

Infrastructure, development and environmental impact

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Development of transportation infrastructure in Colombia has required the mobilization of large financial resources for the projects, especially for the Fourth Generation (4G) Roads program. The 4G are the most ambitious concessions national program of the Colombian Nation in the last years that seeks to intervene around 8.000 kilometers in roads with an investment of nearly 50 billion pesos. One outstanding feature of the program is that all road projects have been structured under the scope/figure of Public Private Partnerships (PPP). Notwithstanding, as infrastructure megaprojects grow in the country, environmental disasters increase. In the last year situations as the oil spill of the Lizama Well 158, the fall of the Chirajara bridge and the recent failure of the Hidroituango Hydroelectric plant occurred.

The two most important premises that justify the use of the Public Private Partnerships (PPP) scheme for the development of infrastructure are: 1) The need for infrastructure is so evident that it is necessary to inject large amounts of money in this sector, that contribute to the economic growth of the country and to reducing poverty, and 2) Public resources are not enough, making it necessary to actively involve the private sector in financing and providing infrastructure, and generate “attractive” conditions for companies and investors to participate. In this respect it is said

that PPPs are the ideal mechanism to leverage the private sector and an ideal way of financing development projects.

Therefore, it is important to examine how the main infrastructure projects are being financed, understand the role of the *Financiera de Desarrollo Nacional* (FDN) in this financing, and ask ourselves what is happening in the planning of these mega projects and the contingency measures that are being taken with respect to the environment, in the structuring of the corresponding contracts.

Since the issuance of the National Development Plan 2010-2014 and of Public Private Partnerships Law number 1508 of 2012 and through the National Infrastructure Agency (ANI), the Government prompted the structuring of fourth generation of road projects in the country with the participation of the International Finance Corporation (IFC) of the World Bank for planning of its funding framework.

Conpes 3760 establishes the road corridors and the initial project groups to be structured by ANI that conform the road concessions fourth generation program. So far, the National Infrastructure Agency has registered in its site a total of 32 concessions or projects among PPP projects of public and private initiative. It is important to note that the present National Development Plan 2018-2022 prompts the termination of the 4G projects, specifically in the “Agreement for transportation and logistics for competitiveness and regional integration” where it appears that one of the Government goals shall be “to conclude, conclude, conclude all works initiated under public work schemes and Public Private Partnerships” (DNP 2019).

According to initial estimations by ANI, the road concessions fourth generation program envisages an investment of approximately \$47 billion pesos to be executed in a term of 8 years from contracting, and the operation and maintenance of the infrastructure for periods of between 25 and 30 years. Investments for construction, operation and maintenance of the roads shall be compensated with income from toll collection and public contributions from the Nation's General Budget. It is foreseen that 65% of the resources shall be allocated for physical works and the other 35% for operation and maintenance (CONPES 2013). As of April 2019, of all 4G projects, 15 have had significant progress and financial closure, in other words, they have found the minimum necessary resources to begin the construction of the projects.

This means that the main mechanisms through which 4G roads are being financed and which we will discuss are the following: i) Private investment funds constituted by different actors including institutional investors as risk and pension administrators. Contributions also come from multilateral banks, local banks and the FDN; ii) Direct loans from FDN and through credit lines with multilateral banks; iii) Loans from national or international banks (for example Chinese banks) to the projects.

Financing

Financiera de Desarrollo Nacional (FDN)

It is a national development bank specialized in financing and structuring infrastructure projects. Its main goal is “to promote, finance and support companies or investment projects in every sector of the national economy”.

Its role in the development of infrastructure is defined by its two main functions: *Project Structuring and Management*: The FDN helps project structuring carrying out pre-feasibility studies, structuring, evaluation, validation and project managing. It also prepares sectorial studies, regulatory and maturity of projects during the pre-investment cycle. *Project Financing*: Its mission is to attract investment to the 4G portfolio. FDN is responsible for ensuring those resources and moving different financing sources, establishing relationship with the main financial institutions, both national and international. It also plays a role in structuring investment private funds, promoting the involvement of actors as pension funds and insurance entities.

