

Coca Bush, Opium Poppy, and Cannabis

By Päivi Lujala
Dept. of Economics
Norwegian University of Science and Technology
paivi.lujala@svt.ntnu.no

July, 2002

NOTE 1: This paper documents the background information for DRUGDATA. It also includes short description of each of the three drugs included in the dataset.

NOTE 2: DRUGDATA and this paper document the data I have used for drug cultivation in the following articles. If you use the data, you should cite Buhaug & Lujala 2005.

1. Buhaug, Halvard, and Päivi Lujala, 2005. 'Accounting for Scale: Measuring Geography in Quantitative Studies of Civil War'. *Political Geography* 24: 399-418.
2. Lujala, Päivi, 2009. 'Deadly Combat over Natural Resources: Gems, Petroleum, Drugs, and the Severity of Armed Civil Conflict'. *Journal of Conflict Resolution*.
3. Lujala, Päivi, 2010. 'The Spoils of Nature: Armed Civil Conflict and Rebel Access to Natural Resources'. *Journal of Peace Research*.

DISCLAIMERS:

- **Material for this paper and DRUGDATA were collected in 2002 and reflect the data availability at that time. The same applies to availability of references listed in the paper: Internet links may become outdated after some time.**
- **DRUGDATA and this paper are not necessarily sufficiently accurate and precise to be used with other conflict datasets or for other purposes than what is described in the three articles listed above.**

ABBREVIATIONS

UNDCP United Nations International Drug Control Programme

ODCCP UN Office for Drug Control and Crime Prevention

CIS Commonwealth for Independent States

INTRODUCTION

This paper presents basic information on where opium poppy and coca bush are cultivated or have been cultivated. It also describes shortly some characteristics of the two plants; their requirements for the climate and soil as well as their advantages over other cultivated plants.

The paper lists the countries that currently produce opium and coca leaves and gives the main producing areas for each of these countries. The paper seeks to also identify changes in cultivation areas and to give an idea when each country or region began to produce opium or coca.

Therefore, this paper gives an idea where (and when) opium and coca have been cultivated. It also covers cannabis to an extent but since cannabis is cultivated throughout the world, the scope of coverage is more limited than for the other drug plants.

It is worth to note that a part of opium and coca cultivation is legal and the products are, for example, used for medical purposes.

GENERAL

During the 1990s, there were eight main producers of opium poppy: Afghanistan, Myanmar, Laos, Pakistan, Mexico, Colombia, Thailand, and Vietnam. Virtually all coca leaves came from three countries: Colombia, Bolivia, and Peru.

In 1999 United Nations International Drug Control Programme (UNDCP) estimated that Afghanistan alone produced almost 80 % of all opium in the world and Colombia more than 65 % of all coca leaf. In total, over 90 % of illicit opium and coca originated from Afghanistan, Myanmar, Laos, Bolivia, Colombia, and Peru. (UNDCP 2001a)

Both opium and coca cultivation require low capital investments and yield high value-to-weight products that are non-perishable and therefore storable. Both can be cultivated in conditions that are too demanding for most other crops. They are also suitable for regions that suffer from land shortage since the value of yield per hectare is much more higher than from the legal crops.

Opium and coca can be grown in a same plot for 15 years (coca up to 40). This allows the producers to use the same plot significantly longer than in case of other crops. Furthermore, opium requires less than a half-year to mature and it can be alternated with other crops. For example, same plot can be used for maize cultivation for the other half of the year.

Therefore, often opium poppy and coca bush outperform alternative crops and the cultivation often concentrates in regions with land shortage and harsh conditions. (Mansfield 1999) The fact that opium and coca can be stored up to several years without that they lose their value, they are often used as a form of household savings. Since they can be transported and smuggled easily, they

are an attractive alternative in areas where transport structure is not developed or is destroyed. In some areas opium and coca can be the only crops that can be profitably produced for the outside markets.

Opium



Picture 1. Lanced poppy pods oozing raw opium resin. Photos from UNDCP pages; <http://www.undcp.org> (to the left) and from Photo Essay on Cultivation of Opium in India; http://www.ieo.org/opm_mass.html.

