

## Foreign Trade (Export and Import) of Herbal Raw Drugs

Buoyed at the increasing global reliance upon herbal products, India's exports of medicinal plants grew at an average annual rate of 22% over the past ten years and stood at ₹3211 crore in 2014-15. Export of extracts during the period registered the highest growth and formed about 50% of the total export value in the year 2014-15. This points towards an emerging trend of exporting value added products from the country. Amongst the crude herbal raw drugs, Isabgol husk, Senna leaves and pods and *Senna tora* seeds remained the top three entities in export. On the import side, Gum Arabic remained the top entity imported by the country. Limitations of the ITC (HS) coding system in providing species-wise detail of entities in foreign trade was acutely felt during the current study. An effort has, nevertheless, been made to bring out complexities in respect of species in high foreign trade. The various policies and legislative provisions impacting foreign trade of medicinal plants have been discussed. A conceptual proposal for improving the ITC (HS) coding system has also been given in the chapter.

## 8.1. INTRODUCTION

The indigenous medical traditions in different countries are believed to have developed around the bio-resources available in that eco-region. There have, however, always been efforts to find more efficacious medicinal herbs from the same or the other eco-regions to make these medical traditions more potent. It is no wonder that, with opening of the land and sea trade routes, the medicinal herbs, including spices, always formed a substantial part of the merchandise traded between the countries. It is because of this trade that many a botanical raw drugs that do not occur in India have come to form an integral part of many key herbal formulations of this country. For example, Mulethi (*Glycyrrhiza glabra*) is extensively used in India in both classical and folk herbal traditions even as it does not occur naturally in India and its use is totally dependent upon its import. Unab (*Ziziphus sativa*), majuphal (*Quercus infectoria*), Hing (*Asafoetida*) are some of the other raw drugs used in India that are exclusively import based. On the other hand, Isabgol (*Plantago ovata*) and Senna (*Cassia angustifolia*), cultivated in India on large scale, are exported in large quantities from India to meet its demand in other countries. As the things stand today, a large number of medicinal plant species have come to be in active foreign trade (export and import) from and to India, and the volume of such foreign trade is on the rise.

A large number of Import and Export houses and agencies in the country are engaged in foreign trade of botanical raw drugs through more than 100 ports. Since foreign trade of botanicals has direct impact on (a) the availability of such botanicals to the domestic herbal industry, (b) the conservation status of the wild resource, and (c) the cultivation levels of important species, it is very necessary to know the exact details of the entities in foreign trade. With a large number of firms engaged in foreign trade of botanical raw drugs through large number of ports, and most of the foreign trade happening under local vernacular/ trade names, the task to collate entity-wise information on the foreign trade of botanical raw drugs becomes very complex.

In the Indian context, the data relating to India's exports and imports by commodities is officially compiled and published by the Directorate General of Commercial Intelligence and Statistics (DGCIIS) of Government of India. The data is compiled in accordance with the Harmonized Commodity Description and Coding System, also known as the Harmonized System (HS) of tariff nomenclature, developed and maintained by the World Customs Organization (WCO) and adopted by the Government of India as Indian Trade Classification, commonly called ITC (HS) codes. As per this system entities in foreign trade are grouped under chapters and assigned unique codes to enable tracking of their trade volumes and trends. The DGCIIS compiles foreign trade data in respect of imports and exports of various entities through all ports in the country, arranging the same ITC (HS) code wise, with traded quantities reflected in kilograms and trade value in rupees.

In as far as botanical raw drugs are concerned, these are broadly covered with the bioresources under foreign trade that have been classified under different chapters, with Chapter 12 entitled "Oil Seeds and Oleaginous Fruits; Miscellaneous Grains, Seeds and Fruit; Industrial or Medicinal Plants; Straw and Fodder" covering a major diversity of plants and plant material in foreign trade. More specifically, it is heading 1211 under this chapter i.e. "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 or dried, whether or not cut, crushed or powdered" under which most of the medicinal herbs are traded. Analysis of DGCIIS data from 2005-06 to 2014-15 reveals that a total of 39 botanical raw drug entities under foreign trade can be segregated under the heading 1211. Some medicinal herbs are also categorized under chapter 13 and chapter 14 wherein foreign trade data in respect of 10 and 6 botanical raw drug entities respectively is recorded. Some

commodities like cinnamon bark, pepper long, juniper berries and *Cassia tora* seeds, that are used as botanical raw drugs in large quantities are clubbed under chapter 9 with spices. From the above it is evident that the DGCIS data is able to provide entity-wise information on the foreign trade of medicinal plants for about 60 species only. The data is, however, good enough to provide information on gross foreign trade of medicinal herbs.

## 8.2. FOREIGN TRADE OF BOTANICAL RAW DRUGS FROM 2005-06 TO 2014-15

DGCIS data (DGCIS, 2015) for a period of ten years i.e. from 2005-06 to 2014-15 has been analyzed in respect of the botanical raw drug entities recorded under chapters 9, 12, 13 and 14 of ITC (HS) and is presented in table 8.1. In addition to the botanical raw drugs, entities defined as 'extracts' of botanical raw drugs and 'gums' under foreign trade, have been included in this analysis. The botanical entities usually traded as 'spices', 'cereals', 'pulses', fruits/ vegetables or for purposes other than medicinal use have, however, not been included in this analysis.

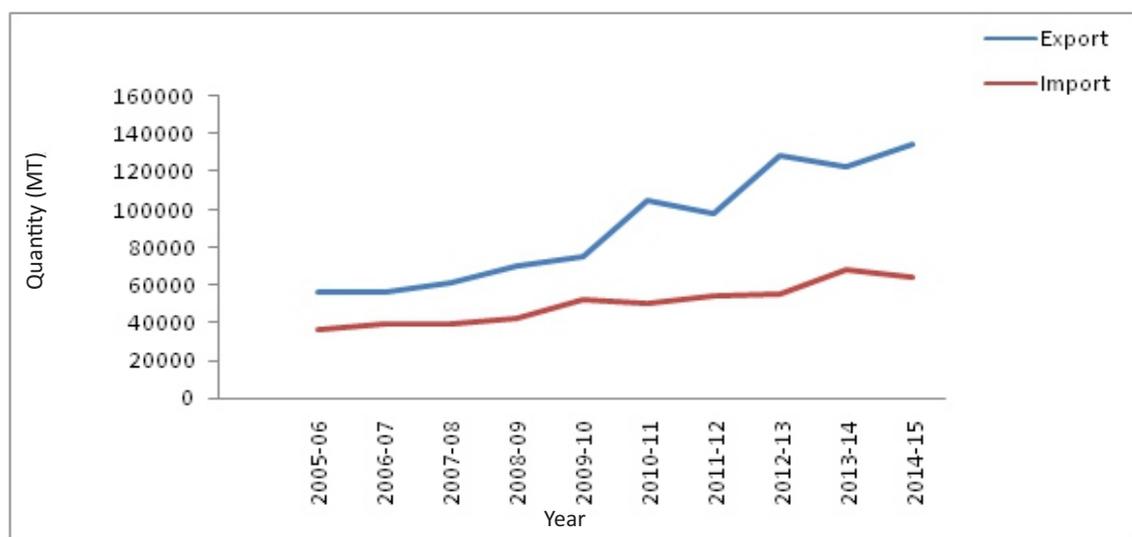
**Table 8.1:** Gross Export and Import of Botanical Raw Drugs from 2005-06 to 2014-15

Year	Export		Import	
	Quantity (MT)	Value (₹ in Lakh)	Quantity (MT)	Value (₹ in Lakh)
2005-06	56014.17	57920.50	36143.68	19165.71
2006-07	55854.62	71999.13	39311.68	26156.85
2007-08	60379.24	74143.90	38675.35	28649.92
2008-09	69822.45	103107.54	42310.85	35457.67
2009-10	74611.74	97186.31	51987.63	37808.51
2010-11	104115.13	117000.62	58076.93	49107.56
2011-12	97244.43	163642.63	53753.29	59438.05
2012-13	128247.37	243748.62	54798.97	67577.39
2013-14	122374.91	277300.43	68209.25	96872.56
2014-15	134436.52	321133.44	64545.34	107572.10
Av. / year (rounded)	90310.00	152718.00	50781.00	52781.00

It can be amply inferred from the above table that at gross level, the export as well as the import of the botanical raw drugs has steadily increased over the past ten years in terms of volumes as well as value. In as far as export of botanical raw drugs is concerned the trade volume has increased from about 56,015 MT in 2005-06 to 134,437 MT in 2014-15 registering an average annual increase of about 11%. In value terms, the export of botanical raw drugs registered an average annual increase of about 22% with the total export value rising from ₹ 579 crore in 2005-06 to ₹ 3211 crore in 2014-15. The import of botanical raw drugs, on the other hand, registered an average annual increase of 7% in volume terms with the total import volume rising from 36,143 MT in 2005-06 to 64545 MT in 2014-15. The import value registered a corresponding average annual increase of 22% with the import value rising from ₹ 192 crore in 2005-06 to ₹ 1076 crore in 2014-15.

Further analysis of the figures in the table above reveals a healthy trade balance between the export and import of medicinal plants over the ten year period. Whereas the volume of medicinal plants exported during 2005-06 was 1.5 times of the volume of medicinal plants imported, the export volume grew to more than two times that of volume imported over the ten year period. Similar trend is also revealed in respect of the export and import value over the years. The gross

value of the medicinal plants exported over the ten year period from 2005-06 to 2014-15 remained about three times that of the import value.



Gross Volume of Foreign Trade of Botanical Raw Drugs

The increase or decrease of annual trade volumes of export and import is considered a robust measure to understand trends of export and import of commodities over the years. An average annual increase of 11% in export volumes of botanical raw drugs, recorded over the ten year period from 2005-06 to 2014-15, amounts to a significant increase. The average annual increase of 22% in the value of export of botanical raw drugs over a ten year period, also forms a significant increase, even with a ten year average annual inflation index of 8.5%.

Since 'extracts' and 'gums' form a significant part of the 'botanical raw drugs' in foreign trade, it is important to study the trends in foreign trade of 'extracts' and 'gums' separately also.

### 8.2.1. Extracts

Foreign trade of extracts of botanical raw drugs, recorded under ITC (HS) 1311.19.11 to ITC (HS) 1311.19.19, is compiled and presented in the table 8.2.

**Table 8.2.** Year-wise Foreign Trade of 'Extracts' of Botanical Raw Drugs

Year	Export		Import	
	Quantity (MT)	Value (₹ in Lakh)	Quantity (MT)	Value (₹ in Lakh)
2005-06	1575.22	19458.9	130.32	1093.64
2006-07	2322.29	29337.9	154.51	977.71
2007-08	1972.32	23108.6	199.40	1519.35
2008-09	2716.94	35097.0	397.80	3425.18
2009-10	2066.49	35950.6	242.18	2995.43
2010-11	2199.10	38326.9	379.02	3801.80
2011-12	3215.63	66561.9	357.01	6498.21
2012-13	4638.29	113270.6	285.54	8636.03
2013-14	7419.62	142610.8	1328.65	10074.50
2014-15	11639.36	151734.2	1692.85	10785.42

The foreign trade of 'extracts' of botanical raw drugs, especially their export, has come to occupy a very important position over the years and has gone up from 1,575 MT during 2005-06 to 11,640 MT during 2014-15 with a corresponding export value of ₹ 195 crore in 2005-06 and ₹ 1517 crore in 2014-15. The major species accounting for the extract export are Camboge, Gymnema, Neem, Belladona, Agar, Nux-vomica with major gains seen in the export of Camboge extract, Neem extract and extract of miscellaneous botanical raw drugs that has gone up by almost 10 times.

The import of extracts has also grown about ten-fold over the ten year period from 2005-06 to 2014-15, rising in volumes imported from 130 MT in 2005-06 to more than 1690 MT in 2014-15, and in value from about ₹ 11 crore to ₹ 108 crore. The major entity under import of 'extracts', for which segregated data of imports is available, is 'Ginseng Extract' with average annual import of 21 MT at an average annual import value of ₹ 11 crore over the ten year period from 2005-06 to 2014-15.

It is, however, a matter of concern that the present ITC (HS) coding system does not allow entity-wise segregation of extracts clubbed under 'other extracts' even as these form the bulk of extracts in foreign trade. Analysis of the export data for the year 2014-15 reveals that about 6,100 MT of herbal extracts forming more than 50% of the total extracts exported during the year by volume were clubbed under the category 'other extracts'. In value terms, the export value of the extracts clubbed under the category 'other extracts' during 2014-15 was ₹ 1,244 crore forming more than 80% of the total export value of all extracts! This analysis also makes it very apparent that the extracts getting clubbed under 'other extracts' include some entities of very high value. Similarly, import of extracts worth ₹ 87 crore out of total extracts worth ₹ 108 crore imported during 2014-15 and forming about 80% of the total imports for the year, is recorded under the category 'other extracts'.

Lack of reflection of such entities in the national database does not augur well for management and development of the resource plant species used in making such extracts. The ITC (HS) Code, therefore, needs to be refined to suitably accommodate the entity-wise information on foreign trade of extracts made of botanical raw drugs.

### 8.2.2. Gums

Gums form a sizeable item of foreign trade, with Gum Arabic, Gum Karaya, Asian Gum, and Guggal forming the major items of such trade. During the year 2014-15 a total of 4,074 MT of gums were exported at an export value of ₹ 84.98 crore. Similarly, a total of 32,274 MT of gums were imported during the same year at a total import value of ₹ 141.29 crore (table-8.3).

**Table 8.3.** Year-wise Foreign Trade of Medicinal 'Gums'

Year	Export		Import	
	Quantity (MT)	Value (₹ in Lakh)	Quantity (MT)	Value (₹ in Lakh)
2005-06	2282.00	2481.90	15381.13	4575.27
2006-07	1726.35	2204.06	19401.81	5732.87
2007-08	2075.74	2381.23	15706.11	4614.26
2008-09	4498.03	6356.96	16316.27	5442.43
2009-10	3869.76	5562.61	21231.62	6957.83
2010-11	4102.13	8423.81	19523.40	6600.89
2011-12	4504.34	11757.63	26374.34	8171.28

Year	Export		Import	
	Quantity (MT)	Value (₹ in Lakh)	Quantity (MT)	Value (₹ in Lakh)
2012-13	2424.34	8414.11	23320.87	8844.67
2013-14	3243.70	10909.79	33940.36	14478.56
2014-15	4073.87	8497.75	32274.29	14128.93

Close scrutiny of the data reveals that the major entities forming foreign trade of 'gums' is the 'Gum Arabic'. One prominent entity traded as 'gum' and forming a large bulk of plant based gums in foreign trade i.e. 'Guar Gum' has not been included in this data as it is not traded primarily as medicinal raw drug.

### 8.3. FOREIGN TRADE OF ASU & H MEDICAMENTS FROM 2005-06 TO 2014-15

A significant part of the botanical raw drugs, including extracts and gums, is imported and exported in the form of ASU & H value added products. The foreign trade of these value added products is recorded in the DGCIS data as 'Medicants' (ITC (HS) 30039011) and 'Medicaments' (ITC (HS) 30049011). As can be noticed from the table 8.4 below, the gross quantity of ASU & H medicaments under exports steadily grew from 6330 MT in 2005-06 to about 15750 MT in 2014-15. In value terms, the export value of ASU&H medicaments during 2005-06 was ₹ 235 crore, which rose to ₹ 708 crore in 2014-15. Ayurvedic formulations form the major share of medicaments (about 99%) in export, with those under Sidhha, Unani and Homoeopathy systems account for only just about one percent of total exports.

**Table 8.4.** Export of ASU&H Medicaments

(Qty. in MT, Value in ₹ crore)

Year	Ayurvedic		Unani		Siddha		Homeopathic		Total	
	Qty	Value	Qty	Value	Qty	Value	Qty	Value	Qty	Value
2005-06	6275.3	23306.7	42.1	112.8	4.9	29.8	7.9	44.2	6330.2	23493.5
2006-07	8681.6	25953.9	8.0	70.1	0.2	2.1	16.7	135.6	8706.5	26161.7
2007-08	11020.7	32143.8	41.0	113.3	9.6	41.5	26.0	129.6	11097.3	32428.2
2008-09	13787.3	55150.4	105.4	543.4	2.9	11.8	73.7	260.3	13969.3	55965.9
2009-10	13936.6	67202.5	13.3	43.0	2.2	43.3	131.3	558.2	14083.4	67847.0
2010-11	14785.0	70045.3	34.4	121.5	12.1	131.2	27.8	92.8	14859.3	70390.8
2011-12	15963.4	80817.5	101.0	5091.4	9.0	75.8	55.3	316.0	16128.7	86300.7
2012-13	12895.2	84977.5	44.8	908.6	40.1	1157.4	11.7	184.5	12991.8	87228.0
2013-14	12461.1	88084.3	62.9	7391.6	17.6	206.1	39.6	322.4	12581.2	96004.4
2014-15	15671.5	70314.9	17.9	67.6	11.0	99.4	48.7	358.2	15749.1	70840.1

The imports of ASU&H medicaments have risen from about 1390 MT in 2005-06 to about 1530 MT in 2014-15 with peak import of about 2000 MT recorded during 2007-08 and 2009-10 and a low of about 600 MT recorded during 2012-13 (table 8.5). The corresponding import value, however, registered a rather steady upward trend as it rose from ₹ 60 crores in 2005-06 to ₹ 159 crore in 2014-15. The major component of import is Homoeopathy medicaments (59%) followed by Ayurveda medicaments (41%).

