14 May 2015

English only

**Commission on Crime Prevention
and Criminal Justice**
Twenty-fourth session
Vienna, 18-22 May 2015
Item 7 of the provisional agenda*
**World crime trends and emerging issues and responses in
the field of crime prevention and criminal justice**

Outcome of the Expert Group Meeting on Timber Analysis (10-12 December 2014)

Summary

To facilitate the development of appropriate international guidance on timber analysis, UNODC hosted an Expert Group Meeting in Vienna from 10-12 December 2014 jointly with its partners of the International Consortium on Combating Wildlife Crime. The Expert Group Meeting convened participants from relevant national agencies, research institutions, front line law enforcement agencies, legal experts, and the scientific community. The purpose of the meeting was to discuss the applicability of available scientific methods for timber identification in support of law enforcement operations and how a standardized approach can be globally applied to support their implementation. The meeting provided a unique forum for law enforcement and the scientific community to discuss the practicalities of their work, the challenges they face when working on timber identification cases, and the need for increased communication and cooperation. During the meeting, participants elaborated a set of key issues and recommendations which form the basis of this conference room paper; a consolidated list of ten recommendations specifically developed by the scientific participants can be found in Annex 1.

_____
* E/CN.15/2015/1.

V.15-03347 (E)

‖‖‖‖‖‖‖‖‖‖‖‖‖‖

I. Background

Within Wildlife and Forest Crime, illegal logging and international trade in illegally logged timber is a major problem, especially for forest-rich countries in the developing world. An INTERPOL and United Nations Environment Programme Report published in 2012 estimated illegal logging, including processing, to be worth between US$ 30 to 100 billion per year globally. Illegal activities can occur at all stages in the timber supply chain and have all the hallmarks of organized and sophisticated crime, sharing many characteristics with other transnational criminal activities, frequently involving fraud, money-laundering, corruption, and counterfeiting.

The International Community has recognized the severity of the problem of global biodiversity loss and degradation of ecosystems, and this is reflected in a number of recent conferences, resolutions, and decisions. During the 22nd Session of the United Nations Commission on Crime Prevention and Criminal Justice (CCPCJ) in April 2013, Member States strengthened the mandate of the United Nations Office on Drugs and Crime (UNODC) in the field of wildlife and forest crime by adopting a resolution on "Crime prevention and criminal justice responses to illicit trafficking in protected species of wild fauna and flora" which was subsequently adopted by the Economic and Social Council (ECOSOC Resolution 2013/40). The resolution encourages UNODC, in cooperation with all members of the International Consortium on Combating Wildlife Crime (ICCWC), "to continue its efforts to provide technical assistance to combat illicit trafficking in wild fauna and flora." At the 16th meeting of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) Conference of the Parties (CoP16, Bangkok, March 2013), 177 governments voted unanimously to bring 293 new timber species under CITES control to ensure legal, sustainable and traceable trade in timber and non-timber forest products. Furthermore, during the 23rd Session of the CCPCJ in May 2014, Member States adopted a resolution on "Strengthening a targeted crime prevention and criminal justice response to combat illicit trafficking in timber and forest products" (Resolution 23/1). The resolution encourages UNODC to promote enforcement, identify good practices in the area of criminal law, and promote the development of tools and technologies, which can be used to combat illicit trafficking in timber and forest products.

Identification of timber products is challenging because diagnostic features generally used to identify tree species (i.e., leaves; flowers; fruit) are often lacking, and when present need to be assessed by expert scientists. For the untrained eye, timber identification is impossible. Law enforcement officers who encounter suspect timber shipments need assistance to identify the timber species and its legal status, and this information is critical to successful prosecutions. Laboratory analysis can provide scientific information and data that can significantly contribute to ensuring legal, sustainable, and traceable trade in timber and non-timber forest products. A standardized approach for both law enforcement and forensic laboratories is necessary to address challenges posed by the transnational nature of the problem.

