BASEL INSTITUTE ON
GOVERNANCE

Social network analysis applied to illegal wildlife trade between East Africa and Southeast Asia (abridged)

Short summary of full report available at: baselgovernance.org/publications/SNA_IWT

Jacopo Costa, Senior Research Fellow

This report presents the findings of a novel application of social network analysis (SNA) to study a criminal network surrounding an East Africa-based wildlife trafficker. This technique focuses on understanding structural, functional and sociometric characteristics of networks by mapping social interactions between individuals and groups.

Particularly, the research studies how wildlife trafficking happens, and, in doing so, offers several promising avenues to curb it. SNA makes it possible to deconstruct the criminal network in question and identity its key individuals, operative functions and flows of goods, information and money. In turn, this can sustain the activities of investigators and prosecutors to discover new leads and suspects, or to better understand the meaning of financial and information flows.

The research has been conducted under a project of PMI Impact aimed at stopping corruption from fuelling illegal wildlife trade (IWT) between East Africa and Southeast Asia.[1] The results show that by combining SNA (a primarily quantitative method) with network ethnography (a qualitative method), we can gain important new insights into the structures, functions and mechanisms of crime networks engaged in IWT.

1 Summary of empirical results

Detailed in full in the report, the analysis explores important characteristics of the network.

1.1 Composition of the ego network

The research has shown that the **network is large** in size, comprising individuals ("nodes") with both primary (direct) and secondary (indirect) interactions with the trafficker. Division of labour and strategic goals determine their geographical placement along the criminal chain. The large majority of nodes seems to operate mainly in the local dimension, while a selected minority operate regionally or globally.

The trafficker and his co-offenders have significant interactions with **three regions** in particular: East Africa, West Africa and Southeast Asia. Quantitatively lower – but no less important – interactions exist between the trafficker and the Middle East, North America, Europe, and North and Central Africa.

[1] This report was funded by PMI IMPACT, a grant award initiative of Philip Morris International (PMI). In the performance of their research, the authors maintained full independence from PMI. The views and opinions expressed in this document are those of the authors and do not necessarily reflect the views of PMI. Neither PMI, nor any of its affiliates, nor any person acting on their behalf may be held responsible for any use which may be made of the information contained herein.

The network is a free-scale structure, which means that most nodes have only a few interactions with the trafficker, while a few nodes account for a large number of interactions. This suggests that **power is concentrated** in a smaller number of relevant nodes who have a disproportionate number of connections vis-à-vis other network members.

The trafficker is surrounded by a **criminal firm** comprised of nodes who come mainly from West Africa but are based in East Africa. This criminal firm carries out the IWT, operating to achieve its criminal goals. Its members have a key role in organising the illicit business in East Africa and can be divided into two categories: the trafficker's **relatives** and **co-offenders**. These nodes manage the illicit business, conduct financial transactions with other nodes and regions, and take care of the procurement and delivery of wildlife goods.

Other traffickers and criminal firms operate closely with the trafficker, coordinating the supply of illicit wildlife goods with him and his criminal firm. They are part of a broader IWT horizontal market that is in place in East Africa, where the illicit goods are traded amongst these crime rings before being sold to Asian trafficking groups. These nodes represent allies of sorts to the trafficker and his network, sharing business activities and illicit strategies amongst themselves.

These criminal firms seem to be **fluid and flexible structures**, able to trade at the regional and global dimensions thanks to the cooperation of relatives, co-offenders, professionals and allied rings. These criminal firms operate both in horizontal and vertical markets to purchase or supply illicit wildlife goods. Despite the criminal nature of the activities in which they are engaged, the relationships between African traffickers and Asian buyers are based on a considerable amount of trust. The repetition over time and the rate of success of the illicit business can help to explain the resilience of these relationships.

Several nodes coming from West Africa who operate between West Africa, East Africa and Southeast Asia are the **globetrotters** of the IWT. They coordinate and manage IWT financial flows, shipments and logistics between the regions. Given their geographical placement, they acquire stable relations with the delegates of the Asian groups. These nodes seem to be responsible for handling informal financial balancing systems that regulate the money flows between East Africa and Southeast Asia.