Whereas the increasing foreign trade of ASU&H medicaments amply reflects the trend towards 'herbals', higher export of value added products also generate greater foreign exchange for the country. The export value generated by export of ASU&H medicaments is almost five times of the

**Table 8.5.** Import of ASY&H Medicaments

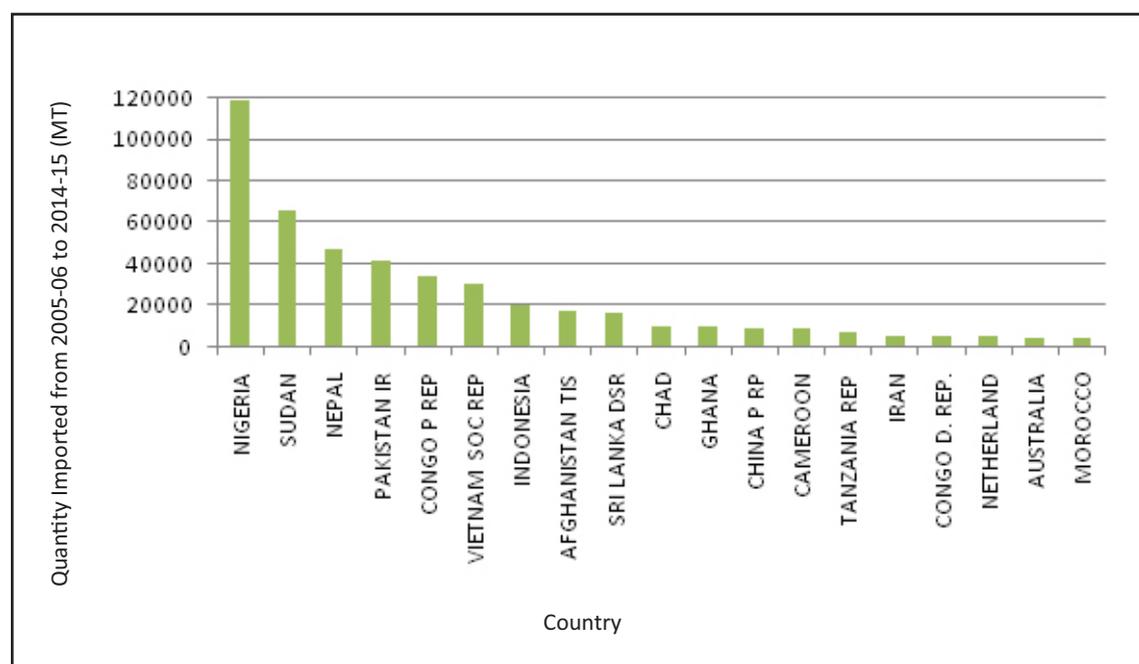
(Qty. in MT, Value in ₹ crore)

Year	Ayurvedic		Unani		Siddha		Homeopathic		Total	
	Qty	Value	Qty	Value	Qty	Value	Qty	Value	Qty	Value
2005-06	1299.3	3531.9	9.9	46.6	6.2	37.5	75.9	2386.9	1391.2	6002.9
2006-07	1119.2	3251.6	70.4	103.0	0	0	67.8	3092.8	1257.4	6447.4
2007-08	2014.6	3460.5	49.6	37.0	0	0	35.2	3152.1	2099.4	6649.6
2008-09	1723.6	6445.2	1.7	4.9	0	0	22.1	4012.3	1747.4	10462.5
2009-10	1711.5	3133.2	15.3	32.5	0	0	369.5	2810.6	2096.4	5976.3
2010-11	1183.9	3282.8	0	0	0	0	164.9	4665.5	1348.8	7948.3
2011-12	902.1	4081.1	0	0	2.7	334.1	93.2	5779.6	997.9	10194.8
2012-13	562.8	3774.3	1.5	4.1	0.0	3.7	33.5	7870.1	597.8	11652.2
2013-14	1349.6	4745.9	0	0	0.3	3.6	17.2	9328.4	1367.1	14077.9
2014-15	1383.6	6560.4	0	0	0.1	0.9	144.9	9330.3	1528.6	15891.7

value on account of imports of herbal based medicaments. However, the total export value of ASU&H medicaments is still about one fifth of the total export value generated by the 'botanical raw drugs'.

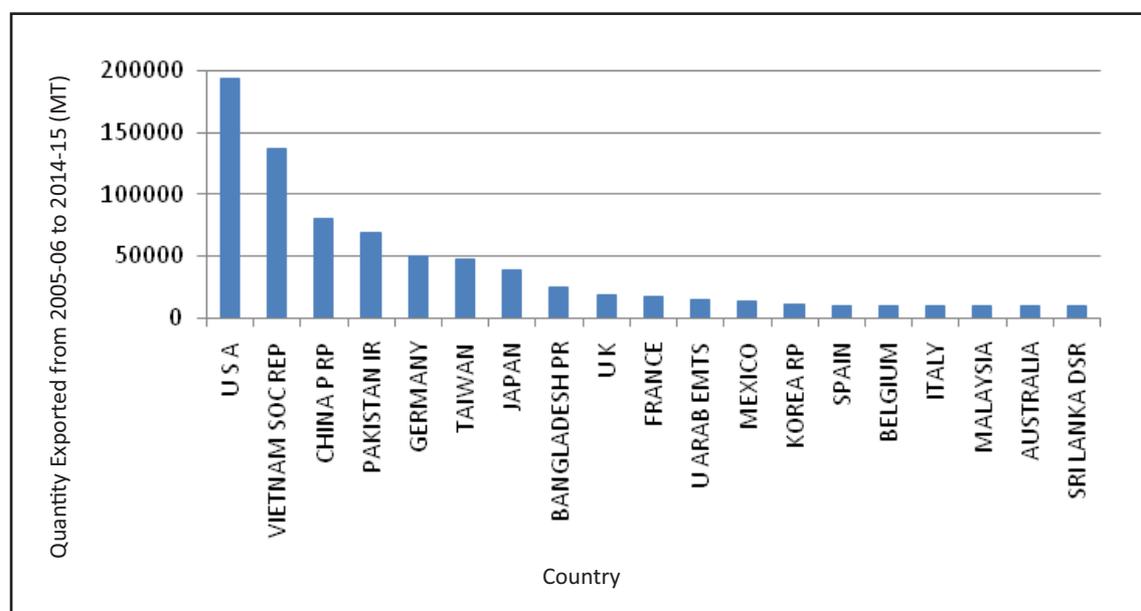
#### 8.4. MAJOR COUNTRIES INVOLVED IN FOREIGN TRADE OF BOTANICAL RAW DRUGS WITH INDIA

India exports a large number of botanical raw drugs to and imports various botanical raw drugs from many countries across the globe. The major countries that had high cumulative foreign trade of medicinal plants with India over a ten year period from 2005-06 to 2014-15 are given the figures below:



Import of Botanical Raw Drugs

The very high import figures from African countries is on account of import of 'Gum Arabic'. United States of America has been the largest importer of botanical raw drugs from India over the ten year period from 2005-06 to 2014-15, with the major entity of export to USA being 'Isabgol'.



Export of Botanical Raw Drugs

## 8.5. PROFILE OF BOTANICAL RAW DRUGS ENTITIES IN FOREIGN TRADE

ITC (HS) code-wise export and import data in respect of botanical raw drugs over the past decade i.e. from 2005-06 to 2014-15, based on the DGCI reports, is presented in tables 8.6a & 8.6b (Exports) and 8.7a & 8.7b (Imports) appended at the end of this chapter. As can be noticed, even after exhaustive listing of the entities traded under different codes, it is possible to list only about 60 botanical raw drug entities under foreign trade. Hundreds of other botanical raw drugs in foreign trade are clubbed under a few ITC (HS) codes titled 'others'.

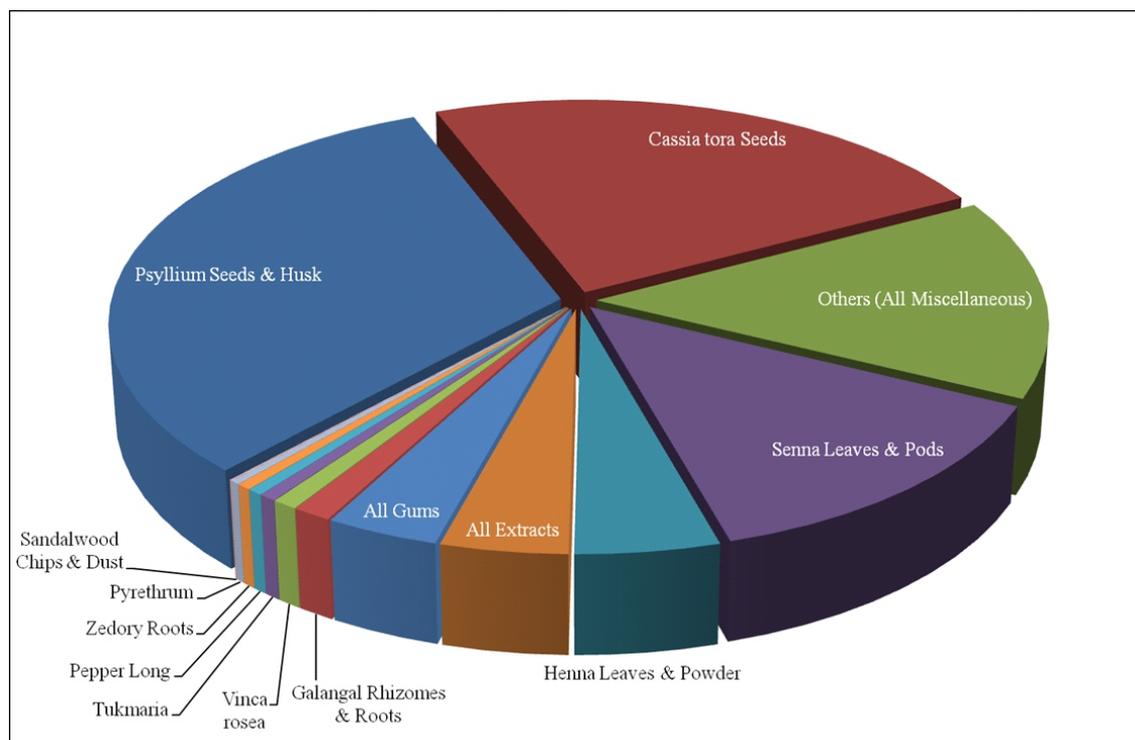
### 8.5.1. Exports

Analysis of the export data reveals that Isabgol (*Plantago ovata*) registered the highest export trade volumes during all the ten years and accounted for about one third of the export value of all botanical raw drugs. This trend is consistent with the similar trend recorded by Ved and Goraya (2008) in an earlier study. Similarly, the export of 'extracts' has followed an increasing trend over the ten years with export volumes increasing from 1,575 MT during 2005-06 to nearly 11,640 MT during 2014-15. Botanical raw drug entities that remained in high foreign trade over the ten year period from 2005-06 to 2014-15 are as under:

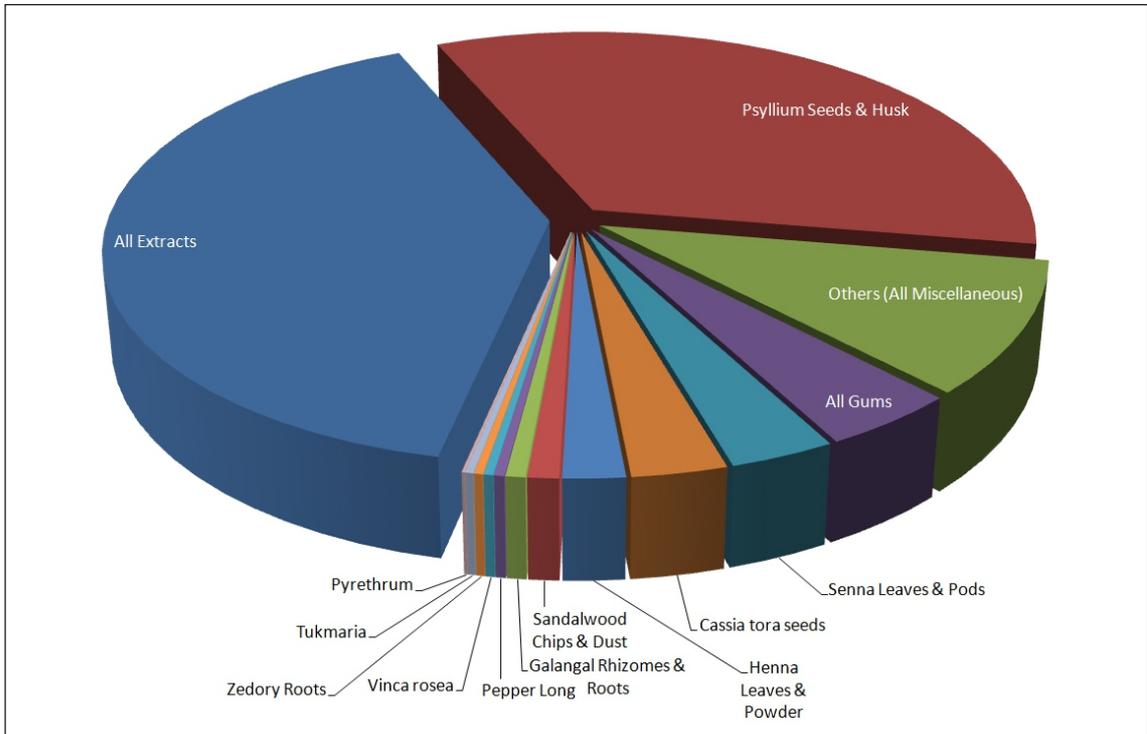
S. No.	ITC (HS) Code	Name of the Entity	Average Export Volume (MT)	Average Export Value (₹ in Crore)
1	12119013 12119032	Psyllium Seeds & Husk	29000	520
2	12119022	Senna Leaves & Pods	12100	51
3	09041110	Pepper Long	450	5
4	09109915	<i>Cassia tora</i> seeds	21000	46
5	12119026	Pyrethrum	270	1.5
6	12119042	Galangal Rhizomes & Roots	1130	9.5
7	12119050	Sandalwood Chips & Dust	78	15
8	12119060	<i>Vinca rosea</i>	735	4.6

S. No.	ITC (HS) Code	Name of the Entity	Average Export Volume (MT)	Average Export Value (Rs. in Crore)
9	12119092	Tukmaria	500	4
10	12119045	Zedovary Roots	427	4.3
11	14041011 14014019	Henna Leaves & Powder	4200	30
12	13012000, 13019016 to 13019019	All Gums	3300	67
13	13021400 to 13021919	All Extracts	3700	614
14		Others (All Miscellaneous)	13420	155
<b>Total</b>			<b>90310</b>	<b>1527</b>

Comparison of the current export data with the one presented in Ved and Goraya (2008) brings out that export of some of the high trading entities has fallen over the years. For example, the export volume of 'Jojoba Seeds', recorded as a high export entity in 2004-05, has fallen to less than 1 MT from 2010-11 onwards. Similarly, the export of 'Pyrethrum' has come down from more than 950 MT in 2005-06 to less than 50 MT in 2014-15, and that of 'Vinca rosea' from 1300 MT in 2005-06 to about 550 MT in 2014-15.



Average Export Volume (MT) of different Botanical Raw Drugs from 2005-06 to 2014-15



Average Export Value (₹ in Crore) of different Botanical Raw Drugs from 2005-06 to 2014-15

On the other hand, the data reveals a nearly fifteen time increase in exports of '*Cassia tora* seeds' over the ten year period, growing from just about 2100 MT in 2005-06 to nearly 30000 MT in 2014-15. Another entity that has registered a steady increase in exports is 'Tukmaria', the seeds of *Ocimum basilicum*, the export of which steadily grew from 230 MT in 2005-06 to 711 MT in 2013-14 before a decline to 433 MT in 2014-15. Export of 'Zedovary Roots' has also grown from about 92 MT to 1120 MT over a ten year period from 2005-06 to 2014-15.

