

Strategic Planning for Sustainable Transport

An analysis of the mechanisms behind public policies for sustainable transport and infrastructure in Costa Rica



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List of Abbreviations and Acronyms

ARESEP	Autoridad Reguladora de los Servicios Públicos
CGR	Contraloría General de la República
CNC	Consejo Nacional de Concesiones
CNFL	Compañía Nacional de Fuerza y Luz
CONAVI	Consejo Nacional de Vialidad
COSEVI	Consejo de Seguridad Vial
CTP	Consejo de Transporte Público
DCC	Dirección de Cambio Climático
FDI	Foreign Direct Investment
FWD	Falling weight Deflectometer
GDP	Gross Domestic Product
ICE	Institución Costarricense de Electricidad
IDB	Interamerican Development Bank
IFO	International Financial Organization
IMF	International Monetary Fund
INCOFER	Instituto Costarricense de Ferrocarriles
INCOP	Instituto Costarricense de Puertos del Pacífico
IRI	International Regularity Index
ISI	Import Substitution Industrialization
JAPDEVA	Junta Administrativa Portuaria de Desarrollo de la Vertiente Atlántica
LANAMMEUCR	Laboratorio Nacional de Materiales y Modelos Estructurales de la Universidad de Costa Rica
MCCA	Mercado Común Centroamericano
MIDEPLAN	Ministerio de Planificación Nacional y Política Económica
MINAE	Ministerio de Ambiente y Energía
MIVAH	Ministerio de Vivienda y Asentamientos Humanos
MOPT	Ministerio de Obras Públicas y Transporte
NDP	National Development Plan
NTP/PNT	National Transport Plan/Plan Nacional de Transporte
OECD	Organization for Economic Cooperation and Development
PIMUS	Plan Integral de Movilidad Urbana Sostenible
PIV	Programa de Infraestructura Vial
PPP	Public-Private Partnership
SAP	Structural Adjustment Plan
UCR	University of Costa Rica
UNEP	United Nations Environmental Programme
UNFCCC	United Nations Framework Convention on Climate Change
USA	United States of America
USAID	United States Agency for International Development
WEF	World Economic Forum

Introduction

Costa Rica is a country of natural beauty, with impressive biodiversity, and economically a strong player in the region. Their international image as *green* country has created an extensive ecotourism sector. This image is supported by a history of effective natural preservation and an electricity sector that produces an estimated 99% of the energy through the use of renewable sources such as hydro, wind, geothermal, and solar power. Costa Rica is a world leader in this aspect, and only a handful of other countries have similar energy networks. However, one's first introduction to Costa Rica as they enter the country through the international airport is in stark contrast with the reputation that Costa Rica upholds. The greater metropolitan area in the central valley of the country suffers from bad air quality, severe traffic congestion, deteriorated roads, waste management problems, and fragmented public transport. However, once the city is left behind, Costa Rica delivers on every promise it makes, from the beauty of its natural parks to the kindness of the people.

Costa Rica has set ambitious goals regarding climate issues. It strives to be carbon neutral in 2021, and aims to completely decarbonize their economy by 2050. The state of the transport and infrastructure in Costa Rica are therefore a thorn in the side for both civil society and policymakers. This sector is responsible for a majority of Green House Gas emissions in the country and relies heavily on the use of fossil fuels. It is estimated that Costa Rica loses about 4% of its GDP in traffic congestions (Proyecto Estado de la Nación, 2018). In light of these issues the government has formulated several policies with the goal to transform the transport sector, creating a clean, efficient and safe system of transport and infrastructure. Some of these policies will be discussed in this thesis, namely the Plan de Descarbonización 2018-2050, the Plan Integral de Movilidad Urbana Sostenible, and the Plan Nacional de Transporte 2011-2035.

The focus of this thesis will be on the mechanisms behind these policies. As such, some key questions that will be addressed are: how is the policymaking process designed? Who are the actors in this process? What institutions are involved and how is coordination shaped? Where lie the biggest challenges in the implementation of these policies? As it currently is, the transport sector suffers from high degrees of fragmentation, with many institutions involved and no clear leadership. It is a very

interesting subject for study, as these mechanisms are the foundations on which the implementation of the policy builds. Without proper understanding of the interactions and challenges that one is faced with in this sector, effective implementation of the policies, and therefore the reaching of the climate goals becomes less feasible.

The focus of this thesis will therefore not be on the exact actions of transformation that will lead to more sustainability and their results. Sustainability, in the form of carbon neutrality and decarbonization should be seen as the ultimate goal in the context of this research, but not the focus of it. The facilitation of the implementation of the plans through institutional transformation is argued to be the absolute priority for the achievement of the goals and objectives as proposed in the policies that will be discussed in this thesis. The expectation is that the Costa Rican public administration for the transport sector will require a comprehensive reform, and as it stands it lacks the capacity to push for such reform.

In the first chapter of this thesis the conceptual and theoretical basis for the analysis of the transport sector will be laid. Here the concepts of the public policy process in Latin America, Neo-institutionalism, and Public-Private Partnerships will be discussed and put into perspective of how they can be used to analyse the Costa Rican transport and infrastructure sector. The second chapter will offer the contextualization of the topic of study. The chapter is organised chronologically and starts with the economic crisis of the 1980s in Costa Rica. The chapter then continues to address the state reform during the 1980s and 1990s, followed by the developments of the past twenty years. It concludes with a brief overview of the current situation and policies in the transport and infrastructure sector. The third and final chapter's focus will be the analysis of the policies discussed using the concepts as discussed in the first chapter, looking into the mechanisms behind these policies and the actors involved in the process. The chapter starts with an analysis of the policy process, followed by an analysis of the role and functioning of the institutions involved. The chapter concludes with a discussion on the use of public-private partnerships and the challenges the public administration is faced with regarding coordination between the sectors.

Methodology

To research this subject, fieldwork has been conducted in San José, Costa Rica. This fieldwork consisted of interviews with different public and non-public figures that are active in the field of transport and sustainability. The fieldwork took place over a period of two months from the 23rd of November 2018 until the 22nd of January 2019. Whilst there I have conducted 5 interviews, with 6 people in total. After returning, one last interview took place in writing. The interviewed people worked in different sectors and a variety of organizations such as the University of Costa Rica (UCR), The Costa Rican Electricity Institute (ICE), The Directory for Climate Change (DCC), the National Power and Light Company (CNFL), and the Office of the First Lady.

As the process of writing progressed, the focus of the thesis has shifted. As such, the interviews took place when the aim of the thesis was different. This has led to some interviews being less useful with the current focus in mind. However, these interviews have broadened the understanding of the subject and have helped to understand the sector and the way in which it functions. In this way, these interviews have been valuable in the process of writing this thesis.

In addition to the fieldwork, extensive bibliographical research has been done, using mainly primary and secondary sources, ranging from government documents and survey data, to academic books and journal articles. These sources have been accessed through the collections of the Leiden University (both digital and physical), Google Scholar, Web of Science, The World Bank, The Organization for Economic Cooperation and Development, The Interamerican Development Bank, and government websites mainly. The combination of the fieldwork with this bibliographical research offer a well-balanced view on the topic.

1. Mechanisms behind Public Policy: A Conceptual Analysis

To be able to determine whether the transport sector in Costa Rica is advancing in the direction of sustainability, a framework needs to be defined on which we build our analysis of the country's policies and the mechanisms behind them. In this chapter the theoretic foundations will be explained upon which this thesis builds. This basis is made up of three main theoretic focusses which will demarcate the analysis of public policies in the transport sector in Costa Rica; public policy in Latin America, Neo-institutionalism, and Public-Private Partnerships. The combination of this theoretical knowledge can lead to greater understanding of what how the public policy process is designed, how policy is constructed, implemented and enforced, and what the actors and institutions are in the process. Furthermore, this chapter gives an explanation of different types of Public-Private Partnerships and how they can be used in the provision of public services or infrastructure. The theoretical insights provided in the following paragraphs are the tools with which the policy process and the dynamics between the public and private sector in Costa Rica will be analysed. I argue that the cooperation and collaboration among public institutions, and private actors is the key factor in creating a more sustainable transport sector.

1.1 The Public Policy Process in Latin America

Public policy is an essential factor in the promotion of sustainability. Public policy can be described as purposeful behavior by governmental actors designed to maintain or change some existing circumstance or mode of conduct (Sloan, 1984, p.5). If politics is about who gets what, when and how, then public policy is a central means through which politics occurs. Analysing public policy therefore gives insight into which problems are perceived as public and can be seen on the policy agenda. Climate change and sustainability is one of such problems. The implementation of policies can lead to new laws, so measures can be legally enforceable. Furthermore, public policy is needed where the transition to sustainability would not happen (quickly enough) if left to private actors. Policies can also be a normalizing factor in culture. If a cultural change is desirable, it can be promoted by adopting policies that normalize the change. Therefore, if we want to

reduce climate change and create awareness, the first steps have to be the creation of public policies expressing the desire for change and a legal framework to make it enforceable. However, there is a high level of uncertainty and complexity regarding climate issues. This poses challenges to the policymaking process. It especially demonstrates the complex relationship between science and public policy, or broader; between knowledge and the decision-making process (Ryan & Bustos, 2019). Studying public policy in Latin America can shed light on a number of issues of concern to political scientists.

The debate on whether Latin American politics are unique in certain ways is central to public policy-making in Latin America as a topic of analysis. An analysis per case is therefore necessary, but there are also academics that argue that more general theories and concept can be applied to Latin American cases. In any way, Diez and Franceschet (2017) argue that there are three aspects of Latin American politics that cannot be overlooked in any public policy analysis; The state and state-society relations, the role of institutions in policymaking, and the effect of socio-economic inequalities on the policy process. Ryan and Bustos (2019) additionally argue that knowledge gaps are another factor in policy making. The term knowledge gaps refers not only to a lack of information, but also to issues with integration of knowledge systems.

