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TRANSPORT ON THE MAGDALENA RIVER: OPPORTUNITIES, ADVANTAGES, AND INSTITUTIONAL CHALLENGES

Daniel DePietro



Introduction

Colombia has been experiencing unprecedented economic growth, largely due to increased security in the country, increased foreign direct investment, and prospering oil and mining sectors. Colombia's growth has brought with it significant increases in import and export activity, which have put a great strain on the country's underdeveloped transportation network. Prohibitively high shipping costs have revealed the country's need for a modernized transportation infrastructure and improved multi-modal transportation¹ systems. To address these needs and ensure that Colombia remains in a position to grow and prosper, investments in transport are necessary. The development of the Magdalena River as a transportation route represents such an investment and can

help address Colombia's current transportation problems.

The river was once considered the most important passageway in Colombia, linking areas such as Bogotá and Medellín with the Caribbean ports at Barranquilla and Cartagena. It was used for almost all passenger and freight traffic moving between Colombia's interior and the Atlantic coast for most of the country's history and was the sole communication route between Bogotá and the world (Gilmore and Harrison, p. 335). However, beginning in the nineteenth century, the river became increasingly difficult to navigate, and it is now scarcely used for transportation.

Today, with a booming economy, a significant decrease in rebel activity, and a realized need for a multi-modal transportation system, Colombia has begun planning the development of the Magdalena River into a low-cost shipping route. As with any major infrastructure project, river development requires strong leadership and effective planning to ensure the project is

¹Multi-modal transport is the movement of goods using at least two different means of transport, such as road, river, air, and rail.

completed on time and within budget. In addition, strong coordination between river development and other infrastructure projects is necessary to ensure that the river's ports are well connected to the country's economic centers. There have previously been many severe infrastructure project delays in Colombia; and, according to a September 2011 report in *The Economist*, the biggest risk to current infrastructure projects in Colombia is completing them on time ("Bridging the Gaps"). Corruption in government agencies continues to persist as well. In response to these problems, the Agencia Nacional de Infraestructura (ANI) (National Infrastructure Agency) was created in 2012 to facilitate efficient and successful infrastructure projects. However, the ANI was not given control of the development of the Magdalena River. Instead, Cormagdalena, a corporation created by the Colombian government to manage the waterway, is responsible for river development. In its 20-year history, Cormagdalena has been the focus of much criticism and has faced difficulties accomplishing its goal of improving river navigability.

Delays and missteps in river development caused by lack of institutional leadership and effective planning will severely hamper Colombia's progress. If transportation infrastructure is not improved in a timely fashion, high shipping costs will lead to higher-priced imports; an inability to export commodities, such as coal and oil, at a competitive price; and ultimately a slowdown in Colombia's growth. The development of the river can address these problems by providing an alternative shipping route and increased cargo-carrying capacity, thus driving down shipping costs.

The purpose of this article is to analyze why the development of the Magdalena River for transportation will be beneficial and how this can be accomplished. I discuss the river's history, explore the economic advantages of river development, and examine how Cormagdalena has managed the waterway in the past. Finally, I argue how Cormagdalena's poor track record and lack of leadership could severely hamper the Magdalena River's development and why the ANI may be better suited to develop the waterway in a timely, efficient, and effective way.

The Diminishing Role of Transportation on the Magdalena River

The Magdalena River basin, shown in Figure 1, extends throughout Colombia for nearly 1,600 km, beginning at Lake Magdalena in the southern part of the country. From there, the river flows 1,280 km northward and converges with the Cauca River at Mompox, about 200 km from the Atlantic coast. The Magdalena continues from Mompox and empties into the ocean at Barranquilla, the third largest industrial city in Colombia and an important port.

