

The Global Observatory of Transnational Criminal Networks

**The Northern  
Triangle Criminal  
Network: Arms  
Trafficking Across  
Central America**

No. 18

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This research was elaborated through protocols and technologies developed by  
Vortex Foundation  
(<http://www.scivortex.org>).



Fusion supported this research as preparation for the series "The Traffickers"  
(<http://thetraffickers.com>).





The Global Observatory of Transnational Criminal Networks - Research Paper No. 18.  
VORTEX Working Papers No. 32

*The Northern Triangle Criminal Network: Arms Trafficking Across Central America*

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First edition, 2017.

Electronic Edition, Bogotá, Colombia

## **Disclaimer**

The facts and the analysis presented herein are sustained in documents and interviews exposed in mass media and judicial records related to the criminal networks analyzed. No primary information uncovering facts has been gathered, which means that only secondary sources were consulted, from legal to media documents. In the case of the names mentioned, quoted or referenced on indictments —with the exception of those specifically mentioned, quoted or referenced in the text as definitively condemned-, the presumption of innocence, in observance of individual rights is always preserved.

The judicial truth is the jurisdiction of the courts, which by law will decide whether the defendants are innocent or guilty.<sup>1</sup> It is stated that belonging to, participating in, being connected to, or appearing on a network, as analyzed herein, does not imply having committed a criminal act or being engaged in a criminal enterprise. It is always possible to belong, participate, be connected, or appear on a network as an agent promoting interests that are socially and institutionally beneficial, or as a result of coercion, among other reasons unrelated to criminal acts committed by the agent.

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According to the United Nations Firearms Protocol (1988), the firearms trafficking can be defined as the "*import, export, acquisition, sale, delivery, movement or transfer of firearms, their parts and components, and ammunition, from or across the territory of one State Party to that of another State Party if any one of the States Parties concerned does not authorize it in accordance with the terms of the Protocol.*" Currently, this type of traffic is strongly linked to several forms of organized crime worldwide, therefore fueling violence and crime in territories already characterized by insecurity and instability.

Central America is a hotspot for firearms trafficking, due to reasons such as (i) political instability and weak state institutions, (ii) high levels of corruption, (iii) ineffective post-conflict processes, (iv) geographical location with several routes for drug trafficking and other types of smuggling between North America and South America, (v) divergences in gun regulations among the Central American countries, and (vi) strong activity of local and transnational criminal networks such as *maras* and *pandillas*.

Bearing in mind how relevant the firearms trafficking is in Central America this document includes a model and analysis of a transnational criminal network that involves nodes/agents participating in Guatemala, Honduras, Nicaragua and El Salvador. The document has 4 parts. In the first part it is presented the methodology and concepts related to Social Network Analysis. In the second part it is discussed the modeled judicial case and the sources gathered and analyzed. The third part includes characteristics of the modeled criminal structure, such as types of nodes/agents, interactions established and the nodes/agents with the highest indicators of direct centrality and betweenness. In the last section, conclusions are presented and discussed.

## **1. Methodology and basic concepts**

### **Social Network Analysis**

Social Network Analysis (SNA) is useful for understanding interactions among individuals or social groups. In the present paper SNA was used to illustrate how social agents, referred herein as nodes/agents, interacted over a period of time to accomplish criminal objectives related to firearms trafficking.

The social agents participating in this network were classified through categories generated according to the analyzed information. When possible, the interactions established by those social agents were classified under three main categories or dimensions: (i) *Economic interactions*, which groups subcategories related to physical movement of money and financial transactions, (ii) *political interactions*, which groups interactions related *with* and *among* political leaders, candidates and some officials, and (iii) *violent and coercive interactions*. Although interactions can be usually classified under any of these categories, in some cases additional categories must be formulated. Therefore, SNA allows illustrating and analyzing interactions established by various types of social agents, rather than just showing traditional hierarchies. As discussed in the following sections, no political interactions were identified in the present model, probably as a result of weak judicial investigations.

Through algorithms, SNA allows identifying the relevant social agents intervening in the network, as well as the sub-networks, the emerging structures, the types of social agents and the types of interactions. In this analysis, the “relevant” social agents are (i) the “*hub*” of the network, in which direct interactions are concentrated, and (ii) *the structural bridge*, which is the social agent with the greatest capacity to arbitrate resources across the flows and indirect interactions of the network. Due to the possibilities of analysis and visualization, SNA has been used to analyze the structure and characteristics of illicit networks (Morselli, 2008; Johnson, Reitzel, Norwood, McCoy, Cummings, & Tate, 2013; Radil, Flint, & Tita, 2010).

