BULLETIN

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FACILITATION OF TRANSPORT AND TRADE IN LATIN AMERICA AND THE CARIBBEAN

Development and conflicts linked to infrastructure construction

Background

Infrastructure is critical for development because improvements in the provision, availability and quality of infrastructure and services offered can lead to profound changes in the standard of living of the population by facilitating access to health, education, other social services and the labour market (Alonso and Sánchez, 2012). Infrastructure also plays an important role in including rural territories in regional and international networks and in establishing urban-rural links, as well as bringing about an inclusive and sustainable transformation of the production, institutional and social spheres (UNDP/Government of Chile, 2014). Mindful of these links, infrastructure has been incorporated into the Sustainable Development Goals of the 2030 Agenda of the United Nations as a crucial tool to improve the population's living conditions, promote greater social stability and create cities and territories that are more resistant and resilient to climate change (United Nations, 2017). Sustainable Development Goal (SDG) 9 refers to developing quality, reliable, sustainable and resilient infrastructure, and SDGs 6, 7 and 11 refer explicitly to the need to "ensure availability and sustainable management of water and sanitation for all", to "ensure access to affordable, reliable, sustainable and modern energy for all" and to "make cities and human settlements inclusive, safe, resilient and sustainable," respectively (Jaimurzina and Sánchez, 2017). Thus, the transformation of infrastructure services represents a sine qua non condition for the progressive structural change needed in the region, since the insufficient, inefficient and unsustainable provision of these services is one of the reasons behind the poorly diversified production structure, the innovation lag, the high concentration of income and vulnerability to climate change (ECLAC, 2016a).

This redefinition of the role of infrastructure represents a major turning point for the sector, which will lead to a revision of how infrastructure is designed and built to include social, territorial and sustainability criteria

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in the early stages of new projects, to ensure that this new infrastructure is inclusive, resilient and adapted to climate change, while at the same time promoting the transformation of the existing stock and adapting it to the new requirements of sustainable development. In addition to broadening the scope of project analysis by including topics that do not traditionally feature among the sectoral ministries' main concerns, the State should strengthen the institutional framework to manage the dialogue with communities and infrastructure governance, in order to address the social and environmental tensions that may arise in territories where new infrastructure is being developed. The State should also maintain existing infrastructure and adapt it to new requirements to ensure inclusive development for all.

This document presents a preliminary examination of a set of social and environmental aspects that should be considered in order to prevent and appropriately address infrastructure-related conflicts, underscoring that conflicts are inherent to development and can offer an opportunity for change when managed well. First, the document describes the infrastructure development context in Latin American and Caribbean and provides a preliminary overview of the number of conflicts linked to the construction of transport and water management infrastructure. The second section analyses the relationship between social conflict and structural violence within the scope of infrastructure development. Section three describes the types of conflicts that reoccur in the sector, while section four draws attention to some tools that may be useful for businesses, governments and society in general for preventing and transforming conflicts related to infrastructure development. The document concludes with a set of recommendations to improve infrastructure governance in Latin America and the Caribbean.

I. The infrastructure context in Latin America

The latest ECLAC estimates on the infrastructure gap show that, despite the progress made in recent years, much remains to be done before infrastructure can be developed at a pace that matches demand, more so if the gap is to be closed with 100% coverage and in a sustainable manner, as called for in the 2030 Agenda. Considering the investment needed to provide universal access to basic services and to create the infrastructure services required by the economy (consumers and producers) based on expected GDP growth, population projections, the α parameter (representing the importance of different types of capital for economic growth) and the infrastructure stock (sensitive to the prices of assets), it is estimated that spending will have to increase by between 2.0% and 6.0%

in the four infrastructure sectors analysed (road transport, railway transport, electricity and telecommunications), depending on which economic growth scenario is used. For each of these scenarios, investment is disaggregated by new infrastructure and as a percentage of the cost of maintaining and repairing existing infrastructure (Sánchez and others, 2017).

The infrastructure deficit is much more evident in rural and remote areas, where the lack of adequate infrastructure often affects the development of the populations of those areas, as they do not enjoy the same service availability, quality and cost as the urban areas of the same country. One example is the low percentage of the road network that is paved, particularly the stretches of the secondary and tertiary networks in rural and remote areas, which represent up to 85% of the region's total network and where on average less than 25% of the network is paved (Jaimurzina and Sánchez, 2017).