Opium poppy can be grown in the most parts of the world, up to latitude 56° N. Opium poppy is not only grown for opium but also for its seeds that have high oil content. It is also grown for its flowers like other poppy varieties that do not contain opium. For example, opium poppy can and has been cultivated in Europe for its seeds (European opium poppy “belt” reaches from northern France, Netherlands, and Belgium, over the southern Germany, Switzerland, Austria and to Bulgaria, Romania, and Ukraine). However, Macedonia is the only region where opium has been produced in significant amounts (Opium Production throughout the World 1949). In addition to Macedonia, in Bulgaria and Soviet Union opium poppy has been cultivated for the sake of opium (Dalev et al. 1960).



Picture 2. Opium poppy field. Source: Photo Essay on Cultivation of Opium in India; http://www.ieo.org/opm_mass.html.

Largest opium producers during the 1990s:

- During the recent years there has been shift in production from South-East Asia (Myanmar, Thailand, Laos) to South-West Asia (Afghanistan).
- The largest producers are (not in order) Afghanistan, Myanmar, Laos, Vietnam, Pakistan, Thailand, Colombia, and Mexico. Of these countries Pakistan produced virtually no opium 2000, and Vietnam and Thailand have ceased to be major producers.
- According to ODCCP (2001), 70 % comes from Afghanistan, 23 % from Myanmar, 5 % from other Asian countries (primarily Laos and Thailand) and 2% from Latin America (Colombia and Mexico).
- Other countries and regions currently producing opium and mentioned by different sources are: Egypt, India, and Central Asia. The extent of production in Central Asia (the former Soviet states Turkmenistan, Uzbekistan, Kazakhstan, Kyrgyzstan, Tajikistan) and Caucasus (Georgia, southern Russia) is unclear. Wild opium poppy and cannabis grow over vast areas in these countries.

Former producers

Before the 1970s and 1980s, largest producers were Pakistan, Iran, and Turkey. Iran, however, was the largest market for opium and imported opium.

In the 1930 and 1940s largest producers were Iran, Turkey, and India.

Cultivation conditions for opium poppy: (Mansfield 1999)

- Efficient cash crop that tolerates well harsh conditions. Cultivated in areas that are not suitable for other crops
- Does not require irrigation
- Up to 3000 meters
- Tolerates a variety of soil and climatic conditions.

Climatic requirements

- In early stages requires cool climate (3 – 10 Celsius degrees) and high humidity (rain is not necessarily if there is enough humidity that condense, for example, during the nights).
- Sun is important during the flowering period and after flowering dry soil is necessary. Rain and wind destroy the plants during these later stages.
- Harvesting is possible only during hot and sunny days.

These climatic requirements may explain why, for example, opium has never been cultivated in southern Thailand (climate is cool enough only on the mountains in the northern parts of the country). One has to note also that Cambodia is not mentioned by any of the sources as an opium cultivating country even though all its neighbors produce opium. This may be explained by the fact that the climate prohibits the cultivation in Cambodia. In contrast, Cambodia has been mentioned as cannabis exporter, and cannabis is also widely cultivated in the lowland Thailand and southern Thailand.

Labor-intensive crop

- Cultivation extremely labor-intensive.
- Harvesting period is very short and requires some skill.
- Estimated, that in Thailand, harvesting of a 0.2-hectare plot requires one month for one person. (Mansfield 1999)
- In Laos and Thailand total labor required for one hectare of opium field is estimated to vary between 300 and 486 person days. (Mansfield 1999)
- In Afghanistan cultivation requires 350 person days for a hectare compared to 41 for wheat. (ODCCP 2001)

Coca bush

Coca bush is a perennial that matures in 18 months. It can be harvested 4-6 times per year for up to 40 years (production begins to decline after 15 years, though). Cultivation is labor intensive and total labor per hectare varies between 68 – 368 person days. (Mansfield 1999)



Picture 3. A woman harvesting coca leaves. Photo from UNDCP Internet pages; <http://www.undcp.org>



Picture 4. Coca bush. Photo from http://www.odci.gov/saynotodrugs/environment_b.html#01

Producers

- Virtually all coca comes from Colombia, Bolivia, and Peru. (Earlier also some production in Venezuela and Ecuador)
- Coca can be cultivated also in other continents. For example, it was cultivated on the Java (Indonesia) at the turn of the nineteenth century (Mansfield 1999). There are also reports that trial plots of coca bush have been found in Georgia.