One aspect of policymaking in Latin America is a political environment dominated by insecurity and political science shows that there are qualitative differences between policy choices made in stable and unstable political systems. Although stability has increased in the region over the past decades, and the threats of civil war, military coups and economic collapse have reduced greatly, some countries remain crisis prone. Latin America as a region has several common issues, in some countries more severe than in others, such as widespread poverty, rising populations, increasing urbanization, high levels of inequality and ineffective bureaucracies. This is true for almost all countries, even where democracy is relatively stable (Sloan, 1982, p.421-422). Therefore, many scholars are sceptical about the applicability of general theories and concepts, derived from advanced industrialized democracies, on Latin America.

However, since the 1980s scholars have tended to pay more attention to the socio-political context in shaping policy outcomes. Public policy scholars in Europe and North America have become more attentive to the role of history, power structures, and

institutions over the past decades, making the more general theories better applicable to the Latin American case. Before the 1980s, the state(-actors) were assumed to be the main drivers of public policy. This state centered model tends to attribute only a small part of the policy process to social actors or other non-state actors. The inclusion of these actors in the literature post 1980 is illustrated by the term; 'policy networks'. This term describes who act in the policy process. It is described as a political structure. The relationships within the network are structural. They define what role the actors play within the network (Marsh & Smith, 2000, p.5).

By the mid-1990s the focus of scholars began to shift towards how political struggles among classes were located in the broader historical and institutional contexts in explicitly comparative terms. They started looking at how this context influenced the struggles and their outcomes, and the subsequent policies that resulted from this. Many scholars (Weir, Orloff, Skocpol, and Pierson for example) believe the historical legacy to be crucial: institutions emerge from earlier political and social struggle and therefore reflect the earlier political and social situations (Diez & Franceschet, 2017, p.10-11). Especially important is the way in which the conflicts are settled at one point in time, which often creates self-reinforcing dynamics, making certain outcomes more or less likely in the future. This aspect will be further discussed in the paragraph on institutionalism.

Looking at Latin America, Diez and Franceschet (2017) have created a broad framework for analysis of public policy. They argue that there are three features that are most relevant for the Latin American case: state weakness and state-society relations, institutions, and inequality. They argue that because Latin American states are generally weak (to different degrees), it is an interesting point of analysis. State theorists identified two key dimensions of state strength/weakness: state autonomy and state capacity. In a different perspective Ryan and Bustos (2019) argue that knowledge gaps influence policies, especially regarding complex issues such as climate change mitigation. In their article they address four issues. Firstly, they identify the main knowledge deficits. Second, they focus on difficulties in knowledge coproduction processes between researchers and policy actors. Third, they address the use of available knowledge by policymakers. Finally, they explore information deficits in the evaluation and monitoring of climate policies.

A state's autonomy is determined by the ability to act independently from external, international, and domestic pressures. There is no clear consensus on the degree of independence of Latin American states, but there are studies that show that most are not very independent regarding international actors, given that many Latin American states are in a relatively dependent position within the international economic system. This position limits the policy options available to policy makers. This applies to most countries, but Latin American countries rely heavily on foreign capital. Therefore the constraints are greater; the threat of capital flight is much greater (Diez & Franceschet, 2017, p 12-14). Besides these international constraints on policy making options, one can also look at internal pressures that influence state autonomy. In many (Latin American) countries democratization happened simultaneously to economic liberalization. Democratization opened the policy process up to civil society and social groups, while at the same time economic liberalization limited the role of the state in economic reform.

The other dimension of state weakness is state capacity, which refers to a state's ability to perform basic functions, such as tax collection and policing. This aspect is mostly important when looking at policy implementation in Latin America. A state's capabilities are defined by Migdal (1988, p.4) as the "capacity to bring about changes in society through state planning, policies, and actions". This is very broad and encompasses the performance of all functions (for example: ability to penetrate society, regulate social relationships, extract resources, allocate resources in determined ways, etc.). As such, a state's capacity is not absolute. Therefore the dichotomy between a 'weak' and a 'strong' state is oversimplified. The issue with climate change policies in this regards is that government agencies often do not have enough human capital and technical capabilities to assess available information and implement and enforce it (Ryan & Bustos, 2019; Stein & Tommasi, 2008). Given the low autonomy and relatively weak capacity of states in Latin America, state autonomy and state-society relations are critical starting points for the analysis of public policy in the region.

Furthermore, institutions play a crucial part in the policy process. The institutional design of a country (presidential/parliamentary system, electoral rules, federal structure, the existence of an independent judiciary) dictates the process and who acts in this process and therefore limits outcomes (Stein & Tommasi, 2008). Diez and Franceschet (2017) make three claims about institutions in their book. First, the context in which

institutions emerge is important (social, historical, ideational). The power relations at the time at which the institution is formed are often reflected in the institution. Secondly, there is a lack of horizontal accountability – the controls that state agencies are supposed to exercise over other state agencies. Unequal power relations in Latin America often lead to a policymaking process that favours the interests of powerful groups. This undermines the needs of poor majorities and stands in the way of effective implementation. Third, researchers need to be attentive to “informal institutionalization”. These are shared (unwritten) rules, that are created and communicated outside of official channels. Scholars have often distinguished between rules (assumed to be formal) and norms and ideals (assumed to be informal). Informal institutions are more than just culture or ideas. They imply behavioral patterns which originate from shared expectations. In some cases the informal rules correct formal rules that do not succeed in producing the desired outcome. However, some parties argue that informal institutions undermine democratic practices (Helmke & Levitsky, 2004, p.728). The role of institutions will be further examined in the next paragraph.

Third, looking at inequality in Latin America and its effect on the policymaking process is crucial. Latin America is a highly unequal region in many aspects (financial, social, gender, etc.). There are regions in the world with more poverty, but no region has more inequality. This undermines democracy, limiting access to the policy process for certain social groups. The effects of inequality on the policymaking process can be seen in three ways. First, it creates conditions that lead to the creation and reproduction of certain informal institutions – particularly clientelism. Secondly, it affects public opinion on problems such as inequality in ways that undermine the politicization of the issue. This deprives progressive groups and movements of a broader social base to mobilize for policy changes. Thirdly, it sets conditions for the participation in policymaking; those without resources are less likely to gain access to the process (Diez & Franceschet, 2017, p.20-21). Inequality creates the conditions in which the elites have more access to platforms where they can influence public opinion on certain policy issues. This unequal access to channels of influence in society inhibits certain topics from being placed on the political agenda.

Lastly, when addressing knowledge gaps in the public policymaking process there are many problems. In the case of climate change mitigation policies, the complexity of

the issue has a lot of effect on policy outcomes. A widespread view in literature is that regarding this issue there is not per se a lack of knowledge, but the use of available knowledge is limited by policy actors (UNEP, 2014). To put it differently; there is knowledge available, but it is not used. Part of the reason for this is that decision makers consider the knowledge to be fragmented and dispersed (according to a survey by Ryan & Bustos, 2019).

Taking into account these aspects of the policy-making 'game' the goal is to create policies that are durable and stable. That is to say, policies that can be preserved beyond the tenure of a single government. Policy stability leads to policy credibility and vice versa. If policies and their incentives are credible to political actors, they are more likely to act on these policies (Stein & Tommasi, 2008). However, Latin America is a generally highly volatile region. Alternating governments often make drastic changes in policies to produce short term results that aim to get them re-elected. This goes at the cost of long term results. This is especially harmful when the policies relate to climate change; a subject that requires almost exclusively long term investment that spans multiple (possibly politically diverse) governments.

1.2 A Theoretic Perspective on Neo-Institutionalism

As mentioned in the previous paragraph, institutions play an important role in defining possibilities for policy outcomes. Institutions are very broad and can encompass many aspects of life. It is important to look at these structures, because, as Acuña (2013) argues, weak institutions are at the root of many Latin American issues. March and Olsen (1989) define institutions as a collection of interrelated rules and routines that define appropriate action in terms of relations between roles and situations. The process involves determining what the situation is, what role is being fulfilled, and what the obligation of that role in that situation is. Alternatively Kiser and Ostrom (1982, p.179) define them as "rules used by individuals for determining who and what are included in decision situations, how information is structured, what actions can be taken and in what sequence, and how individual actions will be aggregated into collective decisions ... all of which exist in a language shared by some community of individuals rather than as physical parts of some external environment". Lastly Peter Hall (1986, p.7) refers to

institutions as “the formal rules, compliance procedures, and standard operating procedures that structure the relationships between people in various units in the polity and the economy”.

What is clear from these definitions is that institutions are collections of rules (be it formal or informal) that in some way shape the behavior and relations of those that act within them. For political institutions we can add that the goal of the institution is to solve collective action problems. This definition then requires to clarify when someone acts within an institution. An actor in this sense is every individual or collective subject whose identity allows for recognition as a collective or as part of one, and with the capacity of strategic action (Acuña, 2013, p.36).

Although the theory of institutionalism mainly focusses on institutions and those that act within them, it is important to realise the role of those that do not act. There are social groups that do not meet this definition of actor. This may be because they do not have the resources or capacity to solve collective action problems, or because they fail to recognize their common interests (Acuña, 2013, p.41). It is important to acknowledge that these groups exist and may not be represented in the workings of institutions as discussed here. However, for the sake of this thesis the focus will be on more formal institutions of government, and those that act within them (government officials, interest groups, etc.).

Institutionalism finds its roots in political thinking. Some early political thinkers (Althusius, Thomas Hobbes, John Locke, Montesquieu) looked at the analysis and design of institutions. Each from their own perspective, but the object of study was the same. Skipping over some centuries, we see a period in which political science was beginning to differentiate itself as an academic discipline in the late 19th century. The focus was highly normative, focussing on formal aspects of government, such as law. It analysed the “machinery” of the governing system. In this period political science was exclusively in service of the state (Peters, 1999, pp.3-4). Spanning from this moment until the early 20th century the focus was mainly on institutions. Government was about the formation and application of law through public institutions, with politics conceptualized as a very minor part of the exercise.

