

**Improving the Detection and Prevention of Illegal
Logging and Illegality in Shipment and Trade of Wood
Products in Guyana**

TRAINING MANUAL

FOR THE

GUYANA FORESTRY SECTOR

JULY 2009

GFC/ITTO-Funded Project

PD 440/07 Rev.1

CONTENTS

CONTENTS	2
INTRODUCTION	3
MANUAL OVERVIEW	3
SECTION 1. INDICATORS OF ILLEGALITY	4
1.1 Definition of illegality	4
1.2 Indicators of illegality using satellite imagery	4
1.3 Illegality detection on the ground	4
SECTION 2. CHAIN OF CUSTODY PROTOCOLS	6
2.1 What is Chain of Custody?	6
2.2 Scope of the CoC protocols	6
2.3 Material flowchart	6
2.4 Lumber production	6
2.5 Barcode tags	7
2.6 Chain of Custody components	7
2.6.1 Tracking	7
2.6.2 Production	8
2.6.3 Processing/handling flowchart	8
2.6.4 Defining product groups	8
2.6.5 Wood sourcing, receiving and storage	8
2.6.6 Summary production records	8
2.6.7 Export	8
SECTION 3. MONITORING AND CONTROL SYSTEM	13
3.1 Responsibility	13
3.2 GFC databases	13
3.3 Field Monitoring	14
3.3.1 Use of Barcodes	14
3.3.2 Real-time Scanning	14
3.3.3 Offline Scanning	14
3.3.4 Identifying discrepancies	15
3.3.5 Response to discrepancies	15
3.3.6 Processing monitoring	15
3.3.7 Transit monitoring	15
3.3.8 Licensing monitoring	16
3.4 Monitoring and Control Schedule	16

INTRODUCTION

Regulation of forest management has been rapidly evolving in Guyana and the Guyana Forestry Commission (GFC) takes an active and vigilant role in monitoring and promoting sustainable forest management practices. Reliable information on illegal forest harvesting activities is often difficult to obtain. Left unchecked, illegal logging and subsequent trade of timber present a substantial threat to sustainable forest management in many countries. The purpose of the GFC/ITTO project is to support forest law enforcement in Guyana using remote sensing technology, Geographic Information System (GIS) and barcode technology linked to database and communication technology.

One important aspect of the project is the dissemination of information and capacity-building in new techniques and procedures. Accordingly, two manuals have been developed for the regulatory agency and the broader forestry sector. This manual is designed for all members of the forestry sector including producers, processors, manufacturers, retailers and exporters. The purpose is to introduce them to some of the concepts of illegality, the national timber tracking system and aspects of monitoring and control.

The manual is designed for formal presentation or self-learning. It is divided into 3 sections and it is anticipated that all sections can be completed in 3 hours. An overview of manual is presented indicating the topics, estimated time to complete each and recommended support resources.

MANUAL OVERVIEW

<u>Topics</u>	<u>Time</u>	<u>Resources recommended</u>
INDICATORS OF ILLEGALITY		
• Definition of legality	20	Draft legality checklists
• Indicators of illegality using satellite imagery	10	Example images
• Illegality detection on the ground	20	Data on seizures
CHAIN OF CUSTODY		
• Definition and scope of CoC	10	Example tags
• Material flows through supply chain	10	Flowchart
• Record-keeping for CoC	30	Example forms
MONITORING AND CONTROL SYSTEM		
• Description of GFC databases	5	
• Field monitoring	5	
• Real-time and off-line scanning	10	
• Using the barcode scanner	10	Barcode scanner and barcodes
• Identifying discrepancies	20	Example data
• Response to discrepancies	10	Example data with discrepancies
• Monitoring and control schedule	20	
TOTAL	180	