It has participated whether directly or indirectly, in most of the major 4G road infrastructure projects and has strengthened the private financing model of 4G projects. Its main role has been to grant direct financing to concessionaries. It has also mobilized other indirect financing vehicles as credit lines with multilateral banks.

The FDN Environmental Policy indicates that: “There is need to ensure that generation of environmental and social impact of projects financed, structured or managed by the entity, be identified with, preventing, mitigating or compensating according to *Normas de Desempeño en Sostenibilidad Ambiental y Social* (Performance Regulations in Environmental and Social Sustainability) of the International Finance Corporation (IFC) and the applicable legislation”, besides “Ensuring that projects financed, structured or managed by the entity respect human rights which means avoiding to break such rights and deal with any adverse impact these rights may suffer”.

Social and Environmental Initial Evaluation shall be governed by the FDN environmental policy and IFC Performance Regulations and in preparing the Social Environmental Evaluation Initial Report, the Social Environmental FDN Director shall indicate which are the IFC Performance Regulations that apply to the project, specifying them; for high risk projects due care with human rights shall be indicated. It is necessary that FDN has an information site for every project for online consultancy of this information and these documents.

Investment Private Funds

These funds mean “an investment vehicle managed by a professional team, with the main objective of providing a medium or long term return to its investors through capital investments in companies not listed in the Stock Exchange”. (Colcapital, 2019). The following participate in the funds:

Investors (local banks, companies, pension entities, multilateral banks, etc)

Professional Manager (PM): natural or legal person, expert in portfolio administration. Its main responsibilities are management, decision, evaluation, follow up, control and managing of fund investments.

Administration Companies: They may be stock brokers, trust companies and investment managing companies which companies are supervised by the *Superintendencia Financiera de Colombia*. Administration companies are responsible for identifying, measuring, controlling, managing and administrating

fund risks, valuating participation units providing the necessary information to the investors, call the Stockholders Assembly and the Vigilance Committee and prepare the corresponding minutes. It must comply with stringent rules for preventing asset laundering and financing of terrorism (SARLAFT) and management of operative risks (SARO) (Colcapital, 2019).

These funds have two important facts: Private investment of banks (both local and international) and the participation of institutional investors as pension funds. Specifically, the Government issued Decree 1385 of 2015 to authorize the *Sociedades Administradoras de Fondos de Pensiones y Cesantías* (AFP) (Pension and Severance Funds Administrative Companies) to make investments in private capital funds aimed at infrastructure projects under the PPP scheme according with Law 1508 of 2012.

This is one of the first critical issues in the financing model. It has been alleged that the decree would allow owners of AFPs to use money of their clients for their business in 4G works (what means the generation of “auto-loans” for the projects) (Acosta, ¿Auto-loans with pension savings?, (2015) (2018). An action has been brought to the Council of State because it allows an open conflict of interests that infringe good banking practice and worse, putting at risk security of the money of those affiliated to the private pension system. (Justicia Tributaria, 2017).

Multilateral Banks

Multilateral banks have played a fundamental role in fostering and implementing the PPP model in Colombia through technical cooperation in the structuring of regulations, institutional

strengthening and project financing (Cruz, Public-Private Associations from multilateral banks, Implementation in Latin America, 2016). In this last aspect there are at least three ways on which multilateral banks have participated in the financing of PPP projects:

Participation as stockholders in FDN (International Financing Corporation of the World Bank and the CAF are stockholders with 8.9% and 8.7% respectively).

Participation in private debt funds: CAF – Development Bank of contributed with 50 million dollars for the Senior Debt Fund for Infrastructure in Colombia CAF-AM ASHMORE I, and the International Finance Corporation contributed with 48 million dollars in *Fondo de Capital Privado 4G Credicorp Capital* – Sura Asset Management.

