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Displacement Effects of Supply-Reduction Policies in Latin America

A Tipping Point in Cocaine Trafficking, 2006–2008

Juan Carlos Garzón and John Bailey

Introduction

Two main forces shape illegal drug trafficking: markets and institutions. In a context of prohibition, markets provide the incentives for people and organizations that participate in the illegal drug chain, and institutions influence their behavior by increasing or, in some cases, decreasing the risk of engaging in illegal activities (Garzón 2014). We use this analytical framework to identify recent trends in illegal drug trafficking in Latin America. We focus especially on cocaine in the period 2000–2013.

Our hypothesis is that supply-reduction efforts, especially increased interdiction in the regional and the country-level offensive against the major drug gangs in Colombia and Mexico, created or accelerated ongoing changes in the behavior of criminal organizations. The policies substantially affected the drug trade in the region, with serious negative outcomes for producer and transit countries. We identify 2006–2008 as a tipping point in supply-reduction efforts, as seen in high levels of interdiction, the fragmentation of large criminal organizations, and the start of a decline in coca cultivation and potential production in the Andean region. Our interest is to analyze changes in the cocaine market and the adaptations by criminal organizations after this tipping point, with particular interest in violence and crime in Latin America. To this end, we show how the tipping point magnifies four main effects: the "balloon effect" (the displacement of targeted activity to another location), the "cockroach/diaspora effect" (the displacement of a targeted criminal group to another territory), the "butterfly effect" (the displacement of impacts of state intervention), and the "short-sheet effect" (the displacement of budget priorities).

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We build a conceptual framework to analyze the impact of the tipping point in the cocaine chain, testing our categories and variables with the available information. To describe the supply-reduction effort we use cocaine seizures as reported by the Latin American governments in relation to potential cocaine production in the Andean region. We recognize that both types of data have limitations of accuracy and availability, but they provide an approximation of the intensity of interdiction along specific routes. We also use information about trends in cocaine consumption and prices to identify changes in local markets. Additionally, we survey scholarly publications, government documents, and media reports to address our working hypothesis. The analysis is essentially qualitative, using the available quantitative evidence to support our hypothesis.

We emphasize that this is a work in progress that offers preliminary findings relevant to our hypothesis, and we also identify areas that require additional research. With the available information, we find that a supply-reduction strategy can reduce and redirect cocaine trafficking but at the cost of negative outcomes and collateral damage. We argue that the current anti-drug strategy has positive outcomes in specific cases, but it also generates new problems or exacerbates institutional and social vulnerabilities.

The next section addresses the relationship between supply-reduction efforts and their effects on markets and on the dynamics of criminal organizations in Latin America. The penultimate section elaborates the working hypothesis, identifying the main variables and their relationships. The final section discusses the main findings, the remaining questions, and some policy implications.

Four Effects of Supply Reduction on Illegal Drug Trafficking in Latin America

The effects of the supply-reduction strategy on illegal drug trafficking in Latin America can be grouped as four main effects or displacements:

1. the "balloon effect": pressing down on one trafficking route displaces the targeted activity to another location;
2. the "cockroach/diaspora effect": repression of criminal networks in one location leads to their displacement to another in search of safe haven;
3. the "butterfly effect": intervention in a given locale can have an impact in a distant territory, without explicit link or connection; and
4. the "short-sheet effect": concentration of resources in law enforcement shifts priorities away from other kinds of policies (e.g., prevention or harm reduction). With limited budget resources, the state's "balance sheet" can cover the nose or the toes, but not both.

We have an extensive literature on the local impacts of the illicit drug trade and the effects of state responses, but here we focus on the transnational impacts, showing the interrelations between national and regional dynamics. This is relevant, because "success" in one country can bring new problems to its neighbors. In practice, however, it is difficult to isolate the connection between the "external" variables (what happens beyond a country's borders) and the "internal" (what happens domestically). For example, homicide rates in Central America, one of the main corridors between cocaine production zones and the US market, could be influenced by changes in the dynamics of drug trafficking in Mexico or Colombia, but the available data and methods can't tell us the precise magnitudes of the effects. Therefore, as we examine the displacements produced by supply-reduction efforts we emphasize that correlation is not causation.

The "balloon effect"

Peter Reuter (2014) notes that the "balloon effect" hypothesis has become part of the conventional wisdom about the illegal drug trade. Different studies use this image to describe the effect of government intervention on displacement of trafficking (Loveman 2006; Friesendorf 2007; Dávalos, Bejarano, and Correa 2009). The theory is that the intensification of interdiction in a specific transshipment country imposes costs on the criminal organization and makes alternative locations more attractive. This hypothesis has been used to explain shifts in production zones in the Andean region (e.g., displacement of production from Colombia to Peru and vice versa), changes of routes (e.g., from the Caribbean to the Pacific), and most recently changes of consumer markets (e.g., displacement of the cocaine market from North America to Europe). The main idea is that pressure by authorities in one place generates effects in others, based on the assumption that criminal organizations have incentives and the capacity to respond to changes in costs and adapt their activities to the new circumstances (Reuter 2014).

Few empirical studies support this hypothesis, in part because of the lack of relevant information and the poor quality of official reports. A problem with the "balloon effect" is that it is easy to confuse correlation with causation, ignoring the multiple variables that could explain changes in markets. As Reuter (2014, 40) states: "Surely the balloon effect contains at least a grain of truth, even if is not the whole story." Despite the problems involved in trying to support this metaphor with sufficient evidence, it is useful to identify the effect of eradication and interdiction on the displacement of production or trafficking. In the Latin American case it seems clear that an interdiction crackdown by one country has had effects in others.

The "cockroach/diaspora effect"

Bruce Bagley (2012) uses the "cockroach effect" to describe the migration of criminal organizations beyond their territories of origin. For Bagley (2012, 11) this movement "is reminiscent of the scurrying of cockroaches out of a dirty kitchen into other places to avoid detection after a light has been turned on them." He identifies the effect as part of the ongoing transformation of criminal groups in Latin America, specifically to describe their displacement from Mexico to Central America. Juan Carlos Garzón (2013) describes this dynamic as a "Criminal Diaspora," highlighting the impact of state interventions (especially the "kingpin" strategy) and confrontations among rival factions in the displacement of criminal organizations. The effect occurs not only as part of "normal business expansion" but also as a survival mechanism. In that same vein, Daniel Rico (2013) analyzes the Colombian case, showing how criminal organizations there began to orient their expansion toward European markets, while at the same time investing in the creation and growth of domestic markets in South America. In this dynamic, veteran criminals migrated in search of safe haven, while younger criminals, with less experience and a greater propensity for violence, assumed leadership at the local levels in Colombia.

The analysis of the international displacement of criminal organizations as an effect of supply-reduction efforts has been useful not only to describe the regional influence of the major criminal organizations, as from Brazil, Mexico, and Colombia, but also to account for consequences in terms of violence and corruption. In Latin America, public authorities and media have explained increases in crime rates by alluding to the presence of foreign actors. However, the supporting evidence usually is anecdotal and unsystematic. In contrast to the studies that analyze the migration of the Russian or Italian mafia (Gambetta 1993; Varese 2012), in Latin America the cross-national spatial mobility of criminal organizations is relatively new and lacks sufficient research.

The "butterfly effect"

This hypothesis suggests that action "X" in one place can produce a reaction "Y" in another, perhaps distant place. The image underlines the sensitive interdependence of the drug market chain. The difference between the "butterfly" and the "balloon effect" is that the former can combine variables (e.g., drug interdiction in one place can affect homicide rates in another), while the latter explores the displacement of a particular component of the chain from one place to another (e.g., crop eradication in Colombia can be offset by increases of coca production in Peru or Bolivia). Usually the "butterfly effect" serves to show how a small change in one country can contribute to a significant change in another country. For our purposes, the emphasis will be on the unexpected displacement of the impact of an action or intervention from one country to another, no matter the size of the changes.