SECTION 1. INDICATORS OF ILLEGALITY

1.1 Definition of illegality

1. A **draft** definition of legality for the production and trade of wood products in Guyana has been developed for the prototype Legal Assurance System. This definition has a hierarchical structure based on an umbrella statement of legality which expands into a series of principles, criteria and indicators which make up checklists for assessing legality of operations.
2. In keeping with legality definitions developed elsewhere in the world, the definition encompasses requirements in the welfare, social, environmental and occupational health & safety sectors in addition to laws and regulations pertinent to the forestry sector. Therefore, the draft definition encompasses both legal origin and legal compliance.
3. The overall definition of legal timber in Guyana is “that which has been removed, transported, processed, bought or sold in a manner that is within the provision of relevant laws of the country”. The three principles are:

Principle 1. The Forest Management Organisation (FMO) has legal rights to harvest and other parties’ legal tenure rights are respected

Principle 2. The FMO complies with relevant national legislation as it pertains to forest management, environment, labour and health & safety

Principle 3. The FMO has paid due taxes, fees, duties, royalties and penalties

1.2 Indicators of illegality using satellite imagery

4. An assessment of legality against the legality checklist requires on-the-ground inspections by forest officers or others trained as auditors. Nevertheless, remote sensing using satellites can be useful in detecting change in certain forest characteristics. This can play a supporting role in the assessment and ultimately enforcement of legality in the forestry sector.
5. Using medium-scale images, change detection is possible for new forest roads and canopy clearings of around 1ha (100m x 100m) or more in extent. However, it is not possible to determine from images the purpose of such changes; i.e. whether the canopy disturbances are due to forestry activities or are related to other causes such as mining or agriculture.
6. Higher resolution images, where available, should allow a determination of the nature of the change (i.e. forestry, mining, agriculture, residential) as well as a more profound assessment of compliance with some of the stipulations of the Code of Practice such as road widths, canopy openings, creek pollution, location of camps, vegetation clearance around bridges and skid trails.

1.3 Illegality detection on the ground

7. It is difficult to quantify the level of illegality in the forest sector in any environment. However, experience in Guyana and elsewhere has suggested that the most common kinds of illegality that occur in the forestry sector include:
 - Clandestine poaching of logs from other concessions, non-allocated state forest, private property or reserves upon which the persons do not have logging rights.
 - Encroachment and logging on neighbouring concessions.

- Falsely obtaining tags and/or removal permits.
 - Misusing tags (e.g. wrongly locating stump tags).
 - Under-declaring volume of loads and falsely declaring species.
 - Harvesting, transporting or processing forest products without appropriate licences or permits (e.g. chainsaw licence, sawmill licence, removal permit).
 - Logging in contravention of the Code of Practice, without approval or at variance with approved management plans.
8. While detection of these offences is possible under the existing GFC monitoring system, because of gaps in the databases and time delays in accessing the data, it is likely that many acts of illegality go undetected. It is the aim of the revised timber tracking system to encourage legality in the sector and seriously enhance the capacity of the GFC to enforce the relevant laws.

SECTION 2. CHAIN OF CUSTODY PROTOCOLS

2.1 What is Chain of Custody?

9. Chain-of-custody (CoC) means the linked system of handling of material as it passes through a supply or processing system. When the chain of custody is established and supported by appropriate paperwork it should be possible to track material through the supply chain to the final product; for timber it means from stump to final sale or product (e.g. dressed lumber for export). Normally, CoC systems are applied by individual companies in their own operations to meet the requirements of certification or legal verification.
10. These protocols have been developed to set the framework for tracking of wood products through the supply chain at the national level and to ensure that sufficient data are available to supply national-level databases to verify the legality of production, shipment and trade of wood products from Guyana. Therefore, while they make reference to procedures within processing facilities they are not intended to provide a full Chain-of-Custody for individual operations, nor do they make claim to verification of any such system.

2.2 Scope of the CoC protocols

11. The protocols are applicable to log producers, sawmills, lumberyards (with or without secondary processing), furniture factories/workshops, manufacturing plants, lumber-dressing facilities and exporters. They set the standards for the collection of data for the national databases, elaborate the procedures for monitoring of wood products and facilities and the generation of reconciliation reports using the databases.