After the Second World War the institutional roots have been rejected in favour of two theoretical approaches based more on individualistic assumptions: behavioralism

and rational choice. Both of these views ascribe a high level of autonomy to the individual, stating that the behavior of individuals is not constrained by institutional frameworks. Individuals would make their own choices, not influenced by the political process, based on personal utility and rationality (Peters, 1999, p.1). This shift in theory was the result of perceived shortcomings of the traditional institutional thinking. However, in the 1980s a resurgence in institutionalism can be seen. This new institutionalism reflected many features of the older version, but also included more theoretical and empirical directions. It added to the old institutionalism research tools and concern for theory that had informed rational choice and behavioral analysis. At this point in time a more theoretical base for institutions was developed which opened up broader academic debate. The different approaches (institutionalism, and rational choice and behavioralism) should be seen as complementary, as neither can fully explain political behavior. Institutionalism should take into account analysis of individual behavior and vice versa (Peters, 1999, p.2).

The criticism on old institutionalism is the result of decades of development in social sciences. To understand new institutionalism (neo-institutionalism in academic literature), its roots need to be understood. Traditional institutionalism tended to concentrate on the constitutions which produced the institutions. The behavioral revolution reversed this. The focus shifted towards the input from society as the formative factor of politics rather than looking at politics as shaping society. This dynamic is called inputism. The success of behavioralism and rational choice theory together with traditional institutionalism are the foundations of the new institutionalism or neo-institutionalism.

Peters (1999) argues that there are six approaches to neo-institutional theory. Whereas Acuña (2013) only differentiates between three main types of neo-institutionalism. Peters discusses normative, rational choice, historical, empirical, international, and societal institutionalism. Although he does note that the last two are clearly less connected to institutional theory than the first four. Acuña groups new institutional theory into three families; rational choice, historical and sociological institutionalism. For this thesis the focus will be on rational choice, normative and historical institutionalism as the combination of these three encompass the influence of the individual and their rationality, the effect of norms (rules) on the outcomes produces

and it analyses the historical roots of institutions as another factor that affects possible policy outcomes. These approaches will be discussed in further detail.

Firstly, normative institutionalism bears strong resemblance to the old institutionalism in that it focusses on norms of institutions as a means of understanding how they function and shape individual behavior. March and Olsen (1989) argue that the central focus of values in political science was being replaced with individualistic assumptions and methodologies. These assumptions were argued to be incapable of explaining institutional outcomes, as the individualistic approach could not be integrated with the collective nature of most political activity. They emphasize the importance of norms and values in explaining and predicting behavior of members in institutions. In this view, individuals are not atomistic, they are part of a complex series of relationships with other individuals and collectives. They are always influenced by their institutional attachments and therefore cannot be utility-maximizing as rational choice theory suggests. This dynamic of interaction is seen as an integrative political process. This is characterized by the commitment of the individual to the goals of the organization, or at least the acceptance that the claims of the institutions are legitimate (Peters, 1999, p.26-27).

This normative focus provides us with a way of judging the success of an institution. Although this might lead to succeed-fail dichotomies, where the reality might lie in between. Also, one should take care with defining institutions as weak or failed, especially in Latin America. This may lead to unfair conclusions. Where institutions may fail in achieving their objective, they may fulfil an important role in a different objective. The weakness or lack of compliance of formal institutions may mask the strength of informal rules that are known and complied with by all. Therefore the stability and conformity to formal rules does not always indicate institutional strength, just like the lack thereof does not necessarily imply institutional weakness. This is especially the case for Latin America, where institutions differ in their mechanisms of enforcement and durability compared to industrialized democracies (Levitsky & Murillo, 2013, p.93).

In the approach of March and Olsen (1989), the collection of values and rules that establish an institution are normative rather than cognitive in the way they influence members. The 'logic of appropriateness' is seen as an explicative factor of behavior within institutions. Appropriateness addresses the fact that members of an institution will more

strongly consider their actions within a framework of what is expected of them, rather than considering personal gain (e.g. a fireman running into a burning building, because it is expected of him even though he might injure himself). The logic of appropriateness states that individuals will make conscious decisions, but the decisions are within the framework determined by the institutional values. This same logic is the motor behind formation and reform of institutions. The patterns of change are characterized as the 'garbage can approach' in normative institutionalism. The argument is that institutions have a routinized set of responses to problems. They tend to use familiar responses, rather than finding alternative solutions to the problem (Olsen & Peters, 1996). Change is in this view often the result of externalities, rather than the result of dynamics within the institution. Changes in the environment pose opportunities and threats to the institution, to which it can adapt.

The limits of this approach are in the capacity to explain behavior. Also the 'logic of appropriateness' is described in vague terms, to the extent that it is hard to argue that it does not exist. Therefore this approach is not falsifiable.

The rational choice approach is the antithesis to the normative approach. In this approach institutions are conceptualized as collections of rules and incentives that establish the conditions for bounded rationality. Elinor Ostrom (1986) was responsible for the first version of rational choice institutionalism. Rational choice institutionalists do subscribe to the idea that most political life takes place in institutions, even though they see individuals as the basis of their analysis. The main argument of rational choice institutionalism is that utility maximization will remain the primary motivation of individuals, but the individuals may realize that the best way to reach their personal goals is through institutional action. Once an institution is established, actors make investments and commitments to courses of action that are dependent on this institution. The actors are therefore reluctant to discard these commitments, even in the face of 'rational' alternatives (Glenn, Edwards, & Vinícius, 2014, p. 935). Therefore their behavior is limited by institutions. Institutions set the limits of what can be done, but within those limits individuals will make rational decision that would yield the most utility for them personally.

There are different variants of rational choice institutionalism, but all assume that the individual is the central actor in the political process, and that individuals act to

maximize personal utility. Another aspect all versions of this approach have in common is that they assume a clean slate when it comes to the design of institutions. The design of institutions is dictated by the incentives and constraints being built into the institutions (Peters, 1999, p.46-47). This directly contradicts the historical approach. The limiting effect of institutions on behavioral choices can be seen, but in this approach Ostrom (1986) argues that this is in itself a rational choice. North (1990, p.3) described institutions as: "The rules of the game for society, or more formally, ... humanly devised constraints that shape human interactions". Therefore, Ostrom states that a benefit of membership might be greater predictability of behavior of others as they are all constrained by membership.

Change in this approach is seen as a discrete event, rather than a continuous process. Change appears to occur when the institution fails to meet the requirements for which it was formed (Peters, 1999, p.56). March and Olsen (1989) on the other hand think of change as occurring through the reformation of preferences and the reshaping of possibilities within the institution. Preferences may change corresponding to what the institution has found it can accomplish. Within this approach, a good institution is one that can formulate and enforce rules that limit personal utility maximization, when maximization is collectively destructive (Ostrom, 1986).

The limits of this approach are similar to those of the normative approach, in that this approach also is not falsifiable. This lies in the fact that it is hard to argue that individuals do not act rationally. Action that may seem irrational, but that may be the result of outsiders not understanding the premises of the actor. What is in the interest of the actor is difficult to conceptualize, and in many academic sources the interest of an actor is defined as that which the actor says is their interest (Acuña, 2013, p.42).

Lastly, the historical approach to institutionalism states that history matters. The fundamental idea is that policy choices made when an institution is being formed will have a continuing effect on policy outcomes in the future. Another word for this dynamic is 'path dependency'. Choices made put you on a certain path, and great inertia may be encountered when trying to change the direction of policy. Hall (1986) was the first to advance this approach. He did not name it historical institutionalism as such, but pointed toward the importance of institutions in the formulation of policies over time. He argued that in order to understand policy choices, it was crucial to understand their political and

policy histories. When governments make policy choices, this creates patterns that will persist until there is a sufficiently strong political force to overcome the inertia created at the start. In historical institutionalism, the institution is conceptualized as rules and procedures, rather than formal structures. Institutional rules and structures attempt to solve problems that they themselves have caused.

This view of organizational life provides us with a dynamic means of conceptualizing path dependency. If initial policy choices were insufficient to fulfil the objective of the institution, a way must be found to adapt or the institution will cease to exist. In this sense historical institutionalism implies a course of evolution, rather than the following of an existing path. (Peters, 1999, p.65-66). This approach seems better suited to explain persistence of patterns in institutions than to explain how the patterns might change. Change in this approach is conceptualized as a punctuated equilibrium. Institutions are expected to function in some sort of equilibrium, functioning as formulated at its conception. Change is possible, but it requires sufficient political force. Often change is assumed to occur (when it does occur) in “rapid bursts of institutional change followed by long periods of stasis” (Krasner, 1984, p.242). Some scholars argue that incremental change is possible in historical institutionalism. It can be seen as adjustment to changing demand and to smaller inadequacies in the design of the institution. This is only possible when the desired state is not too far from the current position. If not, then incremental changes will not be sufficient to produce the necessary change to achieve the objectives.

This approach does not provide us with the tools necessary to determine whether an institution is ‘good’ or not. It simply provides us with an explanation for persisting patterns in institutions and their inertia to change. One aspect that it does address is the adaptability. Even if policy choices at the conception of an institution were adequate, rapid change in policy fields may require adaptation (Peters, 1999, p.73). Successful institutions will be capable of this essential change, as to not become irrelevant. Once again, a limit of this approach is its falsifiability. Just as with the previous two approaches, it is hard to argue against the statements posed here. It can hardly be said that the historical legacy leaves no trace in modern institutions. One other aspect that has to be noted is the similarity with normative institutionalism in the acceptance of the logic of appropriateness. The individual plays no role in historical institutionalism, and it assumes

compliance of members based on existing norms. Therefore, it can be argued that historical institutionalism is a component of normative institutionalism.

Not one of the three approaches discussed would provide a sufficient explanation of institutional practices. Therefore, it is important to keep in mind all approaches when analysing institutions. As with so many things, the actual functioning of institutions is much more complex than posed in any one approach. The intricacies of interpersonal relationships within institutions and among collectives are much too complex to address in this thesis. The combination of the three approaches as explained above will however give an adequate image of the institution as it will consider its norms as limiting behavioral and policy choices, its individuals as rational actors that will seek personal utility maximization within the institutional framework, and its history in explaining persisting patterns and possible inertia to change.