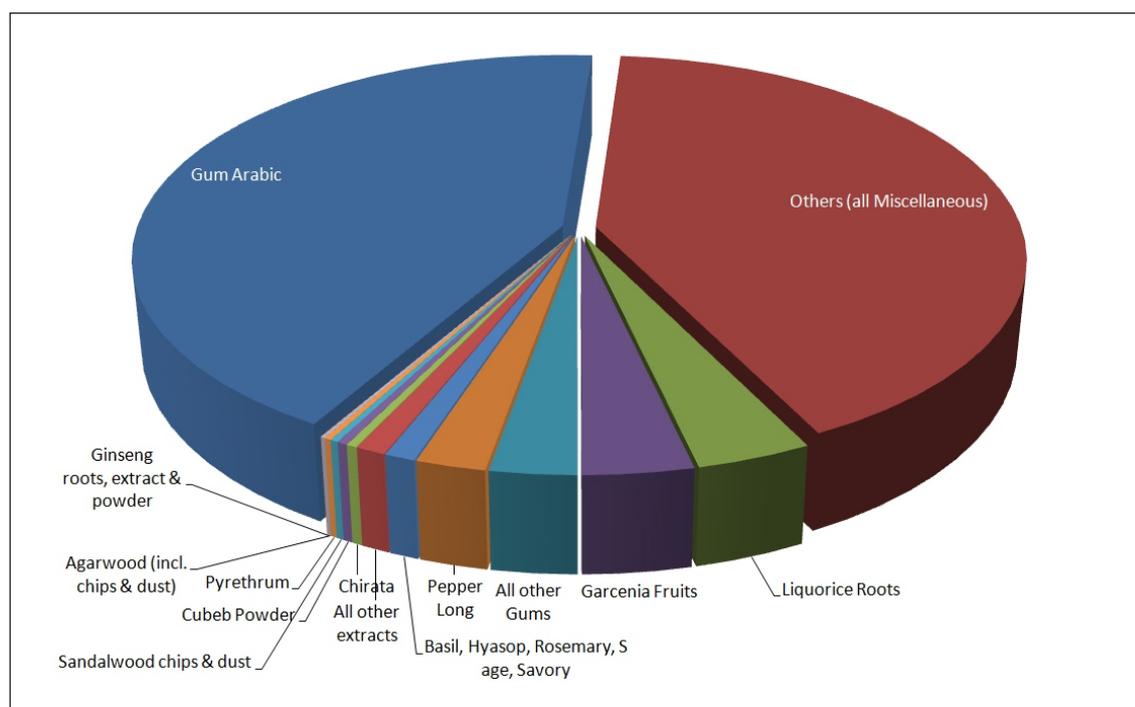


Herbal Raw Drug entities in high export volumes

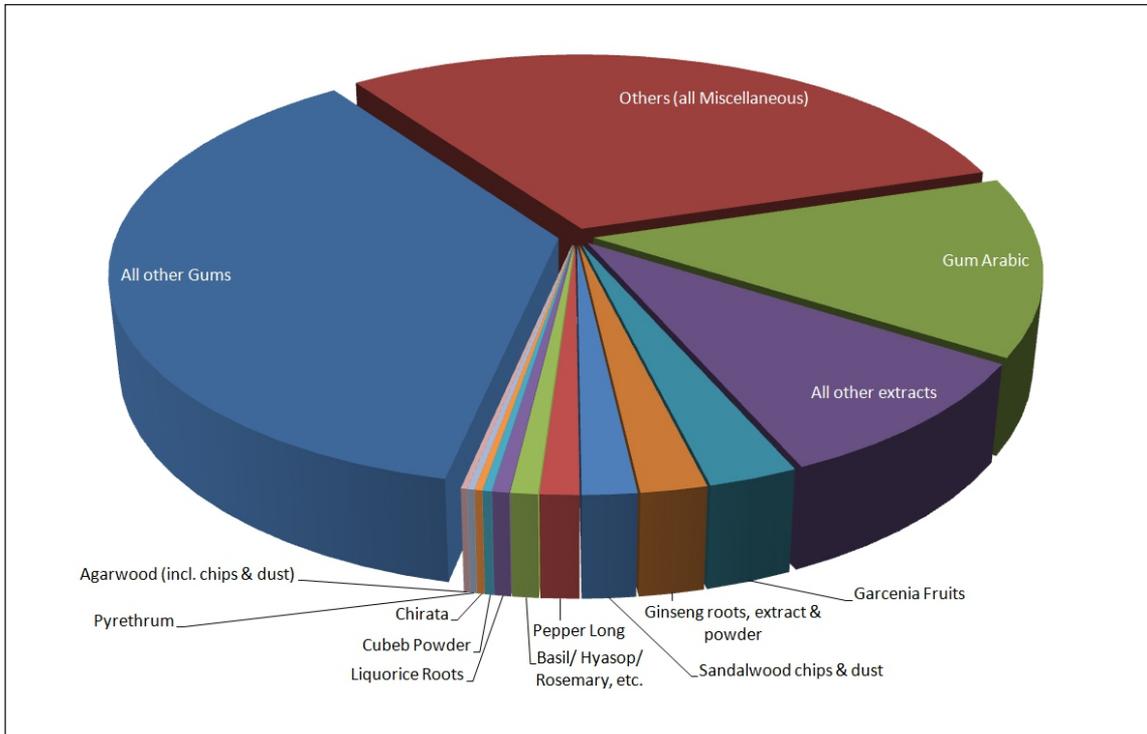
### 8.5.2. Imports

On the import side, Gum Arabic registered the highest import volumes over the ten year period with an increase in import volumes from 14,826 MT in 2005-06 to 31,008 MT in 2014-15. The decade saw a steady decline in the import of Pepper Long (*Piper longum*), a commodity that was recorded as the top imported botanical raw drug entity during 2004-05.

S. No.	ITC (HS) Code	Name of the Entity	Average Import Volume (MT)	Average Import Value (₹ in Crore)
1	13012000	Gum Arabic	21758	72.17
2	12119096	Garcenia Fruits	1815	14.52
3	09041110	Pepper Long	1152	6.34
4	12111000	Liquorice Roots	1900	2.75
5	12112000 13021914	Ginseng roots & extract incl. powder	29	10.83
6	12119050	Sandalwood chips and dust	130	8.86
7	12119094	Basil, hyasop, rosemary sage, savory	509	4.41
8	12119025	Cubeb Powder	164	1.44
9	12119099	Chirata	176	1.22
10	12119026	Pyrethrum	115	1.16
11	12119080	Agarwood (including chips & dust)	42	0.97
12	-	All other gums	1427	194.35
13	-	All other extracts	495	49.81
14	-	Others (all Miscellaneous)	21069	158.97
<b>Total</b>			<b>50781</b>	<b>528</b>



Average Import Volume (MT) of different Botanical Raw Drugs from 2005-06 to 2014-15



Average Import Value (₹ in Crore) of different Botanical Raw Drugs from 2005-06 to 2014-15

## 8.6. MAJOR ENTITIES IN FOREIGN TRADE

Presented below are the highlights of foreign trade in respect of top traded entities under export/import:

### 8.6.1. Psyllium or Isabgol

Psyllium or Isabgol, the seeds or seed husk of *Plantago ovata*, traded for its husk [ITC (HS) 12119013] and for its seeds [ITC (HS) 12119032], registered the highest export trade volumes from 2005-06 to 2014-15 with an average annual trade volume of 27,750 MT of Psyllium husk and an average annual trade volume of 712 MT of Psyllium seeds over this ten year period. Psyllium has also been the single largest foreign exchange earning botanical raw drug with its export value increasing from ₹ 209 crore in 2005-06 to ₹ 767 crore in 2014-15. The combined export of Psyllium husk and Psyllium seed constitutes about 20% of total export of botanical raw drugs by volume and about 24% of total exports of botanical raw drugs by value. Minor quantities of Psyllium husk was also imported during this period. However, the import price per kilogram has shown a fall from a high of ₹ 281 per kilogram in 2006-07 to ₹ 52 in 2014-15. The average export price of Psyllium husk, on the other hand, witnessed an increase from ₹ 83 per kilogram to ₹ 201 per kilogram over this period.



India is the major Psyllium producing and exporting country, contributing about 80% of the Psyllium traded in the world market. United States of America is the single major buyer of Psyllium husk, accounting for about 75% of the total exports of the material from India. Other main buyers

of Psyllium husk from India include the United Kingdom, France, Germany, Sweden, Denmark, Norway, Spain, Italy, Japan, Indonesia, Taiwan, Australia and Korea. In as far as Psyllium seeds are concerned, the major importer of this material from India is Germany. Most of the Psyllium exports occur through the Mundra Port and Sabarmati Inland Container Depot, Ahmedabad in Gujarat and Jawaharlal Nehru Port Trust, Nhava Sheva, Mumbai.

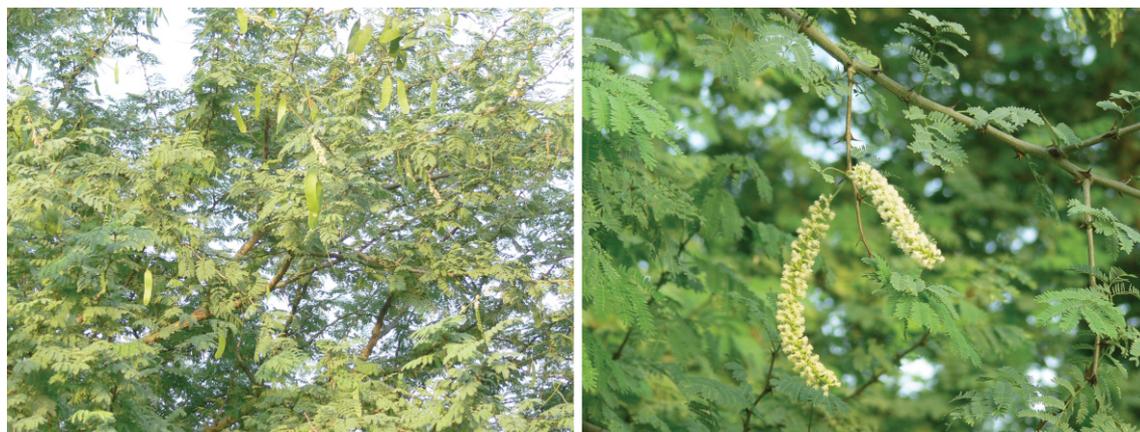
The entire supply of Psyllium seeds is met from cultivation in the states of Rajasthan, Madhya Pradesh and Gujarat, where it is cultivated over about 60,000 hectares. Unjha in Gujarat is the biggest mandi for trade of Isabgol. No wonder that 16 of the 18 major Isabgol processing units are located in the Unjha-Sidhpur belt.

### 8.6.2. Gum Arabic

Gum Arabic [ITC (HS) 13012000], the gum obtained mainly from *Acacia senegal* trees, and known locally as 'Kumtha' or 'Char Gond', has been the major botanical raw drug entity of import over the ten year period from 2005-06 to 2014-15 with an annual average import volume of 21800 MT over the period. This import volume reflects an increase of more than 200% with imports rising from 14826 MT in 2005-06 to 31008 MT in 2014-15. India is second only to the US in consumption of Gum Arabic (NGARA, 2004). The import value also registered an increase of more than 300% over the same period with the import value rising from ₹ 42 crore in 2005-06 to ₹ 300 crore in 2014-15. The average import price per kilogram over the period has been ₹ 31.80, varying from ₹ 28.46/ kg during 2005-06 to ₹ 41.44/ kg during 2014-15.



Gum Arabic has also been an item of sizeable export/ re-export over this ten year period with exports rising from just 58 MT in 2005-06 to nearly 1900 MT in 2014-15. The Gum Arabic that was exported from the country fetched a much higher price as compared to the Gum Arabic imported during the period. The average export price during this period was ₹ 150 per kilogram against the import price of ₹ 31.80 per kilogram. The export price, in fact, recorded a high of ₹ 257.14 per kilogram during 2013-14 before plummeting to ₹ 92.56 per kilogram in 2014-15 due to unexplained reasons. Re-export of processed and value added Gum Arabic (solubilized, atomized, kibbled) is a very common trade practice with France and United Kingdom leading the countries engaged in such re-export.



*Acacia senegal* tree and a flowering twig

This large variation in the prices per unit of Gum Arabic material being imported by India and the material being exported from India brings up the issue of critical identity of the Gum Arabic material under import and export. The official source of Gum Arabic is *Acacia senegal*, a tree that occurs naturally in Sahel region of Africa with small populations of this species also occurring in drier parts of India. Sudan, Chad and Nigeria account for about 96% of the total annual global trade of about 70,000 MT (ITC, 2008). In commercial trade, the *Acacia senegal* gum is known as 'Kordofan' or 'Hashab' gum, if it originates from Sudan, and 'Kitir' gum, if it originates from Chad. About 800 MT of Gum Arabic is tapped from *Acacia senegal* trees every year in India also (IINRG, 2008).

Gum obtained from another *Acacia* tree i.e. *Acacia seyal* is also traded in the international market as Gum Arabic under the trade name 'Talha' gum or 'Nigerian Gum Arabic' depending upon whether it comes from Chad or Nigeria respectively. Produced mainly in Chad and Nigeria, this gum fetches lower prices than the true Gum Arabic obtained from *Acacia senegal*. Current regulations dealing with Gum Arabic, however, do not distinguish between gum obtained from *Acacia senegal* and *Acacia seyal*. Therefore, although gum from *Acacia seyal* is considered to be of inferior quality to the gum obtained from *Acacia senegal*, it continues to be commonly traded as Gum Arabic. India is one of the major buyers of this gum and it imports an estimated 50% of the 9000 MT of this gum produced in Nigeria because of its superior colour (NGARA, 2004).

Gum obtained from *Acacia polyacantha* and *Acacia laeta* is also traded as Gum Arabic. It is considered to be of lower quality than that obtained from *Acacia senegal* and fetches much lower price than the true Gum Arabic. Gum of *Combretum nigricans* is another gum that is traded as Gum Arabic, and is considered as an adulterant to the true Gum Arabic (Anderson et al. 1991).

It is fairly apparent from the above discussion that trade recording system in respect of the trade of Gum Arabic tapped from so many different tree sources and commanding different prices under one ITC (HS) code is highly inadequate to track the species-wise data of this important botanical raw drug.

### 8.6.3. Pepper Long

Pepper Long [ITC (HS) 09041110] has been recorded in sizeable foreign trade as an item of both import and export during the period of this study. Whereas the import of this item has witnessed a steady decline from about 3300 MT in 2005-06 to just about 850 MT in 2014-15, the export of this item has been rather erratic with the exports declining from 718 MT in 2005-06 to only 86 MT in 2010-11 before picking up again and registering a high export volume of 1205 MT in 2014-15. Analysis of the per unit prices in respect of import and export reveals that during this period Pepper Long has been imported at an average price of ₹ 56 per kg (₹ 35.38 – ₹ 78.38), whereas its average export price during this period has been ₹ 171 per kg (₹ 90.78 – ₹ 347.04).



The vast difference in import and export prices of Pepper Long throws up a question about the botanical identity of the Pepper Long under import and export. Pepper Long, commonly known in

India as 'Pippali', is the fruiting spikes of *Piper longum*, a climbing shrub found wild in the country and also cultivated on large scale. The Pepper Long sourced from *Piper longum* fetches high prices in the foreign trade. India's major source of import of Pepper Long is Indonesia, a country that cultivates and also has wide-spread wild populations of another species of Piper i.e. *Piper retrofractum* (= *P. chaba*) that also yields fruiting spikes known in trade as Pepper Long, that are cheaper. Both these species are traded interchangeably under the same ITC (HS) code making it difficult to track the trade of Pepper Long obtained from *Piper longum* and *Piper retrofractum* separately. It seems, however, safe to assume that the Pepper Long entity that is exported is the fruiting spike of *Piper longum* and the one imported is the fruiting spikes of *Piper retrofractum*.

#### 8.6.4. Garcinia and Camboge

Garcinia [ITC (HS) 12119096] and Camboge [ITC (HS) 13021918] usually refer to the produce obtained from the fruits of *Garcinia gummi-gutta* (= *G. cambogia*), a tree occurring in the Southern Western Ghats in India and also in Sri Lanka and Indonesia. Local people in its range of occurrence also cultivate the species in homesteads and private fields for its fruit that is used for culinary purposes. The fruit has come to be an important commodity under foreign trade due to its debatable anti-obesity properties.

India is a big producer of Garcinia fruits and exports a part of the same in dried form. Over the ten year period from 2005-06 to 2014-15, India exported an average of 37 MT of dried fruits of Garcinia under ITC (HS) 12119096 per year, with high exports of 103 MT and 93 MT recorded during the years 2013-14 and 2014-15. India, however, imported much larger quantities of Garcinia fruits over the same period with an average annual import of 1804 MT, with very high imports of 3548 MT recorded during 2013-14. The major countries of import of Garcinia fruits have been Sri Lanka making for more than 69% of total imports and Indonesia making for about 20% of the total imports. The Garcinia fruit being imported from Sri Lanka is usually traded under the name 'Goraka', common name of Garcinia fruit in Sinhala. More than 70% of all import consignments of Garcinia fruit land at Chennai ports – both by sea and air.



It is interesting to note that India also exports Garcinia fruit extracts under the name Camboge extract that is exported under ITC (HS) 13021918. It is a value added product that fetches much higher export price than the dried Garcinia fruits. Over the ten year period 2005-06 to 2014-15, the dried Garcinia fruits have received an average price of ₹ 77 per kg, whereas the average export price commanded by the Garcinia fruit extract over the same period has been ₹ 551 per kg. India exported an average of 1166 MT of Camboge extract per year from 2005-06 to 2014-15 and earned an export value of ₹ 130 crore in 2014-15. Juxtaposing the annual import figures of Garcinia fruits and annual export figures of Camboge extract for the same period, as depicted in the table below, point to the fact that India imports Garcinia fruit at very low prices from Sri Lanka and re-exports the same after making it into Camboge extract at much higher export prices.

