First National Workshop on Measuring Illicit Financial Flows Associated with Drug Trafficking in Nepal

21 March 2022 – Radisson Hotel Kathmandu

Group Exercise 2 – Understanding the methodology to measure illicit drug market value and related IFFs (income generation)

Objective of this exercise: Understand the methodology to estimate illicit drugs flows and its corresponding IFFs. The focus of the exercise is on income generation IFFs emerging from cross-border transactions of purchase and sale of heroin. This exercise aims to apply a basic methodology to estimate supply and demand of heroin and other illicit drugs in a given country, using simulated information (such as on prices, quantities, actors and routes) on Nepal and countries where drugs trafficked in Nepal have their origin/destination.

Please read the scenario below and follow the guidelines at the end of the scenario to estimate the selected aggregates, the total value generated by the heroin market (in terms of revenues and profits), as well as related IFFs.

Please round the results to 2 decimal places. You can use a calculator for this exercise.

You will be guided by UNODC to conduct this exercise.

Scenario

- Trafficking routes

From the analysis of Nepal seizures data in a given year, it emerges that 100% of the heroin trafficked in Nepal originates from India. It is known that all the heroin coming from India is sourced from this country (heroin produced from local opium poppy cultivations) and that there is no production of heroin in Nepal. It is also known that the heroin from Nepal is exported to Hong Kong only.

- Domestic consumption and seizures

Some of the heroin flowing into Nepal is consumed domestically. A study reveals that 0.5% of the adult population consumed the substance at least once in the past year. The size of Nepal adult population (15-64 years old) is 19,044,441 inhabitants. The average annual amount consumed per capita in Nepal is 10.8 grams.

It is also known that 323 kg of heroin are seized in Nepal, in the same year.

- Exports

The rest of the heroin is re-exported to Hong Kong, location of final consumption (where no heroin is further exported to other countries). There are also no other countries where heroin is exported. From an analysis of Hong Kong data, it has been detected that 40% of Hong Kong’s heroin seizures come from Nepal. The 15-64 years old population of Hong Kong is 5,268,321 inhabitants and 0.19% of the adult population consumed heroin at least once in the past year. The average annual quantity consumed per capita is 20 grams. Hong Kong seized 500 kg of heroin.

- Prices
Nepal import price of heroin is 20,000 USD per kg. Nepal domestic wholesale price is 29,000 USD per kg. The export price is 35,000 USD per kg. The retail price is 77 USD per gram.

- **Actors**

For the purpose of this exercise, it is assumed that 65% of the persons who were arrested while importing heroin into Nepal are based (residents) in Nepal and that 60% of the persons arrested while exporting from Nepal are based (residents) in this country. The proportion of the retail market controlled by resident actors is 100%.

- **Intermediate costs**

Regarding intermediate costs, it is known that every stored kg of heroin destined for the domestic market in Nepal costs traffickers 20 USD.

The table below summarizes the economic activities of the 3 countries involved in the heroin supply chain described above.

<table>
<thead>
<tr>
<th>Country</th>
<th>Position in the supply chain</th>
<th>Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>India</td>
<td>Country of departure</td>
<td>Production</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Wholesale and retail trade</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Export</td>
</tr>
<tr>
<td>Nepal</td>
<td>Country of transit and destination</td>
<td>Import</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Wholesale and retail trade</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Export</td>
</tr>
<tr>
<td>Hong Kong</td>
<td>Country of destination</td>
<td>Import</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Wholesale and retail trade</td>
</tr>
</tbody>
</table>

**Overview of the steps to resolve the exercise**

**Step 1: Review of known data (data collection)**

**Step 2: Estimate quantities and value**

2.1. Quantity of heroin consumed in Nepal
2.2. Quantity of heroin exported from Nepal
2.3. Quantity of heroin imported in Nepal

**Step 3: Estimate IFFs (the financial transactions corresponding to imports and exports)**

3.1. Outward IFFs
3.2. Inward IFFs

**Step 4: Estimate illicit gross output and illicit net income**

4.1. Value of heroin domestic market
4.2. Value of heroin export market
4.3. Value of illicit gross output
4.4. Value of illicit net income

**Step 1: Review of known data (data collection)**
### Consumption

<table>
<thead>
<tr>
<th>Variable</th>
<th>Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nepal annual prevalence of heroin (15-64 years-old)</td>
<td>0.5%</td>
</tr>
<tr>
<td>Nepal population size (15-64 years-old)</td>
<td>19,044,441 inhabitants</td>
</tr>
<tr>
<td>Average annual quantity consumed per capita in Nepal</td>
<td>10.8 grams</td>
</tr>
</tbody>
</table>

### Prices

<table>
<thead>
<tr>
<th>Variable</th>
<th>Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Domestic wholesale price</td>
<td>29,000 USD per kg</td>
</tr>
<tr>
<td>Domestic retail price</td>
<td>77 USD per gram</td>
</tr>
<tr>
<td>Import price</td>
<td>20,000 USD per kg</td>
</tr>
<tr>
<td>Export price</td>
<td>35,000 USD per kg</td>
</tr>
</tbody>
</table>