Figure 1. Regional perspective on coca production (1998 or latest figures). Copied from http://www.undcp.org/bolivia/country_profile.html

COUNTRY	HECTARES	COCA LEAF (mt)	COCAINE (mt)	PEOPLE INVOLVED	TURN OVER (US\$million)	GDP SHARE
BOLIVIA	21,800*	52,900	150	51,300	190	2.2 %
COLOMBIA	79,500**	63,600	300***	200,000	2,500	2.6 %

PERU	51,000	95,600	240	200,000	325	0.5%
TOTAL	152,300	212,100	690	451,300	3,015	

* illicit coca only

** latest figures/estimates available

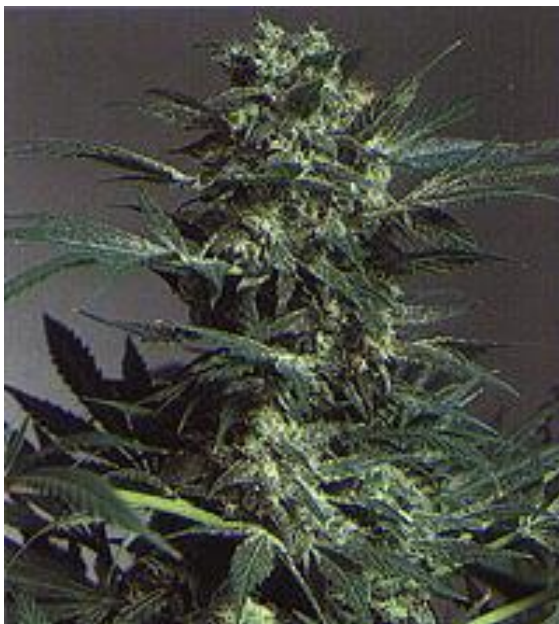
*** yield estimates under review

Cultivation

- Efficient cash crop that is well suited to harsh conditions.
- Tolerates a variety of soil (also acid soils) and climatic conditions and is persistent against pests and diseases. Therefore popular in environmentally fragile areas as in the Andeans. (Mansfield 1999)
- Prefers humid subtropical forest and elevation of 700-2000 m, optimal elevation 1000-1200 m (highest cocaine content). Cultivators prefer steep slopes (good drainage). (Dourojeanni 1992)
- Traditionally was grown on the high Andeans but migration has taken coca bush to Amazon valleys

Cannabis

Cannabis is native to Central and South Asia but is now cultivated on variety of terrains and altitudes all over the world. During the 1990s, 120 countries reported illicit cannabis cultivation (ODCCP 2000).



Picture 5. One variety of cannabis plant (to the left) and (outdoor) cannabis field. Photos from: <http://www3.sympatico.ca/ange.a/photo5.html> and <http://www3.sympatico.ca/ange.a/photo3.html>.

For 1996, Interpol identified 76 countries that export cannabis (Africa 25, Europe 23, Asia and Near and Middle East 18, Americas 13) (UNDCP Research section 1999). According to UNDCP Research section (1999), the **largest hashish** (cannabis resin) **exporters** are Morocco, Afghanistan, and Pakistan. **Largest marijuana** (cannabis leaves) **exporters** are Mexico, Colombia, Cambodia, Thailand, Nigeria, Democratic Republic of Congo, Ghana, Jamaica, and Southern Africa (South Africa, Lesotho, Malawi, and Swaziland).

Central Asia is often mentioned as having significant cannabis cultivation. Russia and Kazakhstan (as well as the other CIS states) have vast areas under wild cannabis growth. For example, in the late 1990s Kazakhstan had 400 000 hectares under wild cannabis growth, but only 2 300 hectares cultivated for cannabis production. (ODCCP 2000b) These countries are potential future producers, and may fill the vacuum left by successful eradication in other countries.

COUNTRIES CURRENTLY CULTIVATING OPIUM OR COCA

Good maps for coca and opium cultivation areas in Latin America, Central Asia, Afghanistan, Pakistan, and South-East Asia can be found in a report by UNDCP 1997: Supply of and Trafficking in Narcotic Drugs and Psychotropic Substances 1996, http://www.undcp.org/technical_series.html (pages 14 - 16).