Castillo, Mejía, and Restrepo (2014) provide an example of the "butterfly effect." Through a statistical exercise, they estimate the effect that successful cocaine interdiction policies in Colombia had on violence in Mexico in recent years. The authors conclude that aggregate supply shock originating in drug seizures in Colombia affected homicide rates in Mexico. In another example, Angrist and Kugler (2008) link the variation in homicide rates in several regions in Colombia where coca was cultivated with levels before and after the crackdown on drug-trafficking activities in Peru. The authors find that increases in coca cultivation are related to increases in the levels of violence. Additionally, the United Nations Office on Drugs and Crime (UNODC, 2011) connects the effect of the reduction in cocaine smuggling through Mexico and diversion of drug flows through other Central American countries to the high level of homicides in this sub-region, especially in the Northern Triangle: Guatemala, Honduras, and El Salvador.

The "butterfly effect" alerts us to consider how external factors can play a role in the changes of criminal violence in a particular region or country. In the case of Mexico, for example, the work of Castillo et al. helps us understand that the government crackdowns on drug cartels during President Felipe Calderón's administration (2006–2012) might not be the only explanation for the surge in violence in that country. The challenge of this perspective is to not overestimate the weight of the exogenous variable, giving proper weight to characteristics of the local context and the proximate causes that influence levels of violence. This is particularly so in a region such as Latin America in which transnational organized crime and illicit drug trafficking figure as prominent explanations.

The "short-sheet effect"

The UNODC identifies what it calls "several unintended consequences" of the prohibitionist model; one of these is "policy displacement." According to the UNODC (2008, 216): "The expanding criminal black market demands a commensurate law enforcement response, requiring more resources. But resources are finite. Public health, which is the driving concern behind drug control, also needs resources, and may have been forced to take the back seat." Prevention policies also have been relegated to secondary status in terms of budget and political priorities. The problem is that the state's balance sheet is finite and there are trade-offs in the allocation of its limited resources.

Since the declaration of a war on drugs in the 1970s, trafficking has had a central place in the cooperation between the United States and Latin America (Andreas and Durán Martínez 2014, 378). Bilateral relationships and resource allocations have been focused on supply-reduction efforts, with the reasoning that supply reduction will drive up drug prices and thus reduce demand. This bias in the definition of priorities and allocation of resources has been reflected in Latin America, where most countries followed the US lead (UNDP 2013; Comolli and Hofmann 2013).

Different works that analyze the cooperation between the United States and Latin America with respect to the distribution of resources and changes in priorities over time support the idea behind the "short-sheet effect." An invaluable resource to explore this perspective is the website "Just the Facts" <justf.org>, a project of the Center for International Policy, Latin America Working Group, and Washington Office on Latin America (WOLA). Their report (Isaacson et al. 2013) shows how over the past few years the United States has expanded its military intelligence and law enforcement agencies' direct involvement in counter-narcotics operations. Since 2000, the United States has spent approximately $12.5 billion in Latin America to stop drugs at the source (Isaacson et al. 2013). In the case of Central America, the Inter-American Development Bank (IDB) and WOLA found that there is a disproportional concentration of resources in projects focused on combating organized crime (43%) and institutional strengthening (36%), especially the police and judicial system (IDB and WOLA 2011). Additionally, a recent report of the Woodrow Wilson Center (2014, 1) concluded: "By focusing too narrowly on counter-narcotics, the United States and host countries became bogged down in a traditional approach to drug law enforcement that prioritizes arrests over community based approaches to reducing crime and violence."

Apart from a regional perspective, a number of studies emphasize a specific type of US cooperation with a particular country. This is the case of Plan Colombia, which involved $6.6 billion in US assistance between 2002 and 2013 (UNDP 2013; Tickner 2014), and the Merida Initiative, specifically, security cooperation with Mexico (Seelke and Finklea 2014). The impacts of these packages have been controversial, especially because of the "collateral damage" produced in terms of violence, human rights violations, forced displacements, and the like (Rosen 2014; Isaacson 2010). Despite recent reallocations of resources to programs such as prevention of youth violence and the strengthening of justice sector institutions, among others, the central point is that 88% of total US security assistance to Latin America continues to be centered on traditional threats (UNDP 2013).

Each of the four effects discussed has different impacts according to the specific country context. The extent of the negative consequences varies according to the role of each country in the drug trade chain and is strongly correlated with weak institutions, especially weak rule of law and lack of resources. Our purpose is to provide a general idea of recent changes in these effects, analyzing how the tipping point of supply-reduction efforts can generate specific impacts in drug markets and consequences for citizen security in Latin America. Our hypothesis is that during 2006–2008 a confluence of events in Mexico, Colombia, and the United States generated a tipping point in the cocaine chain that influenced new patterns of markets and criminality.

A Tipping Point in Cocaine Supply Reduction: Effects in Latin America

Three sets of policy changes introduced in 2006–2008 constitute a tipping point in Latin America toward new patterns of drug markets and criminality: first, Colombia shifted tactics in drug interdiction and reoriented the offensive to disrupt the large criminal organizations, as seen in demobilization of paramilitary groups and emergence of criminal gangs; second, Mexico intensified its offensive against trafficking; and third, the United States hardened its Southwest border with Mexico.

The first element of the tipping point is the offensive by the Colombian state against cocaine production and trafficking, leading to a reconfiguration of criminal organizations in this country. The offensive is reflected in increased seizures, the decrease in potential production (shown in Figure 23.1), and the fragmentation of criminal groups.

According to Castillo, Mejía, and Restrepo (2014), in 2006 the Colombian government reoriented its anti-drug strategy to de-emphasize attacks on the cultivation phases of the drug production chain (coca crop eradication) and focus more attention on the interdiction of drug shipments and the detection and destruction of cocaine processing labs. A result of this shift was an important reduction in the supply of Colombian cocaine. At the same time, according to Daniel Rico (2013), the criminal structures that once operated in Colombia, then known as "cartels," were weakened by government offensives and by internal disputes. The demobilization of paramilitary groups, with more than 30,000 members, had an important influence on the illegal drug chain. Criminal organizations entered a phase of adaptation characterized by the fragmentation of the large structures and the emergence of multiple groups, labeled by the authorities as "Emerging Criminal Gangs." In this context, Rico (2013) suggests that the Colombian groups lost considerable influence in the US market, while Mexican organizations gained strength as distributors of cocaine and thus more leverage to negotiate better terms from Colombian producers.

These arguments indicate that during 2006–2008 in Colombia the cocaine chain experienced a double shock: a supply shock, identified by Castillo et al., and an

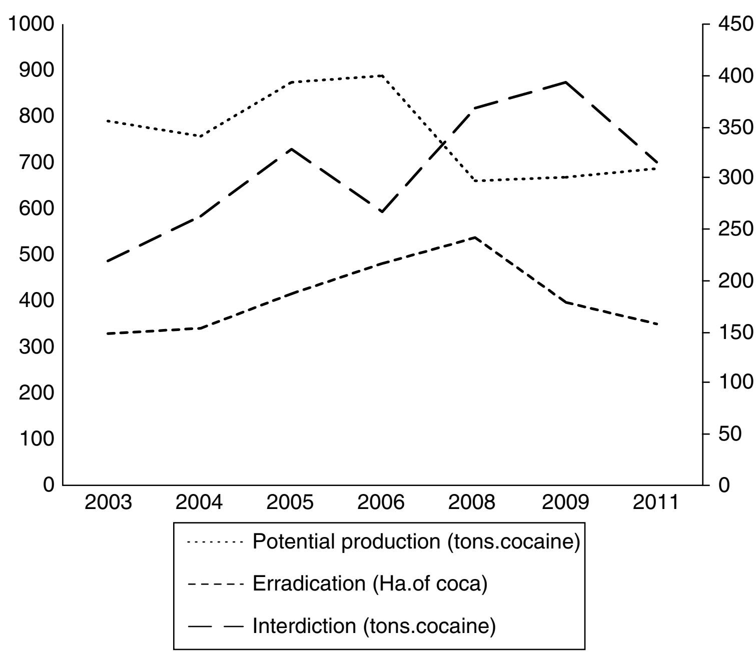

Figure 23.1 Potential production, interdiction, and eradication: Colombia 2003–2011. Source: UNODC Statistics