Dividing the complex river into three sections makes it easier to understand. The Alto (Upper) Magdalena extends 640 km from the river's headwaters to the city of Honda, where a series of impassible rapids exists. The Alto Magdalena is extremely difficult to navigate and has seldom been used for transportation in the past (Gilmore and Harrison, p. 335). The Bajo (Lower) Magdalena extends from Honda to the coast and can be split further into two sections: Honda to Banco, where river navigation is seasonally difficult, and Banco to Barranquilla, where the river is more easily navigable year-round. Between Honda and Banco there exist many port towns, including La Dorada, which has served as a river port for goods bound for Bogotá, and Barrancabermeja, home to Colombia's largest oil refinery. In addition to the river's natural access to the Atlantic port of Barranquilla, the Canal del Dique provides a route to Cartagena Bay, Colombia's largest port. River development will occur primarily on the Bajo Magdalena and it is this section of the river that is the major focus of the remainder of the article.

The navigability of the Magdalena River began to suffer when steamboat navigation gained popularity in the early nineteenth century. As Gabriel García Márquez wrote in *The General in His Labyrinth*, "This was the time when the river had begun to change course, with an irreparable disdain that would become total abandonment by the end of the century" (p. 94). Deforestation along the river's banks greatly increased after the arrival of the steamboat, and once heavily forested areas were transformed into open pastures (López, p. 49).

Figure 1
The Magdalena River Basin



Sources: Adapted by the author from "File:Colombia . . ."; "File:Rio Magdalena . . ."; and U.S. Geological Survey.

Continuing deforestation, along with poor agricultural practices and mining along the river's banks, significantly accelerated soil erosion rates, causing sedimentation, and changed the natural course of the river (Restrepo et al., p. 217). This resulted in alterations in channel depth and a decrease in river navigability to the point where many parts of the river were impassible. The port towns along the banks of the river, such as La Dorada, Puerto Salgar, and Puerto Berrío, suffered as river transport declined.

While the river was physically suffering from sedimentation, the Magdalena River basin

and its inhabitants were subject to a much different tragedy. Between the 1970s and 1990s, a portion of the Bajo Magdalena, stretching from Puerto Berrío to Banco, became the scene of an escalating conflict. Guerilla and paramilitary groups wrestled for control of the river's port towns, whose resources provided them funding. In addition, the Magdalena River began to be used for drug trafficking. The rebel presence significantly decreased transportation safety along the river, further discouraging the few individuals who desired to use it to move cargo.

Increasing violence required the government to focus its resources on fighting the

rebels. Investment in transportation infrastructure was only 0.66 percent of GDP in 2002, a mere fraction of the 3 percent of GDP that the Inter-American Development Bank recommends middle-income countries like Colombia invest in such infrastructure (“Bases del Plan . . .,” p. 198). By 2010, investment in infrastructure had risen to 1.73 percent of GDP, still more than a full percentage point below what is recommended. However, only a portion of this is available for river infrastructure because Colombian law states that only public funds can be used to improve maritime canal access and maintain river channels, and only 65 percent of investment was public investment. Regardless, little of the available money is allocated toward river infrastructure. For example, in 2007, 93 percent of public investment was allocated toward highways, 4.5 percent for airways, and less than 2 percent for waterways (Salin and Mello). Such limited funding is not enough to improve the navigability of the river.

As a result of the problems of sedimentation, internal conflict, and lack of investment, transportation on the Magdalena River is currently very difficult due to

- Unnavigability in certain areas throughout the year
- An inability to navigate the river at night
- Lack of signage and buoys to guide those who do travel on the river
- No knowledge of river level, flow rates, and other factors that help ships navigate
- An absence of port infrastructure to serve the river

The end result of these problems has been a significant decrease in the river’s cargo-carrying capacity. The Magdalena, the river that was once the leading transport route in Colombia, is now used to transport less than 1.2 percent of cargo (by weight) moving through the country.

Colombia’s Need for Transportation Infrastructure

Colombia has had great economic success in recent years without utilizing the Magdalena River for transportation, as evidenced by its 5.9 percent growth in GDP in 2011. If an invest-

ment in river development is to be made, strong evidence must exist to justify it.

