

Controlling the Supply Chain for Key Inputs to Cigarette Manufacturing:

Considerations of Article 6.5 of the Protocol to Eliminate Illicit Trade in Tobacco Products

Summary

- Improved supply chain control of the key inputs to cigarette manufacturing—tobacco leaf, cigarette filters, cigarette paper, and cigarette manufacturing machinery—can help to mitigate illicit trade.
- In accordance with the available literature, as of 2026, only a handful of countries currently have policies in place to help control the supply of these inputs.
- There policies are “low-hanging fruit” that most governments have the capacity to introduce into their relevant regulatory frameworks to begin to address this issue.
- Licensing and/or registration of producers is an effective way to identify who is in the supply chain and to monitor their activities. Granting, renewing, suspending and revoking licenses is a strong tool for governments to reward or sanction actors in the supply chain.
- Obligating reporting and due diligence by input vendors provides vital information to regulators and is generally low cost.
- Regular government audits of actors in the supply chain will help to ensure compliance and is low cost.
- An updated and effective legal framework to facilitate supply chain control is paramount to supporting the government’s efforts.
- Some countries have successfully incorporated key inputs (such as machinery and tobacco leaves) into an existing tracking and tracing system, creating helpful synergy without large-scale investment.

Background

Measures to control the illicit tobacco market are a necessary component of a comprehensive tobacco control policy. Increasingly, experiences point to effective action requiring oversight across the entire tobacco supply chain, including tobacco leaves and manufacturing inputs. Strengthening control at each stage of the supply chain can help reduce opportunities for diversion, unauthorized production, and the movement of tobacco products into illicit markets. The Protocol to Eliminate Illicit Trade in Tobacco Products provides a blueprint to address supply chain control, which is elucidated in eight articles (Articles 6–13) of the treaty.

The aim of this document is to provide an overview of the main approaches countries have adopted to control manufacturing inputs used across the tobacco supply chain, including what is working and how decisions to implement policies and programs were weighed. The document is largely based on a review of the literature on inputs in the tobacco production process, which identified relevant academic and grey literature through database searches (e.g., PubMed, JSTOR, Google Scholar) as of May 2025, as well as institutional reports from WHO, other multilateral agencies, and national regulatory agencies.

The literature review uncovered work being conducted in this topic area by various countries. Accordingly, short interviews facilitated by the WHO FCTC Secretariat were held with relevant representatives from Ministries of Trade, Finance, and/or Agriculture (as relevant) in seven select Parties across four regions. Semi-structured questionnaires were administered to each country, examining their efforts in controlling key inputs in the tobacco product supply chain (the sample questionnaire can be found in the Annex section).

Brief literature review on inputs

Mapping the tobacco production process identifies several critical inputs. Previous research has also mapped the supply chain revealing multiple key stages and various actors. Broadly, these stages are: tobacco farming and harvesting; tobacco curing; primary processing of the tobacco leaf; secondary processing into final products (e.g. cigarettes); product packaging; wholesaling; and retailing. In some countries, exporting is also part of the supply chain after packaging. In some countries, importing supplants everything up to wholesaling. The whole process is heavily mechanized, and both primary and secondary processing stages rely on specialized machinery.

At each step of the tobacco manufacturing process, a variety of inputs are used to modify the product and prepare it for the next stage of processing. While there are many inputs, the main components used are consistent, and in the literature, it is noted that there are very specific raw materials required to produce cigarettes, whether licit or illicit. This research identified four inputs that meet the Protocol’s definition of a “key input”, defined as: “essential to the manufacture of tobacco products,” “identifiable,” and “can be subject to an effective control mechanism.”

Beginning with the starting point of the tobacco production cycle, **tobacco leaf** was identified as a key input. The tobacco leaf value-chain involves farmers and other key actors, including both local and global leaf merchants and first processors. Controls can be applied to actors along this part of the chain. While farmers are the primary suppliers, many are small-scale, and their numbers likely rise to the millions, globally. Moving down the chain, activity consolidates considerably, with two of the largest global leaf merchants supplying much of the tobacco leaf to major manufacturers. Notably, in some countries, the major cigarette manufacturers are also the leaf merchants, which creates a slightly condensed supply chain.