To facilitate the development of appropriate international guidance, UNODC hosted an Expert Group Meeting on Timber Analysis in Vienna from 10-12 December 2014, jointly with ICCWC partners. The Expert Group Meeting (EGM) convened participants from relevant national agencies, research institutions, front line law

enforcement agencies, legal experts, and the scientific community. The purpose of the meeting was to discuss the applicability of available scientific methods for timber identification in support of law enforcement operations and how a standardized approach can be globally applied to support their implementation. The meeting provided a unique forum for law enforcement and the scientific community to discuss the practicalities of their work, the challenges they face when working on timber identification cases, and the need for increased communication and cooperation. During the meeting, participants elaborated a set of key issues and recommendations which form the basis of this conference room paper, a consolidated list of ten recommendations specifically developed by the scientific participants can be found in Annex 1.

II. Key issues and recommendations

Front line decision-making support

Participants stressed the critical need for effective tools to assist front line law enforcement officers in making decisions about which shipments should be stopped, checked and possibly seized, and how to obtain forensic timber identification results to support further investigations. The meeting provided an overview of the existing scientific methodologies available for the identification of timber, their suitability as both screening and diagnostic tools, and the questions they can potentially answer. Although there are currently various timber identification screening tools applied in different global contexts, participants noted the problems with awareness, accessibility and effective utilization of these resources given their varied nature and complexity. Resources for screening currently include identification guides and databases, access to specialized expertise such as dedicated CITES officers or wood anatomists, and use of detector dogs trained in the identification of specific trade-restricted timber species. Potential screening tools for the future include various automated systems utilizing wood anatomy and/or near infrared spectroscopy.

Participants determined a set of requirements for effective screening tools which include ease and speed of use, portability, accuracy, and cost effectiveness. Guidance is also required to assist law enforcement in the acquisition of appropriate samples of timber from larger shipments to be sent for diagnostic testing. Support requirements identified for front line staff extended beyond specific identification tools and included raising awareness; assistance in considering the legal framework in which they are operating and its impact on downstream decisions; guidance on how to make an assessment of verification requirements; information on the screening process; and guidance on the appropriate utilization of forensic identification services.

Forensic timber identification methods

More scientific research is required to improve the availability of forensically validated diagnostic timber identification methodologies, given the potential global requirements for these tests. Although many disciplines present potential scientific solutions to the various identification problems routinely encountered (e.g. wood anatomy, wood chemistry, plant genetics), very few have been thoroughly validated in a way that readies them for admission as evidence in a court of law. Participants

highlighted the lack of adequate forensic validation of available methodologies and diagnostic tools for timber identification which is crucial for forensic purposes and testimony in court, along with expertise and experience in presenting evidence in court. The experts suggested that to alleviate this problem, forensic practitioners and laboratories capable of producing robust forensic timber identification outcomes are needed, and access to that information should be provided to law enforcement. Increasing the number of validated methods should be a priority and due consideration should be given to increased funding and improved access to appropriate reference materials.

Timber identification itself is a very challenging scientific problem, due to the lack of readily observable diagnostic differences among species and individuals from different geographical regions, meaning that in many cases the desired timber identification level is simply unachievable with present scientific knowledge. The radiocarbon-based aging of timber presents a notable exception as the validated technology is currently available and can provide a significant resource, since the year in which a tree was felled is frequently a central point in determining the legality/illegality of the timber product.

Participants produced a set of recommendations to begin addressing these scientific requirements of forensic timber identification (see Annex 1), which cover the collection and curation of samples (both reference and evidence), development of best practice guidelines for forensic analyses, forensic scientist expertise/certification, and development of global proficiency testing programs in forensic wood identification. The need for law enforcement to engage with the scientific community more effectively was also recognized. Specifically, participants recommended that opportunities for law enforcement to direct the development of identification tests by communicating their most pressing challenges in identification should be explored.

Reference materials

The availability of reference materials is essential to the future development of effective forensic timber identification tools. The current paucity of appropriate reference material was one of the central themes of the meeting and presents the greatest barrier to development and forensic validation of timber identification methodologies across the board. Participants expressed concern with the global trend for reduction in funding for essential basic taxonomic research and reference collection augmentation and curation, along with the massive increase in demand for forensic timber identification services, which rely on these collections for their development.

To help address these difficulties, participants emphasised that it is important for countries to recognize and prioritize national reference collections and associated scientific disciplines. Furthermore, participants proposed that Member States be requested to provide suitable reference materials, thus contributing to the reference sample collection of timber species listed in the CITES annexes. This would also have the effect of alleviating the financial burden associated with reference sample collection.