The oil and coal industries are leading Colombian economic expansion. Colombian oil production grew by over 35 percent between 2008 and 2011 and has continued to grow in 2012. Coal production has been increasing at 15 percent per year (“Colombia Shipping . . .,” p. 5). At the same time, foreign direct investment in these sectors is at an all-time high, amounting to over 7.5 billion U.S. dollars² in 2011, which is likely to continue to drive future growth (Alsema). Transportation infrastructure is extremely important to these sectors, because most of the oil and coal produced in Colombia is bound for export and requires transportation to coastal ports. These exports are increasing, with coal and mineral exports increasing by more than 75 percent since 2004 (including a 39 percent increase between 2010 and 2011) and oil exports increasing by almost 20 percent between 2010 and 2011 (“Colombia Oil . . .,” p. 12). However, transport costs are already hurting the coal industry, as the lack of multi-modal transportation adds an estimated 80 percent to the cost of transporting coal (“Colombia Energy . . .”).

In addition to oil and coal, Colombia’s total exports increased by 21 percent between 2009 and 2010 and continue to rise. Eighty percent of Colombian exports are shipped via ocean, with most traveling through Atlantic ports (“Colombia en Cifras . . .,” p. 60). However, the cost of exporting goods in Colombia is extremely high when compared to other countries. The cost of exporting a cargo container is over 35 percent higher in Colombia than in other Latin American countries and is significantly above the world average (World Bank Data).

While increased exports have driven Colombia’s economic growth, imports have risen as well, increasing by 10.5 percent in 2010 and 21.5 percent in 2011 (“Colombia Shipping . . .,” p. 72). Most of these imports are bound for the interior regions of Bogotá, Antioquia, Cundinamarca, and Magdalena, all of which are touched by the Magdalena River. In 2011, the cost of importing goods was even

²All dollar amounts are in U.S. dollars for the remainder of the article.

higher than the cost of exporting goods, at over \$2,800 per container, 43 percent higher than the average cost of \$1,600 per container in other Latin American countries (World Bank Data).

While the cost of shipping goods in Colombia has been increasing steadily for many years, these costs experienced an average increase of 40 percent between the years 2010 and 2011 as a result of the mounting pressures that Colombia's strong economic growth have put on the country's transportation infrastructure. The sharp increase in transportation costs is alarming. Such high costs are due to poor transportation infrastructure, a lack of multi-modal transportation options, and the increased volume of goods being traded that require transport within the country. In fact, inadequate transportation infrastructure is considered the greatest hindrance to future growth in the coal and oil sectors and threatens all Colombian industries. The recent Colombian free trade agreement with the United States will further increase trade and put more pressure on an already strained transport system. The Magdalena River's development can help alleviate the problem of increasing shipping costs that, if allowed to rise at such a rate, will impede economic growth.

Advantages and Disadvantages of River Development

There are four main options for transporting bulk cargo in Colombia: road, rail, river, and, to a lesser extent, pipelines. As of 2012, each main transportation sector (road, rail, and river) had a large infrastructure project either under way or in the planning stage that could drive down transport costs. All three projects, the Ruta del Sol road project, the Carare rail project, and the development of the Magdalena River, accomplish the same goal: connecting Colombia's interior to the Atlantic coast. In the following paragraphs, I compare these three projects and the modes of transportation they represent.

The Ruta del Sol road project is the largest road project ever attempted in Colombia. This 1,000-km highway, managed by the ANI, will connect Bogotá to the Caribbean port of Santa Marta at an estimated cost of \$2.6 bil-

lion ("Success Stories . . ."). The Carare rail project, also managed by the ANI, will connect existing portions of rail with new sections to form a continuous railway from Colombia's interior to the coast. The 460-km rail project is estimated to cost \$1.8 billion (Beltrán). The development of the Bajo Magdalena includes the dredging of approximately 256 km of river, the construction of dikes to control water flow, and the implementation of navigation aids. Unlike the other projects, river development is not under control of the ANI, but, as noted previously, of Cormagdalena. It is estimated to cost \$400 million (Quinn). This is significantly less than the Ruta del Sol and Carare projects but will accomplish the same goals as these more expensive projects, namely connecting Colombia's interior to the Atlantic coast. The river would, however, provide access to not one but two major ports: Barranquilla and Cartagena. Between 2009 and 2011, both ports experienced significant increases in the total tonnage moved through them, at 25 percent and 30 percent, respectively ("Colombia Shipping . . .," p. 73). A significantly lower development cost, as well as access to two growing ports, gives the river major advantages over other modes of transportation.

