographic coordinates (longitude and latitude) | N4° - 53° 30′ ; E1 35° 05′ -73° 40′ |
| Dominant ethnicity | Li, Miao, Yi, Zhuang, etc. |

## Ecosystem Types （all included）

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| X | Forest | X | Grassland | X | Agricultural | X | In-land water |
| X | Coastal | X | Dryland | X | Mountain | X | Urban/peri-urban |

## Important species in the site

| English common name (*Local name*) | Scientific name | Description |
|---|---|---|
| Dendrobe | *Dendrobium nobile Lindl* | The Dendrobium orchid (known as "Shihu" in Chinese) has long been recognized for its unique properties and use as a treatment for stomach and kidney disorders and also for diabetes (Compendium of Materia Medica, at pp. 254-255). Locally, it is also recognized to have curative properties in regard to vascular conditions such as phlebosclerosis . Initial chemical analysis confirms that dendrobia contain a number of compounds of potential interest, including their own varieties of Dendrobine and natural generation of other more than ten kinds of elements that are beneficial to human health, as well as high levels of polysaccharides and amino acids. The presence of anti-tumorals (Chrysotoxene and Erianin) was also noted. Local entrepreneurs have begun processing dendrobe extracts for consumption in a variety of forms, including granules, lozenges, capsules and other boluses, wine, tea bags and other beverages, currently focused on the local market. In addition, one company is focusing on developing the components of dendrobe reproduction (agriculture), including seedlings for commercial marketing. One other company's use of the dendrobe focuses on its fragrance, extracting esters as either raw materials or semi-manufactured goods for sale to foreign manufacturing companies. The opportunity to further explore the uses and properties of dendrobia is significant. |
| Luohanguo | *Momordica grosvenori* | It is a plant that is extremely sweet, possessing a very high proportion of glycosides, which are, moreover not sugars. As such it has a potentially important role in medical treatments relating to diabetes and obesity, and also in the development of a naturally derived low-calorie sweetener. While the traditional medicinal uses remain important and companies continue to have an interest in production of Mormordica extracts, in the form of capsules, liquids, pills, mixtures and granules for medicinal use, as well as the marketing of mormordica extracts as "healthcare beverages," others have taken an interest in producing extracts for export. |
| Golden Camellia | *Camellia chrysantha* | It is a relatively rare flower that is included in the IUCN Red List of Endangered Species. Approximately 90% of the remaining flowers in the wild are found in a relatively limited area within the Guangxi Zhuang Autonomous Region. Within that area, the camellia has a traditional use as a beverage – a use that has become known and desirable throughout China. Recognizing the potential challenges of ensuring the camellia's sustainability while encouraging the development of the market, Guangxi designated the entire area in which most of the extant wild camellias are found as a State Nature Reserve. Most of this reserve is a strict protection area, from which no collection of camellias is permitted. The remainder includes areas in which the staff of the reserve have obtained and multiplied camellia germplasm, which they have provided to a number of local companies, which multiply and cultivate the camellias ex situ, without any further need to return to the Nature reserve. |
| Xiangxi black pig | | Throughout Xiangxi Prefecture, traditional rural farming communities raise Xiangxi Black Pigs, a variety known for the excellence of the bacon and other cured meats produced. Each individual community's pigs, however, were facing a decline in the quality of breeding stock, owing to the fact that each community's selection pool was limited to pigs within that community. The arrival of public and private companies whose goals included strengthening the gene pool of the Xiangxi Black Pig, primarily through carefully monitored interbreeding of specimens obtained from all of the communities raising Xianxi Black Pigs has, in effect, rescued the species and local farming communities from the consequences of this decline. It is an ongoing process and one of great importance in China, where addressing the diminution of the number and variety of agricultural species has been identified as a governmental priority. |
| Baojing Golden tea and Guzhang Tippy tea | | The germplasm that was originally used in the development of Baojing Golden Tea and Guzhang Tippy Tea can, in each instance, be traced back to a particular tree. These two varieties of China's most important agricultural product have been chemically examined and shown to include high levels of amino acids, Theaflavin (an antioxidant polyphenol) and pectin (a natural compound with many uses). |





## General introduction

China is considered as one of the world's mega-diverse countries. China is also a country with multiple ethnic groups. The distribution of ethnic groups in varied geographic areas has enabled people to create diverse traditional knowledge in the process of conserving and sustainably using biodiversity. Such traditional knowledge includes: (1) Biological knowledge of crop resources with unique characters; (2) Traditional medicine; (3) Traditional farming methods and production models that facilitate comprehensive and recycled utilization of biological resources; (4) Traditional culture and customs that promote biodiversity conservation; and (5) Traditional biological products—including some that have been granted geographic indications. It is a party to the Convention on Biological Diversity and its Nagoya Protocol on access and benefit sharing.