To support the collection of appropriate reference material, participants urged that best practice guidelines on appropriate collection and curation be developed in line

with existing standards. To enable maximum utilization of existing reference material, participants suggested guidance be developed on how to internally validate non-taxonomically verified samples which can then be assigned a standard definition of reliability, based on the circumstances of collection and any subsequent verification.

Information availability and cooperation

Most queried timber is not forensically identified due, in the most part, to lack of appropriate information for law enforcement. Front line officers require increased awareness of what to look out for with regards to suspect timber, and they also require additional information on what assistance is available to them (such as access to dedicated CITES officers), and what options are available should they deem further investigation is warranted. Specific information is required about questions that can be answered by various identification techniques, the associated timelines and costs, and the practicalities of accessing those services (i.e. communication with appropriate forensic science personnel, collection, and transportation of appropriate samples). Participants highlighted the need for coordinated efforts and resources to collate the available information in a readily accessible format.

Participants recommended improved information availability for scientists with regards to forensic timber identification methodologies. Specifically, recommendations were made that guidance be produced on the following: best practice scientific reference sample curation and collection; internal validation of non-taxonomically verified reference material; best practice for forensic timber analysis (Annex 1).

Opportunities for improvements in communication and cooperation were highlighted between different law enforcement bodies (i.e. customs and police), as well as between scientists in different disciplines, and between law enforcement and the scientific community. Participants recognized awareness-raising as a key focus area to improve forensic timber identification outcomes and best utilize the existing resources available. Increased access to existing wood collections was also encouraged, to facilitate further forensic test development. The need for improved cooperation and communication with indigenous communities was also highlighted, to draw on knowledge and skills related to local timbers.

The way forward

Given the nature and extent of the problem, participants agreed that attempts to effectively reduce the illegal timber trade will require a concerted and coordinated effort over an extended period of time. Participants considered further UNODC meetings appropriate in order to follow up on the specific recommendations that were developed during the EGM. It was concluded that an umbrella guidance document should be developed as an outcome of the meeting, covering the entire chain of events from suspect shipment, through screening, diagnostic testing, seizure, investigation and prosecution. Participants suggested that in order to be relevant and useful to specific audience groups (e.g. law enforcement, forensic science, the legal profession), additional stand-alone materials and training tools should be developed that focus on the information and guidance relevant to specific audiences.

More broadly, the participants urged governments to recognize that the capacity to forensically identify timber, and therefore to tackle illegal logging, is dependent on support of botanical reference collections such as herbaria and xylaria. Moreover, the responsibility of collecting and maintaining appropriate reference material and related financial implications should be considered at the national level, when inclusion of additional taxa is pursued.

Annex 1

Forensic science recommendations for improved timber identification

1. Recognition of the critical importance of botanical reference collections worldwide and the associated scientific disciplines of plant taxonomy and wood anatomy. Without extensive well-curated reference collections, it is not possible to develop the scientific and forensic tools required to identify timber and enforce current laws.

2. Recognition that wood anatomical analysis should be the first identification step in all cases. Wood anatomists have a potentially critical role in acting as advisors on what (if any) other forensic identification techniques are available and/or required.

3. Recognition of the distinction between scientific services that can produce reference data, such as standard research laboratories, versus those which are appropriate for forensic testing, i.e. those which meet forensic standards for evidence handling and reporting.

4. Provision of validated reference material (herbarium voucher specimens, heartwood samples, lookalike species) to accompany the enactment of any new laws regarding timber taxa to enable suitable forensic tests to be developed.

5. Production of guidance on best practice scientific reference sample curation and collection, including who, where, when, and how samples should be collected for species, population and individual level identification, working within existing standards.

6. Production of guidance on how to validate internally non-taxonomically verified reference material for use when other material is not available.

7. Production of guidance on sample requirements for the various analytical disciplines.

8. Development of a standard definition of reliability/quality of reference samples, as used in other contexts, related to the circumstances of sample collection and its verification status.

9. Establishment of quality assurance in wood identification, towards certification of laboratory experts, and accreditation of the laboratory at a later stage.

10. Development of best practice guidelines for the various disciplines involved in forensic timber analysis.

_____