Analyzing the cost of development per kilometer is necessary due to the differences in physical size of the projects and provides another perspective as to which is the most economical. The Carare rail project is the least cost-effective, at \$4 million/km, followed by the Ruta del Sol project, at a cost of \$2.98 million/km. River development is again the best option, at \$1.56 million/km for the 256 km of river that would be dredged as part of the project. However, the 256 km of dredging will result in a continuous 1,000 km of the river becoming navigable. If looked at this way, the cost of making the river navigable is only \$440,000/km.

In addition to the benefit of lower cost, river transport is more fuel-efficient than road transport. This is due to the decreases in emissions and fuel consumption that result from one barge being able to carry the same load as dozens, even hundreds, of highway trucks (Kruse et al., p. 6). It has also been found that river transport is more fuel-efficient than rail transport. Studies comparing road, river, and rail have also found river transport to have a

lower risk of fatalities and injuries, fewer spills, and a smaller overall environmental impact (Kruse et al., p. 1).

Another advantage to improving river navigability is that there is growing demand for such a project. Although in recent years the river has been utilized for the transportation of approximately 2 million tons of cargo annually, a small fraction of the 180 million tons that moved through Colombia in 2011, cargo transport via the river increased by over 50 percent between 2002 and 2009 (“Transporte en Cifras,” p. 46). The growing hydrocarbon industry, which includes oil and its byproducts, represented over 80 percent of cargo transported on the Magdalena between 2007 and 2009, whereas coal and minerals made up 25 percent of the remaining non-hydrocarbon cargo. Additionally, new contracts are currently being awarded to develop new coal and oil extractive operations within the Magdalena River basin. Transport on the river is attractive to oil companies, as the cost of transporting oil via waterways is approximately five times lower than transport via pipelines in Colombia (“Colombia Shipping . . .,” p. 61). However, a lack of investment into improving the navigability of the river has restricted this industry, as well as others, from using the river to its full potential. For example, in 2012 Impala International, a logistics company that transports coal in Colombia, invested in a fleet of 19 barges and a tugboat in order to increase its ability to transport cargo on the river. However, use of the barges will be limited to the stretch from Barrancabermeja to the Atlantic coast due to unnavigability of the river beyond this point. If the river were fully navigable, it is likely that more investments, similar to Impala’s, will be made and that the shipping industry will take advantage of the river.

Even though the Magdalena River has many advantages over other forms of transportation, drawbacks to river transportation exist. The main disadvantage is that the river does not provide the most direct route to Colombia’s economic centers. Roads and railways can be built to lead right into major cities, unlike the river. With Bogotá 165 km and Medellín 190 km from the closest port on the Magdalena, the river must be developed as part of a multi-modal transportation system in order to be effective. The devel-

opment of these interconnected transport networks will require coordination of river development with the many road and rail projects currently under way in Colombia.

Another disadvantage is that, once made navigable, the river will need constant investment to stay navigable. Unlike road and rail projects, which require less monitoring and repair after initial installation, the river is estimated to need \$200 million over ten years to ensure navigability after the initial \$400 million project is complete. Most of these funds would be used to continue dredging in areas prone to high sedimentation. However, even with this additional cost, development of the Magdalena is cheaper and more cost effective than the road and rail projects.

Yet another major concern of developing the river is the possibility of natural disasters that would affect river transportation. These disasters include floods and droughts, which would significantly raise or lower the depth of the river. To mitigate these risks, the development of the river must be planned in such a way that systems are in place to ensure that the navigability of the river is not compromised in such situations.

