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SWEET DREAMS

ASSESSING OPPORTUNITIES AND THREATS
IN KAZAKHSTAN'S WILD LIQUORICE ROOT TRADE

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JOINT REPORT

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ACRONYMS AND ABBREVIATIONS

ACBK	Association for the Conservation of Biodiversity of Kazakhstan
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
CCCCS	Commodity Classification for China Customs Statistics
EurAsEC	Eurasian Economic Customs Union
IUCN	International Union for the Conservation of Nature
KNCF	Keidanren Nature Conservation Fund
KZT	Kazakhstan Tenge
LLP	Limited Liability partnership
MEGNR RK	Ministry of Ecology, Geology and Natural Resources of the Republic of Kazakh-stan
NGO	Non-governmental Organisation
PAs	Protected Areas
SP	Sole proprietorship
USA	United States of America
USD	United States Dollar
USSR	Union of Soviet Socialist Republics





INTRODUCTION

THE GLOBAL CONSERVATION OF MEDICINAL AND AROMATIC PLANTS IS AS IMPORTANT FOR GLOBAL WILDLIFE POPULATIONS AS IT IS FOR HUMAN ONES.

Developing long-lasting approaches for the conservation, reproduction, and sustainable use of these economically and ecologically valuable plants is as critical for the preservation of the ecosystems in which they grow as it is for the communities and consumers who rely on them. This is especially true in the Republic of Kazakhstan (hereafter Kazakhstan), which has a long history of rural wild harvesting of licorice, which has often been a primary source of revenue for many wild harvesters.



Wild licorice harvesters collect roots for processing



Of the five Fabaceae species of liquorice *Glycyrrhiza* spp. found in Kazakhstan, the two priority and economically valuable species are Common liquorice *G. glabra* L. and Chinese liquorice *Glycyrrhiza uralensis* Fisch, which grow in the valleys of the steppe and desert regions (Кукенова, 1996).

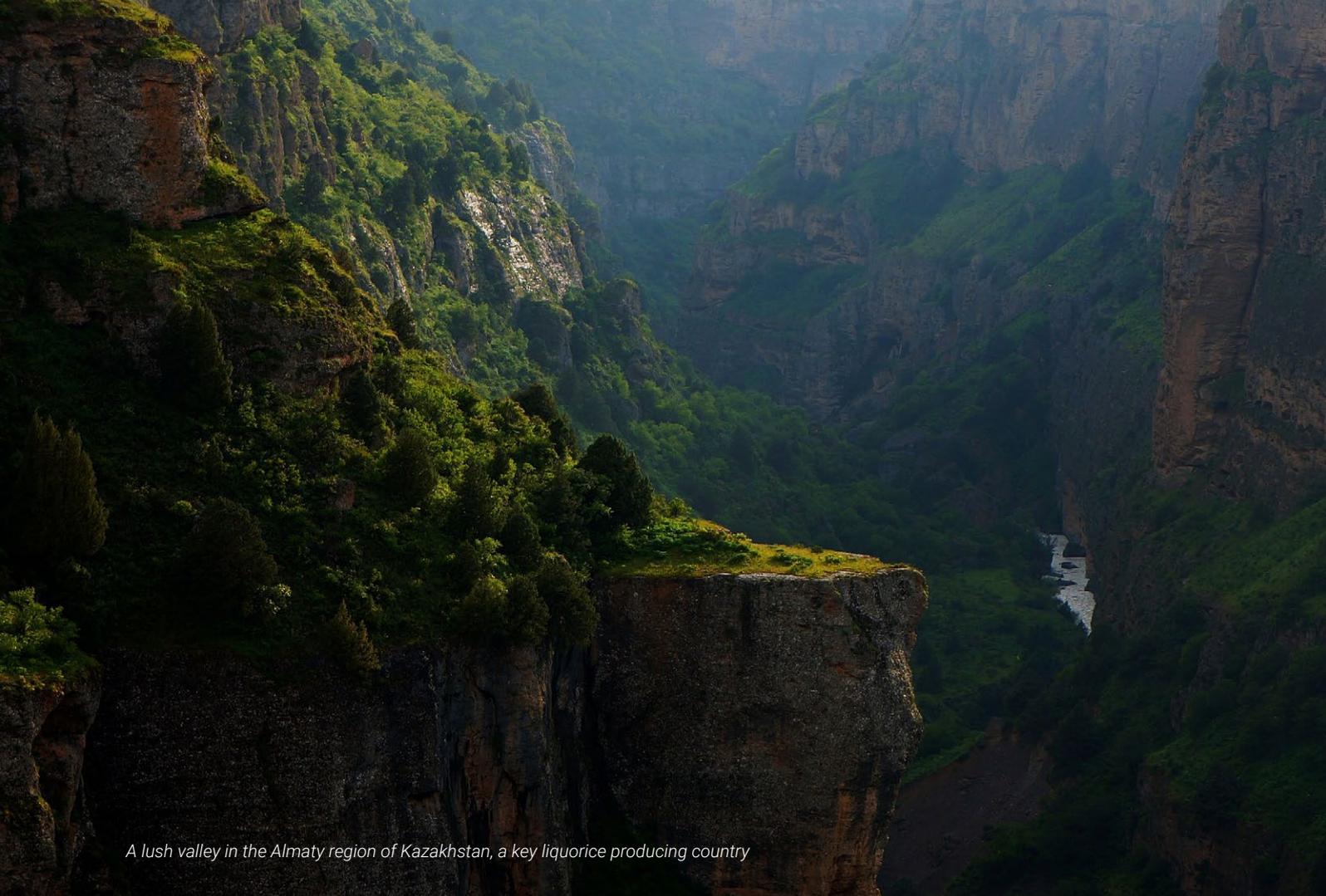
Liquorice root is exported from Kazakhstan and used globally by numerous industries. Liquorice contains many biologically active compounds, including glycyrrhizic and glycyrrhetic acids, with multiple products, including medicines herbal teas and cosmetic products containing liquorice as an ingredient. Despite its wide use, the understanding of conservation and social risks, surrounding the trade in wild liquorice root, is limited.

This report on liquorice trade in Kazakhstan is produced under the project: "Shifting trade in liquorice root (Kanzō) from Central Asia towards sustainability. The project aims to reduce the current unsustainable commercial harvest, which poses a threat to biodiversity conservation, and to scale up successful sustainable and wild liquorice root production from which local people and nature benefit, in the key sourcing areas in Central Asia (including Kazakhstan, Kyrgyzstan, Uzbekistan, Tajikistan and Turkmenistan). The project also aims to expand the levels of production and sustainable harvesting of wild liquorice root, for the benefit of local people and the wider environment.

**glycyrric /
glycyrrhetic**
acids are biologically
active and medicinal
compounds found in
liquorice

**five
liquorice
species**
grow in
Kazakhstan

This report provides an introduction into the harvesting and use of liquorice root in Kazakhstan, including the estimates of resource base and of sustainable supply of liquorice root. This is followed by a description of legislation and policies around harvesting and trade of liquorice root in Kazakhstan, a summary of harvesting methods, threats to the species, an overview of the liquorice trade in Kazakhstan, describing key stakeholders involved and a series of proposed recommendations to enable various stakeholders to develop strategies for sustainable use and the conservation of wild liquorice.