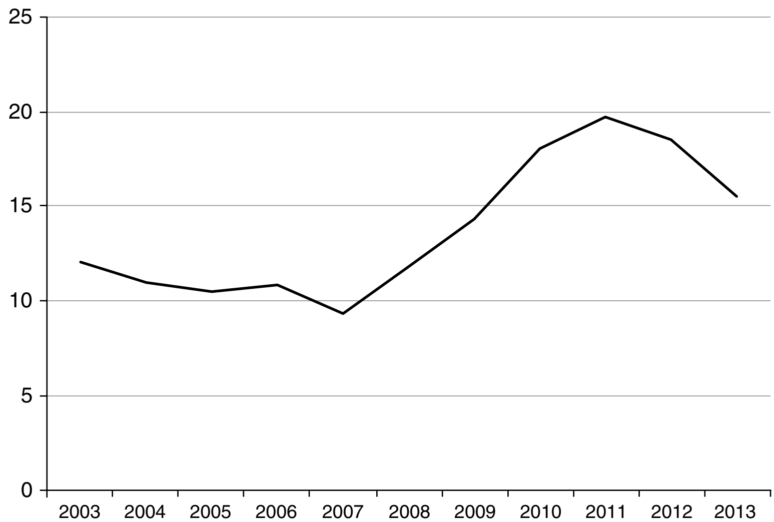

Figure 23.2 Homicide rate in Mexico (per 100,000 inhabitants) 2003–2013. Source: Executive Secretariat of the National Public Security System

intermediaries shock (the reconfiguration of drug-trafficking structures), identified by Rico. Both shocks had relevant impacts on the levels of cocaine production in Colombia and the quantities of product exported.

The second element of the tipping point is the "war" on drug-trafficking organizations launched by Mexico's President Felipe Calderón in December 2006. The offensive contributed to raising levels of violence (as shown in Figure 23.2) and to complicating cocaine trafficking through Mexico and into the United States.

Within days of taking office in December 2006, President Felipe Calderón dispatched some 25,000 federal police and military personnel to several cities along the US–Mexico border in joint operations against criminal organizations. Dozens of other such joint operations were sent subsequently to trouble spots along the border with the United States and to interior coastal states. The joint operations were but one of a series of policy measures in a broad strategy against organized crime. Overall, the Calderón government took a quantum leap to strengthen the country's police–justice systems, with an emphasis on combating organized crime. As to resources, for example, the federal budget in real terms directed to public security increased by 59% over the six-year term. The federal police grew from 6,489 officers in 2006 to 36,940 in 2012, and substantial investments were directed to strengthen state and local police. A point of particular emphasis was intelligence: the "Mexico Platform" was an ambitious attempt to construct a nationwide set of databases on relevant information such as vehicle license plates, active and retired police officers, weapons, and the like (Presidencia 2012; Bailey 2014, ch. 6).

As to results of the anti-crime effort, the government touted especially its kingpin strategy. Of the 37 most-wanted criminals identified by the government in

March 2009, 22 had been killed or captured by July 2011. The government could also point to the 112,889 persons detained on drug-related charges (Presidencia 2012). Public opinion, however, was traumatized by the violence that erupted in 2007. The national homicide rate more than doubled in two years, and – though estimates vary – some 60,000 deaths were attributed to organized crime by the end of Calderón's term in 2012. Many blamed the government's strategy of direct confrontation for the spike in violence. The kingpin emphasis led to the decapitation of large organizations, which promoted fragmentation and increased the competition and violence among second-level leaders (Hamilton 2013).

The intensification of enforcement and the resulting violence increased the costs of drug trafficking in Mexico. The question is whether the change displaced some trafficking activities to countries lying between Colombia and Mexico. According to Peter Reuter (2014), however, the problem with this suggestion is that there are almost no direct deliveries to the United States from Central America. Also, cocaine seizures in Mexico were relatively low, taking into account its role as the main transportation route to the United States. The high of 48 tons for 2007 was largely the result of two record-setting seizures in Mexican ports: 11.7 tons in September and 23.5 tons in October (Hope 2014). Also in 2007 in Colombia the total amount of cocaine seizures was 195 tons. Taking this figure into account, the shock in Mexico must be understood as a change in the conditions of drug trafficking rather than a displacement of drug routes away from this country.

The third element of the tipping point is the intensification of US control of its southern border and increased cooperation with Mexico. The United States hardened its 2,000-mile land border with Mexico as well as its sea border on the Gulf of Mexico and the Caribbean, initially as a response to the 9/11 terrorist attacks and subsequently in response to the potential for spillover violence by criminal organizations operating in northern Mexico. Beginning in 2006, the United States formulated a southwest border strategy that improved interagency coordination and overall effectiveness. Mexico and the United States subsequently launched the Merida Initiative in October 2007, which accelerated bilateral cooperation against criminal organizations. The Initiative was later expanded to include Central America and the Caribbean.

The United States introduced two sets of policies in 2006–2007, which complemented those taken by Mexico. A budget reauthorization in 2006 for the Office of National Drug Control Policy (ONDCP) called for a strategic approach to drug interdiction on the Southwest border, and the first such strategy report appeared in 2007 (Figure 23.3). The main goal was to improve coordination among the scores of local, state, tribal, and federal-level anti-drug agencies along the border as well as with their counterparts in Mexico. For example, administrative mechanisms such as Border Enforcement Security Task Forces were created to improve coordination on the US side and Sensitive Investigative Units were set up to better work with Mexican agencies (ONDCP, 2013a). The second policy innovation was the Merida Initiative adopted by the Calderón and George W. Bush administrations in October 2007 and reaffirmed by the Barack Obama government in March 2010. The Initiative included a substantial increase in US spending to assist Mexico's struggle against trafficking

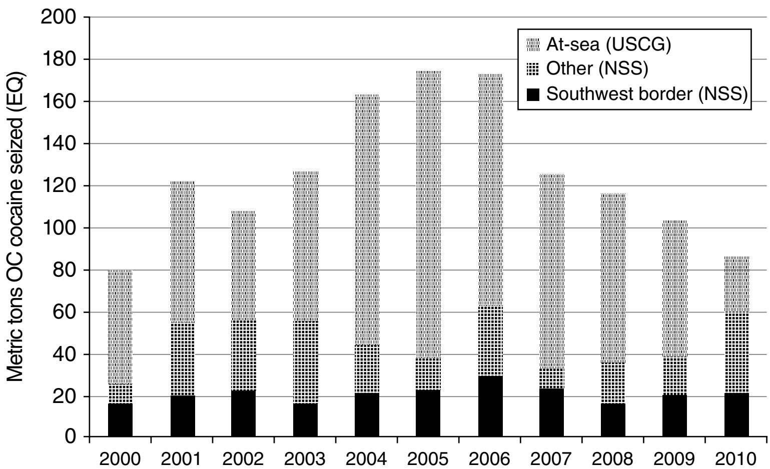

Figure 23.3 Cocaine seizures at the southwest border, the rest of the United States, and at sea, 2000–2010. Source: Office of National Drug Control Policy (2014). "What America's Users Spend on Illegal Drugs: 2000–2010." Original sources: National Seizure System (NSS), EPIC, extracted March 15, 2013, and US Coast Guard