Afghanistan

- In 1972 Turkey abolished opium production and in 1979 Iran effectively prohibited opium cultivation. Consequently, Afghanistan became an alternative source for opium (ODCCP 2001).
- Between 1979 and 1989 warfare destroyed the country and opium cultivation emerged as an alternative for other crops and important source of cash. (ODCCP 2001)
- In the 1990s Afghanistan became the largest opium producer in the world. Opium has been cultivated in Afghanistan throughout the last century but the dramatic increase in cultivation did not take place before the mid-80s. The annual growth rate of production has been estimated to be 23 % since 1986. (ODCCP 2001)
- In 1999 Taliban ordered the cultivators to reduce opium fields by one third (however, area decreased only by 10 %). Later, combined with severe drought, the production dropped almost by 30 %. (ODCCP 2001)
- In 2001 there was a dramatic drop in opium production when Taliban effectively prohibited opium poppy cultivation. (UNDCP 2002)
- Opium is smuggled via Balkan route (Iran, Turkey, Balkan) or Silk route (via Central Asia)

- In Afghanistan and Pakistan opium is mainly cultivated by Pashtoons (an ethnic group), except in Badakhshan (Mansfield 1999).

Cultivation areas

- In 1924, opium was cultivated in Herat, Badakhshan, and Jalalabad (Nangarhar) Districts (ODCCP 2001).
- For the 1940s, Herat and Nangarhar are mentioned as main cultivation areas (Opium Production throughout the World 1949).
- Before and during the 1970s opium was cultivated in Nangarhar and Badakhshan Districts. During the 1970s cultivated also in Helmand. (Gobar 1976)
- During the 1990s the cultivation concentrated in Helmand and Nangarhar. Also Uruzgan, Quandahar, and Badakhshan produce large amounts of opium. New production areas were Baghlan, Balkh, and Jawzjan that all are located in the northern Afghanistan. Also provinces in the eastern Afghanistan produced some opium. (UNDCP 2002)

Myanmar

- Second largest opium and heroin producer in 2002.
- Production takes place in the eastern and northern Myanmar (Kachin and Eastern Shan states) on the mountains (where climate is cool enough for the first phase of the growing season).
- Often cultivated by the minorities
- The same areas producing opium and heroin now also produce Amphetamine Types Stimulants (ATS).

Cultivation period: September - March dry season

Opium cultivation came to Myanmar from Yunnan region in China during the 19th century (or earlier). Opium cultivation was prohibited 1912 in China and the production moved to Kachin and Shan regions in northern Myanmar. In Myanmar the ban on opium cultivation was effectively introduced as late as in the mid-70s. (ODCCP 2001)

After independence in 1949, ethnic minorities in Myanmar rose against the central government and at least Shan separatists used opium money to finance their uprising. Over the time the warfare has turn to struggle to secure the income from opium production to the clashing groups rather than to pursue political targets. (ODCCP 2001)

During the 1950s, Kuomintang (defeated Chinese Nationalists) began to regroup in Shan area to invade Southern China (Yunnan). Their attempts failed and instead they took control of Shan and the most important opium producing areas there (Wa, Kokang and Kengtung). Kuomintang was

pushed to Thailand in 1961 but it continued to control opium production in the Shan region. (ODCCP 2001)

Burmese Communist Party that fought against the military government took control of Shan during the late 1970s. They came to control 80% of the opium fields. (ODCCP 2001)

New market for opium opened during the Vietnam War; up to 34 % of all US troops in Vietnam used heroin and therefore the heroin production developed in the area. Kuomintang controlled the heroin production and heroin was mainly produced near Thailand border in Myanmar. Therefore, while the Burmese Communist Party controlled opium fields, Kuomintang controlled heroin production and trafficking, both competing with local warlords. (ODCCP 2001)

Thailand

- Opium cultivation concentrated on the mountains in the northwest Thailand.
- In the 40s opium was cultivated in the northern Thailand in the border regions to Myanmar and Laos.
- Cultivated on the altitudes over 1000 m.
- Growing season: from September to March.

Cannabis is also widely cultivated in the lowland Thailand and southern Thailand

Columbia

In addition to coca, Colombia also produces opium and cannabis.

Coca

- Cocaine processing started in the 1970s, but most coca leaves were imported from Peru and Bolivia
- Coca cultivation expanded especially during the 90s when coca leave production declined in Peru and Bolivia.
- Coca is mainly cultivated in south-central Colombia. Departments with the highest concentrations for coca production are Guviare, Caqueta, Putumayo, Bolivar, Meta, Cauca, Nariño, Vichada, Guania, and Vaupes. (NADP 2000)
- In contrast to Peru and Bolivia, coca bush are cultivated on large plantations owned by absentee landlords.