A lush valley in the Almaty region of Kazakhstan, a key liquorice producing country

LIQUORICE RESOURCES AND STOCK STATUS IN KAZAKHSTAN

CHINESE LIQUORICE *GLYCYRRHIZA URALENSIS* IS A CHARACTERISTIC SPECIES OF THE CENTRAL ASIAN REGION.

Chinese liquorice *Glycyrrhiza uralensis* is a perennial herbaceous rhizome plant that grows 50–70 (occasionally 100) cm tall in the steppes on solonchic soil meadows and Tugay vegetation along mountain rivers banks up to 3,000 m elevation. The species is characteristic of the Central Asian region (Figure 1) and occurs in central, south-eastern and eastern Kazakhstan (Shu, Ili, Karatal, Aksu, Lepsy, and Ayaguz valleys, Tentek rivers and around Alakol and Sasykkol lakes).

Common liquorice *Glycyrrhiza glabra* is a perennial herb that grows 30–80 (occasionally 150) cm tall in steppes, semi-deserts and deserts, on solonchic soil meadows and in Tugay vegetation with a shallow deposit

of groundwater. The species ranges from the Mediterranean to north-eastern parts of Mongolia (Figure 2) and is found in western (Ural and Bolshoi valleys, Maliy Uzen, Kushum, and Ilek rivers), southern (Syrdarya floodplain), south-eastern (Shu and Ili river valleys) Kazakhstan [Кукенова, 1996].

Botanically, the two species can be told apart by the appearance of their fruit, the shape of their leaves and the size of their flowers, although their main difference is in their seed pods. Those of *G. uralensis* are rectangular, strongly crescent-shaped, and with thick glandular spines, while those of *G. glabra* are rectangular, straight or slightly curved, and bare or with sparse glandular spines (Figure 3).

FIGURE 1

Distribution of Glycyrrhiza uralensis.

Source: *Plants of the World Online*

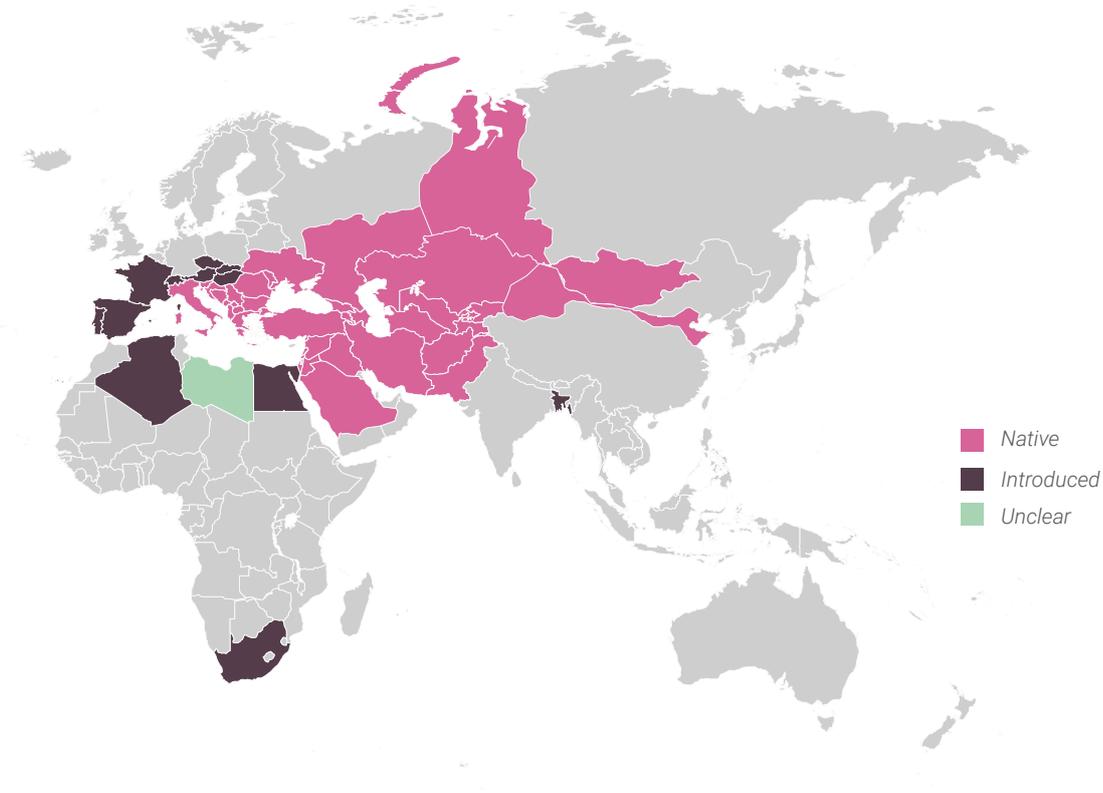
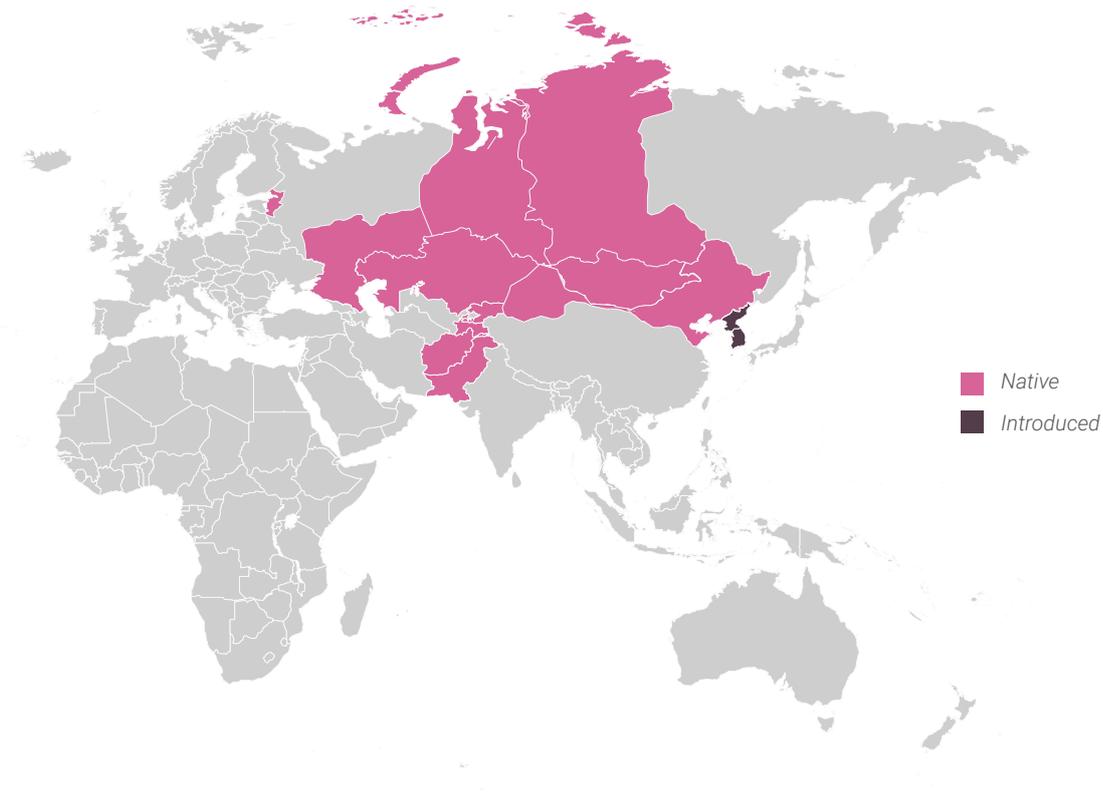


FIGURE 2

Distribution of Glycyrrhiza glabra.