Cigarette filters and cigarette paper are also good candidates for control mechanisms. Importantly, these inputs are in turn made of various raw materials and intermediate goods, not readily ‘visible’. **Cigarette filters** are attached to nearly all commercial cigarettes and are predominantly made from a plant-based plastic known as cellulose acetate, which is later processed into acetate tow. While cellulose acetate has several industrial uses, such as in textiles, apparel, and photographic film, acetate tow is used almost exclusively for cigarette filters, with more than 80% of world production reportedly dedicated to this purpose. Transforming cellulose acetate into acetate tow involves a highly specialized chemical and mechanical process, requiring specific expertise, advanced equipment, and significant investment. Importantly for the purposes of this discussion, this complexity has concentrated the supplier base, leaving the market dominated by a few key companies. As with leaf, controls downstream the supply chain may therefore be more feasible.

Cigarette papers are a highly specialized product, essential to the commercial production of so-called “factory-made” (or FM) cigarettes and other tobacco products, including roll-your-own and cigars. Most cigarette papers are derived from wood pulp. Like cellulose acetate tow, cigarette papers are supplied by a small number of specialised manufacturers. These companies operate large paper mills, which can also produce other types of specialty papers. Unlike

cigarette filters, cigarette papers can be more easily substituted with alternatives, although the evidence suggests that this is infrequent.

Finally, the production of industrial-scale cigarettes requires **specialized equipment**, making these machines viable as key inputs that can be managed in the supply chain. The types of machines can vary, determined by the size and scope of operations in a cigarette factory. Commonly, these include cigarette makers, filter makers, filter-combining machines, and cigarette packaging machines. The market for new tobacco machinery is relatively concentrated; European manufacturers lead globally, followed by emerging manufacturers in Asia. However, there is a large and diverse market for second-hand tobacco machinery, including spare parts, which has proven to complicate regulatory efforts.

The identified key inputs—tobacco leaf, cigarette filters, cigarette papers, and cigarette manufacturing machinery—are all essential and predominantly exclusive to the production of cigarettes; identifiable through common trade names; have unique tariff codes under the World Customs Organization’s Harmonized System; and are, or can be, subject to control mechanisms. Potential control mechanisms include licensing systems for producers, traders, and exporters; traceability systems to monitor production and trade; controlled distribution channels; reporting requirements for producers, importers and exporters; buyer and seller diligence to ensure legitimate transactions; customs oversight to regulate cross-border movement; and international cooperation. There is some precedence to this, with a group of countries already placing controls on key inputs. The following section explores what is currently being done.

Existing supply chain control measures

Licensing or registration

Licensing is an important tool aimed at regulating and securing the supply chain. It enables countries to obtain information about the number and nature of economic operators, and apply verification, further investigation, and audits as needed. Equivalent systems might register economic operators and collect information on quantities, sources, and sales. Granting, renewing, suspending and revoking licenses or registrations becomes a potential tool for governments to exercise control over licensees and registrants. Currently, the Protocol requires Parties to license (or equivalently control) tobacco manufacturing equipment. Several interviewed countries do this.

In one Party from the European region, licenses for tobacco machinery are required for producers, importers, and exporters. These were introduced in the country only after they ratified the Protocol and deliberated on how best to implement it. Consideration was given to the cost-effectiveness of introducing new legislation and the operating realities of managing licenses. These discussions enabled stakeholder ownership from the onset: legislation was written by the Ministry of Finance, and enforcement power was held by Customs. Part of the decision calculus was weighing the costs of inaction, which might involve costlier efforts such as shutting down illicit operations. Such assessments are likely similarly important for other countries. Indeed, the WHO Technical Manual on Tobacco Tax Policy and Administration (2021) recommends that the **scope and stringency of licensing should be proportionate to the risks involved and available enforcement capacity.**

In another Party from the same region, licensing is required of any entity producing manufacturing equipment, alongside registration of the machines. If needed, Customs holds the authority to deactivate registration and prevent re-registration. In another Party from the WHO European region, a series of certificates and licensing is required by facilities owning tobacco machinery. These require detailed reporting about the project and intended production, with restrictions on any changes, including any addition, transfer (e.g., gifting or selling), removal, or destruction of tobacco production machines. This country also places restrictions on the sale of second-hand tobacco manufacturing equipment. In a Party from the Americas region, some restrictions apply to the import of used tobacco manufacturing machines, while a Party from the Western Pacific region requires permits to sell used or scrap machinery.