1.3 A Discussion on Public-Private Partnerships

Costa Rica makes use of several public-private partnerships (PPPs) in transport and infrastructure. This arrangement of cooperation is therefore an interesting point of focus in the analysis of this sector. Especially since knowledge about what is meant by Public-Private Partnerships is not widespread. The term seems to have originated in the United States, relating to joint public and private sector funding for educational programmes and later for funding utilities. It became more widely used in the 1960s, referring to public-private joint ventures for urban renewal. Even though the term originates from the 1950s in the USA, the concept was applied already in the 18th and 19th century. In Britain turnpike trusts borrowed private capital to repair roads and then repaid the debt by charging tolls. Similar trusts also financed many bridges in London. Similar constructions were also used for the private funding of canals and in the late 19th century the Brooklyn Bridge in New York was built with private capital (Yecombe, 2007, p.5). This type of PPP is known as a concession.

The definition of what exactly is a PPP is unclear, but most definitions include the following elements; 1: It is a long-term contract between a public party and a private party. 2: Its aim is that the private party designs, constructs, finances, and/or operates a public infrastructure (facility). 3: Payments to the private party can be made by the public

party, or by charging users of the facility. 4: The facility remains in public-sector ownership, or it reverts to public-sector ownership at the end of the contract (Yescombe, 2007, p.3; Forrer et al., 2010, p.476; OECD, 2012; Custos & Reitz, 2010). This definition is very broad and encompasses a wide array of partnerships between the public and private sector. In a PPP the public authority formulates desired outputs. It is then left to the private party to design, finance, build and/or operate the facility to meet these output specifications. This differentiates a PPP from traditional infrastructure procurement, in which the public party defines a design, after which private parties bid and build the facility. In this case the private party is only responsible for construction and a short warranty period afterwards (Yescombe, 2007, p4; Forrer et al., 2010, pp.476-477). This is a short-term contract, and therefore does not fall under PPP. If we look at the second element of what constitutes a PPP, there are a lot of aspects that can be done by either the public or the private party. The degree in which the project is put into the hands of the private party dictates the type of PPP. Appendix 1 offers an overview of the different types of PPPs.

Although partnering of the different sectors (public, private and non-profit) seems beneficial, it is not as straightforward as it seems. Each sector has its own strengths and the combination of forces is a good match on paper. However, the differences between the sectors complicate the cooperation. For instance: policy ethics are very different to managerial ethics. In an ideal case, the combined effort would result in greater efficiency, at lower cost, but this is not always case and should in no case be assumed (Rosenau, 1999). Although, the structure of PPPs do often achieve lower cost, because only the output is specified by the public authority which gives the private party the freedom to produce this outcome more efficiently (Glaister, 1999, pp.29-30). A careful cost-benefit analysis is always necessary to determine the best strategy to reach a desired outcome (OECD, 2012). Authentic partnering, when this is financially beneficial, would entail close collaboration between the sectors to combine the strengths of the private sector (competitive and efficient) and public sector (responsibility and accountability with regard to civilization). In reality however, PPPs can often resemble almost complete privatization, or they can be very loosely organized and closely contractual (Rosenau, 1999).

Another important aspect of PPPs is the transfer of risk. A PPPs goal is not only to reduce the public spending on infrastructure, but also to allocate part of the risk to the

private party (Glaister, 1999; Forrer et al., 2010; OECD, 2012). The allocation of risk to the private party does not mean that the public authority does not bear risk anymore. According to the OECD principles for public governance of public-private partnerships (2012) risk should be allocated to those that manage them best. All risks should be identified, defined and measured and carried by the party for whom it costs the least to prevent the risk from realising. This is conceptualized in 'appropriate risk transfer'. Risks that are exogenous to one party may be endogenous to the other. An example of this is political and taxation risk, which is not in control of the private party, and can therefore better be carried by the public party. It is also important to note that PPPs can bear an inherent risk for the public party when statutory and political obligations could entail that activities of a failed PPP have to be taken over by government (OECD, 2012).

The nature of PPPs as long-term contracts between a public authority and a private 'project company' also inherently carries uncertainty. Once a contract has been signed it becomes harder for the public authority to change the agreement, unless they are willing to renegotiate. This inherent complication means that the initial contract should be very clear about what it wants to prevent complex renegotiations in the future (Glaister, 1999, p30).

Unfortunately PPPs have in the past been constructed for the wrong reasons. A PPP can be a good way to avoid spending a large sum of money and spreading it over the contract years. This means that more works can be 'paid' within an annual budget. This goes at the expense of committing the budgets of future administrations (Glaister, 1999, p.31). This has at times been misused by governments to meet political, legislated and/or treaty-mandated fiscal targets. It is essential for governments to keep the cost-benefit analysis in mind and only establish a PPP when it represents value for money. Only then, even though budget is committed for a longer period, will it increase fiscal space in the coming years (OECD, 2012).

As can be seen by the explanation of the complexities of PPPs, these are structures that should be used without careful consideration. PPPs when executed well, can provide great benefits to governments and private parties, but there are many possible complications that can cause the failure (in the sense that either cost is higher, or the output is not as desired). These long term contracts carry with them long term obligations and responsibilities, on both the public and private side. Even though the scope of these contracts often encompass several decades, they can be analysed before the termination.

The quality of the service or output can be compared to past performance, and even performance by others, and have to be compared to the standards as set in the contract (Forrer et al., 2010, p.478). This theoretical framework for PPPs will be used in the analysis of its execution in Costa Rica's transport sector in chapter 3.

This theoretical framework will function as the basis for the analysis in chapter 3. Regarding public policy in Latin America and neo-institutionalism, this conceptual basis will be used to analyze the underlying mechanisms in the policy process and the actors that are involved in the transport sector. Within this process the main focus will be on state strength -made up of state autonomy and state capacity-, institutions, and knowledge gaps. Neo-institutional theory will allow for a deep dive into the mechanisms of change and their possible policy outcomes. The theoretic knowledge on PPPs will aid to gain a deeper understanding of the role the private sector plays or can play with regard to sustainable development in transport and infrastructure.

2. Historical and Contemporary Context of Issues in the Transportation Sector

Current debates on development are increasingly focused on sustainability and climate change. The global attention this subject receives is an indication of its importance and that it should be high on the policy agendas of all organizations, both national as well as supra- and international. In order to combat climate change, the United Nations Framework Convention on Climate Change (UNFCCC) aims to stabilize the greenhouse gas concentrations. The convention has near global participation. A recurring subject on this agenda is transport, which is one of the biggest emitters of greenhouse gasses. When trying to analyse the workings and advances of the transport sector in Costa Rica towards sustainability, and to understand its politics, its policies and its institutional framework, it is important to understand the context which gave rise to these. As such, this chapter will elaborate on the historical and political context which have created the contemporary system of public administration.

To this end, several historical events that have greatly impacted the political landscape in Costa Rica and the context of three extensive policies with regard to transport will be discussed. First, the effects of the economic crisis that affected most of Latin America in the 1980s will be analysed. The multisectoral state reforms as consequence of this crisis will be examined. Regarding these reforms, special attention will be paid to the National Plan for the Reform of the Transport Sector (1990-1994 and 1994-1998). Second, We will look at the developments in the state of infrastructure and transport in the country over the past two decades to contextualize the need for action. Finally three of Costa Rica's current policies will be examined regarding sustainability and transport; The Decarbonization Plan 2018-2050 and the Integral Plan for Sustainable Urban Mobility and the National Transport Plan 2011-2035. These policies have to be seen in the context of both national and international goals, such as the global aim to keep the increase of global temperature below 2 degrees Celsius (OECD, 2015), and the goal to decarbonize the economy by 2050 (MINAE, 2019). These policies have a strong focus on transforming the transport sector, and therefore are an important subject of study to determine whether Costa Rica is on the right path to sustainable transport.

2.1 The Economic Crisis and State Reform (1980-1999)

In the early 1980s a severe economic crisis hit Costa Rica, as well as much of Latin America. This crisis was the worst the region had seen in decades, with large declines in the economy. Poverty and inflation rose sharply in the period between 1980 and 1982. There were multiple causes, such as the failure of the Import Substitution Industrialisation (ISI) model where the government tried to reduce imports (and therefore dependence on other countries) through the industrialisation of the economy. This model created many state-owned enterprises through the years that were inefficient. The crisis marked an inflection point in Costa Rican history. The effects that it had will be discussed in this paragraph.

To understand the magnitude of the crisis, one has to take into account both the structural elements of the Costa Rican economy and the international conjecture. One of the causes of the amount of foreign debt that Costa Rica has accumulated. This was mainly the result of decades of increasing public spending, especially in salaries (the state grew rapidly in the decades leading up to the crisis), which created a public deficit of almost 9% of GDP (Hidalgo, 2000). This deficit was systematically covered with international credits. These were acquired from private banks with relatively favourable conditions. Through this process of taking out credits to cover public spending, foreign debt passed from US\$ 164 million in 1970 to US\$ 830 million in 1977. The government did not seem to realize the potential danger posed by the payment conditions. The credits were given in favourable times on the international financial market.

Besides that, Costa Rica had high levels of Foreign Direct Investment (FDI); amounting to 28% of GDP. This was mainly due to high coffee prices in the 1970s (Sánchez, 2004 in Pérez Masís, 2015, p.49) However, the oil crises of 1973 and 1979 had a grave effect on the international economy. Consequently, demand for Costa Rican export declined quickly and because of that coffee prices dropped by almost 50% between 1977 and 1982 (Pérez Masís, 2015, p.49). As coffee was one of the biggest export products of Costa Rica this had a severe effect on the economy. On top of this, the 1970s in Central America was characterized by a lot of armed conflicts (such as in El Salvador, Honduras, Guatemala, and Nicaragua). This also affected the demand for export from the MCCA (Central American Common Market) region. This decline in export, and the deficit it

created was again covered by taking out credit. Costa Rica valued the strides they made in the social domain too highly to give up. Between 1978 and 1982 the debt increased by almost 300% (Sánchez, 2004 in Pérez Masís, 2015, p.49).