Source: *Plants of the World Online*





3000 BCE

is the earliest recorded date of medicinal liquorice root use

Liquorice root use in medicine dates to the third millennium BCE when it was used in China, Greece, India, Italy (Rome), (C. Fiore, *et al*, 2005). In Kazakhstan, liquorice root was harvested for export from the middle of the 19th century and has been processed in Uralsk since 1898 (Обухов, 1926).

Long-term intensive use has led to a depletion in liquorice resources, exacerbated in recent decades by desertification, changes in the hydrological regime of rivers caused by the construction of dams and other facilities, the ploughing up of liquorice stands for agricultural crops, excessive root harvesting and over-exploitation of natural resources.

The study and identification of wild liquorice resources has been and remains an important area of scientific research in Kazakhstan. In the 1960s, numerous expeditions took place to locate liquorice growing areas in the country. By 1970, the largest liquorice populations had been identified in the valleys of Kazakhstan's biggest rivers: the Ural, Syrdarya, Ili, Irtysh, Chu, and Karatal and in several regions: West Kazakhstan (now known as the Ural region), Kyzylordy, South Kazakhstan. Estimated stocks of dry liquorice root in Kazakhstan amounted to 175,200 tonnes in an area of 50,200 ha (Table 1) (Кузьмин *et al.*, 2013).



FIGURE 3

Glycyrrhiza uralensis and *G. glabra* (a – blossom, b – fruits).

TABLE 1

Stages of wild liquorice population research by resource botanists.

	STAGES OF LIQUORICE RESEARCH	AREA OF STANDS (1,000 HA)	OPERATIONAL RESERVES OF DRY ROOT (1,000 T)
1860s	Research into wild liquorice resources began.	–	–
1970	Large liquorice resources explored in desert river valleys and several regions of Kazakhstan.	50.2	175.2
1991	Surveys find reserves of liquorice in Kazakhstan reduced by almost half.	32.5	78.1
2012–2013	After the collapse of the former Soviet Union, liquorice demand falls, liquorice factories close, liquorice stands re-generate and their total area exceeds 1991 levels.	17.7	120.7

TABLE 2

Liquorice root stocks in parts of Kyzylordy and South Kazakhstan (1970–2012).

REGION	AREA (THOUSANDS HA)			OPERATIONAL STOCK (THOUSAND T)		
	1970	1993	2012	1970	1993	2012
South Kazakhstan (Turki-stan district)	1.1	0.8	1.6	4.8	2.4	7.9
Kyzylordy (Shielinsky, Zhanakorgansky districts)	4.1	2.6	4.2	15.8	11.0	25.2
TOTAL	5.2	3.4	5.8	20.6	13.4	33.1

Stocks of liquorice root during the 20-year Soviet rule decreased by almost half and amounted to 78,100 tonnes in an area of 32,500 ha. The period was associated with intensive economic activities of construction of irrigation facilities, ploughing of liquorice meadows for grain and vegetable crops, and intensive livestock raising. In addition, intensive and destructive harvesting of liquorice took place, which was subsequently processed within the country and exported.

After the collapse of the former Soviet Union (USSR), agricultural lands were not used, livestock farming decreased, the demand for liquorice dropped, and liquorice factories in the cities of Uralsk and Chardzhou closed. Consequently, liquorice stands began regenerating, and in some parts of Kyzylordy and South Kazakhstan (now Turkistan),

estimated reserves even exceeded their 1970 levels (Table 2) (Кузьмин *et al.*, 2013).

According to data presented by the Institute of Botany and Phytointroduction at the interregional «Сохраним лекарственные растения» (“Let’s save medicinal plants”) forum in 2017 (Figure 4), reserves of liquorice root in 21 districts within four (out of five key areas) regions of Kazakhstan totalled 120,700 tonnes in a total area of 17,722.9 ha. In terms of the area occupied by liquorice and their reserves of raw materials, Kyzylordy region was the biggest, followed by South Kazakhstan (now Turkistan), Zhambyl, and Almaty regions (Table 3). The five regions identified by research botanists as the main harvesting centres for *Glycyrrhiza uralensis* and *G. glabra*.

120,700 t
of liquorice
reserves across
4 key areas were
reported in 2017

FIGURE 4

The «Сохраним лекарственные растения» (“Let’s save medicinal plants”) forum in 2017



TABLE 3

Available summary data on commercial liquorice stocks (Source: Institute of Botany and Phytointroduction, 2017)

REGION	YEARS OF RESEARCH	NUMBER OF DISTRICTS RESEARCHED	AREA OCCUPIED BY LIQUORICE (HA)	OPERATIONAL AIR-DRIED ROOT STOCK (T)	RECOMMENDED ANNUAL PRODUCTION (T)
Kyzylordy	2012, 2013	6	11,618.2	72,773.5	12,128.4
Zhambyl	2012, 2013	7	2,934.9	20,717.5	3,451.9
Turkistan	2012, 2013	6	2,444.8	22,048.2	3,673.8
Almaty	2015, 2016	2	725.0	5,141.0	856.8
TOTAL		21	17,722.9	120,680.2	20,110.9

The data presented here may no longer correspond to the actual resource potential of natural liquorice in areas where intensive and uncontrolled harvesting has taken place in Kazakhstan: an up-to-date assessment is urgently needed.

FIGURE 5

The main places of growth and harvesting of liquorice in the territory of West Kazakhstan, Kyzylordy, Turkistan, Zhambyl and Almaty regions



A flowering liquorice plant



LEGISLATION ON THE WILD HARVESTING OF LIQUORICE

LIQUORICE ROOT IS HARVESTED ON TWO TYPES OF LAND IN KAZAKHSTAN: STATE-OWNED AND AGRICULTURAL LAND, WITH A MAJORITY OF THE LIQUORICE HARVESTED ON AGRICULTURAL LAND. THESE REPRESENT 80.4% OF KAZAKHSTAN'S TERRITORY (WORLDBANK, 2016).