The advantages of developing the Magdalena River (low cost, fuel efficiency, and an existing demand) all call for the pursuit of a project to make the river navigable. The major disadvantage is that the river must be developed in conjunction with other types of transport. This problem can be solved through effective planning and strong collaboration, which can ensure that the river is well connected to Colombia’s economic centers and integrated with other transportation systems. In order to determine whether Cormagdalena is capable of accomplishing this and leading the development of the Magdalena River and whether it is the best choice to do so, it is necessary to analyze the agency’s structure, functions, and past projects.

Cormagdalena³

As part of the 1991 Colombian Constitution, the Corporación Autónoma Regional del

³Most of the information in this section is from Blackman et al.

Río Grande de la Magdalena (Regional Autonomous Corporation of the Río Grande de la Magdalena), or Cormagdalena, was created as a self-governing corporation to manage the Magdalena River. This unique organization is the only regional autonomous corporation (RAC) in Colombia that does not have control over a particular province but rather control over a body of water. Cormagdalena's purposes, as listed in the constitution and summarized here, are to

- Improve river navigation, transportation, and port activities
- Work toward environmental conservation of the river and surrounding areas
- Manage hydropower generation and distribution
- Regulate fishing and other renewable natural resources

The agency is led by a director general and a board of directors (BOD). The BOD is the main administrative authority and consists of representatives from the executive branch of government, regional governments, national agencies, and private corporations. The director general serves as the corporation's legal authority, is elected by the BOD, and has limited power. He or she must seek approval from the BOD for all budgets, plans, programs, and staffing and ensure that the board's decisions and agreements are carried out. Such an organizational framework can lead to disagreements that hamper progress in achieving the agency's goals.

Over the past ten years, the corporation has been marred by failed projects and investigations into its contracts and practices. In 2003, Colombia's Attorney General's Office ordered the suspension of Cormagdalena's director general and six other officials for irregularities in the execution and performance of contracts worth thousands of dollars (Pinzon). In 2005, Cormagdalena made significant investments in building the "Florentino Ariza," a ship named after the main character in Marquez's *Love in the Time of Cholera*, in hopes that it would attract tourists to the river. However, the project failed when the ship suffered engine damage and began to leak. The Florentino Ariza has remained stranded in Barrancabermeja for several years, where it has begun to rust as its fate remains to be determined. After a failed attempt to dredge the Canal Del Dique in 2010,

it was found that the studies done to determine the feasibility of the project were inadequate. Furthermore, it was found that since 1997 Cormagdalena had paid for multiple studies on improving navigation without any results. In addition to criticism about failed projects, members of the BOD have been questioned about possible conflicts of interest with Cormagdalena projects. For example, the Colombian River Shipping Corporation, whose vice president sits on the BOD, controls 80 percent of the fleet that transports hydrocarbons on the river. Some have accused him of trying to limit competition in the shipping industry by opposing the extension of dredging ("Aguas Turbias . . .").

Cormagdalena's failure to manage the river became evident in 2010, when floods caused by La Niña⁴ caused the displacement of over more than 2 million individuals in the Magdalena River basin. In response, the administration of Colombian President Juan Manuel Santos attempted to take the agency in a new direction, and officials called for the resignation of Cormagdalena's Director General Juan Gonzalo Botero. Feeling pressure from the BOD to step down from his position after serving only part of his term, Botero resigned in May of 2011 (Betín del Río). A new director general, lawyer and former minister of Colombia's embassy in Spain, Augusto García Rodríguez, was elected in September of 2011. Although García has been more successful in working with regional governors and has the support of the BOD, it cannot yet be determined whether his leadership will be enough to take Cormagdalena in a new direction.

Cormagdalena's past leadership decisions and project failures are not the only reasons the corporation has not met its goals. Although the corporation's budget has increased in recent years, for much of the previous decade it was below \$60 million. With so many responsibilities, ranging from the management of power generation to regulating fishing to land conservation, the corporation's funding is spread out over many different areas. In 2009, less than 20 percent of the corporation's budget was

⁴La Niña is defined as cooler-than-normal sea-surface temperatures in the central and eastern tropical Pacific Ocean that have an impact on global weather patterns.

allocated toward improving the navigability and port infrastructure of the river. This represents a small fraction of the estimated \$400 million required for the Bajo Magdalena to be made fully navigable.