However, TK associated with genetic resources is disappearing due to rapidly changing traditional lifestyles. The convenience of modern medicine, easily available modern technology, increasing connectivity with urban civilization, and the lack of awareness of the importance of TK among ethnic minorities and communities also cumulatively contribute towards the erosion of traditional knowledge. Due to almost completely lack of documented TK system, in most cases, such knowledge has been accessed and utilized without any record to be traced. Thus, it is in China's best interest to develop a systematic catalog of its TK, which is a treasure trove to the long-term social and economic development of the country.

With China's ratification of the Nagoya Protocol, documentation of TK system becomes an essential step towards implementation of NP principles and provisions effectively. The development of a systematic, comprehensive, coordinated and detailed traditional knowledge system based on national history and conditions is in urgent need in order to protect China's TK, ensuring the fair and equitable sharing of benefits arising from utilization of such knowledge system. The documented TK system can be used to calculate the actual and potential benefits from the exploration and exploitation of biological and genetic resources, which will significantly facilitate the implementation of Nagoya Protocol in the long run.

Design of National digital library of traditional knowledge associated with genetic resources

National digital library of traditional knowledge associated with genetic resources

## Contribution to Aichi Biodiversity Targets' Strategic Goal E

| | | Breakdown Target | How did you measure the outcome? | Result |
|---|---|---|---|---|
| Strategic Goal E | TARGET 17 | Submission of NBSAPs to Secretariat by (end of) 2015 | | |
| | | NBSAPs adopted as effective policy instrument | | One of China's NBSAP priority area is to carry out surey, evaluation and monitoring of biodiversity. In this area, it requires to carry out survey, compiling and cataloging of biological genetic reousrces and associated TK. The NBSAP also promotes access to, utilization and benefit sharing of genetic resources and associated TK. |
| | | NBSAPs are being implemented | | |
| | TA1RGET 18 | Traditional knowledge, innovations and practices of indigenous and local communities are respected | | |
| | | Traditional knowledge, innovations and practices are fully integrated and reflected in implementation of the Convention … | Investigation, field survey, inventory, documentation and database for traditional genetic resources and traditional knowledge by entries compilation | More than 10 000 entries for traditional GR and TK (including Tradtional Chinese Medicine, traditional agricultural technologies such as rice-fish ecosystem) have been documented for all 55 minorities in China and the research team is developing a TK digital library. |
| | | … with the full and effective participation of indigenous and local communities | How many indigenous people and local communities participated in the efforts of documenting China's TK associated with genetic resources. | More than 1000 indigenous people and local communities participated in the efforts of documentation. |
| | TARGET 19 | Knowledge, the science base and technologies relating to biodiversity, its values, functioning, status and trends, and the consequences of its loss, are improved | | |
| | | Biodiversity knowledge, the science base and technologies are widely shared and transferred and applied | | |
| | TARGET 20 | Mobilization of financial resources for implementing the Strategic Plan for Biodiversity 2011–2020 from all sources has increased substantially from 2010 levels | | |

**Relations to other Aichi Biodiversity Target & SDGs**

Please indicate the Aichi Biodiversity Targets other than the targets your working group focuses and SDGs that your activities contribute to if any. Use "●*" and "* ■" to indicate the "direct" or "indirect" contributions to the targets.

CBD Aichi Biodiversity Targets (https://www.cbd.int/sp/targets/)

| Strategic Goal A | | | | Strategic Goal B | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | |
|  |  |  |  |  |  |  |  |  |  |
| Strategic Goal C | | | Strategic Goal D | | | Strategic Goal E | | | |
| | | | | X | | | X | | |
|  |  |  |  |  |  |  |  |  |  |

UN Sustainable Development Goals (SDGs) (https://sustainabledevelopment.un.org/sdgs)


**Any difficulties you found during your assessment**

Due to rapidly changing traditional lifestyles, the convenience of modern medicine, easily available modern technology, increasing connectivity with urban civilization, and the lack of awareness of the importance of traditional knowledge among ethnic minorities and communities, the erosion of various traditional knowledge systems is increasing. The information and data available are insufficient and fragmented. The staff members responsible for documenting traditional knowledge are lack of capacity and necessary knowledge.

**Key messages for the CBD in planning for the post-2020 Targets**

We suggest that following targets could be included in the post-2020 targets:

By 2030, ILCs will be able to participate more broadly in the conservation and sustainable use of domestic biodiversity in accordance with national laws, administrative or policy measures, meanwhile their TK associated with biodiversity conservation and sustainable use is effectively protected.

By 2030, traditional knowledge associated with genetic resources of indigenous peoples and local communities are effectively protected, and the ABS regime for TK associated with genetic resources established by the CBD and its Nagoya Protocol can be effectively implemented.

By 2030, the ability of indigenous peoples and local communities to make free, prior and informed consent, approval and involvement in accordance with national laws, administrative or policy measures and customary practices has been significantly enhanced and their rights to equitable sharing of traditional knowledge-related benefits are guaranteed.