Through the financing of specific projects, as BID Invest (arm of the bank that supports private sector projects). This has been the most active institution in terms of loans, granting 6 loans to the PPPS' portfolio.

China banks

The first Chinese company awarded with a Public Private Partnerships project in Latin America was China Harbour Engineering Company for the development of *Autopista al Mar 2*. This Chinese company is the company with majority shareholding in the Consortium *Consortio Autopistas Urabá S.A.S.* on which Colombian companies *Ingenieros S.A.S.*, *Unidad de Infraestructura* and *Associated Constructions S.A.S.*, and *Termotécnica Coindustrial* also participated.

The project began works in January 2017 and has only progressed 1.6. According to the Infrastructure Project Manager delay in works are due to the difficulty in obtaining new loan agreements that allow financial closure. According with GPI, financial closure will be achieved in 2019.

During the last official visit of the Colombian government to China, the financial closure of the project was defined with a financing of more than 654 million dollars distributed as follows: 150 million of *Financiera de Desarrollo Nacional*, 418 million dollars of Chinese Development Bank and 84 million dollars of Sumitomo Mitsui Banking Corporation.

One of the main concerns with respect to the Chinese financing is the regulation weakness of the Chinese Development Bank, while having a set of social environmental norms and regulations, these are not public and therefore we don't know how they operate making their implementation impossible to be enforced in the financed projects. Weak regulatory frameworks and absence of adequate mechanisms for consultation to local communities involved in projects financed by China have already generated conflict in peasant and indigenous territories in other Latin American countries.

Challenges and Concerns:

Private participation and conflict of interest

In the private sector PPPs may represent attractive business opportunities because they foresee income for at least two decades or more depending on the term of the concession. Nonetheless,

prioritization of investments is made with political logic, in other words, they are thought on the basis of which projects generate better political return and no resources prioritization system exists to projects that generate a greater social impact (Arbelaez, 2019). Added to this, and in general terms negotiation of contracts is non-transparent, with little public scrutiny, leading to corruption issues.

Reputation issues, transparency and access to information

Reputation issues associated to corruption and transparency scandals in contract negotiation have been present in different projects under the PPPS scheme. This is the reason for the need to make transparent the access to information in all phases of public infrastructure projects and enhance the *Registro Unico de Asociaciones Público Privadas (RUAPP)* (Public Private Partnership Single Registry (PPPSR)) as necessary conditions so that all citizens may monitor resources and projects. Citizens must follow closely management of FDN resources and pension savings resources, and demand transparency and clear accountability on the use of money, investment risks and positive and negative impact of the projects.

Application of FDN and multilateral banks social and environmental regulations

The main criticisms with respect to the role of the financial institutions in this field have been the lack of rigor in the implementation of regulations in projects as *Perimetral de Oriente* or *Ruta del Cacao*, and the lack of capacity to effectively monitor compliance with its regulations. In many occasions it is the

exclusive responsibility of the companies to implement the norms and certify compliance with them, with no rigor in the evaluation by banks of the true compliance with its social environmental policies when granting financing.

Participation of communities in PPP projects ¿Infrastructure for Whom?

Many of the problems and challenges exposed fall in the fact that local communities do not participate in infrastructure planning processes. Justification for the construction of local roads is vested in the generation of benefits for the general population and the contribution to reducing poverty. Nevertheless, mainly communities are affected the most by the construction of infrastructure and companies and financing entities are usually the big winners. The present model of 4G concessions and of PPPs has important limitations when preventing a negative impact on the environment and a detailed analysis of real impacts on reducing poverty and inequality shall be necessary.

Contractual structuring

Contracts

At present PPPs in Colombia operate under the structure of the concession contract. Structuring of PPPs according with Law 1508 of 2012 may be both of public initiative, this is, come from the Nation, and private initiative. The main difference between the different types of initiatives is on the requirements to open selection processes on each of them.

