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ILLICIT TOBACCO IN PAPUA NEW GUINEA

A report estimating the extent and impact of illicit tobacco in Papua New Guinea and options to combat this problem

Acknowledgments

In 2018, the Government of Papua New Guinea (PNG) expressed an interest in a comprehensive and independent market study being undertaken to examine the level of illicit tobacco trade in PNG. It sought to develop a better understanding of the magnitude of the problem to enable it to make well informed and economically sound decisions to prevent the illicit tobacco trade. As a result, British American Tobacco (PNG) commissioned FTI Consulting to undertake this Study.

We would like to sincerely acknowledge the significant contributions that have been made to this Study.

BAT PNG provided relevant contextual information and its own anecdotal and other evidence of the presence of illicit tobacco, industry dynamics and supply chains.

We also appreciate the input and insights of the Manufacturers Council of PNG, the Business Council of PNG and Mr Rohan Pike (former Australian Federal Police and Australian Border Force, and expert on illicit trade).

We have partnered with relevant experts with experience and intimate knowledge of conditions and issues in the PNG tobacco market. This has included key partnerships with:

- Anglo Pacific Research and Strategy (APR) who developed and conducted all in country survey work in PNG and provided key input data used to estimate the size of the PNG tobacco market including illicit tobacco
- Associate Professor John Asafu-Adjaye who provided us with exclusive access to the PNG specific Computable General Equilibrium Model (PNGGEM-Regional) and analysis of the economy-wide and regional impacts of the illicit tobacco market in PNG.

Recognising the PNG Government's range of interests in this important issue, we consulted with a range of key departments and agencies to source information for this Study and to test the approach. This included meetings with the PNG Government's Anti-Illicit Tobacco Taskforce, the PNG National Research Institute (NRI), PNG Customs and the Department of Treasury.

The NRI also peer reviewed a draft of FTI Consulting's reports focusing on research methodology, analysis and results. We thank the NRI for its detailed comments and thoughtful approach, which provide increased confidence in the methodology, analysis and results and have strengthened the clarity and quality of our findings, conclusions and recommendations.

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Glossary and Abbreviations

Abbreviation	Definition
ABF	Australian Border Force
ATO	Australian Taxation Office
BAT	British American Tobacco (PNG) Limited
Brus	An unbranded loose tobacco grown in PNG and sold either in loose, packaged or stick form. Brus is not an excisable material under the <i>Excise Tariff Act 1956</i> . Sellers of brus must be registered under the <i>Tobacco Control Act 2016</i> .
Cigarette	A tobacco product comprising a roll of cut tobacco, enclosed in paper, which is typically sold in packs or individual sticks. This includes domestic and non-domestic cigarettes.
Coarse cut cigarillo	A machine-made coarse cut tobacco roll that is shorter and narrower than a traditional cigar but longer than a cigarette.
Community Perception Survey	A survey undertaken as part of this Study in September/October 2018 of more than 2000 purchasers of tobacco products across PNG.
Contraband	Genuine manufactured cigarettes or cigarillos that have been smuggled into PNG and have not paid applicable excise and customs duties in PNG (also known as illicit whites). These products often do not comply with PNG tobacco laws, for example, related to packaging health warnings and languages.
Convenience store	Small retailers that are typically privately owned and either operate independently or belong to a chain.
Counterfeit	Cigarettes that are manufactured illegally and carry the trademark and/or branding of a brand sold legally without the consent of the trademark owner (also known as fake cigarettes).
FCTC	World Health Organisation Framework Convention on Tobacco Control
GDP	Gross Domestic Product
GRP	Gross Regional Product
HIES	Household Income and Expenditure Survey undertaken by PNG’s National Statistical Office
HMRC	Her Majesty’s Revenue & Customs
Hot spot	Urban and rural areas of PNG that are considered to have very high rates of illicit tobacco.
Illicit tobacco	Cigarettes, coarse cut cigarillos, brus, rolling tobacco and other tobacco products, that do not comply with PNG tobacco laws and/or are sold without paying the applicable PNG excise and customs duties.
Legal tobacco	Cigarettes, coarse cut cigarillos, brus, rolling tobacco and other tobacco products, that comply with PNG tobacco laws and have paid PNG excise and customs duties as applicable.
Manufactured tobacco	Tobacco products that are manufactured (such as cigarettes and coarse cut cigarillos) and are typically subject to regulations related to their manufacturing and production. Does not include brus which is a non-manufactured tobacco product.
OECD	Organisation for Economic Cooperation and Development
PNG	Papua New Guinea

Retail street vendor Standalone street vendor typically operating in the area immediately adjacent to their place of residence.

Abbreviation	Definition
Sub wholesaler	Typically serviced by wholesalers and more prevalent in rural areas or in regions where wholesalers do not exist.
UK	United Kingdom
US	United States
Vendor Turnover Survey	A survey of more than 200 vendors across channels (street vendors, grocery stores, markets, trade stores, etc.) undertaken as part of this Study in September/October 2018.
WHO	World Health Organisation
Wholesaler	Major distributors of tobacco products servicing the main regions of PNG who may also act as independent distributors and importers of tobacco products.
Wholesale vendor	Vendor at a main market who will supply retail vendors either in the same main market or at an adjoining cluster market.

EXECUTIVE SUMMARY

Around the world, the illicit trade of tobacco products is prolific. Cigarettes are among the most commonly traded commodities on the black market due to high profit margins, relative ease of production and movement, and low detection rates and penalties.

Trading illicit tobacco is a crime that cheats governments out of significant revenue each year because of avoiding tobacco excises, duties and taxes. It also has broader impacts on the economy and the community. However, many governments are unaware of how significant the problem and impact of illicit tobacco is – in terms of avoided tax, the range of direct and indirect economic costs and wider societal impacts.

Papua New Guinea (PNG) has a rate of smoking among the highest in the world and it is widely acknowledged that illicit trade of tobacco and other goods in PNG has been a significant and growing problem. There is a great deal of photographic and other evidence of illicit cigarettes available for sale in vendor stores and markets at prices that are insufficient to cover the costs of excise and other taxes.

While in recent times the PNG Government has made efforts to address the illicit tobacco trade, the full suite of actions that it has previously committed to have not been implemented and the actions that have been taken have not had enough of an impact on PNG's growing illicit tobacco problem. For example, there is no evidence of actions being taken to implement the PNG Government's Medium Term Revenue Strategy 2018-2022 commitments focused on addressing smuggling and improving excise revenue collection for all types of goods, including tobacco. This included, among other things, developing an annual operational plan to reduce all forms of smuggling, and developing a medium-term anti-smuggling plan with clear indicators and timeframes.

Addressing illicit tobacco in PNG requires a solid understanding of the existing tobacco market, supply chains and the size of impacts of the problem. It also requires strong leadership, effective coordination between agencies and a focused effort of well targeted actions.

The purpose of this Study was to provide an independent evidence-based analysis aimed at:

- Estimating the size of the PNG tobacco market and the proportion of illicit tobacco in PNG
- Identifying the economic impact that illicit tobacco is having on government revenues and the broader national and regional economy
- Recommending a series of actions that are likely to have the best chance of addressing illicit tobacco in the short term.

This Study represents the most comprehensive and robust evidence-based study of the illicit tobacco in PNG to date. This report sets out this Study's detailed approach, analysis and findings.

Extent of illicit tobacco in the PNG tobacco market

We have used a *consumption model approach* to estimate the proportion of total tobacco consumption in PNG that is represented by illicit tobacco products. This approach has been used in other illicit tobacco studies including a 2013 study by KPMG and is considered '*the best approach to measure the market.*'¹ Adopting this approach involves forming a view about the size of the market with reference to core survey data about the tobacco purchasing habits of PNG consumers.

Our consumption model has been informed by two surveys undertaken in September/October 2018:

- *Community Perception Survey (CPS)* – focused on surveying tobacco usage and purchasing habits of more than 2000 PNG consumers
- *Vendor Turnover Survey (VTS)* – focused on surveying vendors' tobacco sales at different types of outlets (street vendors, grocery stores, markets, trade stores, etc), brands available for sale, country of origin, pricing and sales for more than 200 vendors.

Our survey sample is nationally representative and covers urban, peri-urban and rural accessible zones in each of PNG's four socio-cultural regions. We also surveyed Vanimo and surrounds (in the West Sepik Province of Momase) on the basis that it is considered a 'hot spot' for illicit tobacco.

We have used the data from these surveys and other external sources together with various assumptions to identify the proportion of tobacco products that is likely to be illicit.

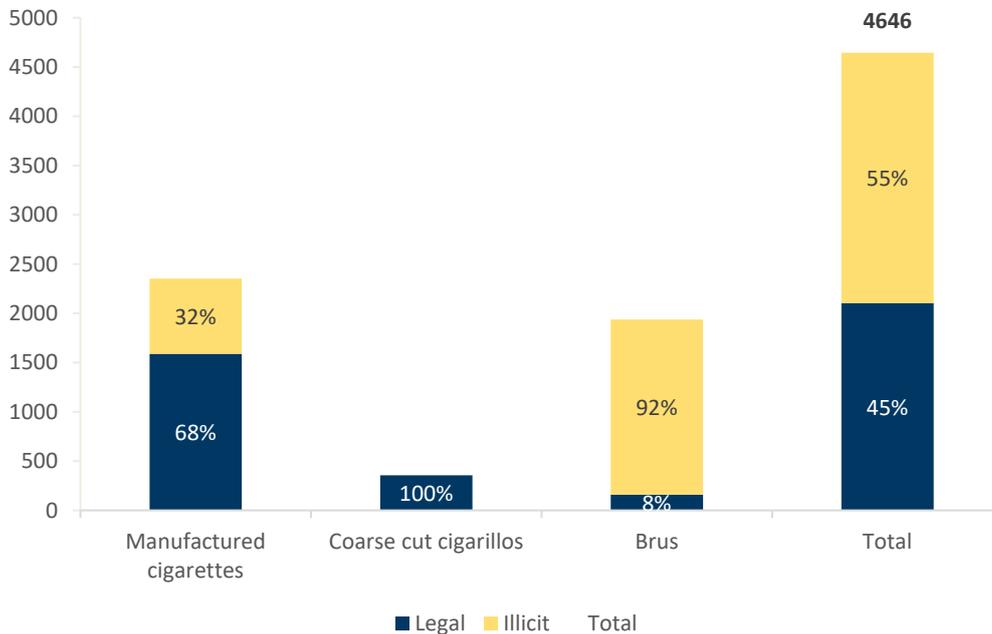
Overall, PNG's total tobacco consumption in 2018 is estimated at around 4.65 billion sticks

We estimate that the overall level of tobacco consumption in PNG was approximately 4.65 billion sticks in 2018 (see Figure 1). Cigarettes accounted for more than 50 per cent of reported total consumption, followed by brus (almost 42 per cent) and then coarse cut cigarillos (almost 8 per cent).

Our estimate of total tobacco consumption is much higher than a previous 2013 estimate of nearly three billion sticks, and the proportion that is represented by cigarettes is also higher (50 per cent compared to 34 per cent).

1 KPMG 2015, Illicit tobacco in Papua New Guinea, 24 April, p.24.

Figure 1: Estimated legal and illicit tobacco consumption in PNG (million sticks)



Source: FTI Consulting.

Around 55 per cent of the estimated total tobacco consumed in PNG in 2018 was illicit

We estimate that around 55 per cent (or 2.54 billion sticks) of total tobacco consumption in 2018 was illicit product. This is made up of illicit cigarettes and brus that is commercially sold without a permit.

Within each tobacco product category, we estimate that:

- 32.41 per cent of all cigarettes purchased are illicit
- 91.762 per cent of all brus consumed is illicit because it is sold commercially without a permit, rather than grown for personal use (which is legal).

We do not believe that there is definitive evidence of illicit coarse cut cigarillos in PNG. These cigarillos are a special type of tobacco product manufactured exclusively for the PNG market. They are not readily found in other international markets, and hence are difficult to counterfeit. The previous 2013 KPMG study of illicit tobacco in PNG also did not find evidence of illicit coarse cut cigarillos.

Brus is becoming increasingly commercialised

Brus is an unbranded loose tobacco grown in PNG and sold either in loose, packaged or stick form. However, under the *Tobacco Control Act 2016* sellers of brus must be registered. We understand that to date no one has been registered to sell brus. As a result, we have assumed that all brus that is sold rather than grown for personal use is illicit.

Our survey results identified that brus is a significant component of the tobacco market. Consumers reported that brus accounts for almost 42 per cent of the total tobacco market in PNG and almost 92 per cent of brus is sold and hence illicit. The amount of brus that consumers reported purchasing suggests that brus is being grown, distributed and sold in significant quantities. There is concern from some

stakeholders that brus is becoming a ‘cash crop’ and that this may contribute to growing food security issues.² Yet little is known about how the market for brus operates in PNG and the opportunities and implications of increasing commercialisation of brus for employment, agriculture and broader economic and regional development.

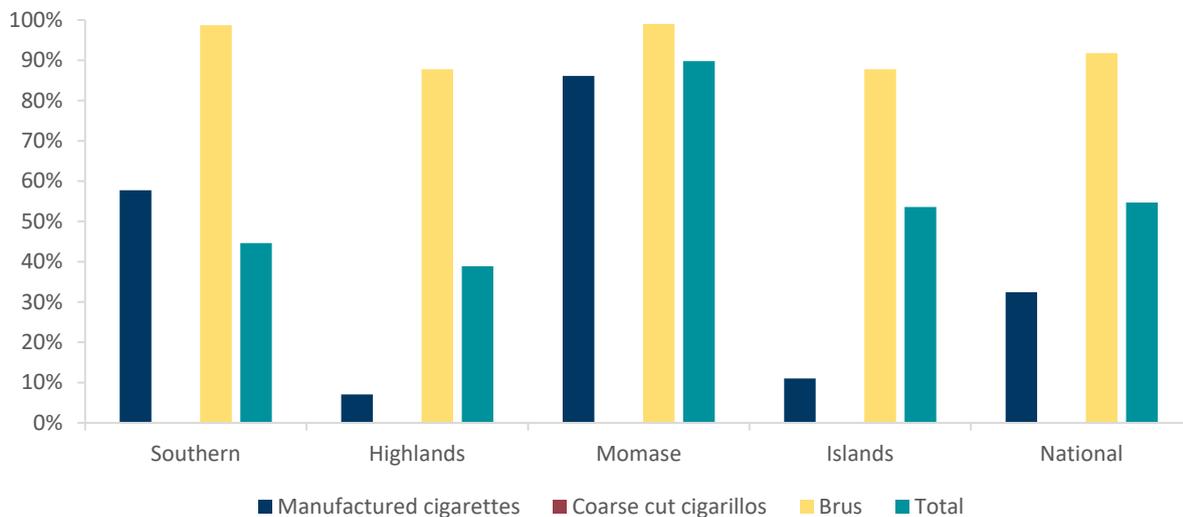
The proportion of illicit cigarettes varies significantly across the regions

The mainland regions of Momase and Southern show high rates of illicit cigarettes – around 86 per cent and 57 per cent respectively (see Figure 2). By comparison, the Islands and Highlands regions have much more modest rates of illicit cigarettes – around 11 per cent and 7 per cent respectively – reflecting the added difficulty of transportation to these areas.

Our results for Vanimo, in the West Sepik Province of Momase near the Indonesian border, reaffirm its status as a known ‘hot spot’ of illicit tobacco trade. In contrast to other regions, we estimate that almost all the reported consumption of tobacco products in Vanimo is illicit:

- More than 95 per cent of Vanimo consumers reported paying K0.50 per stick or less (which is less than the full cost of excise, duties and taxes).
- Only 1.5 per cent of Vanimo consumers reported purchasing Cambridge cigarettes.
- Vanimo consumers reported purchasing brus all the time rather than growing their own for personal use, and hence is illicit.

Figure 2: Illicit tobacco consumption by region (%)



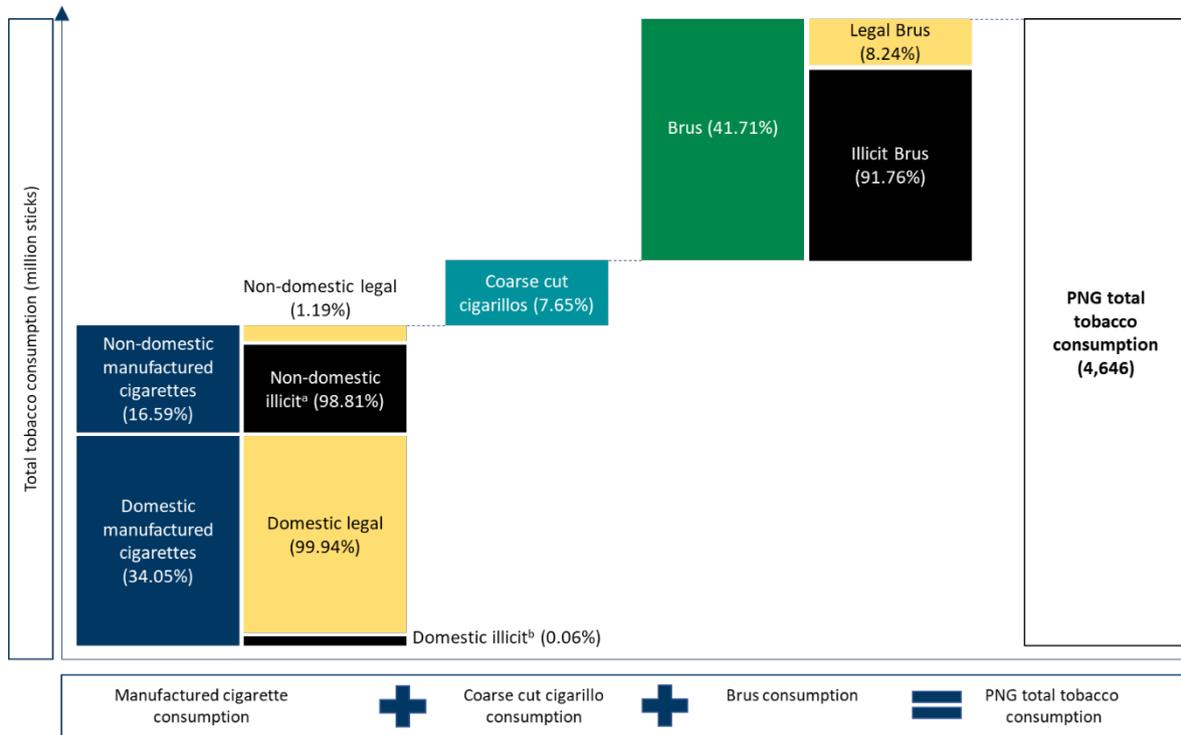
Source: FTI Consulting.

Note: Assumes that there is no illicit consumption of coarse cut cigarillos.

Figure 3 summarises our overall results estimating the total amount of tobacco consumed in 2018 across each category – cigarettes, coarse cut cigarillos and brus – in cigarette stick equivalent units.

2 As expressed by the Manufacturers Council of PNG.

Figure 3: Estimated total legal and illicit tobacco consumption by category (million sticks)



Source: FTI Consulting.

- a Non-domestic illicit comprises all Cambridge products assumed to be counterfeit, plus illicit brands and non-domestic brands sold below K0.90 per stick.
- b Domestic illicit comprises domestic brands sold at K0.90 per stick or less in September/October 2018 other than Cambridge.

Our survey findings provide insights into the habits of PNG consumers, and the extent of illicit tobacco use

Our survey findings provide key insights into the reported consumption habits of PNG consumers, including how much they typically purchase, the types of tobacco products they purchase (i.e. cigarettes, coarse cut cigarillos or brus), the extent to which they purchase domestically produced or imported cigarettes, the price they pay and their awareness and use of counterfeit tobacco products.

Based on survey responses:

- Most consumers purchased cigarettes as sticks rather than packs (despite new regulations which prohibit the sale of cigarettes in packs less than 25-sticks). Purchasing cigarettes on a stick rather than pack basis increases the difficulty of detecting counterfeit products and allows illicit cigarettes to be substituted for genuine cigarettes.
- Most consumers reported that they purchased domestically produced cigarettes (90-99 per cent), and favoured Cambridge (around 98 per cent in Momase and Highlands, 70 per cent in Papua, 45 per cent in Islands). This suggests that there may be a possibility that consumers are unknowingly purchasing illicit cigarettes as Cambridge.
- A very small proportion of PNG consumers paid less than K1.00 per stick for cigarettes, despite various reports and photographic evidence that there is widespread availability of imported cigarettes for sale at around K0.50 per stick.

Again, the reported results for Vanimo provide a stark contrast to these PNG regional results. Vanimo consumers reported purchasing Cambridge only 1.5 per cent of the time, and more than 95 per cent of all cigarettes were purchased at K0.50 per stick or less. Vanimo consumers also reported purchasing all of their brus, rather than growing their own for personal use, which is illegal.

These results above suggest a few dynamics may be at play:

- Most cigarette consumers are unlikely to be able to distinguish between genuine and illicit products as the differences between the two types of products are very minor, even on a pack basis.
- Most consumers are even less likely to know whether they are purchasing genuine product because they have purchased cigarettes on a stick rather than a pack basis.
- There appears to be strong preference or brand loyalty for domestically produced tobacco products, and more specifically Cambridge, throughout most PNG regions.
- Vendors may be pricing illicit cigarettes at or near the price for genuine domestically produced products for two reasons: to maximise profits rather than sales and to avoid any suspicion (by both consumers and enforcement agencies) that the products that are being sold are not genuine.
- While there is often a wide variety of packs of manufactured cigarettes available for sale (including known illicit brands or cigarettes at significantly lower prices than domestically produced cigarettes), there is no available evidence to suggest that those products are being sold as those brands or at those prices (except in Vanimo).

These factors taken together suggest that illicit cigarette sticks are possibly being substituted into open genuine packs and sold as Cambridge. Consumers may be unknowingly purchasing illicit cigarettes but paying almost the same price as genuine products. Consequently:

- PNG Government is losing a significant amount of revenue because of not collecting the excises, duties and taxes associated with these sales.
- Producers of legal tobacco products are losing market share and revenue despite consumers preferring or seeking to purchase their genuine products.
- Consumers may not be getting what they have paid for in many cases.

Impact of illicit tobacco on the PNG economy

The tobacco industry has links with other sectors in the economy including government and households. As a result, any shrinkage of the tobacco sector due to the presence of illicit tobacco will have repercussions across the entire economy.

We have used a model of the PNG economy called PNGGEM-Regional to estimate the economic impact that illicit cigarettes on government revenues and the broader national and regional economies.

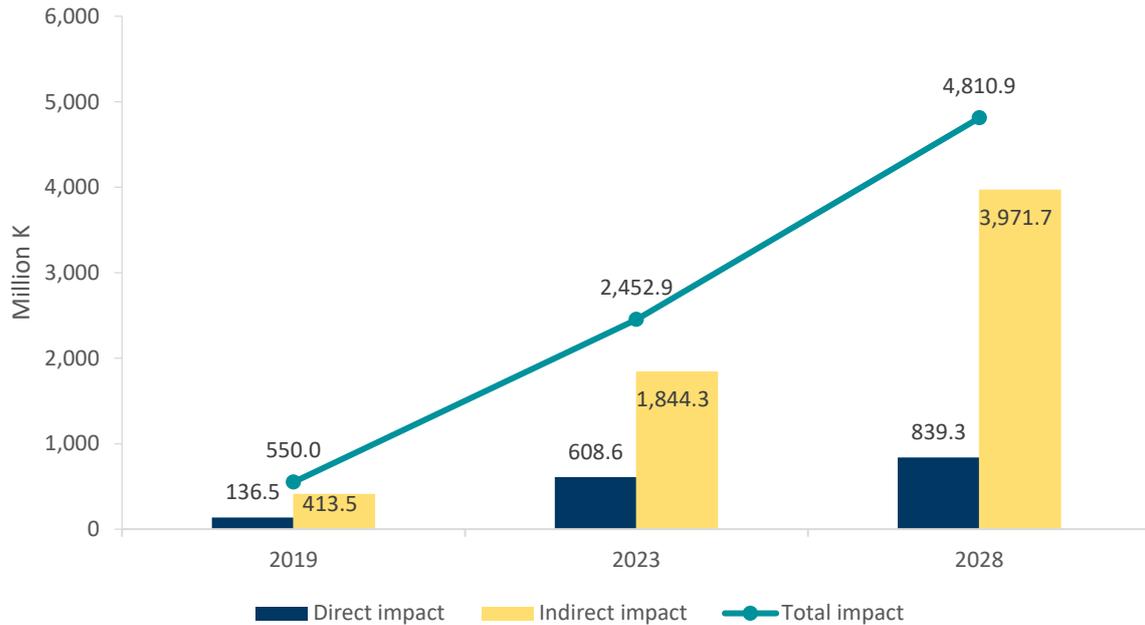
We have limited our focus to illicit manufactured cigarettes only since brus is part of the subsistence economy and not currently subject to any form of PNG Government taxes. For simplicity, we have presented the impacts at various points over a ten-year period – 2019, 2023 and 2028.

It is important to recognise that the results presented here do not include the broader social, health and community impacts of illicit cigarettes. While these are discussed in international literature, we were unable to obtain enough reliable data and information in a PNG context to assess the magnitude of these potential broader impacts.

Impact of illicit cigarettes on government revenues

Consistent with the international literature, our economic modelling reveals that illicit cigarettes have a significant impact on government revenues (see Figure 4). The PNG Government levies direct taxes on tobacco products such as excise taxes, customs duties and a 10 per cent value added tax. However, there are also broader economy-wide (indirect or flow on) losses across all tax categories including tariffs, excise duties, export tax, income tax, production tax and company tax.

Figure 4: Impact of illicit cigarettes on tax revenues (K millions)



Source: FTI Consulting model simulation results and author’s computations for the direct impacts.

Based on our estimated proportion of illicit cigarettes in the PNG tobacco market, we project that the PNG Government stands to lose K136.5 million in 2019 through direct tax losses associated with illicit manufactured cigarettes and that this will grow to around K608 million by 2023, and K839 million by 2028.

Our model estimates that the indirect losses to the PNG Government account for a further K413.51 million in 2019 and these are expected to increase significantly to around K1.84 billion by 2023, and K3.97 billion by 2028.

Adding the direct and indirect impacts together means that the PNG Government faces total revenue losses from illicit cigarettes of around K550 million in 2019. This then increases significantly to K2.45 billion by 2023 and will total K4.8 billion by 2028.

These results underscore the importance of taking swift and deliberate action to tackle illicit cigarettes in PNG. This scale of lost revenue has significant implications for the PNG Government’s ability to deliver broader economic and social outcomes to benefit the PNG people.

National economic impacts

The tobacco industry is a significant component of the PNG economy and the modelling results indicate that illicit cigarettes have an overall negative impact on PNG’s economy. The negative impact on the economy is caused by the flow on effects arising from reduced output and employment across the economy, which in turn reduces household income and consumption. Falling employment also results in a decline in household income (not shown), which in turn leads to a fall in national welfare.

As Table 1 shows, our modelling indicates that all key macroeconomic indicators – Gross Domestic Product (GDP), Total Employment, Total Output and National Welfare – are negatively impacted and these negative impacts intensify over time:

- Real GDP decreases by -0.3 per cent in 2019 and rapidly decreases to -4.4 per cent by 2028
- Total Employment decreases by -0.4 per cent in 2019 and then declines to -4 per cent by 2028
- Total Output initially declines by -0.2 per cent in 2019 but falls further to -3.1 per cent by 2028
- National Welfare declines by -0.5 per cent in 2019 and to -4.1 per cent by 2028.

Table 1: Macroeconomic impacts of illicit cigarettes (% changes)

Variable	2019	2023	2028
Real GDP	-0.3	-0.9	-4.4
Total Employment	-0.4	-1.1	-4.0
Total Output	-0.2	-0.8	-3.1
National Welfare	-0.5	-1.7	-4.1

Source: FTI Consulting model simulation results.

Regional economic impacts

The economic impacts are also felt at a regional level. As with the national level results, the impacts on each of the regions are generally modest initially but increase significantly over time (see Table 2).

In 2019, the impacts on regional growth (measured by Gross Regional Product or GRP, in real terms) range from -0.2 per cent in the Highlands region to -0.5 per cent in the Southern region. By 2023, we see more pronounced impacts ranging from -0.5 per cent in the Highlands region to -1.5 per cent in the Southern region. Real GRP reduces further by 2028, with the largest declines now occurring in the Highlands (-4.8 per cent) and other regions experiencing relatively lower but still significant declines ranging from -2.1 to -2.5 per cent respectively.

Table 2: Impacts on real Gross Regional Product (GRP) (% changes)

Region	2019	2023	2028
Southern	-0.5	-1.5	-2.5
Momase	-0.3	-0.9	-2.2
Islands	-0.3	-1.3	-2.1
Highlands	-0.2	-0.5	-4.8

Source: FTI Consulting model simulation results

Illicit cigarettes also create adverse impacts on regional employment (see Table 3). Although the initial employment impacts are small in 2019, with zero impacts in the Highlands and Islands, by 2028 the employment losses range from -3.1 per cent in the Southern region to -0.2 per cent in the Momase region.

Table 3: Impacts on regional employment (% changes)

Region	2019	2023	2028
Southern	-0.7	-1.6	-3.1
Momase	-0.1	-0.2	-0.2
Islands	0.0	-0.1	-1.8
Highlands	0.0	-0.5	-2.2

Source: FTI Consulting model simulation results

Addressing PNG’s illicit tobacco problem

Addressing illicit tobacco in PNG requires strong leadership, effective coordination between agencies and a focused effort of well targeted actions. We have identified a series of actions aimed at severely hampering illicit tobacco in PNG.

The clear focus is on adopting a more targeted approach and significantly enhancing the effectiveness of detection and enforcement. If implemented, these actions should result in increased seizure and destruction of illicit tobacco, increased government revenue associated with tobacco excises and duties as well as broader government taxes.

1. A Taskforce needs to be established to focus PNG Government efforts on improved detection and enforcement of illicit tobacco (and other illicit goods)

A Taskforce needs to be established which meets the following principles:

- **Independent** – be independently led and ideally have bipartisan support
- **Dedicated resources and powers** – have dedicated resources that can be directed by the Taskforce and legislative powers that enable it to take direct action
- **Accountability** – have clear objectives and measurable outcomes that guide the Taskforce’s activities
- **Transparency** – report and be transparent about the Taskforce’s success in addressing illicit tobacco transparently, both to highlight the effectiveness of its efforts and to further discourage illicit behaviour.

The Taskforce should include resources from the key enforcement agencies responsible for tackling illicit tobacco and other goods. At a minimum, this should include dedicated Customs, Police, Armed Forces and Border Control staff. Other relevant government entities should also be engaged such as PNG Ports and Post PNG.