Because of the changing international financial climate, the conditions on the debt changed. In just two years the annual interest rates on the loans rose rapidly from around 6% to 21% (Jiménez, 2000, p.25). This led to even greater debt and forced the administration of Rodrigo Carazo (1978-1982) to request a “stand-by” loan from the IMF of US\$ 60,5 million to cover debt services. In exchange for this loan the government had to agree to a series of measures which included the reduction of the fiscal deficit, the devaluation of the currency, reduction of tariffs, reduction of protection of industry, less price control, restriction of salary increase for public employees and the encouragement of productive investment, especially foreign investment (Pérez Masís, 2015, p.50). The government, realizing that these measures implied taking a step back in the social domain, did not agree with the demands of the IMF. As such the IMF reduced the loan, which led to Costa Rica only receiving US\$ 15,4 million.

This process repeated in 1981, when a larger loan was requested (US\$ 276,8 million). Again the government felt that the demands tied to this loan were too strict and the two parties did not reach an agreement. The ties with the IMF became very tense leading to a climax in the beginning of 1982, when president Carazo broke relations and requested that the delegation of the IMF would leave the country. Eventually, the Carazo administration decided to deal with the deteriorating financial situation by printing money. This forced the government to devalue the currency and inflation skyrocketed (Hidalgo, 2014). The social impact this had was enormous, and it sent many people into poverty. In 1970, 24,7% of the population lived in poverty. This number had risen to 41,7% in 1980 and only two years later in 1982 (during the peak of the crisis) the number had risen to a staggering 70,7%. This number was even higher for people living in rural areas, where the percentage of people in poverty rose to 82,9% (Jiménez, 2000, p.27).

This can be partly ascribed to the high inflation, which had a grave effect on the cost of living. The cost of the standard *basket of goods*¹ rose from 60% of the average income to 86% of average income between 1980 and 1982. The dire financial situation Costa Rica found itself in led to the country declaring its inability to pay, because it was not even able to cover the interest over the debt. Consequence of this decree was that now the only sources of financing were international financial organisms such as the IMF and the World Bank. However, as explained before, the loans and aid from these institutions come with a package of “suggestions” regarding political economy that the government has to adopt as a compromise. There were three main financial institutions involved in the Costa Rican crisis that for the most part determined the path towards reform. These were the IMF, the World Bank and USAID (Pérez Masís, 2015, p.51). The World Bank encouraged structural reform of the state through the so-called Structural Adjustment Plans (SAP), and through a mechanisms called cross-conditionality² the loans from the IMF would not be paid out until the conditions set by the World Bank were met.

These conditions gave the process of state reform an obligatory character and left little room for critical reflection. As Costa Rica was dependent on the loans, the diagnosis of the international financing institutes and their development model was adopted without much further consideration of alternative solutions. The view of the IMF and the World Bank was that the cause of the crisis was the failure of the state, and the development model it used, rather than just an economic crisis. Therefore the recommendations were aimed towards not just stabilizing the economy, but rather establishing a new development model. Pérez Masís (2015, p.52) observes in his thesis that in essence the measures were quite simple; stabilize, privatize, and liberalize. The way in which the measures were adopted can be roughly grouped into three periods: stabilization (1982-1985), structural adjustment (1985-1989), and state reform (1990-1998).

¹ “The basket includes a variety of products from different categories — food and beverages, clothing, housing, transportation, education, medical expenses, and other items. Each group of products has its own weight in the basket. The basket of goods is analysed annually to examine the price differences i.e., the value of basket of goods from the current and previous year. In addition, it should be adapted in accordance with the buying preferences of people. The reason is that consumers can change their spending habits from one period to another, and the basket of goods should reflect these new habits” (Temelkov, 2020).

² “duplication of requirements by the IMF and the World Bank” (IMF, 2001)

In the first period of economic stabilization the focus was mostly on accomplishing three goals:

- Price, fiscal, and exchange rate stabilization.
- Renegotiation of foreign debt.
- Political reform that would enable growth in the medium and long term.

To reach the first objective, major cuts were made in public spending to reduce the fiscal deficit and strict monetary policy was implemented that aimed to reduce the pressure of inflation. The second objective was achieved with financial support obtained from USAID, which allowed the administration of president Monge to keep paying the interest on debt and gave the opportunity for dialogue with the IMF to reach a new agreement. For the third objective a new development model was constructed based on neoliberal values. This included the opening of the market with the aim to reinsert Costa Rica in the international markets, beyond the regional MCCA (Pérez Masís, 2015, p.53).

The second stage consisted of the implementation of the first two structural adjustment plans (SAP 1 & 2). The aim of these plans was to reduce the role of the state in the productive matrix. The plan covered many sectors, with the goal of liberalizing and diversifying the Costa Rican market. In the public sector, this meant that public spending was greatly limited and it involved the transformation of many ministries to be more cost-efficient. The limits on spending also entailed the freezing of salaries and contracts of public employees. The public budget was reoriented more towards export agriculture, the selling of state assets and increasing savings (Hidalgo, 2000, pp.286-288).

What distinguishes the third stage is the emphasis on modernization, rationalization and the integral reform of the state. The previous periods focussed on stabilizing the economy and giving impulse to production and export diversification. Even though this period knew two politically very different administrations (Calderón Fournier 1990-1994 and Figueres Olsen 1994-1998) there was a stability in policy. This was due to the signing of an agreement between the two parties in 1995. This allowed for the continuation of discussion and later approval of SAP 3, which until then did not enjoy sufficient political support. This plan encompassed a multisectoral credit program, an adjustment plan for the public sector, and a sectoral program of investments (Hidalgo, 2000, p.292).

The reforms that were implemented to improve the economic situation (especially during the third period) had a strong impact on the transport sector in the country. The measures that strongly limited public spending weakened the management capacity of the Ministry of Public Works and Transport (MOPT). During the third period of reform the ministry was restructured. The role of provider was changed to one as regulator and coordinator. This reform was implemented alongside a legal framework that would allow for more private participation in the transport infrastructure sector (Pérez Masís, 2015, p.56). However, one of the principal efforts to reduce public spending was the postponement of infrastructure projects, especially during the administration of Calderón. This left the country, along with other problems, with a deteriorated road network (Hidalgo, 2000, p.194).

Before 1998 there is no available data on public spending on infrastructure as the budget corresponds with the total budget of the MOPT. There are no specifications what percentage of the budget was specifically invested in infrastructure, and therefore it cannot be differentiated from other expenses of the ministry. However, even by looking at the total budget of MOPT, one can see a decrease in spending (and therefore inherently a decrease in investment in infrastructure). Between 1988 and 1996 the public spending of the MOPT decreased from 1,5% of GDP to 0,9% of GDP. The first exact data comes from 1998, when the level of public spending on infrastructure was around 0,2% of GDP. This number did grow steadily over the next ten years, but the growth was very slow. It was not until 2008 that spending on infrastructure surpassed 1% of GDP (Proyecto Estado de la Nación, 2006).

The structural reform of the state was included in the National Development Plan 1990-1994. This plan furthered the concept of the subsidiary state (as opposed to the state as provider). The plan built on foundations of analysis per sector of society. In the case of the transport sector, this led to the National Plan for the Reform of the Transport Sector (Plan Nacional de Reforma del Sector Transporte). The main objectives of this plan were; to provide the necessary facilities that guarantee the shortening of distances, safety in transport, and efficiency in service; the stimulation of private sector participation in transport infrastructure; the stimulation of investigation and development in the field of transportation; the amplification and improvement of human resource education to

develop the sector; and the creation of a statistical information system for the sector (Pérez Masís, 2015, p.59)

The objectives of the plan were to be reached through a series of institutional reforms. Some of the goals were to be reached through internal mechanisms of change while others were given impulse through new proposed laws. One of these laws was the “Ley General de Concesión de Obra Pública” (General Law for the Concession of Public Works). This law meant that Costa Rica adopted a legal framework for the concession of public works (such as transport infrastructure). It became apparent quite soon that the law had very little practical use, and in 1994 it was modified. However, In the modification the excessive legal controls and procedures that were built into the old version were unchanged, meaning that the modified law also had very little practical use (Montero & Zamora, 2009, p.22).

In the period between 1994 and 1998 the restructuring and reform of the ministry of public works and transport was realized. Through this reform, the ministry was reduced to a basic governing body with regard to politics on the topics of transport and public works. Most of the executive functions the ministry had until then were decentralized to a series of councils that were created. The councils created were the CNC (Consejo Nacional de Concesiones or National Concessions Council) and the CONAVI (Consejo Nacional de Vialidad or National Roads Council). Before this the COSEVI (Consejo de Seguridad Vial or Road Safety Council) and the Consejo de Aviación Civil (Civil Aviation Council) already existed. Finally in 2000 the Consejo Portuario (Port Authority Council) and the CTP (Consejo de Transporte Público or Public Transport Council) were created. The common characteristic of these councils was that they were officially part of a ministry, but they were independent in their functioning. These councils had their own budget and administrative autonomy (Pallavicini, 2013, p.3). With the creation of the CNC and CONAVI the foundation of the institutional structure of the MOPT was laid, which still exists today. The idea behind the councils is that they specialize in a single aspect of public policy/ public politics and therefore can do the work more efficiently.

Of these institutions especially the CNC is interesting to study in the context of transport infrastructure and private participation in that sector. At the moment of creation the council consisted of three administrative bodies; a board of directors which is presided by the minister of the MOPT, a technical secretariat in charge of management

of contracts including preparation and supervision of concessions, and an internal audit which supervises the work of the board of directors and the technical secretariat (Law No. 7762 “Ley General de Concesión de Obra Pública con Servicios Públicos”, 2012). The goal of this council was to promote, manage and coordinate the concessions in public infrastructure projects. However, through the years the council has not had a high degree of success or efficiency. As infrastructure (and by extension the concessions to build and operate it) is a crucial factor in creating a sustainable transport sector, it is a part of multiple public policies. In this context, the CNC plays an important role in the execution of these policies. In the next chapter, those plans and the role of the CNC will be analysed.