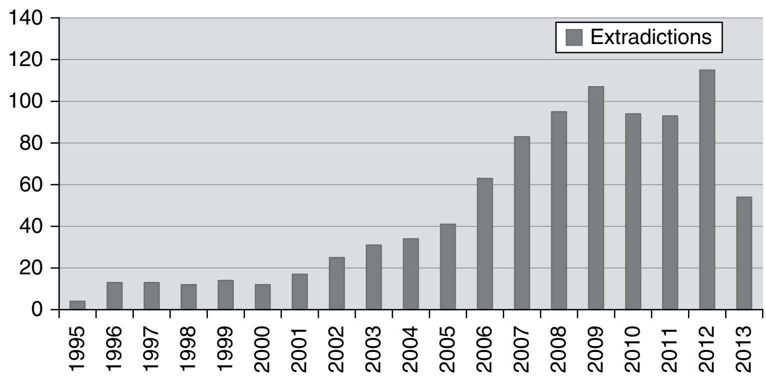

Figure 23.4 Individuals extradited from Mexico to the United States 1995–2013. Source: Seelke and Finklea (2014), "U.S.–Mexican Security Cooperation: The Merida Initiative and Beyond."

organizations ($1.4 billion over three years), but its importance rested on much closer collaboration between the governments with respect to sharing intelligence and the recognition that the anti-drug effort was a shared responsibility, with the United States pledging greater effort to reduce drug consumption, weapons trafficking, and money laundering (Seelke et al. 2011; Seelke and Finklea 2014).

It is difficult to determine the precise impact of bilateral cooperation on drug trafficking. The US State Department has cited the arrest or killing of high-profile criminal leaders since late 2009 as examples of increased law enforcement cooperation. Additionally, the number of extraditions increased during Calderón's administration, starting at 83 in 2007 and rising to nearly 100 per year (Figure 23.4).

The operations against "priority targets" have shown the important role that US law enforcement agencies played in Mexico (e.g., the capture of the Joaquín "El Chapo" Guzmán in February 2014) (Radden Keefe 2014). Overall, we consider that stepped-up bilateral cooperation must be taken into account as a force of change, without overestimating the role that the Merida Initiative may have played in this dynamic.

In addition to these three sets of policy changes, we note that the quantities of cocaine seized in South and Central America increased steadily over 2003–2009, reaching the highest point in 2009 with 482 tons. This is significant if we consider that, according to the White House, the potential cocaine production in the Andean region was 750 tons in 2010. Production figures should be read with caution because of potential double counting (e.g., a seizure in a border region could be counted in both countries), and the inconsistencies in information systems across the region. Even so, the evidence shows an impressive effort to interdict the supply of cocaine to the United States.

According to the UNOCD database, between 2003 and 2011 in South America 2,152 tons of cocaine were seized and more than one million hectares of coca crop were eradicated. In many countries the number of people jailed for drug offenses showed remarkable growth (OAS 2013). At the same time, the street price of cocaine in the United Stated rose from $150 to $177 and the amount of cocaine consumed in this country decreased by about 50% (ONDCP 2014). Does the supply-reduction strategy explain the decrease of the availability and price increase of cocaine in the United States? With the available information it's difficult to claim causation between anti-drug interventions and the changes in the cocaine market. There are many factors that influence supply, prices, and levels of consumption (Mejía and Posada 2008; Babor et al. 2010; Pollack and Reuter 2014).

Even accepting that in the US case the supply-reduction efforts in Latin America had the expected effect, from the regional perspective the question is: what is the cost–benefit balance of the implementation of this policy? To address this question, we analyze how the 2006–2008 tipping point magnified the four effects and changed the cocaine market and the dynamic of organized crime in Latin America. Figure 23.5 synthetizes the framework proposed in this chapter.

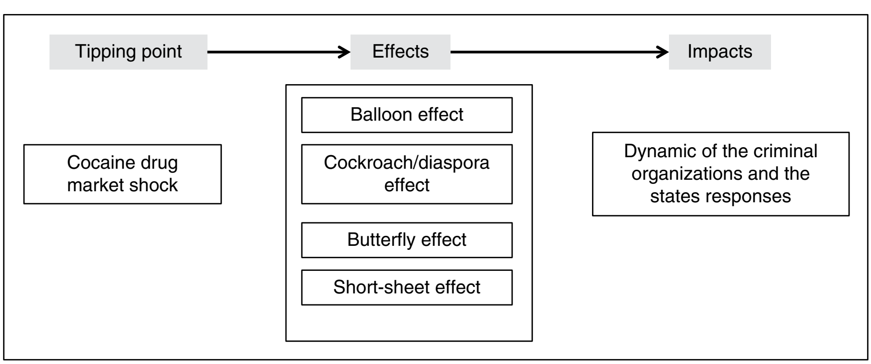

Figure 23.5 The shock, the effects and their impacts – analytical framework

In the next section we discuss the main changes and trends in illegal drug trafficking based on the idea of the shock and its repercussions in the four effects. Rather than seeking to offer an in-depth analysis of each variable, the idea is identify the stylized facts of the cocaine market and the consequences of the supply-reduction strategy.

Supply Reduction and Dynamics of Cocaine Trafficking in Latin America: Costs and Consequences

A challenge to measure the impact of the supply-reduction strategy is the multiple variables at play, making it difficult to identify the specific causes for fluctuations in prices, purity, and the availability of cocaine. We can, however, analyze the main changes during and after the tipping point. Obviously, the correlation between the shock and the effects need not imply causation. Our assumption is that the shock has consequences and impacts depend on the characteristics of each country and its role in the drug chain. This is a preliminary approach that must be tested with available evidence.

In this section we identify variations in the four effects, taking the 2006–2008 shock as the starting point. Our aim is to show the potential and real costs of the supply-reduction strategy. The main findings are summarized in Table 23.1. This exercise is based on a review of the secondary literature on the effects of drug trafficking and crime in the region, as well as multilateral and national government reports.

It was not possible in all cases to support the identified changes with empirical evidence. At times, the shifts or trends highlighted in reports, official documents, or academic articles are assumptions based on anecdotal information or thin evidence. We do not attempt to evaluate the quality of the studies but recognize knowledge and information gaps. Aware of the limitations, we categorize the evidence as "strong" (supported by data and studies, applied in an important group of cases), "moderate" (with some data and systematic analysis, but only applied in some cases), and "tentative" (based on anecdotes and limited evidence).

Regarding the "balloon effect" there are three main changes to highlight: the shift of the distribution of global cocaine consumption, with a more important role for the European market and the West African route; the growth of local retail markets in transit countries; and the displacement of production within the Andean region.

In 2005, 49% of cocaine users (annual prevalence) were in North America, 25% in Latin America and the Caribbean, and 15% in Western and Central Europe. In 2011, Western and Central Europe increased its participation to 21% and Africa doubled its share of users, with 15% of the global consumption of cocaine (UNODC 2013b). While the US rate of cocaine consumption dropped considerably, the market increased elsewhere. In Africa and Asia there are pockets of emerging cocaine use; in Western and Central Europe, indicators of overall supply suggest a rebound in the availability of cocaine; and the retail market in several countries in Latin America has grown (UNODC 2014a). The correlation between amounts of cocaine seized in

Table 23.1 Impacts of the supply-reduction strategy: Effects, changes and costs

Effect	*Change*	*Evidence*	*Potential and real cost*
(A) Balloon effect	Displacement of routes (and final consumption market)	Strong	- Increased consumption in producing and transit countries
	Displacement of production	Strong	- Violence related to disputes over emerging routes
	Displacement of consumption	Moderate	- Growth of local retail markets
(B) Cockroach/ diaspora effect	Displacement of criminal organizations	Moderate	- Expansion of criminal activities and corruption
	Spillovers of violence	Tentative	- Diversification of criminal activities (e.g., predatory crimes)
	Expansion of transnational organized to "new" zones	Tentative	- Diffusion of violence and crime to new territories
	Fragmentation as a result of the government enforcement and inter-gang disputes	Strong	- Institutional instability
(C) Butterfly Effect	Scarcity of drugs in transit countries as result of government intervention in producer countries	Tentative	- Diffusion of violence and crime to new territories - Institutional instability - Interdiction crackdowns by one country may affect others
	Increases of violence in other countries as a result of government interventions in producer and transit countries	Moderate	
(D) Short-sheet effect	Relocation of resources from one region to another	Strong	-Supply-reduction policy bias: International cooperation oriented to reducing drug supply, instead of addressing the needs of the recipient country
	Changes of preferences and relocation into new areas	Moderate	- Loss of independence and autonomy to allocate national resources