STATE-OWNED LANDS

The state-owned lands where liquorice harvesting is taking place are Protected Areas (PAs) and lands of the Forest Fund including forests, grazing land, open forest stands, hayfields and other lands.

based on belonging to a particular category. The collection of medicinal plants such as liquorice in Kazakhstan is regulated only on state-owned lands of the Forest Fund and protected areas. On state-owned lands the harvest is regulated through specific legislation¹, for example there is resource monitoring by state forest service control and designation of sustainable harvest volumes of liquorice root.

80.4%
of Kazakhstan's
land is classified
as agricultural

The Land Code of the Republic of Kazakhstan subdivides its territory into categories that determine their use (Anon., 2003). The legal status and permitted use of a land is determined

In order to harvest wild liquorice root, a biological justification (see Box 1) needs to be first obtained, for harvesting from both agricultural and state-owned lands. In the case of agricultural lands, a consent needs to also be received from the land-owner.

Harvesting and selling more liquorice root than the volumes indicated in the biological justifications, is considered illegal. The procedures (underpinned by the relevant legislation) for control of this, however, are only established for state-owned land.

NON-STATE-OWNED “AGRICULTURAL” LANDS

The measures applied in the state-owned lands cannot be implemented for the agricultural lands, since there is no legislative document to reference. And, since liquorice is not listed in the “Red Book of Kazakhstan” of threatened species, harvesting liquorice on agricultural lands is considered to be an agricultural resource use.

The lack of a regulatory framework and uncontrolled, unsustainable harvesting of plants hinders investment in the liquorice industry and the creation of processing plants in Kazakhstan (Акжолова, 2017; Anon., 2017). The Ministry of Ecology, Geology and Natural Resources developed a draft law to strengthen protection measures and improve flora protection and use on Forest Fund and other lands, which was approved at a meeting of the Interdepartmental Commission. The draft recognises that currently only national Forest Fund land and PAs receive protection. However, these only cover 29.4 million ha, or 10.8% of Kazakhstan’s territory: state-owned forested areas comprise 12.7 million ha (with a majority of them classified as PAs), and protected areas 24.4 million ha of the total area of the country.

The draft regulation was further developed by a working group, which included experts from the Institute of Botany and Phytointroduction, as well as representatives and experts of

Kazakhstani environmental non-governmental organisations (NGOs). Adoption of the bill would resolve outstanding issues relating to the protection and use of flora, including conditions for conservation, reproduction, and rational use of natural vegetation resources across the whole country. The final development of the bill is set for 2021.

OTHER RELEVANT LEGISLATION

The following laws relate to regulation of plant and vegetation use and are relevant when looking into the regulatory framework of liquorice root supply-chains:

- *Environmental Code of the Republic of Kazakhstan*: the norms of the code relate only to the establishment of environmental requirements for the protection and use of certain species of plant resources. It also provides a framework law on environmental protection, and as such is relevant to the liquorice sector.
- *The Land and Water Codes of the Republic of Kazakhstan*: dealing with vegetation issues in relation to the protection and use of land and water resources. Those codes are in charge of the zoning, protection and rational use of lands. In the case of liquorice, the type of land is a central factor for its conservation and the definition of rational use as well. The Land and Water Codes define use and protection of subsoil, waters, atmospheric air, the woods and other vegetation, fauna, objects of the environment having special ecological, scientific and cultural value, especially protected natural territories.
- *Entrepreneurial Code*: mainly related to the ownership of forest resources. In the case of liquorice, the Code regulates net income through the use of property, production, sale of goods, performance of work, provision of services, so the access and trade in liquorice by harvesters falls into this scope.

biological justification needs to be obtained before harvesting of liquorice can occur

liquorice exports
require
mandatory
licenses

The Law of the Republic of Kazakhstan “On architectural, urban planning and construction activities in the Republic of Kazakhstan” relates to issues of preserving protected landscapes during design and construction, as well as landscaping of settlements. The Law On Pastures, adopted on 20 February 2017 provides legal regulation of plant resources in pastures (about 179.9 million ha, approximately 66% of Kazakhstan’s territory). However, it does not cover issues concerning other plant species and vegetation (for example, medicinal plant raw materials, perennial plantings, genetic and other plant resources).

Liquorice root is included in the Unified List of Goods, to which prohibitions and restrictions on import or export are applied by member states of the Eurasian Economic Customs Union (EurAsEC) in trade with third countries (Anon.

2012). In accordance with this, the export of liquorice root is subject to mandatory licensing. Export licences are issued by the Committee for Forestry and Wildlife of the Ministry of Ecology, Geology and Natural Resources.

Export of wild animals, plant and medicinal raw materials from the EurAsEC is determined by the Regulation on the Export from the Customs Territory of the Eurasian Economic Union of Live Wild Animals, Individual Wild Plants and Wild Medicinal Raw Materials. Specific species of flora and fauna, including liquorice root, found in Kazakhstan are included in section 2.6 of the unified list of goods provided under the protocol on non-tariff regulations in relation to third countries (Appendix No. 7 to the Treaty on the Eurasian Economic Union dated 29th May 2014 (Anon. 2014)).

BOX 1

BIOLOGICAL JUSTIFICATION FOR THE USE OF WILD FLORA AND FAUNA

A “biological justification” is a scientific conclusion necessary prior to any use (agricultural, scientific, etc.) of natural resources of Kazakhstan. It is established legally by the 2004 Law “On protection, reproduction and usage of flora and fauna wildlife objects”, that also includes measures for non-compliance. A biological justification contains scientific conclusions estimating resource availability and

sustainable harvesting quantities and is issued by an appropriate institution. In the case of flora, the Institute of Botany and Phytointroduction is an appointed institution to issue biological justifications. This procedure does not apply to species listed in the Red Data Book of Kazakhstan, nor to native species listed in the CITES Appendices, the use of these species is regulated under different laws.



Processed liquorice root ready for export



A tractor digs up wild liquorice root for harvesters to collect

HARVESTING METHODS USED TO HARVEST LIQUORICE

Over the years, specialists at the Institute of Botany and Phytointroduction have developed scientific recommendations for sustainable utilisation of wild liquorice population (Михайлова, 1966; Худайбергенов, 1970; Худайбергенов, 1979; Анон, 1981; Исамбаев et al., 1991; Исамбаев, 1994; Худайбергенов, 1990; Кузьмин, 1997; Кузьмин, 2011; Кузьмин et al., 2014; Гемеджиева, 2016).

Based on research into wild and cultivated liquorice in the Syrdarya and Ural river valleys, the period for restoration of wild liquorice stands following industrial harvesting has been established experimentally. Harvesting of raw materials in the same area should only take place again after 6–8 years. After this time stands are usually completely restored (Быкова, 2016). The restoration period for root reserves recommended in by the botanical experts is 5–6 years in the Ural river valley in western Kazakhstan, and 4–5 years in the Syrdarya river valley in South Kazakhstan. The compliance with those recommended restoration periods is mandatory but only

implemented on the state-owned lands where there is an appropriate regulation underpinning the enforcement (Анон., 1981).