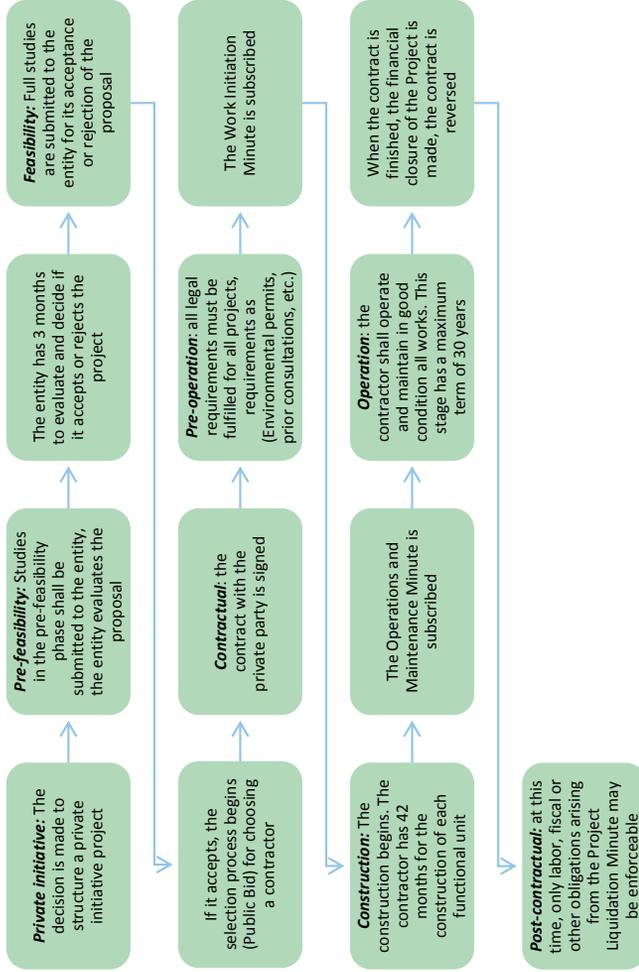
Private initiative projects are understood as the authorization individuals have to structure infrastructure projects, at their

own risk, assuming all structuring costs and presenting them confidentially to the consideration of the competent state entity. This has an effect on the territorial participation both of the decentralized government and social actors. Infrastructure mega projects are generated in the framework of national and central government policies affecting development territorial plans with no regional consultation of the needs of the municipalities that shall suffer the impact of the project. It is necessary therefore to emphasize on the impact a private individual has on the territorial sovereignty when deciding on carrying on a project on private initiative.

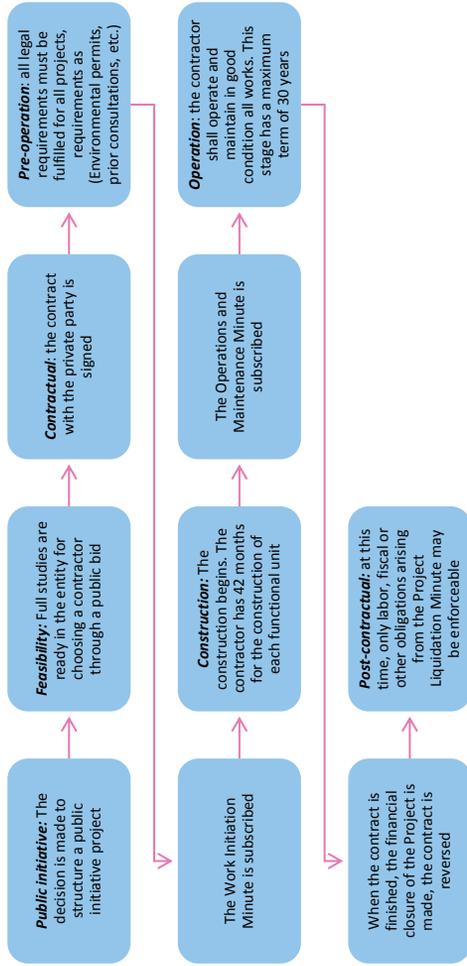
When a private initiative appears, the state entity may not open the selection process nor respond to the private on the feasibility of its initiative, without having previously compared the public and private initiative projects, independently from the stage on which each one is, taking into account criteria that demonstrate which of the initiatives is the most convenient in accordance with interests and public policies. These objective criteria must be, among other: i) Cost-benefit; ii) Scope and specifications, and iii) Opportunity.