The primary focus of the Taskforce should be increased detection of illicit products resulting in:

- Increased revenue collection (from excise taxes and import duties), for example, where tobacco products otherwise meet the packaging and health warning legislative requirements.
- Increased seizure and destruction of tobacco products that do not meet the legislative requirements.

- Prosecution of offending companies and individuals.

The Taskforce should be broadly focused on identifying the range of illicit products, as the trade of illicit tobacco often coincides with the trade of other illicit and excisable products. Various sub-committees should be established targeting different types of illicit products, with one of those sub-committees clearly focused on tobacco.



Having a dedicated sub-committee for tobacco balances the need for focused resources and outcomes related to tobacco with the benefits of sharing of information about supply chains, importation methods and other intelligence across other illicit products and activities.

While there are a range of possible models for the Taskforce’s operations, the Taskforce should be chaired by an independent person appointed by Government, ideally with bipartisan support. The Taskforce should not include representatives of industry, but it is important that the Taskforce works closely with industry. This could be achieved either by including industry representatives on an Advisory Committee or establishing agreements or Memoranda of Understanding – to share information that may assist it in identifying illicit tobacco sources and implement joint initiatives such as public education and awareness campaigns.

The Taskforce must be vested with the appropriate legislative powers to support its investigation, inspection, seizure, enforcement and prosecution powers. It needs to be able to direct relevant staff, and to operationalise system and procedural changes to respond quickly to market intelligence and analysis, which is likely to change quickly as illicit traders respond to increased enforcement efforts. It should not report to or be subject to the direction of other agencies.

The initial resources for the Taskforce should comprise existing staff resources from within Customs, Police, Immigration, Health and Armed Forces, and could also include representation (or alternatively close consultation) from PNG Ports and Post PNG. It is not clear whether these resources need to be supplemented to maximise effectiveness of the enforcement effort. However, this could be informed by the success of the Taskforce’s activities and funded from some of the additional excise and import duties collected if required.

The Taskforce’s outcomes need to be clearly measured and reported publicly to provide confidence that it is operating effectively and making progress towards eliminating illicit tobacco.

The key performance indicators or measures of success should include the following:

- Value of excise and import duties collected from imported tobacco products
- Quantity and value of illicit tobacco products seized and destroyed
- Successful prosecutions for importation of illicit tobacco products.

The Taskforce should report regularly to the National Executive Council on its activities, effectiveness and emerging issues.

The information collected should be verified independently and made publicly available to enhance confidence of the effectiveness of the PNG Government's efforts in tackling illicit tobacco, and to further deter the importation of illicit tobacco products.

2. Detection and enforcement should primarily focus on key entry points for illicit tobacco

Enforcement should be focused on the key entry points for illicit tobacco products. These are primarily major seaports (Lae, Motukea and other larger coastal ports), road border cross points with Indonesia and larger air and mail cargo.

The high rates of illicit cigarettes at Vanimo suggest that effective detection and enforcement along the land and sea border with Indonesia is critical to being able control the entry of illicit tobacco and other products into PNG.

Entry via major ports such as Moresby/Motukea and Lae needs to be carefully monitored and controlled, and there should also be an increased focus at ports such as Kokopo, Madang and Kimbe.

PNG Government should work closely with PNG Ports to ensure that any changes in trends of trade volumes and declared products at all ports are monitored closely to identify any diversion strategies of importers.

Ongoing training should be provided to enforcement officers on detection of illicit tobacco at all locations.

PNG Government should review existing guidelines dealing with the disposal and destruction of seized tobacco to ensure that the procedures are efficient, effective and secure.

Destruction of illicit tobacco seized should be conducted by an entity that is separate from the detection and seizure entity to provide a check on any tobacco products that illegal syphoned after being seized.

3. Additional investment in detection at Lae and other major ports is required

As a starting point, PNG Government should enhance its detection and enforcement efforts by:

- Enacting existing provisions under the Tobacco Control Act declaring enforcement officers
- Drawing together the existing staffing and other resources to provide specific focus on targeting illicit tobacco through a Taskforce (as recommended above).

Additional resources will enable the Taskforce to achieve more effective detection and enforcement.

PNG Government needs to significantly enhance detection and examination equipment at Lae and other secondary ports. Additional information should also be collected to:

- Assess the extent to which the equipment is being efficiently used (i.e. the number of inspections conducted as a proportion of total containers imported).

- Monitor any increases in trade volumes which may signal a movement of illicit tobacco products through different ports.

4. Importers of tobacco products should be licensed or require a permit

PNG Government needs to make the Regulations to require permits for all tobacco imports (except for tobacco imported by travelers within duty free limits). This would make it easier for the Government and/or the Taskforce to take enforcement action and seize tobacco where no duty has been paid, increasing the deterrent against illicit tobacco smuggling.

An appropriate prescribed fee could be levied for the tobacco importation licences or permits which could contribute to the ongoing cost of tackling illicit tobacco in PNG.

5. Prohibitions on selling illicit cigarettes and cigarette sticks should be actively enforced

Allowing cigarettes to be sold as sticks rather than packs reduces confidence that cigarettes meet regulatory requirements and provides the opportunity for illicit cigarettes to be sold as genuine products.

Enforcement officers need to increase their efforts at enforcing existing laws including by confiscating from vendors any cigarettes that do not meet PNG packaging laws including health warnings, language requirements or are sold individually or in packs of less than 25 sticks. Vendors who continue to sell illicit cigarettes should lose their retail licences.

From an illicit tobacco point of view, the PNG Government may wish to consider whether to allow a smaller and more affordable pack size to balance affordability and enforceability of tobacco legislation. Smaller pack sizes have previously been trialed in PNG and other countries.

Irrespective of whether the PNG Government chooses to review existing pack sizes, it is critical that enforcement officers actively enforce existing laws to prevent the widespread availability of illicit tobacco products.

6. Government should review existing legislation against best practice, including to ensure that existing penalties and sanctions provide an appropriate deterrent

The PNG Government should undertake a legislative gap analysis to ensure that existing tobacco laws remain current and reflect best practice. The gap analysis should involve:

- Enacting all existing legislative provisions to ensure that illicit tobacco is subject to the full force of existing laws
- Extending the range of level of existing penalties as recommended above
- Enhancing existing legislation to reflect international best practice.

The system of penalties and sanctions in relevant legislation should be expanded to include:

- Seizure of goods, vehicles and vessels
- Seizure of cash and assets as part of the proceeds of crime
- Criminal prosecution with significant custodial sentences
- Financial wrongdoing penalties up to the value of the excise and import duties due (i.e. doubling the cost of duties for a false declaration)

- Civil action
- Prohibition of the importation or sale of tobacco products for a defined period
- Withdrawal of any applicable importation, manufacturing or retailing licences
- Immigration sanctions to refuse entry to PNG for tobacco smuggling
- Public naming and shaming.

The level of penalties should recognise the economy-wide impact and harm created by illicit tobacco and be consistent with penalties for drug dealing and other serious crimes.

7. Additional enforcement should be accompanied by a public education and awareness campaign

Public education campaigns should be conducted to better inform the community about illicit tobacco and enhance their awareness of the following:

- How to recognise a genuine from an illicit tobacco product (e.g. cigarette and package markings)
- The adverse economic, health and community impacts of illicit tobacco in PNG – which could draw on the results of this Study
- The general tax and legal requirements related to tobacco in PNG, and importance of collecting appropriate excise and duties on imported goods to benefit PNG people.

These campaigns could be funded and administered jointly by the PNG Government and industry, including through additional funds collected from excise, duties and taxes on imported tobacco products.

8. Cooperative agreements should be pursued, including with key tobacco importing countries and provincial governments

The PNG Government should pursue cooperative bilateral agreements with neighbouring countries focused on sharing information and coordinating enforcement actions among customs, tax and other authorities.

Key tobacco importing countries such as Indonesia and China should be considered, as well as other transit countries such as Malaysia, Philippines and Vietnam.

There may also be opportunities to enhance surveillance, enforcement and intelligence gathering efforts through greater cooperation and collaboration with provincial governments.

9. Government should develop a better understanding of the market for brus

The PNG Government should commission a review of the market for brus to develop a better understanding of:

- How brus is being grown, distributed and sold
- How the commercialisation of brus contributes to employment, and economic and regional development
- The impact of commercial brus growing on agriculture and food production

- The health and other impacts of brus (compared to manufactured tobacco products).

Undertaking such research will enable the PNG Government to take a more considered approach to the development of the market and the approach to regulation.

10. The effectiveness of the implemented policy measures should be reviewed in three years and strategies adapted to deal with a changing market

The PNG Government should fully implement previous commitments made under the Medium Term Review Strategy 2018-2022 focused on addressing smuggling and improving excise revenue collection for all types of goods, including tobacco.

Through the Taskforce, the PNG Government should also enhance its data collection, monitoring and review of existing measures.

More focused data collection will further support other measures outlined above by:

- Focusing and redirecting resources if required to reflect changes in how the market responds to the implementation of new initiatives
- Facilitating evaluation of the effectiveness of these measures and whether they should be adapted based on changes in illicit markets
- Enabling alternative approaches to be used to estimate the extent of illicit tobacco in PNG in future.

Finally, the PNG Government should undertake a further review of the PNG tobacco market in three years to assess the effectiveness of actions taken to address illicit tobacco, and to further develop its longer-term strategy and approach.

1. INTRODUCTION

Around the world, the illicit trade of tobacco products is prolific. Cigarettes are among the most commonly traded commodities on the black market due to high profit margins, relative ease of production and movement and low detection rates and penalties. Research indicates that 11.6 per cent of the global cigarette market is illicit, equivalent to 657 billion cigarettes a year and US\$40.5 billion in lost revenue.³

Trading illicit tobacco is a crime that cheats Governments out of significant amounts of government revenue each year because of avoiding tobacco excises, duties and taxes. It is that claimed at eliminating the global illicit trade around the world would earn governments at least US\$31 billion.⁴

Many governments are unaware of how significant the problem and impact of illicit tobacco is – both in terms of avoided tax as well as the range of broader social, health and economy-wide costs. The burden of this falls disproportionately on middle and low income countries.⁵ The impact often extends to legitimate retailers (including small or family businesses) and increased crime, with criminal gangs often using illegal tobacco to source their broader illegal activities.⁶

In Papua New Guinea (PNG), the illicit trade of tobacco is recognised by senior government officials as a significant problem that needs to be addressed. The PNG Chief Commissioner for Customs has acknowledged that *'fake cigarettes have already infiltrated the whole of Papua New Guinea'*.⁷ The Police Commissioner has also stated:

*Illicit trade remains a challenge for the Royal PNG Constabulary ... [D]espite having the trans national crime unit within the department which is in continuous dialogue with other Pacific Island countries, through the sharing of information on people moving illegally or goods being smuggled within the Pacific region, they are still struggling to address this growing issue.*⁸

PNG Customs continues to detect and seize significant amounts of illicit tobacco products. In January 2019 alone, more than five million illicit cigarettes including counterfeits of domestically produced cigarettes were seized at Daru, Western Province and at the Motukea Container Examination Facility.

PNG's population is now more than eight million people and it has a rate of smoking among the highest in the world.⁹ This means that the lost PNG Government revenue arising from illicit tobacco not paying their fair share of excise, duties and other taxes that apply to tobacco is significant. There are also broader economic and social impacts arising from the ready availability of illicit tobacco.

The PNG Government has made some attempts in recent years to address the illicit tobacco challenge. It is a signatory to the World Health Organisation's International Framework Convention for Tobacco Control. It also introduced new tobacco legislation – the *Tobacco Control Act 2016* – to regulate the manufacture, importation, distribution and sale, and use of tobacco and tobacco products, although several legislative provisions are yet to be formally enacted or regulations promulgated. The

3 Joossens L, Merriman D, Ross H and Raw M 2009, *How Eliminating the Global Illicit Cigarette Trade Would Increase Tax Revenue and Save Lives*, Paris, International Union Against Tuberculosis and Lung Disease, 2009.

4 *ibid.*

5 *ibid.*

6 *ibid.*

7 *Post Courier, Illicit cigarettes concern customs*, 31 August 2016.

8 *Post Courier, Deal to help fight illicit trade*, 6 September 2017.

9 World Health Organisation (WHO) 2016, Smoking prevalence data (males), accessed on 29 November 2018 from <https://data.worldbank.org/indicator/SH.PRV.SMOK.MA>.

Government’s Medium Term Revenue Strategy 2018-2022 includes commitments focused on addressing smuggling and improving excise revenue collection for all types of goods, including tobacco. In 2018, the PNG Government also announced the establishment of the PNG Anti-Illicit Trade Taskforce to measure illicit trade and initiate enforcement activities.¹⁰ However, to date the full suite of actions that the Government has committed to have not been implemented and the Taskforce has been inactive. The actions that have been taken have not had enough of an impact on PNG’s growing illicit tobacco problem.

Against this backdrop, there are significant opportunities and benefits to working with the PNG Government on policy responses to address illicit tobacco. Developing an effective strategy for tackling illicit tobacco relies on having a reliable estimate of illicit tobacco and a good knowledge of the supply chains used to produce, distribute and sell illicit tobacco in PNG. This study seeks to address this knowledge gap.

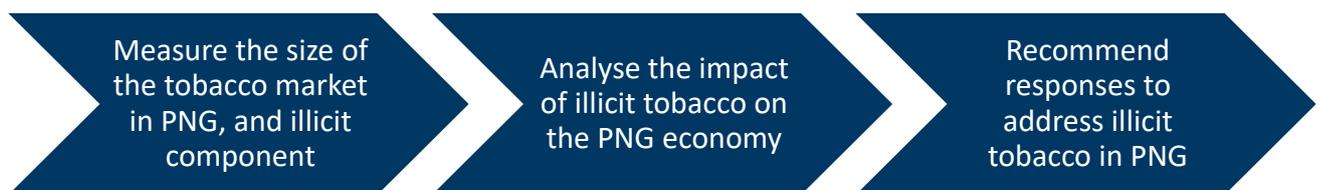
1.1 Purpose of this report

In 2018, the Government of Papua New Guinea (PNG) expressed an interest in a comprehensive and independent market study being undertaken to examine the level of illicit tobacco trade in PNG. It sought to develop a better understanding of the magnitude of the problem to enable it to make well informed and economically sound decisions to prevent the illicit tobacco trade.

FTI Consulting has been commissioned to provide an independent and robust evidence-based study that can be relied upon to inform policy options to address the impact of illicit tobacco. Despite it being widely acknowledged that there is a significant illicit tobacco problem in PNG, only one study has ever been undertaken in 2013 seeking to estimate the extent of illicit tobacco in PNG.

Having a robust estimate of the size of the tobacco market (including illicit tobacco) and an understanding of how the tobacco supply chain works is an essential pre-requisite to being able to develop well targeted and effective strategies and to provide a baseline for assessing the effectiveness of policy and other actions to address the extent of the problem.

This study involved three distinct and related stages of work:



This study has required extensive data and information gathering to support the design of the survey questionnaires and economic modelling. A key issue for this study has been the limited availability of reliable data to estimate the size of the PNG tobacco market and the illicit component of the market. Addressing these data limitations may enable alternative approaches to be used in future to determine or corroborate any estimates of the tobacco market and illicit component in future.

10 The Taskforce included representatives from Customs, the Independent Consumer and Competition Commission, Treasury, Trade, Police, Defence and Health.

FTI Consulting has partnered with locally based Anglo Pacific Research and Strategy (APR) and Associate Professor John Asafu-Adjaye to undertake this study of the illicit tobacco market in PNG. We have sought to assure each of our inputs to the model by engaging extensively with government agencies or external organisations that are responsible for relevant data, information and inputs.

We have also undertaken an extensive review of international literature to identify evidence of the:

- Incidence of illicit tobacco in other countries and the conditions that drive or control illicit tobacco in those countries
- Economic and social impacts of illicit tobacco
- Policy and other options that have been pursued to control or reduce illicit tobacco.

Stage 1 Estimating the size of the tobacco market in PNG

The first stage of this study was to estimate the size of the tobacco market in PNG and the illicit tobacco component within that overall market. The approach to estimating the size of the tobacco market including illicit tobacco draws on accepted methodologies and approaches to estimate the size of illicit tobacco markets, and recognised by the World Bank.¹¹ We have also had regard to previous studies of illicit tobacco markets including a 2013 KPMG study undertaken in PNG and previous studies undertaken in other countries and referred to throughout this report.¹²

We have used a range of inputs and assumptions to determine the size of the tobacco market including a consumption model, drawing on inputs from a Community Perceptions Survey, a Vendor Turnover Survey and a range of other sources.

Stage 2 Estimating the impact of illicit tobacco on the PNG economy

Having identified the size of the illicit tobacco market in PNG, Stage 2 of the study sought to estimate the impact of illicit tobacco on various aspects of the PNG economy including on:

- Government revenue: from applicable tobacco excise, import duties and other taxes
- Gross Domestic or Regional Product (GDP/GRP): the sum of private consumption, private investment, government consumption, government investment and total exports minus total imports – measured at the national or regional level respectively
- Total Output: The value of the total output of all industries
- Total Employment: The total number of salaried and non-salaried people employed
- National Welfare: The change in the value of the PNG economy's output measured by adding to GDP net inflows of investment income, net private unrequited transfers from abroad, and net foreign aid receipts from abroad.

FTI Consulting has assessed the impacts at both the national and regional levels using the PNGGEM-Regional model, which is a highly regarded computable general equilibrium (CGE) model used specifically to model impacts on the PNG economy. CGE models provide the leading analytical approach for assessing

11 World Bank, *Economics of Tobacco Toolkit*, Tool 7 Smuggling, Understand, Measure and Combat Tobacco Smuggling.

12 The 2013 study was undertaken by KPMG 2015, *Illicit tobacco in Papua New Guinea*, 24 April.

the impacts of events, policy or targeted investments on the economy. They provide economic estimates of both the immediate impacts as well as the flow on impacts to the rest of the economy (i.e. the economy-wide impacts). Most central government agencies prefer to use CGE models on the basis that is the only framework capable of reliably capturing the full suite of impacts that flow from major changes in the economy.

We have previously used the PNGGEM-Regional model for a range of economic impact studies including a recent study examining the economic impact of the new terminal operations at the ports of Lae and Motukea and the economic impact of South Pacific Brewery.

Chapter 5 provides further details about the approach used to estimate the economy-wide impacts of illicit tobacco on PNG.

Stage 3 Identifying the options to address the illicit tobacco market in PNG

Stage 3 identifies policy and other options for addressing the illicit tobacco trade in PNG. It draws on the international experience in combatting the illicit tobacco trade including the policy and other options that have been used to address the problem and the factors that have been demonstrated to contribute to the success of reducing illicit tobacco. It identifies actions that are more likely to be effective at combatting the illicit tobacco trade in the PNG context, drawing on the results of our Stage 1 analysis.

1.2 Structure of this report

This report is structured as follows:

- Chapter 2 presents some of the international evidence about the incidence of illicit tobacco in other countries and the conditions that drive or control illicit tobacco in those countries. It also identifies some of the economic and social impacts of illicit tobacco and the range of policy and other options that have been pursued to control or reduce illicit tobacco.
- Chapter 3 provides context about the tobacco market in PNG. It describes the available evidence of tobacco consumption, affordability and price in PNG, as well as the current regulation and government policies related to the tobacco market and control of illicit tobacco.
- Chapter 4 provides an overview of the market for tobacco products in PNG and maps the existing supply chains for legal and illicit tobacco including for production, distribution and entry into PNG.
- Chapter 5 describes the model and approach used to estimate the size of the tobacco market in PNG, and the illicit component of that market.
- Chapter 6 presents our estimate of the size of the PNG tobacco market and the proportion of illicit tobacco and summarises the key survey results used to inform our estimation process.
- Chapter 7 describes the model and approach used to quantify the direct and indirect economic impacts of illicit tobacco (specifically illicit cigarettes) in PNG and presents the results of the economic analysis of illicit tobacco on the PNG economy.
- Chapter 8 identifies various options available to address the illicit tobacco market in PNG, drawing on evidence of options and better practice identified from the international literature and having regard to the PNG context.

2. INTERNATIONAL EVIDENCE OF ILLICIT TOBACCO

This Chapter presents some of the international evidence about the incidence of illicit tobacco in other countries and the conditions that drive or control illicit tobacco in those countries. It also identifies international evidence of the economic and social impacts of illicit tobacco and the range of policy and other options that have been pursued in other countries to control or reduce illicit tobacco.

2.1 Evidence of illicit tobacco in international markets

According to Euromonitor International:

Illicit trade in cigarettes is the biggest illegal trade in a legal product in terms of value and second only to illegal drugs in terms of revenue generated by smugglers.¹³

Globally, it is estimated that around 10-12 per cent of cigarette consumption is illicit. This is based on a range of estimates from around the world of the illicit cigarette trade in 84 countries.¹⁴ Overall, this comprehensive analysis indicated that 11.6 per cent (or 657 billion cigarettes) of cigarette consumption in sampled countries was illicit, but that the rate in low-income countries was around 16.8 per cent.¹⁵

More recent estimates suggest that global illicit trade volumes account for around 10.6 per cent (excluding China):

In 2016 the volume of duty-not-paid cigarettes consumed around the world was 488 billion sticks, with an estimated value of at least US\$35 billion. Global illicit trade volumes fell by 0.9 per cent in 2016, while the average penetration grew to 7.9 per cent, from 7.8 per cent in 2015. However, as with all tobacco statistics, China skews the picture. Consumption of illegal cigarettes in China declined by 7 per cent in 2016, meaning that, excluding that country world illicit trade grew by 1.1 per cent, with 10.6 per cent penetration.¹⁶

In Australia, the most recent 2017 estimates suggest that the proportion of total consumption represented by illicit tobacco has increased to 15 per cent of total consumption. Prior estimates of the proportion of illicit tobacco in Australia have ranged from 8.3 per cent in 2007 to 14.3 per cent in 2016.¹⁷

Historically, New Zealand maintained modest estimates of the size of the illicit tobacco market. A range of estimates between 2005 and 2013 suggested that illicit tobacco in New Zealand varied between 0.7 and 3.87 per cent of total tobacco consumption.¹⁸ Since 2010, New Zealand has been increasing tobacco

13 Euromonitor International Passport 2012, *Illicit Trade in Tobacco Products*, p.3.

14 Joossens L, Merriman D, Ross H and Raw M, op. cit. Note this study did not include Papua New Guinea, but included a number of other countries in the Asia-Pacific region including: Australia, Indonesia, Japan, Malaysia, Philippines, Singapore and Thailand.

15 *ibid.*

16 Euromonitor International 2018, *Illicit Trade in Tobacco Products*, February.

17 KPMG 2018, *Illicit Tobacco in Australia*, 2017 Full Year Report, 20 April, p.6.

18 Sanne van der Deen et. al 2016, A continuation of 10% annual tobacco tax increases until 2020: Modelling results for smoking prevalence by sex and ethnicity.

Shafey O, Eriksen M, Ross H, Mackay J. 2009, *The Tobacco Atlas*. Third ed. Atlanta, United States of America: American Cancer Society.

Ernst & Young 2010, *Out of the shadows: an independent report of New Zealand's illicit tobacco market*. Auckland, New Zealand: Report prepared for British American Tobacco.

excise by 10 per cent annually in real terms, and will continue to do so until 2020.¹⁹ However, the tax increase appears to have been mirrored by an increasing rate of illicit tobacco, growing from an estimated 5.2 per cent of consumption in 2015 to around 9 per cent in 2016 and 2017.²⁰

In 2016, illicit tobacco across 16 Asian markets was estimated to account for around 16.1 per cent of total consumption, or 131.2 billion cigarettes.²¹

In PNG, the only previous published study by KPMG estimated that in 2013 around 11 per cent of total manufactured cigarette consumption was illicit.²² This estimate did not include consumption of brus – which accounted for around 58 per cent of total consumption.

While it is difficult to rely or compare international estimates due to significant differences in methodological approaches, they do provide the basis for considering what conditions give rise to significant rates of illicit tobacco in various countries. This is further discussed below.

2.2 Conditions that give rise to illicit tobacco

The international literature and studies identified above provide insights into the conditions or factors that are likely to allow illicit tobacco markets to grow and prosper. Key factors include:

- the price of tobacco products and affordability
- the effectiveness of law enforcement, including across shared borders
- the strength of organised crime networks and corruption
- consumer attitudes towards illicit tobacco.

Price of tobacco products and affordability

From an economic perspective, higher prices for legal tobacco products and low disposable incomes will generally create incentives for consumers to source other more affordable tobacco alternatives. Similarly, high rates of tobacco taxes and excises and significant differences between the price of tobacco products in one location or country versus another will also create incentives for illicit traders to supply the market.

Price differentials remain a key driver of illicit trade on both the demand and supply sides.²³ Prices of illicit tobacco products are generally lower than legal tobacco products. The World Bank recently reported that, compared to the average price of legal cigarettes, the average street price of smuggled cigarettes was 50 per cent cheaper in Brazil and Argentina, 60 per cent cheaper in Uruguay and 67 per cent cheaper in Paraguay.²⁴

19 Sanne van der Deen et. al. 2016, op cit.

20 KPMG 2018, *Illicit tobacco in New Zealand*, 2017 Full Year Report.

21 Asia Illicit Tobacco Indicator 2016: Executive Summary, December 2017, <http://illicittobacco.oxfordeconomics.com/media/OXF05304ASIAREPORT2017AW22.pdf>

22 KPMG 2015, op. cit., p.6.

23 Euromonitor International 2018, op. cit.

24 World Bank 2019, *Confronting Illicit Tobacco Trade – A Global Review of Country Experiences*, p.xii.

While the demand for tobacco is highly inelastic due a limited number of substitutes, the demand for *individual tobacco products* is highly responsive to changes in price.²⁵ In the short term, smokers are unlikely to quit smoking, and will instead search for lower priced alternatives. A New Zealand study acknowledged:

*A potential consequence of price increases is an increase in the attractiveness and feasibility of illicit tobacco trade. Illicit tobacco has the potential to undermine price increases aimed at reducing tobacco use because they provide addicted smokers with a continuing source of nicotine, often at lower cost. Illicit trade also reduces government revenue and provides funds for organised crime and corruption.*²⁶

Several international studies have examined the relationship between price of legal tobacco, taxes and illicit trade. Some studies in the United States (US) have identified increased bootlegging in response to increased excise levels across states.²⁷ There is also evidence of higher consumption of cigarettes in high tax jurisdictions that bordered low tax jurisdictions compared to ones that neighboured high tax jurisdictions.²⁸

Joossens et al found that there is little relationship internationally between the price of a cigarette pack and the market share of illicit tobacco (based on the percentage of legal cigarette consumption).²⁹ In particular, a number of countries with relatively low pack prices (such as Latvia, Lithuania, Dominican Republic, Pakistan, Bolivia and Malaysia) had a higher market share of illicit cigarettes, and countries with relatively high pack prices (such as Norway, Australia, New Zealand, Singapore and the United Kingdom) had low rates of illicit trade. Based on this evidence, Joossens et al concluded:

*... non-price factors, such as strength of governance, extent of corruption, and the availability of informal distribution networks appear to be more important determinants of the size of the illicit tobacco market.*³⁰

A study by Alvarez & Marsal examined the correlation between the tax yield in US dollars per thousand cigarettes and the percentage of total consumption that is illicit for a representative set of countries (excluding China). While the results showed no apparent correlation, there did appear to be a relationship between tax yield and illicit consumption once differences in disposable income levels were considered.³¹ This study also found a positive relationship between affordability and the illicit proportion of total consumption.³¹

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- 25 Czubek, M. & Johal, S. 2010, *Econometric analysis of cigarette consumption in the UK*, HM Revenue & Customs Knowledge, Analysis & Intelligence, accessed at: <https://www.gov.uk/government/publications/econometric-analysis-of-cigarette-consumption-in-the-uk>.
- 26 Action on Smoking and Health 2010, *Illicit Tobacco Trade: Monitoring and Mitigating Risk in New Zealand*, p.7.
- 27 Saba R.P., Beard R., Ekelund R.B., and Ressler R.W. 1995, The demand for cigarette smuggling, *Economic Inquiry*, vol 33, no 2, pp.189-220.
- Thursby J.G., and Thursby M.C. 2000, Interstate cigarette bootlegging: Extent, revenue losses, and effects of federal intervention, *National Tax Journal*, vol 53 no 1, pp.59-78.
- 28 Goel R.K. 2008, Cigarette smuggling: Price vs non-price incentives, *Applied Economics Letters*, vol 15, no 8, pp.587-592.
- 29 Joossens L, Merriman D, Ross H and Raw M 2009, op. cit.
- 30 ibid.
- 31 Alvarez & Marsal 2017, *Causes & Control of Illicit Tobacco*, pp.7-8.

A study in New Zealand found that its geographical location, population size and limited demand for tobacco compared to other markets means that the conditions for encouraging illicit trade to flourish are less favourable.³²

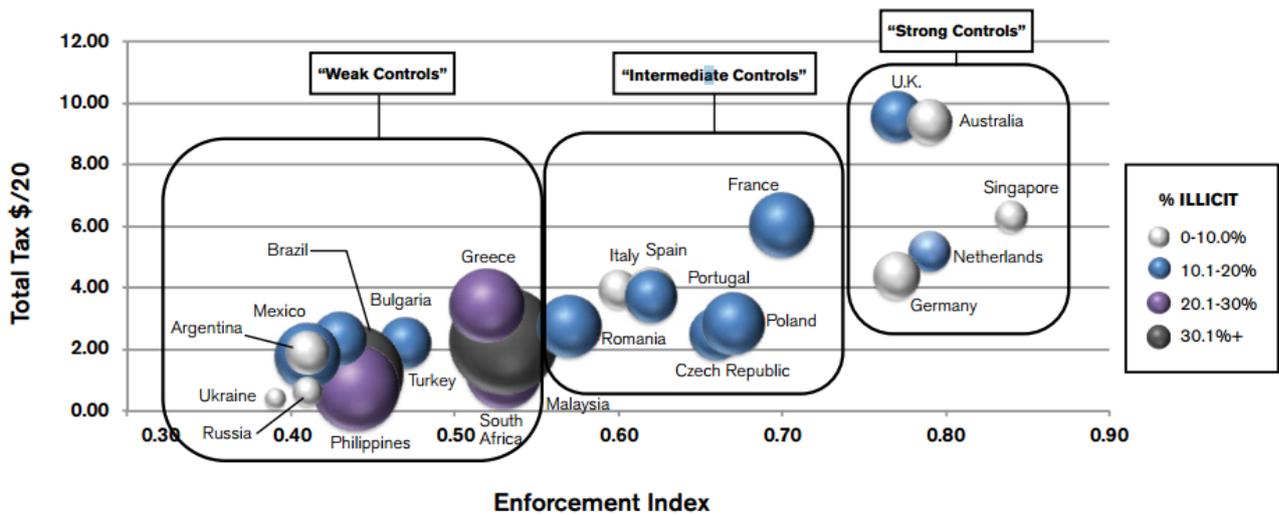
Effectiveness of enforcement and porous borders

Much of the international literature highlights the consequences of poor enforcement for the prevalence of illicit tobacco.