The lack of connectivity or poor maintenance of secondary and tertiary road networks can cause temporary losses in connectivity or substantial increases in travel times, which end up hindering access to basic education or health services or the labour market. For example, the poor condition of tertiary roads used by small and medium-sized coal-mining companies in Colombia to transport their products not only lead to significant cost overruns that may end up excluding many producers from the market, but also to high negative externalities for the population and environment (Duque, Medina and Saade Hazin, 2017), even affecting the lives of those not linked to mining activities.
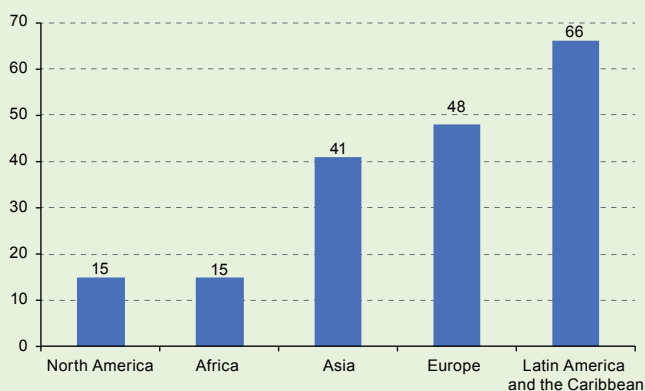
The SDGs recognize the provision of basic infrastructure services as a priority. However, extending service coverage to 100% of the population represents a huge challenge for the region's countries as it implies reaching even the most scattered and isolated communities. Some national government initiatives in the region have sought to provide universal coverage to close those gaps, and there are numerous plans, programmes and projects launched by national and subnational governments or the private sector that provide partial coverage to marginalized areas or those that lack assistance (Sánchez and others, 2017).

Moreover, populations in rural or remote areas, as well as indigenous populations, tend to bear the brunt of the negative externalities of the large infrastructure projects needed for national development, as their livelihoods and living conditions are affected without their expectations for a better life necessarily being met. This means that some population groups do not see infrastructure development in a positive light and the deep-rooted perception of many local communities

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is that the State sides with large corporations or with the latest development model in vogue in the capital city to the detriment of local communities, leading to a greater potential for social conflict around infrastructure development in Latin America.

According to the Environmental Justice initiative,[1] Latin America and the Caribbean is the region with the highest number of conflicts related to infrastructure development and construction (see figure 1).

Figure 1
Conflicts related to transport and water management infrastructure development, by region, as of March 2018
(Number of conflicts)

Source: Environmental Justice Atlas [online] https://ejatlas.org/.

Although the methodology covers more than one type of conflict, which may differ from region to region in terms of size, impact, investment and severity (complaints, protests, litigation), it nonetheless sheds light on the significance of these issues for the population in those regions, especially with regard to the impact of building new infrastructure or the lack of infrastructure on the environment and peoples' livelihoods and lifestyles.

Within Latin America and the Caribbean, Colombia, Brazil and Mexico have the highest number of conflicts, although most of these are related to water management, followed by transport infrastructure, particularly in Central America (see table 1).

The transport-related conflicts registered in the Atlas cover a range of issues, from small expansions of local road capacity to the construction of large transport corridors running through the Amazon, so, simply comparing the number of conflicts cannot be used as an indicator of potential national conflicts or of the effectiveness of prevailing infrastructure governance frameworks in those countries.

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[1] The Environmental Justice Atlas is part of the European project, Environmental Justice Organizations, Liabilities and Trade (EJOLT), which brings together a team of international experts from 23 universities and environmental justice organizations from 18 countries. See Environmental Justice Atlas [online] https://ejatlas.org.