The **Asian buyers** are the counterparts of the trafficker and his criminal firm, who are interested in procuring the wildlife goods illegally commercialised by these actors. The findings suggest that these Asian buyers undertake different basic tasks, such as networking and building/nourishing social capital and relational structures with traffickers and crime rings based in East Africa. They are also systematically involved in the procurement of goods, arrangement of shipment logistics and management of financial flows.

The network includes **professionals** who bring specific skills and know-how to the network. They are involved in specific operations, such as assisting with deliveries and financial flows.

Shipment operators are clearing agents and freight forwarders, which in turn are connected to other professionals who work within the airline companies or cargo departments. Financial operators are accountants and employees of financial institutions. These professionals are co-opted by the criminal firm to provide skills and know-how that are not available amongst members of the network. This also applies to individuals who have decision-making authority or have access to the resources and infrastructure necessary to facilitate the transactions and flows that the criminal IWT network requires.

Global level operators connect the trafficker with the Middle East, North America and Europe, three regions that have seen significant migratory flows from West Africa and are home to West African communities. In the context of IWT, Middle East seems to be a financial and commercial hub. There is evidence that Middle Eastern ports and airports are often used as transfer points or fictitious destinations. At the same time, Middle Eastern countries are also financial centres where money could potentially be laundered, kept in financial institutions and reinvested in real estate or other businesses. Given the lack of definitive findings, we can conservatively underline that, in this case study, the Middle East seems to be at the core of a financial web apparently related to IWT, as well as relational dynamics involving some of the most important nodes of this network.

Similar characteristics are visible in the connections with North America and Europe, where the role of migration and diaspora mechanisms is significant. The nodes living in these continents could be opportunistically used to open new markets, as well as acting as front men or women for laundering and re-investing money and financial flows.

Finally, several nodes operate in West Africa. The largest proportion of the traffickers operating between East Africa and Southeast Asia are from West Africa. Not surprisingly, they maintain important relations with their communities of origin, relatives and family groups. Some of these West Africa-based nodes may make economic requests aimed at satisfying basic needs as food, housing rent, school or medical fees. Others seem to play a role in IWT both for the delivery of goods and the management of financial flows. The pervasiveness of the activity of West Africans in the global network and wildlife trade analysed in this specific case study is interesting given that the main chain of illicit operations lies elsewhere between East Africa and Southeast Asia. In terms of ethnography, it is clear that ethnic bonds, family relations, kinship and regional origin play a role in enabling effective and coordinated illicit activities between the different rings and clusters.

Lastly, an important point about how SNA illuminates the structure and roles of criminal networks such as the one in this case study. The findings have shown that the structures of the network are complex and chaotic when deconstructed in their basic units. Multiple local spaces punctuate the transnational supply chain, and a multiplicity of actors with different traits and goals operate worldwide. Opaque trafficking clusters manage the illicit trade. Yet the network perspective provided by SNA makes it possible to identify – beyond this chaos and disorder – the ordered scheme underlying the illicit exchange.

1.2 Functions for IWT

A literature review and empirical analysis of the data makes it possible to identify five functions that support IWT in this case study: networking, money, delivery & shipment, business & goods, and concealment.

Networking activities are based on the exchange of personal information and contacts between nodes, and sustain the mechanisms of enlargement of borders and membership of the networks. These activities reduce the distance between the actors, as well as the timing, costs and risks of these illicit activities. They also contribute to increasing the illicit profits.

Networking is associated with the trafficker's ability to manage the network in two crucial respects: co-optation and coordination. Networking activities allow traffickers and their criminal firms along the East Africa and Southeast Asia axis to weave a web of connections with other countries and clusters. The process of attracting new nodes into the network gives the traffickers the ability to create a pool of collaborators with particular skillsets and social capital that can be activated as needed. This pool of individuals recruited into the network is not necessarily all active at once; some individuals' roles may lay dormant until they are needed and are activated for particular purposes.

High networking frequency is displayed by second-level hubs, i.e. those nodes who are surrounded by wide and significant relational sub-networks. The trafficker and his criminal firm rely on them to achieve their criminal goals. These nodes contribute to expanding the network's borders and in coordinating the activation of different clusters. They control specific portions of the network and geographical spaces, handle operative functions, and help to coordinate tasks, activities and strategies needed to carry out the illicit trade.