The root of Cormagdalena's problems, however, can be linked to its organization as an RAC. The corporation's structure results in it having very little autonomy due to the many control mechanisms in place to ensure that it acts in accordance with other national institutions. For example, Cormagdalena must submit annual action plans that are in agreement with the President's National Development Plan, allowing the agency little room to pursue its own endeavors. At the same time, the National Planning Department must approve all investment projects. To ensure that the corporation complies with national strategies, Colombia's control organizations can discipline RACs for failure to implement plans. National authorities also have some control over the salaries of Cormagdalena staff. Such control results in an organization that has little independence to pursue projects that it feels would be beneficial to the river. Although Cormagdalena is supposed to be the authority on the Magdalena River, it is not being given the ability to do so.

The exact purpose of the RACs, of which Cormagdalena is 1 of 33, has changed over time. When created in 1991, RACs were charged with promoting development by arranging financing for, building, and operating infrastructure. However, in 1993 Law 99 made environmental management the main responsibility of these organizations. Yet their role in infrastructure was not completely removed, because the law assigned departments, municipalities, and RACs joint responsibility for developing many types of infrastructure, including flood control and water management systems. The law also gave the Ministry of Environment the role of overseeing and coordinating the activities of RACs.

Law 99 has resulted in multiple problems. First, it assigns RACs responsibility for both developing infrastructure and monitoring it after development. With no outside monitoring agency, incentives to ensure that projects are successful and sustainable are minimal. The failure of the dredging project in the Canal del Dique is one example of how such lack of mon-

itoring and accountability has impeded river development.

A second problem was not caused by Law 99 but was exacerbated by it. The law has required regional governments, RACs, and other groups to work together on projects. This has proved especially difficult for Cormagdalena, because it shares jurisdiction over the river with 100 other groups. The roles and jurisdictions of each of the different groups are often confused, and Cormagdalena has not shown the ability to effectively lead collaboration efforts.

Finally, the Ministry of Environment has been unable to adequately oversee the RACs or to promote national-regional coordination. Lack of institutional coordination, due to lack of leadership, has resulted in national organizations, local governments, and RACs working independently and sometimes divergently. However, projects must converge and interconnect to form a complete transportation system consisting of river, road, and rail; unfortunately, evidence shows that such collaboration is not common in RACs like Cormagdalena.

President Santos has stated that the RAC system was "poorly conceived" and that many are "mismanaged and corrupt" (quoted in Molinski). After the floods caused by La Niña, the government took control of the 33 RACs that operate in Colombia because of their failure to manage water resources and to mitigate the nation's risk of flooding. Many of the corporations were eliminated or merged together as part of the takeover. However, Cormagdalena survived and is still in charge of managing the Magdalena.

Why Cormagdalena survived must be questioned. In the corporation's 21 years of existence, the river's navigability has not improved. The BOD has led the corporation into failed projects and has been plagued by corruption, while doing little to improve river navigability. The agency must act in accordance with the executive branch's National Development Plan, and all investments should be approved by the National Planning Department. If the agency must answer to multiple national organizations and ensure that the plans of those organizations are implemented, why should these national agencies not be in charge instead? Law 99 stated that the primary role of Cormagdalena is to manage the environment, not develop

infrastructure. If development of the Magdalena as a transport route is the goal, then a corporation whose main goal is to promote investment and improvement in infrastructure should lead such a project.

Cormagdalena's limitations have not gone unnoticed. Senators, environmental agencies, and the National Planning Department have all called for the strengthening of the organization to make it effective. Others have called for its elimination. However, in October 2012 Cormagdalena began the prequalification process for bidders seeking to enter a public-private partnership to make the river navigable. Although it is possible that Cormagdalena, under the leadership of its new director general, could break from its unsuccessful past and effectively lead river development, Colombians must take a critical look at Cormagdalena and determine whether a more capable organization should lead such efforts.