Table 1
Latin America and the Caribbean (selected countries): conflicts related to transport and water management infrastructure development and total number of conflicts, 2018

Country	Conflicts related to transport and water management infrastructure development (including hydroelectric plants)	Total number of conflicts	Share of total conflicts (percentages)
Guatemala	10	27	37
Jamaica	1	3	33
Panama	5	15	33
El Salvador	2	6	33
Belize	1	3	33
Nicaragua	3	10	30
Costa Rica	4	15	27
Bolivia (Plur. State of)	10	40	25
Honduras	5	20	25
Mexico	14	71	20
Colombia	24	127	19
Ecuador	10	63	16
Brazil	15	98	15
Venezuela (Bol. Rep. of)	5	33	15
Peru	11	79	14
Chile	5	49	10
Argentina	5	50	10
Paraguay	0	6	0
Uruguay	0	4	0

Source: Environmental Justice Atlas [online] https://ejatlas.org/.
Note: The Atlas distinguishes between conflicts related to nuclear energy; mineral extraction and building activities; waste management; biomass production and land management; fossil fuels and climate justice; water management; infrastructure and built environment; recreational tourism; biodiversity and conservation activities; and industrial and utilities activities.

Notwithstanding the above, when discussing social conflicts, it is not a good idea to simplify these processes or to use information from specialized international sources only. It is imperative to look beyond the visible reasons or motives, and analyse the underlying structural causes. Infrastructure projects are often developed in social and territorial peripheries that may be affected by "structural violence" (see the definition below), related to poverty, inequality and a lack of opportunities and effective forums for dialogue and participation. Within this environment, infrastructure projects can reignite existing social conflicts by exerting greater pressure on pre-existing tensions, for example, if the areas in which the projects are being developed lack proper planning and land-use management. In these cases, the competent

authorities must mobilize the community effectively so that people become actively involved in projects, contributing their knowledge about the cultural and territorial characteristics and the animal and vegetable biodiversity that should be protected.

II. Social conflict and structural violence in the context of infrastructure development

To understand the relationship between social conflict and structural violence in the context of development, these concepts first need to be understood as they relate to the concept of peace. Johan Galtung coined the term "structural violence" in 1974 to describe the social process that occurs when people are not fulfilling their development potential as human beings, because they are unable access to basic services, such as health or education, or forums where they can voice their concerns and be represented, while other population groups enjoy their rights fully, thus, distinguishing structural violence from personal or direct violence, which is when violent actions are carried out (Galtung, 1974). Therefore, in the absence of adequate infrastructure services to ensure a decent life and to satisfy the basic needs of the entire population, there is a situation of structural violence that can act as a catalyst for social conflict.

III. Types of conflicts associated with infrastructure development

Social conflicts related to infrastructure development can be linked to multiple causes, some of which can be very complex. These causes can often be simplified and linked exclusively to aspects such as the socioenvironmental impact or expropriation of land. However, a deeper examination reveals there are a number of factors associated with structural violence that can act as powerful drivers of conflict, with new infrastructure developments acting as a trigger rather than a cause of existing conflicts in the territory. For this reason, a detailed analysis should be

carried out to understand the real causes behind conflicts. At the risk of adopting too reductionist an approach to this complex issue, the types of causes described below do at least reflect the underlying problems that should be considered in the profiles of large-scale projects or those to be developed in sensitive areas.

Types of possible causes of social conflict related to the development of large infrastructure projects:

(i) Impact on human development. The denial of basic needs owing to a lack of infrastructure, both in terms of quantity and quality, is a factor behind the potential for social conflict.

(ii) Impact on the environment. The development of new infrastructure, especially mega works, can have a negative impact on the environment by altering ecosystems and the livelihoods of local communities, particularly indigenous or Afrodescendent populations, that have deep ties with nature, thus affecting their social reproduction and continuity as a social group. In these cases, a conflict may arise from opposing views on the type of development desired, where the main factor would not be the impact on nature itself, but the competition for resources or the potential impact of works on the economic activities of the local population.

(iii) Issues relating to employment and the procurement of goods and services. Communities demand that infrastructure companies hire labour and services locally as a means of improving the living standards of local communities.

(iv) Resettlement of communities. Infrastructure projects that are in the State's interest may involve the forced expropriation of land and the resettlement of communities in other locations.

(v) Accelerated industrialization processes in rural societies. Large infrastructure projects can produce accelerated social changes in communities, affecting their socioeconomic conditions as a result of increased living costs, altering production modalities and changing their social systems fundamentally, based on mostly rural relationships.