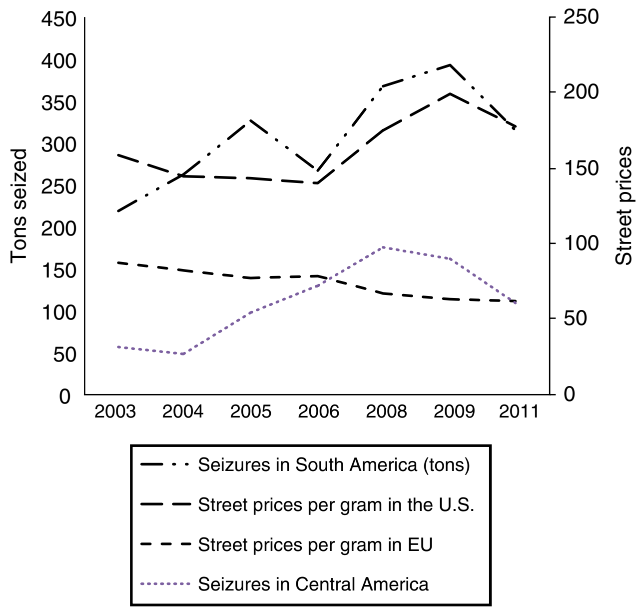

Figure 23.6 Cocaine seizures and the street prices in the United States and the European Union. Source: UNODC Statistics

South and Central America and increased street prices in the United States is high (Figure 23.6). On the other hand, in Europe (considering the European Union) there is an inverse relationship (more seizures in Latin America correlate with cheaper cocaine in EU). In Latin America we have inadequate information about prices, but the evidence shows that cocaine use is widespread across the region. In some countries it has reached levels similar to those found in Europe. The number of past-year cocaine users in South America was estimated at almost 2 million in 2004–2005 and at 3.35 million in 2012 (UNODC 2014a).

Colombia's "emerging criminal bands" turned to European markets and focused on developing local markets in South America for cocaine and its byproducts. Central America, previously a transit zone, assumed a more active role for drug-processing and money-laundering services (Garzón 2013). West African countries are playing a much larger role in international drug markets (West Africa Commission on Drugs 2014). According to the UNODC (2013a), a significant percentage of cocaine exported to Africa passes through Brazil, transported by Nigerian criminal groups. Recent information shows that flows of cocaine from Venezuela to Africa have decreased, replaced by transshipment through Brazil and Argentina.

On the other hand, the volume of cocaine production has changed slowly in the Andean region. The remarkable drop in Colombia's production, especially in 2008, was partially offset by increases in Peru and Bolivia (Figure 23.7). In Peru, coca bush cultivation increased by 34% between 2005 and 2011, exceeding the production

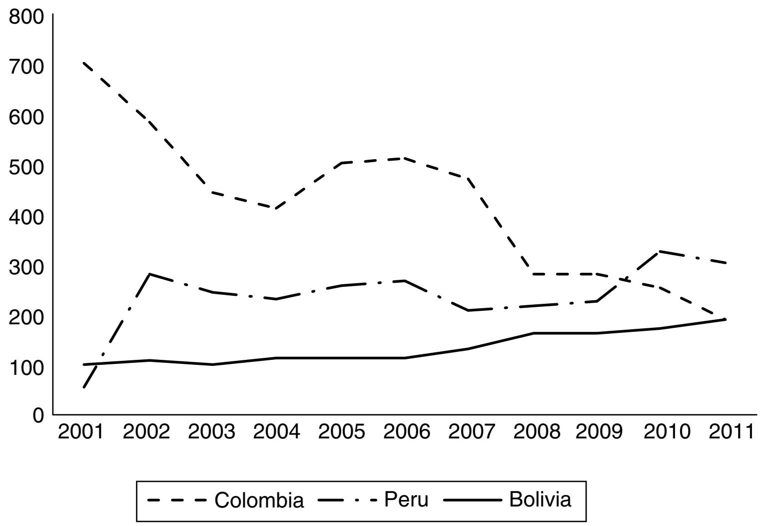

Figure 23.7 Potential pure cocaine production (tons) 2001–2011. Source: UNODC Statistics

potential of Colombia (UNODC 2013a). In 2007, the potential production of the Andean region was 810 tons of cocaine; in 2008 this figure decreased to 660 tons and rebounded to 680 tons in 2011 (ONDCP 2013b). The deficit generated by the shock in 2007 was a little more than 100 tons, an important decrease but not enough to leave the market undersupplied.

Criminal organizations adapted to changes of route and the emergence of "new" markets. A temporary deficit of cocaine supply could explain in part the movement of Mexican organizations to the Andean region and to some transit countries. During this process, Colombian groups lost influence in the US market, while Mexican gangs gained some control over trafficking to the Northern Hemisphere (Rico 2013; Dudley 2014). Colombians sought to strengthen their presence in key transit areas (Venezuela and Honduras) and some alternative routes (e.g., Costa Rica), while Mexicans sought to engage production areas. The trends reflect in part the "cockroach/diaspora effect," but not all movement by criminal organizations could be explained by a rational decision to shift business to a distant territory (Garzón 2014).

What happens in Latin America is similar to what Federico Varese (2012, 15) found in the case of the Russian Mafia in Italy: "A Mafioso is in new territory because he escapes to it. Once there, he explores local opportunities." In most cases this is not an orderly process of expansion, but rather a survival mechanism. Government offensives against the bigger organizations in Mexico and Colombia generated a pressure on the first and second tiers of their leadership (Garzón 2014).

A principal strategy in the supply-reduction effort has been the "kingpin" approach that seeks to dismantle drug syndicates by killing or capturing their leaders. The assumption is that eliminating cartel leaders disrupts criminal organizations and weakens the drug-trafficking business cycle. In Mexico's "war on drugs" President Calderón's administration boasted of capturing or killing 37 major drug traffickers, with 25 of these between 2009 and 2012. A consequence of this strategy has been the fragmentation of the groups, with the attorney general's office estimating that seven major criminal organizations have now become "between 60 and 80" (Corcoran 2014). In Colombia we find a similar kind of process.

Given this reality, some of the established criminals sought safer locales in which to continue their activities, generating the "diaspora effect." With some exceptions, this dynamic involves specific leaders or small groups that have sought partnerships with local organizations that could provide protection, contacts, and access to markets or routes. Even though the presence of foreign criminals has been used to explain increases of violence and crime in some Latin American countries, we should be wary of this interpretation. The alliances between transnational drug-trafficking organizations and local groups are just one of the reasons for violence in contexts characterized by weak institutions and fragile rule of law (Shirk 2011; Locke 2012).

On the other hand, there is not enough evidence to support the idea of a "spillover" of violence on the US–Mexico border. Kristin Finklea of the Congressional Research Service finds there is currently no comprehensive, publicly available data to answer the question of whether there has been a significant spillover of drug-trafficking-related violence. We do not know "what proportion of the violent crime rate is related to drug trafficking or, even more specifically, what proportion of drug trafficking-related violent crimes can be attributed to spillover violence" (Finklea 2013, Summary). Most of the information that supports the "spillover" effect is based on particular events or anecdotal reports that could overestimate the influence of the exogenous variables in a given territory.