Alvarez & Marsal created a composite index comprising the degree of regulatory enforcement and the effectiveness of the criminal justice system (see Figure 5), and found that:

- enforcement tends to be higher in more developed countries, where tax rates and tax burdens tend to be higher
- there is a clear link between the level of enforcement and the level of illicit trade as a proportion of total consumption – lower levels of enforcement tend to yield higher levels of illicit trade
- higher levels of illicit trade occur where affordability is pressured and/or enforcement is weak.³³

Figure 5: Link between enforcement and illicit trade



Source: Alvarez & Marsal 2017, Causes & Control of Illicit Tobacco, p.14.

Euromonitor International also noted that while price differentials remain the key driver of illicit trade on both the demand and supply sides, porous borders and weak governance are also key drivers.³⁴ In the context of New Zealand, Ajmal and Veng also concluded that:

32 Action on Smoking and Health 2010, op. cit., p.2.
 33 Alvarez & Marsal 2017, op. cit., pp.14-15.
 34 Euromonitor International 2018, op. cit.

*With no land borders and a highly competent customs force, it is likely that illicit tobacco will continue to constitute a very small proportion of total tobacco consumption in New Zealand for the foreseeable future.*³⁵

In the United States, illicit trade primarily takes the form of cross-state border resale of genuine product, which has been increasing.³⁶ Alvarez & Marsal concluded that countries that are in close geographical proximity and have easy access to lower price alternative product from other countries are more susceptible to illicit trade. They cited countries such as Latvia which have relatively high illicit tobacco and border low priced Russia and Belarus; and Brazil which has easy access to illicit supply from Paraguay.³⁷

Strength of organised crime networks and corruption

The involvement of organised crime in the illicit tobacco market has been described extensively in literature, motivated by the potential for significant profits from their illegal trade. Cigarette smuggling is a low-risk, high-reward criminal activity. This provides a large incentive for organised crime to make profit for other activities. It is also a lucrative market for terrorist groups.³⁸

A survey commissioned by the European Commission and European Anti-Fraud Office found that:

*In all of the countries, a third of respondents or less think that illicit tobacco is one of the most important sources of revenue for organised crime.*³⁹

The World Health Organisation (WHO) reports that large-scale illicit trade activities, including illicit trade in tobacco products, are generally conducted by criminal networks, which operate more easily in countries where governance is weak, corruption is high, and the control of authorities is lax.⁴⁰

In many cases, the involvement in illicit tobacco trade is aimed at financing broader organised crime activities. For example, the U.S. Congressional Research Service noted that *'the production, smuggling, and sale of tobacco products, including genuine and counterfeit cigarettes, is a lucrative form of financing for organised crime as well as terrorist groups'*.⁴¹

There is a clear association between perceptions of corruption and illicit cigarette market share as demonstrated in Figure 6. By comparison, PNG scored 28 points out of 100 on the 2018 Corruption Perceptions Index reported by Transparency International (and this study estimates that 32 per cent of cigarettes purchased are illicit).⁴²

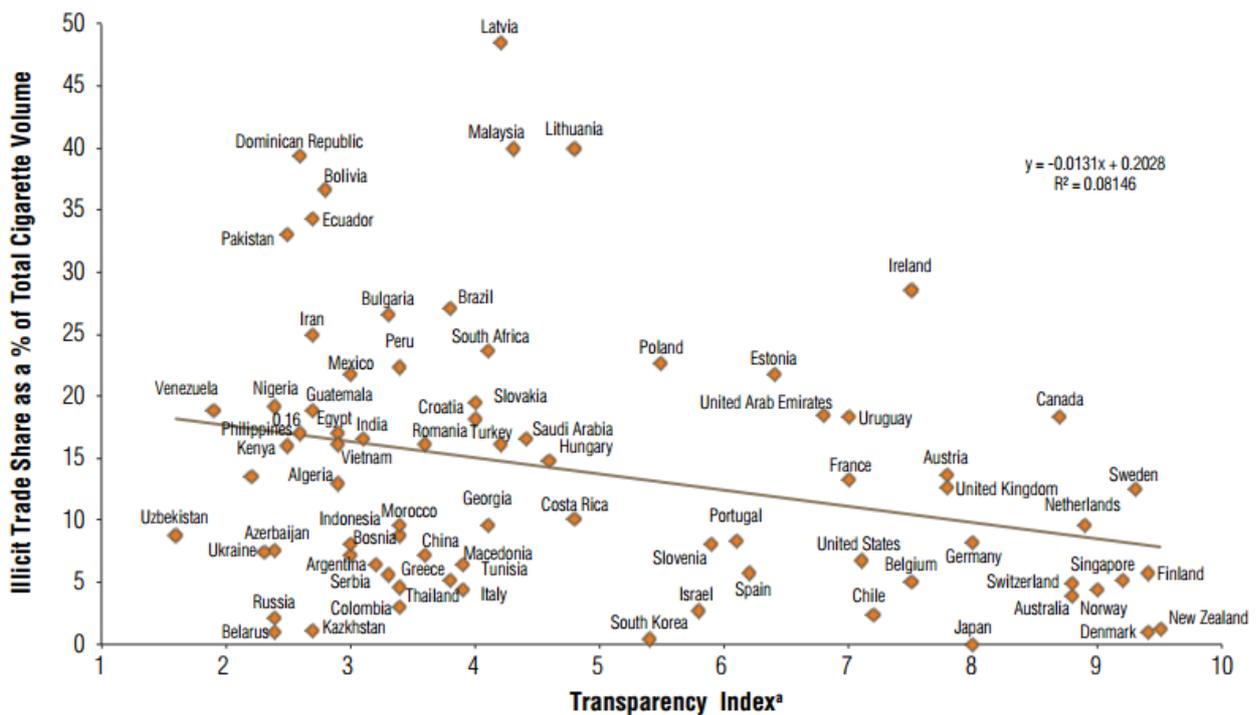
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- 35 Amjal A. and Veng I. 2015, Tobacco Tax and the Illicit Trade in tobacco products in New Zealand, *Australian and New Zealand Journal of Public Health*, Vol. 39, No. 2, p.120.
 - 36 Euromonitor International Passport 2014, *Illicit Trade in Tobacco Products 2013*, September.
 - 37 Alvarez & Marsal 2017, op. cit., p.2.
 - 38 US Department of State 2015, The global illicit trade in tobacco: a threat to national security, December.
 - 39 European Commission 2018, Public perception of illicit tobacco trade, p.6.
 - 40 Joossens L, Raw M. 2012, From cigarette smuggling to illicit tobacco trade. *Tobacco Control*, Vol 21(2), pp.230-4; and Shelley LI, Melzer SA. 2008, The nexus of organized crime and terrorism: two case studies in cigarette smuggling. *International Journal of Comp Appl Crim Justice*, Vol 32(1), pp.43-63.
 - 41 Rollins J, Wyler LS. 2013, *Terrorism and transnational crime: foreign policy issues for Congress*, Washington, DC: Congressional Research Service.
 - 42 Transparency International 2019, <https://www.transparency.org/country/PNG>, accessed 31 January 2019. PNG's Corruption Index averaged 23.94 points from 2003 until 2018, reaching an all time high of 29 points in 2017 and a record low of 20 points in 2007.

High levels of corruption have been found to be correlated with increased levels of illicit tobacco, even in countries where the price of tobacco was relatively cheap.⁴³ Interpol commented:

[C]orruption is a fundamental element and facilitator of illicit trade in tobacco products. Bribery can be resorted to at different phases of the tobacco supply chain. For example, bribes can be offered to customs officials to permit the cross-border movement of smuggled cigarettes. When counterfeiting operations are involved, bribes might be given to law enforcement officials to allow the operation of an illegal manufacturing facility. Corruption can also play a role in the process of obtaining various types of permits and licences from national authorities.⁴⁴

The strength of organised crime networks, the presence of pre-existing logistics and smuggling routes and consumer attitudes to illicit tobacco also influence the prevalence of illicit tobacco.

Figure 6: Link between illicit cigarette market share and corruption by country



^a The Transparency Index indicates a country's level of corruption, with lower numbers equaling more corruption.

Source: National Center for Chronic Disease Prevention and Health Promotion 2015, Preventing and Reducing Illicit Tobacco Trade in the United States, p.9, based on Euromonitor International 2015, and Transparency International 2011.

Consumer attitudes to illicit tobacco

Consumer attitudes, complacency and lack of understanding of the prevalence and impacts of illicit tobacco contribute to the presence and growth of illicit tobacco. Euromonitor International reported:

43 Yürekli & Saygınoy 2010. Worldwide organized cigarette smuggling: an empirical analysis.
 44 Interpol 2014, Countering Illicit Trade in Tobacco Products: A guide for policy-makers, p.38.

*The Robin Hood complex – widespread consumer acceptance of illicit traders as benefactors rather than criminals – remains a central problem.*⁴⁵

Consumer perception of illicit tobacco has been shown to be an important factor in the decision to purchase and consume illicit tobacco.⁴⁶ For example, UK consumer research in 2011 on illicit tobacco awareness, purchase and attitudes found that:

- 32 per cent believe that buying illicit tobacco is no ‘big deal’, and 56 per cent believe everyone who smokes buys illicit product
- 64 per cent believe it brings crime into the local community
- 75 per cent agree that billions of pounds a year of tax are lost that could be spent on schools and hospitals
- 67 per cent say it makes it possible to smoke when they couldn’t afford it otherwise
- 88 per cent believe illicit tobacco is a danger to children because they can buy them easily and cheaply
- 29 per cent are likely to report someone if they suspect them of selling illicit tobacco rising to 75 per cent if they are suspected to be selling to children.⁴⁷

In Spain, it has been noted that illicit tobacco is being driven by the high price of legal cigarettes and social distrust of the public institutions, and the fact that selling illicit cigarettes is tolerated and supported by Spaniards.⁴⁸

2.3 International approaches to addressing illicit tobacco

Illicit tobacco is a problem that has plagued many countries. Given the size of illicit markets and the range of harmful impacts, many countries have sought to address the problem of illicit tobacco using a range of options. The World Bank has categorised policies to combat illicit tobacco as falling into four general categories:

- Reduce the supply of illicit tobacco by regulating transport and retail sales
- Reduce demand for illicit tobacco by influencing consumers not to purchase illicit tobacco
- Increase the certainty and severity of punishment through enhanced law enforcement and prosecution
- Reduce incentives for illicit tobacco by harmonising tax and pricing policies across jurisdictions.

Table 4 highlights a range of measures that have been used internationally to address illicit tobacco. The World Bank has also recently released a comprehensive report identifying the lessons learnt from the

45 Euromonitor International 2018. *Illicit trade in tobacco products*, Strategy Briefing, November.

46 Wiltshire et. al. 2001, They’re doing people a service: Qualitative study of smoking, smuggling and social deprivation.

47 McNeill et. al. 2013, Countering the demand for, and supply of illicit tobacco: an assessment of the ‘North of England Tackling licit Tobacco for Better Health’ Programme.

48 Transcrime 2014, The Factbook Illicit Trade in Tobacco Products, Issue 7, Spain.

experience of 30 countries in combatting illicit tobacco markets, which highlight many of the measures presented in this report.⁴⁹

Table 4: Measures used to combat illicit tobacco trade

Approach	Description
Reducing supply of illicit tobacco through regulation	
1 Licensing	Authorising participants in the legal tobacco market to engage in any activity within the tobacco supply chain, from tobacco growing, manufacturing, distribution or sale of products.
2 Product markings/stamps	Affixing counterfeit-resistant images on tobacco packaging that signal date and location of manufacture and the intended retail market.
3 Track and trace	Incorporating markers and record-keeping to track tobacco products throughout the supply chain; trace tobacco product movement by transferring the tracking data into a national information-sharing database.
Reducing demand for illicit tobacco	
4 Public awareness	Disseminating information to consumers about the risks associated with illicit tobacco trade, to motivate support for enforcement activities and influence demand.
Increasing certainty and severity of punishment	
5 Enforcement	Committing effort and resources to detect and prosecute illicit tobacco trade. Includes police, immigration, customs, postal services, port services and any other channels through which illicit tobacco may be distributed.
6 Penalties	Deterring illicit tobacco trade by imposing high/escalating fines, licence revocation, or other measures aimed at retailers, distributors, consumers, and other participants in illicit supply chain.
7 Agency coordination	Coordinating agencies (including internationally or across jurisdictions) to support intelligence gathering, joint customs operations, and sharing of best practices.
Reducing incentives for illicit tobacco trade	
8 Tax harmonisation	Equalising tax rates across neighbouring jurisdictions to reduce the imbalance in cigarette prices across borders.

Source: FTI Consulting.

Several common themes emerge from the international experience:

- A comprehensive strategy combining policy and other options, rather than relying on one single option, is generally required to have a marked impact on illicit tobacco trade.
- Policy and other options need to be applied across the supply chain, rather than targeted on one activity, to limit the scope for illicit traders to work around the new initiatives.
- Effective enforcement is a critical platform for targeting a broader suite of illicit tobacco control measures.
- Without the foundation of effective enforcement, increasing excise rates and import duties is likely to encourage illicit tobacco rather than discourage tobacco consumption.

49 World Bank 2019, op. cit.

- Beyond these measures, there is a need to constantly update and revise strategies – including by collecting good baseline data and monitoring the impacts of various initiatives. Many governments around the world have sought to enhance their data collection and monitoring of illicit markets to better inform and target their policy responses to prevent or reduce illicit trade.

Reducing supply of illicit tobacco through regulation

Licensing

Licensing involves authorising companies to engage in various activities within the tobacco supply chain, ranging from tobacco growing to product manufacturing to product transportation, retail, and export. Licensing allows authorities to control the supply chain by identifying and monitoring individuals and businesses involved in the tobacco trade. In doing so, it provides information to government authorities about relevant operators in the market, which can facilitate information gathering, monitoring and enforcement activities.

Licensing can often involve background checking to ensure the bona fides of market operators. Licensed companies often face strong incentives to not be involved in illicit or illegal activity, since doing so may potentially risk their licences being suspended or revoked.

Many countries including the European Union, Canada, Spain, Italy, United Kingdom, Brazil, Hungary, Romania, Turkey and Malaysia currently use licensing as a tool to control illicit tobacco. Licensing of tobacco retailers is also relatively common across the United States.

Licensing of retailers may be challenging where there are many street vendors selling tobacco products. Similarly, licensing tobacco growers is difficult where there are many small-scale farmers.

In PNG, existing tobacco legislation includes provisions requiring manufacturers, importers and distributors of tobacco products to be licensed after paying a prescribed fee. The licensing provisions require the Head of State, acting on advice, to issue regulations prescribing the requirements for granting, renewing or revoking licences and any other matters. To date, these regulations have not been issued. Regulation of tobacco industry players, particularly importers, remains an important action to control illicit tobacco.

Product markings and tax stamps

Tax stamps or product markings are generally used to demonstrate that tobacco products are authentic and have paid the required duties or excises. They also support other mechanisms such as track and trace systems. As with legal tender, product markings and tax stamps often incorporate high tech security features to avoid being copied or counterfeited. Product markings and tax stamps are most useful when they are applied to all forms of tobacco products given their substitutability.

Most states in the United States require tax stamps to be applied to cigarettes. However, tax stamps are often not applied to other tobacco products such as cigars or packaged loose leaf tobacco. Tax stamps and product markings are typically applied in the production of wholesale tobacco supplies. Where tax stamps are used it is important to ensure that all tobacco products are stamped to avoid substitution to other forms of tobacco products (for example, cigarettes, cigars, roll your own).

The UK implemented pack markings with 'UKDUTYPAID' printed prominently on licit cigarette packs and pouches of roll your own tobacco.

There are numerous success stories associated with the introduction of tax stamps or product markings. For example, California's encrypted tax stamp led to the recovery of US\$125 million in tax revenues in the first 20 months, and US\$450 million over 10 years.⁵⁰

While there may be merit in considering product markings and tax stamps in the PNG tobacco market, it may be costly to develop and implement product markings which are not able to be easily counterfeited.

Track and trace systems

Track and trace systems involve real time monitoring of the movement of tobacco products through the supply chain. It involves installing advanced anti-counterfeiting systems starting typically in the production or packaging phase, throughout the supply chain and at the point of sale. Track and trace systems are often coupled with product markings and tax stamps.

Track and trace systems perform several functions including verifying the quantities of tobacco produced and imported, verifying that correct tax payments have been made, tracking products through the supply chain, tracing products back to their sources and ensuring product authenticity.

The WHO Framework Convention on Tobacco Control Illicit Trade Protocol specifies minimum data requirements for a track and trace system including information on the date and location of manufacture, the manufacturing facility, the intended market for retail sale and a product description.

Track and trace systems can be of varying degrees of sophistication. They have been implemented by several governments around the world, including Turkey, Brazil, Kenya, Malaysia, Albania, Canada, Panama, Morocco and the Philippines.

To be effective, the same track and trace systems need to be implemented in countries that are known to be the source of illicit tobacco products. However, there are several countries that do not have track and trace systems such as China, South Korea and the United Arab Emirates – which are known to supply a significant amount of illicit tobacco to other markets.⁵¹

In the United States, track and trace systems have been implemented in California, Massachusetts, and Michigan. However, these systems generally have limited functionality because they track and trace products that have entered into each state's legitimate distribution system only and do not provide information on where tobacco has been diverted from licit distribution channels into the illicit market and who was responsible for diverting the products.⁵²

Track and trace systems will not eliminate all forms of illicit trade – for example, they do not monitor production in illegal manufacturing facilities or counterfeit production. They can also be costly. In the PNG context, because track and trace systems are typically applied at the packaging stage – they are unlikely to deal effectively with loose leaf tobacco such as brus. Further, as noted above several the key countries involved in the shipment of illicit tobacco such as China do not have track and trace systems in place, thereby limiting the value of PNG introducing this technology.

50 National Center for Chronic Disease Prevention and Health Promotion 2015, Office on Smoking and Health, Preventing and Reducing Illicit Tobacco Trade in the United States, p.32.

51 KPMG 2016, op. cit. Although signatories to the WHO Protocol, China and South Korea are expected to implement compliant track and trace systems to allow for global tracking.

52 National Center for Chronic Disease Prevention and Health Promotion 2015, op. cit., pp.25-8.

Reducing demand for illicit tobacco

Public education and awareness campaigns are generally a component of a broader strategy to reduce demand for illicit tobacco trade. They typically involve disseminating information to the community about the:

- Criminal nature of illegal tobacco and information about the law and consequences of being caught
- Negative effects and risks associated with illicit tobacco – such as the impact on communities, tobacco consumption, health and criminal activity.

Public education can often be used to reduce demand for illicit tobacco by highlighting the economic, health and social consequences of illicit tobacco use.

Several countries have used public education campaigns to communicate the dangers of illicit tobacco. For example, the United Kingdom, European Union, Canada and Malaysia have used public education to focus on health-related messages. In some cases, the campaigns have focused on tax evasion, the poor quality of illicit products and the relationship to serious organised crime.⁵³

In the United Kingdom, *The North of England Tackling Illicit Tobacco for Better Health Programme* was a social marketing media-based program with two key messages – the role of illicit tobacco in encouraging greater tobacco use by young people, and the impact of additional crime in communities. This program was effective in raising awareness of the consequences of illicit tobacco trade and in increasing calls to telephone hotlines reporting illicit tobacco. These actions contributed to successfully reducing illicit trade in the 2000s.⁵⁴

Some countries have linked public education campaigns with strategies aimed at increasing enforcement and imposing higher penalties. For example, in the United States, Chicago and Cook County used public education campaigns to encourage consumers to report retailers selling illicit cigarettes to a telephone hotline.⁵⁵

Public education has also proven effective in controlling tobacco use and contributing to less young people taking up smoking and encouraging adult smokers to quit.⁵⁶

Public education and awareness campaigns can be costly depending on the form of media used and its frequency and distribution.

In the PNG context, public education and awareness campaigns should be considered to address the lack of understanding of the incidence and impacts of illicit tobacco on PNG, and to increase awareness of the consequences of being involved in illicit supply.

53 Reuter and Majmundar 2015, Understanding the US Illicit Tobacco Market.

54 McNeill A, Iringe-Koko B, Bains M, Bauld L, Siggins G, Russell A. 2014, Countering the demand for, and supply of, illicit tobacco: an assessment of the 'North of England Tackling Illicit Tobacco for Better Health' Programme, Tobacco Control, Vol 23(e1), pp.44-50.

55 National Center for Chronic Disease Prevention and Health Promotion 2015, op. cit., p.33.

56 McAfee T, Davis K, Alexander R, Pechacek T and Bunnell R. 2013, Effect of the first federally funded US antismoking national media campaign, The Lancet, Vol 382 (9909), 2003-2011.

Increasing the certainty and severity of punishment

Enforcement effort and resources

Effective enforcement requires adequate resources in people, equipment/technology and training and effective legislative arrangements. As noted previously, enforcement is a critical factor in reducing the growth of illicit tobacco trade.

Providing enough intelligence resources for customs and excise administrations, both directly and through cooperation with other agencies, will increase the frequency of contraband detection and seizures. Investment is needed in both human resources — such as increasing the number of excise officers, especially those operating at crossing points — and in capital resources, such as scanners, fixed installations at high-risk borders and inland locations, and transportable equipment for use elsewhere. Investment in technology is critical to the fight against illegal trade in tobacco products.

The case study presented later in this Chapter of the United Kingdom highlights the importance of controlling illicit trade through effective enforcement.

In the PNG context, there are significant opportunities to enhance the focus on detection and enforcement to address illicit tobacco.

Increase penalties for illicit trade

In addition to increasing enforcement effort, resources and technology, the penalties for illegal or illicit activity need to provide an appropriate deterrent to reduce illicit tobacco trade.

A range of penalty options may apply depending on the part of the supply chain where illicit tobacco is understood to occur. Options include high initial penalties, escalating penalties, licence revocation, asset seizure and confiscation, collection of lost taxes, and jail sentences.

As noted in Section 2.4, the United Kingdom strengthened its penalties for illicit activity including by increasing the maximum sentence for criminal prosecutions to seven years, imposing financial wrongdoing penalties of up to 70 per cent of the duty payable, prohibiting sales for up to six months and withdrawing haulers' licences.

Increased penalties on their own are unlikely to provide an effective deterrent without being coupled with increased detection and enforcement effort.

In PNG, the penalties in the existing *Customs Tariff Act 1990* and *Excise Tariff Act 1956* are insufficient. Given the potential profit available to importers of illicit cigarettes, these penalties do not provide enough incentive for importers to not bring illicit cigarettes into the country. The penalties and sanctions should be broadened and include seizure of cash, goods and other assets as part of the proceeds of crime, as well as other penalties such as prohibiting the importation or sale of tobacco products, withdrawing licences and applying immigration sanctions.

Coordination and collaboration

Coordination and collaboration can take many forms including:

- between government agencies involved in enforcement (such as Customs/border control, law enforcement agencies)
- between jurisdictions, including other countries and between national and provincial governments.

Within each country, there are typically multiple agencies involved in controlling tobacco markets including Customs (importation/exportation and recovery of duties), Police (criminal activity surveillance, enforcement and penalties), health/hospitals (health impacts of tobacco) and Treasury (policy and recovery of excises, duties and taxes).

International experience suggests that coordination and information sharing between law enforcement agencies, as well as between different jurisdictions, can have a significant impact on illicit tobacco networks.

Bilateral cooperation and agreements can be particularly useful in addressing cross border infiltration of illicit tobacco. These agreements can assist in focusing enforcement and border control at transit ports and airports where for example tobacco may be imported and then subsequently repackaged.

A key factor associated with the success of coordination efforts in tackling illicit tobacco is assigning a lead agency. A key component of UK reforms was that HM Revenue & Customs (HMRC) and Border Force took the lead role with activities supported by Department of Health, the public health community and tobacco manufacturers.

Countries such as the UK and European Union have employed liaison officers in other jurisdictions to work with law enforcement to target illicit tobacco in source countries before it entered the UK.⁵⁷ Between 2011 and 2013, 28 outposted officers facilitated the seizure of illicit tobacco products with an estimated evaded duty of £658 million.⁵⁸

In the United States, where illicit tobacco trade is often driven by inter-jurisdictional differences in taxes and price, bilateral agreements have focused on tax harmonisation. The European Union has also implemented a successful regional tax harmonisation system that has reduced tax and price differences among its member states.⁵⁹

Developing such agreements relies on both countries and jurisdictions having common interest to reduce illicit trade. In the PNG context, there are opportunities to strengthen collaboration and cooperation:

- At the national level – between PNG Government agencies including Customs, the Royal Constabulary, Treasury, Immigration, Health and Armed Forces. This collaboration would be principally aimed at focusing detection, enforcement and revenue collection efforts.
- At a provincial level – between national government agencies and provincial governments in relation to intelligence sharing, border surveillance and enforcement.
- At an international level – with major countries involved in the shipment, transit or supply of illicit tobacco products. This collaboration would be principally aimed at improving information and intelligence about illicit activities and coordinating enforcement efforts wherever possible.

57 NERA Economic Consulting 2017, *An economic analysis of the supply and distribution of illicit tobacco in Australia*, December, p.47.

58 HM Revenue & Customs and Border Force 2015, *Tackling Illicit Tobacco: From leaf to light*, The HMRC and Border force strategy to tackle tobacco smuggling, March.

59 National Center for Chronic Disease Prevention and Health Promotion 2015, op. cit., p.14.

Tobacco taxes and price

The link between taxes and illicit tobacco

Governments have often used increased excise and taxes as a strategy to reduce tobacco consumption. However, increased tobacco taxes have been shown to cause economic activity to move underground and to fuel illicit sources of tobacco as price-sensitive smokers look to evade the increased price. Studies have shown that tax increases are likely to encourage smokers to switch from smoking legally purchased cigarettes and tobacco to contraband products.⁶⁰

There is extensive literature on the link between taxes (prices) and illicit trade – some indicating that increased taxes encourage illicit markets to develop and grow if effective enforcement is not in place. Yürekli and Sayginsoy concluded that increasing cigarette taxes increase government tax revenues but may also increase the level of global smuggling if the tax increase is not accompanied by improved law enforcement.⁶¹

Alvarez & Marsal analysed 28 of the world’s major cigarette markets (except China) including in the US. It found that the principal driver of tobacco affordability was tobacco retail price increases driven mainly by tax increases. It concluded:

- Tobacco tax increases have been a key driver of growth in the illicit tobacco trade.
- Countries are more susceptible to growth in illicit trade where they experience sudden affordability declines, usually caused by substantial tax induced retail price increases and/or countries that are in close geographical proximity and have easy access to lower price alternative product.
- Countries that have strong enforcement are better able to control the scale of illicit trade even when taxation levels are higher. Where enforcement is weak, the scale of illicit trade can be high even in low tax countries.⁶²

A Canadian econometric study sought to quantify the impact of increased taxes on illicit tobacco, finding that each additional dollar in final applicable taxes raises the propensity to consume contraband cigarettes by 5.1 per cent.⁶³

A report by Martin Taylor to the UK Chancellor of the Exchequer explained the link between high taxation and illicit tobacco:

The principal cause of the smuggling, of course, is the high level of duty in the UK, which not only has the world’s most expensive cigarettes apart from Norway but is raising their price rapidly.

... each increase in duty raises the demand for cheap goods and, through its effect on the smugglers’ profit margins, their supply. In the absence of escalating enforcement, duty hikes will simply lead to an acceleration of contraband imports.⁶⁴

60 Lee J.M., Chen S.H, Chen H.F. and Jeng H.Y. 2009, Price sensitivity and smoking smuggled cigarettes, *European Journal of Public Health*, Vol. 19, no. 1, pp.23–27.

61 Yürekli A. and Sayginsoy O. 2010. Worldwide organized cigarette smuggling: an empirical analysis, *Applied Economics*, Vol 42(5), p.559.

62 Alvarez & Marsal 2017, op. cit., p.2.

63 Ouellet, J., Restuccia, M., Tellier, A. and Lacroix, C. 2010, The Impact of Cigarette Tax Reduction on Consumption Behavior: Short- and Long-Term Empirical Evidence from Canada, CIRANO – Scientific Publications, 1 May, p.12.

64 Taylor M., Report to the UK Chancellor of the Exchequer, Untitled – Regarding Tobacco Smuggling, pp.4-6.

In the UK, annual increases in excise duty of five per cent above inflation coincided with an increase in cigarette smuggling from three per cent of total consumption in 1996–1997 to 18 per cent in 1999–2000 and was predicted to increase to 36 per cent by 2003–04 if no action was taken. In response, in 2000–01 the UK Government decided to limit excise increases to the rate of inflation and to focus its approach on implementing a range of anti-illicit trade strategies. While cigarette smuggling did not return to its previous lower levels, it did stabilize and the UK Government continued to update its strategy in 2006, 2008, 2011 and 2015.⁶⁵

New Zealand has pursued an aggressive tobacco tax policy in the last ten years. It introduced a major tobacco excise tax increase of 24 per cent in 2010, followed by annual 10 per cent increases in tobacco tax till 2016. Amjal and Veng concluded that the tobacco tax has had a minimal impact in discouraging illicit tobacco trade and consumption in New Zealand. Instead, it appears that many smokers have mitigated the financial burden of increased taxes by switching to cheaper brands of legal tobacco products.⁶⁶

The Canadian experience appears to provide strong empirical evidence that higher cigarette taxes encourage illicit trade, while lower cigarette taxes discourage it (see Box 1). The sharp decline in smuggled cigarette seizures from 1994 to 2001 corresponds with the decline in cigarette tax rates, while the subsequent rise in seizures of smuggled cigarettes followed tax increases from 2002 onwards.

In Malaysia, efforts to discourage smoking via higher taxes are claimed to have backfired as smokers turn to readily available contraband cigarettes.⁶⁷ Higher taxes have contributed to significant increases in non-domestic illicit tobacco inflows. Between 2012 and 2015, the estimated total illicit tobacco consumption remained relatively constant (34.5 per cent compared to 36.9 per cent). However, it then increased dramatically to 52.3 per cent in 2016 where one in every two cigarettes consumed in Malaysia was illicit. This in turn contributed to a near doubling in the estimated tax loss in 2016.⁶⁸

In the context of PNG, the recent annual increases in excise duties have failed to reduce the incidence of illicit tobacco. In the absence of effective enforcement in PNG, the increase of excise duties appears to have fueled and further encouraged illicit importers and traders of tobacco products. This supports the need for PNG Government to focus its efforts on greater detection and enforcement of illicit tobacco, which in the long run should also contribute to increase government revenues from legitimate tobacco supplies.

65 Alvarez & Marsal 2017, op. cit., pp.15-16.

66 Amjal A. and Veng I. 2015, op. cit., p.119.

67 Amirullah, A., Fazira, A. and Salman, A. 2017, Institute for Democracy and Economic Affairs, *Illicit Trade in Malaysia: Causes & Consequences*, October, p.4.