## The Graph

The criminal situation analyzed in this paper requires interactions of collaboration or confrontation that can be analyzed as a social network: “*Social networks can be defined as ‘a group of collaborating (and/or competing) entities that are related to each other’*” (den Bossche & Segers, 2013, p. 39). Social networks are analyzed through *nodes* that represent individuals and *lines* or *arcs* that represent the interactions or ties. Therefore, “*(...) a network is defined as a set of nodes connected by ties*” (Worrell, Wasko, & Johnstn, 2013, p. 128).

The case analyzed herein was modeled through a technology of analysis developed by Vortex Foundation. The technology, consisting of protocols for processing, categorizing and analyzing information, generates a database of nodes/agents and interactions. This

database allows subsequently analyzing information and characteristics related to specific nodes/agents or interactions.

The first protocol for analyzing the sources of information consists of identifying “relationships” or “interactions” between two nodes/agents, according to the following syntactic structure:

*[[Name Actor 1[Description Actor 1]][interaction[verb word ^ action word]] [[Name Actor 2[Description Actor 2]]]*

Through specific protocols each section of this syntactic structure is processed in the system to consolidate the mentioned database. The database is then analyzed through additional protocols to generate SNA graphs like the ones presented below, and to calculate and identify the indicators of centrality that characterize each node.

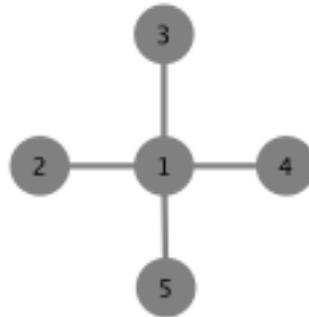
In the present analysis each node represents a social agent; therefore, the concept of “node/agent” is used to identify each individual or corporation participating in the network. As previously stated, each line connecting two nodes represents a social interaction. Also, the arrow in the line represents the specific direction of each interaction: *“For instance, if the node/agent X interacts with/to node/agent Z, then there is an arrow from a node representing X to a node representing Z.”* (Salcedo-Albaran, Goga, & Goredema, 2014).

## **Indicators of Direct Centrality and Betweenness**

It is important to differentiate two meanings of centrality: (i) The most connected node/agent and (ii) the node/agent with the highest capacity to intervene in the geodesic routes of the network.

On the one hand, the direct centrality indicator allows identifying the amount of direct interactions established by each node/agent. For instance, in the figure 0 the node/agent 1 has 4 direct interactions, while nodes 2, 3, 4 and 5 only have one direct interaction with the node 1. Since there are 8 bidirectional interactions, the node/agent 1 concentrates 50% (4) out of the total direct interactions, while each of the nodes/agents 2, 3, 4 and 5 concentrate 12,5%. In this situation, the node/agent 1 is the hub of graph 1, because it registers the highest direct centrality indicator.

Figure 0. Example of a graph with 5 interacting nodes/agents.



The second meaning of “centrality” allows identifying the node/agent with the highest capacity to arbitrate or intervene across the geodesic routes of the network, known as “the structural bridge”. While in graph 0 there are only 4 direct interactions (or 8 bidirectional interactions), there is a higher amount of geodesic routes, which are the indirect paths connecting all the nodes/agents. For instance, there is a geodesic route connecting the nodes 2 and 3 through the node 1, there is another geodesic route connecting nodes 2 and 4 also through node 1, etc. Those geodesic routes represent the paths of resources flowing across the network.

After calculating the total amount of geodesic routes connecting the nodes/agents of the network, it is possible to identify the node/agent with the highest capacity to intervene in those geodesic routes, by calculating the betweenness indicator. As it can be observed in graph 1, the node 1 intervenes in every indirect route of the network because there is not a single path that doesn't go through the node/agent 1, therefore it registers a betweenness indicator of 100%.

## 2. Description of the case

### The Criminal Network

According analyzed media sources, the criminal network analyzed below was apparently dismantled in 2015. At that time Salvadorian authorities pointed out the node/agent identified herein with the code COOFARTRRIANMSGAMEMACP (Medardo Arana) as the alleged leader of a criminal structure focused in the smuggling of firearms, ammunitions and explosives across the Northern Triangle of Central America. This Salvadoran man

established a joint trafficking enterprise in El Salvador with nodes/agents identified herein with the codes GUSMANPA and GUSMDJPA, two Nicaraguan brothers in charge of smuggling firearms from Honduras and Guatemala to El Salvador.