(vi) Poor infrastructure and land-use planning. New economic realities attract migration flows, which can be a factor behind social tension when public systems, such as health and education, or housing availability, are not properly prepared for a substantial increase in demand for these services.

Although they are not included in this list, there are also various counter-culture and counter-system groups or initiatives that question current development models

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and visions. These groups are sometimes linked to identity processes that seek to break with the unifying nature of globalization. As a key component of prevailing development models, infrastructure can also be questioned.

IV. Tools for preventing and transforming conflict

As the previous sections indicate, poverty, lack of economic opportunities, social marginalization and unemployment, among other variables, are key sources of fragility. Private sector development is increasingly considered as a powerful and adaptable vehicle for reconstruction and regeneration of the economy, especially in post-conflict situations (Van Dorp, 2014). In this regard, investment in sustainable infrastructure, whether public or private, can be an important engine and catalyst for development. This requires a series of new tools and initiatives to prevent social conflicts or to transform them into development opportunities. Conflict-sensitive analysis, as well as dialogue as a mechanism for participatory governance, can be powerful tools for achieving that.

A. Conflict-sensitive analysis

Infrastructure development often takes place in complex social contexts. Thus, every project should include, or at least consider, conflict-sensitive analysis as part of its ex ante evaluation, on the premise that all infrastructure development implies a change to the dynamics of the territory where it takes place. Therefore, these processes must be strengthened by expanding the scope of prior analysis, in order to have more information about the potential impact of the project on the territory where it is carried out.

Table 2
Developing a conflict-sensitive analysis for infrastructure development

Has a social mapping exercise been carried out in the territory to identify the stakeholders and their motivation?
Who benefits from the project and how? Is the infrastructure inclusive?
Who is harmed and how?
Is the socioenvironmental impact acceptable for the population? What is the cost-benefit ratio?
What are the traditional livelihoods and how will they be affected by the infrastructure project?
Is the project aligned with the territory's needs? Is adequate land-use planning in place?
How can communities be compensated? If applicable, is there a resettlement plan in place for the communities? Have they been compensated adequately? Do they have alternative development plans?
Is there an information plan for the population about the project?

Source: Prepared by the authors.

Gathering information on the most important stakeholders, their motivations, the political and socioeconomic situation of the territories and previous conflict (participatory or social mapping) can also be useful, as it can provide an overview of the territories that can help to prevent conflicts or to stop existing ones escalating. This analytical tool allows a series of indicators to be established that can useful, even at a basic level, to measure the project's impact. Based on measurement scales, these indicators could include the extent to which the project affects livelihoods (water and land), inclusiveness (what percentage of the population benefits from the project) and transparency (how stakeholders were informed about the project). This information can also be an important tool for managing political and social risks for the companies that will build or operate the new infrastructure.

B. Dialogue as a mechanism for preventing and transforming conflict in the infrastructure sector

Legal frameworks are sometimes insufficient to solve problems of great social complexity that are beyond the traditional scope of the transport or public works ministries. Thus, alternative spaces are needed to look at these issues from a perspective of change and to transform the factors behind conflicts into development opportunities with a more comprehensive and long-term view. These spaces could be conceived as multidisciplinary initiatives to strengthen a more participatory approach to infrastructure governance that seeks to redefine the relationship between citizens, the State and the business sector by establishing dialogue as a basis for transforming conflicts into opportunities for sustainable development.

Infrastructure governance can be understood as a set of processes related to decision-making in the area of infrastructure and to the implementation of those decisions, which involves the mechanisms, procedures and rules established formally and informally by institutions. It refers to both the actions of infrastructure service suppliers in their respective markets and to the vertical and horizontal structure of those markets. Participatory and representative dialogue mechanisms are needed to address in an integrated and sustainable manner the challenges in the areas of planning, coordination, evaluation and design management, and operation of the new infrastructure (Jaimurzina and Sánchez, 2017).

This dialogue can be managed through the theory of change,[2] which covers the personal, relational, structural and cultural dimensions, by taking a transformative approach to factors behind a conflict related to infrastructure

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[2]   On the basis of Culberston, Lederach and Neufeldt (2007).

development, thus promoting the engagement of the State, communities and infrastructure companies as a preventative and transformational element of social conflict and promotor of sustainable development.