2.3 Material flowchart

12. The flow of wood products through the supply chain in Guyana can be represented by the diagram in Exhibit 2-1. The flows of different products are represented by the coloured arrows; the broken arrows indicate the flows where material will be accompanied by the GFC barcode tags. Each box in the diagram represents a location: a timber production source (large-scale TSAs or small-scale SFPs), a facility in the processing chain (primary, secondary, manufacturing and retail) and a sales destination. Though the various locations are represented by separate boxes, in some cases the processing units will actually be located in the same facility (e.g. a planer located in a lumberyard).

2.4 Lumber production

13. Logging on State Forest land should only occur where a forestry concession has been issued. TSA's and WCL's must have an approved 5-yr forest management plan and an annual plan of operations. Logging is regulated by the sustainable harvest determined in the plans.
14. SFP concessionaires are not required to produce management plans. Logging is regulated by the identification of an annual volume quota determined by the size and integrity of the concession and the forest type. Logging on private lands – such as agricultural land and Amerindian reservations – does not come under the regulation of the GFC, though any wood products leaving private land and destined for sale are subject to GFC regulations.

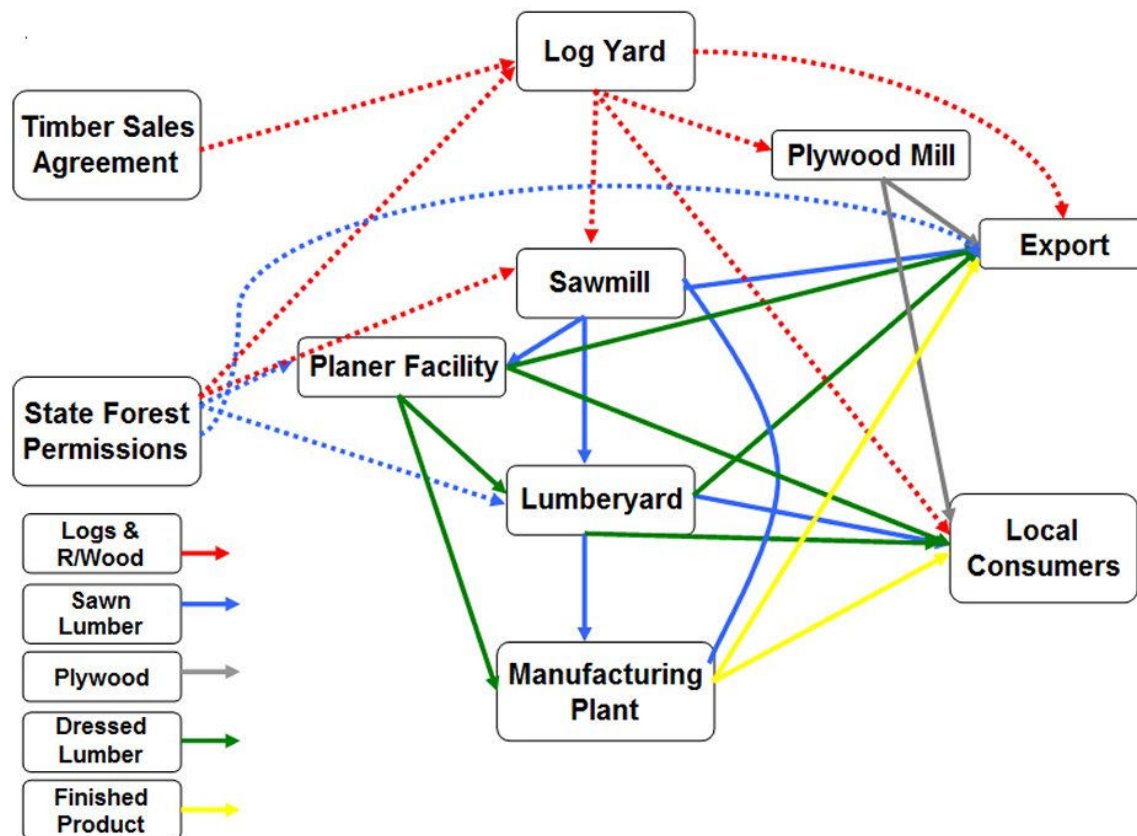


Exhibit 2-1. Wood products flow chart for Guyana (dotted lines indicate that the GFC tag/barcode should be affixed).