According to these recommendations, liquorice root can be harvested from March to November, depending on the characteristics of the harvesting area. Commercial harvesting of liquorice root is carried out mechanically— with a plantation plough pulled by a tractor. Ploughing for liquorice root harvesting must be carried out to a depth of 40 cm in river floodplains, to 60 cm in steppe depressions while for small liquorice stands the roots are dug out by hand, with shovels. The roots and rhizomes are separated from the aerial shoots and the roots of other plants. Only healthy light-yellow roots are selected. The harvested roots and rhizomes should be 5 to 50 mm (or more) thick and the length can also vary. Only three-quarters of all the roots and rhizomes should be selected, leaving a quarter of rhizomes in the soil to regenerate the liquorice population by vegetative propagation.

6-8 years

the recommended period between liquorice harvesting to allow for regeneration

After harvesting, cutting and cleaning, the raw materials are put into loose stacks for air circulation. Root cleaning is done using specialised machinery or simpler tools such as spin dryers. The roots can be dried under sheds with good ventilation or in dryers at a

temperature not exceeding 60 °C. A root is considered dry when it breaks when bent.

Following mechanised root harvesting, measures must be taken to accelerate the restoration of liquorice stands. These include:

1. **tillage immediately** after harvesting by disking, harrowing and rolling
2. **short-term flooding** of ploughed areas
3. **control of weeds** by spring disking of the soil
4. **mowing weeds** for hay and silage in June–July before flowering occurs
5. **clearing fields** from dry weeds in the autumn

POTENTIAL THREATS TO LIQUORICE SPECIES IN KAZAKHSTAN

The main threats to liquorice species include unregulated, uncontrolled, destructive harvesting and the lack of a regulatory framework that ensures the sustainable use of medicinal plant resources in Kazakhstan (described in Chapter 4).

Uncontrolled and destructive harvesting of liquorice root in Kyzylordy, South Kazakhstan (now Turkistan), Zhambyl, West Kazakhstan, and Almaty, for export of raw materials are also current threats to the species. In recent decades, this has been exacerbated by global desertification processes, changes in river hydrological regimes during the construction of dams and other facilities and the ploughing of liquorice stands for agricultural crops.

Root harvesting that does not follow collection protocols that take into account the biological characteristics of the species, destroys natural populations of liquorice, and uncontrolled harvesting poses a direct threat to the conservation of biodiversity and is frequently reported in the media. Illegal harvesting of liquorice root without licences, permits, paying taxes and commissions also impacts regeneration. Not only are the recommended practices of harvesting are not followed, the frequency of collection recommended by scientists—once every six years to restore the population after harvesting—is also ignored. Destructive harvesting practices are carried out by harvesters who enter liquorice stands without permission and use tractors to turn over deep layers of earth to expose the liquorice roots and sometimes burn important tugai vegetation such as *Tamarix* *Tamaricaceae* spp. and *Halimodendron halodendron* populations in their way. Hastily harvested large roots are

collected, leaving the exposed, small, non-marketable roots to dry out in the ploughed land. As a result the vegetation perishes, ecosystems are disrupted, pastures and animal feed disappear, and local livelihoods are affected. It is not uncommon for such harvesters to leave landowners with a field full of huge furrows (Anon., 2017). Not only the recommended practices of harvesting are not followed, the frequency of collection recommended by scientists—once every six years to restore the population after harvesting—is also ignored.

Twice a year—in spring and autumn—unorganised harvesters plough the Syrdarya river floodplain in search of liquorice roots, hiring local harvesters to assist who get paid Kazakhstan Tenge KZT 34 per kilogramme of dry roots (USD 0.22 at 2014 rates). On the international market, foreign buyers pay root suppliers KZT 305,000–380,000 (United States Dollar USD 2,000–2,500 at 2014 rates) for a tonne of dried root, a more than tenfold mark up (Anon., 2012; Anon., 2014; Сактапова, 2014; Доброта, 2014; Акжолова, 2017; Титенок, 2013). This represents good earnings for a village, so there is little consideration for the environmental harm done by excessive digging for roots, which leads to disruption of the soil structure and the increased water run-off and erosion, in turn, flooding of dams could cause them to break which could cause significant damage.

To conserve liquorice, it is necessary to implement a strategy for the restoration of natural population after harvesting raw materials, control the frequency of liquorice root harvesting, develop and implement an appropriate legislative framework.



destructive harvesting

practices are a serious threat to the species across a number of regions

desertification and landscape changes

due to dam construction exacerbates threats posed by destructive harvesting



A rural dwelling sits on the side of a valley in the Almaty region

CHARACTERISTICS OF THE LIQUORICE MARKET IN KAZAKHSTAN

LIQUORICE TRADE CHAINS (HARVESTERS, PROCESSORS, EXPORTERS)

Frequently suppliers (often also exporters) represented by an LLP or SP (cf. Box 2), after receiving permits for root harvesting in a specific administrative district, simply purchase raw materials from local people or hire harvesters, who do not have permits or follow the harvesting rules (pers.comm., Department of Ecology to N. Gemedzhieva, 2020).

According to law enforcement agencies in the Turkistan region, there is evidence of the engagement of local residents without permits in root extraction. Subsequently, they sell their harvest to resellers, who hand over the product at collection points for export (Галушко, 2017). Unmanaged harvesting by non-specialist harvesters inevitably results in protocols not

being followed, with negative impacts on the environment. The large manufacturing factories, because of their commercial relations with important foreign companies who require trustable and safe supplies, tend to purchase raw materials only from LLPs who use more traditional harvesting methods.² There are also LLPs who apply international standards such as ISO standard to their harvesting methods who guarantee the traceability and legality of the supply-chain.

Some LLPs and SPs, having obtained a significant quantity of roots from local people and collectors, the origin of which is difficult to establish, do seek opportunities to acquire permits.

BOX 2

COMPANIES PURCHASING LIQUORICE

A limited liability partnership (LLP) or sole proprietorship (SP) are administrative entities that buy raw materials harvested from local harvesters or harvest directly and are allowed to sell unprocessed raw materials abroad. In both cases, the raw materials extraction and trade need to be accompanied by a “biological justification” license (Box 1) and an export

licence. LLP or SP are the entities selling the roots in different areas of a district, or even in another region. In some cases, they sell raw materials without a “biological justification” to foreign traders or resell them to other LLPs that have permits for other areas and an export license.

TRADE VOLUMES AND TURNOVER

To obtain information on the volumes of liquorice root in trade in Kazakhstan, the Association for the Conservation of Biodiversity of Kazakhstan (ACBK) contacted the following:

1. Regional Departments of Ecology of the Committee for Environmental Regulation and Control
2. the Ministry of Energy of the Republic of Kazakhstan
3. Committee of Forestry and Wildlife of the Ministry of Ecology, Geology and Natural Resources (MEGNR) of the Republic of Kazakhstan
4. Regional Departments of Natural Resources and Environmental Management

The ACBK also contacted the State Revenue Committee of the Ministry of Finance of the Republic of Kazakhstan for information on LLPs and SPs that had received export licence for liquorice root and for information on the export volumes of liquorice root collected in the Kyzylordy, Turkistan, Zhambyl, West Kazakhstan, and Almaty regions for the period from 2010 to 2019. In total, seven responses were received; too few to enable an objective analysis. The data obtained from official sources turned out to be incomplete, both in terms of the list of procurers and the years of procurement, and there was no information on the number of officially issued licences over the ten-year period.