Opium

- Cultivated from the late 1980s

- Grown in high Andean valleys (southwestern Highlands) on small plots on the altitudes between 2000–3000 m (Armstead 1992).
- Concentrated in Tolima, Huila, (Cauca and Nariño) departments.

Cannabis

- Cultivated during the 1960s and 1970s, since then overshadowed by coca production. (ODCCP Colombia Country Profile 2001)
- Cultivated in Santa Marta region (Sierra Nevada) department and on the Perija mountains in Serrana department (both in the northeast Colombia). (Armstead 1992)
- Cultivated on the altitudes between 1000–2000 meters.

Figure 2. *Coca bush, opium poppy and cannabis cultivation in Colombia 1990-1999 (hectares). Source: http://www.undcp.org/colombia/country_profile.html*

	1999	1998	1997	1996	1995	1994	1993	1992	1991	1990
Coca	122,500	79,500	79,500	67,200	50,900	44,700	39,700	37,100	37,500	40,100
Opium	7,500	6,100	6,600	6,300	6,540	20,000	20,000	20,000	1,344	0
Cannabis	5,000	5,000	5,000	5,000	4,980	4,986	5,000	2,000	2,000	1500

Bolivia

- Coca bush cultivated since the 1970s, in Yungas for several hundreds of years.
- Concentrated in Chapare, Yungas, and Apolo regions, Chapare produces most of coca in Bolivia, Apolo least.
- In Yungas region there is also legal cultivation for traditional purposes.
- Production of has declined during the 1990s. (ODCCP 2000).

Figure 3. *Area of coca cultivation in Bolivia 1990-1999 (hectares). Copied from http://www.undcp.org/bolivia/country_profile.html*

	Coca Cultivation*	Gross Eradication**	New Coca Cultivation**
1990	50,300	8,087	5,608
1991	47,900	5,488	2,987
1992	45,500	5,149	2,709
1993	47,200	2,400	4,097

1994	48,100	2,240	1,958
1995	48,600	5,498	5,993
1996	48,100	7,512	7,012
1997	45,800	7,026	5,526
1998	38,000	11,621	3,821
1999	21,800	est. 15,353	800

* USAID/Bolivia , thereof 12,000 licit production

** DIRECO

Peru

- During the 1990s coca bush cultivation was concentrated in Upper Huallaga, 65% of production came from there (Armstead 1992). According to Dourojeanni (1992) production was at the early 1990s concentrated in Hunuco and San Martin departments (Upper Huallaga is located in Hunuco department).
- The traditional center for coca cultivation was Cuzco from where migration took coca to eastern Amazonian valleys during the 1960s.
- In the 1960s, main production areas were (in this order): Cuzco, Hunuco, La Libertad, and Ayacucho (Dourojeanni 1992).
- In the 1970s organized crime promoted the cultivation, and cultivation spread quickly during the 1980s, especially in the Huallaga Valley. For the 1980s Dourojeanni (1992) lists Huallaga (Hunaco), Tingo Mara (Leoncio Prado department), Uchiza (San Martin department) and Aucaycu (Leoncio Prado department), and provinces Tocache and Mariscal Caceres as most important production areas.
- Since 1992 the production of coca leaves has declined.
- Coca growing areas identified for alternative development: Marañon; Central Huallaga, Upper and Lower Mayo; Lower Huallaga and Yurimaguas; Upper Huallaga; Aguaytia; Pichis, Palcazú, Pachitea, Perené and Tambo; Apurimac and Ene; La Convención y Lares; Tambopata and Inambari.

Pakistan

Opium cultivated in the northern Pakistan. It was a major producer earlier but had become virtually production free by year 2000. Pakistan is a major cannabis producer, though.

Laos

Opium poppy is cultivated in the northern Laos and the country was the third largest producer in the late 1990s, although significantly smaller producer than Myanmar and Afghanistan. Laos succeeded to cut production significantly during the 1990s.

Vietnam

Vietnam is considered as a minor producers after a remarkable success in opium cultivation eradication. The area of opium cultivation in 2000 was estimated to be as low as 428.6 hectares, of which 426.4 ha was destroyed accounting for 99.5 % of the total planted area. (http://www.undcp.org/vietnam/country_profile.html)

Other Opium and Coca (Cannabis) Producing Countries

Guatemala

Opium poppy cultivated in San Marcos department, however production classified as minor as a result of successful eradication.