The Protocol also encourages Parties to extend licensing or registration, where appropriate, to other actors in the supply chain, including entities dealing in other key manufacturing inputs. In the aforementioned Party, most tobacco raw materials' manufacturing and trade are controlled, and this extends to most economic operators. So, a layering of licenses and permits are required to be held by manufacturers, dealers and traders, as well as exporters and importers. Most activities in the tobacco product manufacturing process are covered by a permit. Being a license holder involves rigorous reporting requirements, allowing authorities to effectively track the raw materials in the manufacturing process. Another aforementioned Party similarly requires licensing to sell inputs, including for papers and filters, and certificates to operate the manufacturing sites. Further restrictions apply for imports: only firms that produce a minimum value of units annually under a declared brand are eligible to import cigarette paper for that brand.

Tobacco leaf licensing is typically more challenging than licensing other inputs due to the often-large number of economic operators, mostly farmers. Countries that do regulate the activity get around this in a few ways. In one of the interviewed Parties in the European region, production or sale of raw tobacco requires entry into a register of producers, which is a public record published online. While in another European Party, regulations apply to a few stages of the lifecycle of the leaf. The export of tobacco seeds and seedlings is banned, and imports require approval from the Ministry of Agriculture. Raw tobacco cultivation occurs under production contracts between farmers and authorized buyers, or through an officially registered non-contractual auction system. Traders must be licensed. Both importing and exporting tobacco leaf requires certificates. Finally, processing leaf is restricted to permit-holding facilities.

One of the interviewed Parties—which is amongst the largest tobacco growing countries in the world—does not currently apply licenses or equivalent controls on tobacco leaf supply, apart from import and export controls. A key obstacle the government has identified is the number of tobacco farmers, which is enormous in scale. Still, authorities are considering how to best address the issue, relaying that activity is concentrated in the Southern region, and controls could possibly be applied to processors of the leaf, of which there are far fewer operators compared to the number of growers.

Data reporting requirements

Most licensing or equivalent systems must uphold reporting requirements to remain valid. The information collected can benefit authorities in controlling the supply chain depending on what is requested, so it is important to consider what countries do. In one of the Parties covered earlier in the Western Pacific region, authorities use an inventory software system to have authorized economic operators report on sourcing and management of raw materials (inclusive of paper, filters, and equipment). These data are usually passed on to the field operations division, so that there can be real time tracking of the raw materials in the manufacturing process. Such systems can reduce the burden of data collection and the cost of compliance while enabling rich information gathering, making it a good practice for other countries to consider. In another European Party, facilities are required to report the procurement of raw materials, and there are further checks that the raw materials are consistent with the facility's declared production capacity, which is calculated using machine capacity and expected operating hours. In a different European Party, raw tobacco sales agreements and transactions are subject to detailed reporting requirements, including the weight of raw tobacco covered by each agreement, cultivation

areas, production, deliveries, stocks, and quantities destroyed. A government official must supervise the destruction of crops. In a Party from the European region, reporting requirements on licenses or permits for manufacturing tobacco equipment include details of purchase orders, transport, sales invoices, and any destruction of equipment. The last one is particularly compelling as a deterrent to reselling machines or machine parts to unauthorized operators.

Due diligence

License holders shall ensure that they do not engage in transactions that could facilitate illicit activities. Therefore, a due diligence on customers, or a “know your customer” check by sellers, can potentially strengthen the effectiveness of the whole system. In the aforementioned Party, for instance, license holders of manufacturing equipment must provide details of the customer purchasing the machine to the government. For example, the customer must be licensed to purchase if in the national territory or the seller must confirm the business requirement of the buyer for the product if outside of the country. Another Party also in the European region places similar obligations on tobacco machine license holders. This is true in countries outside of those interviewed as well.