2.5 Barcode tags

15. All trees felled – including those on private lands – should be identified with a GFC tag (barcode) and the corresponding tag affixed to the stump. Once used up further tags can be requested once a case is made that the quota was insufficient or the mean log size is less than that used to determine the original number of tags (3m³/tree).
16. Tags are issued to TSAs and WCLs based on the Annual Allowable Cut determined in the forest plans. Tags, marked private and distinguished from State Forest tags by a different colour, are issued on request to land owners and Amerindian councils. Tags are not transferable once issued.

2.6 Chain of Custody components

2.6.1 Tracking

17. In order to track flows of material through the supply chain it is necessary to collect data at the various critical control points (e.g. where wood products enter and leave a processing unit). In most cases the means for data collection and the associated forms are in place though to be effective some forms have been revised to ensure that data collected is complete and enforcement of requirements is uniform.

18. In a CoC system it should be possible to track materials both forwards and backwards from input to sale, and sale back to input. All well-run processing facilities will already have in place some form of material-management system and record-keeping. The CoC should build on existing systems, strengthening weak links as necessary to ensure that tracking is possible. The requirements listed below are **not for a full CoC** (individual processing units can adopt that on a voluntary basis); they provide the minimum requirements for data collection and recording to allow input and output records to be provided and reconciled.

2.6.2 Production

19. Production will be recorded on the production register (Exhibit 2-2) and the removal permit by the concessionaire. The essential elements of these forms will be the listing of all logs produced referencing the GFC log-tracking (barcode) number, species, top and bottom diameter, source concession and block. In order to allow near real-time tracking of material, the production register should be surrendered fortnightly to the local GFC station for input into the production database.

2.6.3 Processing/handling flowchart

20. Each facility should describe the movement and processing of material within the facility from point of entry to final point of sale or transfer. This is best done with a flowchart. With the aid of the flowchart, it will be possible to identify the Critical Control Points in the process.

2.6.4 Defining product groups

21. Product groups are the basic units in the CoC. A product group is a product or line of products which shares the same set of input materials in approximately the same proportions (such as tongue & groove, V-joint, garden chairs). Operators need to list all the product groups they produce with a detailed description of the materials in each product group, including species.

2.6.5 Wood sourcing, receiving and storage

22. Wood raw material inputs should be identifiable and accompanied with appropriate paperwork (recording supplier information, quantity of delivery, species, date of delivery); in addition, buyers should complete the GFC Wood Products Supply form on a monthly basis. Logs or rough lumber bundles in storage should retain their GFC tag numbers/barcodes until processed.

2.6.6 Summary production records

23. Processing facilities should keep the following monthly records of their production:

- Raw material (or other partially processed material) received (Wood Products Supply form – Exhibit 2-3).
- Total volume of material sold (Wood Products Sales form – Exhibit 2-4).
- Sales invoices, packing lists and shipping documents, as appropriate.

2.6.7 Export

24. Export records should include all the sources of the material (i.e. lumberyards where material was purchased) by species, product and volume; this is recorded on the GFC Application for Export (Exhibit 2-5).