### Exports/Imports

<table>
<thead>
<tr>
<th>Variable</th>
<th>Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hong Kong population size (15-64 years-old)</td>
<td>5,268,321 inhabitants</td>
</tr>
<tr>
<td>Annual prevalence of Hong Kong (15-64 years-old)</td>
<td>0.19%</td>
</tr>
<tr>
<td>Average annual quantity consumed per capita in Hong Kong</td>
<td>20 grams</td>
</tr>
<tr>
<td>Proportion of the drugs seized in Hong Kong coming from Nepal</td>
<td>40%</td>
</tr>
<tr>
<td>Proportion of heroin exported from Nepal</td>
<td>100% destined to Hong Kong</td>
</tr>
<tr>
<td>Proportion of heroin imported into Nepal</td>
<td>100% originating in India</td>
</tr>
<tr>
<td>Proportion of retail market controlled by Nepal residents</td>
<td>100%</td>
</tr>
</tbody>
</table>

### Seizures

<table>
<thead>
<tr>
<th>Variable</th>
<th>Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quantity of heroin seized in Nepal</td>
<td>323 kg</td>
</tr>
<tr>
<td>Quantity of heroin seized in Hong Kong</td>
<td>500 kg</td>
</tr>
</tbody>
</table>

### Proportion of resident international traffickers

<table>
<thead>
<tr>
<th>Variable</th>
<th>Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proportion of resident drug importers in Nepal</td>
<td>65%</td>
</tr>
<tr>
<td>Proportion of resident drug exporters in Nepal</td>
<td>60%</td>
</tr>
</tbody>
</table>

### Intermediate costs

<table>
<thead>
<tr>
<th>Variable</th>
<th>Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drug storage cost per kg in Nepal</td>
<td>20 USD per kg</td>
</tr>
</tbody>
</table>

### Step 2: Estimate quantities

2.1. **Quantities of heroin consumed in Nepal**

- **Number of heroin users in Nepal:**
  
  \[ \text{Nepal population} \times \text{Annual prevalence rate in Nepal} \]
  
  \[ = 19,044,441 \times 0.005 \]
  
  \[ = 95,222 \text{ users} \]

- **Consumed quantity in Nepal:**
2.2. **Quantity of heroin exported from Nepal**

Recalling that Hong Kong is the only region where heroin crossing Nepal is exported, it follows that:

- **Number of heroin users in Hong Kong:**

  \[ \text{Number of users} = \text{Hong Kong population} \times \text{annual prevalence rate in Hong Kong} \]
  \[ = 5,268,321 \times 0.0019 \]
  \[ = 10,009.80 \]
  \[ = 10,010 \text{ users} \]

- **Quantity of heroin consumed in Hong Kong**

  \[ = \text{Number of users} \times \text{quantity per capita} \]
  \[ = 10,010 \times 20 \text{ g} \]
  \[ = 200,200 \text{ grams} \]
  \[ = 200.2 \text{ kg} \]

- **Exports from Nepal to Hong Kong**

  Bearing in mind that there are no other heroin exports from Hong Kong to other countries, Hong Kong imports from Nepal are given by:
  
  \[ (\text{Hong Kong consumption} + \text{Hong Kong seizures}) \times \text{Proportion coming from Nepal} \]
  \[ = (200.2 \text{ kg} + 500 \text{ kg}) \times 0.4 \]
  \[ = 700.2 \text{ kg} \times 0.4 \]
  \[ = 280.08 \text{ kg} \]

2.3. **Quantity of heroin imported into Nepal**

Bearing in mind that there are no other heroin exports from Nepal to countries/regions other than Hong Kong, and that no heroin is produced in Nepal, the total imports of heroin in Nepal are calculated as:

Imports = Consumption + Seizures + Exports

\[ = 1,028.40 \text{ kg} + 323 \text{ kg} + 280.08 \text{ kg} \]
= 1,631.48 kg

**Step 3: Estimate IFFs**

**3.1. Outward IFFs**

Outward IFFs = Imports x import price x proportion of resident importers

= 1,631.48 kg x 20,000 USD x 0.65

= 21,209,240 USD

**3.2. Inward IFFs**

Inward IFFs = Exports x export price x proportion of resident exporters

= 280.08 x 35,000 USD x 0.6

= 5,881,680 USD

**Step 4. Estimate of illicit gross income and illicit net income**

**4.1. Value of domestic market**

Value of the domestic market = Quantity consumed in Nepal x retail price

= 1,028.40 kg x 77 USD

= 79,186.8 USD

**4.2. Value of export market**

**4.3. Value of exports market = Inward IFF = 5,881,680 USD**

**4.4. Value of illicit gross output**

Illicit gross output = Domestic market + export market

= 79,186.8 USD + 5,881,680 USD

= 5,960,866.8 USD

= 5,960,867

**4.5. Value of illicit net income**

Intermediate costs = domestic consumption x storage per kg

= 1,028.40 kg x 20 USD

= 20,568 USD

Illicit net income = illicit gross output – intermediate costs

= 5,960,834.9 USD - 20,568 USD

= 5,940,266.9 USD