We find interesting the variation of effects that drug trafficking has in different countries, especially the relationship between the changes in flows of cocaine and variations in levels of violence. For example, in Honduras, the number of cocaine seizures, used as a proxy estimate of the cocaine flow, is highly correlated with the homicide rate. In contrast, in countries such as Panama and Costa Rica this correlation is unstable, and in Guatemala and El Salvador there is no relationship (Figure 23.8). Given this mixed picture, there appears to be no single or unambiguous correlation between organized crime and violence. In some circumstances, criminals and criminal economies can operate with moderate and selective use of violence. There are many factors that influence this relationship, including the capacity of the state to manage negative effects produced by illegal economies (Caulkins and Reuter 2009).

This is one of the main challenges to demonstrate the "butterfly effect." One of the assumptions is that the increase of violence in some countries is related to changes in drug markets due to government intervention in other countries. For example, in the recent literature the offensive against drug trafficking in Mexico and Colombia is used to explain the spiral of violence in countries like El Salvador, Guatemala, and Honduras (Andreas and Durán Martínez 2014; International Crisis Group 2014). The hypothesis is that Central America has become an area of much greater drug-smuggling

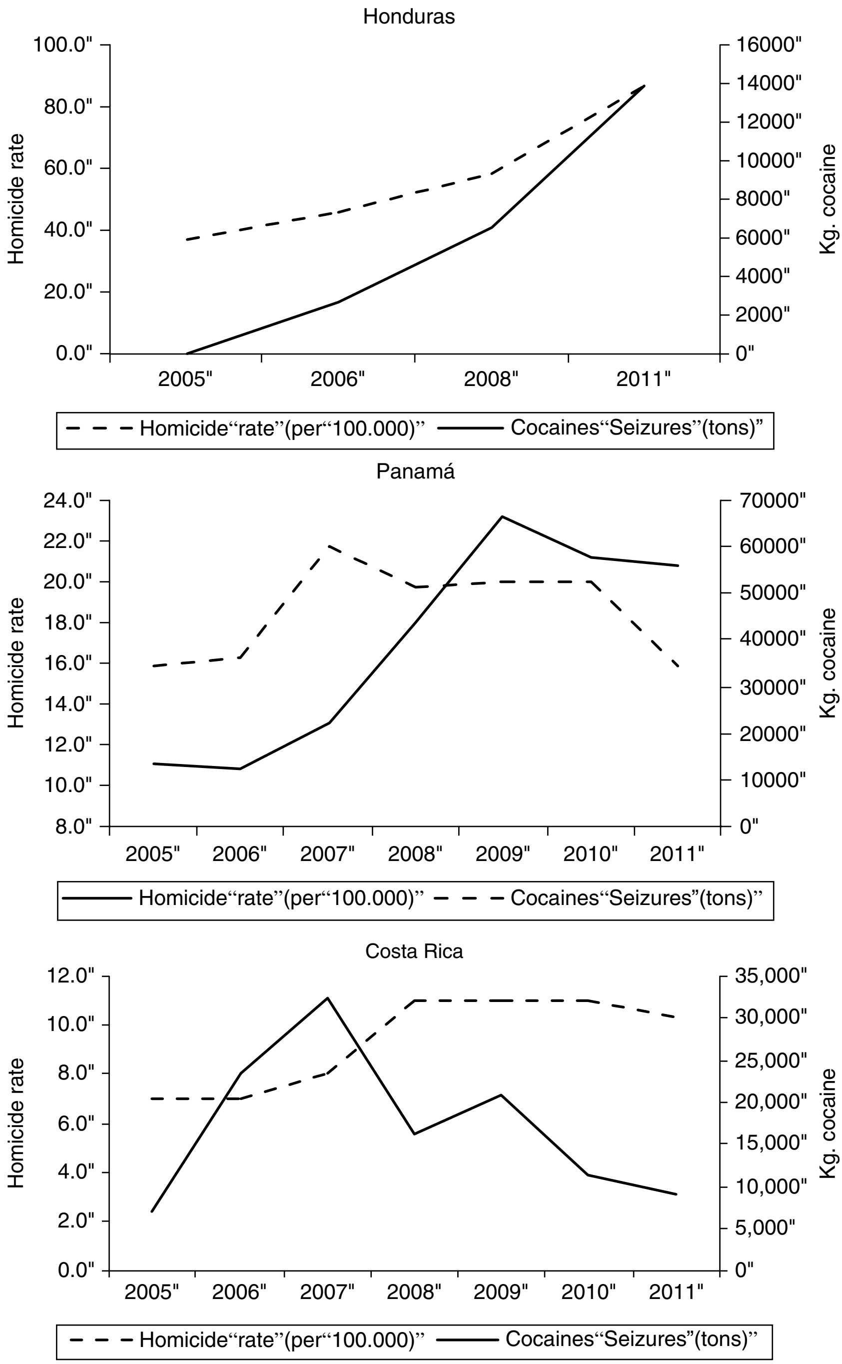

Figure 23.8 Homicides rates and seizures in Honduras, Panamá and Costa Rica. Source: UNDP (2013), “Regional Human Development Report 2013–2014. Citizen Security with a Human Face: Evidence and Proposals for Latin America.”

activity and that the local gangs operating in this region were actively involved in trafficking (Farah 2011; Dudley 2011). The problem with this approach is that it tends to ignore other dynamics that influence violence and can exaggerate the role of local organizations in transnational trafficking (UNODC 2012).

In the case of Guatemala, for example, the homicide rate decreased after 2006, despite the increased role of this country as a route to the US market. In El Salvador levels of violence dropped dramatically with a truce among gangs. Both examples suggest that violence among criminal groups is not necessarily linked to drug trafficking. Further, Nicaragua and Costa Rica, two important transit countries, have relatively low levels of violence and crime, comparable with European levels.

According to the United Nations, organized crime – including drug trafficking – is not the major cause of violence in Latin America. The UNODC (2013b) estimates that 33% of homicides were committed by organized crime. From this perspective, there is no simple explanation for the high levels of violence and crime in the region. While the negative consequences of the drug trade and the "war on drugs" explain some of the criminal violence, an assessment of the impact must consider the fragility of institutions, the role of national elites, and pronounced socioeconomic disparities, among other factors.

With regard to the "short-sheet effect," after the shock of 2006–2008, resources were displaced from Mexico and Colombia to Central America, and Plan Colombia and the Merida Initiative had important changes in the definition of priorities and budget distributions. The reallocation of resources could be explained as a response to the changing nature of the assistance to Mexico and Colombia (more focus on capacity strengthening and less on the provision of military equipment), as well as to the rising importance of Central America in the anti-drug strategy. According to the "Just the Facts" project, in 2008–2010 (after the tipping point) US aid to Latin America and the Caribbean hit its highest level, explained in part by the Merida Initiative (Isaacson et al. 2013). In 2011, there was an important drop in military and police assistance, in a context of US budgetary austerity and decreased assistance to Colombia and Mexico. At about the same time, the amount of resources from the United States to Central America grew (Isaac et al. 2013).

The displacement of resources shows the continuing weight of drug-supply reduction in US assistance to Latin America. If the supply problem migrates, the policy remedy moves as well. The flaw in the remedy persists: the assistance aims to reduce drug flows to consumer countries; it is not aimed to address the needs of the developing countries (Comolli and Hofmann 2013). In the case of Colombia, Mejía and Restrepo (2014, 31) find that the countries engaged in cooperation "reduce the space and independence to decide which policies are more effective and less costly for their own national interest rather than the interest of funding countries."

There are, however, some positive signs of change. The latest versions of Plan Colombia and the Merida Initiative offer a more balanced approach, with programs oriented to assist vulnerable populations, such as at-risk youth, crime prevention, judicial reform, and alternative development. Despite some reallocation of resources, the distribution continues to reflect a narrow security perspective and a partial view of drug policy. A good example is Colombia where 92% of the national drug policy budget goes to the demand side (production, eradication, etc.), with only 8% going to prevention measures and the health system. This is a clear bias in a country that faces a growing problem of consumption.