To develop these dialogue spaces, it is necessary to work on the personal dimension to lay the foundations in the relational dimension, transforming the negative perceptions and prejudices that act as obstacles to effective communication among stakeholders involved in infrastructure development. At the same time, by creating joint visions of development, the relational dimension allows the structural (political) dimension —which is where the problems related to structural violence are located— to be changed. Working in these three dimensions paves the way for introducing changes in the cultural dimension, which renders the process more sustainable by legitimizing new types of relationships based on dialogue, instead of confrontation and conflict (see table 3).

Table 3
Process overview

Overall goal: Develop infrastructure governance that is inclusive and promotes sustainable development			
How? By building dialogue platforms to promote sustainable development and overcome potential social conflicts related to infrastructure development			
Theory of change: Dealing with the causes of social conflict and promoting sustainable development through infrastructure-related dialogue is fundamental to overcoming potential social conflicts			
	Personal	Relational	Structural	Cultural
Focus	Educate, train and raise awareness among stakeholders with regard to dialogue and a culture of peace centred on respect for human rights.	Design and create multi-stakeholder dialogue spaces among governments, infrastructure companies, civil society and/or local communities.	Design and implement inclusive infrastructure aimed at sustainable development, based on a participatory and human-rights-based approach.	Work on the aforementioned initiatives under the relational, personal and structural dimensions.
Theory	Sustainable and symmetrical dialogue processes require informed and trained stakeholders.	Creating dialogue spaces helps to establish a new paradigm for the relationships among governments, communities and infrastructure companies, which allows visions of sustainable development to be created.	Creating sustainable and inclusive infrastructure aimed at sustainable development, from a participatory and human-rights-based perspective, helps to overcome structural violence and social conflict.	Cultural change requires work to be carried out simultaneously on the personal, relational and structural dimensions. Engaging in these three - spheres produces a cultural shift, which guarantees the sustainability of the process and contributes to overcoming potential social conflicts.

Source: Prepared by the author, on the basis of H. Culberston, J. Lederach and R. Neufeldt, *Reflective Peacebuilding: A Planning, Monitoring and Learning Toolkit*, Notre Dame, University of Notre Dame/Catholic Relief Services (CRS), 2007.

V. Conclusions and recommendations

1. Infrastructure development is fundamental for development, since it creates the basic conditions for a decent life (health, education, water and sanitation, transport, among others). However, if infrastructure is not aligned with the population's needs, its development can trigger social tension and conflict by inciting or exacerbating structural violence in the affected territories.

2. To overcoming social conflicts that arise from infrastructure projects, in addition to promoting respect for human rights, more participatory governance mechanisms must be promoted through dialogue among infrastructure companies, the State and local communities. A paradigm shift in the decision-making mechanisms can allow a lot more sustainable and inclusive infrastructure to be created, thus improving the social profitability of that infrastructure.

3. Adequate land-use planning and management is essential for infrastructure development, in order to overcome short-term approaches that ignore the needs of the communities where infrastructure projects are developed and that sometimes ended up being detrimental to the well-being of the communities. In this sense, infrastructure development must place people at the centre of development to ensure that the expected improvements in their standard of living are made a reality.

4. Improved infrastructure governance, together with changes in policies and regulations for better integration, can be an effective tool to manage conflicts related to the construction of new infrastructure. To this end, greater coordination must be encouraged among the State, the private sector and civil society to have a positive effect on social development and the environment. The model proposed by ECLAC —focused on integrated and sustainable logistics and

mobility policies— provides tools to mainstream these concerns and adopt a long-term approach.

5. Infrastructure companies operating in socially unstable environments —mainly those linked to large infrastructure works— must make specific efforts and take concrete actions in conjunction with their stakeholders to identify the needs of territories at an early stage and include cross-cutting criteria in their infrastructure development efforts.

6. Lastly, awareness needs to be raised in the transport sector of the links between transport and poverty. In this regard, the experiences of those working in other areas of infrastructure could be shared, particularly those areas that historically have been able to set up mechanisms for participation, collaboration and partnerships between sectors to strike a balance between necessary, socially-profitable investments and other processes based on local capacities, knowledge and impact monitoring.

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