68 Oxford Economics 2017, *Asia Illicit Tobacco Indicator 2016: Executive Summary*, December, <http://illicittobacco.oxfordeconomics.com/media/OXF05304ASIAREPORT2017AW22.pdf>

BOX 1: EVIDENCE OF IMPACT OF EXCISE TAX RATE CHANGES ON ILLICIT TOBACCO SEIZURES

In 1994, the price of a pack of cigarettes in New York was around US\$0.36 compared to around US\$1.49 (CAD\$1.92) across the border in Ontario, Canada. It was not unusual for residents to simply drive across the US border to purchase their cigarettes, and for smuggling enterprises to prosper. One study claimed that between 1987 and 1993, contraband cigarettes had increased from one per cent of total market share to about 31 per cent.

In 1994, the Canadian Government halved the excise rates on cigarettes, from CAD\$10.36 per carton to CAD\$5.36 per carton (of 20 packs—i.e. 400 cigarettes). Half of Canada’s provinces also reduced their cigarette tax rates resulting in, on average, a total reduction in federal and provincial cigarette taxes of 29 per cent. Following the 1994 tax decrease, seizures declined by 93.6 per cent from 456 000 cartons in 1994 to 29 000 in 2001.

In 2002, the Canadian Government then introduced significant and rapid tax increases of CAD\$15.85 per carton, nearly twice the post-cut rate and about 50 per cent more than the pre-cut rate. By 2008, 965 000 cartons of smuggled cigarettes had been seized.

After 2009, carton seizures began to fall again, even though cigarette taxes remained high. This likely reflected increased enforcement through the Contraband Tobacco Enforcement Strategy, which aimed to combat the increased rates of black-market tobacco smugglers by seizing the cars of anyone caught with contraband tobacco. In 2010, additional resources were dedicated to a three-year Contraband Tobacco Initiative aimed at strengthening federal, provincial and municipal enforcement agencies cooperation to target organised crime involved in contraband tobacco smuggling.

In the years following these initiatives, illegal carton seizures decreased from a record 978 000 cartons in 2009 to 356 000 in 2012.

This case study highlights the role that increased taxes can have on driving illicit tobacco in the absence of effective enforcement.

Source: Furtick K., Malcolm C. and Randazzo, A. 2014, Reason Foundation, The effect of cigarette tax rates on illicit trade: Lessons learnt in Canada, Policy Brief 113, January.

Tax harmonisation

One of the key drivers of illicit tobacco between countries (and across the US) relates to price differentials caused by differential taxation in nearby countries. For example, in the US, state and local taxes range from US\$0.17 per pack in Missouri to US\$6.16 in Chicago.⁶⁹

Tax harmonisation involves jurisdictions working together to equalise their varying taxation rates on tobacco across their respective jurisdictions. Regional agreements harmonising tax rates can reduce illicit tobacco. Even when neighbouring countries cannot agree on tax rates, they may cooperate on measures to make tax evasion more difficult.

In 2011, the European Union implemented a directive to reduce tax and price differences among its 28-member states. Member states were required to ensure that excise tax accounted for at least €90 per 1000 cigarettes, or €1.80 for each pack of 20 cigarettes.⁷⁰

In practice, it is difficult to achieve tax harmonisation because it requires agreement and coordination across governments. Low taxing countries may potentially resist tax harmonisation if it impacts on tax paid sales within their country, even if it does not reduce government revenues. Further, while it may

69 National Center for Chronic Disease Prevention and Health Promotion 2015, op. cit., p.14.

70 *ibid.*

reduce the price differential between countries, it may not remove the differential completely. Where a significant price differential remains, the incentive for profiting from illicit tobacco trade remains.

In the PNG context, tax harmonisation between countries is unlikely to have a significant impact on the price differential between illicit and legal products. Cooperating on measures to make tax evasion more difficult is likely to have the best impact on addressing illicit tobacco.

2.4 International case studies

This section presents two case studies of the approach taken in the UK and Australia to tackle illicit tobacco. The international experience suggests that, among other things, a comprehensive strategy combining policy and other options is generally required and effectively targeted and focused enforcement is an essential platform to have a marked impact on illicit tobacco trade. The case studies highlight the range of initiatives implemented to address various weaknesses in those markets, but also how strategies have been refined and adapted over time to continue to reduce the rates of illicit tobacco and to address changing market dynamics.

United Kingdom

Between 1996-97 and 1999-2000, the UK experienced a dramatic increase in cigarette smuggling – which rose from three per cent to 18 per cent of total consumption despite annual increases in excise duties of five per cent above inflation.⁷¹ In 2000, the UK Government estimated that tobacco smuggling was costing over £3.4 billion in lost revenue each year.⁷² In response, the UK Government released a comprehensive strategy in 2011 comprising a series of initiatives which by 2015 had yielded significant benefits as outlined in Table 5.

While the rates of cigarette smuggling stabilised, they did not return to its previous lower levels and the composition of illicit trade also changed toward counterfeit and illicit white product. The UK Government responded by updating and reinforcing its strategy in 2006, 2008, 2011 and 2015. Over this period, the UK Government strengthened cooperation with tobacco manufacturers, collaborated with overseas partners and international organisations, expanded HMRC to be able to focus in addition on hand-rolling tobacco, increased the network of Foreign Liaison Officers, and introduced new technology and detection capabilities.

71 HM Revenue & Customs 2015, op. cit., p.4.

72 HM Revenue & Customs 2015, op. cit., p.6.

Table 5: Success of 2011 UK Initiatives in Tackling Illicit Tobacco

Initiatives	Results
Reduced duty-free limits for travelers from the EU.	£37.5 billion tobacco duty collected between April 2011-February 2015.
Agreed closer-working protocol with Trading Standards.	6.4 billion non-UK-duty paid cigarettes seized by HMRC and Border Force.
Established an Anti-illicit Joint Working Group with the tobacco manufacturers.	1 621 tonnes non-UK-duty paid hand-rolling tobacco seized by HMRC and Border Force.
Worked to use a new industry authentication system to tackle the illicit market.	177 people convicted of organised tobacco crime offences.
Invested £25m in additional criminal investigators, expanded overseas enforcement and intelligence activity and strengthened postal border control.	605 people convicted of smaller scale tobacco crime offences.
Implemented new technology to support detection and seizure of illicit tobacco coming via postal routes.	50 per cent increase in annual prosecutions for tobacco offences.
Adopted a tougher approach on sanctions, with new sanctions following detection of illicit tobacco, and on supply chain enforcement.	3300 assessments to recover unpaid excise duty.
Enabled 200% of duty evaded to be charged as a penalty when illicit product has been seized	3000 penalties issued for less serious tobacco offences. £49 million value of penalties and assessments raised.

Source: HM Revenue & Customs 2015, Tackling Illicit Tobacco: From leaf to light, The HMRC and Border Force strategy to tackle tobacco smuggling, March, p.7.

In March 2015, the UK Government announced further reforms. Of note, it decided to limit increases in tobacco excise duties to the rate of inflation and instead implemented:

- Increased enforcement – greater interception, seizures and asset confiscations
- Increased penalties for illicit activity – including criminal prosecutions with up to a seven-year sentence, financial wrongdoing penalties of up to 70 per cent of duty payable, prohibiting sales for up to six months and withdrawing hauliers' licences
- Civil actions including winding up orders and bankruptcy
- Fiscal marks on tobacco packaging
- Improved public awareness
- £209 million over three years for 1000 new customs officers/investigators and new detection technology including x-ray scanners and other equipment.

The combined actions contributed to a reduction in illicit cigarettes from 22 per cent of total cigarette consumption in 2000–01 to 10 per cent by 2013–14. The rate of illicit hand-rolling tobacco also reduced from 61 per cent of total hand-rolling consumption to 39 per cent over the same period. Revenue losses have reduced from £3.4 billion to 2.1 billion a year over the lifetime of the strategy.

Australia

Tobacco control in Australia has typically been undertaken by multiple agencies including the Australian Taxation Office (ATO), Australian Federal Police, Australian Crime and Intelligence Commission, Department of Immigration and Border Protection, the Department of Health, the National Measurement Institute as well as state and territory police, health agencies and local councils.

In 2016, the Australian Government announced tougher penalties and changes to legislation to establish more workable offences – for example by:

- Not requiring prosecutors to prove whether tobacco was cultivated in Australia or imported.
- Establishing an offence where a person who possesses tobacco is reasonably suspected to have not paid excise.
- Introducing tiered offences for illicit tobacco dealing such as increasing the maximum penalty for possession of illicit tobacco from \$21 000 to \$105 000 and creating new offences for possession of more than 10 kilograms of tobacco (5 years' imprisonment, \$210 000 fine) and more than 1000 kilograms of tobacco (10 years' imprisonment, \$315 000 fine).

In October 2017, a Taskforce was established to review the black economy in Australia and to provide an innovative, forward-looking blueprint for tackling it. The report examined a range of different black economy markets including the market for illicit tobacco.

The Black Economy Taskforce found that Tobacco Strike Team has been highly successful, conducting several major raids and prosecutions.⁷³ However, it considered that more could be done to improve enforcement including:⁷⁴

- Creating a specific body responsible for the policing of illicit tobacco.
- Alternatively, establishing a cross-agency Tobacco Taskforce with responsibility for enforcing tobacco legislation, improving information sharing and providing single point accountability.
- Examining the feasibility of new technology to mark packs and cases to show when excise has been paid correctly.
- Taxing tobacco at the time that it enters an Australian port rather than at bonded warehouses.

In response to the Black Economy Taskforce recommendations, in May 2018, the Australian Government announced a set of budget measures to combat the illicit tobacco trade including establishing an Illicit Tobacco Taskforce and 'Black Economy Package – combatting illicit tobacco'.

The Black Economy Package was worth AU\$136 million over four years and consisted of the following key components:

- **Creating the Illicit Tobacco Taskforce** — Forming a multi-agency Illicit Tobacco Taskforce from 1 July 2018 comprising members from several law enforcement and border security agencies to increase the resources and capabilities dedicated to combatting illicit tobacco smuggling. The Taskforce was led by ABF and included Department of Home Affairs, the Australian Criminal Intelligence Commission, the Australian Transaction Reports and Analysis Centre, the Commonwealth Director of Public Prosecutions and the ATO. The new Taskforce was given

73 The Black Economy Taskforce 2017, Final Report, October, p.309.

74 *ibid*, pp.305-311.

additional powers and capabilities to enhance intelligence gathering and proactively target, disrupt and prosecute serious and organised crime groups at the centre of the illicit tobacco trade.

- **Collecting tobacco duties and taxes at the border** — From 1 July 2019, importers of tobacco will be required to pay all duty and tax liabilities upon importation rather than after importation and storage. Although there is currently no licensed commercial tobacco production in Australia, the taxing point for any future domestic manufacture of tobacco will also be changed to be consistent with the new taxing point for tobacco imports.
- **Introducing a prohibited import control for tobacco** — From 1 July 2019, permits will be required for all tobacco imports (except for tobacco imported by travellers within duty free limits) to facilitate enforcement action and seize tobacco where no duty has been paid.

Additional resources were also provided to bolster its capabilities to detect and destroy domestically grown illicit tobacco crops, and to replace the ATO's outdated paper lodgment system for excise and excise equivalent goods payment. Together, these measures are expected to result in a net gain to the budget of AU\$3.6 billion over the next four years.

In July 2018, the newly established Taskforce executed its first warrant uncovering more than 17 acres of illegal tobacco crops and six tonnes of tobacco leaf, with an estimated excise value of AU\$13.3 million. The ATO and the Department of Home Affairs revealed that almost AU\$600 million in tobacco duty was foregone in 2015-16 financial year because of the trade in illicit tobacco.

Since July 2016, the ATO has undertaken 33 seizures totaling 221 tonnes of illicit tobacco with estimated tobacco duty forgone of AU\$192 million. In the last financial year, the ABF made more than 110 000 detections of illicit tobacco at the border including almost 240 million cigarettes and 217 million tonnes of tobacco, worth more than AU\$356 million in evaded duty.

In January 2019, two men were arrested in Melbourne for allegedly importing illicit tobacco worth more than AU\$10 million in evaded revenue. It is alleged the men imported declared multiple air cargo consignments as black tea from the United Arab Emirates.

A study estimating the proportion of illicit tobacco in the Australian market has been undertaken each year since 2012. The most recent 2017 estimates indicates that the illicit tobacco market represents 13.9 per cent of total tobacco consumption in Australia.⁷⁵

While the impacts of the most recent 2018 initiatives are yet to be fully realised, several of the initiatives would be worth considering in the PNG context including actioning a dedicated Taskforce, collecting tobacco duties and taxes at the border and introducing a prohibited import control for tobacco.

75 KPMG 2018, *Illicit tobacco in Australia*, p.6.

3. THE PAPUA NEW GUINEA TOBACCO MARKET

This Chapter provides context about the tobacco market in PNG. It describes the available evidence of tobacco consumption, affordability and price in PNG, as well as the current regulation and government policies related to the tobacco market and control of illicit tobacco.

3.1 Tobacco consumption in PNG

The World Bank identifies PNG as one of the ten countries with the highest rates of tobacco use in the world.⁷⁶ World Health Organisation (WHO) data indicates that in 2015 around 31.1 per cent PNG’s population over the age of 15 years smoked.

The PNG 2009-10 Household Income and Expenditure Survey (HIES), while not directly comparable to WHO data, provides further detail about smoking prevalence in PNG by regional and urban/rural location (see Table 6).⁷⁷

Table 6: Smoking prevalence in PNG by region and location (%)

PNG regions	Urban	Rural	Total
Southern	18.7	24.7	24.1
Momase	29.4	28.8	28.8
Islands	20.6	25.4	25.0
Highlands	20.5	27.0	26.7
National	22.6	26.9	26.3

Source: National Statistical Office, Papua New Guinea Household Income and Expenditure Survey, 2009-10.

In summary, the HIES data indicates:

- **Smoking is more prevalent in rural regions** – 26.9 per cent of the population in rural regions smoke compared to 22.6 per cent in urban regions (albeit in the Momase region smoking is more prevalent in urban areas compared to rural areas).
- **There are significant differences in smoking rates between urban and rural areas** – the largest differences between urban and rural areas are for Southern region (18.7 per cent versus 24.7 per cent) and Highlands (20.5 per cent versus 27.0 per cent).
- **The highest prevalence of smoking is in the Momase region** – which has a prevalence of 28.8 per cent and interestingly displays a higher rate of smoking in urban areas compared to rural areas.

Very few studies have been undertaken of the illicit tobacco market in PNG. The previous 2013 KPMG study identified that the overall level of tobacco consumption in PNG was approximately 2.9 billion sticks

76 World Bank 2019, Tobacco Consumption in Papua New Guinea, <http://documents.worldbank.org/curated/en/354251468000603245/Tobacco-consumption-in-Papua-New-Guinea>, accessed 10 March 2019.

77 National Statistical Office, Papua New Guinea Household Income and Expenditure Survey (HIES), 2009-10. The HIES is the third and most recent household income and expenditure survey conducted in PNG and includes data on demographics, family, health, employment and consumption.

– and that approximately 108.9 million sticks were estimated to be illicit (see Table 7).⁷⁸ It further estimated that illicit tobacco (excluding brus) accounted for around 3.7 per cent of total tobacco consumption and around 11 per cent of total manufactured cigarette consumption.⁷⁹ Brus was the largest part of the PNG tobacco market and accounted for 58 per cent of total consumption in 2013. The *Tobacco Control Act 2016* now makes it illegal to sell brus without a licence.

Table 7: Illicit tobacco consumption and manufactured cigarette consumption, 2013

Tobacco category	% of total tobacco consumption	% of manufactured cigarette consumption
Illicit manufactured cigarettes	3.7	11.0
Informal tobacco (brus)	58.0	-
Legal tobacco	38.3	89.0
<i>Domestic and non-domestic manufactured cigarettes</i>	30.3	89.0
<i>Manufactured tobacco</i>	8.0	-
Total tobacco	100	100

Source: KPMG 2015, *Illicit tobacco in Papua New Guinea*, 24 April, p.6.

Note: The term ‘manufactured tobacco’ is used by KPMG to refer to a coarse cut cigarillo that is manufactured exclusively for the PNG market and sold under the brand name ‘Spear’.

3.2 Tobacco affordability and price

The tobacco pack price in PNG is relatively high compared to surrounding countries in the South East Asian region. Figure 7 shows that PNG is the eighth most expensive country to purchase a pack of cigarettes out of a sample 33 countries. The pack price is more than four times the pack price in Indonesia, and more than ten times the pack price in Vietnam. The large pack price differential significantly increases the incentive for illicit trade from Indonesia into PNG, whether by individuals or by crime syndicates.

A significant component of the price of tobacco in PNG is the rate of tobacco excise. Tobacco Atlas estimates that the tobacco excise tax accounts for around 27.78 per cent of the retail price of a pack of legal cigarettes in PNG.⁸⁰

Cigarettes are significantly less affordable in PNG compared to other Asia Pacific countries. WHO estimated that in 2016 the proportion of GDP per capita required to purchase 100 packs (or 2000 sticks) of the most sold brand of cigarettes was 27.56 per cent, and that cigarettes had become less affordable between 2014 and 2016.⁸¹

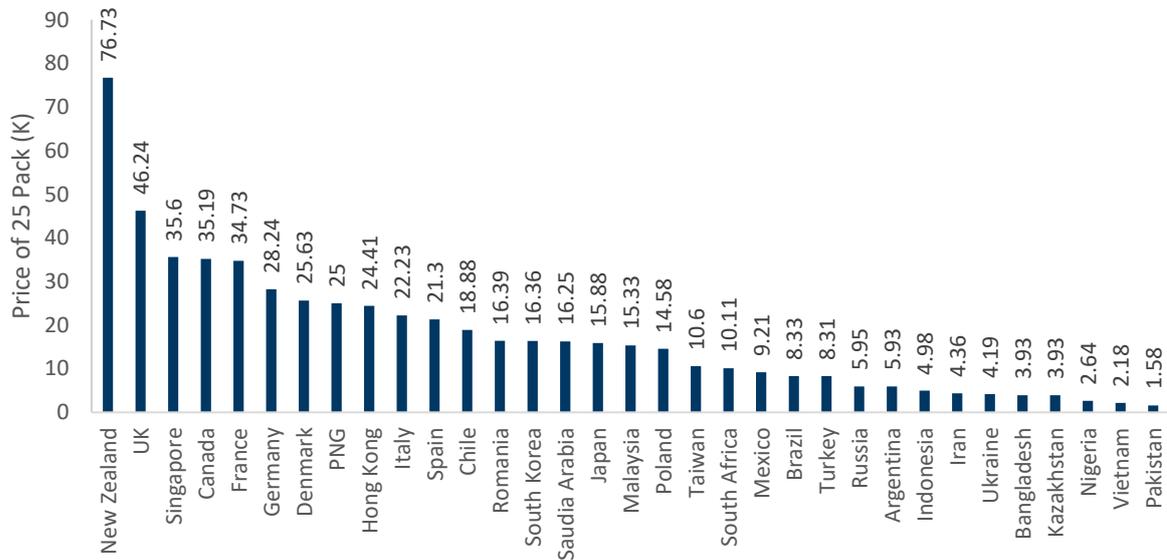
78 KPMG 2015, op. cit., p.6.

79 ibid.

80 Tobacco Atlas, <https://tobaccoatlas.org/country/papua-new-guinea/>, accessed 13 September 2018.

81 World Health Organisation 2017, *Report on the global tobacco epidemic*, Country Profile – Papua New Guinea.

Figure 7: Comparison of 2018 international cigarette pack prices (Kina per 25 cigarette pack)



Source: Information provided by BAT.

- a PNG pack price reflects the price of a pack of 25 cigarettes at K1.00 per stick.
- b Pack price for Iran, Saudi Arabia, New Zealand, Pakistan, Taiwan, Hong Kong, and Singapore reflects the equivalent recommended selling price for a pack of Pall Mall 20s.

PNG ranked 23rd out of 24 countries in terms of affordability – only Kiribati ranked less affordable. By comparison, the proportion of GDP per capita required to purchase 100 packs (or 2000 sticks) of the most sold brand of cigarettes in Australia was three per cent.⁸²

3.3 Excises, duties and taxes

Taxation is a tool that many countries around the world use to control tobacco markets.⁸³ It is aimed at collecting revenue, recognising the broader impact that tobacco smoking can have on the community. Many countries around the world impose excises, taxes and duties on tobacco products.

In PNG, tobacco products are subject to excise taxes, customs duties and a value added tax of 10 per cent.

The *Customs Tariff Act 1990* outlines the rates of duty that apply to various imported and exported goods, including tobacco. The duty-free allowance for cigarettes when entering PNG is 250 cigarettes or 250 grams of tobacco per adult.

82 *ibid.*

83 Excises and value added taxes are the most common forms of domestic consumption taxation levied on tobacco products. In 2012, WHO identified that only 20 out of 186 countries reviewed did not levy either an excise or value added tax on cigarettes. WHO 2013, *Report on the Global Tobacco Epidemic*.

The *Excise Tariff Act 1956* sets out the tariffs to be levied on all dutiable goods manufactured or imported into PNG. Excise tariff rates apply to eleven categories of tobacco products on either a per kilogram of tobacco or per 1000 sticks basis. Table 8 sets out the 2018 excise rates that apply to various tobacco products.⁸⁴

Table 8 PNG tobacco excise rates by category, 2018

Tariff category	Unit	Value (Kina)
Cigars, cheroots and cigarillos containing tobacco	kg	419.33
Cigarettes of tobacco or tobacco substitutes containing tobacco other than dark fired tobacco	1000	419.33
Cigarettes of tobacco containing dark fired tobacco without filter (Spear or equivalent) ^a	1000	209.70
Smoking tobacco, whether or not containing tobacco substitutes in any proportion	kg	139.81
Chewing tobacco	kg	139.81
Snuff	kg	139.81
Twist or trade tobacco	kg	139.81
Stick tobacco	kg	139.81
Coarse Shredded Tobacco for Roll Your Own Cigarettes	kg	67.60
‘Homogenised’ or ‘reconstituted’ tobacco	kg	194.20
Other	kg	139.81

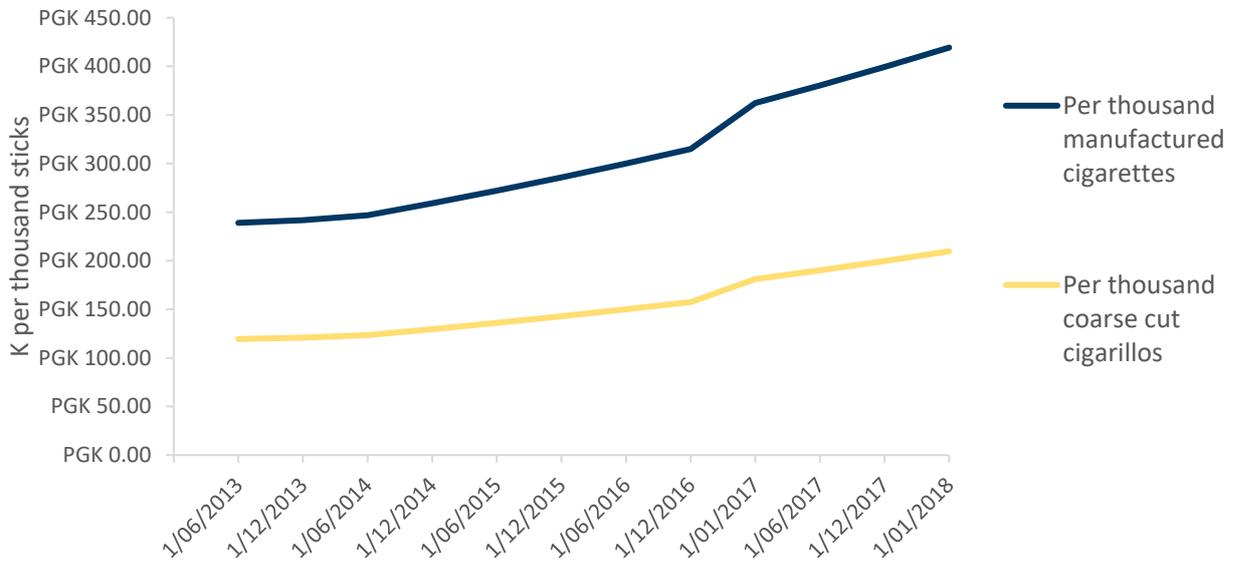
Source: PNG Customs.

a: PNG Government has announced it will increase excise rates by 2.5 per cent from 1 June 2019 for all the above tobacco categories (except for the new excise tier in factory made cigarettes Category 2402.20.40).

Over the last five years, the excise rate for tobacco has been increased each year – sometimes twice a year by five per cent each time (10 per cent annually) (see Figure 8). From 1 June 2019, the PNG Government is expected to increase excise rates for most tobacco categories by 2.5 per cent. It has also introduced a new second tier of excise for factory made cigarettes that is set at half of the existing excise rate for current factory-made cigarettes.

84 The excise rates to apply from 1 June 2019 onwards will be published by PNG Customs around 31 May 2019 as is normal custom.

Figure 8: Trend in PNG tobacco excise rates, 2013-2018 (K per thousand sticks)



Source: Information provided by BAT.

Table 9 shows the legal inbound domestic quantity of tobacco products that entered PNG each year and the value of excise paid. It indicates that the amount of tobacco products entering the country legally has increased significantly over the last few years and accounted for around K1.1 million in excise revenues in 2017.

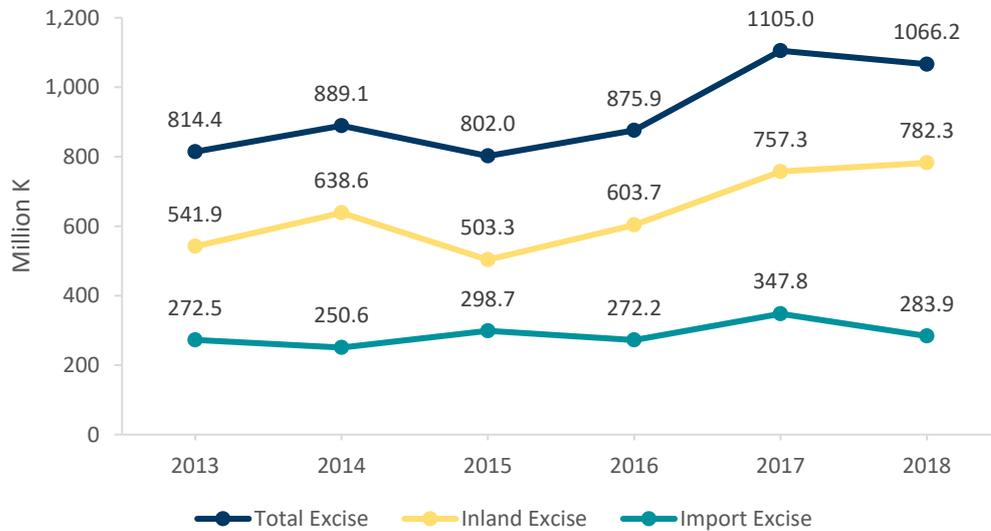
Table 9: Legal Inbound Domestic Inflows from Various Countries

Year	Quantity (kg)	Value
2015	674 603	K108 429.60
2016	12 306.87	K278 860.30
2017	42 310.56	K1 184 189.00
TOTAL	729 220.43	K1 571 478.90

Source: Information provided by PNG Customs.

Despite the increasing rate of tobacco excises, PNG tobacco excise revenues have not tended to increase at the same rate over the last five years (see Figure 9).

Figure 9: Total PNG excise revenues, 2013-2018 (K millions)



Source: Information provided by PNG Treasury. PNG Treasury advised it was unable to provide more disaggregated data indicating the excise revenue collected specifically in relation to tobacco products.

3.4 Regulation of tobacco manufacturing, importation, distribution and sale, and use

The *Tobacco Control Act 2016* (the Tobacco Control Act) regulates the manufacture, importation, distribution and sale, and use of tobacco products. It prohibits:

- Smoking in public areas and in the workplace, with mandatory signage
- Advertising tobacco products, including free or discounted distribution of products. It does not fully ban advertising at the point of sale or on the point of sale website
- Products being labelled as suitable for chewing, and the sale of products to those under 18
- Unsupervised sales methods such as vending machines.

The Tobacco Control Act restricts the sale of cigarettes and specifically prevents:

- Retailers from selling or offering to sell loose cigarettes in amounts of fewer than 25 cigarettes
- Manufacturers, importers, distributors or retailers of products from selling or offering to sell cigarettes in a pack that contains fewer than 25 cigarettes, or loose tobacco in a package that contains less than 25 grams.

The Tobacco Control Act also regulates cigarette packaging and labelling to reduce their appeal including:

- Conforming to prescribed requirements and health messages
- Requiring health messages to take up a minimum of 50 per cent of the principal display area of tobacco packets and packages
- Requiring packets to carry messages that include pictures or pictograms and include elements in English, Pidgin and Motu.

Section 41 of the Tobacco Control Act also requires manufacturers, importers and distributors of tobacco products to be licensed after paying a prescribed fee. The licensing provisions require the Head of State

to issue regulations prescribing the requirements for granting, renewing or revoking licences and any other matters. We understand that to date these regulations have not been issued.

The Tobacco Control Act empowers District Development Authorities to declare healthy district and village standards on the use of brus and tobacco products. It also provides for:

- Registration of various business involved in the tobacco supply chain allowing tracking and increased enforcement of regulations
- District Development Authorities licensing the sale of brus
- Establishment of the Health Promotion Trust Fund.

However, the provisions above do not operate until a notice or notices are published in the National Gazette by the Minister acting on the advice of the Secretary.

Brus is legal to grow or consume and as a locally grown product it does not attract customs tariffs. However, it becomes illicit when used for or as part of a blend and sold or used to produce counterfeit cigarettes. Brus can be sold when the person is registered, and where it meets requirements for manufactured tobacco including all necessary licences and similar.

Penalties related to illicit tobacco under PNG law

In the case of smuggling, a person may import tobacco and declare it as a different commodity that attracts lesser duty. This represents a direct intent to evade duties and taxes and is a breach of Section 149 of the Customs Act. The penalty for smuggling under this section is a fine not less than K5 000 and K50 000 or imprisonment for a period not exceeding 10 years, or both.

A penalty of K15 000 each can also be applied for importing and selling cigarettes that do not comply with packaging and labelling laws under Sections 24 (packaging) and Section 28 (labelling) of the Tobacco Control Act.

The other penalty provisions under the Customs Act relate to *Division 1A – Administrative Penalties* and *Section 147B Administrative Penalties*. Penalties apply where customs declarations are ‘materially incorrect’ and lead to the importer not paying the correct taxes. In this situation, the provisions allow the Chief Commissioner of Customs discretion to apply penalties ranging from not less than 50 per cent and not exceeding 200 per cent of the duty unpaid, not declared or attempted to be avoided.