The node/agent COOFARTRRIANMSGAMEMACP provided firearms to a faction of the *Mara Salvatrucha*. According to police investigation, at least 16 out of 25 confirmed economic exchanges to acquire unlicensed firearms happened between the node/agent COOFARTRRIANMSGAMEMACP and *Mara Salvatrucha* members. Also, at least 44 *Mara Salvatrucha* members were identified as collaborators of the network.

In the network also participated two nodes/agents operating inside a private Security Company identified herein with the codes AMPRCSAW and AMPRCSAW1. Both individuals were accused of selling ammunitions for 40, 45 and 380 caliber to the criminal structure, taking advantage of their license to acquire the ammunition for their employer company and then reselling it to the criminal structure. Another captured suspect was the node/agent identified with the code PRARPFOHN, a professional armorer in charge of repairing the trafficked arms.

According to the prosecution carried out by the Attorney General Office of El Salvador<sup>1</sup>, a group of local business located in the downtown of San Salvador city, identified in the model with the code ACOFARTRSISS, worked as accomplices of the operation, in charge of hiding trafficked guns and money collected through extortions executed to other local business by the *Mara Salvatrucha* members. As a result of one of this extortions two security workers were murdered with trafficked firearms.

According to the prosecution, the prices of the seized armament rounded USD \$300 for ammunition boxes, some of them for M-16 and AK47 fusils. For handguns, the price was approximately USD \$600, USD \$1200 for fusils and USD \$600 for M-67 industrial grenades. Some of the seized weapons were exclusive use of the Salvadorian Army Force [*Fuerzas Armadas de El Salvador*], which sustains the potential, yet uncertain, involvement of military officers.

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<sup>1</sup> Fiscalía General de la República de El Salvador.

## Court Proceedings

When the criminal network was discovered by Salvadorian authorities, 80 raids were conducted to make effective 77 arrests under charges of (i) extortion, (ii) illegal trade and arms depot, (iii) supply of weapons, ammunition, explosives and similar items to illegal groups or organized crime, (iv) incitement and conspiracy on aggravated homicide and illicit grouping.

The specialized anti-gang units of the Attorney General Office of El Salvador<sup>2</sup> achieved to keep imprisoned the 44 *Mara Salvatrucha* members who were identified as collaborators, including Medardo Arana aka "Pilot" (COOFARTRRIANMSGAMEMACP), currently held in the *Ciudad Barros* prison. However, the initial matrix case remains unconcluded and under trial. Unfortunately, it was not possible to access the original sources and judicial records; therefore, the model herein analyzed is based on processed qualitative information extracted from press and official dispatches related to the case.

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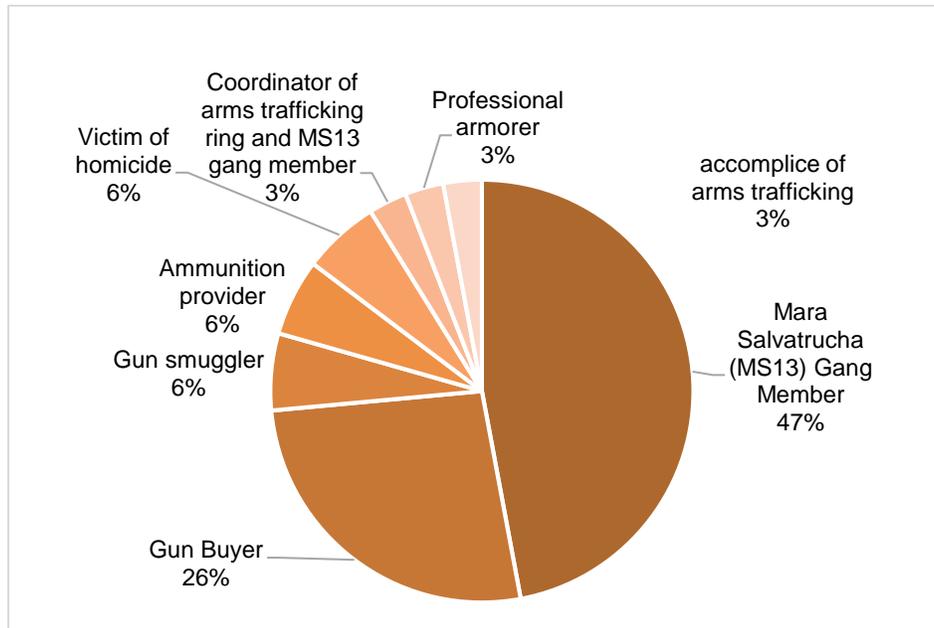
<sup>2</sup> Fiscalía General de la República de El Salvador.