Kazakhstan, Kyrgyzstan, Tajikistan, Uzbekistan

For *opium*, see maps in Supply of and Trafficking in Narcotic Drugs and Psychotropic Substances 1996 (UNDCP 1999), http://www.undcp.org/technical_series.html (pages 14 - 16). However, in ODCCP 2000 it is stated that the earlier fears of existence of large opium poppy areas in Central Asia were unfounded.

In the 1930s there was legal opium production in Kazakhstan (southeast of Lake Balkhash) and Kyrgyzstan (on the mountain ranges Tian Shan and Alataus) (Opium Production throughout the World 1949).

Kyrgyzstan was once one of the world's largest suppliers of licit opium poppy. After the Soviet ban on opium poppy cultivation in 1973, illicit cultivation continued in small areas. In the recent years, opium poppy cultivation has been found to take place in house gardens in remote mountainous regions of the Aksu, Jety-Oguz, and Isskata districts. Cannabis grows wild in Kyrgyzstan and large cannabis tracts exist in the Chu Valley and in the area around Issyk-Kul Lake. Most cannabis is used locally but some is exported to other Central Asian countries. (http://www.undcp.org/uzbekistan/country_profile_kyr.html)

Cannabis cultivation in Kazakhstan cultivation is concentrated in **Jambul** region (ODCCP 2000).

Mexico

Illegal opium production began in the 1930s. Report Opium Production throughout the World (1949) lists Sonora, Sinaloa, Durango, Lower California Chihuahua, Jalisco, Nyarit, and Guerrero as cultivation areas during the 30s and 40s.

According to (Armstead 1992), in the late 1980s Southeast Chiapas emerged as a new area where opium poppy was cultivated. He mentions that earlier also regions such as Sinaloa, Durango, Chihuahua in northern Mexico produced opium (according to him, in these areas cultivation had been successfully eradicated and therefore production had moved to Chiapas).

COUNTRIES THAT HAVE PRODUCED OPIUM AND COCA

Africa

Tunis and Egypt are reported to have produced opium during the 1940s (Opium Production throughout the World 1949). Both produced small amounts and production was illegal in both countries. During the 1990s Egypt (South Sinai) produced minor amounts of opium for domestic use.

Lebanon was a major producer of opium and cannabis in the Middle East in the 1970s and 1980s. In 1991-1993 Lebanese and Syrian forces eradicated illicit cultivation in the Bekaa Valley. Subsequently Lebanon gradually transformed from a producer country to a regional hub for cocaine and heroin trafficking. (http://www.undcp.org/egypt/country_profile_lebanon.html)

Bulgaria

Opium was cultivated in western Bulgaria in the regions of Blagoevgrad, Mikhailovgrad, Plovdiv (Dalev et al. 1960).

China

Production and consumption of non-medical opium has been illegal since the 1912 in China. However, in the 1940s illicit cultivation was thought to be common in mountainous and backward regions but exact information for this is not available. Apparently, at least in Yunnan, opium production was high during the 1940s and only the eastern Provinces were estimated not to have any opium production at the time. (Opium Production throughout the World 1949)

Ecuador

Coca leaves produced during the 1970s but production small and declining during the 80s (Abruzzese 1989). Ecuador is not mentioned in the production figures for 1990s.