**Table 8.6.** Garcinia and Camboge Import and Export figures Juxtaposed

Year	Export of Garcinia Fruit [ITC (HS) 12119096]		Import of Garcinia Fruit [ITC (HS) 12119096]		Export of Camboge Extract [ITC (HS) 13021918]	
	Quantity (MT)	Value (₹ in Lakh)	Quantity (MT)	Value (₹ in Lakh)	Quantity (MT)	Value (₹ in Lakh)
2005-06	64.00	467.09	878.20	348.66	672.65	3257.34
2006-07	31.07	134.25	2585.68	1559.49	93.59	558.44
2007-08	8.82	57.90	911.42	294.18	581.68	2856.26
2008-09	10.41	64.71	2992.10	998.99	1314.64	7529.37
2009-10	21.20	84.15	1408.27	492.18	475.80	2848.35
2010-11	10.89	51.70	1320.55	757.38	585.63	3371.65
2011-12	3.77	20.48	891.58	904.18	592.06	4805.47
2012-13	25.30	59.75	1726.00	1434.84	561.50	4401.45
2013-14	103.10	577.27	3548.45	4855.35	1725.41	15680.12
2014-15	93.28	799.22	1780.36	3449.04	5053.92	12960.32

Major buyer of Camboge extract from India is United States of America that accounts for more than 50% of the exported volume, with South Korea, Japan, Germany and Australia as other major importers of this commodity. Even though India is the largest exporter of Camboge extract, it imports small quantities of the same, usually in very pure form.

The issue of tracking the import and export of Garcinia fruits and Camboge extract is far from simple, as foreign trade of these entities takes place under a large number of ITC (HS) Codes. In addition to the two ITC (HS) codes referred to above, under which dried Garcinia fruits and Camboge extract is usually traded, these commodities have been noticed to be also traded under the following 13 ITC (HS) codes: ITC (HS) 12079940; ITC (HS) 13021918; ITC (HS) 13021919; ITC (HS) 13021930; ITC (HS) 13021990; ITC (HS) 21061000; ITC (HS) 21069099; ITC (HS) 29389090; ITC (HS) 30049011; ITC (HS) 30049099; ITC (HS) 33012949; ITC (HS) 39269099; and ITC (HS) 84301020.

The issue related to complexity of foreign trade of *Garcinia* fruits does not end here. *Garcinia* also refers to the fruits of many other tree species of genus *Garcinia* viz. *G. indica* (the Kokum tree), *G. morella* (Kadukaai pulli), *G. xanthochymus* (Mysore Gamboge), etc. Fruit extract of *Garcinia indica* has been noted to be exported under the ITC (HS) code 13021918, the same code as for Camboge extract. The fruits of this species are also traded under the ITC (HS) codes 12079940, 15159010, 15159099 and 30049011, as food supplement. In the above scenario, it is imperative that the ITC (HS) coding system of Garcinia and Camboge is refined to be able to effectively track trends in its foreign trade.

### 8.6.5. Senna Leaves and Pods

Senna leaves and pods, exported and imported under ITC (HS) code 12119022, is the produce obtained from *Senna alexandrina* Gars. ex Mill. [= *Cassia angustifolia* M. Vahl]. In addition to the use of this commodity by the domestic herbal industry in large quantities, Senna leaves and pods form an important commodity exported from the country. The quantities exported and the export value realised over the ten year period from 2005-06 to 2014-15 is given in the table below:

Analysis of the table above reveals that Senna has been a fairly stable



Year	Qty. Exported (MT)	Value (₹ in Lakh)
2005-06	11430.18	2392.97
2006-07	9398.89	2670.43
2007-08	10006.28	3070.69
2008-09	12286.83	4907.41
2009-10	12653.46	4653.98
2010-11	15048.58	4496.19
2011-12	13576.09	5100.24
2012-13	11975.64	6736.40
2013-14	11214.63	7769.58
2014-15	13243.56	8817.39

commodity in as far as its export is concerned with its average annual quantity exported over the ten year period from 2005-06 to 2014-15 being around 12000 MT. The entity has, however, seen more than 3.5 times growth in the value terms.



Senna - dried leaves and pods

Senna is under extensive cultivation in Tamil Nadu, Rajasthan and Gujarat and the cultivated material is able to fully meet the demand of the species.

#### 8.6.6. Henna Leaves and Henna Powder

Henna (Mehndi) Leaves and Henna Powder, obtained from *Lawsonia inermis*, a shrub that is widely cultivated around Sojat in Rajasthan, is known to command a good export market. Till about 2007-08, the foreign trade of Henna Leaves and Henna Powder was recorded under ITC (HS) codes 14041011 and 14041019 respectively. An average annual export volume of more than 200 MT of Henna Leaves and more than 4000 MT of Henna Powder at a collective average annual export value of more than ₹ 30 crore was being recorded under these ITC (HS) codes till 2007-08. However, there is no record of the foreign trade of these entities under these ITC (HS) codes. Limited scrutiny of the DTR data shows that the export of these entities is now being recorded under many different ITC (HS) codes viz. 12119029, with the result that segregated data of export of these entities is now not readily available.

#### 8.6.7. Myrobalans

Myrobalans ('Amla' and 'Others') were reported to form an important export commodity during 2004-05 by Ved and Goraya (2008) with a total export volume of more than 4000 MT at a export value of about ₹ 20 crore. Recorded under ITC (HS) Codes 14041061 and 14041069 till 2007-08, an

annual average trade of 'Myrobalans' has been about 800 MT at an average annual export value of ₹ 4 crore. No record of the export of this commodity is now available under the above mentioned ITC (HS) codes. A limited analysis of the DTR data shows that the export of these entities is now being recorded under various different ITC (HS) codes viz. 12119049, making it difficult to pool segregated data of export of this commodity. Moreover, entity-wise information in respect of different entities in foreign trade as 'myrobalans' is not available.

#### 8.6.8. Nux-Vomica Seeds

Nux-Vomica seeds (*Strychnos nux-vomica*) are traded under the ITC (HS) 12119012 and form one of the important botanical raw drugs under export from India. The export of this commodity has, however, registered a sharp decline from a high of 24 MT during 2007-08 to a mere 0.2 MT in 2014-15 with nil export recorded during 2012-13. The major consumer of exported Nux-Vomica seeds is the Homoeopathic industry, with limited annual requirement of the material. One of the reasons for decline in export of Nux-Vomica seeds from 2005-06 to 2014-15 seems to be the simultaneous rise in export of Nux-Vomica extracts [ITC (HS) 13021913] during the same period. The export of Nux-Vomica extract started moderately in 2006-07 with export of only 20 kg of material, rose up to 4.5MT in 2010-11 and then leveling off at about 1.5 MT per annum, registering an unexplained dip to just 20 kg in 2014-15. It is interesting to note that the total export volume of Nux Vomica seeds over the ten year period from 2005-06 to 2014-15 was 83.6 MT and that of Nux-Vomica extract was only 8.87 MT. However, the export value of Nux-Vomica extract was ₹ 392 Lakh against the total export value of only ₹ 52 Lakh in respect of Nux-Vomica seeds. It is apparent that the per unit rate in respect of export of Nux-Vomica extract was much higher than that for the Nux-Vomica seeds.

#### 8.6.9. Liquorice Roots

Liquorice (also Licorice) roots (Mulethi) is the produce obtained from the roots of *Glycyrrhiza glabra* and forms an important item of import. Till 2007-08 data on its foreign trade was being maintained under ITC (HS) code 1211.10.00, and an average annual import volume of about 1900 MT at average annual import value of ₹ 2.75 crore was being recorded under this code. However, from 2008-09 onwards, data of import of this commodity is NOT being maintained under the code 1211.10.00 making it difficult to pool comprehensive data of its import. Liquorice roots continue to be a commodity of significant import and sample scrutiny of the DTRs reveals that during the year 2015-16, import of this commodity has been effected under ITC (HS) Codes 1211.90.11 (assigned to 'Ambrette seeds'), 1211.90.49 (assigned to 'other' roots), and 1211.90.99 (assigned to 'other' plant parts).

#### 8.6.10. Cassia tora Seeds

*Cassia tora* seeds, traded under ITC (HS) Code 09109915, have remained another commodity in



*Cassia tora* - seeds and plant

high exports over the ten year period from 2005-06 to 2014-15 with its export volume increasing over ten times from 2083 MT during 2005-06 to 28190 MT during 2014-15, with a corresponding increase in export value from ₹ 3.57 crore in 20105-06 to ₹ 123.99 crore in 2014-15. The export price per kg has also increased from just about ₹ 17 per kg in 2005-06 to ₹ 44 per kg in 2014-15.

#### 8.6.11. Galangal and Zedovary Roots

Galangal Roots (*Alpinia galanga*) and Zedovary Roots (*Curcuma zerambet*) have remained important commodities of export over the past decade. The Galangal Roots, traded under ITC (HS) Code 12119042, registered an increase in export volumes from about 361 MT in 2005-06 to a high of 3095 MT in 2012-13, before coming down to 705 MT in 2014-15. The export value also reflected a corresponding increase from ₹ 2.57 crore in 2005-06 to a high of 26 crore in 2012-13 before coming down to ₹ 7.94 crore in 2014-15. Similarly, Zedovary Roots, traded under ITC (HS) Code 12119045 also registered an increase in export volume from about 92 MT in 2005-06 to 1124 MT in 2014-15 with corresponding increase in export value from about ₹ 36 lakh in 2005-06 to ₹ 13.79 crore in 2014-15. Major source of both Galangal Roots and Zedovary Roots in the country is cultivation and both the species seem to have good potential of creating cash income for the farmers.

#### 8.6.12. Import of Miscellaneous Herbal Raw Drugs

The Indian herbal industry is known to use a large number of herbal raw drugs, many of which are imported from other countries. Most of these species are clubbed under 'others' categories under the present system of ITC (HS) classification, making it difficult to get entity-wise information. A sample check of the DTR records of 2014-15 in respect of entities clubbed as 'others' has revealed import of herbal raw drugs like Kakar singi (*Pistacia integerrima*) from China; dried leaves of Mandukparni (*Centella asiatica*) from Madagascar; dried leaves of *Taxus baccata* from Netherlands; Gule-gauzaban (*Alcanna tinctoria/ Caccinea macrantha*) from Mediterranean countries.

### 8.7. RULES AND REGULATIONS RELATED TO FOREIGN TRADE OF BOTANICAL RAW DRUGS

The wild populations of a large number of medicinal plants have drastically declined due to increasing exploitation pressure, bringing many of these species to the brink of extinction. The global concern about the conservation and sustainable utilization of such red-listed species has led countries to join the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). At the heart of the CITES agreement is an extensive list of animal and plant species that have been identified as threatened due to overexploitation through international trade. Depending upon the gravity of threat status, different species have been assigned under Appendix I, Appendix II or Appendix III, with the Critically Endangered species being listed under Appendix I and the other two appendices containing lists of species under lesser threat. As at present, 14 species native to India, including *Saussurea costus*, an imported medicinal plant species, are listed in Appendix-I. An additional 58 species native to India, including important medicinal plant species like *Nardostachys jatamansii*, *Picrorhiza kurroa* and *Rauvolfia serpentina*, are listed in Appendix-II. The Appendix-II also enlists two plant families i.e. Cactaceae and Orchidaceae. 4 species native to India are listed under Appendix-III.

India is also a signatory to the CITES and has put in place various provisions related to export of plants, plant portions and their derivatives and extracts, obtained from the wild. CITES is implemented in India through a combination of the Wildlife (Protection) Act, 1972, the Export and Import Policy (EXIM) of the Foreign Trade (Development and Regulation) Act, 1992 and the

Customs Act, 1962. The lists of plant species included in the CITES Appendix I and the CITES Appendix II form the basis for regulating the foreign trade of medicinal plants under various policy and legal provisions in the country.

### **The Wildlife (Protection) Act, 1972**

This Act prohibits export of the following six species/ specie groups, included in Schedule VI (Section 2) of the Act (Inserted by Act 44 of 1991, w.e.f. 2-10-1991).

1. Beddome's cycad (*Cycas beddomei*)
2. Blue Vanda (*Vanda soerulec*)
3. Kuth (*Saussurea lappa* = *S. costus*)
4. Ladies slipper orchids (*Paphiopedilum* spp.)
5. Pitcher plant (*Nepenthes khasiana*)
6. Red Vanda (*Ranthera inschootiana*)

All the above six species/ specie groups are included in the CITES Appendix-I. Of these, Kuth (*Saussurea lappa* = *Saussurea costus*), is an important medicinal plant.

### **The Biological Diversity Act, 2002**

The Act does not specifically mention export of biological resources. However various sections of the Act deal with regulations related to obtaining and trade of the biological resources and ipso facto apply to the export of these resources also. Section 38 of the Act empowers the Central government, in consultation with the concerned State government, to notify red-listed species and 'prohibit or regulate collection thereof for any purpose'. At present 118 species (after adjusting an overlap of 14 species) have been notified through notifications in respect of 17 states. Further, as per Section 3 of the Act, the foreign nationals and the NRIs are required to obtain prior approval of the National Biodiversity Authority to access biological resources for research or for commercial utilization or for bio-survey and bio-utilization. Forms for making application for such approval are provided under Rule 14 of the Biological Diversity Rules, 2004. Section 7 of the Act enjoins Indian citizens to give prior intimation to the concerned State Biodiversity Board for obtaining biological resources for commercial utilization or for bio-survey and bio-utilization. The Central Government, vide MoEF & CC Notification dated 07 April 2016 has, under section 40 of the Act, however, has exempted 385 plant species pertaining to biological resources, including 108 species of medicinal plants, from the purview of this Act, being "normally traded commodities".

### **The EXIM Policy**

The major policy on foreign trade in wildlife and wildlife products, including medicinal plants, is the Export and Import Policy, commonly called the EXIM Policy. This policy, subjected to periodic revisions, is decided in consultation with the Directorate of Wildlife Preservation of the Government of India, and the CITES Management Authority for CITES implementation in the country. The EXIM policy is put into effect via the provisions of the Foreign Trade (Development and Regulation) Act, 1992 and enforced via the Customs Act.

The export of plant species, many of which are of medicinal importance, is regulated under the Schedule 2 (Appendix 2) of the EXIM policy. This schedule includes 6 plant species listed in Appendix-I, 12 plant species listed in Appendix-II, and 1 species of plants listed in Appendix-III of CITES and acts as a 'Negative List of Exports'. As at present, 29 plant species have been notified in this schedule and their exports prohibited (vide DGFT's notification dated 14.10.1998, reproduced

in the box below). All the six plant species listed under Schedule VI of the Wildlife (Protection) Act, 1972 also form part of this negative list of exports. The negative list of exports, first notified in 1998, under the EXIM Policy 1997-2002, still continues.

8 enlisted 'plants' actually refer to groups of plants, 3 at 'Family' level and 5 at 'Genus' level, with a very large number of species in these groups, especially the family 'Orchidaceae'. The actual number of plant species in the list is, therefore, much higher than meets the eye. Further analysis of this list brings out that there are certain overlaps in the list that need to be removed. For example, there is no need to list a few species of orchids when the entire Orchidaceae family has been included. In the present list, along with the family Orchidaceae, 5 species of orchids have also been listed. Similarly, when the entire Cycadaceae family is included in the list, there is no need to make specific listing of *Cycas beddomie*, a member of family Cycadaceae. There is a need to re-assess the inclusion of the entire *Euphorbia* genus in the list, as many of the Euphorbias are common weeds. Over the years threat status of many medicinal plant species has been assessed in the country. Some of the species assessed as red-listed may need to be included in the 'Negative List of Exports'. Further, the nomenclature of the listed species needs to be updated.

### **Export of CITES Listed Medicinal Plants**

The rules and guidelines regarding export of medicinal plants are given in the ITC (HS) Export Schedule-I. The export of all plants and plant portions of wild origin, which are listed in Appendix I of the CITES, Schedule VI of the Wildlife (Protection) Act, 1972 or Schedule 2 (Appendix 2) of the EXIM policy is prohibited.

The export of all plants and plant portions (except Red Sanders - *Pterocarpus santalinus*), listed in Appendix I of the CITES, Schedule VI of the Wildlife (Protection) Act, 1972 or Schedule 2 (Appendix 2) of the EXIM policy is, however, allowed if such material is obtained from cultivation. Such export is, however, subject to fulfillment of the following conditions (Heron, 2012).

**Certificate of Cultivation:** This certificate is issued by the concerned authority to the farmer as proof that a specified quantity of medicinal plant material has been obtained from cultivation done in the farmer's land. This certificate can be used by the farmer or the buyer to apply for the Certificate of Legal Procurement.