The second type of illicit activity relates to counterfeiting a legitimate brand and declaring the import as something else which is again an act of smuggling, sometimes referred to as ‘false declaration’ by the Customs. In such cases the importer can be charged for smuggling under Section 149 of the Customs Act.

Alternatively, Sections 53 and 54 of the *Trade Marks Act 1978* allows a person who has a trade mark to launch civil proceedings to protect their intellectual property. The Courts decide the level and extent of loss, harm and damage suffered by the rights holder and a relevant compensation may be decided in favour of the rights holder and could include certain restrictions and injunctive orders on the continued use of the trade marks.

3.5 National Tobacco Control Policy

The PNG Government introduced the National Tobacco Control Policy in 2004. The policy's objective is to provide an integrated national framework for tobacco control strategies and to regulate and control the consumption of tobacco in PNG. The policy's objectives include:

- Preventing the initiation of tobacco use
- Eliminating second hand exposure to second hand smoke
- Promoting the cessation of tobacco use
- Identifying and eliminating disparities related to tobacco use and its effects among different population groups.

3.6 Medium Term Revenue Strategy 2018-2022

The Medium Term Revenue Strategy (MTRS) defines the vision, goals and objectives, approaches, administrative reform measures and improvements in policies for strengthening tax collections, compliance and monitoring systems over the medium term. It provides the reform framework for developing the revenue system into an efficient system that can support the improved and sustained delivery of services, economic growth and macroeconomic stability.

The MTRS notes that smuggling in PNG is still a major challenge and there is a prevalence of many counterfeit products including tobacco. It attributes this to:

- The existence of strong smuggling networks
- Falsified customs declaration that misclassify products and country of origin
- Insufficient patrol and inspection tools
- Failure to properly monitor and evaluate exempted goods
- Importers breaking down large shipments into smaller cargoes and hiding under informal trading activity along the border, and seaway smuggling
- Ineffective information sharing between Customs and relevant agencies.

The MTRS commits to several actions aimed at strengthening cross-border mechanisms to focus on smuggling and customs valuations including that Customs will:

- Develop an annual operational plan to reduce all forms of smuggling
- Finalise and implement a medium-term anti-smuggling plan with clear indicators and timeframe
- Enhance officials' capacity to lodge criminal cases against smugglers
- Strengthen the compliance on usage of customs tax exempted goods
- Establish temporary bonded customs storage along the borders and urban areas to reduce the dispersal of smuggled goods and to reduce compliance burdens on traders
- Develop a National Command Centre.

It is not clear that these commitments have been actioned.

3.7 WHO Framework Convention on Tobacco Control

PNG is a signatory to the WHO Framework Convention on Tobacco Control (FCTC). The FCTC provides a framework for international cooperation in several areas of tobacco control including regulation of cross-border tobacco advertising, promotion and sponsorship and measures to address illicit tobacco trade.

The FCTC includes core provisions related to:

- Price and tax measures – including implementing tax and price policies on tobacco products to contribute to health objectives aimed at reducing tobacco consumption; and prohibiting or restricting sales to and/or imports by international travelers of tax-free and duty-free tobacco products.
- Non-price measures – protecting citizens from exposure to tobacco smoke, regulating the contents of tobacco products, regulating tobacco product disclosure, packaging and labelling of tobacco products, education, communication, training and public awareness, tobacco advertising, promotion and sponsorship and demand reduction measures.

The FCTC is an international legal instrument establishing broad commitments in the health sector and a general system of governance. Among other things, it requires that parties:

- Adopt effective measures for marking unit packets and packages of tobacco products and any outside packaging with a view to determining the origin of tobacco products and their points of diversion.
- Consider developing track and trace regimes to secure the distribution system and assisting in the investigation of illicit trade.
- Take measures in the areas of monitoring and collecting data on cross-border trade in tobacco products, criminal legislation, destruction of confiscated equipment and illegal tobacco products.
- Enable the confiscation of proceeds from illicit trade.
- Promote international cooperation in relation to investigations, prosecution and proceedings.
- Adopt measures aimed at preventing illicit trade, including through licensing.

WHO's 2017 report on the global tobacco epidemic indicates that PNG meets the requirements fully for smoke-free policies, mostly for advertising, partially for taxation, and not at all for monitoring, cessation programs, health warnings and mass media.⁸⁵

Further to the FCTC, the WHO has developed further requirements in the *Protocol to Eliminate Illicit Trade in Tobacco Products*. The Protocol supports a dual approach to target prevention and suppress illicit tobacco trade. A key feature of the Protocol is that it seeks to impose a regulatory regime on legitimate tobacco trade which include:

- Licensing, due diligence, and record-keeping
- A track and trace national system and international track and trace regime
- Controls over selling tobacco products over the internet and through duty-free sales
- Controls on manufacturing and transacting in tobacco products in free-trade zones.

⁸⁵ World Health Organisation 2018, http://www.who.int/tobacco/surveillance/policy/country_profile/png.pdf, accessed 14 September.

4. MAPPING PNG TOBACCO MARKET SUPPLY CHAINS

The World Bank advises that the process of deciding how to tackle illicit tobacco should start with mapping the supply and demand for tobacco products, what is known about illicit trade in tobacco products, the modus operandi of actors involved in or facilitating illicit trade, the capacity, commitment, and accountability of government agencies and resultant effectiveness of tax and customs administration.⁸⁶

This Chapter provides an overview of the market for tobacco products in PNG and maps the existing supply chains for legal and illicit tobacco including for production, distribution and entry into PNG.

4.1 Approach to mapping PNG tobacco supply chains

FTI Consulting has mapped both the legal and illicit tobacco market supply chain in PNG having regard to key economic dimensions of the market namely:

- *Product level* – identifying the different types of tobacco products, both legal and illicit and the drivers of substitutes between the two products
- *Functional level* – identifying the different segments of the supply chain – production, distribution and consumption – for legal and illicit products
- *Geographic level* – identifying on a geographic basis, where the legal and illicit tobacco products are produced, distributed and consumed.

PNG tobacco product segmentation

In defining the nature of the PNG tobacco market, it is important to identify the legal and illicit types of tobacco products that are available and consumed in PNG, and the drivers of substitutes between them.

Our analysis indicates that the PNG tobacco market is characterised by the consumption of:

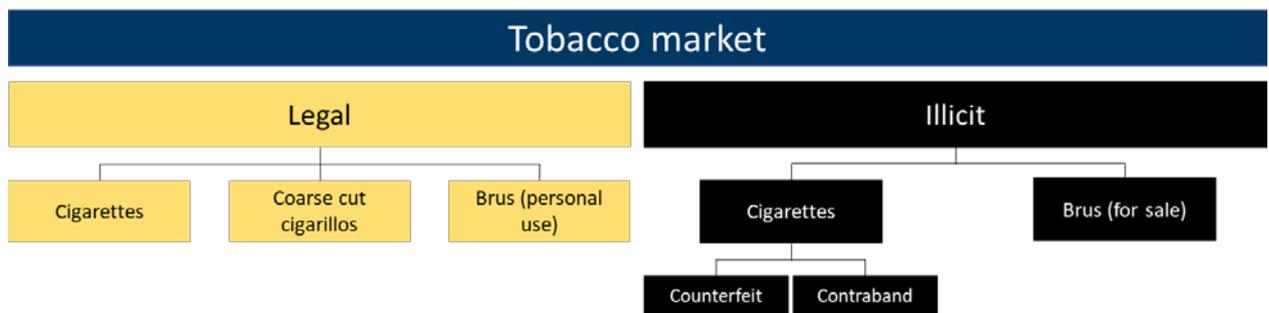
- *Cigarettes* – a tobacco product comprising a roll of cut tobacco, enclosed in paper, which is typically sold in packs. This includes domestic cigarettes manufactured in PNG and non-domestic cigarettes that may be manufactured in other countries and subsequently imported into PNG.
- *Coarse cut cigarillos* – a machine made coarse cut tobacco product that is shorter and narrower than a traditional cigar but longer than cigarettes. They are a special type of tobacco product manufactured for the PNG market and not readily found in other international markets.
- *Brus* – a home grown tobacco leaf that is grown for personal use and often shared with family and friends, and/or sold either in whole-leaf bundles, chopped in a bag, or pre-rolled by vendors in newspapers.

Figure 10 depicts each of these categories of tobacco products. The illicit market essentially reflects all forms of tobacco that are produced, imported, exported, purchased, sold or purchased that do not comply with relevant PNG regulations and/or do not pay relevant PNG excise, duties and taxes. This includes:

86 World Bank 2019, op. cit., p.xvii.

- *Contraband* – genuine manufactured cigarettes or tobacco products that have not paid applicable PNG excise and customs duties and/or have not complied with PNG tobacco laws, for example, related to packaging, health warnings and languages. They are often smuggled from countries where tobacco products are cheaper than in PNG.
- *Counterfeit* – cigarettes that are manufactured illegally and may carry the trademark and/or branding of a legally sold brand without the consent of the trademark owner (also known as fake cigarettes). Once manufactured they are illegally smuggled into PNG.
- *Brus* – it is not illegal to grow or consume brus for personal use. However, the *Tobacco Control Act 2016* requires sellers or distributors of brus to be registered. Our understanding is that to date no sellers or distributors have been registered to sell or distribute brus. As a result, any brus that is currently being purchased or sold is illicit.

Figure 10: Types of tobacco products consumed in PNG



Source: FTI Consulting.

PNG tobacco functional segmentation

Our analysis of the PNG supply and distribution channel for illicit tobacco identifies three distinct functions:

- *Production*: cultivating, processing and/or manufacturing of tobacco products
- *Distribution*: moving illicit tobacco from the point of production to the point of consumption
- *Consumption*: the point when illicit tobacco products are physically received by consumers.

PNG tobacco geographic segmentation

Our analysis of the supply and distribution of illicit tobacco into PNG is grouped around the following three geographic levels:

- *Outside of PNG*: activities that take place entirely outside of PNG
- *At the border*: activities that take place at the PNG border (being the points where customs clearance is required)
- *Within PNG*: activities that take place entirely within PNG.

Based on the above market dimensions, FTI Consulting has mapped the supply and distribution of tobacco products – both legal and illicit. Figure 11 illustrates the pathway that tobacco products typically follow from their initial production to the PNG user. It highlights the relationships between the legal and illicit supply chains, and the parts of the supply chain where legal and illicit supply can overlap.

The following sections further discuss each of these dimensions.

4.2 Production

Production is the first step in the supply chain which includes farming, processing and manufacturing of tobacco products. It involves two key stages:

- *Primary* – growing tobacco leaf and sourcing inputs such as tobacco leaf, filters or papers
- *Secondary* – manufacturing tobacco products using inputs from the primary stage.

The legal production chain involves tobacco growers providing raw tobacco leaf to manufacturers, who then create several branded products. The product is then stored for domestic and foreign markets.

In 2018, British American Tobacco (BAT) was the sole domestic producer of legal tobacco products in PNG, although we understand that recently other tobacco companies have received the necessary regulatory approvals to commence tobacco manufacturing in PNG.⁸⁷ BAT does not use domestically grown tobacco in its PNG based production facilities. Rather, it imports tobacco leaf and other inputs such as papers and filters into PNG and uses these inputs to produce a range of manufactured cigarette brands and coarse cut cigarillos.

Illicit tobacco often begins in the legal production chain, where it may have been grown and produced legally. Tobacco may enter illicit channels in a variety of ways and at several stages, including:

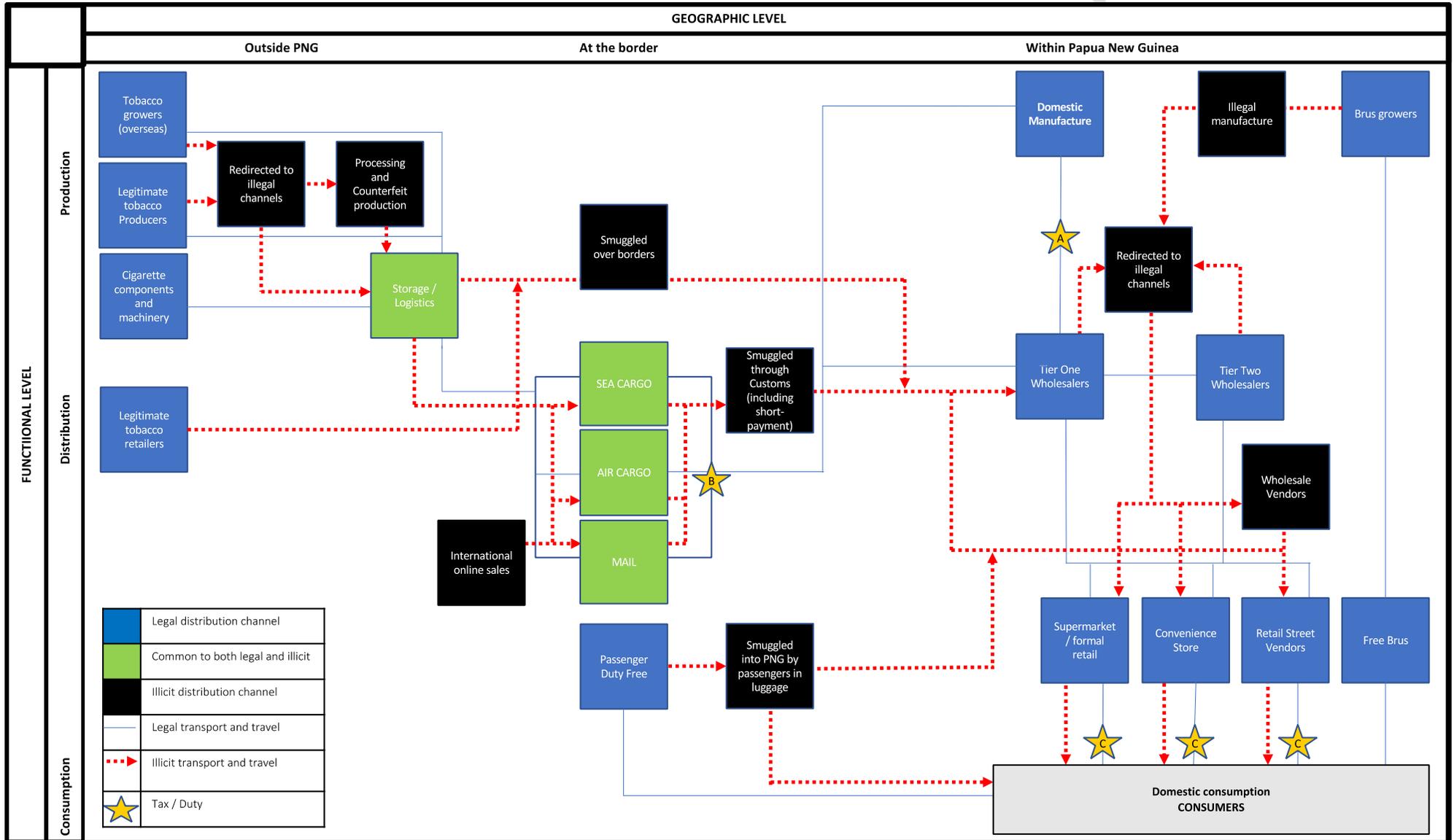
- Raw tobacco leaf directed to illicit channels and subsequently processed and manufactured to create illicit products such as counterfeit cigarettes
- Manufactured cigarettes stolen or directed away from legal manufacturing channels towards illicit channels.

In circumstances where unprocessed products enter illicit channels, tobacco-related inputs including machinery, tubes and papers have a role in the illicit production chain. The storage and logistics of the legal inputs is a key factor in illicit tobacco procedures. Overseas manufactured cigarettes are often legitimate products but become illicit when they evade customs duty on entry to PNG.

In addition to manufactured tobacco products, PNG tobacco consumers also commonly smoke brus which is a home-grown raw tobacco leaf that is processed in whole-leaf bundles, chopped in bags, or pre-rolled in newspapers. Brus that is pre-rolled in newspaper can look very similar to coarse cut cigarillos, which are a manufactured tobacco product that is also rolled in newspaper print. As noted previously, brus is legal if it is grown for own consumption or given away but is illicit if sold without a registration.

87 As advised by the Manufacturers Council of PNG.

Figure 11: Map of PNG tobacco supply chains



4.3 Distribution

Distribution refers to transfer or transportation of tobacco products from the point of production to the point of consumption. Illicit tobacco often shares parts of its journey with legal tobacco. For example, a vendor or retailer that sells illicit tobacco may also sell legal tobacco and both may be stored in a legal warehouse on the way to a wholesaler.

Upon arrival in PNG, legal tobacco products are stored in bonded warehouses except for small parcels delivered through mail. These products are sometimes moved between different bonded warehouses with product only released once duty has been paid. Once the tobacco products are released, they are moved into duty-paid warehouses where they are distributed by wholesalers to retail suppliers such as retail street vendors and supermarkets.

Domestically produced tobacco products and legally imported cigarettes are typically distributed through:

- Wholesalers – who are major distributors servicing PNG’s main regions, while also acting as independent distributors and importers of tobacco products and/or
- Sub wholesalers – who are serviced by wholesalers and are more prevalent in rural areas or regions where wholesalers do not exist.

Domestically produced tobacco products will typically be sold under trading terms that include a recommended retail price which wholesalers and sub wholesalers are encouraged to sell at. Once products leave these levels of customers, retailers and vendors have greater freedom to decide at what price point they will sell their products. However, it is unlikely that vendors would sell tobacco sticks without recovering any sort of margin and would be making a loss if they priced sticks at less than the costs of production and applicable taxes.

The typical supply chain in PNG including the associated product mix can vary between urban and rural areas. In more rural areas, smaller populations, lower wages and difficulties in transporting product often result in a more fragmented supply chain. This in turn occasionally creates supply constraints and lack of tobacco product availability as well as inconsistency in the product mix. As a result, rural consumers often smoke a larger quantity of brus, which is generally more readily available in rural areas than manufactured tobacco.

Illicit tobacco products in large quantities are often shipped through multiple transit ports. This approach is designed to make the illicit tobacco product harder to track, with the product often further disguised among other types of products and accompanied by forged or altered documents to facilitate their entry into PNG.

Illicit tobacco products can be also shipped through mail parcels albeit in smaller quantities.

Tobacco smugglers use discrete informal channels to distribute their product. Brus is often grown to be sold as a subsistence earning. It is typically only available in the vendor market, unless a consumer gets it from family or friends.

Industry stakeholders in PNG confirm that the structural arrangements that are associated with illicit tobacco smugglers are often not homogenous in PNG. Some operate as self-sufficient, usually smaller-sized operations that focus predominantly on their immediate buyers and suppliers, rather than operating as a broader network. At the other end of the spectrum, there are larger cartel type operations in PNG that are heavily involved in both the distribution and retailing of illicit tobacco products. PNG Customs advised that some or most of the perpetrators are crime syndicates who engage in illicit trade including tobacco and cigarette smuggling. They

also advised that there are unverified claims of customs officers collaborating with perpetrators.⁸⁸

4.4 Entry into PNG

As illustrated in Figure 11 previously, outside of PNG, many of the elements of the distribution channels for illicit tobacco are common for legal tobacco. In the legal distribution channel, tobacco products are exported to PNG via road, sea and air (cargo and mail).

PNG Customs advised that it has seen illicit tobacco imported in cigarette, loose leaf and molasses form and across all border streams, including international mail, air and sea cargo, and the traveler streams.

In Asia, counterfeiting is a pervasive issue. China is the largest source country of counterfeit cigarettes in the world, estimated at manufacturing 190 billion counterfeit cigarettes annually.⁸⁹ Most of these counterfeits are of cigarette brands sold in China for the domestic market.

Interpol notes that the Asia Pacific region faces a significant battle with illicit tobacco ranging from the production and distribution of counterfeits and contraband, to being recipients of illicit products.⁹⁰ It identifies China, North Korea, Philippines and Vietnam as known sources for illicit cigarettes. It also notes that Singapore, as the world's busiest port and free zone, is a regional and global transit point for illicit tobacco. There is also large-scale smuggling of loose-leaf tobacco from Indonesia and Malaysia.

Sea cargo

Overseas sea cargo is a key vehicle for bringing large quantities of illicit tobacco into the country. PNG Customs noted that the huge sea border and a long land border dividing the country in half with Indonesia makes monitoring particularly challenging and PNG Customs alone cannot adequately monitor its borders 24/7.⁹¹ Our discussions with stakeholders suggested that transportation of illicit tobacco via sea cargo is an increasingly common strategy to smuggle illicit tobacco into PNG.

Tactics enabling illicit tobacco to enter PNG and avoid paying relevant excise, duties and taxes include:

- Redirecting illicit tobacco products through several ports where they are mixed with other goods.

88 Interpol 2014, op. cit.

89 International Tax and Investment Centre 2012, *The Illicit Trade in Tobacco Products and How to Tackle It*, Submission to Australian Inquiry into Illicit Tobacco, Submission 172, p.7; Joossens and Raw 2012, op. cit., pp.230-4.

90 Interpol 2014, op cit.

91 *ibid.*

- Falsely declaring tobacco as consumer goods or other imported goods that attract lower excise and duties.
- Importing tobacco in small quantities with other items in several shipments, which when put together, equate to a commercial quantity readily available for sale.
- Registering individuals and companies with the Investment Promotion Authority with no physical address or location.⁹²

The Manufacturers Council of PNG also advised us that it was not uncommon for cigarettes and other illicit goods to be transported from Indonesia via smaller ships and vessels such as logging ships, barges and banana boats.

Prior to 2016, PNG Customs conducted examinations at all ports around the country manually using limited manpower and technology. As a result, large volumes of tobacco were being imported undetected. Surveillance indicated street vendors selling illicit cigarettes in major towns and cities. Information about the seizures made was being captured in PNG Customs' Case Management Information System, however PNG Customs advised that this data was lost when the system crashed in 2015.

Since 2016, PNG Customs has begun to strengthen its border control initiatives, including by introducing the Container Examination Facility (CEF) at the Port of Motukea, undertaking a major recruitment drive and improving remuneration packages, adopting new technologies and modernising systems and processes. PNG Customs reported that these initiatives have contributed to increased detection of tobacco in large quantities or containers. However, PNG Customs indicated that it has not eradicated the problem all together as perpetrators have started devising new ways of evading the law and outsmarting technologies.⁹³

PNG Customs advised that most of the illicit cigarette trade happens at Motukea and Lae. However, now that the new Motukea Container Examination Facility is operational, PNG Customs indicated that it is highly possible that many of the shipments are being diverted to other smaller ports and to Lae which do not have such facilities.⁹⁴

As Table 10 shows, in 2017, PNG Customs reported that it seized more than 4 792 cartons of manufactured cigarettes (that is, nearly 48 million cigarette sticks) at the Ports of Moresby and Lae alone. Illicit tobacco seized originated from China, Malaysia, Philippines, Vietnam and Australia. PNG Customs estimates that a 40-foot container full of contraband cigarettes has a street value of about eight million kina.⁹⁵

Industry data suggests that the 2017 seizures included almost 20 per cent of counterfeit cigarettes, and the 2018 seizures were around 5 300 cartons.⁹⁶

PNG Customs has continued to make several large-scale seizures in 2019 with more than five million illicit cigarettes seized and destroyed in January alone including:

- 150 inners or bricks of counterfeit cigarettes seized in Daru, Western Province

92 PNG Customs 2018, Letter from Office of the Chief Commissioner for Customs to FTI Consulting, Data/information on illicit trade and tobacco in PNG, 4 September.

93 *ibid.*

94 *ibid.*

95 Post Courier 2019, Illicit trade is a threat to PNG, 15 January.

96 Confidential information provided by BAT.

- A container of counterfeit cigarettes detected by the Container Examination Facility at Motukea, originating from Malaysia.⁹⁷

Table 10: PNG Customs Reported Illicit Tobacco Seizures at Sea Ports, 2017^a

Year	Number (Cartons) ^b	Origin	Port of Detection
2017	800	Philippines	Port Moresby
2017	750	China	Port Moresby
2017	na ^c	China	Port Moresby
2017	1021	Vietnam	Port Moresby
2017	482	Malaysia	Port Moresby
2017	269	China	Port Moresby
2017	430	Australia	Port Moresby
2017	1040	Philippines	Lae
TOTAL	4792	--	--

Source: Information provided by PNG Customs, Letter from Office of the Chief Commissioner for Customs, 4 September 2018.

- a Data may not fully capture the level of illicit activities as some incidences go unreported or undetected.
- b A carton comprises 10 000 cigarette sticks.
- c Comprised one 40-foot container. Number of cartons not provided.

Road transport from Indonesia or coastal border

Vanimo (near the Indonesian border) has long been considered an illicit tobacco hotspot. There are many illicit products selling in Vanimo due to its proximity to the Indonesia border, and the Indonesian city of Jayapura, where many products sell a lot cheaper than in PNG.

Tobacco (and other) products bought in Indonesia are driven or walked across the border – which is porous with little inspection and enforcement. We have been given reports that some tobacco is transported freely by banana boats across the coasts of Indonesia and PNG to avoid detection.

In 2012, it was reported that the Batas market on the Indonesian side of the border with PNG in West Sepik province was becoming a hotspot for illicit goods including cigarettes, alcohol, food, electronic and other goods sold at very cheap prices.⁹⁸ Illicit cigarettes from the Batas Market were often brought across the Wutung Border Post, and then sent to Vanimo. They were also transported to Aitape, near the border of East and West Sepik provinces, and moved down to Wewak and Madang to be transported to the Highlands.

It has also previously been reported that Highlands businessmen liaise with the local villagers and get them to carry Indonesian cigarettes across from Batas. They stockpiled cigarettes in the villages and then sent large quantities via boat or road to Aitape, transported by road to Wewak,

⁹⁷ Information provided by BAT.

⁹⁸ Malum Nalu 2012, Happenings in PNG, Batas market a hotspot for illegal trade, 27 June.

then loaded onto ships or dinghies for Madang or Bogia, where they were picked up and transported by road to Mt Hagen, Minj or Banz.

Other forms of entry

Other forms of entry for illicit tobacco include air cargo, passenger smuggling, mail (including online sales) and theft. These forms of entry or distribution generally involve smaller quantities.

Air cargo is an efficient and fast supply chain compared with sea cargo. Illicit tobacco transported through air freight, passenger and postal streams is becoming increasingly common in PNG.

The emergence of online sales direct to retailers and consumers represents a growing avenue of entry into PNG. Using the online channel, both domestic and international sellers can bring in and deliver illicit tobacco products (usually cigarettes) direct to consumers and retailers, using postal and parcel delivery services. These products avoid detection by law enforcement agencies by advertising through non-traditional channels such as social media and in foreign languages. Tobacco products sold this way can include contraband, counterfeit, illicit white brands and loose-leaf tobacco.

Passenger smuggling (also known as ant smuggling) is another method used to bring illicit tobacco products into PNG. It involves smuggling quantities of undeclared tobacco products, purchased either duty-free or at a cheaper price elsewhere. Once the product is in PNG, it is then sold to retailers or distributors, who then move the product through the illicit distribution channel.

While the individual amounts of smuggled product are smaller than the quantities in large-scale smuggling operations, they often involve several smugglers making multiple trips, which combine their quantities together to form larger volumes.

Redirection

Part of the illicit tobacco supply chain includes legitimate tobacco products that have been redirected from somewhere in the legitimate PNG supply chain and resold through illicit channels. Industry stakeholders have suggested this occurs at several different points in the supply and distribution channel including upon their arrival at bonded warehouses and by diverting tobacco products intended for duty-free sales. Most of these products can be considered contraband as redirection can occur prior to the payment of duty.

Another form of redirection involves redirecting seized illicit product back into the market. While newspaper reports have sometimes depicted the destruction of illicit tobacco products, there is no reported reconciliation of tobacco products seized and tobacco products destroyed. In the absence of this evidence, it is possible that some of the seized products are never actually destroyed and that some or all may illegally find its way back into the market.

Theft

Another potential source of illicit tobacco product is burglary and theft. Stolen products can then subsequently be sold through informal channels such as pop-up shops or by directly approaching consumers. As tobacco prices increase, theft of manufactured tobacco products is likely to increase if good security processes and storage are not in place.

BAT advises that all its customers have secure processes and storage to prevent losses through theft. As a result, it does not consider that theft from its own warehouses or customer warehouses is likely to be a frequent occurrence, and where it does occur it is not likely to be in quantities that could significantly impact on illicit supplies.

4.5 Purchase or sale of tobacco

Tobacco products are readily available for purchase from a range of different vendor outlets. This includes convenience stores, grocery and petromarts, cafes and street vendors.

Convenience stores and retail street vendors are the most common channels for purchasing tobacco products in PNG. Street vendors mainly operate from non-permanent stalls and are a more informal channel than modern grocery retailers like supermarkets.

The literature on consumer preferences for illicit tobacco identifies several factors that influence consumers decisions to choose illicit tobacco including:

- The price of legal tobacco relative to illicit tobacco
- Attitudes towards illicit tobacco whereby many don't see purchasing illicit tobacco as an immoral act
- Ineffective law enforcement leading to low chances of getting caught
- Strength of organised crime and corruption which make it easier to access illicit tobacco.

One unique dynamic in PNG is that many PNG tobacco users purchase sticks rather than full packs, despite this now being inconsistent with the requirements of the Tobacco Control Act. The key driver for this market dynamic is affordability as low wages often result in consumers purchasing to consume a small number of sticks when they can afford it rather than purchasing full packs requiring a greater financial outlay. Brus represents a significant portion of consumption in PNG, mostly due to it being legal to grow and available cheap or free.

The other key dynamic in the PNG market is strong brand recognition and loyalty towards locally produced tobacco products and brands. This includes cigarette brands such as Cambridge and coarse cut cigarillos such as Spear. Recognition of these brand names in PNG is so strong that customers are known to refer to 'having a Cambridge' or 'having a Spear' as a general term for having a smoke irrespective of whether they purchase these brands.

5. APPROACH TO ESTIMATING THE SIZE OF TOBACCO MARKET AND ILLICIT COMPONENT

This Chapter outlines the methodological approach we have taken to estimating the size of the tobacco market in PNG including the illicit tobacco component.

5.1 The challenge of estimating the size of illicit trade

Estimating the size of illicit markets is methodologically challenging. This is because it is a hidden activity – illicit traders do not typically record their activity, and law enforcement agencies are often reluctant to publish statistics about the extent of illicit activities. As a result, it is often necessary to estimate the size of illicit markets using a combination of methods which are likely to require reliable data, rely on assumptions and/or are not easily comparable.

The World Bank has identified five general methods ranging in technical and statistical complexity that can be used to measure the illicit tobacco trade namely:

1. Observe the producers and ask the experts for smuggling data
2. Observe smokers directly and ask them about their methods of obtaining tobacco
3. Monitor and analyse data on the export and import of tobacco
4. Compare the sale of tobacco with estimated consumption of tobacco by using household surveys
5. Compare the sale of tobacco with estimated consumption of tobacco by using a mathematical formula and economic inference.