### 3. Characteristics of The Network

#### Nodes/Agents

The total amount of nodes/agents registered in the sources is 34, distributed as follows (Figure 1):

Figure 1. Nodes/Agents of the Northern Triangle Criminal Network.



The most relevant type of node/agent identified in this network is the “Mara Salvatrucha Gang Member”, which constitutes 47% out of the total amount of nodes/agents. Most of those members were involved in the illicit purchase of firearms, and other crimes related to the use of trafficked weapons, such as extortions, kidnappings and even homicides.

Other categories of nodes/agents involved in the criminal structure are:

**Gun buyers (26%):** These are presumed criminal agents executing illegal activities at the local level, such as the *maras*, without being part of the transnational structure.

**Gun smugglers (6%):** These are nodes/agents in charge of acquiring and illegally importing firearms from Guatemala and Honduras to El Salvador.

**Ammunition providers (6%):** These agents were in charge of legally purchasing and diverting the ammunitions by selling them to the criminal structure.

**Victims (6%):** These are the two security workers who were murdered by *Mara Salvatrucha* members, as a result of crimes related to arm trafficking, specifically extortion to small and medium businesses that operated in the center of San Salvador city.

**Coordinator (3%):** This category represents the node/agent Medardo Arana aka “Pilot”, identified in the network with the code COOFARTRRIANMSGAMEMACP, who was allegedly the leader of the criminal structure, in charge of coordinating activities between gun smugglers and potential purchasers of illegal firearms.

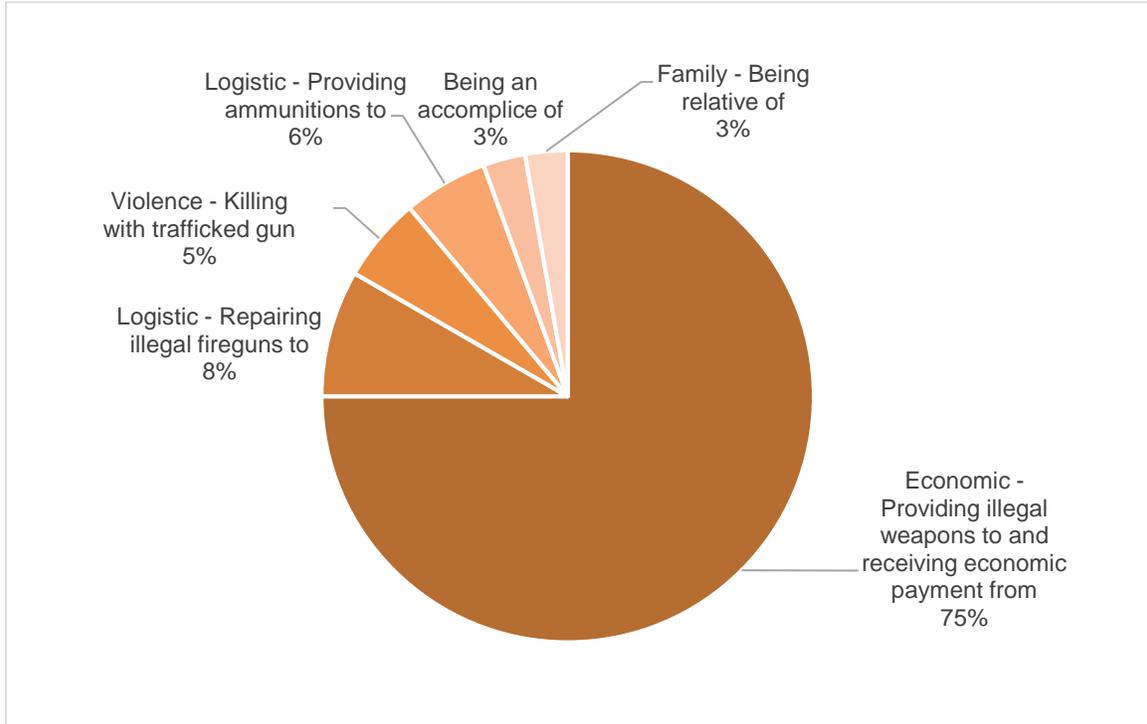
**Professional armorer (3%):** This category represents Pedro Feliciano Orellana Hernández identified herein with the code PRARPFOHN, who was the man in charge of repairing arms trafficked by the criminal structure.