The farmers/ traders/ exporters wishing to cultivate/ trade/ export medicinal plant species enlisted in CITES Appendix-I and Schedule-VI of the Wildlife (Protection) Act, 1972 are required to procure a License for such cultivation/ trade/ export from the Chief Wildlife Warden of the concerned State. Under the CITES regulations, the farmer must register his nursery/ land where he wishes to cultivate medicinal plant species enlisted in CITES Appendix-I with the CITES Secretariat, that will issue a Registration Certificate to the farmer.

**Certificate of Legal Procurement (CLP):** This certificate is issued to the farmer/ trader/ exporter by the designated authority – usually the concerned Divisional Forest Officer – after the produce obtained from cultivation is packed, sealed and stamped in the presence of the designated authority. This certificate is the same as the one previously known as the Legal Procurement Certificate (LPC). The nomenclature has been changed under new DGFT Rules. The CLP is the key document needed by the CITES Management Authority for issuing CITES Export Permit.

In most of the cases, the farmers are not in a position to export the medicinal plant material directly, and sell it to some local trader/ exporter. In such cases the seller is required to prepare an

Affidavit on Stamp Paper as proof of the transfer of ownership of the material under export. This affidavit is needed for procuring CLP.

**Transit Pass:** It is a document issued by the designated authority – usually the concerned Divisional Forest Officer – to a farmer or a buyer to enable him to transport a specified quantity of medicinal plant material from one location (origin) to another (destination). This Transit Pass is presented at the Forest check posts along the given transportation route for verification and is got stamped as a proof that the material under transportation has actually come from the source stated in the Pass.

Usually such transit is allowed from the depot of the trader/ exporter. Thus, it is necessary for the trader/ exporter to get his Depot registered with the concerned authority – usually the local Forest Office.

**CITES Export Permit:** This permit is issued by the CITES Management Authority to the exporter as a proof of the source of the medicinal plant material under export. The Permit is valid for shipment of the concerned consignment and for every subsequent shipment a fresh Export Permit is needed.

The Director (WL) has four Regional Deputy Directors and four sub-regional offices of wildlife preservation, these serving as assistant CITES Management Authorities.

**Registration of Companies for Export:** The companies wishing to export medicinal plant material need to register their authorized dealership with the Customs. Copies of various documents like VAT/ sales tax registration, income tax returns, company's balance sheet of the previous years are needed for such registration. In case exports are intended for the USA, the exporting companies also need to be registered with the US Food and Drug Administration (FDA) under the US Bioterrorism ACT. As required by the US Customs, a Certificate of Analysis (CoA) is also needed for exporting medicinal plant material to the US. The exporter also needs to have an EXIM Code to effect exports.

In case of plant species listed under Appendix II of CITES, and not listed in Schedule VI of the Wildlife (Protection) Act, 1972 or Schedule 2 (Appendix 2) of the EXIM policy, export is allowed irrespective of the wild or cultivation origin of the produce, provided the exporter fulfils the following –

- The exporter must have a Certificate of Legal Procurement (CLP) issued by the jurisdictional DFO.
- In case of material obtained from cultivation, the exporter is required to have a Certificate of Cultivation from the District Agriculture Officer, District Horticulture Officer or the DFO.

The export of derivatives, extracts and formulations 'which may contain portions/extracts of plants on the prohibited list but only in unrecognizable and physically inseparable form' is allowed and that 'no certificate from any authorities whatsoever shall be required for their [formulations] export'. It needs to be remembered that export of CITES listed medicinal plants is allowed only through 7 ports i.e. Mumbai, Calcutta, Cochin, Delhi, Chennai, Tuticorin and Amritsar.

All violations of the EXIM policy constitute an offence under the Customs Act and are dealt with by

Customs officials. Inspection of consignments by Wildlife Inspectors may also be carried out at border crossings.

### **Import of CITES listed Medicinal Plants**

The rules and guidelines regarding import of medicinal plants are given in the ITC (HS) Import Schedule-I. The import of plants, their products and derivatives, except Kuth (*Saussurea costus*), had been free and it was only in 2006 that the CITES-related import controls were established. In 2006, the classifications of Export and Import Items were amended and imports of medicinal plants like Rauwolfia spp., Kuth (*Saussurea costus*) roots, Cacti, Agarwood and Agar oil are now subject to CITES provisions (Ministry of Commerce & Industry Department of Commerce Notification No. 42 RE-2005/2004-09). There is, however, no negative list of imports. The import of CITES listed medicinal herbs is, however, subject to fulfillment of the following legal requirements –

- Import Permit under CITES from the Regional Deputy Director (Wildlife)
- Export Permit of CITES from the exporting country.
- For import of seeds for planting/sowing, Import Permit under 'Plants, Fruits and Seeds (Regulation of Import into India) Order, 1989' is also required.

Several categories relevant to CITES-listed species have been identified as goods allowed to be imported without restriction (i.e. free of import duties or quotas), e.g. “medicinal plants, fresh or dried, whether or not cut, crushed or powdered” (Schedule 1 Chapter 12), lac, gums, resins and other vegetable extracts (Schedule 1, Chapter 13), pharmaceutical products (Schedule 1, Chapter 30) and essential oils (Schedule 1, Chapter 33).

### **Issues Pertaining to Procedural Delays**

Export of cultivated medicinal plant material in respect of CITES listed species holds a good revenue generation potential. Large efforts have also been made to promote cultivation of such species in the country. The success of these efforts has, however, not been commensurate with the efforts made. Firstly, there are propagation issues concerning the CITES listed species. Much more research inputs are required to develop their commercially viable cultivation models. Secondly and more importantly, the challenges in obtaining the necessary documents for the produce cultivated at huge expenses, act as dampeners to take up such cultivation on a larger scale. The long delays usually involved in procuring necessary documents make it difficult for the exporter to offer a reliable and timely supply to the buyers.

Interactions with various field officers during the course of this study revealed that much of the delays are caused by non-availability to them of comprehensive guidelines giving details and procedure for making various documents for export of such species. It seems very important to develop and effectively disseminate guidelines on the subject to the government field agencies and the exporters to facilitate the documentation process. It also would be a good idea to organize capacity building programs for the concerned officers from the field and the exporters to understand the documentation process for effecting export of CITES listed medicinal plant species.

### **Treatment of Trade with Nepal**

India and Nepal entered into trade agreement, called the 'Indo-Nepal Treaty of Trade' in 2009 for an initial period of 7 years with a provision for automatic extension for seven year periods at a

time, unless it is revoked by either of the parties after giving due notice. 27 routes/ border posts have also been defined for such trade. Under Article IV of the treaty, both Nepal and India have agreed to, on a reciprocal basis, to exempt from basic customs duty as well as from quantitative restrictions the import of such primary products as may be mutually agreed upon, from each other. And the 'protocol to the treaty' elaborates upon the scope of Article IV and provides a list of the primary products agreed upon for preferential treatment under Article IV. "Herbs, ayurvedic and herbal medicines, including essential oils and its extracts" (Sr. No. 11) are also included in this list.

Under this agreement, a large number of botanical raw drugs were being imported from Nepal through designated check posts along the Indo-Nepal border. Record of such imports was also being maintained at some of the forest check posts. However, due to some newly introduced regulatory regime by the UP Forest Department viz. making transit permit from the department mandatory for such traded items has resulted in procedural inconvenience for Nepalese exporters and has adversely impacted the imports of herbal raw drugs from Nepal. The issue was also discussed during the meeting of Nepal-India Inter-Governmental Committee (IGC) on Trade, Transit and Cooperation to Control Unauthorized Trade held in Kathmandu on December 21-22, 2013. The issue was proposed to be resolved through a consultative meeting with the Government of Uttar Pradesh. However, result of such meeting, if any held, could not be located. The result of his impasse is that record of import of herbal raw drugs from Nepal is no more available with the Forest Check Posts. It is believed that the material continues to arrive in various herbal markets in India in a clandestine manner.

## **8. THE HS CODES: ADEQUACY FOR RECORDING FOREIGN TRADE OF BOTANICAL RAW DRUGS AND A SUGGESTIVE MODEL FOR IMPROVEMENT THEREOF**

All commodities under foreign trade are assigned a unique code under Harmonized Commodity Description and Coding System, also known as the Harmonised System (HS) of tariff nomenclature, developed and maintained by the World Customs Organization (WCO). The various entities in foreign trade have been classified under different chapters with efforts made to accord a unique HS code to all entities in such trade. To achieve this, the WCO uses a six-digit universal HS Code to assign unique HS codes to as many entities as possible. The large diversity of bioresources that form an important part of the foreign trade have been classified under different chapters, with Chapter-12 entitled "Oil Seeds and Oleaginous Fruits; Miscellaneous Grains, Seeds and Fruit; Industrial or Medicinal Plants; Straw and Fodder" covering a major diversity of plants and plant material in foreign trade.

Let's take Chapter-12 as an example to explore the efficacy of the present HS coding system to bring out the identity of all bioresources traded under the coding system provided in this chapter. Narrowing our search to medicinal plants, we find that heading 1211 under this Chapter titled "Plants and parts of plants (including seeds and fruits), of a kind used primarily in perfumery, in pharmacy or for insecticidal, fungicidal or similar purpose, fresh or dried, whether or not cut, crushed or powdered" is more specific to this group of plants. The WCO has further expanded the heading 1211 to six digits with a view to assign unique HS Codes at 6-digit level (universal code) to plant entities in foreign trade. However, issues still remain to segregate species-wise data of botanical raw drug entities in foreign trade.

### **Issue-1**

A review of the six-digit coding level would reveal that it has been able to assign universal HS codes

to the following four items only:

1211.10	Liquorice roots ( <i>Glycyrrhiza glabra</i> )
1211.20	Ginseng roots ( <i>Panax pseudoginseng</i> ; <i>Panax</i> spp.)
1211.30	Coca leaf ( <i>Erythroxylum coca</i> )
1211.40	Poppy straw ( <i>Papaver somniferum</i> )

The large diversity of other medicinal herbs and parts thereof under foreign trade has been clustered under the following six-digit HS Code:

1211.90	Other
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It is, thus, HS Code 1211.90 (Other) under which most of the medicinal plants and parts thereof are grouped together for foreign trade. Thus, whether it is Neem or Nux-vomica seeds, Belladonna, Senna or Gymnema leaves, Psyllium husk, Serpentine roots, or Sandal wood chips, the foreign trade of all these items happens under this one HS code. Thus, this six-digit universal coding system is deficient in providing entity wise/ species wise information on the medicinal plant entities/ species in foreign trade.

The issue to provide more specific entity-wise codes has been sought to be addressed by the various national governments by adding another 2 or more digits to the six-digit universal codes. The Government of India has developed its own Indian Trade Classification of HS system - ITC (HS) - by adding two additional digits to the six-digit universal code to further classify the medicinal herbs by parts. The universal six-digit code 1211.90 (Other) has been, therefore, expanded to an eight-digit ITC (HS) coding system. For example, ITC (HS) codes from 1211.90.11 to 1211.90.19 have been assigned to Seeds of Medicinal Plants, as detailed below:

1211.90.11 to 1211.90.19 : Seeds of Medicinal Plants	
1211.90.11	Ambrette Seeds (Musk grains of vgtbl kngdm)
1211.90.12	Nux vomica Seeds
1211.90.13	Psyllium Seeds
1211.90.14	Neem Seeds
1211.90.15	Jajoba Seeds
1211.90.16	-
1211.90.17	-
1211.90.18	-
1211.90.19	Other Seeds FRSH/ DRD W/N Cut Crshd/ Pwdrd used in Perfmry, Pharm Etc/

And, as detailed below, HS Codes 1211.90.21 to 1211.90.29 have been assigned to the leaves of medicinal plants:

1211.90.21 to 1211.90.29 : Leaves of Medicinal Plants	
1211.90.21	Belladonna Leaves
1211.90.22	Senna Leaves and Pods
1211.90.23	Neem Leaves/ Powder
1211.90.24	Gymnema Powder
1211.90.25	Cubeb Powder
1211.90.26	Pyrethrum

1211.90.27	-
1211.90.28	-
1211.90.29	Other LEVS, PWDR, FLRS & Pods FRSH/ DRD W/N Cut Crshd/ Pwdrd

Similarly, HS Codes 1211.90.31 to 1211.90.39 are assigned to the Bark/ Fruit Rind/ Husk of medicinal plants; HS Codes 1211.90.41 to 1211.90.49 are assigned to the roots/ rhizomes of medicinal plants, etc.

It is very clear from the above that even this eight-digit ITC (HS) coding system is highly inadequate in recording all medicinal plant entities under foreign trade by species. Continuing with the examples of ITC (HS) codes from 1211.90.11 to 1211.90.19, assigned for foreign trade of medicinal seeds, it can be noted that this system is able to provide data in respect of medicinal seeds for only five species, whereas trade data of the seeds of possibly 100 other species is presently being clubbed under ITC (HS) code 1211.90.19 (Other Seeds). There are, however, three codes i.e. from 1211.90.16 to 1211.90.18 that have not yet been allocated to any entity. The same is true for the foreign trade of medicinal leaves, roots and rhizomes, bark, whole plants, etc. where the trade data of a large number of species is clubbed under ITC (HS) Codes 1211.90.29, 1211.90.39, 1211.90.49, and 1211.90.99. Some blank codes are also available in these categories also.

The present form of maintenance of foreign trade data of medicinal plants by the Director General of Commercial Intelligence and Statistics (DGCIS) is able to provide information in respect of only about 30 medicinal plant entities under the head 1211.90. Whereas it is a definite improvement over the universal coding system, it requires more refinement to be able to record entity-wise/ species-wise information. It needs no emphasis that species-wise information about the botanical raw drugs in foreign trade is very essential for managing their resource base, including initiating their cultivation. This information is also necessary to track the species-wise export/ import trends to support necessary policy inputs to safeguard their domestic trade and to keep a check on the trade of species in the negative list and those that are assessed as red-listed.

## Issue-2

The other area where the present system of tariff nomenclature put in place by the Indian Trade Classification is the assignment of ITC (HS) codes by Common Names to different botanical raw drugs. Even as the common names are easy to pronounce and sometimes have a charm about them, their use frequently leads to confusion and misunderstanding about the correct identity of the plant species these refer to. Plants with common names almost always tend to have several common names that vary from region to region, and country to country. In a number of instances, the same common name often refers to several different species, not to one specific plant, with some unrelated plants also sharing the same common name. Let's take the following examples to elucidate this issue.

Close analysis of the foreign trade of entities assigned ITC (HS) tariff nomenclature of 'Pepper Long' and 'Gum Arabic' reveals that the material being imported and exported under the HS Codes assigned to these entities, in fact, belongs to different botanical species. Whereas, Pepper Long in export most likely refers to *Piper longum*, the entity being imported under the same common name and the same ITC (HS) code most likely pertains to *Piper retrofractum*. This inference has been drawn from the price difference in the material exported and imported as Pepper Long and digging up information about the country of import, etc. Similarly, Gum Arabic of import is traditionally linked to the gum obtained from the trees of *Acacia senegal*. However, the per unit price variation in various import consignments reveals that the Gum Arabic of import very likely

refers to the gum obtained from various other species of *Acacia* viz. *A. seyal* or *A. polyacantha*.

This problem could be addressed if ITC (HS) codes, assigned to the bioresources in trade, use the scientific botanical names of these entities. It is, thus, necessary that the bioresource entities be traded only under their botanical names to know their exact identity.

### **Deciphering Identity of Botanical Raw Drugs in Foreign Trade**

The issue of deciphering the exact identity of the botanical entities in foreign trade has been drawing attention of stakeholders in medicinal plant trade as well as in their conservation for long. Realizing that the foreign trade data, compiled and published by DGCIIS in its present form, is highly inadequate in revealing the proper identity of most of the bioresources, including the medicinal plants, the National Biodiversity Authority (NBA) commissioned a study to examine in detail the primary data relating to the Exports and Imports of bioresources during the year 2013-14. This study, based on a thorough review of the primary data available in the Daily Trade Returns (DTRs) obtained from 106 ports, has checked a total of 21831 DTRs that have been classified under HS code 1211, covering the period 1/4/2013 to 31/3/2014. Examination of these DTRs revealed that it was possible to link 17607 DTRs to a total of 64 different entities, still leaving a sizeable number of 4224 DTRs to be appropriately correlated to the entities. The successful linking of botanical raw drugs to their specific entities based on scrutiny of 17607 DTRs points towards the possibility of linking the bioresources to their unique identity. However, two issues still remain to be addressed even after this detailed and long drawn exercise. These issues are (a) the continuing ambiguity in terms of correlating the specific entities to their botanical nomenclature as most of the DTRs use the common names for the traded botanical raw drugs; and (b) surprising inclusion of some records of medicaments and finished products under the HS Code 1211.90 pointing towards the need to build capacity of the port authorities in data recording.

The NBA team subsequently scrutinized the remaining 4224 DTRs that could not be linked to corresponding entities due to use of common/ vernacular names internally using the nomenclature correlation between botanical and vernacular names of medicinal plants given on the FRLHT-ENVIS website ([envis.frlht.org/databasesearch.frlhtenvis.nic.in](http://envis.frlht.org/databasesearch.frlhtenvis.nic.in)). This exercise resulted in establishing tentative linkages of a further 3473 DTRs to 457 botanical nomenclatures, some of these being synonyms needing further cleaning. This effort, however, suggests that, with little improvement in the ITC (HS) coding system, there is a possibility of reflecting proper species-wise identity of botanical raw drugs in our foreign trade data.