The World Bank notes that each of these methods has its strengths and weaknesses and advises that no single method is appropriate for every country in every situation. It recommends using several methods wherever possible to cross validate estimates of illicit activity and to minimize methodological objections with the approach.⁹⁹

In determining its approach to estimating the size of the PNG tobacco market, FTI Consulting has had regard to several factors including the:

- Range of methods identified by the World Bank
- Approaches adopted by range of previous international studies including a 2013 KPMG study of illicit tobacco in PNG
- Features of the supply and demand for tobacco in PNG.

A key issue for this study has been the limited availability of reliable data to enable the various approaches identified by the World Bank. For example:

99 World Bank, Economics of Tobacco Toolkit, Tool 7 Smuggling, Understand, Measure and Combat Tobacco Smuggling, p.29-30.

- Available data on illicit tobacco seizures is limited in timeframe and does not appear to capture all the seizures that have been reported in newspapers. Further it is unclear what proportion of illicit tobacco is seized and destroyed.
- Estimating illicit tobacco based on exports and imports of tobacco is difficult because there is no available data on actual imports of tobacco products, and we were not able to obtain excise data broken down to product level (e.g. tobacco, alcohol, etc).

Addressing these data limitations may enable alternative approaches to be used in future to determine or corroborate any estimates of the tobacco market and illicit component in future. This is further discussed in Chapter 8.

We have also had regard to the KPMG study estimating the size of the PNG tobacco market and the proportion of illicit tobacco in 2013.¹⁰⁰ That study adopted a consumption model and relied upon surveys of consumers and product purchasing to obtain raw data. It also adopted a range of assumptions and indicators of illicit tobacco, including in relation to price.

5.2 Our approach to estimating the size of the PNG tobacco market

We have used *a consumption model approach* to estimate the proportion of total tobacco consumption in PNG that is represented by illicit tobacco products. The consumption model approach involves forming a view about the size of the market with reference to core data inputs about the purchase of tobacco products drawing on survey and other relevant data. A consumption model approach has been used in other studies of illicit tobacco including the 2013 PNG study undertaken by KPMG and is considered *'the best approach to measure the market.'*¹⁰¹

Our consumption model has been informed by two surveys undertaken in September/October 2018:

- *Community Perception Survey (CPS)* – focused on surveying tobacco usage and purchasing habits of more than 2000 PNG consumers
- *Vendor Turnover Survey (VTS)* – focused surveying tobacco product sales at outlets across different channels (street vendors, grocery stores, markets, trade stores, etc), brands available for sale, country of origin, pricing and sales for more than 200 vendors.

Our sampling approach was nationally representative covering PNG's four socio-cultural regions. It also included a case study focused on Vanimo and surrounds (in the West Sepik Province of Momase) which is considered a 'hot spot' for illicit tobacco given its proximity to cheaper Indonesian cigarettes.

We adopted a 50:50 split of urban and rural sampling, and further split the rural component to explore geographical gradients by distance from urban centres as follows:

- Urban – living inside town/city boundaries of the provincial capital (50 per cent)

100 KPMG 2015, op. cit., p.24.

101 *ibid.*

- Peri-urban – villages 20-40 kms outside of city/town boundaries (25 per cent)
- Rural accessible – 60 to 80 kms outside town but within easy reach of a passable road (25 per cent).

We have predominantly relied on the CPS for its major inputs to estimate the proportion of the tobacco market that is illicit and used the VTS and other data to validate the survey results. We have used external data sources such as WHO smoking prevalence data, HIES smoking prevalence and population data, United Nations population and age stratification data as well as PNG Government and industry data to translate the survey results into relevant national figures.

Given that some consumers may not be able to distinguish between legitimate and illicit tobacco products, we have used several factors to determine whether tobacco products are illicit including:

- A price point analysis – to identify products that are likely to be illicit where they are priced at a level that is insufficient to cover supply costs and taxes
- A brand analysis – to identify brands of tobacco products that are known to be illicit
- Other simplifying assumptions where price point analysis is unlikely to provide an accurate reflection of the amount of illicit product in specific markets.

Unlike the previous 2013 KPMG study, we did not conduct a Product Purchase Survey because we did not think that it was appropriate to make payments for cigarettes to obtain data.

Compared to previous studies, we have:

- Enhanced the national coverage of surveys used to gather the primary input data used to estimate the size of the PNG tobacco market
- Incorporated additional actual and verified data where previously only estimates were used.

Appendix A provides further technical detail about the approach used to estimate the size of the illicit tobacco market expressed as a proportion of total tobacco consumption, and relevant data sources and inputs.

5.3 Key assumptions to calculate illicit portion of PNG tobacco market

Estimates of the total tobacco consumed in PNG (including illicit tobacco) have been derived drawing on reported purchases of brus, coarse cut cigarillos and cigarettes across PNG as gathered through surveys undertaken in September/October 2018.

As consumers are not able to readily recognise whether they have purchased illicit products, we have made several assumptions supported by available evidence to identify the amount of tobacco products that are likely to be illicit (as set out in Table 11).

Overall, we believe that the above assumptions are likely to produce a relatively conservative estimate of the amount of illicit tobacco consumed in PNG because:

- The survey responses are likely to include a degree of under reporting, particularly of own consumption or purchase of illicit products.

- The calculation assumes that only five per cent of Cambridge purchased in Highlands is illicit, despite the survey revealing that the proportion of illicit cigarettes in other mainland regions such as Southern and Momase is much higher.
- The estimates reflect questions related to illicit tobacco purchased in the last week only because these more recent responses were likely to be more reliable. However, survey responses indicate that some people did not purchase illicit tobacco in the last week but did purchase in the last month.

Table 11: Assumptions used to determine presence of illicit product

Product	Assumption	Rationale
Brus	Illicit brus = all brus that consumers reported that had paid for (i.e. not free brus)	Under <i>Tobacco Control Act 2016</i> , all brus that is sold (and hence purchased) without being registered is prohibited. We understand that to date no one has been registered to sell brus.
Coarse cut cigarillos	Illicit coarse cut cigarillos = 0	Coarse cut cigarillos are not produced or common in neighbouring countries and are difficult to counterfeit or reproduce so we have assumed that it is all legal. It is possible that some reported consumption of coarse cut cigarillos may reflect other tobacco products with similar characteristics including brus rolled in newspaper.
Cigarettes – general assumption	Illicit = all cigarette sticks bought for K0.90 or less	<p>K1.00 per stick is the recommended retail price for all BAT products across PNG except as indicated below.</p> <p>K0.70 per stick represents an estimate of likely total tax per stick.</p> <p>K0.20 per stick is an assumption about the costs of production, manufacturing, distribution and margin for all other products.</p>
Exception – Cambridge	Illicit Cambridge = all Cambridge cigarette sticks bought for K1.00 or less (except in Highlands)	K1.20 per stick is the recommended retail price for all Cambridge except in Highlands where it is recommended to sell for K1.00 per stick.
Exception – Cambridge in Highlands	Illicit Cambridge in Highlands = 5% of Cambridge cigarette sticks bought for K1.00 or less	<p>K1.00 per stick is the recommended retail price for Cambridge in Highlands.</p> <p>We have assumed that 5% of Cambridge bought for K1.00 or less per stick is illicit based on consumer responses regarding packaging and suspected price matching.</p>
Certain brands are illicit in PNG	Illicit brands include: Double Happiness, GD, Reef, Dunhill, Chesterfield, Surya, Kansas Green, LA.	These brands typically do not comply with PNG packaging laws (including pack size and health warnings) and hence cannot be sold legally in PNG.

Any brus that is purchased is illicit

PNG tobacco smokers reported that they purchased brus, which is a home-grown raw tobacco leaf that is processed in whole-leaf bundles, chopped in bags, or pre-rolled in newspapers. Brus is legal if it is grown for own consumption or given away. However, the sale of brus is not permitted unless the vendor is registered under the *Tobacco Control Act 2016*. We understand that to date no one has been registered to sell brus. As a result, we treated brus as ‘legal’ where it was grown for personal use or given to family and friends, and ‘illicit’ where it consumers reported that they had paid for it.

Including an estimate of the amount of brus that is purchased by consumers has significant impact on the estimate of the proportion of illicit tobacco in the market. For example, the previous 2013 KPMG study identified that brus accounted for 58 per cent of total tobacco consumption in PNG. However, the KPMG study did not reflect any of this amount in estimate of illicit tobacco.¹⁰²

Any cigarettes purchased for less than recommended retail price is likely to be illicit

The recommended retail price for BAT products across all PNG regions is K1.00 per stick when calculated on a per stick basis.¹⁰³ The exception to this is Cambridge – which has a recommended retail price of K1.20 when calculated on a per stick basis except in Highlands as discussed below. We have assumed that any Cambridge that sells at K1.00 per stick or below is illicit except in Highlands.

To verify this assumption, we used available information about the total costs associated with a cigarette stick (i.e. production, manufacturing, retailing and excises, duties and taxes) to determine the likely price of a legal cigarette stick. We assumed that all cigarettes purchased:

- At below K0.70 per stick are deemed to be illicit – industry information suggests that the current value of excises, duties and taxes applying to legal tobacco sales is around K0.70 per stick. It is impossible to retail cigarettes at under K0.70 per stick because it would not be enough to cover the taxes let alone production, distribution and retail costs. Hence any tobacco selling for less than this amount is considered illicit.¹⁰⁴
- Between K0.70 and K0.90 per stick are also likely to be illicit – the difference between K0.70 and K0.90 per stick represents the reasonable costs associated with production, manufacture and distribution of tobacco (assumed to be K0.20 per stick).¹⁰⁵ As a result, we believe that any tobacco selling for K0.90 per stick or less is likely to be illicit.

102 KPMG 2015, op. cit., p.6.

103 We refer to stick prices because the survey indicates that most PNG consumers purchase cigarette sticks rather than packs. All prices are based on pack price for stick comparison.

104 Note that after the survey was undertaken, the PNG Government announced in the 2019 PNG Budget that it would introduce a new second tier excise for Factory Made Cigarettes (FMC). This new tier is set at half of the existing rate for current FMC excise. In January 2019, BAT rebased Rothmans pricing and launched this brand at K0.70 per stick.

105 McFaddeb, M. J. 2016, *How high are the manufacturing costs of a single cigarette*, 10 September, Quora: estimates that manufacturing and transportation of cigarettes costs around six US cents per cigarette.

The competitive market for tobacco in Highlands

The Highlands tobacco market is highly competitive, and as a result the recommended retail price of Cambridge cigarettes when calculated on a per stick basis is K1.00 in Highlands compared to K1.20 in other PNG regions.

We are aware of observed reports of price matching of genuine and illicit product in Highlands. In 2016, complaints were recorded by consumers alleging counterfeit Cambridge was being offered for sale at the same price as genuine Cambridge.

Most survey respondents consumed Cambridge cigarettes in Highlands, and almost all was purchased at K1.00 per stick. Our survey field reports indicated that consumers, including in Highlands, noted the poor taste of some of the Cambridge products purchased. Poor taste is usually a sign of illicit product.

There is no reason to believe that there would be no counterfeit cigarettes in Highlands given the high rates of illicit cigarettes in other PNG regions. As a result, the survey results may support the contention that there may be price matching between genuine and illicit product. That is, the price of illicit or counterfeit product appears to be set at the same price as genuine Cambridge product at K1.00 per stick (only a handful of responses sit outside this range).

If the price is matched for genuine and illicit product, it is reasonable to expect that at least some portion of the consumption of product priced at K1.00 or less per stick will be illicit. We have adopted a conservative assumption that 5 per cent of the total Cambridge product purchased by consumers is illicit. We expect that accessibility and logistics in transporting illicit products to Highlands may be more challenging given that there is only one road into and out of the area and no seaports. Therefore, a lower rate of illicit product compared to other PNG regions is likely to be a reasonable but conservative assumption.

Coarse cut cigarillos are difficult to counterfeit

Coarse cut cigarillos are manufactured domestically and exclusively for the PNG market. As a result, it is considered a unique product that is unlikely to be replicated or counterfeited.

We have taken a conservative position and assumed that that all reported consumption of coarse cut cigarillos is genuine. This is supported by the following:

- The proportion of customers saying they are aware of counterfeits and had even tried counterfeit coarse cut cigarillos or other stick products in the past is low compared to cigarettes – except in Southern and Vanimo (in the Momase region) where consumers indicated that they are aware of counterfeit coarse cut cigarillos or other stick products and have previously tried counterfeits.
- Neither BAT nor the field surveyors for this study observed any counterfeit coarse cut cigarillos or other stick like products for sale in the market.
- The CPS survey suggests that coarse cut cigarillos are typically selling for around K1.00 per stick which appears to be the typical floor price, with consumers in Islands and Vanimo (in the Momase region) often paying more for coarse cut cigarillos – K1.20 and K1.50 per stick respectively.

While we believe that the illicit manufacture and sale of coarse cut cigarillos is unlikely, there remains a possibility that customers may be asking for and purchasing what they believe to be coarse cut cigarillos but may in fact be purchasing brus. This is because both manufactured coarse cut cigarillos and brus are often sold individually rolled in newspaper print. As a result, customers may find it very difficult to distinguish the difference between the two tobacco products until it is consumed.

Some specific brands are known to be illicit

There are several brands circulating in PNG that do not meet PNG packaging laws and hence cannot be sold legally in PNG. This includes the following brands identified in our surveys: Double Happiness, Chesterfield, Dunhill, GD, Kansas Green, LA, Reef and Surya. As a result, we included all quantities of these cigarettes brands that survey respondents reported that they had purchased in our estimate of illicit manufactured cigarettes.

6. SIZE OF THE TOBACCO MARKET AND ILLICIT COMPONENT

This Chapter presents our estimate of the size of the PNG tobacco market and the proportion of illicit tobacco and provides a summary of the results of two key surveys undertaken to inform our estimation process.

6.1 Overview of survey results

It is important to recognise that the survey results represent the respondents' views about their purchasing and sales rather than necessarily actual behavior. The survey results reveal:

- what consumers *have reported* they have purchased – it is well accepted that consumers often understate their reported consumption when responding to surveys. We have sought to minimise the extent of under reporting by focusing questions on purchasing habits rather than consumption. However, the possibility of some under reporting remains.
- what consumers *think* they have purchased – it can be difficult for consumers to distinguish between what may constitute a genuine versus an illicit tobacco product, both on a pack basis but more particularly on a per stick basis. It is possible that consumers may have unknowingly purchased illicit tobacco believing it to be a genuine product.

For this reason, the CPS survey findings may not be consistent with observations of what is *'displayed or available for sale'* or *'what is actually sold'*. Further vendors may be reluctant to accurately report what is sold particularly if they have substituted illicit products for genuine products in some way. It is possible also that vendors may not know that they are selling illicit products as genuine products if the substitution has occurred earlier in the distribution chain.

Survey respondents reported that:

- Around 50.64 per cent purchased cigarettes, 41.71 per cent used brus and the remaining 7.65 per cent purchased coarse cut cigarillos.
- There is significant variability across the regions in terms of the range of cigarettes that they had purchased, the amount purchased, and the price paid.
- The clear majority purchased cigarettes as sticks (92.26 per cent) rather than packs (despite new regulations taking effect which prohibit the sale of cigarettes in anything less than a 25-stick pack).
- Most regions reported purchasing domestically manufactured cigarettes (90-99 per cent, except in Vanimo) and favoured the Cambridge brand (around 97.96 per cent in Momase, 89.90 per cent Highlands, 70.56 per cent in Southern, 45.71 per cent in Islands).
- Almost all paid K1.00 or K1.20 per stick (97.31 per cent) except in Highlands where all consumers paid K1.00 per stick.
- A very small proportion (1.75 per cent) paid less than K1.00 per stick for cigarettes.

The results for Vanimo – a known 'hot spot' of illicit trade in Momase near the Indonesian border – provide a stark contrast to the PNG regional results. Cambridge was purchased only

1.53 per cent of the time, and more than 95 per cent of cigarettes were purchased at K0.50 per stick or less.

The high-level regional results summarised above suggest a few dynamics may be at play:

- Most cigarette consumers are unlikely to be able to distinguish between genuine and illicit products as the differences between the two types of products are very minor, even on a pack basis.
- Most consumers are even less likely to know whether they are purchasing genuine product because they have purchased cigarettes on a stick rather than a pack basis.
- There appears to be strong preference or brand loyalty for domestically produced tobacco products, and more specifically Cambridge, throughout most PNG regions.
- Vendors may be pricing illicit manufactured cigarettes at or near the genuine price for domestically produced products for two reasons: to maximise profits rather than sales and to avoid any suspicion (by both consumers and enforcement agencies) that the products that are being sold are not genuine.
- While there are often a wide variety of packs of cigarettes available for sale (including known illicit brands or cigarettes at significantly lower prices than domestically produced cigarettes), consumers did not often report purchasing those brands or at those prices (except in Vanimo).

These factors taken together suggest that one possibility is that illicit cigarette sticks may be being substituted into open genuine packs and sold as other brands. Consumers may be unknowingly purchasing illicit cigarettes but paying almost the same price as genuine products.

The consequence of this is that PNG Government may be losing a significant amount of revenue because of not collecting the excises, duties and taxes associated with these sales. Further, manufacturers of legal tobacco products may be losing market share and revenue despite consumers preferring or seeking to purchase their products.¹⁰⁶ Further, consumers may not be getting what they have paid for in many cases.

The remainder of this section identifies some of the differences in the survey results for cigarettes, coarse cut cigarillos and brus respectively.

Cigarettes

PNG consumers reported that cigarettes accounted for 50.64 per cent of their total tobacco consumption.¹⁰⁷ The clear majority of respondents (92.26 per cent) purchased cigarettes in sticks rather than packs despite tobacco laws prohibiting the sale of cigarettes in anything other than a 25-stick pack.

106 BAT's last price increase was in 2014 when the PNG Government increased excise by 25 per cent. Since then, BAT has not increased its prices and has chosen to absorb all excise increases. BAT advises that its volume fell below one billion sticks in 2016.

107 Calculated by weighting the survey number of respondents, then applying regional weightings to get national figures.

Across PNG, consumers purchased a broad range of cigarettes, although the range of cigarettes available and purchased by consumers varies across the regions (see Table 12). Consumers reported that they purchased 18 different brands of cigarettes. Southern was the region that consumers reported purchasing the greatest range of brands – a total of 14 brands, compared to eight in Islands, seven in Momase and four in Highlands.

However, Cambridge dominates reported purchases in all regions by far and accounts for almost 92 per cent of reported cigarette consumption in PNG. All other brands except Pall Mall Green and Pall Mall Red accounted for less than one per cent each of PNG consumers’ reported purchases.

Table 12: Proportion of cigarette brands purchased in PNG regions (%)

Brands	Southern	Momase	Highlands	Islands	% of total cigarette consumption ^a
Cambridge	70.56	97.96	98.90	45.71	93.57
Pall Mall Green	10.72	0.56	0.64	15.32	2.31
Pall Mall Red	1.54	0.36	-	37.32	1.88
Rothmans	6.07	0.94	-	-	0.89
Benson & Hedges	2.29	0.09	0.16	0.95	0.35
Brus Cigarettes	0.10	-	0.30	-	0.20
Rave	2.50	-	-	-	0.19
Golden Bridge	1.73	-	-	0.32	0.15
Deal	1.33	-	-	-	0.12
Double Happiness	0.87	-	-	0.19	0.12
Not specified	0.95	-	-	-	0.08
Reef	0.95	-	-	-	0.02
Pall Mall Blue	0.01	0.04	-	0.16	0.02
GD	0.24	-	-	-	0.02
Winfield	0.13	-	-	-	0.02
Marlboro	-	0.04	-	-	0.01
LA	-	-	-	0.03	0.00
TOTAL %	100.00	100.0	100.00	100.00	100.00

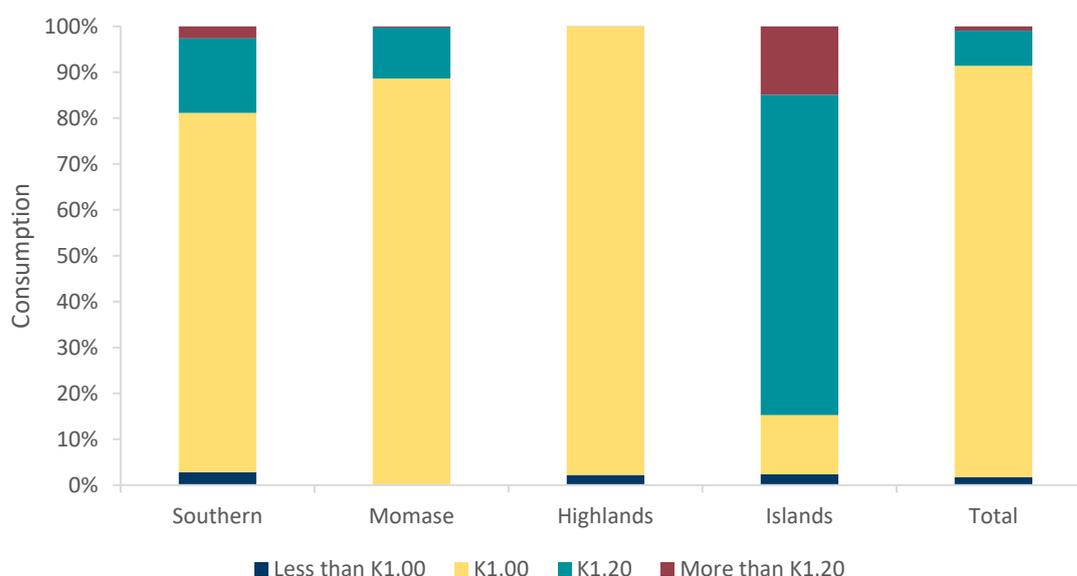
Source: FTI Consulting survey results.

a National average reflects the weighted average of the four PNG regions, and does not include Vanimo.

In addition to the brands that survey respondents identified above, field surveyors also noted the availability of an additional brand in Momase known as Voss. Vendors also indicated that they supplied two other brands: iScore in Islands (a Thai brand of cigarettes) and Chesterfield in Vanimo but consumers responding to our survey did not report that they had purchased these brands.

The price that consumers reported they paid for cigarette sticks centres around K1.00 to K1.20 per stick across all the regions (see Figure 12). On the mainland, consumers reported paying K1.00 per stick for most cigarette sticks with K1.20 per stick the next most dominant price point. However, Islands consumers reported paying K1.20 per stick as the dominant price and prices paid ranged from K0.80 to K1.50 per stick.

Figure 12: Distribution of prices paid for cigarettes per stick (%)



Source: FTI Consulting survey results.

a National average reflects the weighted average of the four PNG regions, and does not include Vanimo.

Table 13 presents information from the survey about the extent to which respondents were aware of and/or had tried counterfeit cigarette or tobacco products in PNG. It does not reflect any amounts that they may have purchased.

Around 60 per cent of respondents reported that they were aware of counterfeit cigarettes or tobacco products, and 42 per cent advised that they had even tried counterfeit cigarettes or tobacco products. There was significant variation in responses across the regions as shown below. These results reaffirm that illicit cigarettes exist across the country.

Table 13: Awareness and trying illicit cigarettes (%)

	Southern	Momase	Highlands	Islands	National average
Aware of fake cigarettes	78.67	55.63	42.02	63.21	59.88
Tried fake cigarettes	56.89	46.13	25.49	42.45	42.74

Source: FTI Consulting survey results.

Coarse cut cigarillos

Coarse cut cigarillos are rolled machine-made coarse cut tobacco products that are shorter and narrower than traditional cigars but longer than cigarettes. They are manufactured exclusively for the PNG market and marketed under the brand name ‘Spear’.

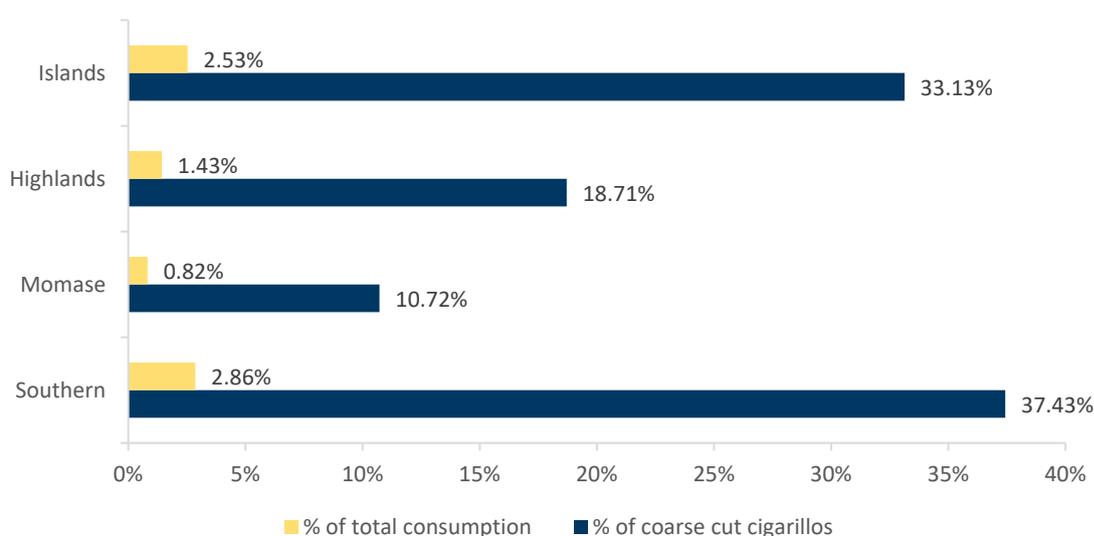
Spear is considered a unique product that goes through a complex manufacturing process, has a unique taste and is rolled in newsprint. Coarse cut cigarillos are not known to be sold in neighbouring countries. For these reasons, it is considered unlikely that illicit coarse cut cigarillos are being sold in PNG.

There is generally strong recognition of the ‘Spear’ brand and it is not unusual for PNG tobacco consumers to use the term ‘having a Spear’ to refer generally to the act of smoking, irrespective of whether it is in fact Spear that is being consumed. As a result, it is possible that consumer responses to our survey questions may potentially signal more than just consumption of tobacco products in the category of coarse cut cigarillos.

A further important feature of Spear is that it is presented in newsprint – similar to how brus is often sold. As a result, there is a possibility that consumers at the time of purchase may not easily recognise the difference between a coarse cut cigarillo and a brus roll sold in newsprint. This could influence consumer responses about their awareness of illicit coarse cut cigarillos in the market and the reported number of coarse cut cigarillos purchased.

In 2017, a new coarse cut cigarillo product known as ‘Spear long’ was introduced into the PNG market. This coarse cut cigarillo is longer than the original product and is known to sometimes be sold and consumed as a half stick or smaller. However, our survey did not collect information from consumers about whether they purchased original or long sticks, nor whether they purchased full sticks or half sticks. It is possible that the reported number of coarse cut cigarillos purchased may in fact represent some purchases of less than a full cigarillo stick.

Figure 13: Proportion of coarse cut cigarillos purchased by region (%)



Source: FTI Consulting survey results.

Based on survey responses, we estimate that coarse cut cigarillos accounted for around 7.65 per cent of reported tobacco purchases in PNG. The survey revealed that regions of Southern and Islands accounted for most of the purchases of coarse cut cigarillos (37.43 and 33.13 per cent respectively), with Highlands and Momase consumers reportedly purchasing only 18.71 and 10.72 per cent of the total reported purchases of coarse cut cigarillos (see Figure 13).

Coarse cut cigarillos in PNG typically sell for between K1.00 and K1.20 per stick. Once products leave the wholesalers and sub wholesalers, retailers and vendors have greater freedom to decide at what price point they will sell their products. It is unlikely that vendors would sell tobacco sticks without recovering any sort of margin and would make a loss if they priced sticks at less than supply costs and applicable taxes.

Table 14 reveals that:

- Vendors reported that they typically sold coarse cut cigarillos for around K1.00 or K1.20 per stick, particularly on the mainland. Except for Highlands consumers, and vendors in Southern – K1.00 per stick is the typical floor price reported by consumers. Consumers in Islands often reported paying K1.20 per cigarillos stick. Consumers in Vanimo reported paying up to K1.50 per stick. It is possible that this reflects a different type of tobacco product since vendors indicated that they did not sell coarse cut cigarillos in Vanimo.
- Consumers reported that they were aware of counterfeits and had even tried counterfeit coarse cut cigarillos in the past. However, the proportion of consumers saying so was low compared to cigarettes – except in Southern and Vanimo where consumers indicated that they were more aware of counterfeit coarse cut cigarillos and had previously tried counterfeits.
- Neither the field surveyors nor BAT observed any counterfeit coarse cut cigarillos or other stick like products. An alternative cigarette brand called Rave is similar in some respects to coarse cut cigarillos as it is considered to have a similar taste and is a similar low burning product. It is possible that PNG consumers believe that this is a counterfeit version of coarse cut cigarillos or alternatively that brus rolls wrapped in newsprint are also being sold as coarse cut cigarillos.

Table 14: Coarse cut cigarillo purchase price, sale price and awareness

	CPS price range	Majority purchase	VTS price range	Majority sold	Aware of fakes	Tried fakes
Southern	K1.00-2.00	65.24% at K1.00	K0.50-1.50	39.44% at K1.00	44.66%	33.50%
Momase	K1.00-1.30	80.27% at K1.00	K1.00-1.50	64.72% at K1.20	12.00%	2.00%
Islands	K1.00-1.50	52.05% at K1.20	K1.00-1.50	59.92% at K1.20	9.42%	6.81%
Highlands	K0.50-2.00	96.82% at K1.00	K1.00	100% at K1.00	0.00%	2.56%
Vanimo	K1.00-1.50	72.53% at K1.50	0	0	33.33%	33.33%

Source: FTI Consulting survey results.

These results reflect consumer responses to questions about whether they purchase ‘Spear’ which is the only coarse cut cigarillo product selling legally in PNG.

Most PNG consumers on the mainland indicated that they purchased coarse cut cigarillos at K1.00 per stick. By comparison, most consumers reported that they paid more for coarse cut cigarillos in Islands (K1.20 per stick) and in Vanimo (K1.50 per stick).

Consumers reported purchasing coarse cut cigarillos between K1.00 to K1.50 per stick except in Highlands where the range was from K0.50 to K2.00 per stick. It is likely that purchases of coarse cut cigarillos at K0.50 per stick reflect either purchases of less than a whole stick given the size of individual cigarillos or reflect the sale of brus rolls which may look similar to cigarillos when wrapped in newsprint.

