

Sustainability in the traditional Chinese medicine (TCM) sector in China: *the case for industry leadership*

In early October 2015 this year's Nobel Prize for Medicine was awarded for discoveries that have led to the development of potent new drugs against parasitic diseases including malaria and elephantiasis. In particular, Youyou Tu, China's first Nobel laureate in medicine, was awarded half of the prize for discovering *artemisinin*, a drug that has slashed malaria deaths and become the mainstay in the fight against this mosquito-borne disease. Tu, working at the China Academy of Traditional Chinese Medicine used traditional Chinese medicine (TCM) formulations from the plant *Artemisia annua* to isolate *artemisinin*.

This award has put the spotlight on the role of both medicinal plants and traditional Chinese medicine in providing an important source of modern medicines. While the majority of *Artemisia annua* is now sourced from cultivation—predominantly in Asia and Africa—and a switch to synthetically produced active ingredients is expected to reduce reliance on wild-sourced material, some *Artemisia annua* continues to be wild-harvested for trade in parts of Africa, Europe and South America. Conservation of the wild populations remains important for ensuring the genetic diversity of plants, as well as climate adaptation.

While most of the international wildlife trade attention over the past decades has been on addressing the illegal trade in threatened animals, significantly less attention has been placed on dealing with the increasing demand and scale of trade in wild medicinal and aromatic plant (MAPs). China is the largest global exporter and the origin of many such wild plants used in TCM, some of which are consumed domestically, and many others, like *Artemisia annua*, an integral component of herbal medicine and ingredients consumed worldwide. Wild plants used for medicinal purposes globally, and in China, are declining, driven partially by overharvesting to meet high demand from the TCM and herbal products industry.

According to a study undertaken by the International Trade Centre and TRAFFIC (International Trade Centre, 2015), China's 2013 export volume and value for selected MAP articles (both wild-collected and cultivated) amounted to over 1.3 billion kg, with a reported Customs value of over USD5 billion. This represented about 15.6% of total world exports of these species in terms of reported Customs value. China has an approximate 41.7% global share of trade under Customs code HS 1211 (which includes medicinal plants e.g. *Astragalus* spp., *Cordyceps sinensis*, danggui *Angelica sinensis*, ginkgo *Ginkgo biloba*, Ginseng *Panax ginseng*, Licorice *Glycyrrhiza glabra*, rhubarb *Rheum* spp., *Schisandra* spp.) exports in terms of reported value. Although it is not possible to quantify the proportion that is obtained from wild-collection versus cultivation, it is known that hundreds of Chinese MAP species are wild-collected either entirely or partially. The unpublished TRAFFIC project report on 'Policy, Laws and Regulations for Collection, Management, and Sustainable Use of Medicinal Plant Resources' provides estimates for China's TCM sector, including that in 2012, China had over 2000 TCM companies with a turnover in excess of CNY20 million (over USD3.2 million), and the TCM industry's gross output was CNY515.6 billion (over USD84 billion), of which only a fraction was exported, primarily as medicinal plants and herbal ingredients. The continuous growth creates a challenge for the TCM industry, the main user of wild plants as TCM ingredients.

Building around the TCM industry leaderships approach, TRAFFIC together with the World Federation of Chinese Medicine Societies (WFCMS), Zhejiang Wecome Pharmaceutical Ltd. (Wecome) and WWF China implemented the project "Engaging the private sector in sustainable management of medicinal plants—the multiplier effect" (abbreviated to EGP MAPs) over 29 months, finishing in July 2015. Funded under the EU-China Environmental Governance Programme, the project has contributed overall to the global theme of corporate environmental responsibility, focusing on the longer-term goal of achieving sustainable management of medicinal plants and contributing to improved rural livelihoods and environmental governance in Hunan and Zhejiang provinces of China through the establishment of green supply chains among TCM stakeholders.



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◀ **Houpu Magnolia *Magnolia officinalis***

has been assessed as Vulnerable nationally, based on a population decline in China. It is a second-class protected species in China, which means that wild harvesting of its bark, used as a popular TCM ingredient, is strictly regulated and requires a harvesting permit. The majority of *Magnolia officinalis* is at present sourced from cultivated sources, however some wild harvesting continues, for example in the EGP MAPs project site in Zhejiang province.

▼ Wild harvesters and farmers training in Zhejiang province (below left); training farmers and harvesters in practical skills in respect of *Polygonum* spp., Tangyuan village, Shangyang county, Longquan city, Zhejiang province (below centre); participants of the 2nd TCM CSR and Sustainability Forum held in April 2015 in Hangzhou, debating the CSR guidelines for the TCM sector and policy recommendations for the development of an enabling environment for sustainable sourcing practices, both developed within EGP MAPs (below right).