2.2 Developments in Infrastructure and Transport (2000-2019)

Macro-economic stability and openness have made Costa Rica into a country more and more oriented at exports of goods and services. The country has steadily invested in protecting biodiversity and ecotourism. However, the country is also characterized by decades of very limited investment in infrastructure and urban mobility. Costa Rica has 5,1 million inhabitants, of which around one third (2,15 million) live in the greater metropolitan area (World Population Review, 2020). This density of population carries with it challenges to the system of urban mobility. In absence of a good system of public transport, carbon emissions increase conform the burning of fossil fuels to meet the demand of a growing vehicle fleet. The vehicle fleet has tripled over the past three decades, dominated by private vehicles³. This illustrates one of the biggest problems of the country.

The majority of the Green House Gas (GHG) emissions in Costa Rica come from transport, which has implications for the national strategy. Large investments in education, health and natural capital are in strong contrast with small investments in infrastructure. This deficit undermines the foundations of the economy in general, and of the green economy especially (MINAE, 2019). The carbonization of the economy is caused in the first place by the burning of fuels to power public, private and cargo transport.

³ In 1994 – Costa Rica had 418.048 units (cars, etc.). This has increased to 1.347.000 in 2015 of which 834.000 are automobiles (MINAE, 2019)

Between 1996 and 2016 the imports of petroleum have more than tripled⁴. Diesel accounts for almost 40% of all purchases of hydrocarbons. Between 2002 and 2012 the amount of carbon generated by the burning of gasoline and diesel increased by 43% (MINAE, 2019). The transport system represents one of the biggest urban challenges, as it generates negative impact on a large scale when it is not planned and operated in accordance with sustainability criteria. Among the negative consequences, those that are most salient are socio-environmental impacts such as GHG emissions, air quality and noise pollution, and socio-economic impacts such as accidents and traffic congestion. It is calculated that these externalities represent a total cost of US\$ 2.864,4 million yearly (IDB et al., 2017).

Infrastructure investments in the past have favoured private vehicle usage, as is evidenced by most of the MOPT budget being canalized towards road infrastructure. Additionally, the governing of public transport is weak and has impeded the improvement of standards in public transport. Moreover, cargo transport in Costa Rica is an important contributor to pollution. Of all energy consumed in the country, more than one third is consumed by the cargo transport sector. This sector represents 15% of the total vehicle fleet. Costa Rica also has the oldest registered fleet, with an average vehicle age of 22 years. The average age for transport vehicles in the world is 16 years and in the European Union and United States, the average age is respectively 12 and 14 years. Most of these old vehicles run on diesel, and the older engines are significantly less climate friendly (MINAE, 2019; Quirós, 2018).

As mentioned in the paragraph on the economic crisis, due to financial distress the transport infrastructure suffers from underinvestment. On top of this, many years of ineffective public management in this sector have led to the deterioration of the road network. One of the largest problems Costa Rica has had regarding infrastructure is the lack of scientific data that can aid in pinpointing the needs for investment. This changed when the Laboratory of Materials and Structural Models of the University of Costa Rica (LANAMMEUCR) was appointed in 2001 as the independent organization that would map the infrastructure needs in order to achieve higher efficiency in public investment (Pérez Masís, 2015, p.63).

⁴ Between 1996 and 2016 CR went from buying 6.424.561 barrels of petrol to 20,208,666 (MINAE, 2019)

The LANAMMEUCR uses a selection of indices to analyse the quality of the national road network in Costa Rica. It is important to note that the analysis of this laboratory only regards the paved National Road Network, which accounts for roughly 23% of the total road network. Costa Rica has around 44.500 km of roads, which is divided between the National Road Network, which is managed by CONAVI, and the Cantonal Road Network, which is managed by municipalities. There are no elaborate analyses of the Cantonal Road Network to allow for comparison (LANAMMEUCR, 2019). However, Pérez Masís (2015, p.66) does note that the MOPT did signal that in 2005 less than 10% of the cantonal road network was in good condition. The first of these indices is the International Regularity Index (IRI), which looks at the road surfaces (surface quality, cracks, holes, etc.). This is an important index, because the quality of the road surface directly impacts the amount of exhaust fumes released, comfort, safety, and the wear and tear of vehicles. The second index is the Falling Weight Deflectometer (FWD), which analyses the structural integrity of the roads. This is done by dropping a determined weight on the asphalt and measuring the deformation the impact causes. In well-constructed and new roads, very little deflection is expected. Lastly a coefficient to evaluate road safety is used, called GRIP. This measures the road friction. It looks at the levels of sliding on the asphalt, which is directly related to the possibility and probability of an accident (LANAMMEUCR, 2013; 2019).

To give an indication of the state of infrastructure and the advances being made, the data from 2013 and the data from 2019 will be compared. In the “Informe de Evaluación de la Red Vial Nacional Pavimentada de Costa Rica, Años 2012-2013” (LANAMMEUCR, 2013), the results show that only 150 kilometres of the road network, which correspond to 3%, is of “good” quality based on the IRI, while 32% of the network is qualified as “regular” and the majority of the roads (65%) is qualified as either “deficient” or “very deficient”. It is interesting to note that a qualification of “very good” exists, but that none of the roads in Costa Rica were categorized as such, and therefore are left out of this data. In this same report, the structural analysis using the FWD index shows that 7% of the roads demonstrate high, or very high deflections. 5,4% of the roads show moderate deflections and 87,9% show low deflections. This means that a large majority of the roads is structurally sound. Regarding the GRIP coefficient the data shows that less

than 1% of the evaluated roads is regarded as “non-slip”. Of the roads, 52% were qualified as being in good condition or with little slipping, 31% of the roads were slippery and 16% had very little grip, which represents very dangerous situations for vehicles, especially when braking.

In comparison, the “Informe de Evaluación de la Red Vial Nacional Pavimentada de Costa Rica 2018-2019” (2019) shows that with regard to the road surface index IRI, 11% of the roads is qualified as “good”, while 52 % is qualified as “regular” and 37% is either “deficient” or “very deficient”. Looking at the FWD index, 7% of the roads demonstrate high or very high deflections, 5% show moderate deflections and 88% show low deflections. Lastly, the 2019 report states that in the matter of the GRIP coefficient less than 1% of the roads is “non-slip” and 22% of the roads are in good condition or with little slipping, while 33% of the roads were qualified as slippery and 44% of the roads were qualified as bad with very little friction. For ease of comparison, figure 1 demonstrates the changes in road quality, judged on these indices, as reported in 2013 (over the years 2012-2013) and 2019 (over the years 2018-2019).

What can be seen from this comparison is that with respect to road surface quality Costa Rica is making rapid advances, with increases in good and regular quality roads and an impressive decline in deficient or very deficient quality roads. However, these strides forward are contrasted by the decline in the GRIP coefficient. Friction on a large part of the roads has declined, and this poses immediate threats to road safety. It is remarkable that no change in the structural integrity of roads has been observed in the research. The state of infrastructure is still an important issue in the transformation of the transport sector, as good infrastructure allows for higher efficiency due to less congestion, less pollution, and widened employment opportunities (Pisu & Villalobos, 2016). It is estimated that the cost of traffic congestion in the metropolitan area of San José reach 4% of GDP (OECD, 2020) due to the waste of fossil fuels, and time spent unproductively. Therefore, special attention will be paid to advances in transport infrastructure as articulated in the different plans in the next chapter.

Figure 1: Quality of the National Paved Road network in Costa Rica

Index	Score 2013 (in % of roads)	Score 2019 (in % of roads)	Difference (in % of roads)
IRI			
Good	3	11	+8
Regular	32	52	+20
Deficient or very deficient	65	37	-28
FWD			
High or very high deflection	7	7	0
Moderate deflection	5	5	0
Low deflection	88	88	0
GRIP			
Non-slip	<1	<1	0
Good (little slipping)	52	22	-30
Slippery	31	33	+2
Bad (very little friction)	16	44	+28

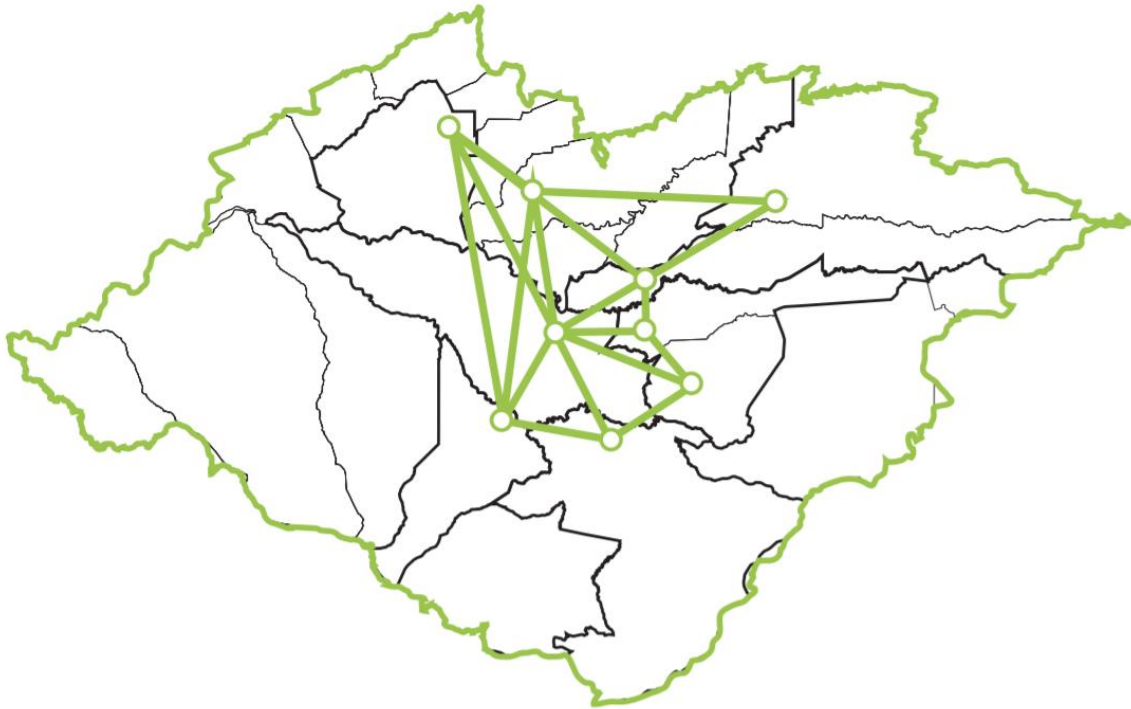
Source: Elaborated by the author based on data from LANAMMEUCR (2013; 2019)

When observing the geographical distribution of travels within the metropolitan area, it becomes clear that many travels take place between different sectors of the area (see figure 2), rather than in a concentric pattern. In other words, although the centre of San José is an important attractor of travels, the dynamics of mobility present more than one centre. Analysis shows a distribution of travels that concentrate around 5 sectors (IDB et al., 2017). This indicates a polynuclear urban configuration. However, when comparing the system of public transport to the patterns of travel it is clear that there is an asymmetry. The system of public buses (the main mode of public transport) is designed in a radial pattern, concentrated in the centre of San José, with few good connections between different routes. (see figure 3). This means that the supply of public transport does not correspond to the demand for mobility, generating a divergence between supply and demand.