Year	
Month	
Facility Name	
Facility Address	
Facility Type	
Licence #	

Date	Product	Species	Units	Quantity	Supplier	Invoice #	GFC tag #	Permit #

NOTES

- Facility Type: Sawmill, dressing, lumberyard, manufacturing, exporter
- Licence #: GFC licence as applicable
- Date: Transaction date
- Product: Log, chainsawn lumber, dressed lumber, furniture etc
- Units: Units of measurement (m3, pieces, BM)
- Quantity: Volume, number, weight
- Invoice #: Or receipt #
- GFC tag #: Necessary for primary processor of logs or chainsawn lumber
- Permit #: As applicable

Exhibit 2-3. GFC Wood Products Supply template

Year	
Month	
Facility Name	
Facility Address	
Facility Type	
Licence #	

Date	Product	Species	Units	Quantity	Purchaser	Invoice #	GFC tag #	Permit #

NOTES

- Facility Type: *Sawmill, dressing, lumberyard, manufacturing, exporter*
- Licence #: *GFC licence as applicable*
- Date: *Transaction date*
- Product: *Log, chainsawn lumber, dressed lumber, furniture etc*
- Units: *Units of measurement (m3, pieces, BM)*
- Quantity: *Volume, number, weight*
- Invoice #: *Or receipt #*
- GFC tag #: *Necessary for primary processor of logs or chainsawn lumber*
- Permit #: *As applicable*

Exhibit 2-4. GFC Wood Products Sales template

APPLICATION FOR EXPORT OF FOREST PRODUCE
(to be completed in ink and in triplicate)

Name of Applicant:	
Address of Applicant:	
Removal Permit(s)/PP # (s):	
Suppliers Name (s):	1. 2. 3. 4. 5.
Suppliers Invoice/Receipt #'s:	1. 2. 3. 4. 5.
License #:	
Location of Produce:	
Proposed Place of Loading for Export:	
Expected Date & Time of Loading:	

Signature:

Date:

FOR OFFICIAL USE ONLY

GFC Document #:

The above information has been checked and found to be true and correct.

Name of Officer:

Date:

Officer Remarks:

Exhibit 2-5. *GFC Application for Export of Forest Produce template.*

TRAINING MANUAL FOR THE FORESTRY SECTOR

SECTION 3. MONITORING AND CONTROL SYSTEM

3.1 Responsibility

25. GFC has the primary responsibility for monitoring and control of the timber tracking system. To assist in this barcode scanners will be used in the field to collect data on logs and lumber. The scanners will be linked to the central GFC databases via a wireless Wide Area Network system to allow field officers access to real-time data.

3.2 GFC databases

26. The GFC has an integrated database system that can track timber and timber products through the supply chain – from the point of production to the point of export. This has been made possible by utilising some of the elements/software/databases that were currently existing (production and export) and adding some that did not exist (processing facilities). The flow of data through the system is illustrated in Exhibit 3-1.