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The EGP MAPs project has piloted activities targeting the following groups: manufacturers and traders of TCM in Hunan and Zhejiang provinces, and wild-harvesters and farmers of TCM plants. Through the duration of the project, partners (1) supported the development and implementation of the voluntary sustainable production scheme and Corporate Social Responsibility (CSR) approaches for TCM manufacturers and traders by applying the FairWild Standard principles; (2) built capacity of wild-harvesters and farmers in sustainable practices through industry leadership on supply chain management; and (3) supported the development of an enabling policy and regulatory environment to support companies in the TCM sector in sustainable sourcing and supply chain management practices.

The project used the FairWild Standard as a best-practice framework for sustainable harvesting and equitable trade in wild plants. Eleven principles of the FairWild Standard cover social, environmental and economic aspects of sustainability—a comprehensive framework to tackling the complex issues involved in sustainable wild collection. The project also worked with a CSR framework, aiming to demonstrate the success of an innovative industry-led approach to sustainable use of wild resources.

The following major project outcomes and impacts include:

- the TCM-sector CSR guidelines developed to help businesses green their supply chain management and improve product competitiveness.
- a long-term strategy and implementation roadmap for sustainable production and supply chain management developed by targeted TCM manufacturers and traders.
- training materials aimed at manufacturers and traders on implementation of the FairWild Standard, including “train the trainer” materials.
- assessment of wild plant resources (target species Houpu *Magnolia officinalis* and Solomon’s Seal *Polygonatum* spp.) at a pilot location in Zhejiang province.
- engagement with key industry stakeholders through two TCM CSR and Sustainability Forums, convened on the platform of the Chinese Medical and Pharmaceutical Material Association (CMPMA) and the International Trade Union of Genuine Regional Materia Medica (TUGRMM), thus ensuring their continuation beyond the project’s completion.
- development of case studies on sustainable wild-collection worldwide and the implementation of best practices.
- examination of the feasibility of introducing voluntary certification schemes in China.
- the training of 1105 wild-harvesters and farmers on wild-collection, sustainable harvesting and production following the FairWild Standard in Hunan and Zhejiang provinces.
- establishment and legal registration of a national Farmer Association on TCM Sustainable Development under the CMPMA. The association enables sustainable production practices and extends market opportunities for sustainably sourced products, in particular *Polygonatum cyrtoneum* and *Polygonatum filipes* (*Rhizoma Polygonati*).
- research to understand the dynamics of international markets, including the EU, for sustainably-certified wild-collected botanical ingredients from China.
- a thorough review of national laws, administrative regulations, programmes and policies governing the collection, management and use of medicinal plant resources in China and the development of policy recommendations. The policy recommendations were designed targeting four distinct stakeholder groups that influence conservation, management, use and trade of wild medicinal plant resources in China:

(1) **Legislative government agencies at all levels, and law enforcement agencies**, to accelerate the revision of existing legislation concerning TCM, in particular the *Regulations of Wild Medicinal Resources*; to clarify plant resources property regime and the collection permits system; to strengthen law enforcement for conservation and sustainable use; to support collaboration among different Ministries; to use the rigorous Non-Detriment Findings guidance for trade in CITES-listed species; and to include the sustainable use and trade in wild plants within China’s Strategy for Plant Conservation, in line with the country’s CBD commitments.

(2) **Specialized government agencies responsible for enabling and implementing policies**, to set up the preferential mechanisms and favourable economic policies for sustainable performance of companies, and to conduct a comprehensive economic valuation of China’s wild medicinal plant resources.

(3) **Relevant research institutions**, to conduct a nationwide survey of medicinal plant resources in line with the “China National Plan for TCM plants protection and development 2015–2020”; a nationwide assessment of the conservation status of medicinal plants using widely recognized conservation tools such as the IUCN Red List criteria; to establish pilots for conservation and sustainable use of wild plants; and to compile the national programme for protection and sustainable use of medicinal plant resources.

(4) **Companies and relevant industry associations**, to implement international best practices; pilot certification that meets international benchmarks such as the FairWild Standard; support companies’ introduction of risk analysis and resource assessment for the plant ingredients in their products; promote the sustainable consumption of TCM products and the importance of sustainable and legal sourcing of TCM ingredients among domestic and international consumers; and encourage the development of long-term relationships with wild-harvesting communities based on the principles of mutual respect and equitable trade, among others.

The integrity of TCM development is dependent on a sustainable TCM sector, which in turn depends on sustainable use of medicinal plant resources and responsible business practices. The recognition of this dependence by industry actors within China is slow, but is necessary considering the impact of this sector on species and on rural livelihoods, and its importance to healthcare and trade opportunities. This project was a first important step on the pathway towards sustainable supply chains in the Chinese TCM industry, and provides an important model for future development.

More information: www.traffic.org/egp-maps.

REFERENCES

- Timoshyna A., Li Chenyang, Ke Zhang, Morgan, B., and Tsipidis, V. (2015). *Engaging China’s private sector in sustainable management of medicinal plants (EGP MAPs—the multiplier effect)*. TRAFFIC. Cambridge.
- International Trade Centre (2015). *Market Potential for Wild-Collected Chinese Medicinal and Aromatic Plants with Sustainability Certifications*, International Trade Centre, Geneva, Switzerland.

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