### **Previous Suggestions to Improve ITC (HS) Coding System**

Various suggestions to improve the current ITC (HS) system of classification have been made in the past. The Ayurvedic Drug Manufacturers' Association (ADMA), an important stakeholder in the botanical raw drug trade, has suggested classifying the trade of medicinal herbs by Ayurvedic Pharmacopoeia using prominent Ayurvedic names. The suggestion, however, suffers from the same issues as with the use of common names as different texts of ISM use different name for the same entity. Bringing in nomenclature uniformity in respect of botanical raw drugs in foreign trade will not be possible if foreign trade of botanical raw drugs is recorded by Ayurvedic names.

A suggestion for revising the existing 8-digit ITC (HS) coding by way of adding another 4 or more digits to specify the precise taxonomic entity, its part/s and source (cultivation and/ or wild) has also been made under the NBA sponsored study (draft report presented in the eighth meeting of the Expert Committee on Normally Traded Commodities held at Hyderabad on 13 November

2014). This suggestion may involve an exhaustive listing of biological resources using their scientific nomenclature along with specific parts and source (wild/cultivation) and may result in addition of another 8 digits to the existing 8-digit ITC (HS) codes. This system would need clubbing all botanical raw drug entities obtained from the same plant e.g. leaves, bark, seeds, seed oil and extract of Neem (*Azadirachta indica*) that are presently traded as distinct entities under different ITC (HS) codes together. It would, thus, require exhaustive modifications in the existing ITC (HS) code structure, that itself will be a long drawn affair.

### **Possible Solution to Improve ITC (HS) Code 1211.90 – A Proposal**

We believe that any approach to provide unique tariff nomenclature to botanical raw drug entities known to be in foreign trade must be dynamic enough to be able to incorporate new entities that will keep on entering the foreign trade in future. We also believe that interventions that fit into the existing ITC (HS) Coding structure and that do not require any major changes in the existing structure would be easier to implement. The following suggestive model keeps these issues in view.

We have taken the existing ITC (HS) code 1211.90 as a pilot case to explain our proposal for the reason that it is under this code that most of the botanical raw drugs are traded. As at present, it is believed that more than 400 botanical raw entities are exported and imported under this code. We propose the following two pronged strategy to address this issue:

The first is to assign the available un-allotted 8 digit ITC (HS) codes under seed, leaves, bark, root, whole plant categories to those important medicinal plants under foreign trade that are presently being clubbed under 'others'. A limited review of the already assigned ITC (HS) codes can also be simultaneously undertaken to ensure that specific 8-digit codes are allocated to entities under high foreign trade. For example, ITC (HS) Code 1211.90.15 has been allocated to 'Jojoba Seeds', perhaps on the strength of its large foreign trade from 2003-04 to 2005-06. The foreign trade of this entity, with entire seed supplies coming from cultivation in Rajasthan, has come to almost nil from 2009-10 onwards with no likelihood of its revival in the near future, as its cultivation has drastically reduced. Thus, the item 'Jojoba Seeds' could be re-allocated under ITC (HS) Code 1211.90.19 and the code presently allocated to 'Jojoba seeds' can be assigned to some other promising botanical entity. The seeds of *Ocimum basilicum*, known in trade as 'Tukmaria', have been wrongly assigned the ITC (HS) code 1211.90.92 and should be shifted to take place of 'Jojoba Seeds' under ITC (HS) code 1211.90.15. Similarly, ITC (HS) codes from 1211.90.11 to 1211.90.19 have been assigned to 'Leaves of Medicinal Plants'. However, the ITC (HS) code 1211.90.25 has been assigned to 'Cubeb Powder', which is powder of fruiting spikes of *Piper cubeba* and NOT leaves and should, therefore, be shifted to ITC (HS) code 1211.90.92, to be vacated after the shift of 'Tukmaria' to ITC (HS) code 1211.90.15.

Secondly, we propose a selective introduction of 2 more digits to the existing eight digit ITC (HS) codes under the head 1211.90 and present below a **combination of eight-digit and ten-digit coding system** to account for maximum botanical entities under foreign trade. This proposal is based on the gains achieved by the addition of two digits under ITC (HS) code to this six-digit universal code. The addition of two additional codes to the six-digit universal code 1211.90 has helped in deciphering the identity of about 30 botanical raw drug entities. For example, the ITC (HS) code 1211.90.11 has been assigned to Ambrette Seeds. Similarly, specific ITC (HS) codes 1211.90.12 to 1211.90.15 respectively refer to the seeds of *Nux vomica*, *Psyllium*, *Neem* and *Jojoba*. The issue, however, is with the ITC (HS) code 1211.90.19, under which all 'other seeds'

used as raw drugs have been clubbed. The same issue holds good for the ITC (HS) codes 1211.90.29 (other leaves); 1211.90.39 (other bark/ rind, etc.); 1211.90.49 (other roots/ rhizomes), etc. under which the entities that have not been assigned unique code have been clustered.

We propose to add two more digits to the 8-digit ITC (HS) codes 1211.90.19, 1211.90.29, 1211.90.39, 1211.90.49, 1211.90.99, etc. to make these into ten-digit ITC (HS) codes. This simple intervention provides an opportunity to assign unique ITC (HS) code to nearly 100 more botanical entities under each of the categories i.e. seeds, leaves, bark/ rind, root/ rhizome, whole plants, etc. We also propose to use the scientific botanical nomenclature for assigning the unique ITC (HS) codes. An illustrative example is given below to explain the point:

Seeds of Medicinal Plants (ITC (HS) Codes 1211.90.11 to 1211.90.19)			
Existing Provisions		Proposed Provisions	
1211.90.11	Ambrette Seeds (musk grains of vgtbl kngdm)	1211.90.11	<i>Abelmoschus moschatus</i> [Ambrette/ musk seeds]
1211.90.12	Nux vomica Seeds	1211.90.12	<i>Strychnos nux-vomica</i> [Nux vomica seeds]
1211.90.13	Psyllium Seed	1211.90.13	<i>Plantago ovata</i> [Psyllium seeds]
1211.90.14	Neem Seeds	1211.90.14	<i>Azadirachta indica</i> [Neem seeds]
1211.90.15	Jjoba Seeds	1211.90.15	<i>Ocimum basilicum</i> [Tukmaria]
1211.90.16	-	1211.90.16	<i>Embelia tjerium-cottam</i> [Vai vidang]
1211.90.17	-	1211.90.17	<i>Gloriosa superba</i> [Kalihari seeds]
1211.90.18	-	1211.90.18	<i>Peganum harmala</i> [Lal dana/ Harmal]
1211.90.19	Other Seeds Fresh/ Dried W/N Cut Crshd/ Pwdrd used in Perfmry, Pharm Etc/	1211.90.19.01	<i>Abrus precatorius</i> [Gunja]
		1211.90.19.02	<i>Aesculus indica</i> [Khanor]
		1211.90.19.03	<i>Amaranthus paniculatus</i> [Ramdana]
		-	<i>Anethum graveolens</i> [Sowa]
		-	
		-	<i>Lallemantia royleana</i> [Tukhme-balanga]
		-	
		-	<i>Pongamia pinnata</i> [Karanj]
		-	
			<i>Ricinus communis</i> [Arind]
		-	
		1211.90.19.95	<i>Silybum marianum</i> [Milk thistle]
		1211.90.19.98	<i>Simmondsia chinensis</i> [Jjoba]
1211.90.19.99	Other seeds fresh/ dried w/n cut crshd/ pwdrd used in perfmry, pharma, etc./		

Leaves of Medicinal Plants (ITC (HS) Codes 1211.90.21 to 1211.90.29)			
Existing Provisions		Proposed Provisions	
1211.90.21	Belladonna Leaves	1211.90.21	<i>Atropa belladonna</i> [Belladonna Leaves]
1211.90.22	Senna Leaves and Pods	1211.90.22	<i>Senna alexandrina</i> [Senna Leaves and Pods]
1211.90.23	Neem Leaves/ Powder	1211.90.23	<i>Azadirachta indica</i> [Neem Leaves/ Powder]
1211.90.24	Gymnema Powder	1211.90.24	<i>Gymnema sylvestris</i> [Gymnema Leaves/ Powder]
1211.90.25	Cubeb Powder	1211.90.25	
1211.90.26	Pyrethrum	1211.90.26	<i>Tanacetum cinerarifolium</i> [Pyrethrum]
1211.90.27	-	1211.90.27	
1211.90.28	-	1211.90.28	
1211.90.29	Other LEVS, PWDR, FLRS & Pods FRSH/ DRD W/N Cut Crshd/ Pwdrd	1211.90.29.01	
		1211.90.29.02	
		1211.90.29.03	
		-	
		-	
		-	
		-	
		-	
		1211.90.29.98	
1211.90.29.99	Other LEVS, PWDR, FLRS & Pods FRSH/ DRD W/N Cut Crshd/ Pwdrd		

As can be noted from the above example, it is possible to assign species-specific 10-digit ITC (HS) codes to as many as 100 species each traded for their medicinal seeds and for their medicinal leaves without disturbing the basic structure of the existing ITC (HS) codes. The code allocated to 'jojoba seeds', an entity no more in high foreign trade due to decline in its cultivation in India, can also be re-allocated to some other entity in high foreign trade. A similar species-specific ITC (HS) coding system could be worked out for the medicinal plant entities traded as roots/ rhizomes, bark, flowers, whole plants, etc. accounting for almost all the 400 odd medicinal plant species in foreign trade.

The ITC (HS) Code 1302.19.19, under which 'other extracts' are exported/ imported, also suffers from similar identity issues of various high value extracts clubbed under the head. A review and updating of this code is also essential to know correct identity of the material being exported/ imported under this code.

#### **Suggested Course for Detailed Development of the above Indicative Model**

The following course, in the form of a dedicated time bound assignment, would need to be adopted for refining and finalization of the above proposal:

- Exhaustive analysis of the existing codes, scrutiny of the DTRs for at least one year from across

various ports in the country, and selective interactions with leading importing/ exporting firms to enlist and confirm the identities of various botanical raw drug entities in foreign trade.

- To record volumes of annual exports/ imports to arrive at some workable threshold of annual trade volumes to prioritise allocation of ITC (HS) codes to new entities and to prevent entities in negligible or one time trade from cluttering the database.
- Consultations with different stakeholders to build consensus and to create awareness.
- Development of a handbook on the ITC (HS) code-wise botanical raw drug entities in foreign trade along with photographs of plants and traded parts to act as a reference and educational material for the port authorities, as well as traders.
- Capacity building programs for the port authorities to impress upon the need for correct recording of entities under foreign trade vis-à-vis their allocated ITC (HS) codes from resource conservation and development point of view.

The development and implementation of the above proposal is feasible, as the DGFT has been empowered to effect changes in the ITC-HS Codes including changes in the commodity description, weeding out of defunct codes, and addition of new codes. The updating of ITC (HS) codes is, in fact, required to be carried out periodically as a part of the ongoing process.



Ambrette/ Musk Seeds (*Abelmoschus moschatus*)

**Table 8.6 a:** Export Volume of Medicinal Plants from 2005-06 to 2014-15

ITCHS	Item	2005-06	2006-07	2007-08
		QTY (MT)	QTY (MT)	QTY (MT)
09041110	Pepper long	718.57	320.75	285.06
09109915	<i>Cassia tora</i> seed	2083.28	6496.23	4803.53
12112000	Ginseng roots frsh/drid w/n cut crshd/pwdrd	11.09	5.74	5.93
12113000	Coca Leaf Frsh/Drid w/n Cut Crshd/Pwdrd	0.00	0.10	0.21
12114000	Popy straw frsh/drid w/n cut crshd/pwdrd	1.20	0.00	0.00
12119011	Ambrette seeds (musk grains of vgtbl kngdm)	30.43	72.84	23.16
12119012	Nux-vomica dried ripe seeds	16.00	22.23	24.00
12119013	Psyllium seed (isobgul)	760.51	1122.56	638.87
12119014	Neem seed	100.20	56.70	36.52
12119015	Jojoba seed	390.34	105.68	162.84
12119019	Other seeds frsh/drid w/n cut crshd/pwdrd in perfmry,pha	1686.18	3503.53	647.71
12119021	Beladona leaves	5.45	122.04	8.26
12119022	Senna leaves and pads	11430.18	9398.89	10006.28
12119023	Neem leaves/powder	373.97	245.19	171.50
12119024	Gymnema powder	59.23	53.14	23.67
12119025	Cubeb powder	0.00	5.00	17.71
12119026	Pyrethrum	958.97	579.00	259.40
12119029	Other levs, pwdr, flurs & pods frsh/drd w/n cut crshd/pwdrd	1105.22	1941.25	1221.05
12119031	Cascara sagrada bark	1.13	0.00	0.25
12119032	Psyllium husk (isobgul husk)	24959.91	19926.06	29245.82
12119033	Cambodge fruit rind/the dried pericap of the fruits of garc	16.66	7.09	12.44
12119039	Othr bark, husk & rind fresh/dried w/n cut crshd/powdered	747.47	348.33	385.18
12119041	Belladonna roots	17.58	4.75	164.77
12119042	Galangal rhizomes & rts incl. Greater gala	360.98	472.46	329.81
12119043	Ipecac dried rhizome & roots	10.51	0.20	0.00
12119044	Serpentina roots	0.91	1.68	6.30
12119045	Zedovary roots	92.42	53.25	115.72
12119046	Kuth root	0.01	0.05	5.70
12119047	Sarsaparilla	36.49	13.90	50.09
12119048	Sweet flag rhizome	29.00	55.20	120.87
12119049	Other roots & rhizomes frsh/drd w/n cut crshd/pwdrd	665.03	909.43	764.24

Foreign Trade (Export and Import) of Herbal Raw Drugs

(Quantity in MT)

2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15
QTY (MT)						
189.37	128.43	85.97	107.17	272.38	170.88	1205.29
8441.86	20557.91	35637.23	21694.84	38572.46	38313.02	28190.32
0.13	8.36	2.37	0.07	1.78	0.31	0.10
0.19	0.00	0.00	0.10	0.00	0.23	0.00
3.00	0.00	0.02	0.13	0.80	15.20	0.02
3.96	1.34	12.73	61.58	47.95	18.01	64.76
18.70	0.80	1.50	0.06	0.00	0.05	0.25
672.60	466.65	726.67	538.58	565.86	632.31	998.49
26.17	1.41	3.19	7.71	36.25	0.88	0.06
52.38	3.00	0.00	0.60	0.51	0.04	0.01
3178.75	1069.60	1876.19	3045.09	2685.61	3301.72	5114.52
18.34	34.90	3.53	19.31	10.58	32.31	21.43
12286.83	12653.46	15048.58	13576.09	11975.64	11214.63	13243.56
294.69	147.88	71.26	143.21	96.64	116.25	63.06
25.44	35.29	31.19	24.07	39.20	52.34	46.51
0.00	0.00	0.10	10.40	0.45	1.03	1.05
330.14	165.27	212.51	9.41	107.54	41.04	33.77
1637.02	1826.93	2335.67	3015.52	3302.69	5290.13	9935.54
4.01	24.40	0.00	0.00	5.27	0.06	15.02
26216.06	20679.12	28415.74	29342.47	39670.74	32465.58	32325.64
51.56	38.98	20.43	83.12	41.58	25.96	36.96
716.76	520.99	739.33	778.95	1051.22	927.72	1792.54
0.00	0.15	0.02	0.16	0.19	0.13	0.00
563.38	597.33	1189.75	2133.58	3094.92	1874.77	705.45
0.33	10.20	5.72	2.26	5.19	10.71	3.70
0.00	0.07	0.31	0.70	1.52	0.16	0.55
183.62	206.32	421.29	382.35	1180.07	512.73	1124.12
5.00	6.06	0.61	10.14	17.03	12.35	11.30
39.00	9.23	54.67	40.27	30.84	84.22	48.47
60.50	42.00	53.49	19.40	101.00	306.02	226.58
887.16	694.12	1251.75	1636.23	2030.32	2174.16	3523.61