India

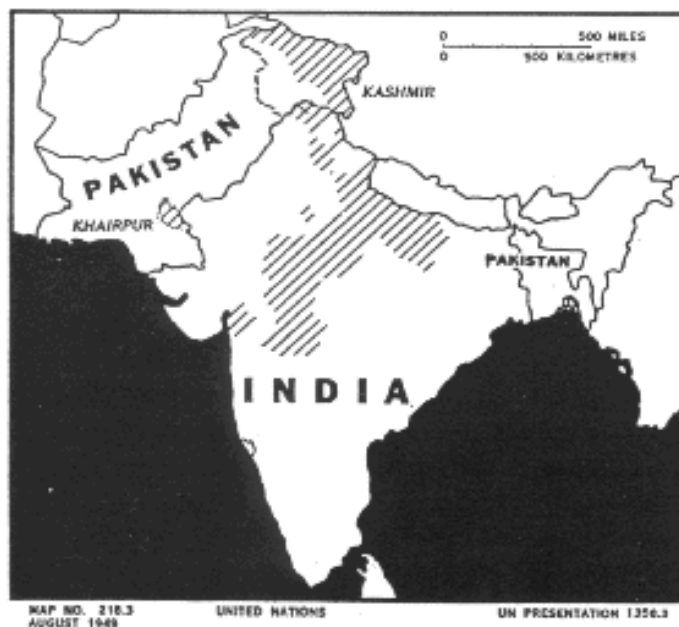
During the first half of the 20th century India was one of the major opium producers (Opium Production throughout the World 1949). The areas under opium poppy cultivation are shown in **Map 1**. Asthana (1954) mentions that at least following regions had opium cultivation: Uttar Pradesh, Madhya Bharat, Rajasthan, and Himachal in the early 1950s. Today, opium poppy is grown and opium produced in Uttar Pradesh, Madhya Bharat, and Rajasthan, however, tightly under government control (Photo Essay on Cultivation of Opium in India 2002). However, some opium finds its way to illicit channels (http://www.undcp.org/india/country_profile.html).

Iran

Iran was until 1979 one of the chief opium producing and exporting countries. The Report “Opium Production throughout the World” (1949) lists Khorassan, Luristan, Isfahan, and Fars provinces as largest producers and Kermansha, Hamadan, Yazd, and Kerman as significant producers. The production was thus located in the northeastern, west-central, and southwestern parts of Iran.

Kashmir

According to the Report “Opium Production throughout the World” (1949) Kashmir produced a little opium during the 30s and 40s. (See **Map 1**)



Map 1. Cultivation areas for opium poppy in Indian and Kashmir in the 1940s. (Opium Production throughout the World 1949).

Macedonia

Opium poppy was cultivated in the central and eastern parts of Macedonia (Kusvié 1960).



Map 2. *Opium poppy cultivation areas in Yugoslavia during the first half of the 20th century. Grown in the central and eastern parts. Source: Opium Production throughout the World 1949.*

Nepal

According to the Report “Opium Production throughout the World” (1949) Nepal had been a major opium producer but that in the 40s there was no longer Nepalese opium in the international markets. In Nepal opium was cultivated in the tropical lowlands.

North-Korea

In the 1930s and 1940s opium was grown in the remote mountain areas. (Opium Production throughout the World 1949)

Turkey

Turkey was one of the largest exporters during the 1940s in the world. Production was mainly legal and tightly controlled and Turkey exported opium only to countries where opium was further manufactured. (Opium Production throughout the World 1949). For production areas, see Map 3)



Map 3. Opium poppy areas in Turkey in the 40s. (Source: (Opium Production throughout the World 1949).

POTENTIAL NEW AREAS FOR LARGE SCALE DRUG CULTIVATION

Africa

Export oriented cannabis cultivation is spreading fast in the Africa. Morocco is already the largest supplier for the European markets and production in West (Nigeria, Congo (Zaire) and Ghana) and Southern Africa (South Africa, Malawi, Lesotho, Swaziland and Mozambique) has grown beyond just satisfying domestic demand. In addition, countries such as Uganda, Kenya, and Ethiopia have experienced a remarkable increase in cannabis production in the recent years. There are also reports of experimental cultivation of opium poppy at least in Kenya and Egypt.

Central Asia, Caucasus and Southern Russia

The drug cultivation situation in these areas is unclear. Both Cannabis and opium poppy grow wild in these countries and the regions have long traditions to produce these for local use (although not necessarily for drugs but for opium seeds that are used in baking). The production potential is huge and cultivation may shift to these areas if it is eradicated successfully in other Asian countries.

THOUGHTS

Cultivation is (almost) always illegal; therefore it is prone to initiate conflicts between producers and central government.

Drug cultivation can relocate easily and many areas are suitable for production. Therefore, it differs from immobile resources such as minerals. On the other hand, drug cultivation seems to require a special socio-cultural setting where cultivation is acceptable, combined with economic situation that makes drug cultivation the only way to acquire cash or in some cases to survive.

Therefore, classifying opium or coca production as diffuse natural resource may not be so straightforward.

In some areas people have begun to cultivate opium and coca to “qualify” for aid.