The "short-sheet effect" complicates the management of resources at the national level and the definition of priorities, all in a context of severe scarcity. In the case of Central America, Jose Miguel Cruz (2014) demonstrates how "local elites maneuvered to maintain and promote the old-regime security operators at the helm of law-enforcement institutions." Cruz argues that resources are misallocated by the fixation on waging war on drugs, rather than on addressing the longstanding social causes of crime and the egregious lack of institutional accountability. The balance is that after years of cooperation some countries are crumbling under the weight of crime and widespread corruption. According to the "Just the Facts" project: "A lack of transparency leads to a lack of debate about consequences and alternatives, for human rights, for civil–military relations, and for the United States' standing in the region" (Isaacson 2013).

Conclusion

This chapter described four main displacement effects of the supply-reduction strategy in Latin America: the "balloon effect" (the displacement of the targeted activity to another location), the "cockroach/diaspora effect" (the displacement of the targeted criminal groups to another territory), the "butterfly effect" (the displacement of the impact of state intervention), and the "short-sheet effect" (the displacement of budget priorities). To explore recent changes in the drug market and organized crime in the region, we analyzed cocaine trafficking in 2000–2013, identifying a tipping point of the supply-reduction strategy in 2006–2008. In the tipping point, three sets of policy changes with respect to drug production and trafficking were introduced and generated a shock in the cocaine market: first, Colombia shifted tactics in drug interdiction and weakened the major criminal organizations; second, Mexico intensified its offensive against trafficking organizations; and, third, the United States stepped up its control over its Southwest border with Mexico. To identify the impacts and consequences of the supply-reduction policies, we analyzed how the cocaine market supply shock boosted the displacement effects. As result of this exercise we offer some preliminary findings.

First, supply-reduction efforts may play a role to increase the price and decrease drug consumption in the United States. They probably have a more limited effect in coca production and displacement of the supply chain to other markets where the availability of cocaine is stable or growing and consumption is higher.

Second, the displacement of supply routes brought negative consequences to those countries that assumed a larger role in the drug trade and whose local criminal organizations have become more actively involved in trafficking. In some cases this dynamic has been accompanied by increases in homicide rates, but that relationship is variable.

Third, with the available information it is difficult to measure the impact of the "cockroach/diaspora effect." The diffusion of violence beyond national borders and the influence of foreign organizations on internal security are part of an ongoing research agenda that still lacks sufficient information.

Fourth, the "kingpin" offensive against large drug-trafficking groups contributed to the fragmentation of criminal organizations, and, in some cases, to the deterioration of local security conditions.

Fifth, the displacement effect probably overestimates the weight of exogenous variables, inflating the real influence of transnational drug trafficking in criminal violence in Latin America. It is clear that the drug trade and state responses to it had tangible impacts in the region, but they are neither unique nor the most important explanation.

Sixth, the supply-reduction policy bias in the international security cooperation, especially with respect to the United States, led to the reallocation of resources in response to changes in routes and markets. The fixation on waging war on drugs has created tensions with the needs and priorities of source and transit countries. Despite some rebalancing, drug policy budgets continue to follow a narrow security vision, one concentrated on supply reduction.

Overall, we find that supply reduction through disruption and interdiction can reduce and redirect cocaine trafficking but at the cost of negative outcomes and collateral damage, at least in the short term. From this perspective, for Latin American countries the "benefits" of maintaining an anti-drug strategy that emphasizes interdiction are far outweighed by the costs in terms of instability, insecurity, and public health problems. The supply-reduction effort generates an unbalanced approach that distorts international cooperation and often overlooks the most important problems in Latin America: weakness of state institutions, the lack of the responsibility and accountability of national elites, and social vulnerabilities that foster criminal economies. The supply-reduction bias is beginning to change, but perhaps more in discourse than in practice.

References

Andreas, Peter and Durán Martínez. 2014. "The International Politics of Drugs and Illicit Trade in The Americas." In *Handbook of Latin America in the World* edited by Dominguez and Covarrubias.

Angrist, Joshua D. and Adriana D. Kugler. 2008. "Rural windfall or a new resource course? Coca, income and civil conflict in Colombia." *The Review of Economics and Statistics*, May, 90 (2), 191–215.

Bagley, Bruce. 2012. *Drug Trafficking and Organized Crime in the Americas: Major Trends in the Twenty-First Century*. Washington, DC: Woodrow Wilson Center.

Bailey, John. 2014. *The Politics of Crime in Mexico. Democratic Governance in a Security Trap*. New York: Lynne Rienner.

Babor, Thomas, Caulkins, Jonathan, Edwards, Griffith, Fischer, Bendickt, Foxcroft, David, Humphreys, Keith, Obot, Isidore, Rehm, Jurgen, Reuter, Peter and Room, Robin. 2010. *Drug Policy and the Public Good*. Oxford: Oxford University Press.

Castillo, Juan Camilo, Mejía, Daniel, and Restrepo, Pascual. 2014. "Scarcity without Leviathan: The Violent Effects of Cocaine Supply Shortages in the Mexican Drug War." Accessed June 19, 2015. http://www.cgdev.org/sites/default/files/scarcity-leviathan-effects-cocaine-supply-shortages_1.pdf

Caulkins, Jonathan and Reuter, Peter. 2009. "Towards a Harm-Reduction Approach to Enforcement." *Safer Communities*, 8 (1).

Comolli, Virginia and Hofmann, Claudia. 2013. "Drug Markets, Security and Foreign Aid". Accessed June 19, 2015. https://dl.dropboxusercontent.com/u/64663568/library/MDLE-6-Drug-markets-security-and-foreign-aid.pdf

Corcoran, Patrick. 2014. "Mexico Has 80 Drug Cartels: Attorney General." InSight Crime. Accessed June 19, 2015. http://www.insightcrime.org/news-analysis/mexico-has-80-drug-cartels-attorney-general

Cruz, José Miguel. 2014. "The Real failure in Central America." *Miami Herald*. Accessed June 19, 2015. http://www.miamiherald.com/opinion/op-ed/article1976942.html

Dávalos, Liliana, Bejarano, Adriana and Correa, Leonardo. 2009. "Disabusing Cocaine: Pervasive Myths and Enduring Realities of a Globalised Commodity." *International Journal of Drug Policy*, 20 (5), September.

Dudley, Steven. 2011. "Drug Trafficking Organizations in Central America: Transportistas, Mexican Cartels, and Maras." In *Organized Crime in Central America: The Northern Triangle*, edited by Cynthia Arnson and Eric Olson. Washington, DC: Woodrow Wilson Center.

Dudley, Steven. 2014. "Criminal Evolution and Violence in Latin America and the Caribbean." InSight Crime. Accessed June 19, 2015. http://www.insightcrime.org/news-analysis/evolution-crime-violence-latin-america-caribbean

Farah, Douglas. 2011. "Organized Crime in El Salvador: Its Homegrown and Transnational Dimensions." In *Organized Crime in Central America: The Northern Triangle*, edited by Cynthia Arnson and Eric Olson. Washington, DC: Woodrow Wilson Center.

Finklea, Kristin. 2013. "Southwest Border Violence: Issues in Identifying and Measuring Spillover Violence." Congressional Research Service. Accessed June 19, 2015. https://www.fas.org/sgp/crs/homesec/R41075.pdf

Friesendorf, Cornelius. 2007. *US Foreign Policy and the War on Drugs: Displacing the Cocaine and Heroin Industry*. New York: CSS studies in security and international relations.

Gambetta, Diego. 1993. *The Sicilian Mafia*. London: Harvard University Press.

Garzón, Juan Carlos. 2013. *The Criminal Diaspora: The Spread of Transnational Organized Crime and How to Contain its Expansion*. Washington, DC: Woodrow Wilson Center.

Garzón, Juan Carlos. 2014. "From Drug Cartels to Predatory Micro Networks: The 'New' Face of Organized Crime in Latin America." In *Reconceptualizing Security in the Western Hemisphere in the 21st Century*, edited by Bruce M. Bagley, Jonathan D. Rosen, and Hanna Kassab. Lanham, MD: Lexington Books.