Instead, a preliminary list of at least 40 SPs and LLPs involved in the collection and export of liquorice root in Kazakhstan was compiled, based on the collation of information from various official and unofficial sources. However,

only a quarter of these were regular procurers of liquorice root, active in the market for more than five years.

They included: Alban Raimbek LTD LLP (Almaty region), Bek-Nur-Rus LLP (Turkistan, West Kazakhstan region), Seyitbek aulete LLP (Turkistan, Kyzylordy region), JV KazMiya LLP, (Zhambyl region), Sätti Tirlík LLP (Zhambyl region), EuroNur LLP (Zhambyl, Kyzylordy regions), Liquorice Priuralia LLP, Liquorice Kazakhstan LLP (West Kazakhstan region), ALUA LLP (West Kazakhstan region), Asia Gold LLP (Almaty region).

To date, five factories processing liquorice root have been built in Kazakhstan, based in the main liquorice root production and harvesting regions in West Kazakhstan (2), Kyzylordy (2), and Zhambyl (1). A factory for the production of liquorice extract in the Almaty region is planned to open in 2020–2021 (Table 4).

40

SPs and LLPs involved in collection and export were included in the data



Wild harvesters collect liquorice roots after a tractor has dug up the plants

BOX 3

WHO ARE THE LIQUORICE HARVESTERS?

In Kazakhstan, most wild liquorice harvesters are from rural villages, typically with low income, where yearly harvest of the wild root is the only source of stable income. The only option to maximise income is to harvest as much as possible, at highly unsustainable rates, much of which is traded internationally through

illegal supply chains. Wild liquorice harvesters are predominantly male (10% women), with female participation increasing in liquorice processing (40% women). Using safe, fair and more sustainable harvesting and production schemes, could provide more suitable working conditions for women harvesters/workers.

TABLE 4

Kazakhstani factories processing liquorice root (source: Internet research).

NAME (YEAR OF OPENING)	LOCATION (REGION, DISTRICT)	STATUS
Plant "Liquorice Priuralia" LLP (2007)	West Kazakhstan, Uralsk city	Liquorice extract is produced by a diffusion method so the finished product contains the maximum amount of nutrients.
Liquorice root processing plant "Liquorice Kazakhstan" LLP (since November 2011)	West Kazakhstan, Uralsk city	Currently produces liquorice root extract at only 50% of its capacity, but has the potential to produce 1,000 tonnes per year; some 3% of global liquorice processing.
Plant for the cultivation and processing of liquorice root "BIS Group" LLP (since December 2014)	Kyzylordy, Zhalagashsky	Production suspended in March 2017 owing to a drop in market prices and inefficient operation. Recently bought by a Chinese investor and export production resumed.
Pharmaceutical plant for the processing of liquorice root "Miya Shieli" LLP (since November 2014)	Kyzylordy, Shieliyskiy	Production suspended, although now under new management via a Chinese investor.
The plant is a joint Kazakh-Japanese venture "JV KazMiya" LLP (since December 2016)	Zhambyl, Shusky	Production of extract and glycyrrhizic acid.
Plant for the production of liquorice extract "ECO Stove" LLP	Almaty, Balkhashsky	Planned to operate from 2021

Kazakhstan's factories, built between 2007 and 2016, focus on exporting raw plant materials, with the main destinations being: China, Japan, Canada, USA, Turkey, Germany, India, and South Korea. Currently, some factories are either suspended or operate at 50% of their capacity only even though the world market demand for liquorice root remains high. As of January 2017, Kazakhstan sold raw liquorice root (washed, dried, ground, chopped) at only KZT 180,000 (USD 540 at 2017 rates) per tonne. Processing

roots to produce liquorice extract results in a sixfold loss in weight but a significant price increase of up to KZT1.2 million (USD 3600 at 2017 rates) per tonne (Денисова, 2017).

The value of liquorice extract from Kazakhstan can vary greatly depending on the country/region of import according to an analysis by the national agency for export and investment "KAZNEX INVEST" (Куатова & Сакипова, 2014) (Table 5).

sixfold price increase
from processing raw roots to produce liquorice extract

TABLE 5

Value of liquorice extract from Kazakhstan according to importing country/region (Куатова & Сакипова, 2014).

COUNTRY/REGION OF IMPORT	COST PER TONNE (USD AT 2008 RATE)
South Korea	232,000
Japan	116,677
Australia	37,000
Italy	18,065
Switzerland	16,927
Taiwan ³	14,000
Netherlands	13,286
Sweden	13,000
India	9,071
Iran	4,793
Turkmenistan	4,611
Ukraine	3,762
Mainland China	3,630
Pakistan	739

REPORTED INTERNATIONAL EXPORT OF LIQUORICE FROM KAZAKHSTAN

To document the international export of liquorice from Kazakhstan, available data for the years 2010 to 2019 were analysed from the United Nations Commodity Trade Statistics Database (UN Comtrade).

This database contains detailed imports and exports statistics reported by authorities of close to 200 countries/regions and is considered the most comprehensive trade database available with more than one billion records.

Data are reported under specific Customs Codes that follow a harmonised and standardised system. The two relevant Harmonised System (HS) codes for liquorice were:

- **HS1211.10:** Liquorice roots used primarily in perfumery, in pharmacy or for insecticidal, fungicidal or similar purposes; fresh or dried, whether or not cut, crushed or powdered
- **HS1302.12:** Vegetable saps and extracts; of liquorice

However, the HS code for HS1211.10 was deleted in the 2006 Amendment of the HS code system (World Customs Organisation, 2007), effective from 2007. Liquorice root trade data is reported under the aggregated code HS1211⁴.