Audits

On-site inspections and audits of collected information add a further layer of control by allowing authorities to verify that licensed or registered operators are complying with their obligations and that reported data correspond with actual activity. This may include risk-based or random inspections of a set percent of operators, periodic audits of reporting and record-keeping systems, reconciliation of raw material inputs against production and sales, verification of inventories and storage locations, and physical inspection of shipments or manufacturing facilities. A Party from the Western Pacific region applies a few of these methods, deploying their inventory system mentioned above to be periodically reconciled against official registry reports where finished products are enlisted, allowing authorities to identify any discrepancies. Furthermore, manufacturing premises are supposed to be guarded 24/7 by a revenue officer, who is part of the Department of Finance, on premises. They act as gatekeepers for raw materials coming in, and final products going out. The commissioner also holds power of visitation. In a different Party in the European region, for the sake of efficiency and cost-effectiveness, risk-based inspections are carried out on identified high-risk shipments, including physical checks and photos.

Excise tax on input

Select countries apply excise taxes on tobacco leaf. This is a strong control measure, but it is worth bearing in mind that taxing leaf tends to punish farmers the most within the supply chain, and they are typically the weakest economic actor in the supply chain within most countries. Parties should therefore proceed cautiously with any such effort lest they impoverish the most vulnerable individuals.

In one Party in the European region, processed raw tobacco is subject to excise tax, paid for by the entity that sold the processed raw tobacco. The existing regime follows years of effort to strengthen the tax, including changing the definition of cured tobacco to protect the tax from loopholes. It also involves the introduction of excise tax stamps on packages of cured tobacco, allowing the product to be tracked. There are some exemptions: intermediary tobacco entities may transfer raw tobacco without excise tax to other authorized entities, such as a manufacturer, another legal intermediary tobacco entity or an entity operating a tax warehouse. This country's approach uses excise taxation not only as a revenue measure, but also as a mechanism for controlling the movement of raw tobacco through the supply chain.

Another Party from the Western Pacific region similarly applies excise taxes at the processing stage rather than at the level of tobacco cultivation. Tobacco leaves in their original state are not subject to excise tax. The tax becomes applicable once the tobacco is partially manufactured, which authorities describe as tobacco that has already been cut and remains an input for the subsequent manufacture of cigarettes or other tobacco products. Partially manufactured tobacco is subject to an excise tax of PHP 250 per kilogram. The liability therefore falls on the economic operator involved in processing or trading the partially manufactured tobacco. The tax serves as another layer of control in tracking the supply chain.

Tracking and tracing systems

Article 8 of the Protocol compels each Party to establish a tracking and tracing system for all produced or imported tobacco products.

In one Party, the tracking and tracing framework is closely linked to the European Union Tobacco Products Directive. Their system requires traceability of the machines used to manufacture tobacco products, and a unique identifying code is placed on manufacturing equipment to enable tracing. Customs is responsible for enforcing the system and has access to the tracking and tracing data. Information from the system can also be used as an input for risk-based

physical inspections. However, one limitation they have found is that the unique identifying code assigned to a machine and the licensing system for that machine are not automatically linked, meaning that authorities may need to compare or triangulate information from different datasets to identify potential inconsistencies.

A different European country has a tobacco market information system—a tracking mechanism designed to monitor domestically produced raw tobacco leaf. The registered leaf merchant, corporate intermediary, or tobacco manufacturer purchasing the crop, including private leaf companies and international cigarette manufacturers, is legally required to record the transaction in the tracking system. The information includes origin, destination, vehicle details, and precise quantity being moved.

Another Party indicated that the current tracking and tracing system derives from the framework that was in place while the country was a member of the European Union. They retained and amended most of the EU legislation in domestic law, including provisions related to tracking and tracing (tracking the supply chain from machinery to retail sales) and stronger sanctions (such as forfeit and seize of manufacturing machinery, steep fines, and system deactivation for up to five years). Their registration of tobacco manufacturing machines operates separately from the tracking and tracing system.