Hamilton, Keegan. 2013. "Why Killing Kingpins Won't Stop Mexico's Drug Cartels." *The Atlantic*, February 27, Accessed June 19, 2015. http://www.theatlantic.com/international/archive/2013/02/why-killing-kingpins-wont-stop-mexicos-drug-cartels/273558/

Hope, Alejandro. 2014. "El fin del corredor mexicano?" *Perspectiva Latinoamericana*. Dossier, 4, abril–junio. Accessed June 19, 2015. http://www.revistaperspectiva.com/files/files/dossier/dossier_4.pdf

International Crisis Group. 2014. "Corridor of Violence: The Guatemala-Honduras Border." Accessed June 19, 2015. http://www.crisisgroup.org/~/media/Files/latin-america/Guatemala/052-corridor-of-violence-the-guatemala-honduras-border.pdf

IDB and WOLA. 2011. "Mapeo de las Intervenciones en Seguridad Ciudadana en Centroamérica." Accessed June 19, 2015. http://seguridadciudadana-centroamerica.org/Documentos.asp

Isaacson, Adam. 2010. "Don't Call it a Model". Accessed June 19, 2015. http://www.wola.org/sites/default/files/Drug%20Policy/notmodel.pdf

Isaacson, Adam, Haugaard, Lisa, Poe, Abigail, Kinosian, Sarah and Withers, George. 2013. "Time to Listen: Trends in U.S. Security Assistance to Latin America and the Caribbean." Accessed June 19, 2015. http://www.ciponline.org/research/entry/time-to-listen

Locke, Raquel. 2012. *Organized Crime, Conflict, and Fragility: A New Approach*. New York: International Peace Institute.

Loveman, Brian. 2006. *Addicted to Failure: U.S. Security Policy in Latin America and the Andean Region*. Lanham, MD: Rowman & Littlefield.

Mejía, Daniel and Posada, Carlos Esteban. 2008. "Cocaine Production and Trafficking: What Do We Know?" Washington, DC: The World Bank, Development Research Group, Macroeconomics and Growth Team. Accessed June 19, 2015. http://elibrary.worldbank.org/doi/pdf/10.1596/1813-9450-4618

Mejía, Daniel and Restrepo, Pascual. 2014. "Why Is Strict Prohibition Collapsing?" In *Ending the Drug Wars*, edited by John Collins. London: London School of Economics.

OAS. 2013. "The Drug Problem in the Americas". Accessed June 19, 2015. http://www.oas.org/documents/eng/press/Introduction_and_Analytical_Report.pdf

ONDCP. 2013a. "National Southwest Border Counternarcotics Strategy". Accessed June 19, 2015. https://www.whitehouse.gov/sites/default/files/ondcp/policy-and-research/southwest_border_strategy_2013.pdf

ONDCP. 2013b. "Coca in The Andes". Accessed June 19, 2015. http://www.whitehouse.gov/ondcp/targeting-cocaine-at-the-source

ONDCP. 2014. "What America's Users Spend on Illegal Drugs: 2000–2010." Accessed June 19, 2015. https://www.whitehouse.gov/sites/default/files/ondcp/policy-and-research/wausid_results_report.pdf

Pollack, Harold and Reuter, Reuter, "Does Tougher Enforcement Make Drugs More Expensive? *Addiction*, 109: 1959–1966. doi: 10.1111/add.12497.

Presidencia (Mexico). 2012. *Sexto informe de gobierno*. Accessed June 19, 2015. http://calderon.presidencia.gob.mx/informe/sexto/

Radden Keefe, Patrick. 2014. "The Hunt for El Chapo.", *The New Yorker*. Accessed June 19, 2015. http://www.newyorker.com/magazine/2014/05/05/the-hunt-for-el-chapo

Reuter, Peter. 2014. "The Mobility of Drug Trafficking." In *Ending the Drug Wars*, edited by John Collins, London: London School of Economics.

Rico, Daniel. 2013. "Las dimensiones internacionales del crimen organizado en Colombia: Las BACRIM, sus rutas y refugios." In *The Criminal Diaspora: The Spread of Transnational Organized Crime and How to Contain its Expansion*, edited by Juan Carlos Garzón and Eric Olson. Washington, DC: Woodrow Wilson Center.

Rosen, Jonathan. 2014. *The Losing War. Plan Colombia and Beyond*. New York: State University of New York.

Seelke, Clare and Finklea, Kristin. 2014. "U.S.– Mexican Security Cooperation: The Merida Initiative and Beyond." Accessed June 19, 2015. https://fas.org/sgp/crs/row/R41349.pdf

Seelke, Clare, Wyler, Liana, Beittel, June, and Sullivan, Mark. 2011. "Latin America and the Caribbean: Illicit Drug Trafficking and U.S. Counterdrug Programs." CRS Report for Congress, R41215. Accessed June 19, 2015. http://fas.org/sgp/crs/row/R41215.pdf

Shirk, David. 2011. *The Drug War in Mexico: Confronting a Shared Threat*. New York: The Council on Foreign Relations.

Tickner, Arlene. 2014. *Colombia, the United States, and Security Cooperation by Proxy*. Washington DC: WOLA.

UNDP. 2013. "Regional Human Development Report 2013–2014. Citizen Security with a Human Face: Evidence and Proposals for Latin America." Accessed June 19, 2015. http://hdr.undp.org/sites/default/files/citizen_security_with_a_human_face_-executivesummary.pdf

UNODC. 2008. "World Drug Report 2008." Accessed June 19, 2015. http://www.unodc.org/documents/wdr/WDR_2008/WDR_2008_eng_web.pdf

UNODC. 2011. "Global Homicide Study 2011." Accessed June 19, 2015. http://www.unodc.org/documents/data-and-analysis/statistics/Homicide/Globa_study_on_homicide_2011_web.pdf

UNODC. 2012. "Transnational Organized Crime in Central America and the Caribbean: A Threat Assessment." Accessed June 19, 2015. http://www.unodc.org/documents/data-and-analysis/Studies/TOC_Central_America_and_the_Caribbean_english.pdf

UNODC. 2013a. "World Drug Report 2013". Accessed June 19, 2015. http://www.unodc.org/unodc/secured/wdr/wdr2013/World_Drug_Report_2013.pdf

UNODC. 2013b. "Global Study on Homicide 2013". Accessed June 19, 2015. http://www.unodc.org/documents/gsh/pdfs/2014_GLOBAL_HOMICIDE_BOOK_web.pdf

UNODC. 2014a. "World Drug Report 2014". Accessed June 19, 2015. https://www.unodc.org/documents/wdr2014/World_Drug_Report_2014_web.pdf

UNODC. 2014b. "The Contribution of the Executive Director of the United Nations Office on Drugs and Crime to the high-level review of the implementation of the Political Declaration and Plan of Action on International Cooperation towards an Integrated and Balanced Strategy to Counter the World Drug Problem, to be conducted by the Commission on Narcotic Drugs in 2014." Accessed June 19, 2015. http://www.unodc.org/documents/commissions/CND-session57/UNODC_ED/V1388514e.pdf

Varese, Federico. 2012. "How Mafias take advantage of Globalization. The Russian Mafia in Italy." *British Journal of Criminology Advance Access*, 52 (2): 235–253.

West Africa Commission on Drugs. 2014. "Not Just in Transit. Drugs, the State and Society in West Africa." Accessed June 19, 2015. http://www.unodc.org/documents/ungass2016//Contributions/IO/WACD_report_June_2014_english.pdf

Woodrow Wilson Center. 2014. "Crime and Violence in Central America's Northern Triangle. How U.S. Policy Responses are Helping, Hurting, and Can be Improved." Accessed June 19, 2015. http://www.wilsoncenter.org/sites/default/files/CARSI%20Principal%20Conclusions_v2.pdf