The National Infrastructure Agency (ANI)⁵

RACs, such as Cormagdalena, have been described as “elements of a unitary system and a national system of governance without really falling into either category, a structure that inevitably creates conflict and confusion. RACs are neither regional administrative offices of a national environmental ministry nor local governments” (Blackman et al., p. 52). This describes Cormagdalena well; and with its history of failed projects and corruption, the agency should not be leading an effort to develop the Magdalena River. River development will require coordination with other infrastructure projects, as it will be necessary to create connections between the river's ports and major economic centers. For this reason and many others, the newly created ANI should take over the responsibilities of developing the Magdalena River from Cormagdalena and lead the efforts to turn the river into a major transportation route.

The ANI was created in 2012 to replace the Instituto Nacional de Concesiones (INCO) (National Institute of Concessions). The purpose of replacing INCO with the ANI was to create

a clean slate for the government, because INCO had become a corrupt agency. The ANI has been populated with professionals who are experienced in the way other infrastructure projects are managed in Colombia. These individuals are more educated than previous INCO employees and are also paid more in order to reduce the incentives for corruption. The goals of the agency are to achieve greater efficiency, effectiveness, and transparency in the administration of the country's infrastructure; to develop road, rail, port, river, and air transportation infrastructure; and to cultivate public-private partnerships. In announcing the new agency, President Santos stated, “for the first time, we [Colombia] will have a technical and independent entity that will be in charge of conducting serious, in-depth studies, and which will be thinking about how we can make the big leap to modernity in infrastructure” (“Government Greenlights . . .”).

Giving the National Infrastructure Agency responsibility for the development of the Magdalena River is sensible. The ANI is better equipped to manage an infrastructure project than Cormagdalena, because it is already leading the largest road and rail projects in the country, and it has 25 other road contracts and multiple rail contracts under development. Control of river development would allow the ANI to integrate river development into its road and rail projects and facilitate the creation of an interconnected, multi-modal transportation system. In addition, the ANI is involved in dredging projects for the ports of Cartagena and Buenaventura. It makes sense to use the relationships with dredging companies and similar organizations that the ANI built when planning the dredging of these ports in planning the development of the Magdalena River. Additionally, because the ANI is now in charge of concessions for infrastructure projects, it is likely that any plans Cormagdalena makes for the development of the river would have to pass through the ANI. Giving responsibility to the ANI would increase institutional efficiency and reduce the number of individuals involved in river development, thus lowering the chance of corruption along the way. By removing the middleman that is Cormagdalena, the development process would become more efficient and more transparent.

⁵Most of the information in this section is from Agencia Nacional de Infraestructura's “Plan de Acción 2012.”

Conclusion

While Cormagdalena has begun the process of seeking a partner to develop the Magdalena River, the organization of public-private partnerships and infrastructure projects is what the ANI was created to do. The ANI is better suited to lead the development of the Magdalena River not only because infrastructure projects are its sole purpose but also because the ANI will be better able to integrate the development of the Magdalena River into the interconnected, multi-modal transportation network that Colombia desperately needs. This is not to say that Cormagdalena should not play some role in the river's future, because it has responsibilities that involve environmental protection, resource allocation, and hydropower generation on the river. How-

ever, river infrastructure development would be more successful under the management of the ANI.

As the flamboyant 1966 presidential candidate Dr. Antonio Goyeneche once proposed, "Rather than toil away our treasury fund to build a road to the coast, we will take water, sand, and cement, and pave the Magdalena River, creating a motorway to the modern world" (quoted in Ospina). Although his proposals were radical, the idea of utilizing the river for transportation, as it was used throughout Colombia's past, was sound. The Magdalena River provides a great opportunity for the country to invest in its future; and if a project to make it navigable is successful, it will provide many benefits to Colombia and help alleviate the threat that rising transportation costs pose to Colombia's growth.

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