The main stages with respect to the environment are pre-feasibility and pre-operation.

In the pre-feasibility phase the individual presenting the proposal must fully describe the project it will present to the entity together with a minimum design on construction, operation, maintenance, organization and exploitation, and demand studies and the financing source for the project. In this stage the individual shall



Contractual Stages Private Initiative: (Graph prepared by Asociación Ambiente y Sociedad)



Contractual Stages Public Initiative: (Graph prepared by Asociación Ambiente y Sociedad)

present its initiative and the state entity shall establish in a period of not more than 3 months if the project is feasible and relevant. If approved by the state entity, the individual may go on to the feasibility stage on which it must submit the completed financial model, a detailed description of the phases and term of the project, environmental, economic and social impact studies and feasibility studies.

The pre-operation stage after the contract has been signed is the time for making the prior consultations necessary for requesting the environmental license.

The nature of the PPPS is the administration of a public property or a service by a private, so that although you are standing before the materialization of the general interest, it is a contract that responds to particular interests. It is not a problem that private companies develop projects expecting an economic retribution for their performance providing the execution of the contract responds mainly to the general interest. When procedures as the environmental ones respond first to a particular interest than to a general interest, this constitutes not only a breach of environmental obligations, but a breach of the General Statute for Public Contracting.

PPPS, as shown, are contracts characterized by their first restructuring stages where planning and structuring are longer and costlier, with the aim that on the long term this is a guaranty of effective implementation that results in a reduction of risks. Due to the fact that they are essentially long term contracts, they require an adaptation capacity to changing circumstances, offering certain flexibility, always bearing in mind the legal certainty and

clarity that government contracts must have. This is why PPPs, more than any other type of contracts, must be structured from the principles of government contracting so that with time, they always protect legal assets around which they were built.

Principles: From government contracting to environmental protection

Principles of transparency, economy, planning, responsibility and objective selection oversee government contracting in Colombia.

The planning principle refers to the duty of the contracting entity to make adequate previous studies (pre-feasibility, feasibility, engineering, environmental studies, etc.) in order to precise the object of the contract, the obligations of the parties, distribution of risks and the price. PPP schemes shall only be used when in the structuring stage, economic studies or cost benefit analysis studies, or the comparative opinions demonstrate that they are an efficient mode or necessary for their execution.

The sustainable development principle recognizes that social and economic progress implies exploitation and use of natural resources which means, that any work shall be submitted to rationality so it does not irreversibly affect common goods. By contrast, looking for the best measures to ensure that private actions do not break ecologic equilibrium is proposed.

The precaution principle assumes two premises: risk and uncertainty. This principle seeks not to wait for the absolute proof of a cause effect relationship when elements serious enough lead us to think that an activity could have irreversible harmful

consequences for human health and the environment, and thus are not sustainable. In other words, in order to detain the structuring of the project, the existence of elements which make us think of an activity with negative irreversible consequences is considered enough evidence.

The prevention principle is an environmental general principle that makes visible admission of the measures necessary to anticipate the occurrence of environmental damage. It is applied in cases where consequences on the environment a certain project or activity could cause may be known, so that the competent authority may make decisions before the risk appears or the damage occurs, while the precaution principle operates in the absence of an absolute scientific certainty. Practical effectiveness of the preventive action requires that it gets along harmoniously with the precaution principle because this principle makes the scientific rigor flexible in a restrictive way.