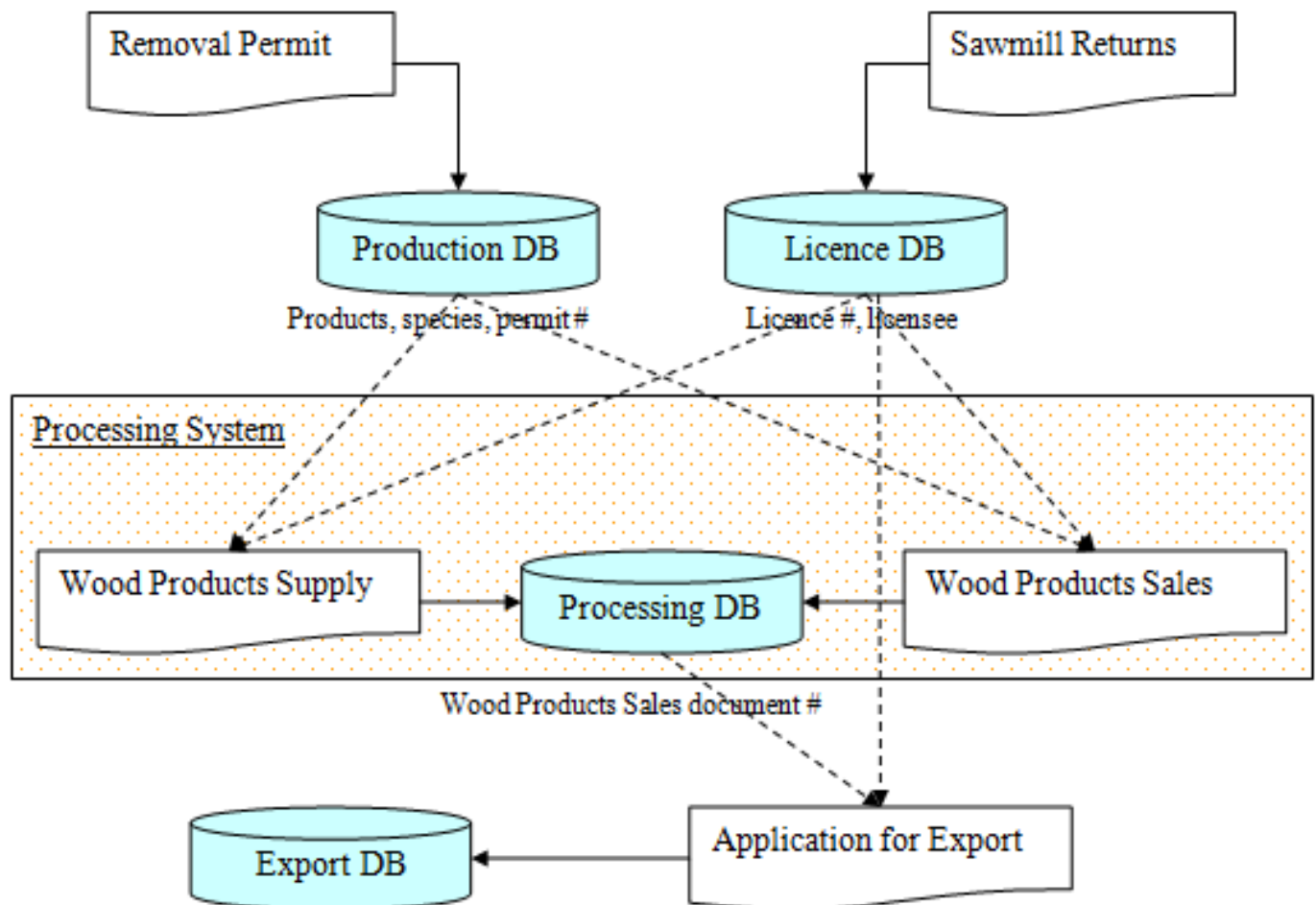


Exhibit 3-1. GFC's integrated database system.

3.3 Field Monitoring

3.3.1 Use of Barcodes

27. The barcodes on tags are used as a monitoring tool as the software has the functionality to use bar coding technology to assist with timber tracking. Officers can scan a barcode using a hand-held scanner and the scanner will show details about the corresponding tag. The barcode will contain only a number (this is less wasteful of tags which cannot be pre-programmed and increases security of data) which will be the unique GFC tag number.
28. The scanners work on a similar principle to those utilised in some supermarkets; once the scanner is directed at the barcode a laser beam will read the code and identify a number which links to the database and returns information related to the tag.
29. The scanner can be used at any point along the supply chain, once the GFC tag is still affixed (i.e. until the logyard or input bay for chainsawn lumber), including at the stump. This allows greater flexibility in monitoring and enhanced effectiveness by introducing the ability for random spot-checks as well as routine checks at forest stations. Thus barcode monitoring will take place at roadside (at GFC stations or spot-checks), at stump and on the wharf.

3.3.2 Real-time Scanning

30. The hand-held scanners issued to forest officers will be linked to the ground satellite stations that are part of the Virtual Private Network (VPN) once they are within range (approximately 1km). The scanners will link to the production/issuance database and the scanner will display information about the tag (issuance) and, once the data has been entered from production records, the log (species and, possibly, size).
31. This type of scanning will take place only at one of GFC's main offices which are part of GFC's VPN (Georgetown, Canje, Linden, Parika, Buckhall and Soesdyke) and can access the main database housed at the Georgetown office either directly or via a local server at the office.