**Accomplices (3%):** These are businesses operating in the center of San Salvador city, in charge of covering criminal activities carried out by the *Mara Salvatrucha* members, as well as hiding guns and money acquired through extortion.

## Interactions

The total amount of interactions is 36 (Figure 2), categorized under 4 main types illustrated in the Figure 3: Economic 75%, Logistic 8%, Violent 6%, Complicity 3% and Family 3%.

Figure 2. Interactions of the Northern Triangle Criminal Network.



The **Economic** interactions, illustrated in the figure 3 with gray color, include the unlawful purchase of firearms, as well as the following economic exchanges:

- Between the node/agent COOFARTRRIANMSGAMEMACP and the nodes/agents GUSMANPA and GUSMDJPA.
- Between the node/agent COOFARTRRIANMSGAMEMACP and his customers: 16 Mara Salvatrucha members, identified herein with the codes MASAMSGAMEMSMGM (1-16) and other unknown customers identified with the code GUBUUC (1-8).

The most active node/agent participating this interaction is COOFARTRRIANMSGAMEMACP.

The category “**Logistic interaction**”, illustrated in the Figure 3 with blue lines, groups those interactions consisting of the involvement of Pedro Feliciano Orellana Hernández,







The high level of centralization of this network is also reflected through the betweenness indicator, which is also highly concentrated in the node/agent COOFARTRRIANMSGAMEMACP, with 92%. This means that COOFARTRRIANMSGAMEMACP intervenes in 92% out of the total amount of geodesic routes (or indirect interactions) of the network. It calls the attention that the second and third nodes/agents with the highest indicators of direct centrality (GUSMANPA and GUSMDJPA) do not register a high indicator of betweenness, which means that the nodes/agents with the highest concentration of direct interactions lack power to arbitrate and intervene across the geodesic routes. In fact, the nodes/agents with the second and third highest indicators of betweenness are MASAMSGAMEMSMGM and MASAMSGAMEMSMGM10, due to their involvement in purchasing and using firearms for purposes of extortion and homicide.

As presented in the Annex 2, 31 out of 34 nodes/agents register a betweenness indicator of zero, which implies that the geodesic routes end in these nodes and, therefore, they lack capacity to intervene in the movement of resources or information.

## Conclusions

Trafficking of firearms is one of the most relevant criminal markets fueling the high levels of violence, forced human displacement<sup>3</sup> and political instability that characterize the Northern Triangle of Central America. Specifically, the presence and activity of *maras* create a permanent demand of firearms that are used for executing several types of usually violent crimes.

Due to opacity in the access to public judicial information, the criminal network discussed in this document was modeled through media information and secondary official information generated by authorities, since it was impossible to gather the original public records.

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<sup>3</sup> The Northern Triangle (Honduras, Guatemala and El Salvador) in Central America, as well as Mexico are currently suffering a humanitarian crisis directly linked to the persistent criminal violence. In 2014 around five per cent of the population were displaced by criminal violence and threats in El Salvador. Most of the 566,700 internally displaced persons in these three countries have been forced to migrate as a result of organized crime and gang violence. Internal Displacement Monitoring Centre (2015) New humanitarian frontiers: Addressing criminal violence in Mexico and Central America. Available in: <https://goo.gl/KISAoS>

The resulting model, which consisted of 34 nodes/agents and 36 interactions, illustrates the transnational and domestic dimensions of the firearms trafficking. While a Mara Salvatrucha leader conducted the criminal operation from San Salvador, foreign actors from Nicaragua were responsible of purchasing and smuggling different types of firearms across Central America.

The most relevant type of nodes/agents identified in the network is the “Mara Salvatrucha Gang Member”, which constitutes 47% out of the total amount of nodes/agents. Most of those members were involved in the illicit purchase of firearms, and other crimes related to the use of these trafficked weapons for executing extortions, kidnappings and homicides.

The Economic interactions represent the most relevant type of interaction, which includes the unlawful purchase of firearms, as well as the economic exchange of weapons and ammunitions. The most active node/agent in this interaction is COOFARTRRIANMSGAMEMACP, Medardo Arana.