Importantly, even if the main trafficker is taken out – for example because he is arrested – the network will not completely collapse, because all these sub-networks could still have the capacity to merge into a new reticular structure.

The function **money** regards the financial flows and transactions between different actors and clusters. The activities related to this function are for the most part cross-cutting with respect to the other functions, and concern all the regions where the network is active. Financial flows are necessary to pay for the procurement of the goods and their stockpiling in safe warehouses, their shipment, transportation and concealment, as well as the activities of professionals and co-offenders. At the same time, financial flows have another meaning when directed to relatives and kinship cliques. In this case, monetary resources serve to sustain communities and kinship groups that surround the trafficker and his criminal firm.

The function **delivery & shipment** comprises activities related to the transport and delivery of goods from one point to the other. These are key activities supporting the success of the illicit trade, as they involve organising and executing the operational plans underpinning the safe movement of the wildlife goods between the regions. The evidence suggests that this

function is concentrated among a small number of nodes. The activities associated with this function illustrate how traffickers, criminal firms and delivery operators in the IWT network need to develop large relational structures in order to successfully achieve their operative goals. Specifically, this means connecting freight forwarders, clearing agents, logistic companies, drivers and public officials, each of whom plays a role in ensuring the wildlife goods can be safely and swiftly transported.

Business & goods represents the core operative activities of the criminal scheme. It involves the procurement of the wildlife goods on illicit markets, matching supply and demand at the regional and global level, and the protection of the illicit business from the activities of law enforcement and judicial powers. This function is mainly handled by the trafficker and his criminal firm jointly with the Asian buyers. The business relations between these two clusters of actors are facilitated by the operations of the West African globetrotters working between East Africa and Southeast Asia.

Concealment activities refer to the modalities that have been used by traffickers to conceal the illicit wildlife goods during transportation and delivery. Clearly, this is another fundamental task to carry out IWT and protect the wildlife goods from detection. The number of interactions in this category is small. The findings indicate this function is mainly managed by members of the trafficker's criminal firm, West African globetrotters and Asian buyers. Logically the concealment function is operationalised in coordination with activities aimed at organising the illicit business and trade routes.

Given these empirical findings, the lack of activities related to corruption immediately catches the eye. The common narrative in East Africa is that corruption is everywhere but interestingly, the empirical materials refer to corruption only in a marginal manner. This result could be explained by a couple of considerations. First, corrupt public officials such as law enforcement agents could already be part of the network and its sub-components, as an important element of the social fabric that composes them. Second, the corrupt activities typical of this context are very easy and simplistic, not going very far from its basic shape, i.e. the bribe. The lack of complicated financial transactions or abroad-to-abroad payments, as well as the lack of offshore centres or tax havens, reduces immensely the organisational and logistical efforts needed to carry out the corrupt exchange, as well as the need to coordinate the activities of the different co-offenders.

1.3 Information flows

Mechanisms and routes of information flows are important because they allow the trafficker and his criminal firm to collect inputs coming from different actors and geographical places, and in turn forward these inputs within the network, amplifying their operative range, effectiveness and efficiency. Thanks to the percolation of information along the network, the trafficker can allocate tasks and functions to those nodes who can implement them. This mechanism makes it possible to coordinate the flow of information and tasks necessary to carry out the procurement of wildlife goods, the management of financial flows, the matching of supply and demand, and the logistics of concealment and delivery.

As with the previous two elements, structures and functions, the percolation element is also chaotic, complex and disorganised in its basic components. In the micro dimension, it is composed of a high number of dyadic contacts spread around very distant geographical contexts and criminal clusters. Different types of information are exchanged in the interactions between actors, and an encrypted language is often used to conceal the subject. Order comes from two elements. The first is the direction given by the trafficker actions (top-down). The second is the further spread through self-organisation dynamics, i.e. that is more developed from the bottom up thanks to the non-linear efforts of the network's members. Just as the networking activities serve to coordinate the activation of specific nodes, so the percolation mechanisms serve to coordinate the operations in relation to wildlife goods, money and shipments.