Environmental Studies

Time for evaluation to decide on the adequacy of contingent measures depicted in the studies for environmental impact may be short in infrastructure mega-projects preventing thorough environmental assessments. Also, the environmental permit is not the product of a regulated decision but of a cognitive-evaluative process carried out by the competent entity from the Environmental Impact Study that ends in a decision of an individual person according with its personal appreciation. In these cases, it is assumed that state entities have the enough environmental information necessary to determine that studies submitted by the

private person are in effect the best environmental alternative, being known that environmental sector resources are usually insufficient irrespective of the impact of poor budget administration on institutions.

The case of the Bogota-Villavicencio Road

An example of an infrastructure project contracted first under the concession scheme, of private initiative, and then under a private initiative PPP that generated an environmental impact of at least 72.000 million pesos, total costs for the indefinite closing of the road not included and 9 human lives was the double lane project of the Bogota – Villavicencio road with the Chirajara bridge and a landslide at Km. 58 in El Tablon - Chirajara sector. The goal of this project is the structuring, construction, operation and maintenance of the new lane between El Tablon – Chirajara and the intersection Fundadores and maintenance and operation of the entire Bogota-Villavicencio road.

On Monday January 15, 2018, due to a design flaw, half of the Chirajara bridge fell leaving 9 workers dead and the collapse of one of the biggest infrastructure works in the country. Blaming began against the designs and construction but little was said about the environmental responsibility generated by this incident. New measures have been taken to begin the construction of a new bridge and end the second lane of the Bogota-Villavicencio road, but nothing important on the contingency measures that shall be taken with respect to the environment. With respect to the landslides of the past months, the main steps taken or planned to be taken have been with respect to the economic impact, but it

is not clear what will happen with respect to the environment or who will be responsible for the environmental impact.

In the project different elements were identified which makes us think that planning on environmental issues was not made according with the general principles of administrative law and environmental law.

First, the addition made to the initial contract is a private initiative addition, this is to say that it is the private party that determines the need for a new mapping of the road and establishes criteria for the development of the widening of the road. Having been developed by private initiative is not necessarily a problem, but in this project both the concessionaire and INCO acted prematurely with respect to the addition. According with the compliance auditing carried by the Controllershship to the three sections of the Bogota – Villavicencio road “According with the control entity, attention to critical or unstable sites of the road ‘is limited to cleaning of hydraulic works, sealing of cracks and crevices, adoquin repair and horizontal and vertical signals, excluding the concessionaire from implementing definitive solutions on this special infrastructure’ ”. The above shows that following obligations submitted by the concessionaire, there is a clear absence of comprehensive solutions for the road. Therefore, the private initiative showed a lack of care and of institutional strength vs. the private party, thus promoting that the private party decides to a certain extent, its own contractual conditions for the development of infrastructure projects that look for materializing the general interest. On the other hand, the technical follow-up the entity carries of the studies is minimal especially on a road with a considerable number of critical points

due to soil instability. This leads to performing works without the necessary precaution with superficial control of the project.

Secondly, the addition indicates minimum environmental obligations because they constitute obligations for respecting environmental regulations and limits the concessionaire's environmental responsibility exclusively to the inadequate execution of the Environmental Permit. It is important to emphasize these obligations and their superficiality because environmental requirements demanded from the concessionaire are only in the event of serious fault or gross negligence, that brings the environmental issue to one of little relevance while it must be addressed actively with care and protection, and not with minimum care. On the other hand, in this addition there is no evidence of assignment of the environmental risk to any of the parties, although for 2010, CONPES 3413 of 2006 had established that the environmental risk should be assigned to the private party. Leave hanging risks and the environmental responsibility in long term contracts as this one, and reduce obligations to a minimum creates legal gaps when risks materialize.