To elaborate on the third figure; currently the bus service is organized in 252 routes, which is divided between 8 sectors (which correspond to the different colours in

figure 3). These routes follow a pattern of centre-periphery, with the exception of 6 intersectoral services which connect different sectors in a circumferential manner. The 252 bus lines are operated by 41 different companies, with a total fleet of 1842 buses. Due to the unintegrated character of the system, around 40% of all journeys with public transport in the metropolitan area require at least one transfer (IDB et al., 2017).

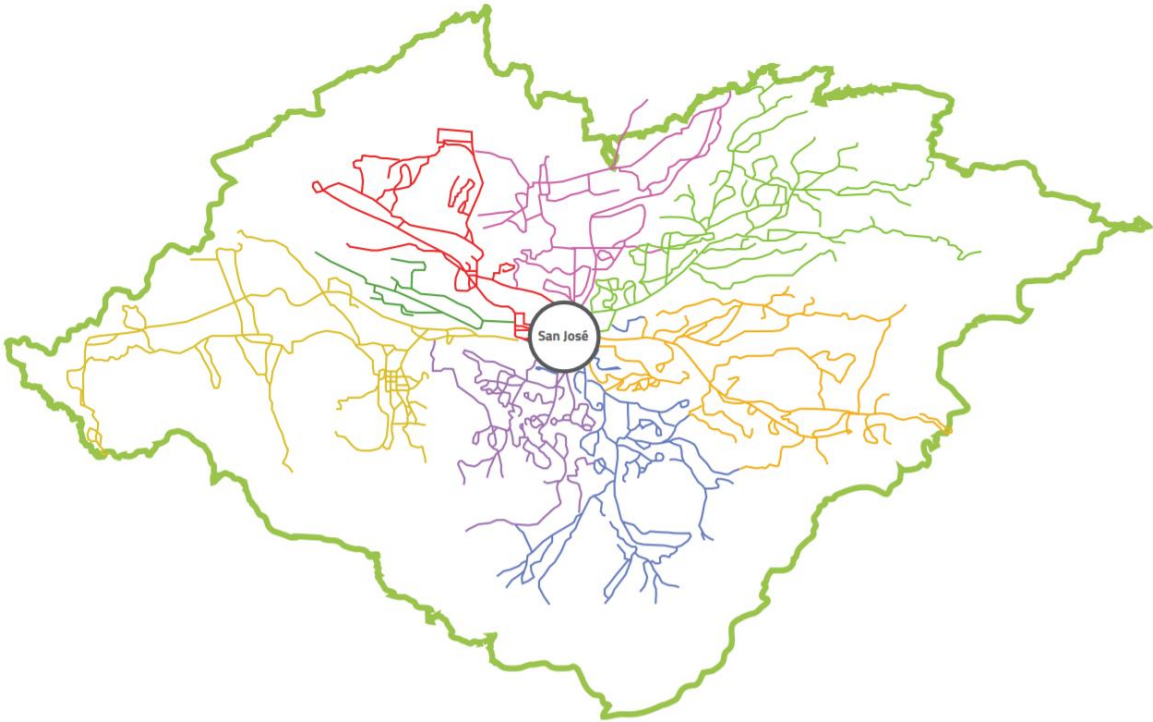
Figure 2: Principal origin-destination pairs of travels in the metropolitan area



(IDB et al., 2017)

Moreover, these transfers currently produce conditions that strongly penalize travelling by bus as opposed to travelling by car. This is due to the absence of an integrated (electronic) payment system. This simply means that every transfer is a new payment. Also, because terminals of the bus companies are located in the centre of San José, this is where most transfers happen. Most terminals however, are far apart and the public space in between them often lacks adequate sidewalks, making for either long, or unsafe walks between buses. As a result, when taking the bus, going the same distance will take on average 70% longer than taking the car due to transfers, walks in between and waiting time (IDB et al., 2017). Hence, it can be concluded that the sectoral organization does not offer an efficient alternative to the car.

Figure 3: Current network of buses



(IDB et al., 2017)

2.3 Contemporary Public Policies for Sustainable Transport

In this paragraph we will explore the current plans and policies for sustainable transport that the Costa Rican government has articulated. The plans that will be explored are the Decarbonization Plan 2018-2050 (Plan de Descarbonización 2018-2050), the Integral Plan for Sustainable Urban Mobility in the metropolitan area (Plan Integral de Movilidad Urbana Sostenible or PIMUS) and the National Transport Plan 2011-2035 (Plan Nacional de Transporte 2011-2035 or PNT). The Decarbonization Plan is a comprehensive plan that encompasses a multi-sectoral approach. It focusses on improving the areas that currently produce the most pollution, to create a sustainable future. This plan shows the importance of transforming the transport sector, as three out of the ten goals set in this plan are directly related to this sector. The PIMUS is an extensive plan that focusses on mobility in the greater metropolitan area in the central valley of Costa Rica. This plan proposes a transformation on different levels. Most importantly it

aims to transform the system of public transport. Lastly, the NTP focusses on creating a more efficient transport system, prioritizing infrastructure development and maintenance. It aims to be the main instrument for the medium and long term planning for the transport system. The plans will be discussed as context in this chapter, as the analysis will focus on the policy process and the actors within it. The explanation of the policies here will provide a broader understanding of what they entail, but the primary focus of the study will not be on the content of the plans. The main focus is on the processes and mechanisms behind them. As such, these plans will provide necessary context.

The Decarbonization Plan 2018-2050 is the embodiment of the sustainability objectives that Costa Rica has set for itself. The plan is very ambitious and comprehensive, spanning many sectors and a long time period. As such, it is divided into three phases or stages. The first of which is the initial stage (2018-2022). The second stage is the stage of inflection (2023-2030), and the last stage is the stage of normalization of the change or “massive unfolding” (2031-2050). A brief explanation of the actions per stage will be given as described in the plan (MINAE, 2019):

2018-2022: Urgent actions, not only for their direct impact but also to create the conditions for a more profound transformation. In this period it is crucial to avoid decisions that seem to have merit in the short term, but that will not contribute to the grand objective of carbon neutrality.

2023-2030: This is when the change of path towards transformation should be consolidated. Visions should be clear and there has to be consensus among the different ministries and other actors involved on the action to be taken with a high level of detail. With the knowledge and acceptance, decisive investments should be made that redirect the market towards zero-emissions solutions.

2031-2050: The stage of normalization of change, and the massive deployment. The success of this stage is only possible if during the previous phases profound changes have been made. In this stage, more countries will have joined in the effort to decarbonize their economies. This will lead to a bigger market for zero-emissions technologies which will contribute to the transformation.

In this plan 10 axes of decarbonization have been formulated, across 8 transversal strategies. These strategies are the values and norms that have to be considered when developing a plan of action to execute the 10 axes (see appendix 2).

In order to reach the goals set in this plan, five priorities have been identified. The first of which is the transformation of the public transport model to correspond to (future) demand, with shorter travel times and more direct routes within a modern urban model. Secondly the transformation of activities in the agrarian sector that produce the most GHG emissions should be accelerated and scaled up. Thirdly, the foundations for the electrification of the economy have to be laid. The fourth priority is to be wary of technology solutions that are limited to partial reduction of emissions. These technologies will yield positive results in the short term, but will impede the transition to a zero-emissions society. Lastly, two transversal processes have to be initiated without which the decarbonization of the economy would be inviable: a) The structural reform for a new institutionality to allow for the construction of foundations for a new system of sustainable consumption and production, and b) green fiscal reform to promote actions of sustainable development and growth, reducing negative external influences that deteriorate natural capital (MINAE, 2019).

The notion that the transformation of the transport sector is crucial in the process towards a carbon neutral or even zero-emission society is clear, as (the first) three axes are directly concerned with reshaping the sector and the way in which mobility is practiced. For the matter of this thesis, these axes are the most important to analyse. A brief overview of the actions in the first stage of the plan related to these axes is given in appendix 2. Even though it is interesting to analyse the actions for the second and third stage, these stages are further away in the future, and the actions and policies formulated relating to these stages are more vague than those formulated for the first period. Therefore, it does not offer a lot of opportunity for in depth discussion.

Next we will look at the goals and proposed actions of the PIMUS. The goal of the PIMUS is “to achieve an integrated, efficient and inclusive system of metropolitan mobility, which allows all people to have access to their activities in an agile, ordered way in any mode of transport and which promotes an organized, sustainable circulation which a focus on local development” (originally in Spanish, translation by author). In one sentence the objective of the PIMUS is to invert the pyramid of mobility (figure 4) to

contribute to a more sustainable metropolitan area from a social, environmental, institutional and economic standpoint.