Most liquorice business in Kazakhstan is related to the export of raw materials i.e. liquorice roots, while the export of processed products is significantly lower. However, data on export of liquorice roots were not available for this analysis, partly because they are no

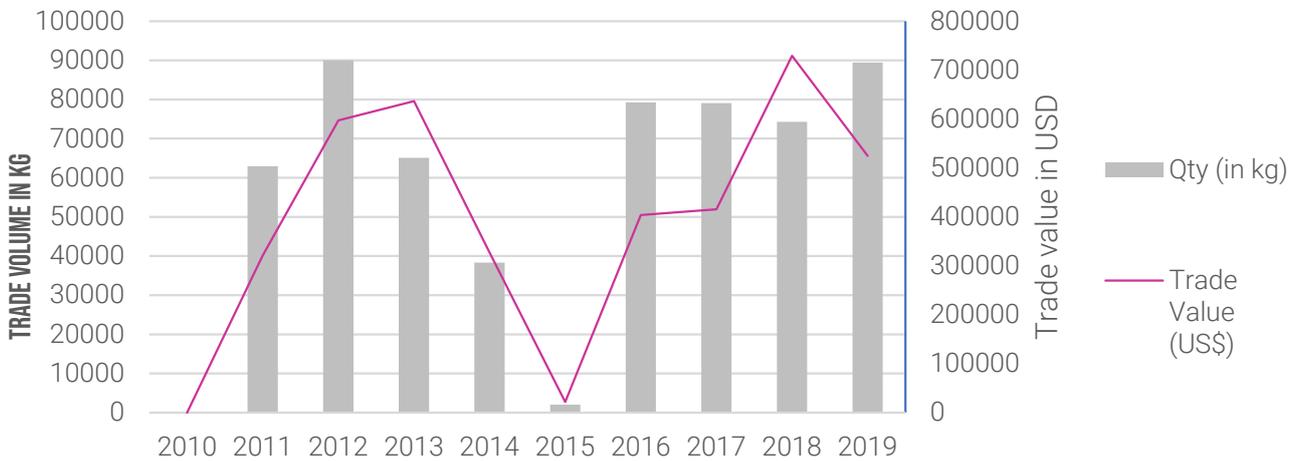
longer reported under the specific HS code, and because data shared on liquorice root export by the Ministry of Finance were not complete.

Hence only trade reported under HS Code 1302.12 can be further analysed (Figures 6 and 7). Data was downloaded for the years 2010 to 2019 from the UN Comtrade Database in February 2021. Kazakhstani authorities report their trade statistics on a yearly basis, however data for the years 2010 and 2015 were missing from the UN Comtrade Database.

FIGURE 6

Export of Liquorice extract (HS1302.12) from Kazakhstan by value and volume, as reported by exporter (Source: UN Comtrade, <https://comtrade.un.org/data>)

EXPORT OF LIQUORICE EXTRACT FROM KAZAKHSTAN IN QUANTITY (IN KG) AND VALUE (IN USD) FROM 2010 -2019



distinct customs codes for liquorice are needed to foster transparent, traceable supply chains

Without taking into account the unreported years, the export value varies from USD 320,894 to USD 729,361 and the quantity fluctuates from 38 tonnes in 2014 to 89 tonnes in 2019. From this analysis, the commercial importance of China is clearly apparent (Figure 7) followed by USA and France.

A popular trade route for liquorice roots traded between Kazakhstan and Mainland China is the Khorgos checkpoint and according to the Khorgos Directorate of Immigration and

Quarantine Control, 22,000 tonnes of liquorice root were exported from Kazakhstan to Mainland China through the Khorgos checkpoint in 2014. The analysis of Mainland China liquorice import data would be an important source of information in future research, against harmonised system tariff codes for liquorice root and extract, as they appears in the Commodity Classification for China Customs Statistics (CCCCS) code (International Trade Center, 2016).



A harvester displays raw liquorice root during collection

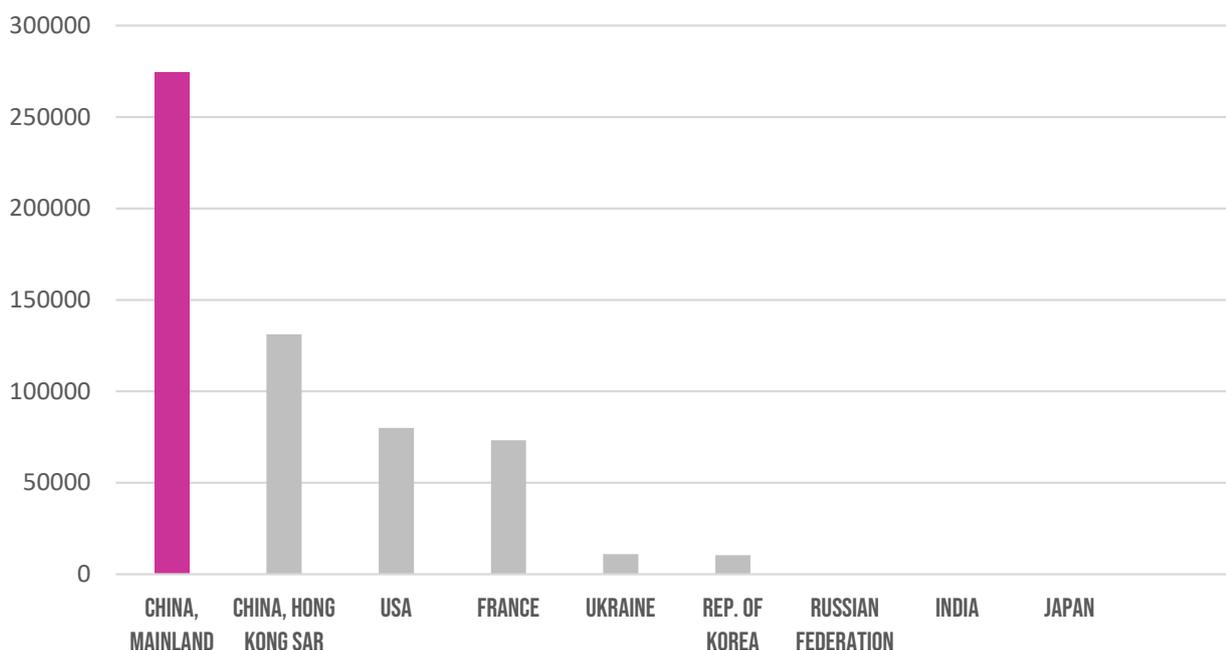
Owing to intensive and uncontrolled harvesting in Kazakhstan, there are currently no accurate data available on potential liquorice root production, hampering the smooth operation of the constructed factories, which could receive a stable supply of raw materials to meet the existing production capacity from sustainable utilisation of wild population and industrial

cultivation of liquorice. For the international trade, the existence of a distinct code for liquorice root is needed to ensure traceable and transparent supply chains. At national level, systematic reporting and open information on the liquorice production and trade is a first step towards a sustainable liquorice industry.

FIGURE 7

Export of Liquorice extract (HS1302.12) from Kazakhstan by volume and trading partner, as reported by exporter (Source: UN-Comtrade, <https://comtrade.un.org/data>)

EXPORT VOLUME (IN KG) OF LIQUORICE EXTRACT FROM KAZAKHSTAN PER IMPORTER FROM 2010 TO 2019



POTENTIAL AND OPPORTUNITIES FOR SUSTAINABLE LIQUORICE PRODUCTION IN KAZAKHSTAN: THE FAIRWILD STANDARD

Kazakhstani medicinal herbs, in particular liquorice, have long been very popular abroad. A lack of information on sustainable liquorice root harvesting in Kazakhstan is a potential obstacle for the engagement of commercial trading partners, in particular from the markets that are interested in sustainability issues.