In the third place, the environmental permit covering Chirajara works was issued in the beginning of 2010 although works in sector 4A began at the end of 2014 nearly 5 years after the permit was issued. Although the terms for losing the permit did not expire, the project was developed with studies submitted by the concessionaire with ANI in 2008 that did not consider the earthquake of that year in *El Calvario* that affected the East zone of the country. The time between the studies and the construction do not necessarily mean a problem in the structuring of a project, but

lack of modifications or follow up to certain points that were left open in the environmental permit of 2010 deserve observation.

In addition to the collapse, various slides and cave-ins have occurred on the road, product of explosions made during construction of the roads. What happens then with compliance, planning, prevention and precaution principles covering all contracts and projects with environmental impact of some extent? At present with the collapse of the Chirajara bridge and the continuous landslides on the Llano road, the consequences of not bearing in mind any of the principles of environmental laws in the structuring of the project are evident.

Conclusions

The PPP contract is a contract whereby the administration is handed to a private party from the pre-contractual phase, considering that it has been of public and not private initiative, on which although a government entity has control and influence over project results, this entity is not responsible for their structuring and delimitation. In these types of contracts, stages that due to their nature should be entrusted to the government entity are being granted to others. With respect to the environment, environmental impact studies EIA are conducted by a private party and confirmed with the issuance of an environmental permit, but the competent authority has not carried its own study that would allow it to establish minimum quality parameters. While there exists an institutional confidence in the capacity of the Ministry of the Environment and consequently in ANLA, we have to ask how decisions are being made on environmental risks of mega projects through the present model.

The present regulatory framework, according with international guidelines complies with all necessary parameters for environmental protection however, poor environmental practices continue that lead to the consequences and damages we have seen in Colombia. Proposals always exist to tighten up environmental regulations to demand compliance with the different obligations; nevertheless, as aforementioned, with contracts with a term of approximately 30 years, the flexibility demanded by passing of time is necessary for the execution of the contract. Here are the principles of government contracting and environmental law, but if environmental authorities do not demand them to the contractors, then quality and diligence standards with which contractual execution is measured in infrastructure mega projects in Colombia is not clear.

In big infrastructure projects as the Bogota – Villavicencio road, if not a breach, a doubtful compliance with different environmental principles was observed that generate doubts in the real protection and responsibility capacity promoted by government contracts and environmental permits. In this particular case we observed lack of follow-up by environmental authorities and lack of commitment by the concessionaire in mitigating contingencies. It is not a great mystery that in big infrastructure projects there are a series of financial interests for the parties which determine an important part of the structuring of a project. Nevertheless, these projects seek to materialize public policies that watch over the general interest, and therefore the option of leaving social interests protected by the environmental law in a second category cannot be an option. These rights are aimed at protecting not only the present generation but future ones.

Protecting the environment and the Colombian ecosystem is a constitutional duty of the State; but, what happens with the precaution principle that leads us, before the scientific uncertainty, to appeal to the legal protection of the environment, and the prevention principle that calls the environmental authorities and contractors to actively take all the necessary measures to materialize the occurrence of any environmental risk? Analyzing the procedure for the issuance of environmental permits and authorizations of EIA, a question mark hangs over on the applicability of the precaution principle on a project when the entity only knows about the possible environmental impact by the studies submitted by the company that will develop the project. With these results of the present model in mind, it might be worth to propose that studies are conducted by a third party with no interest on the contractual framework and not related to any of the parties.

It is necessary to promote a critical debate on the PPPs and on how to finance infrastructure needs. Strengthening of the public sector as provider of infrastructure cannot be neglected, and instruments must be designed to allow the evaluation of the best financing alternatives, true project costs, real benefits (in financial, social and environmental terms) and a rigorous analysis of risks. This will only be possible if all interested parties participate from key stages of project structuring. Access to timely and truthful information is the basis for effective participative processes.