CONCLUSION

In Americas (South and Central) opium and coca cultivation in larger extent seems to be rather recent phenomena. Large-scale coca cultivation in Peru and Bolivia began in the 1960s and 1970s and in Colombia in the 1980s and 1990s. Opium poppy was introduced in Mexico in the 1930s.

In contrast, opium production for exporting has much longer history in Asia. For example, during the first half of the 19th century Brits forced China to keep their borders open for opium exports from British India (so called Opium War). In the Golden Triangle that composes of northern Thailand, northeastern Myanmar, south Yunnan (China) and northern Laos, opium cultivation and trade has been widespread at least since the 19th century.

REFERENCES

- Abruzzese, R. 1989. Coca-leaf production in the countries of the Andean subregion. *Bulletin on Narcotics*. Issue 1, 1989. http://www.undcp.org/bulletin_on_narcotics.html
- Armstead, L. 1992. Illicit narcotics cultivation and processing: the ignored environmental drama. *Bulletin on Narcotics*. Issue 2, 1992. http://www.undcp.org/bulletin_on_narcotics.html
- Asthana 1954. The cultivation of the Opium Poppy in India. *Bulletin on Narcotics*. Issue 3, 1954. http://www.undcp.org/bulletin_on_narcotics.html
- Dalev, D., L. Iliev & R. Iliev. Poppy Cultivation and the Production of Opium. *Bulletin on Narcotics*. Issue 1, 1960. http://www.undcp.org/bulletin_on_narcotics.html
- Dourojeanni, M. 1992. Environmental impact of coca cultivation and cocaine production in the Amazon region of Peru. *Bulletin on Narcotics*. Issue 2, 1992. http://www.undcp.org/bulletin_on_narcotics.html
- Gobar, Asad Hassan 1976. Drug abuse in Afghanistan. *Bulletin on Narcotics*. Issue 2, 1976. http://www.undcp.org/bulletin_on_narcotics.html
- Kusvié 1960. Cultivation of the opium poppy and opium production in Yugoslavia. *Bulletin on Narcotics*. Issue 2, 1960. http://www.undcp.org/bulletin_on_narcotics.html
- Opium Survey 2000. Annual opium poppy survey in Laos 1999/2000. http://www.undcp.org/laopdr/report_2000_10_31_1.html 01/08/02
- Mansfield D. 1999. Alternative development: the modern thrust of supply-side policy. *Bulletin on Narcotics*. Volume LI. Nos. 1 and 2. http://www.undcp.org/bulletin_on_narcotics.html.
- NADP 2000. Support to Operational Capacities of Office of National Alternative Development Plan (NADP) Colombia. A project description. <http://www.undcp.org/colombia/nadp.html>. 01/08/02
- ODCCP 1999. Lao PDR Country Drug Profile. Extent patterns and trends in illicit drugs. <http://www.undcp.org>. 01/08/02
- ODCCP 2000. Global Illicit Drug Trends 2000. ODCCP studies on Drugs and Crime. <http://www.undcp.org>. 01/08/02
- ODCCP 2000b. World Drug Report 2000. <http://www.undcp.org>. 01/08/02
- ODCCP Columbia Country Profile. <http://www.undcp.org>. 01/08/02
- ODCCP 2001. Global illicit drug trends 2001. Statistics. <http://www.undcp.org>. 01/08/02
- Opium Production throughout World 1949. *Bulletin on Narcotics*. Issue 1, 1949. http://www.undcp.org/bulletin_on_narcotics.html 01/20/02
- Photo Essay on Cultivation of Opium in India 2002. http://www.ieo.org/opm_mass.html. 01/20/02

- UNDCP 1999. Supply of and Trafficking in Narcotic Drugs and Psychotropic Substances 1996.
http://www.undcp.org/technical_series_1998-03-01_1.html. 01/20/02
- UNDCP 2001a. Global Monitoring Programme of Illicit Crops.
http://www.undcp.org/crop_monitoring.html. 01/08/02
- UNDCP 2002. Afghanistan. Annual Opium Poppy Survey 2001.
<http://www.undcp.org/pakistan/publications.html>. 01/22/02
- UNDCP Research section 1999. Cannabis as an illicit narcotic crop: a review of the global situation of cannabis consumption, trafficking and production. *Bulletin on Narcotics*. Issue 1, 1997.
http://www.undcp.org/bulletin_on_narcotics.html