An example of a company that reached FairWild certification is Kazakhstan "Azia Gold" LLP. This company operates within the Sarkand district of the Almaty region of East Kazakhstan close to the Chinese border. It initiates the discussions about the FairWild standard in 2005 after engaging a major European trade company for natural products.

The company expressed an interest in implementing the FairWild certification standards and together with a major European company and another US company, Azia Gold entered into a multi-year partnership to implement the standard. In 2006, the Swiss Institute for Market Ecology, the inspection and certification body, began the process of an organisational internal audit. The company received FairWild certification in 2008. Since then, "Azia Gold" has annually supplied more than 500 tonnes of FairWild-certified wild liquorice root and other species.

BOX 4

THE FAIRWILD STANDARD

The FairWild Standard (FairWild Foundation, 2010) and certification scheme is a suitable tool to support communities and rural producers to conserve biodiversity and manage their natural resources sustainably.

It is unique in its sole focus on wild harvested plants, fungi and lichen—also links the sustainability criteria for the target resources to the wider landscape, thus ensuring that the harvesting supports and doesn't have a negative impact on other sensitive species in the area.

It includes social and fair-trade requirements, building in positive economic incentives for communities and rural producers, and providing

a framework by which buyers can commit to support their suppliers. It is a tested system and has successfully reached market, with a large pool of companies engaged and interested in FairWild.

The FairWild Standard provides comprehensive guidance both on conservation and sustainable use of wild plant resources. It also helps to prevent negative impacts of collection activities on other wild species, the collection and neighbouring areas. FairWild criteria preclude discrimination against collectors/workers based on gender; and limit the participation of children; providing safeguards for women and girls.

With the implementation of the standard, the local communities have benefited from the FairWild premium; a fund intended to finance social development projects in the collectors' communities. The Fund may also be used to improve the sustainability of wild plant collection during the first five years of certification. In the

past, it has been used for projects related to the harvesting of liquorice in Kazakhstan to improve the working and living conditions of the harvesters by providing for example a kitchen space, fire extinguishers and an electricity generator (Anon, 2010b).





Woodlands in the Almaty region



CONCLUSIONS

THE MAIN THREATS TO WILD LIQUORICE IN KAZAKHSTAN INCLUDE UNREGULATED, UNCONTROLLED, DESTRUCTIVE HARVESTING AND THE LACK OF A REGULATORY FRAMEWORK THAT ENSURES SUSTAINABLE USE.

**sustainable
collection**
of liquorice in
Kazakhstan is
possible

To solve this, a draft regulation of the use and production of several vulnerable species of medicinal plants, including liquorice, was developed and proposed during several meetings, which included experts from the Institute of Botany and Phytointroduction, representatives, experts of Kazakhstani environmental NGOs and private sector representatives. Thus, the adoption of this bill can assure that the issues related to protection and use of flora objects, including conditions for conservation, reproduction, and rational

use of natural vegetation resources will be fully resolved. The final development of the bill is set for 2021.

Sustainable collection of wild liquorice in Kazakhstan is possible and there are companies with legal and traceable supply chains in the country. Tools like the FairWild Standard can assist with improving wild harvesting and management practices for businesses and provide a framework for better policies at a state level.

RECOMMENDATIONS FOR KAZAKHSTAN'S: GOVERNMENT AGENCIES, MINISTRIES, PRIVATE SECTOR, PRODUCERS, AND NGOS AND RESEARCH ORGANISATIONS

Ministry of Ecology, Geology and Natural Resources

- Collaborate with the Committee of Forestry and Wildlife to evaluate the actual status of current wild liquorice populations, gather reliable information on potential sustainable liquorice root production in Kazakhstan.
- Ensure that the draft legislation to strengthen protection measures and improve flora protection includes measures for the issuance of permits for liquorice root harvesting, processing, business licenses to sell in the domestic market, as well as licences for the export and guidance on the harvesting, implementation of recommendations and restoration of harvested liquorice areas.
- Establish a cross-ministerial working group that will address the sustainable use, harvest and trade of wild liquorice root, and facilitate multi-stakeholder consultations including with the private sector and NGOs.

Ministry of Finance

- Strengthen the monitoring of trade data in liquorice species and its products, and enable transparent reporting and access to trade data for stakeholders.
- Collaborate with other source, transit and consumer countries for liquorice roots and products, to exchange information and data on trade and tariffs including through the existing and improved Harmonized System reporting for international trade statistics.

Ministry of Justice

- Monitor the implementation on the ground of recommendations for sustainable procurement of liquorice root with law enforcement agencies and apply control and supervisory measures to prevent illegal harvest and export of liquorice root.

Ministry of Labour and Social Protection of Population

- Support initiatives to ensure that rural and marginalised people engaged in liquorice harvesting earn a fair income, promote traditional knowledge and local development in the collection regions.

- **Ensure strict adherence to liquorice root harvesting guidelines** of the Institute of Botany and Phytointroduction for the sustainable use of wild liquorice stands and their restoration after production harvesting.
- **Provide information annually on allocated production areas**, cadastral maps, site plans, and GPS co-ordinates to regional environmental departments and organisations responsible for preparing a biological justification for the use of liquorice in order to eliminate redundant research.
- **Observe the recommended practices and frequency of liquorice root harvesting** on protected areas, state-owned forests and agricultural lands.
- **Consider introduction of the FairWild Standard** as a mechanism for accessing international markets and applying best practices for sustainable harvesting and use of liquorice root.

- **Review liquorice supply chains** and understand the legality and sustainability of supply, focusing on existing legal provisions in Kazakhstan.
- **Implement the FairWild Standard best practices**, which assure full traceability, sustainability and legality of harvest and trade in wild plant resources.

- **Provide technical assistance** for the development and adoption of the draft legislation to strengthen protection measures and improve flora protection across Kazakhstan.
- **Encourage and support the organisation of roundtable workshops** bringing together all relevant stakeholders in Kazakhstan to discuss the outcomes and recommendations of this study and to support sustainable use and trade of medicinal plants in Kazakhstan.
- **Non-governmental and scientific organisations should support the uptake of the FairWild Standard for liquorice in Kazakhstan**, encouraging companies that have wild-sourced plants in their supply chains to commit to responsible sourcing and trading practices. This will provide an avenue for companies unlikely or slow to begin the FairWild certification process to express their public commitments towards sustainable practices, which is underpinned by improved understanding and knowledge of the risks and opportunities in wild plant supply chains.

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ENDNOTES

¹ «Of protected areas of Kazakhstan» from 07.07.2006; «Forest Code of the Republic of Kazakhstan» from 08.07.2003.

² Based on discussions from the meeting interregional forum "Let's Save Medicinal Plants" reported by the lead author who was part of the event.

³ Taiwan Province of China (hereafter Taiwan).

⁴ HS 1211: Plants and parts of plants (including seeds and fruits), of a kind used primarily in perfumery, in pharmacy or for insecticidal, fungicidal or similar purposes, fresh, chilled, frozen or dried, whether or not cut, crushed or powdered (UN COMTRADE).

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