ITCHS	Item	2005-06	2006-07	2007-08	
		QTY (MT)	QTY (MT)	QTY (MT)	
12119050	Sandal wood chips and dust	170.04	113.81	43.28	
12119060	Vinca rosea (herbs)	1335.47	1027.75	754.60	
12119070	Mint,incl. Leaves(all species)	14.01	21.89	228.11	
12119080	Agarwood (inclndng chips & dust)	8.65	0.22	1.49	
12119091	Chirata	34.03	19.23	6.00	
12119092	Tukmaria	230.23	297.10	524.29	
12119093	Unab (indian jujube or chinese dates)	29.34	0.46	0.50	
12119094	Basil, hyasop, rosemary sage, savory	112.72	204.59	164.95	
12119095	Lovage	0.00	2.00	1.00	
12119096	Garcenia	64.00	31.07	8.82	
12119099	Othr prts of plants usd in perfmry, pharma-cutical etc,frsh/d	3439.60	3917.98	4893.86	
13012000	Gum arabic	58.15	95.88	91.54	
13019011	Asian gum	252.84	361.70	414.65	
13019012	African gum	1.44	1.00	22.36	
13019013	Asafoetida	723.20	491.07	832.98	
13019014	Benjamin ras	10.00	0.00	2.55	
13019015	Benjamin Cowrie	0.00	0.00	0.00	
13019016	Karaya gum (indian tragacanth) hastab	1269.42	932.22	862.32	
13019017	Tragacanth (adraganth)	0.65	0.20	0.20	
13019018	Storax	0.00	0.05	0.00	
13019019	Other natural gums	689.50	335.30	682.12	
13021100	Saps & extracts of opium	71.07	66.51	62.22	
13021200	Saps & extracts of liquorice	1.33	0.75	2.63	
13021911	Extracts belladona	31.61	29.38	7.54	
13021912	Extracts cascara sagrada	0.03	0.13	0.00	
13021913	Extracts Nux-vomica	0.00	0.02	0.10	
13021914	Ginseng extract including powder	0.63	16.81	32.28	
13021915	Agarose	0.00	0.05	0.00	
13021916	Extracts, neem	18.20	59.84	113.41	
13021917	Gymnema extract,	42.92	93.59	48.10	
13021918	Cambodge extract	672.65	946.88	581.68	
13021919	Other extracts	736.78	1108.33	1124.36	
14049021	Soap nut powder	29.69	124.89	89.15	
14049029	Other soap nuts	283.33	541.51	482.89	

Foreign Trade (Export and Import) of Herbal Raw Drugs

2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15
QTY (MT)						
33.37	22.38	158.09	50.36	38.45	78.25	74.51
650.40	313.50	412.07	521.21	864.46	903.30	569.60
98.12	29.58	51.37	35.22	66.95	41.19	38.94
2.70	53.77	7.59	12.90	18.42	16.10	18.89
10.99	1.72	3.51	12.03	1.89	7.58	8.20
571.57	517.18	587.74	664.72	489.84	711.27	433.28
15.63	0.21	33.75	10.08	0.01	3.84	0.46
52.33	149.84	331.54	414.26	295.00	495.26	1294.15
0.00	12.50	2.00	0.10	0.00	0.00	0.00
10.41	21.20	10.89	3.77	25.30	103.10	93.28
4785.27	7507.51	6829.39	8719.25	12219.35	10986.59	16906.06
1592.04	633.54	1383.55	730.00	237.15	887.33	398.65
381.00	336.90	533.21	747.27	633.50	683.40	405.60
0.00	18.85	1.63	0.61	0.10	5.70	0.50
840.09	1135.08	1190.96	911.91	1584.52	983.45	893.07
3.22	0.80	1.00	0.00	0.08	3.00	0.00
0.00	0.00	1.00	0.00	0.00	0.00	0.00
984.08	1016.99	1036.35	921.18	576.40	517.10	198.02
0.30	0.30	0.64	0.94	4.68	2.73	0.12
0.10	3.30	4.00	5.20	1.30	5.09	8.17
1537.29	1859.08	1140.75	2099.14	971.13	1139.35	3062.81
72.88	141.40	118.92	282.60	462.37	347.51	165.32
13.86	24.68	18.34	93.27	4.49	19.83	36.68
5.84	8.84	2.99	20.67	3.14	12.69	5.47
0.03	0.00	0.00	0.33	0.00	0.00	0.00
0.00	0.41	4.53	0.53	1.47	1.80	0.02
0.00	1.11	0.11	1.51	0.31	0.31	0.05
0.07	0.00	0.00	0.00	0.00	0.00	0.00
84.68	130.74	94.99	201.36	298.06	648.97	181.93
82.45	39.71	54.89	97.64	90.03	92.19	97.69
1314.64	475.80	585.63	592.06	561.50	1725.41	5053.92
1142.49	1243.80	1318.70	1925.66	3216.92	4570.91	6098.28
348.60	115.79	507.05	850.64	549.74	236.93	175.89
421.71	348.86	1207.14	2292.66	2302.38	1185.11	656.87

**Table 8.6 b:** Export Value of Medicinal Plants from 2005-06 to 2014-15

ITCHS	Item	2005-06	2006-07	2007-08
09041110	Pepper long	652.34	356.61	333.28
09109915	<i>Cassia tora</i> seed	357.39	1006.73	973.97
12112000	Ginseng roots frsh/drid w/n cut crshd/pwdrd	12.27	14.20	19.26
12113000	Coca Leaf Frsh/Drid w/n Cut Crshd/Pwdrd	0.00	0.02	2.02
12114000	Popy straw frsh/drid w/n cut crshd/pwdrd	0.31	0.00	0.00
12119011	Ambrette seeds(must grains of vgtbl kngdm)	102.26	62.81	286.92
12119012	Nux vomica dried ripe seeds	1.76	17.74	12.82
12119013	Psyllium seed (isobgul)	601.15	606.19	471.51
12119014	Neem seed	44.79	80.15	35.73
12119015	Jojoba seed	389.28	101.06	213.95
12119019	Other seeds frsh/drid w/n cut crshd/pwdrd usd in perfmry, pha	935.67	994.02	736.50
12119021	Beladona leaves	8.19	105.18	8.11
12119022	Senna leaves and pads	2392.97	2670.43	3070.69
12119023	Neem leaves/pOwder	130.97	91.78	74.02
12119024	Gymnema powder,	71.10	105.96	24.21
12119025	Cubeb Powder	0.00	0.16	2.13
12119026	Pyrethrum	436.08	294.66	164.38
12119029	Other levs, pwdr, flurs & pods frsh/drd w/n cut crshd/pwdrd	791.24	1492.96	1225.45
12119031	Cascara sagrada bark	5.31	0.00	0.37
12119032	Psyllium husk (isobgul husk)	20906.17	25468.65	34665.56
12119033	Cambodge fruit rind/the dried pericap of the fruits of garc	19.81	19.32	16.21
12119039	Othr bark, husk & rind fresh/dried w/n cut crshd/powdered	323.80	219.33	210.40
12119041	Belladonna roots	6.88	1.73	39.89
12119042	Galangal rhizomes & rts incl. Greater gala	257.03	322.01	203.19
12119043	Ipecac dried rhizome & roots	27.27	0.44	0.00
12119044	Serpentina roots	0.95	0.78	2.72
12119045	Zedovary roots	35.85	24.72	36.61
12119046	Kuth root	0.02	0.05	10.49
12119047	Sarsaparilla	32.58	10.18	41.52
12119048	Sweet flag rhizome	10.16	29.75	59.20
12119049	Other roots & rhizomes frsh/drd w/n cut crshd/pwdrd	516.34	626.05	738.18
12119050	Sandal wood chips and dust	3532.14	2444.77	962.48

Foreign Trade (Export and Import) of Herbal Raw Drugs

(₹ in Lakh)

2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15
274.46	171.49	138.99	293.33	613.90	762.73	1267.57
1142.07	2772.83	5557.55	4322.84	8814.99	8817.61	12399.21
0.29	9.79	1.43	0.99	1.97	39.15	0.13
0.45	0.00	0.00	0.35	0.00	0.43	0.00
1.14	0.00	0.07	0.13	0.51	3.51	0.31
65.01	3.48	21.75	94.43	112.12	58.20	102.91
10.01	4.39	3.84	0.02	0.00	0.08	0.22
772.03	498.59	571.57	638.88	577.44	854.81	1170.70
6.49	0.64	2.70	74.50	16.33	15.71	0.15
104.02	5.24	0.00	1.58	0.83	1.91	0.05
1230.42	918.22	1283.08	1751.86	1974.99	2687.28	2985.75
8.91	64.35	7.38	24.67	20.00	58.32	72.12
4907.41	4653.98	4496.19	5100.24	6736.40	7769.58	8817.39
108.39	33.71	28.00	56.78	70.63	89.99	134.44
30.96	31.00	43.92	28.10	48.20	100.76	97.13
0.00	0.00	0.16	2.33	0.04	0.23	0.63
160.75	82.79	174.20	5.48	74.54	37.68	21.75
1549.29	1276.67	1784.70	2469.44	3585.86	6777.40	8977.98
6.78	47.72	0.00	0.00	1.95	0.84	26.70
44662.40	38122.85	45467.01	54879.98	80014.63	75936.05	92411.35
53.58	43.27	28.41	127.43	56.54	51.71	85.72
532.36	564.27	663.21	1019.56	1075.09	1037.64	1155.76
0.00	0.28	0.85	6.47	10.44	0.16	0.00
281.82	426.89	1018.30	1855.77	2605.28	1801.32	793.77
67.63	77.33	244.02	112.51	201.33	156.52	18.84
0.00	3.14	2.63	0.71	10.01	21.64	25.24
71.25	134.91	404.59	382.10	1234.29	638.63	1379.26
9.77	21.92	2.01	21.30	73.46	63.71	61.21
42.15	15.14	134.34	72.72	86.70	351.00	215.73
32.15	19.86	27.08	7.04	54.47	187.24	105.06
638.66	514.40	1027.65	1831.74	2457.95	2955.48	4582.65
1232.76	505.72	924.37	1153.98	617.56	1504.52	2400.79

ITCHS	Item	2005-06	2006-07	2007-08
12119060	Vinca rosea (herbs)	485.21	398.20	314.34
12119070	Mint, incl. Leaves(all species)	9.63	21.37	211.15
12119080	Agarwood (inclndng chips & dust)	71.60	0.23	1.67
12119091	Chirata	5.81	5.11	6.25
12119092	Tukmaria	63.59	97.16	189.66
12119093	Unab (indian jujube or chinese dates)	6.41	0.41	1.62
12119094	Basil,hyasop,rose mary sage,savory	472.66	370.63	276.65
12119095	LOVAGE	0.00	0.60	0.51
12119096	Garcelona	467.09	134.25	57.90
12119099	Othr prts of plants used in perfmry, pharma-cutical etc,frsh/d	1810.33	2003.33	2949.25
13012000	Gum arabic	75.06	124.95	90.65
13019011	Asian gum	256.87	371.80	524.01
13019012	African gum	0.68	0.32	23.97
13019013	Asafoetida	888.17	917.62	1137.67
13019014	Benjamin ras	21.17	0.00	1.82
13019015	Benjamin Cowrie	0.00	0.00	0.00
13019016	Karaya gum(indian tragacanth) hastab	1743.85	1508.69	1267.76
13019017	Tragacanth (adraganth)	0.76	0.30	0.35
13019018	STORAX	0.00	0.48	0.00
13019019	Other natural gums	383.51	197.52	472.67
13021100	Saps & extracts of opium	1637.31	1899.92	1544.37
13021200	Saps & extracts of liquorice	10.59	4.15	4.88
13021911	Extracts belladona	2261.41	453.09	203.43
13021912	Extracts cascare sagrada	0.81	3.27	0.00
13021913	Extracts Nux-vomica	0.00	0.33	1.41
13021914	Ginseng extract including powder	7.41	165.45	29.13
13021915	Agarose	0.00	0.51	0.00
13021916	Extracts, neem	425.95	1232.09	1178.75
13021917	Gymnema extract,	253.94	558.44	354.56
13021918	Cambodge extract	3257.34	5265.09	2856.26
13021919	Other extracts	11604.17	19755.60	16935.84
14049021	Soap nut powder	12.18	122.80	80.84
14049029	Other soap nuts	250.47	490.51	425.27

Foreign Trade (Export and Import) of Herbal Raw Drugs

2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15
343.77	171.76	192.40	384.06	819.93	964.11	567.21
166.24	127.12	377.41	53.27	207.32	150.37	147.81
4.18	122.56	93.71	144.11	271.62	274.51	332.38
9.96	4.09	6.29	1.69	2.61	15.78	20.08
277.16	351.40	410.20	520.87	425.56	885.69	831.67
4.53	0.24	8.51	11.39	0.01	12.70	2.37
129.62	169.27	313.72	395.64	414.37	698.80	2437.81
0.00	5.79	1.20	0.08	0.00	0.00	0.00
64.71	84.15	51.70	20.48	59.75	577.27	799.22
2692.50	3676.32	4361.08	7694.33	9851.99	10336.26	17079.95
2223.49	1014.71	1901.66	1536.44	457.80	2281.64	1099.32
695.65	602.15	1012.17	2866.61	3380.01	4484.65	1775.30
0.00	12.29	18.06	1.12	0.16	12.76	0.81
1355.19	1728.31	1960.95	2020.78	2928.66	3448.79	4104.90
2.41	0.41	2.80	0.00	0.35	6.87	0.00
0.00	0.00	1.94	0.00	0.00	0.00	0.00
1833.74	2299.46	3312.23	3902.24	2220.80	2038.93	770.63
0.48	0.75	1.88	2.76	6.51	4.63	0.24
0.10	19.75	3.19	4.46	1.06	6.71	9.88
1601.09	1613.09	2169.88	3444.00	2347.42	2073.60	4841.57
2253.72	4758.45	3295.45	8200.89	15824.35	15496.69	8052.20
52.27	690.60	28.43	168.96	43.78	74.33	106.50
122.74	98.35	124.66	256.16	308.05	577.11	316.56
2.09	0.00	0.00	4.28	0.00	0.00	0.00
0.00	113.98	22.72	3.67	4.85	244.86	0.29
0.00	12.78	1.07	21.24	9.95	1.76	1.98
0.32	0.04	0.00	0.00	0.00	0.00	0.00
1018.58	2297.75	2144.34	2174.94	4143.36	3739.76	4547.56
506.06	354.96	413.09	764.95	996.65	1146.55	1336.59
7529.37	2848.35	3371.65	4805.47	4401.45	15680.12	12960.32
23611.86	24775.34	28925.46	50161.35	87538.14	105649.61	124412.23
182.00	176.20	513.07	743.14	338.26	207.62	143.56
439.34	355.69	840.36	1860.17	1894.46	1295.78	883.05

**Table 8.7a:** Import Volume of Medicinal Plants from 2005-06 to 2014-15

ITCHS	Item	2005-06	2006-07	2007-08
09041110	Pepper long	3307.19	1614.45	734.64
09109915	<i>Cassia tora</i> seed	0.00	25.13	0.00
12112000	Ginseng roots frsh/drid w/n cut crshd/pwdrd	0.79	23.11	1.01
12113000	Coca leaf frsh/drid w/n cut crshd/pwdrd	3.99	0.00	0.00
12119011	Ambrette seeds(must grains of vgtbl kngdm)	20.84	64.72	108.93
12119013	Psyllium seed (Isobgul)	0.30	0.00	0.00
12119014	Neem seed	0.00	0.00	0.00
12119019	Other seeds frsh/drid w/n cut crshd/pwdrd usd in perfmry, pha	603.78	293.41	835.56
12119021	Beladona leaves	0.00	0.00	0.00
12119022	Senna leaves and pads	2.00	0.00	11.00
12119025	Cubeb powder	150.11	169.98	136.91
12119026	Pyrethrum	260.31	232.68	169.07
12119029	Other levs, pwdr, flurs & pods frsh/drd w/n cut crshd/pwdrd	5463.51	3242.74	6119.93
12119031	Cascara sagrada bark	0.00	0.00	0.00
12119032	Psyllium husk (Isobgul husk)	0.04	9.00	1.00
12119033	Cambodge fruit rind/the dried pericap of the fruits of garcinia	0.00	0.00	0.00
12119039	Othr bark, husk & rind fresh/dried w/n cut crshd/powdered	3765.55	4058.27	4801.65
12119041	Belladonna roots	0.00	0.50	0.00
12119042	Galangal rhizomes & rts incl. Greater gala	184.12	217.85	157.16
12119043	Ipecac dried rhizome & roots	0.48	0.47	2.63
12119044	Serpentina roots	36.00	0.00	0.00
12119045	Zedovary roots	0.00	0.00	19.26
12119046	Kuth root	172.50	112.95	40.70
12119047	Sarsaparilla	9.93	6.74	3.16
12119049	Other roots & rhizomes frsh/drd w/n cut crshd/pwdrd	600.71	833.18	1741.26
12119050	Sandal wood chips and dust	32.47	81.24	57.35
12119060	Vinca rosea (herbs)	0.00	0.00	0.00
12119070	Mint,incl. Leaves(all species)	17.50	41.54	58.77
12119080	Agarwood (inclndg chips & dust)	34.59	64.51	33.56
12119091	Chirata	27.65	83.27	173.80
12119092	Tukmaria	279.33	33.30	91.31
12119093	Unab (Indian Jujube or Chinese Dates)	61.46	83.46	71.20

Foreign Trade (Export and Import) of Herbal Raw Drugs

(Quantity in MT)