Vendors reported that they sold coarse cut cigarillos at either K1.00 or K1.20 per stick. Vendors in Vanimo reported that they did not sell any coarse cut cigarillos despite consumers saying that they purchased coarse cut cigarillos mostly at K1.50 per stick. Information from BAT indicates that it does not typically sell coarse cut cigarillos in Vanimo. The only possible explanations for these results may be that either coarse cut cigarillos are being re-sold in Vanimo from other areas and consumers may be purchasing other illicit cigarette brands that have similar characteristics.

Brus

Our consumer survey responses indicate that brus accounted for 41.71 per cent of total tobacco purchases in PNG. This includes both brus that is grown and used for personal use (legal) as well as brus that is purchased (illicit).

Consumers reported that the proportion of brus that they had purchased (as distinct from growing or obtaining freely) ranged between 87 per cent and 99 per cent in the regions (see Table 15). By comparison, Vanimo consumers indicated that all their brus was purchased.

The very high rate of illicit consumption of brus reflects the fact that it is readily available particularly in less urban areas of PNG and is significantly cheaper than cigarettes.

Table 15: Proportion of total brus that is illicit ^a

PNG regions	Total brus	Illicit brus ^b	% of brus that is illicit
Southern	52 704 479	52 015 004	98.69
Momase	611 847 937	605 868 585	99.02
Islands	297 100 576	263 496 929	88.69
Highlands	976 279 020	856 853 741	87.77
National	1 937 932 012	1 778 234 260	91.76

Source: FTI Consulting survey results.

a Estimate of total brus is based on reported weekly purchases, weighted by gender, smoking prevalence and population to obtain yearly results for each region. We assumed all types of brus translate 1:1 to ‘rolls’ and are equivalent to a cigarette stick.

b Illicit brus reflects all brus that is reported as having been purchased rather than grown for personal use.

Table 16 provides information about how survey respondents purchased brus. Across PNG, most consumers reported purchasing their brus either in newspaper rolls (43.81 per cent) or single leaf (37.92 per cent). Again, there was significant variation across the regions with

consumers in Islands indicating that they purchased their brus in single leaf form 79.05 per cent of the time compared to 9 per cent for Momase consumers.

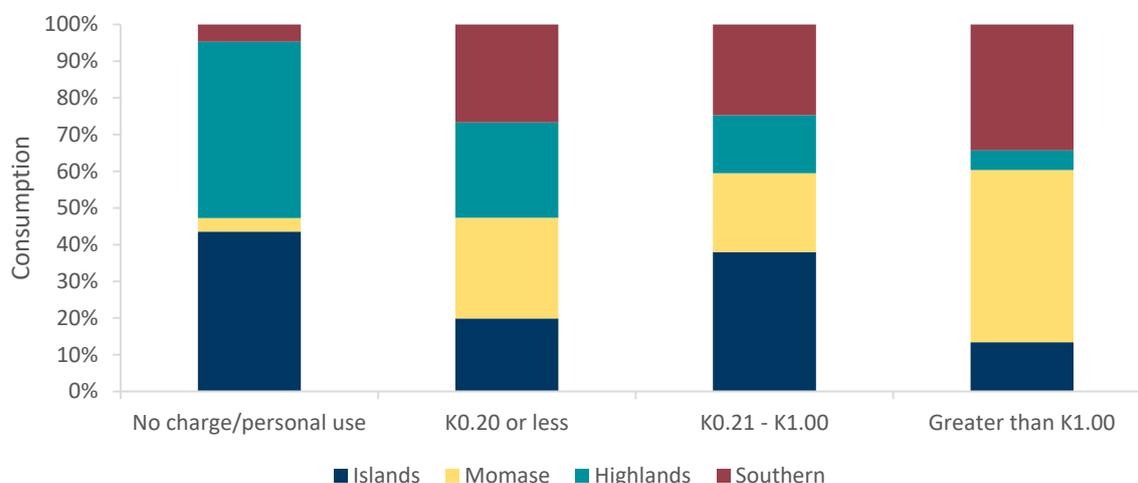
Table 16: How brus is purchased by region (%)

PNG regions	Brus Packet	Cigar Type Rolls	Leaf Bundles	Newspaper Rolls	Packed Brus	Plastic Bag	Single Leaf
Southern	10.47	1.16	12.79	20.93	12.79	1.16	36.05
Momase	0	-	23.00	68.00	-	-	9.00
Islands	0	0.4	17.39	3.16	-	-	79.05
Highlands	0	-	9.47	69.14	-	-	21.4
Vanimo	0.00	0.74	8.09	35.29	-	-	55.88

Source: FTI Consulting survey results.

Across most of the regions, consumers reported paying K0.20 or less per roll of brus (Figure 14).¹⁰⁸ While brus is purchased in different ways (bundles, single leaf etc.) – for simplicity we assumed all types of brus translate 1:1 to ‘rolls’ and are equivalent to a cigarette stick. The fact that brus is cheap and widely available means that it is a very attractive alternative to cigarettes. However, it is difficult to compare the prices paid for brus as it is not a homogenous product and is difficult to assess the extent to a similar size or quantity of product is being purchased.

Figure 14: Proportion of respondents purchasing brus rolls at various price points by region (%)



Source: FTI Consulting survey results.

108 The price paid for brus is determined by dividing the question of ‘how much did you pay for the brus you bought in the last week’ by ‘how many rolls of brus did you smoke in the last week’.

6.2 Estimates of size of PNG tobacco market

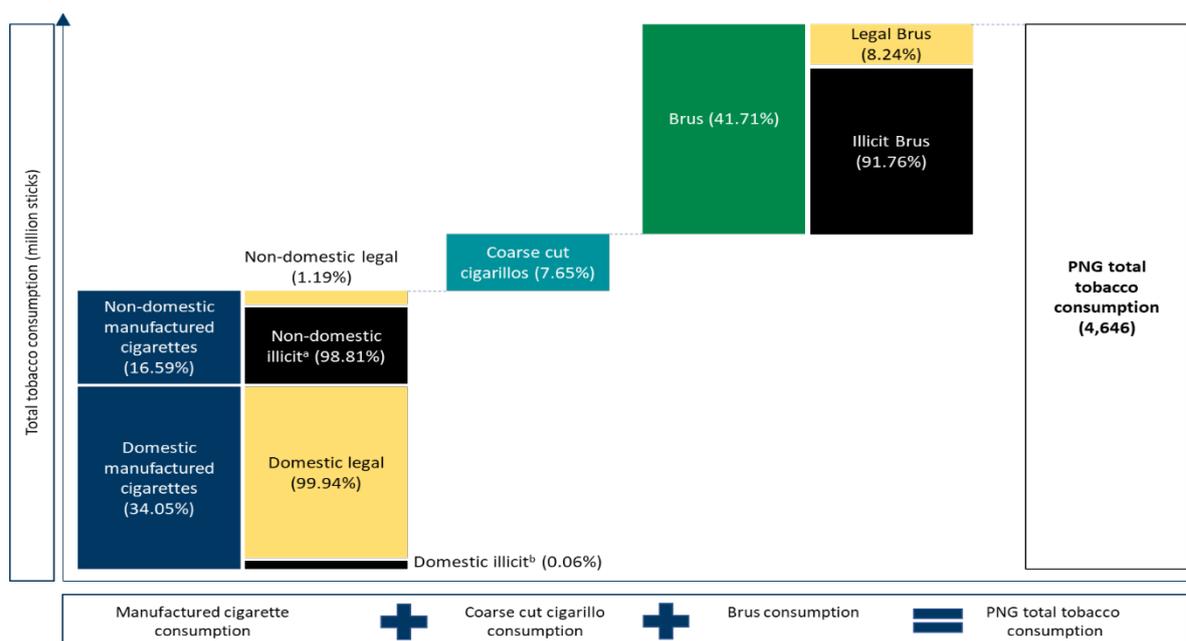
As noted in Chapter 5, we adopted a *consumption model approach* to estimate the proportion of total tobacco consumption in PNG that is represented by illicit tobacco products. Figure 15 and Table 17 summarise our overall results estimating the total amount of tobacco consumed in 2018 across each category – cigarettes, coarse cut cigarillos and brus – in cigarette stick equivalent units.

Based on our survey results, we estimate that the overall level of tobacco consumption in PNG was approximately 4.65 billion sticks in 2018. Cigarettes accounted for more than 50 per cent of total consumption, followed by brus (almost 42 per cent) and then coarse cut cigarillos (almost 8 per cent).

We further estimate that around 55 per cent (around 2.54 billion sticks) of total tobacco consumption is illicit product. This is made up of cigarettes and brus:

- 32.41 per cent of all cigarettes purchased are illicit.
- 91.76 per cent of all brus consumed is purchased (illicit) rather than grown for personal use (legal).

Figure 15: Estimated total legal and illicit tobacco consumption by category (million sticks)



Source: FTI Consulting.

a Non-domestic illicit comprises all Cambridge product determined to be counterfeit, plus illicit brands and non-domestic brands sold below K0.90 per stick.

b Domestic illicit comprises domestic brands sold at K0.90 per stick or less in September/October 2018 other than Cambridge.

We do not believe that there is definitive evidence of illicit coarse cut cigarillos in PNG. This is consistent with the findings of the previous KPMG study of illicit tobacco in PNG. However, it is

possible that consumers may be reporting purchases of coarse cut cigarillos which reflect less than a whole cigarillo stick, similar tasting cigarettes or brus rolls wrapped in similar newsprint.

Table 17: Proportion of total tobacco consumption by tobacco product

Product	% of total tobacco consumption		% of tobacco product category	
	Legal	Illicit	Legal	Illicit
Cigarettes	34.22	16.42	67.56	32.41
Coarse cut cigarillos	7.65	0	100	0
Brus	3.44	38.27	8.24	91.76

Source: FTI Consulting survey results. Total tobacco consumption is estimated to be 4.646 billion cigarette equivalent units.

Table 18 indicates that the estimated proportion of illicit cigarettes varies significantly across the regions:

- The estimates for the mainland regions of Southern and Momase show high rates of illicit tobacco of around 57.74 per cent and 86.11 per cent respectively
- The results for the Highlands and the Islands regions are much more modest at around 7.08 per cent and 11.03 per cent respectively.

Table 18: Proportion of total tobacco consumption that is illicit product by region (%)

Type	Southern	Highlands	Momase	Islands	National
Cigarettes	57.74	7.08	86.11	11.03	32.41
Coarse cut cigarillos	0.00	0.00	0.00	0.00	0.00
Brus	98.69	87.77	99.02	87.77	91.76
TOTAL	44.62	38.87	89.81	53.57	54.69

Source: FTI Consulting survey results.

Note: These figures are multiplied by the smoking population of PNG to determine annual national consumption. Refer to Appendix A.

The relatively low rate of illicit cigarettes in the Islands region may reflect the additional logistics associated with transporting illicit cigarettes from international locations. These international sources of illicit cigarettes are likely to enter PNG via major seaports, airports and at locations across the border between Indonesia and PNG. It would then be necessary for those illicit supplies to be trans shipped to Island ports, or otherwise smuggled in small quantities – rather than large quantities by road.

It is possible that the Highlands results above may be understated by the assumption that only five per cent of all Cambridge cigarettes consumed at K1.00 or under may be illicit.

6.3 Vanimo case study

Previous studies examining illicit tobacco in PNG have identified that a very high proportion of cigarettes selling in Vanimo are illicit and that Indonesia appears to be the major source country for these illicit cigarettes.¹⁰⁹

As part of this study, we surveyed Vanimo and surrounding areas in the West Sepik province of Momase on the basis that it has long been considered an illicit tobacco ‘hot spot’. Given its proximity to the Indonesian border, tobacco products can often be purchased for around 20 per cent of the price in PNG.

Our results suggest that, in contrast to the other regional results, almost all the reported consumption of tobacco products in Vanimo is illicit:

- More than 98 per cent of cigarettes are illicit.
- All the brus consumed in Vanimo is purchased and hence is illicit.

These results reaffirm Vanimo’s status as a PNG hot spot of illicit tobacco.

As Table 19 indicates, Vanimo smokers surveyed reported that they purchased six different brands of cigarettes. Unlike other regions, Cambridge was purchased only 1.5 per cent of the time. The most popular brands purchased by Vanimo smokers were Dunhill (50 per cent) and Marlboro (46 per cent).

Table 19: Price distribution of cigarettes in Vanimo (Kina per stick)

Brand	K0.50	K0.60	K1.00	K1.20	K1.40	K1.50	Total
Cambridge	0	0	11.37	45.22	36.18	7.24	1.53
Pall Mall Green	0	0	100	0	0	0	0.55
Marlboro	100	0	0	0	0	0	46.19
Reef	100	0	0	0	0	0	0.25
Dunhill	95.47	4.53	0	0	0	0	50.13
Surya	100	0	0	0	0	0	1.35
TOTAL	95.65	2.27	0.73	0.69	0.55	0.11	100

Source: FTI Consulting survey results.

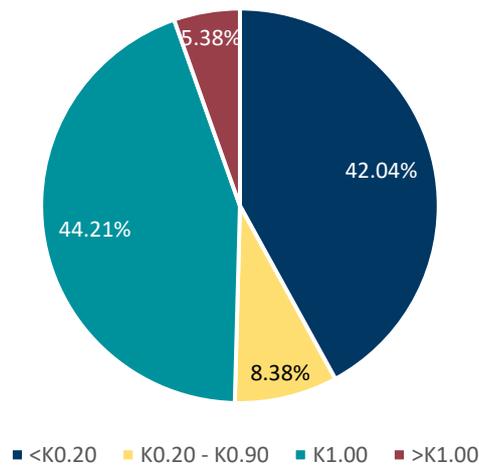
The other striking feature of the Vanimo market is the low price of cigarettes – consumers reportedly purchased more than 95 per cent of the cigarettes at K0.50 per stick or less. As noted previously, this price is not enough to cover even the costs of the excises, duties and taxes payable on cigarettes and is a sure sign that these products are all illicit.

109 KPMG 2015, op. cit., p.38.

In Vanimo, vendors indicated that they did not sell coarse cut cigarillos at all, but consumers indicated that they were buying them for between K1.00 and K1.50 per stick. BAT advised that it does not typically sell coarse cut cigarillos in Vanimo. As a result, it is likely that these products are either being re-sold in Vanimo from other areas or consumers may be purchasing other illicit cigarette brands that have similar characteristics to coarse cut cigarillos.

Figure 16 shows that 42 per cent of Vanimo consumers reported that they typically purchased brus for K0.20 per newspaper roll. However, it is difficult to compare the prices paid for brus rolls as they are not necessarily a homogenous product.

Figure 16: Price of brus rolls in Vanimo (Kina per roll)



Source: FTI Consulting.

In the field, surveyors observed that domestically produced cigarette brands were generally only available in the town major shops. However, most people reported that they preferred to smoke the Indonesian cigarette brands and locally grown brus on the basis that it was affordable.

The survey evidence suggests that illicit tobacco is so dominant and entrenched in Vanimo that smokers and traders do not appear to consider that Indonesian or other cigarettes are counterfeit. Unlike the PNG regions, less than 10 per cent of consumers in Vanimo indicated that they were aware of counterfeit cigarettes or had tried them. Vendors also seemed to not recognise Indonesian smoke brands as counterfeit – instead surveyors reported that vendors appeared to regard them as their normal everyday smoke which is not counterfeit.

The vendor survey reported that 12.14 million cigarette sticks sold by the 48 vendors were all sold for less than K0.70 per stick, with over 99 per cent sold at K0.50 per stick or less. Given that K0.70 per stick is the estimated value of excise and other taxes on a cigarette stick, this means that all the vendor sales at these outlets were illicit.

Several factors are likely to be contributing to such high rates of illicit cigarettes in Vanimo:

- The porous border between PNG and Indonesia, including multiple entry points and modes of transiting illicit tobacco
- The ineffective detection and enforcement of imported tobacco entering the country without paying required excise, duties and taxes
- The lack of awareness or understanding amongst consumers and vendors about which products are illicit and which are genuine.

This underscores the importance of ensuring that there are effective arrangements at border check points and other locations along the shared border with Indonesia.

7. ECONOMIC IMPACTS OF ILLICIT TOBACCO

This Chapter presents the results of our analysis of the economic impacts of illicit tobacco on the PNG economy. It describes the model and approach used to quantify the:

- Direct impacts, which are losses to the PNG economy arising from of illicit tobacco activities which are mainly in the form of taxes that should have been paid to the PNG Government.
- Indirect impacts or flow on effects of illicit tobacco activities to the other sectors of the economy and overall macroeconomy.

The results presented here do not include the impacts of illicit cigarettes on the broader social, health and community. While these are discussed in international literature, we were unable to obtain enough reliable data and information in a PNG context to quantify these broader impacts.

7.1 Approach to estimating economy-wide impacts

Our analysis has focused on estimating the economic impact of illicit cigarettes only, since brus is part of the subsistence economy and not currently subject to any form of PNG Government taxes.

Modelling results are presented under three main headings: macroeconomic impacts, regional impacts and impacts on government tax revenues. The national results include each of the key macroeconomic variables including Gross Domestic Product (GDP), total output, total employment and national welfare. The regional impacts comprise impacts on Gross Regional Product (GRP) and regional employment.

The process of estimating the economic impacts is undertaken in two phases:

- The first phase is the base run (or reference simulation) which represents the business-as-usual case where the economy follows its normal growth path. This scenario takes account of the important developments in the economy which have occurred in the past as well as expected future developments, particularly changes in commodity prices.
- The next phase in the analysis is the policy run where an exogenous shock is imposed on the model. In this case the policy shock is a reduction in the size of the formal tobacco sector because of activities in the illicit tobacco market, which causes the economy to adjust to a new equilibrium. The model then computes deviations of the endogenous variables following this shock from their values in the base run.

For simplicity, rather than presenting a series of annual results, we have presented the results over three distinct time periods spanning ten years – 2019, 2023 and 2028.

7.2 Description of the PNGGEM-Regional model

The model that we have used to estimate the economic impact of illicit tobacco in PNG belongs to the class of models known as computable general equilibrium (CGE) models. Unlike partial equilibrium models that only analyse a single sector of the economy at a time, CGE models can account for all sectors simultaneously. They can also account for the labour market, the capital market, the foreign exchange market, the government, households and producers.¹¹⁰

A CGE model also captures the interdependencies and linkages between different parts of the economy. For a given policy (or scenario), or combination of policies, a CGE model provides economic estimates of not only the immediate impacts, but also the flow on impacts into the rest of the economy (i.e., the economy-wide impacts). Given that a real economy is a complex system, several simplifying assumptions are made to facilitate the model solution. The key ones are that producers choose their inputs to maximise their profits (or minimise costs), while consumers make purchases to maximise their utility.

The specific CGE model used in this study was the PNGGEM-Regional model.¹¹¹ The PNGGEM-Regional model provides an initial map of the economy which assumes that all markets are in equilibrium. A given scenario is then imposed on this initial map, and the model calculates its impact on the economy. The model solution produces impacts on a range of macroeconomic variables such as GDP or GRP, total employment, household welfare and total output. It is also able to produce impacts at the sectoral level and disaggregate government revenue results into the various tax components.

The PNGGEM-Regional model has 43 domestic industries producing 38 commodities and includes:

- Six labour classifications: urban skilled, urban semi-skilled, urban unskilled, rural skilled, rural semi-skilled and rural unskilled.
- The agricultural sector has been disaggregated into smallholder and plantation subsectors for each of PNG's main export crops, namely coffee, cocoa, palm oil and copra.
- Other sectors include forestry, mining, oil and gas, manufacturing (including timber and food processing), and services, including transportation, hotels, restaurants, commerce, and government administration and national defence.
- A separately identifiable beverages and tobacco sector.

The model consists of various equations to describe the purchasing decisions of industries, investors, a single representative household, the government sector and the external (trade) sector. It is assumed that firms choose their inputs to maximise profits and that consumers maximise utility subject to their budget constraints. The model assumes constant returns to scale production technology. Inputs used for production consist of intermediate inputs and primary factors including capital, labour and land. Intermediate inputs are derived from two

110 A good paper on the strengths of general equilibrium models (e.g., CGE models) versus partial equilibrium models is: Bandara, J.S. 1991, Computable general equilibrium models for development policy analysis in LDCs. *Journal of Economic Surveys*, Vol 5 (1), pp.3-69.

111 Levantis, T. 2004, PNGGEM, ABARE's Model of the Papua New Guinea Economy. Canberra, ACT: Australian Bureau of Agricultural and Resource Economics.

sources (domestic and imported) and are assumed to be substitutable. The links between production and consumption within the economy, as well as links to the external economy, are represented by the model's input-output structure. The database also allows various structural coefficients such as sales and cost shares to be computed.

7.3 Key model definitions, assumptions and outputs

Definition of regions

A useful feature of the PNGGEM-Regional model is that it can represent the economy at four levels – national, regional, provincial and district. The analysis in this report is conducted at the national and regional levels. The regions and provinces reflected in the model are as follows:

- *Southern Region*: Central, National Capital District, Oro, Western Province, Gulf and Milne Bay.
- *Highlands Region*: Southern Highlands, Eastern Highlands, Western Highlands, Enga, Simbu, Hela, Jiwaka.
- *Momase Region*: East Sepik, Morobe, West Sepik, Madang.
- *Islands Region*: Bougainville, West New Britain, Manus, East New Britain, New Ireland.

Key model variables or outputs

The key macroeconomic variables in the model are as follows:

- **Gross Domestic Product (GDP)**: Defined as the sum of private consumption, private investment, government consumption, government investment and total exports minus total imports.
- **Gross Regional Product (GRP)**: The equivalent of GDP measured at the regional level.
- **Total Output**: The value of the total output of all industries in the economy.
- **Total Employment**: The total number of salaried and non-salaried people employed in the economy.
- **National Welfare**: The change in the value of output of the economy that accrues to Papua New Guineans. National welfare is measured by adding to GDP net inflows of investment income, net private unrequited transfers from abroad, and net foreign aid receipts from abroad.

Assumptions used to estimate indirect economic impacts

The domestic Beverage and Tobacco industry in PNG represents around three per cent of the PNG economy based on data extracted from PNGGEM-Regional model's database. Sales figures provided by BAT and South Pacific Brewery indicate that the share of tobacco in the PNG Beverage and Tobacco industry is around 50 per cent. This figure would be higher if illicit tobacco was included.

Our modelling has considered the illicit component of manufactured cigarettes only and has excluded brus. This is because there is currently no excise rate applicable to the sale of brus and it is highly unlikely that PNG Government would seek to tax brus given the subsistence nature of its production.

Our conclusions reflect the model outputs whereby an external shock (in this case introduction of illicit tobacco production) is applied and the model solves for a new equilibrium. The model results reflect the difference between the shock being imposed and the status quo ante. Figures reported reflect percentage changes in a given variable after the economy has adjusted to a new equilibrium following the shock. The impacts are cumulative and therefore initial impacts (e.g. after one year) are small but build up over time.

As outlined in Chapter 6, our survey results indicate that illicit cigarettes account for about a third of total manufactured cigarettes, which implies that the legal tobacco market is at least one-third less than what it should have been. The value of the shock applied in the simulation is weighted by 0.5 given that tobacco has a share of 50 per cent of value added in the Beverage and Tobacco sector.

7.4 Impacts on government tax revenues

Cigarettes that enter PNG and are sold in a market without paying excise, import duties and other taxes are illicit. As a result, there is a loss to government in the form of revenue used to deliver other public services, including health. In contrast, brus is a tobacco product that is locally grown and readily available particularly in rural areas in PNG that does not attract excise duties or taxes.

Consistent with the international literature, our economic modelling reveals that illicit cigarettes have a significant impact on government revenues. The PNG Government levies direct taxes on tobacco products such as excise taxes, customs duties and a 10 per cent value added tax. However, there are also broader economy-wide (indirect or flow) losses across all tax categories including tariffs, excise duties, export tax, income tax, production tax and company tax.

In 2017, BAT paid K430.7 million in excise duties and K62.4 million in value added taxes, resulting in total taxes of K493 million.¹¹² The direct tax losses reflect information provided by BAT in relation to total tax figures for the period 2009 (K290 million) to 2017 (K493 million). Based on this information and discussions with PNG Treasury, we estimate that BAT's tax payments to PNG Government have been growing at about eight per cent per year on average.

Based on our estimated proportion of illicit cigarettes in the PNG tobacco market, we project that the PNG Government stands to lose K136.5 million in 2019 through direct tax losses associated with illicit manufactured cigarettes and that this will grow to around K608 million in 2023, and K839 million by 2028.

To properly account for losses in government tax revenues, the economy-wide (indirect) losses must also be considered. Our model estimates that the indirect losses to Government account

112 Information provided by BAT.

for a further K413.51 million in 2019 and these are expected to increase significantly to around K1.84 billion by 2023, and K3.97 billion by 2028 (see Table 20).

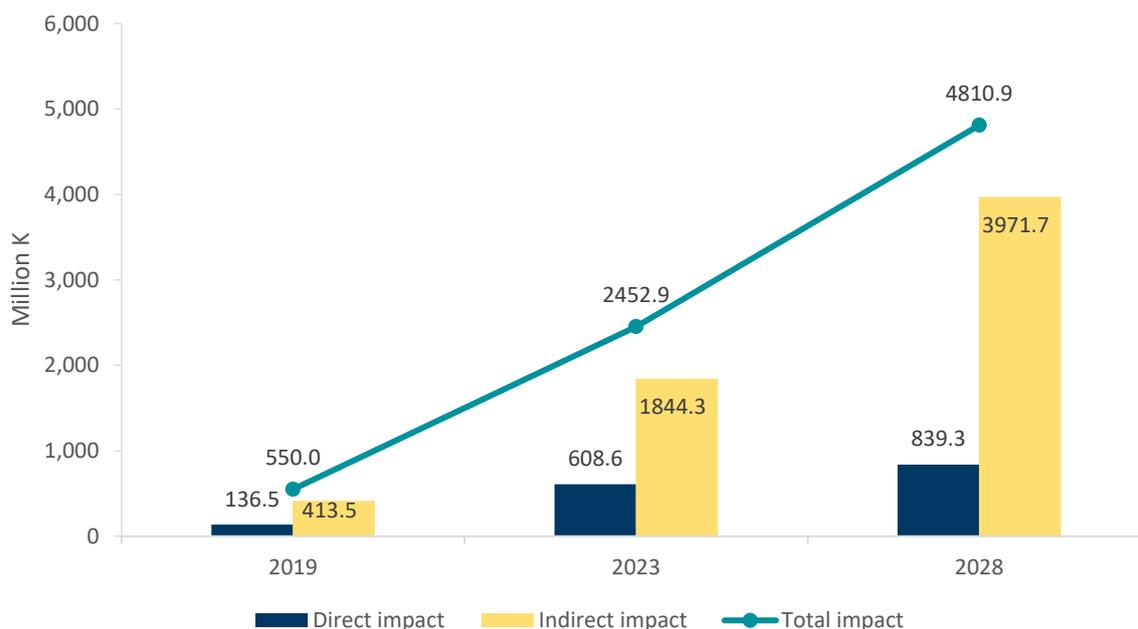
Table 20: Indirect impact of illicit cigarettes on tax revenues (K millions)

Revenue source	2019	2023	2028
Tariff revenue	9.777	33.109	43.625
Excise tax revenue	35.375	147.563	207.37
Export tax revenue	22.412	140.758	272.385
GST revenue	78.875	337.375	1 688.75
Income tax revenue	139.188	494.5	714.125
Production tax revenue	18.133	83.75	151.438
Company tax revenue	109.75	607.25	894.000
TOTAL	413.51	1 844.305	3 971.693

Source: FTI Consulting model simulation results

Adding the direct and indirect impacts together means that the PNG Government faces revenue losses from illicit cigarettes of around K550 million by 2019, which rise significantly to K2.45 billion by 2023 and K4.8 billion by 2028 (see Figure 17).

Figure 17: Impacts of illicit cigarettes on tax revenues (K millions)



Source: FTI Consulting model simulation results and computations for the direct impacts.

These results underscore the importance of taking swift and deliberate action to tackle illicit cigarettes in PNG. This scale of lost revenue has significant implications for the PNG Government’s ability to deliver broader economic and social outcomes to benefit PNG people.

7.5 National economic impacts

The tobacco industry is a significant component of the PNG economy and the modelling results indicate that illicit cigarettes have an overall negative impact on PNG’s economy. Further, the proportion of illicit cigarettes results in a decline in all the key macroeconomic indicators with the negative effects intensifying over time. As Table 21 shows:

- GDP decreases by -0.3 per cent in 2019, decreases to -0.9 per cent by 2023 and rapidly decreases to -4.4 per cent by 2028. The contraction in the economy reflects the flow on effects arising from reductions in output and employment across the economy, which in turn lead reduce household income and consumption.
- Total Output initially declines by -0.2 per cent but falls further to -3.1 per cent by 2028.
- Total Employment decreases by -0.4 per cent in 2019 and then declines to -4 per cent by 2028. The fall in employment results in a decline in household income (not shown), which in turn leads to a fall in national welfare.
- National Welfare declines by -0.5 per cent in 2019 and to -4.1 per cent by 2028.

Table 21: Macroeconomic impacts of illicit cigarettes (% changes)

Variable	2019	2023	2028
Real GDP	-0.3	-0.9	-4.4
Total Employment	-0.4	-1.1	-4.0
Total Output	-0.2	-0.8	-3.1
National Welfare	-0.5	-1.7	-4.1

Source: FTI Consulting model simulation results.

7.6 Regional economic impacts

At the regional level, the estimated proportion of illicit manufactured cigarettes also shows a negative impact across each of the four regions for both Gross Regional Product and regional employment. As was the case at the national level, the initial impacts are generally small but increase significantly over time. The regional economic impacts are further described below.

Impacts on real Gross Regional Product (GRP)

Table 22 presents the impact of illicit cigarettes on real GRP by region.

For GRP growth, the impacts in 2019 range from -0.5 per cent in the Southern region to -0.2 per cent in the Highlands region.

By 2023, we see more pronounced impacts ranging from -0.5 per cent in the Highlands region to -1.5 per cent in the Southern region.

Real GRP reduces further by 2028, with the largest declines occurring in the Highlands (- 4.8 per cent) and Momase and the Islands experiencing relatively lower but still significant declines of -2.2 and -2.5 per cent respectively.

Table 22: Impacts on real Gross Regional Product (GRP) (% changes)

Region	2019	2023	2028
Southern	-0.5	-1.5	-2.5
Momase	-0.3	-0.9	-2.2
Islands	-0.3	-1.3	-2.1
Highlands	-0.2	-0.5	-4.8

Source: FTI Consulting model simulation results

Impacts on regional employment

The results of our analysis also suggest that there are adverse impacts on regional employment (Table 23). Although the initial employment impacts are small, with zero impacts in the Highlands and Islands, by 2028 the employment losses are as high as -3.1 per cent per annum in the Southern region.

The fall in GRP is driven by falls in regional output which in turn results in job losses. As is the case with GRP, the initial regional employment losses are modest. For example, in 2019 the Southern and Momase regions experience employment reductions of -0.7 per cent and -0.1 per cent respectively, while the Highlands and the Islands experience no decline.