2 Is organisation arising from chaos? Switching perspectives for a clearer view

Conducting research on IWT means diving into the debate about its opportunistic or organised nature. This report shows that IWT is shaped by the mechanism by which chaotic behaviours are transformed into organised mechanisms. The findings show that, when considered in their micro components, structures, functions and flows are a shapeless mix of chaotic and opportunistic spaces, actors and mechanisms. However, their accumulation and sedimentation on the network structures along an indefinite time horizon permit the transformation of these chaotic inputs into ordered outputs.

Understanding this entails three things:

- A switch in perspective from individuals (micro level) to networks (macro level), making it possible to understand how micro-level interactions between individuals combine to create an organised shape.
- Unpacking the strategies that are employed to direct the process of organisation and increase its efficiency.
- Separating the concepts of the criminal network (borderless webs of interactions between individual and collective actors) and the organised criminal group (a specific group of individuals who operate together to organise the illicit trade).

In sum, by rising up above the micro level, SNA allows us to reveal hidden order, strategies and repeated patterns in what looks at first like chaotic information and activities by individuals. These kinds of insights are vital to law enforcement efforts aimed at identifying and dismantling wildlife trafficking rings.

3 What this means in practice for counter-IWT efforts

Practical considerations for law enforcement and other counter-wildlife trafficking stakeholders arising from the research include:

- Identifying **key geographic locations** and their role in the trading chain. It is likely that high-level elements of the network concentrate in capital cities, large urban settings and trading hubs, while lower-level networks are located in small towns and suburbs, border regions and near wildlife habitats. Urban locations make it easier for high-level actors to hide their illicit business behind a veil of legitimate activities and relations in the community.
- Identifying **meeting places** of co-offenders, which the research suggests are likely to include shopping malls, shops, business headquarters and hotels. These places are often identified with the senders and receivers of shipments of illegal goods and financial flows. This helps to target electronic surveillance or shadowing activities, as well as financial investigations.
- **Focusing on "connectors"**, in other words the individuals that the social network analysis reveals are highly effective in connecting and coordinating different criminal clusters and regions.
- **Exploring family and kinship relations**, which the analysis reveals are particularly important at the higher echelons of the network. As the activities are complex and require large amounts of trust, traffickers appear to rely on relatives and members of their own kinship communities. This framework may help deconstruct the organigram of an illicit ring and to understand the financial flows connecting different regional clusters.
- Understanding the **fluid, adaptive and changing nature** of criminal enterprises engaged in wildlife trafficking, in contrast to the mafia-style structures often associated with organised crime. This has implications for efforts to neutralise the mechanisms of transnational organised crime, as it encourages a focus on the high-level individuals, clusters and rings that may be strategically placed at the peripheries of crime networks rather than only at the centre.
- Tracing and anticipating the **evolution** of the network by clarifying the nature of the **second-level hubs** and sub-networks, their regional or global projection and their networking activities.
- Understanding that due to the resilience, know-how, capabilities, social capital and resources of these sub-networks, the **arrest of key traffickers may not cause the disruption of the entire network.** These can quickly forge a new network and continue activities even if deprived temporarily of a head.
- Selecting **who is who** – which individuals are part of the inner circles, which connect with other crime rings, and which provide the network with skills, know-how and connections. Understanding the different functions of each group of actor sheds light on how the illicit network is evolving, shaping and reshaping over time.
- Identifying **recurrent schemes for sharing information** between different actors, including their substance, timing and geographical locations, to help interpret flows of information and documentation.
- The need for – as in all transnational, organised and financial crimes – **stronger coordination and systematic cooperation** between countries, jurisdictions and law enforcement actors with regards to investigations and intelligence.

4 Read more

- Download the full report here.
- Find out more about the Basel Institute's Public Governance division;
- Read this quick guide to social network analysis in combating organised crime and corruption by Jacopo Costa
- For more information about SNA and collaboration between researchers and practitioners, see an early report on Social network analysis in the fight against illegal wildlife trade (2020).
- Find out more about the Basel Institute's Green Corruption programme;