2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15
716.17	930.53	1100.42	808.74	566.49	890.06	851.74
0.00	0.00	0.00	20.00	0.00	0.00	0.00
1.38	2.38	0.00	2.60	10.83	31.63	0.08
0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	32.64	0.00	87.50	26.00	46.93	68.44
3.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.01	0.00	0.00	7.00	0.00
421.89	391.06	51.62	551.18	519.54	421.31	359.93
0.00	0.00	0.00	0.01	0.00	0.01	0.00
10.00	15.15	0.00	59.60	0.00	254.00	317.90
11.00	55.10	64.95	72.00	197.04	505.17	282.19
99.21	153.05	50.00	6.00	67.15	96.00	12.02
4185.45	9046.57	2659.81	4319.11	3880.41	4065.72	3487.39
0.00	0.00	0.00	0.00	0.00	0.00	0.02
104.44	12.55	0.00	0.00	1566.55	171.00	193.57
0.00	79.00	20.00	156.00	40.00	0.00	0.35
5418.74	4892.29	10313.32	8963.76	9009.10	9316.09	9633.39
3.06	0.00	0.00	0.00	0.00	0.00	0.00
115.45	253.71	150.50	267.22	101.00	206.12	381.42
9.12	6.69	8.86	52.61	3.59	1.40	1.88
0.00	0.00	0.00	0.00	0.00	0.00	0.00
19.79	0.00	0.00	0.00	25.00	0.00	0.00
0.00	58.00	52.00	0.00	0.00	0.00	0.00
0.00	8.89	0.00	6.41	0.00	0.00	9.49
3438.08	4583.38	16258.78	3454.37	5813.49	4865.07	5437.11
194.03	56.80	92.30	161.74	131.78	180.75	310.01
0.00	0.00	0.00	0.00	18.60	0.00	0.00
24.02	16.02	18.93	37.46	46.42	109.16	154.84
6.54	34.01	21.55	81.48	26.00	62.57	50.67
74.63	90.93	298.19	110.29	426.71	301.95	175.80
120.71	326.99	217.45	373.17	272.22	179.96	106.58
43.20	75.40	194.96	37.05	27.00	91.00	67.00

ITCHS	Item	2005-06	2006-07	2007-08
12119094	Basil, hyasop, rosemary sage, savory	300.63	204.11	223.80
12119095	Lovage	64.00	0.00	27.95
12119096	Garcelona	878.20	2585.68	911.42
12119099	Othr prts of plants usd in perfmry, pharma-cutical etc,frsh/d	3646.34	3830.56	4666.57
13012000	Gum arabic	14825.84	18840.06	14876.37
13019011	Asian gum	30.00	88.06	96.80
13019012	African gum	0.00	0.00	100.00
13019013	Asafoetida	528.52	688.00	927.16
13019014	Benjamin ras	60.09	3.00	5.30
13019015	Benjamin cowrie	40.00	0.00	0.00
13019016	Karaya gum (indian tragacanth) hastab	0.00	0.00	0.00
13019017	Tragacanth (adraganth)	10.82	2.10	3.75
13019018	Storax	0.00	0.00	0.00
13019019	Other natural gums	414.38	468.59	623.89
13021200	Saps & extracts of liquorice	12.93	16.09	18.36
13021911	Extracts belladona	0.00	0.00	0.00
13021913	Extracts nux-vomica	0.00	0.00	0.00
13021914	Ginseng extract including powder	10.37	14.06	19.38
13021915	Agarose	0.00	0.01	0.00
13021916	Extracts, neem	0.20	0.00	0.06
13021917	Gymnema extract	0.00	0.00	0.08
13021918	Cambodge extract	0.00	20.10	20.00
13021919	Other extracts	106.82	104.25	141.52
14049029	Other soap nuts	179.39	1154.11	643.08

**Table 8.7b:** Import Value of Medicinal Plants from 2005-06 to 2014-15

ITCHS	Item	2005-06	2006-07	2007-08
9041110	Pepper long	1695.54	995.77	259.90
9109915	<i>Cassia tora</i> seed	0.00	6.36	0.00
12112000	Ginsng roots frsh/drid w/n cut crshd/pwdrd	6.06	23.06	5.42
12113000	Coca leaf frsh/drid w/n cut crshd/pwdrd	2.23	0.00	0.00
12119011	Ambrette seeds (must grains of vgtbl kngdm)	23.79	147.48	303.56
12119013	Psyllium seed (isobgul)	0.08	0.00	0.00
12119014	Neem seed	0.00	0.00	0.00
12119019	Other seeds frsh/drid w/n cut crshd/pwdrd usd in perfmry,pha	195.49	118.66	129.04

Foreign Trade (Export and Import) of Herbal Raw Drugs

2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15
177.97	296.56	320.87	568.50	840.46	669.58	1491.01
3.00	0.00	10.80	10.13	16.75	15.91	23.28
2992.10	1412.27	1320.55	891.58	1726.00	3652.85	1780.36
5646.72	5903.67	3495.26	2963.38	4085.98	4376.34	3483.50
15803.50	20999.54	19171.21	26031.45	22892.14	33132.62	31007.75
127.24	5.90	0.00	20.00	11.00	36.26	46.97
33.00	0.00	0.00	0.00	0.00	73.00	315.00
653.70	534.89	899.83	1027.72	940.39	1147.11	1029.27
0.00	6.08	0.00	0.00	5.00	38.99	2.30
0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	1.09	8.25	66.67	71.92	421.78	586.28
2.00	9.17	2.32	2.00	2.05	0.00	2.35
6.44	0.00	4.37	4.14	0.60	3.63	4.00
344.09	209.84	337.25	250.08	338.16	234.08	309.64
14.64	9.07	17.49	35.97	74.07	7.14	8.21
0.00	0.00	0.00	0.00	0.00	0.50	0.00
0.00	0.00	0.00	0.00	0.15	1.00	0.00
14.30	27.16	22.62	23.46	31.92	33.23	17.57
1.16	1.85	0.31	3.15	2.92	2.40	0.48
0.00	0.00	25.00	1.18	0.46	0.00	0.00
0.35	1.00	0.00	0.40	0.00	0.00	63.00
0.02	21.94	42.32	56.26	0.00	0.00	0.04
367.33	181.16	271.28	236.59	176.02	1284.38	1603.55
1103.38	1245.30	553.55	1932.33	808.06	1275.55	868.96

(₹ in Lakh)

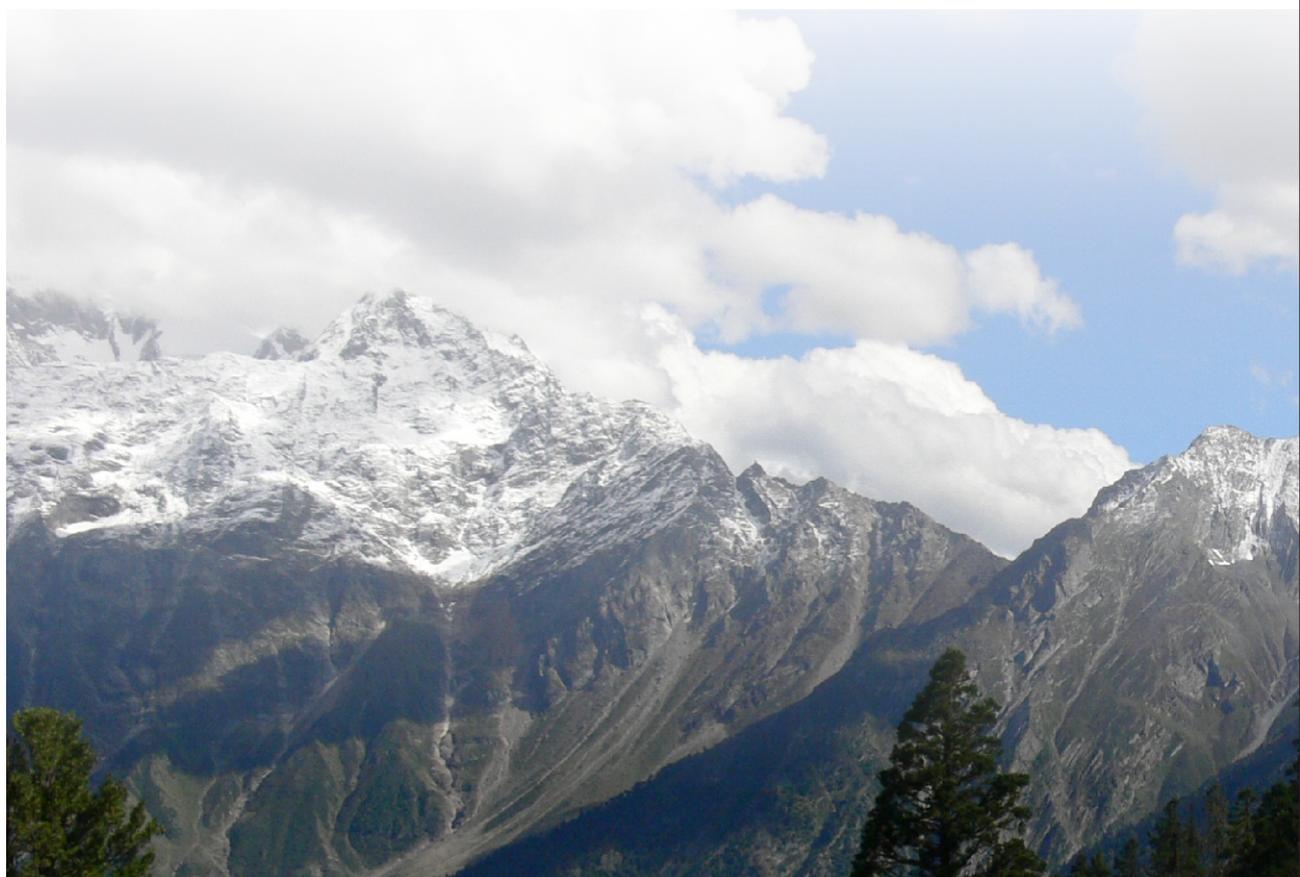
2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15
280.27	391.67	492.58	492.82	418.23	697.61	615.49
0.00	0.00	0.00	5.29	0.00	0.00	0.00
11.45	12.17	0.04	1.06	22.68	52.46	7.90
0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	117.47	0.00	30.26	4.38	18.65	38.35
1.65	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.14	0.00	0.00	1.33	0.00
308.32	274.10	254.55	642.03	515.18	591.67	599.92

ITCHS	Item	2005-06	2006-07	2007-08	
12119021	Beladona leaves	0.00	0.00	0.00	
12119022	Senna leaves and pads	2.58	0.00	3.48	
12119025	Cubeb powder	97.91	120.43	85.47	
12119026	Pyrethrum	211.09	177.44	239.77	
12119029	Other levs, pwdr, flurs & pods frsh/drd w/n cut crshd/pwdrd	3150.13	3045.17	3673.93	
12119031	Cascara sagrada bark	0.00	0.00	0.00	
12119032	Psyllium husk (isobgul husk)	0.05	25.34	2.64	
12119033	Cambodge fruit rind/the dried pericap of the fruits of garcinia	0.00	0.00	0.00	
12119039	Othr bark, husk & rind fresh/dried w/n cut crshd/powdered	1876.02	2282.63	3147.64	
12119041	Belladona roots	0.00	0.59	0.00	
12119042	Galangal rhizomes & rts incl. Greater gala	85.72	98.93	68.52	
12119043	Ipecac dried rhizome & roots	7.66	14.86	93.26	
12119044	Serpentina roots	16.42	0.00	0.00	
12119045	Zedovary roots	0.00	0.00	7.51	
12119046	Kuth root	22.58	59.26	16.61	
12119047	Sarsaparilla	5.82	5.06	2.35	
12119049	Other roots & rhizomes frsh/drd w/n cut crshd/pwdrd	355.33	869.95	493.90	
12119050	Sandal wood chips and dust	358.37	548.40	453.42	
12119060	Vinca rosea (herbs)	0.00	0.00	0.00	
12119070	Mint,incl. Leaves(all species)	7.34	57.49	66.32	
12119080	Agarwood (incldng chips & dust)	55.78	320.82	49.36	
12119091	Chirata	6.50	19.98	61.59	
12119092	Tukmaria	39.34	3.39	10.71	
12119093	Unab (indian jujube or chinese dates)	12.80	13.36	7.55	
12119094	Basil, hyasop, rosemary, sage,savory	141.03	81.53	123.39	
12119095	Lovage	13.46	0.00	2.52	
12119096	Garcenia	348.66	982.71	294.18	
12119099	Othr prts of plants usd in perfmry, pharma-cutical etc,frsh/d	1215.49	1706.21	1645.39	
13012000	Gum Arabic	4218.83	5327.16	3802.08	
13019011	Asian gum	10.14	59.70	76.72	
13019012	African gum	0.00	0.00	20.55	
13019013	Asafoetida	3527.88	7473.49	11128.05	

Foreign Trade (Export and Import) of Herbal Raw Drugs

2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15
0.00	0.00	0.00	0.06	0.00	0.07	0.00
38.69	11.19	0.00	15.91	0.00	85.77	206.47
5.71	39.19	40.58	69.50	135.72	444.02	401.03
59.37	134.57	54.38	16.22	98.63	150.82	19.32
5167.30	4299.61	4023.24	5452.12	7694.81	11179.07	11146.36
0.00	0.00	0.00	0.00	0.00	0.00	0.12
59.84	30.84	0.00	0.00	813.54	89.19	100.12
0.00	24.62	18.06	180.90	39.75	0.00	0.35
4613.37	3705.48	5949.95	6656.27	6929.49	7874.91	9139.14
10.04	0.00	0.00	0.00	0.00	0.00	0.00
49.93	205.24	187.22	462.98	95.15	329.80	281.89
364.06	392.51	545.24	184.88	227.13	99.40	156.41
0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.62	0.00	0.00	0.00	6.54	0.00	0.00
0.00	35.58	38.61	0.00	0.00	0.00	0.00
0.00	5.63	0.00	5.44	0.00	0.00	8.84
1138.60	1390.53	2173.68	1651.73	3475.02	3698.91	5543.82
361.09	204.69	458.54	1020.26	1349.12	1773.48	2334.11
0.00	0.00	0.00	0.00	9.96	0.00	0.00
26.95	22.90	24.02	59.73	160.59	303.70	457.51
11.94	60.38	35.99	62.89	73.82	139.12	155.89
24.16	50.80	200.22	99.33	269.21	325.81	157.67
19.07	130.68	104.23	133.73	98.38	65.14	36.84
5.38	12.96	20.80	7.60	6.34	24.61	15.68
117.24	134.19	211.96	381.83	557.61	543.23	2114.06
2.49	0.00	47.40	47.91	63.19	59.21	75.14
998.99	452.70	757.38	904.18	1434.84	4893.27	3449.04
1783.37	2423.16	2334.37	2159.81	3154.21	3550.15	5471.33
4443.00	6604.55	5839.62	7569.28	8118.33	13378.41	12872.35
146.98	1.66	0.00	46.81	4.56	21.46	31.52
4.50	0.00	0.00	0.00	0.00	20.78	92.90
10894.96	13047.18	20532.74	23246.10	22146.42	35090.94	39891.82

ITCHS	Item	2005-06	2006-07	2007-08
13019014	Benjamin ras	18.49	1.23	1.78
13019015	Benjamin cowrie	11.44	0.00	0.00
13019016	Karaya gum (indian tragacanth) hastab	0.00	0.00	0.00
13019017	Tragacanth (adraganth)	6.45	1.20	2.22
13019018	Storax	0.00	0.00	0.00
13019019	Other natural gums	309.92	343.58	710.85
13021200	Saps & extracts of liquorice	45.92	59.17	63.40
13021911	Extracts belladona	0.00	0.00	0.00
13021913	Extracts nux-vomica	0.00	0.00	0.00
13021914	Ginseng extract including powder	328.80	396.09	446.90
13021915	Agar se	0.00	4.41	0.00
13021916	Extracts Neem	0.92	0.00	6.14
13021917	Gymnema extract	0.00	0.00	10.80
13021918	Cambodge extract	0.00	7.72	4.47
13021919	Other extracts	718.00	510.32	987.64
14049029	Other soap nuts	15.65	247.90	140.89



Foreign Trade (Export and Import) of Herbal Raw Drugs

2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15
0.00	2.08	0.00	0.00	2.13	50.21	17.97
0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	8.89	62.13	134.60	197.86	308.07	394.67
1.38	6.85	1.40	1.58	4.01	0.00	3.10
165.01	0.00	96.85	84.11	11.88	76.42	77.07
681.56	333.80	600.89	334.90	505.90	623.21	639.35
49.92	42.40	123.71	192.62	240.92	54.68	61.11
0.00	0.00	0.00	0.00	0.00	3.44	0.00
0.00	0.00	0.00	0.00	1.67	10.96	0.00
316.87	737.12	587.94	1017.82	2325.74	2739.78	1792.49
1.17	13.33	25.06	19.79	84.89	62.59	25.31
0.00	0.00	14.03	8.86	46.00	0.00	0.00
10.53	2.36	0.00	2.78	0.00	0.00	168.16
0.12	34.92	204.04	188.24	0.00	0.00	0.52
3046.57	2165.30	2847.02	5068.10	5936.81	7203.05	8737.83
234.20	245.21	198.95	777.72	296.75	237.16	233.13