A high level of centralization around the node/agent COOFARTRRIANMSGAMEMACP, Medardo Arana characterizes the resulting modeled. This node/agent registers 92% in the betweenness indicator and 43,1% in the direct centrality indicator, which means that COOFARTRRIANMSGAMEMACP intervenes in 92% of the geodesic routes and concentrates 43,1% out of the total amount of direct interactions. The high centralization around a single node/agent represents a low level of resilience and, therefore, a low level of sophistication, since isolating or removing COOFARTRRIANMSGAMEMACP would affect almost a half of direct interactions and, therefore, would modify the structure.

Although the successful operation of the firearms trafficking market requires cooperation of authorities at various levels, the sources gathered for elaborating the present model do not reflect corruption or cooptation among public servants, since no authorities were identified as part of the network. Therefore, additional analysis with sources that inform about the corruption and collaboration provided by public servants is required.

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## Annex 1. Direct Centrality Indicator

Node/Agent	Degree
COOFARTRRRIANMSGAMEMACP	43.1
GUSMANPA	4.2
GUSMDJPA	4.2
PRARPFOHN	4.2
MASAMSGAMEMSMGM	2.8
MASAMSGAMEMSMGM10	2.8
ACOFARTRSISS	1.4
AMPRCSAW	1.4
AMPRCSAW1	1.4
GUBUUC	1.4
GUBUUC1	1.4
GUBUUC2	1.4
GUBUUC3	1.4
GUBUUC4	1.4
GUBUUC5	1.4
GUBUUC6	1.4
GUBUUC7	1.4
GUBUUC8	1.4
MASAMSGAMEMSMGM1	1.4
MASAMSGAMEMSMGM11	1.4
MASAMSGAMEMSMGM12	1.4
MASAMSGAMEMSMGM13	1.4
MASAMSGAMEMSMGM14	1.4
MASAMSGAMEMSMGM15	1.4
MASAMSGAMEMSMGM16	1.4
MASAMSGAMEMSMGM2	1.4
MASAMSGAMEMSMGM3	1.4
MASAMSGAMEMSMGM4	1.4
MASAMSGAMEMSMGM5	1.4
MASAMSGAMEMSMGM7	1.4
MASAMSGAMEMSMGM8	1.4
MASAMSGAMEMSMGM9	1.4
VIOFHOSW	1.4
VIOFHOSW1	1.4

## Annex 2. Betweenness Indicator

Node/Agent	Bet
COOFARTRRIANMSGAMEMACP	92
MASAMSGAMEMSMGM	4
MASAMSGAMEMSMGM10	4
ACOFARTRSISS	0
AMPRCSAW	0
AMPRCSAW1	0
GUBUUC	0
GUBUUC1	0
GUBUUC2	0
GUBUUC3	0
GUBUUC4	0
GUBUUC5	0
GUBUUC6	0
GUBUUC7	0
GUBUUC8	0
GUSMANPA	0
GUSMDJPA	0
MASAMSGAMEMSMGM1	0
MASAMSGAMEMSMGM11	0
MASAMSGAMEMSMGM12	0
MASAMSGAMEMSMGM13	0
MASAMSGAMEMSMGM14	0
MASAMSGAMEMSMGM15	0
MASAMSGAMEMSMGM16	0
MASAMSGAMEMSMGM2	0
MASAMSGAMEMSMGM3	0
MASAMSGAMEMSMGM4	0
MASAMSGAMEMSMGM5	0
MASAMSGAMEMSMGM7	0
MASAMSGAMEMSMGM8	0
MASAMSGAMEMSMGM9	0
PRARPFOHN	0
VIOFHOSW	0
VIOFHOSW1	0

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Philosopher and MsC in Political Science. Founder and CEO at Vortex Foundation. Eduardo has researched in the areas of organized crime, kidnapping, corruption, drug-trafficking and State Capture. As partner, advisor or consultant, he currently researches on the structure and impact of Transnational Criminal Networks with scholars, institutes and Universities in North, Central and South America, Europe and Africa.

### **Diana Santos**

Sociologist from the Universidad del Rosario (Bogotá, Colombia). Currently assisting projects at Vortex Foundation and The Global Observatory of Transnational Criminal Networks, especially modeling transnational criminal networks, and writing research papers. Interested in: Interdisciplinary studie, and visual communication of knowledge.