3.3.3 Offline Scanning

32. Not all GFC offices are connected to the main office's VPN and for most field locations direct wireless connection with databases is not possible. In such situations, forestry personnel will be able to go to a regional office, dock the scanner and download updates to the tag database into the scanner. The officer will then be able to scan tags and see information about that tag immediately, using a local database on the scanner device. The information returned will be the same as for real-time scanning (see **example** below).

<p>Concession: Case Timbers Ltd. Concession Code: TSA BCE 001/1997 Tag#: 106228B Status: Used Expires: 2010-03-19 Block Range: AF2-AF6</p>
--

3.3.4 Identifying discrepancies

33. Any discrepancies between the information returned on the scanner and the situation on the ground or the accompanying paperwork (production register, removal permit, export certificate) will alert the officer to the possibility of illegality.
34. All log tag numbers reported on the removal permits are linked with the name of the operator to whom these were issued. If a tag was issued to one concessionaire and is utilized by another concessionaire, the barcode tracking system will detect this as the name of the issued concessionaire will appear.
35. Upon utilisation of tag as indicated by the removal permit, these are recorded as used in the system and cannot be reused. Also, GFC tags have specific issued dates integrated into the records and an expiry date. The scanner will indicate if a tag presented has already been used or is invalid for any other reason.
36. The officer can also check for other discrepancies between the information on the scanner based on the scanned barcode and the evidence presented either in the paperwork (such as removal permit) or on the ground (such as species, block location of stump).
37. There is also a feature of the scanners that allows them to be pre-programmed to expect the correct source concession and date prior to checking a batch of logs (or chainsawn lumber) and warn when barcodes do not conform.

3.3.5 Response to discrepancies

38. GFC has a Tag Discrepancy Report form which should be used in the event of a discrepancy. The forest officer observing the discrepancy should complete the form providing a description of the discrepancy (e.g. name of concessionaire issued the tag and name of concessionaire in charge of product; actual block location of stump and block range for the issued tag) and submit to his supervisor.
39. The supervisor will review and report to the Legality and Extension Unit who will authorise an investigation and take appropriate action.

3.3.6 Processing monitoring

40. The assessment of the CoC system includes on-the-ground inspections and checks of paperwork and comparison with GFC reports generated from the databases to ensure accuracy, completeness and acceptable reconciliation between material inputs and outputs (taking into account normal recovery where appropriate).

3.3.7 Transit monitoring

41. All timber produce leaving the stump which is destined for sale, whether from state or private land, must be accompanied by a removal permit stating the tag numbers, species, sizes etc. This permit should accompany the vehicle at all times which in transit and be surrendered on request to a GFC officer.

3.3.8 Licensing monitoring

42. In addition to concession permits, all those operating a chainsaw on their concession are required to obtain an annual “saw-pit” licence; sawmills (including portable sawmills) are required also to be licensed as are all lumberyards engaged in retailing of timber products. In addition, lumberyards should keep records of receipts and sales of lumber and are subject to regular monitoring by the GFC.

3.4 Monitoring and Control Schedule

43. The Legality and Extension Unit of the GFC will have overall responsibility for monitoring and control of the timber tracking system. The strategy will include both regular (periodic) monitoring and occasional checks. The reports that can be generated from the databases will be used as the basis of these monitoring and control checks.

44. On a regular (periodic) basis the following reports will be generated:

- Tag Usage Report (monthly)
- Permit Usage Report (monthly)
- Production and Tag Usage Report (monthly)
- Sawmill Input/Output (quarterly)

45. On an occasional basis these reports will be generated:

- Purchase Input Report (random spot check)
- Sales Input Report (random spot check)
- Application/Invoice Query (random spot check)
- Application for Export for Forest Produce (on application)
- Reconciliation Report (ad hoc – e.g. for CoC checks for certification or verification)