However, by 2023 the employment losses are as high as -1.6 per cent for the Southern region. The magnitude of these losses increases significantly by 2028, with a range of -3.1 per cent (Southern) to -0.2 per cent (Momase).

Table 23: Impacts on regional employment (% changes)

Region	2019	2023	2028
Southern	-0.7	-1.6	-3.1
Momase	-0.1	-0.2	-0.2
Islands	0.0	-0.1	-1.8
Highlands	0.0	-0.5	-2.2

Source: FTI Consulting model simulation results

8. ADDRESSING PNG'S ILLICIT TOBACCO PROBLEM

The previous Chapters of this report highlight the scale of the illicit tobacco problem in PNG, and the significant economy-wide and broader community, social and health impacts of illicit tobacco.

Many governments around the world have sought to address the significant impacts that illicit tobacco have on their people and their economies. Several common themes emerge from the international experience in implementing policy and other options to combat illicit tobacco:

- A comprehensive strategy combining policy and other options, rather than relying on one single option, is generally required to have a marked impact on illicit tobacco trade.
- The policy and other options need to be applied across the supply chain, rather than targeted on one activity, to limit the scope for illicit traders to work around the new initiatives.
- Effective enforcement is a critical platform for targeting a broader suite of illicit tobacco control measures and requires a coordinated and focused approach.
- Continuing to increase excise rates and import duties is likely to encourage illicit tobacco rather than discourage tobacco consumption, particularly without the foundation of effective enforcement.
- There is a need to constantly update and revise strategies – including by collecting good baseline data, and devoting resources to monitor and review the impacts of various initiatives.

These themes are consistent with comments made by PNG Customs:

... illicit tobacco trade requires a holistic approach to curb it at both the national and regional level as it is perpetrated by crime syndicates (who are well structured and connected) across borders. As such the PNG Customs Service is now working on reviewing its laws (introduce heftier penalties), policies and strategies to help counter this phenomenon.¹¹³

Addressing illicit tobacco in PNG requires strong leadership, effective coordination between agencies and a focused effort of well targeted actions. This Chapter identifies a comprehensive strategy combining policy and other options to be applied across the supply chain. The clear focus is on adopting a more targeted approach and significantly enhancing the effectiveness of detection and enforcement. If implemented, these actions should result in increased seizure and destruction of illicit tobacco, increased government revenue associated with tobacco excises and duties as well as broader government taxes.

The recommendations presented here represent a suite of short-term initiatives which should be implemented, and then reviewed and adapted over time to keep pace with the evolving tobacco market. Adapting PNG's strategy over time is critical to ensuring that progress continues to be made in addressing this significant problem. This underscores the importance

¹¹³ PNG Customs 2018, Letter from Office of the Chief Commissioner for Customs to FTI Consulting, Data/information on illicit trade and tobacco in PNG, 4 September, p.4.

of collecting good baseline data to enable the impacts of various initiatives to be evaluated and to continuously update and revise the PNG Government’s strategy over time.

A Taskforce should be established to focus PNG Government efforts on improved detection and enforcement of illicit tobacco (and other illicit goods)

Effective enforcement is critical to being able to control illicit tobacco from entering the country and to maximise government revenue associated with the importation of tobacco goods. A Taskforce should be established consistent with the following principles:

- **Independent** – be independently led and ideally have bipartisan support
- **Dedicated resources and powers** – have dedicated resources that can be directed by the Taskforce and legislative powers that enable it to take direct action
- **Accountability** – have clear objectives and measurable outcomes that guide the Taskforce’s activities
- **Transparency** – report and be transparent about the Taskforce’s success in addressing illicit tobacco transparently, both to highlight the effectiveness of its efforts and to further discourage illicit behaviour.

The Taskforce should include resources from the key enforcement agencies responsible for tackling illicit tobacco and other goods. At a minimum, this should include dedicated Customs, Police, Armed Forces and Border Control staff. Other relevant government entities should also be engaged such as PNG Ports and Post PNG.

The primary focus of the Taskforce should be increased detection of illicit products resulting in:

- Increased revenue collection from excise taxes and import duties, for example, where tobacco products otherwise meet the packaging and health warning legislative requirements
- Increased seizure and destruction of tobacco products that do not meet the legislative requirements.
- Prosecution of offending companies and individuals.



The Taskforce should be broadly focused on identifying the range of illicit products, as the trade of illicit tobacco often coincides with the trade of other illicit and excisable products. Various sub-committees should be established targeting different types of illicit products, with one of those sub-committees clearly focused on tobacco.

Having a dedicated sub-committee for tobacco balances the need for focused resources and outcomes related to tobacco with the benefits of sharing of information about supply chains, importation methods and other intelligence across other illicit products and activities.

While there are a range of possible models for the Taskforce's operations, the Taskforce should be chaired by an independent person appointed by Government, ideally with bipartisan support. The Taskforce should not include representatives of industry, but it is important that the Taskforce works closely with industry. This could be achieved either by including industry representatives on an Advisory Committee or establishing agreements or Memoranda of Understanding – to share information that may assist it in identifying illicit tobacco sources and implement joint initiatives such as public education and awareness campaigns.

The Taskforce must be vested with the appropriate legislative powers to support its investigation, inspection, seizure, enforcement and prosecution powers. It needs to be able to direct relevant staff, and to operationalise system and procedural changes to respond quickly to market intelligence and analysis, which is likely to change quickly as illicit traders respond to increased enforcement efforts. It should not report to or be subject to the direction of other agencies.

The initial resources for the Taskforce should comprise existing staff resources from within Customs, Police, Immigration, Health and Armed Forces, and could also include representation (or alternatively close consultation) from PNG Ports and Post PNG. It is not clear whether these resources need to be supplemented to maximise effectiveness of the enforcement effort. However, this could be informed by the success of the Taskforce's activities and funded from

The Taskforce should be transparent and accountable, and its effectiveness measured

The Taskforce's outcomes need to be clearly measured and reported publicly to provide confidence that it is operating effectively and making progress towards eliminating illicit tobacco. Publishing key performance measures will also deter illegal activity as perpetrators will be better informed about the risks of being caught.

The three key performance indicators or measures of success should include the following:

- Value of excise and import duties collected from imported tobacco products
- Quantity and value of illicit tobacco product seized and destroyed
- Successful prosecutions for importation of illicit tobacco products.

Collection and analysis of this information will enable the PNG Government to assess the effectiveness of existing arrangements and the extent to which additional resources may be required to combat illicit tobacco.

The Taskforce should report regularly to the National Executive Council on its activities, effectiveness and emerging issues.

Other information should also be collected such as the:

- Number, location, date/time of inspections conducted

- Volume of goods identified
- Volume and origin of seized tobacco products
- Volume of illicit tobacco products destroyed.

The information collected needs to be verified independently and made publicly available to enhance confidence of the effectiveness of the PNG Government's efforts in tackling illicit tobacco, and to further deter the importation of illicit tobacco products.

Detection and enforcement should focus on key entry points for illicit tobacco

Enforcement should be focused on the key entry points for illicit tobacco products. These are primarily major seaports (Lae, Motukea and other larger coastal ports), road border cross points with Indonesia and larger air and mail cargo.

The high rates of illicit cigarettes at Vanimo suggest that effective surveillance, detection and enforcement along the border with Indonesia is critical to being able control the entry of illicit tobacco and other products into PNG. Coastal surveillance should be stepped up to include logging ships, barges and other smaller vessels which stakeholders have advised are often involved in the transportation of illicit products including tobacco.

However, the border with Indonesia is not the only major entry point for large scale cigarette importation and smuggling. Entry via major ports such as Motukea and Lae needs to be carefully monitored and controlled. Noting that any increased focus on these two major ports will encourage importers of tobacco products to divert their products through other secondary ports, it is important to increase the focus at ports such as Kokopo, Madang and Kimbe. PNG Government should work closely with PNG Ports to ensure that any changes in trends of trade volumes and declared products at all ports are monitored closely to identify any diversion strategies of importers.

Ongoing training should be provided to enforcement officers on detection of illicit tobacco at all locations.

Effective disposal and destruction of seized tobacco, tobacco products and manufacturing equipment is vital to securing the legal market, legal supply chains, and preventing the re-entry of these products into the illicit market or for use in manufacturing illicit cigarettes. PNG Government should review existing guidelines dealing with the disposal and destruction of seized tobacco to ensure that the procedures are efficient, effective and secure.

Data should be collected on the quantity of tobacco seized as well as the quantity of tobacco destroyed. Destruction of illicit tobacco seized should be conducted by an entity that is separate from the detection and seizure entity to provide a check on any tobacco products that illegal syphoned after being seized.

Government should invest in additional detection at Lae and other major ports

Additional staffing resources are likely to enable the Taskforce to achieve more effective detection and enforcement. As a starting point, PNG Government should enhance its detection and enforcement efforts by:

- Enacting existing provisions under the Tobacco Control Act declaring enforcement officers to enhance enforcement

- Drawing together the existing staffing and other resources to provide specific focus on targeting illicit tobacco through the Taskforce recommended above.

PNG Government needs to significantly enhance detection and examination equipment at Lae and other secondary ports. The new Container Examination Facility at Motukea has increased detections of illicit tobacco at Motukea since 2016 when the facility became operational. However, Lae port handles significantly more trade than Motukea and the role of other major PNG ports in handling illicit tobacco is likely to grow as illicit traders divert their products to other ports. The reported detection of nearly 48 million cigarettes sticks in 2017 alone suggests that the additional cost of similar Container Examination Facilities at other ports is likely to pay for itself.

To monitor the effectiveness and efficiency of strategies described above, the Taskforce should collect and report information to:

- Assess the extent to which the equipment is being efficiently used (i.e. the number of inspections conducted as a proportion of total containers imported).
- Monitor any increases in trade volumes which may signal a movement of illicit tobacco products through different ports.

Importers of tobacco products should be licensed or require a permit

The Australian Government recently announced that from 1 July 2019 permits will be required for all tobacco imports (except for tobacco imported by travelers within duty free limits). This was aimed at making it easier for the Australian Border Force to take enforcement action and seize tobacco where no duty has been paid, increasing the deterrent against illicit tobacco smuggling.

In PNG, while Section 41 of the *Tobacco Control Act 2016* requires manufacturers, importers and distributors of tobacco products to be licensed after paying a prescribed fee, regulations have not been enacted to give effect to these provisions. As a result, importers of tobacco products into PNG do not currently require any form of licence or permit.

PNG Government should make the regulations to require permits for all tobacco imports (except for tobacco imported by travelers within duty free limits). This would make it easier to take enforcement action and seize tobacco where no duty has been paid, increasing the deterrent against illicit tobacco smuggling.

An appropriate prescribed fee could be levied for the tobacco importation licences or permits which could contribute to the ongoing cost of tackling illicit tobacco in PNG.

Prohibitions of illicit cigarettes and cigarettes in sticks should be actively enforced

Allowing cigarettes to be sold as sticks rather than packs reduces confidence that cigarettes meet regulatory requirements and provides the opportunity for illicit cigarettes to be substituted and sold as genuine products.

Enforcement officers need to increase their efforts at enforcing existing laws. At a minimum, enforcement officers should confiscate from vendors any cigarettes that do not meet PNG packaging laws including health warnings, language requirements or are sold individually or in packs of less than 25 sticks. This will discourage vendors from purchasing illicit tobacco products

from wholesalers and provide a more effective block against the supply chain. Vendors who continue to sell illicit cigarettes should lose their retail licences.

Our survey revealed that almost all consumers (92.26 per cent) purchased manufactured cigarettes as sticks rather than packs, despite the new requirements making it illegal to sell loose cigarettes and packs of less than 25 sticks. This is consistent with the PNG market dynamic that is driven by affordability – low wages often mean that consumers purchase to consume a small number of sticks when they can afford it rather than purchasing full packs requiring a greater financial outlay.

Selling cigarettes in packs rather than as loose cigarettes provides a better basis for providing consumers with assurance that the cigarettes they are buying are genuine. In contrast, allowing loose rather than packaged cigarettes to be sold provides the basis for illicit substitution of cigarettes. This is further exacerbated by the difficulty for consumers of differentiating between genuine and illicit sticks.

From an illicit tobacco point of view, the PNG Government may wish to consider whether to allow a smaller and more affordable pack size to balance affordability and enforceability of tobacco legislation. Smaller pack sizes have previously been trialed in PNG and other countries.

Irrespective of whether the PNG Government chooses to review existing pack sizes, it is critical that enforcement officers actively enforce existing laws to prevent the widespread availability of illicit tobacco products.

Government should review existing legislation against best practice, including to ensure that existing penalties and sanctions provide an appropriate deterrent

The Government should undertake a legislative gap analysis to ensure that existing tobacco laws remain current and reflective of best practice. The gap analysis should involve:

- Enacting all existing legislative provisions to ensure that illicit tobacco is subject to the full force of existing laws
- Extending the range of level of existing penalties as recommended above
- Enhancing existing legislation to reflect international best practice.

The system of penalties and sanctions in relevant legislation should be expanded to include:

- Seizure of goods, vehicles and vessels
- Seizure of cash and assets as part of the proceeds of crime
- Criminal prosecution with significant custodial sentences
- Financial wrongdoing penalties up to the value of the excise and import duties due (i.e. doubling the cost of duties for a false declaration)
- Civil action
- Prohibition of the importation or sale of tobacco products for a defined period
- Withdrawal of any applicable importation, manufacturing or retailing licences
- Immigration sanctions to refuse entry to PNG for tobacco smuggling
- Public naming and shaming.

The level of penalties should recognise the economy-wide impact and harm created by illicit tobacco and be consistent with penalties for drug dealing and other serious crimes.

Additional enforcement should be accompanied by a public education and awareness campaign

It is clear from our surveying of customers and vendors that there is not a high awareness and understanding of which cigarette brands and sticks are illicit, and the legal and other consequences associated with purchasing illicit tobacco products.

Public education and awareness campaigns should be conducted to better inform the community about illicit tobacco. The focus of the campaigns should be broad and include increasing community awareness about:

- How to recognise a genuine from an illicit tobacco product (e.g. cigarette and package markings)
- The adverse economic, health and community impacts of illicit tobacco in PNG – which could draw on the results of this Study
- The general tax and legal requirements related to tobacco in PNG, and importance of collecting appropriate excise and duties on imported goods to benefit PNG people.

These campaigns could be funded and administered jointly by the PNG Government and industry, including through funds generated by more effective collection of excise taxes and import duties on imported tobacco products.

Cooperative agreements should be pursued, including with key tobacco importing countries and provincial governments

Given the international nature of the illicit tobacco trade, it is important to pursue cooperation and collaboration internationally to identify illicit products and to implement effective strategies to tackle the problem.

International cooperation should ideally be focused on sharing information among customs, tax and other authorities and cooperation between law enforcement agencies to facilitate unreported importation. The nature of information could include details of:

- Seizures of tobacco, tobacco products or tobacco manufacturing equipment
- Import, export, transit of tobacco products
- Tobacco concealment methods, modi operandi used in illicit trade in tobacco, tobacco products or manufacturing equipment.

There may also be opportunities to coordinate enforcement efforts. For example, PNG and Australia currently operate joint border controls in the Torres Strait. This model could be extended to cover countries in international waters to the north of PNG.

Key tobacco importing countries such as Indonesia and China should be considered, as well as other transiting countries such as Malaysia, Philippines and Vietnam.

There may also be opportunities to enhance surveillance, enforcement and intelligence gathering efforts through greater cooperation and collaboration with provincial governments.

Government should develop a better understanding of the market for brus

This study has identified that brus is a significant component of the tobacco market. Brus accounts for around 41 per cent of the total tobacco market in PNG. The amount of brus being sold suggests that brus is no longer being grown just for personal consumption, but rather is being distributed and sold commercially and in significant quantities. There is concern also from some stakeholders that brus is becoming a ‘cash crop’ and that this may contribute to growing food security issues.¹¹⁴ Yet little is known about how the market for brus operates in PNG.

Developing a better understanding of the market for brus is important for several reasons. The international evidence suggests that:

- Any increased focus on enforcement against illicit manufactured cigarettes will drive the expansion of other forms of tobacco products such as brus
- Non-manufactured forms of tobacco such as brus are likely to have significant health impacts beyond manufactured tobacco products which are subject to strict regulations.

Developing a better understanding of the market for brus does not necessarily mean that it needs to be further regulated or prohibited. Brus has for many years been acknowledged as having a role in supporting PNG subsistence economy. However, the PNG Government should seek to commission research to better understand:

- How brus is being grown, distributed and sold
- How the commercialisation of brus contributes to employment, and economic and regional development
- The impact of commercial brus growing on agriculture and food production
- The chemical composition of brus including the tar, nicotine and other chemicals present which may create serious health impacts.

Undertaking such research will enable the Government to take a more considered approach to the development of the market and the approach to regulation.

The effectiveness of the implemented policy measures needs to be reviewed and strategies adapted to deal with a changing market

The Government should review the status and implement previous commitments made under the Medium Term Review Strategy 2018-2022 focused on addressing smuggling and improving excise revenue collection for all types of goods, including tobacco.

The Government (through the Taskforce) should also enhance its data collection, monitoring and review of existing measures. Existing data collection, analysis and reporting of data about the amount of illicit tobacco, trends in entry points and modes of transportation used to transfer illicit tobacco is limited. Further, there is also a lack of data available in relation to imports, exports and tobacco excises paid to enable alternative approaches to be used to estimate the size of the market and evaluate the success of initiatives.

114 As expressed by Manufacturers Council of PNG.

Better information collection and analysis is required to develop and evaluate the effectiveness of policy interventions. At a minimum, data should be collected and analysed in relation to:

- Activity measures on number of inspection and enforcement officers, number of inspections conducted, volume of tobacco detected, seized and destroyed, mode of entry/importation into PNG, origin of seized goods, volume and value of imported tobacco products, volume and value of exported tobacco products and the value of tobacco excises collected
- Performance measures including additional excise and import duties collected, number/quantity of illicit product seizures and destroyed, quantity of seizures, number of prosecutions.

More focused data collection will further support other measures outlined above by:

- Focusing and redirecting resources if required to reflect changes in how the market responds to the implementation of new initiatives
- Facilitating evaluation of the effectiveness of these measures and whether they should be adapted based on changes in illicit markets
- Enabling alternative approaches to be used to estimate the extent of illicit tobacco in PNG in future.

Finally, the international experience suggests that policy and legislative settings and actions taken to address illicit tobacco need to be regularly reviewed and revised to address the evolving market. This Study represents only the second time that a report estimating the proportion of illicit tobacco trade has been undertaken in PNG. This is insufficient to deal with an illicit market where there are likely to be significant ongoing incentives to find loopholes or weaknesses in existing legislative and institutional arrangements to continue to maintain a profitable market for their product.

The PNG Government should undertake a further review of the PNG tobacco market in three years. This is an appropriate amount of time to allow for the recommendations in this report to be implemented, and to enable the success of initiatives to be evaluated. A further review would be appropriately overseen by the Taskforce, with the results used to inform future actions aimed at further reducing the incidence and impacts of illicit tobacco in PNG.

APPENDIX A APPROACH AND DATA INPUTS USED TO ESTIMATE MARKET SIZE

Table 24 summarises the calculations used to estimate the size of the illicit tobacco market expressed as a proportion of total tobacco consumption:

Table 24: Approach used to calculate illicit tobacco in PNG

SIZE OF THE ILLICIT TOBACCO MARKET AS A % OF THE TOTAL TOBACCO SMOKED IN PNG PER YEAR

(A) Total illicit tobacco smoked in PNG per year (weighted for regional and gender smoking prevalence and population %, and for % of adult smoking population)

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(B) Total (legal and illicit) tobacco smoked in PNG per year (weighted for regional and gender smoking prevalence and population %, and for % of adult smoking population)

(A) TOTAL ILLICIT TOBACCO SMOKED IN PNG PER YEAR

Total illicit tobacco smoked in PNG per year = Quantity of illicit tobacco smoked per occasion X Frequency of illicit tobacco smoked per year

Illicit tobacco identified through several key assumptions as outlined in Chapter 5

(B) TOTAL (LEGAL AND ILLICIT) TOBACCO CONSUMED IN PNG PER YEAR

Total tobacco smoked in PNG per year = Quantity of manufactured cigarettes, tobacco and brus smoked in PNG per year (excluding free brus) + Quantity of free brus smoked in PNG per year

Quantity of manufactured cigarettes and tobacco smoked in PNG per year = Quantity of manufactured cigarettes and tobacco smoked per occasion X Frequency of manufactured cigarettes and tobacco smoked per year

Quantity of free brus smoked in PNG per year = Quantity of free brus smoked per occasion X Frequency of free brus smoked per year

Data sources informing calculation

We derived most of the data inputs for this calculation from the Community Perception Survey (CPS) regional results and then sought to extrapolate the results to reflect an estimate for the adult smoking population of PNG using United Nations, WHO, and Household Income and Expenditure Survey (HIES) data.

Table 25 summarises the calculation method and data sources used.

Table 25: Calculation methodology and data sources

Input	Consumption model inputs	Source
1	Quantity of tobacco purchased per week (legal and illicit – excludes free brus)	Community Perception Survey
2	Quantity of tobacco purchased per year (legal and illicit – excludes free brus)	(1) X (52) = (2)
3	Quantity of illicit tobacco purchased per week (includes all manufactured cigarettes and tobacco purchased at below agreed price + known illicit brands purchased at any price + all purchased brus)	Community Perception Survey
4	Quantity of illicit tobacco purchased per year	(3) X 52 = (4)
5	Quantity of free brus smoked per week	Community Perception Survey
6	Quantity of free brus smoked per year	(5) X (52) = (6)
7	Nationally representative weightings on regional gender smoking prevalence, gender population % and adult smoking population	UN, HIES, WHO
8	Total tobacco consumption per year in PNG	[(2) + (6)] x (7) = (8)
9	Total illicit tobacco consumption per year in PNG	(4) x (7) = (9)
10	Size of the illicit tobacco market expressed as a proportion of consumption	(9) / (8) = (10)

Surveying methodology and approach

As noted above, the key inputs used to measure the size of the PNG tobacco market including illicit tobacco were derived from two surveys conducted concurrently over September and October 2018.

A Community Perception Survey (CPS) – which focused on tobacco usage and purchasing habits by PNG consumers. The CPS sought to establish purchasing behaviour rather than actual consumption habits to overcome known under reporting of own consumption. It comprised a nationally-representative sample of more than 2000 smokers including 1 600+ interviews across PNG’s four socio-cultural regions, covering both urban and peri-urban rural zones and a further 400+ smokers in the known illicit tobacco ‘hot spot’ of Vanimo and surrounds in West Sepik Province (which is in very close proximity to Indonesia where tobacco is markedly cheaper).

A Vendor Turnover Survey (VTS) – which comprised a sample of 200+ tobacco outlets across channels (street vendors, grocery stores, markets, trade stores, etc.) on a representative basis. This was a short ‘trade census’ questionnaire covering stocked brands, pricing and approximate volumes of each. The survey assessed:

- The brands available for sale

- The country of origin of the brands for sale
- Whether each brand is a domestic or non-domestic product
- Whether each brand is genuine or counterfeit product
- At what price it was sold at
- How much of each is sold by volume monthly.

The sampling approach across the country was matched across both the CPS and VTS. Surveying covered all four of the distinct socio-cultural regions: Islands, Highlands, Momase and Southern. Surveying was also undertaken in Vanimo and surrounds in West Sepik Province on the basis that it is considered a ‘hot spot’ for illicit tobacco given its proximity to cheaper Indonesian cigarettes.

We adopted a 50:50 split of urban and rural sampling, and further split the rural component to explore geographical gradients by distance from urban centres as follows:

- Urban – living inside town/city boundaries of the provincial capital (50 per cent)
- Peri-urban – villages 20-40 kms outside of city/town boundaries (25 per cent)
- Rural accessible – 60 to 80 kms outside town but within easy reach of a passable road (25 per cent).

Table 26 provides further details of survey locations.

Table 26: Survey locations by region

Region	Zone 1 (Urban)	Zone 2 (Peri urban)	Zone 3 (Rural accessible)
Southern	Gerehu Stage – 1-5, Rainbow, Taurama, Sabama, Gordons, Hanuaba, Elevala, Boroko, Gordons, Waigani, Hohola, Sabama, Gabutu	Gaire, Brown River, Yomare, Baramata, Roku	Kwikila, Saroa Keina, Gabagaba
Highlands	Wamp Nga, Hagen United, Hagen Tech, Works Compound, Dobel, Pultimb, New Town, Council camp, Main market, Kona road, Warakum, Tarangau, HMI, Kagamuga, Rabiamul, Kimininga, Kaiwe, Ella Barracks, Kimininga Barracks, TIS School, Warakum, Tarangau	Baisu village and Raglamp, Kelua #1, Kolge, Ogelbeng	Baiyer bridge, Nengel and Rugli
Islands	Gamur, Kokopo town, Ralum, Vunamami, Kokopo Business College, Kinabot Stg 1,2,3 and Backstreet, Vunatagia, Kokopo market, Kinabot Stg 1, Kokopo Police Barracks, Vunapope compound, Nonga compound, KBC and Tagigira street, Tokua airport, Kabaleo, Takubar, Butuwin, Ralum, Vunamami, Bitavavar, Malapau, Talina, Nivani	Ralalar, Talakua, Nangananga, Ralubang, Ratavul, Mope and Ganai	Kerevat and Vudal (North Baining, Unre, Utmei), Kabaira, Lungalunga and Pakanakapiaka
Momase	Kamkumung, Bumayong, 7th Street, Back street, China town, Buimo road, Eriku, Town market, Papuan Compound, Malahang, Top town, Buimo road, Bumbu, Salamanda	Nadzab, Gabensis, Omsis and Markham bridge	40 mile and 41 mile, Warabung, Wakini, Timini, Apere
Vanimo	Vanimo town, Dali Makepa, East Tower, Reptile street, Police Barracks	Yoko, Musu, Hubapu, Dapu and Pasi station	Wutung village, Sumomini and Imbis

Surveying was not undertaken in more remote regions – rural remote (100+ kms outside town and some way away from an easily passable road) and rural extreme remote (only accessible by boat, light aircraft, helicopter or extreme trek). In part, this reflects the fact that lifestyles/behaviours in deeper rural zones are usually quite homogeneous (differences between rural zones are not great, whereas differences from urban to peri urban and rural accessible zones are quite marked).

Table 27: Survey age segmentation (%)

Age group	% of population	% of respondents in any given zone/location	
		Male (50)	Female (50)
18-19	8	4	4
20-29	32	16	16
30-39	26	13	13
40-49	18	9	9
50+yrs	16	8	8
TOTAL	100	50	50

Across all sampling locations, age and gender strata were based on the National Statistical Office’s national population pyramid:

- While males marginally outnumber females in the population, gender was split equally (50:50) across all sample units, as in most social surveying in PNG. Post-weighting was also applied for relative smoking incidence between genders.
- Age group segmentation was drawn from the NSO’s national population pyramid (avoiding the need for post-weighting for age group in analysis). Under-18s make up 45.8 per cent of the population; with the under-18s discarded, the population pyramid indicated age quotas as seen in this example grid of 18+ age groups (see Table 28).

Statistical validity was estimated as being within plus/minus 4 per cent at the 95 per cent confidence interval.

Other relevant data informing the estimates

We used smoking prevalence data to calculate the total number of smokers in PNG and to inform the weightings applied to the Community Perception Survey (CPS) data sets to derive representative consumption. The smoking prevalence rate measures the total percentage of daily smokers in PNG.

As there is limited consistent time series data examining smoking prevalence in PNG, we combined discrete datasets to arrive at our own total smoking population estimate.

Both the WHO and HIES provide data on smoking prevalence, but these data sets are not directly comparable:

- HIES reports smoking prevalence as a percentage of the total PNG population and provides a level of detail and granularity at the regional level.
- WHO reports it as a percentage of PNG’s adult population (15 + years old is adopted as adult in this context).

Table 28: Estimated smoking population in PNG, 2018

Input	Source	Estimate
Total population	United Nations, World Population Prospects: 2017 Revision ¹¹⁵	8,418,346 (2018)
% of adult population (18-64 years)	United Nations, World Population Prospects, 2017 Revision ¹¹⁶	53.3% (2015)
Daily smoking prevalence (15+)	World Health Organisation ¹¹⁷	31.1% (2015)
TOTAL SMOKING POPULATION		1 492 320

To arrive at the total adult population of tobacco smokers in PNG for 2018, we have drawn upon the United Nations estimates of total population and age stratification for PNG, as well as the WHO smoking prevalence rate as is reflected in Table 28. Based on these inputs, we estimated that the 2018 total adult smoking population in PNG is 1 492 320.

To more accurately reflect the regional and provincial differences in smoking in Papua New Guinea, we have supplemented our modelling of WHO prevalence rates with the regional granularity offered by HIES data published by the PNG National Statistical Office (as set out in the following tables). These figures allow the survey data for each region to be weighted accurately into a national model.

Table 29: Smoking prevalence in PNG by region (%)

All	PNG	Southern		Highlands		Momase		Islands	
	National	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban
Current smokers	26.3	24.7	18.7	27	20.5	28.8	29.4	25.4	20.6
Former smokers	3.9	3.3	3.4	4.4	2.8	4.2	4.2	3.5	3.4
Non-smokers	69.8	72	77.9	68.6	76.7	67	66.4	71.1	76

Table 30: Smoking prevalence in PNG by gender (%)

Gender	Percentage of current smokers
Male	37.3
Female	14.5
Average	26.3

Source: National Statistical Office, Papua New Guinea, Household Income and Expenditure Survey, 2009-10

115 United Nations 2017, Department of Economic and Social Affairs, Population Division, World Population Prospects: The 2017 Revision.

116 *ibid.*

117 WHO 2017. Report on the global tobacco epidemic, http://www.who.int/tobacco/surveillance/policy/country_profile/png.pdf

Table 31: Population distribution in PNG by region (%)

PNG regions	Percentage of PNG population
Southern	20
Momase	26
Islands	15
Highlands	39

Source: National Statistical Office, Papua New Guinea, Household Income and Expenditure Survey, 2009-10.

Table 32: Smoking prevalence in PNG by gender (%)

PNG regions	Female	Male	Total
Southern	8.90	38.00	24.1
Momase	18.40	38.7	28.8
Islands	11.60	37.70	25.0
Highlands	15.50	37.30	26.7

Source: National Statistical Office, Papua New Guinea, Household Income and Expenditure Survey, 2009-10.

Table 33: Gender ratio in PNG (%)

PNG regions	Female	Male
Southern	52.38	47.62
Momase	51.46	48.54
Islands	51.92	48.08
Highlands	51.69	48.31

Source: National Statistical Office, Papua New Guinea, Household Income and Expenditure Survey, 2009-10.

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