Tracking and tracing systems and cargo tracking systems

In another Party in the European region, the SENT (Electronic Transport Supervision System) is used to monitor the transport of selected tobacco-related inputs, including dried tobacco, cigarette paper that can be used for machine production of cigarettes, and forming tape (heavy-duty belt used inside automated cigarette-making machines). The consignor, carrier, and buyer are required to register the transport in the system and provide the relevant information, including the location of the means of transport. Vehicles carrying these goods must also transmit geolocation data through GPS or an external location system, allowing authorities to follow the movement of the consignment during transport. This system therefore provides an additional layer of control over the movement of key inputs before they enter the manufacturing process.

Final remarks

Article 6.5 of the Protocol mandates that evidence-based research should be conducted to identify whether “any key inputs exist that are essential to the manufacture of tobacco products, are identifiable and can be subject to an

effective control mechanism.” As previously explained, the Protocol indicates several mechanisms to control the tobacco supply chain. This report finds first that at least four key inputs essential to the manufacture of tobacco products (manufacturing equipment, tobacco leaf, cigarette filters and cigarette papers) are identifiable and can be subject to effective control mechanisms. Overall, efforts to strengthen control of the cigarette supply chain remain limited and inconsistently applied across Parties, though with a handful of promising examples of countries developing and implementing relevant policies and regulations.

This slowness in relevant policymaking could be for several reasons. First, it might not be obvious to some Parties that individual components in the supply chain are amenable to regulation, or second, that targeting these components could meaningfully curb illicit trade. *Why* to do it may be the first challenge, but *how* to do it is the follow-on one.

This report seeks to highlight some useful starting points drawing from governments’ recent learnings.

Several Parties issue licenses for these key cigarette inputs, offering at the bare minimum, a reasonable survey of the number and nature of actors in the supply chain, and a foundation for regulatory oversight. These licenses can be further strengthened by data reporting requirements and periodic audits. Cigarettes filters and papers manufacturers can, at the least, be subject to expectations of due diligence by sellers (reasonable efforts to ensure the legitimacy of their buyers) that are reported directly to government and subject to inspection. These measures represent extremely low-hanging fruit, being relatively simple to implement and with great potential to yield significant results.

The findings from this exercise may serve as a useful guide to Parties in their efforts to meet their obligations to the Protocol, and moreover, to strive towards stronger control of illicit cigarette production and trade. With many countries starting from a low baseline, small, practical steps, such as those outlined above, can lay a solid foundation towards having better knowledge and control of the supply chain of tobacco products. Examples from Parties surveyed in this report illustrate that progress is possible.

There are still a number of practical questions that Parties may need to weigh when considering implementing stronger controls on the supply chain.

How might Parties who are furthest behind be brought up to speed quickly and cost-effectively? How should priorities be set to enable this? Ultimately, countries need to evaluate their own circumstances, but there may also be a role for third-

party support where a government's capacity is limited. Are resources available to dedicate to this sort of evaluation?

Another key question is whether there is already a legal basis for introducing controls and, if not, how much time, effort, and resources would be required to put them in place. This is likely to require intragovernmental cooperation among key stakeholders such as finance ministries, justice ministries (and/or attorneys general), and legislative bodies.

Broadly, Parties need to consider what resources are needed both to assess the current system and to implement new controls, and what is realistically feasible. The structure of the domestic supply chain might help shape these choices: what is produced in the country, how many producers or other actors are involved, how much production is retained for domestic use or exported, and how might these factors affect priority-setting?

Institutional arrangements equally matter. Which agencies hold relevant information, and how can information be shared effectively both inter- and intra-institutionally? These systems become most useful when the information collected is actionable; conversely, they may impose significant costs without delivering commensurate value if they are not purposefully designed.

Many Parties remain some distance from achieving what the Protocol is mandating in Articles 6 to 13, so these considerations loom large.

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