Figure 4: The inverted pyramid of mobility

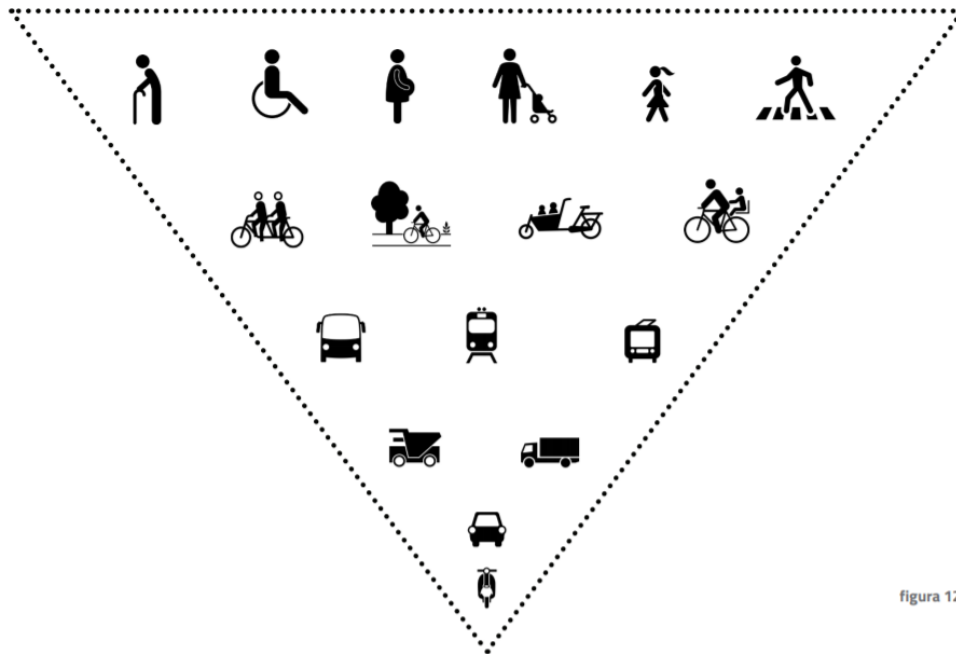


figura 12. Pirí

(IDB et al., 2017)

To reach this goal the plan describes six overarching goals, each with their own objectives, although they cannot be seen as separate from each other. To invert the pyramid of mobility a simultaneous transformation over three different aspects is necessary: avoidance of unnecessary travels through territorial organization, changing the choice of transport modality towards from sustainable forms, and improving the environmental performance of motorized modalities.

The six objectives to reach this goal, as articulated by the IDB et al. (2017) are:

1. To incentivize active modes of transport
2. To have high quality public transport.
3. To have safe, efficient and clean mobility
4. To have universal access
5. The creation of a sustainable city
6. Ensure integral, participative metropolitan planification

A short elaboration on these objectives can be found in appendix 3.

Lastly we will look at the National Transport Plan 2011-2035. As formulated in the plan: "This exercise in planning does not only facilitate the Ministry of Public Works and Transport in the task to carry out the different policies of the government, but it also becomes the roadmap for decision-making regarding investments in the transport system, by the public and private sector" (MOPT, 2011, p.7, originally in Spanish, translation by author). As governments change, often political objectives change. This plan aims to be a lasting legacy for the execution of policies in the transport sector even in the face of political changes. The idea is that there are mechanisms in place that allow for revision of the plan when the political landscape changes. This allows for altering of aspects of the plan but ensures that the plan is followed.

This plan is an instrument which permits the focussing of the necessary resources and investments to assure the future success of the transport system in Costa Rica. It is the vision of this plan and the MOPT to create a space for the encounter between different economic and social actors. The NTP should not be viewed as a rigid document, but as a guide on how to canalize resources and coordinate actions. Systematic revision of the plan is required to keep it adequately up to date in the context of new established goals, or new challenges (MOPT, 2011, p.7-8). However, it is the goal of this document to be the one and only instrument for medium and long term planning for the transport system. Any other act of strategic planning regarding this sector should be included within this plan.

The MOPT envisions that the system of transport should be managed and coordinated by a combination of state organisms and businesses, under the unequivocal directory of the ministry. This means that the MOPT wants to facilitate the private sector entry into the transport and infrastructure sector, but this has to be under two premises: the initiatives have to clearly contribute to the established objectives in this plan and secondly, the projects in which the private sector participates stay under direct control and supervision of the ministry itself or one or more of its dependent institutions (MOPT, 2011, p.9)

The plan is written out of a need for sustainable development and out of a competitive perspective. Costa Rica's infrastructure sector is underfunded and deteriorated. The main objective of the government is to improve the ranking in the Global Competitiveness Index of the World Economic Forum (WEF) for every mode of transport. The implementation of a substantial improvement in the competitiveness of

infrastructure is essential for the modernization of the transport system. This requires an integral transformation focussed on the reform of the legal framework, the organizational structure, planification, infrastructure, and interconnected and accessible transport systems. The NTP prioritizes the mobility of persons over, for example (air-)port infrastructure. The cornerstone of urban mobility is the road network (MOPT, 2011, p.16). Therefore, the public management of infrastructure is the first priority, as it lies the foundations upon which a more efficient model of urban mobility can be built. As pointed out in the previous paragraph, a very large part of the population of Costa Rica lives in the Greater Metropolitan Area. The NTP recognizes this, and therefore suggests that attention can be focussed on this area first (MOPT, 2011, p.21).

This plan has divided its goals into two periods. The first focusses on the period 2011-2018, and the second period is 2019-2035. Several different objectives have been established for these two periods. The goals for these periods can be found in appendix 4. In rough lines the first period is focussed on the continuation of the actions that already on course, as developed in the National Development Plan. This period does not focus on reforms, but instead focusses on preparing the planning and financing for the extensive transformation that follows in the second period. As such, the goals for this period are to continue on the current path, while conducting studies and analyses to facilitate effective transformation from 2018 onward. The second period focusses on the reorganization of the transport sector and its system. This is when the planned actions will be implemented. With this plan the MOPT aims to achieve better competitiveness rankings in the fields of infrastructure (MOPT, 2011, p.10-11).

The ultimate goals of the plan are to equip the Costa Rican citizens with a transport system that integrates all modes that make it up, to facilitate easy access to mobility options. Furthermore, it aims to create a system of transport that facilitates commerce in the sense that it constitutes an effective tool, not only for economic activity, but also for general productivity of the country and the better connection to international markets through improved exports. Lastly it wants to assure the sustainability of the system, minimizing its environmental impact, giving impulse to the image of the country as destination for touristic activities, especially ecotourism (MOPT, 2011, p.12)

All three plans, although written by different organisms, promote some similar ideas. One aspect that can be found in all three policies is the urgent need for an

institutional reform, as without this the feasibility of the rest of the recommended actions becomes a significant issue. Furthermore, it can be seen that infrastructure, as well as public transport are essential aspects in the transformation of the transport system. The policy process, the actors and institutions involved, and the partnering with the private sector in relation to these plans will be discussed in the next chapter.

3. Analysis of the Transport Policies

In this chapter the three policies described in the previous chapter will be analysed from the theoretical perspective as outlined in the first chapter. Firstly, the policy process of these plans will be analysed; why are the plans necessary? Who are the actors involved? What are the challenges in the process of formulation and what challenges do the proposed policies present with regard to implementation? Secondly, the role and functioning of institutions in this process will be examined more closely. How is the institutional framework designed, and what are the consequences of this design on policy outcomes? This chapter will shed a light on this question from a neo-institutional perspective. Lastly, private participation in the transport sector, as proposed in these plans, will be addressed through the lens of public-private partnerships (PPPs). This will focus on the question whether the role of the private sector as envisioned in the plans is realistic, and whether there are opportunities for private sector participation that are overlooked in the policies. Additionally it will be discussed whether the PPPs that already exist are efficient and in line with good governance principles regarding PPPs.

3.1 The Public Policy Process

As pointed out in the second chapter, the plans for the transformation of the transport sector are extensive. The first question we have to ask ourselves is; why are these plans necessary? As noted in the first chapter, public policy is required when private actors would not provide an (adequate) service or product. As history has pointed out, many years of underinvestment and mismanagement regarding infrastructure and transport has led to deterioration. This shows that without state intervention the situation of the transport sector does not improve, as in the years that the public sector neglected transport and infrastructure, private actors have not taken its place. A second factor is the question of responsibility. Where lies ultimate responsibility for decarbonizing the transport sector?

Furthermore, public policies are essential for the transition towards sustainability, because there are too few incentives for this transition to happen spontaneously. As stated earlier, public policy can be a normalizing factor, and accelerate cultural changes.

In fields where there is no public consensus it can be especially helpful to formulate clear public policy to this end. Climate change and sustainability are still highly debated topics on the political agenda, and can often represent a divisive factor in politics. Creating public policy normally already is a complex process, but the lack of consensus regarding climate change issues poses additional challenges. This subject especially demonstrates the complex relation between science and public policy (Ryan & Bustos, 2019). However, Costa Rica shows a collective understanding of the importance of sustainable development and climate change issues, demonstrated by its history of action toward sustainable development, especially in the fields of reforestation⁵ and energy production⁶. Another aspect that weighs in Costa Rica's favour as opposed to many other Latin American countries is its tradition of relative political stability. This allowed for democracy and the institutional design of the country to consolidate over time.

To speed up the transition in the transport sector, the first step that is necessary is the expression of desire for change, followed by the formulation of public policies to support this desire. For this reason it is essential to establish innovative, visionary, and progressive policies that are in line with the desired sustainability objectives. With regard to the ambition and the vision as formulated by the plans discussed in this thesis, there is no question that if implemented as written they would provide significant advances in the transport and infrastructure sector. All three plans propose a profound transformation based on institutional change in order to facilitate the implementation of the other actions. This does beg the question whether the plans might be overambitious and therefore not feasible. We will first look at the policy process in Costa Rica's transport sector to answer this question. In the analysis of this process the factors as discussed in the theoretical framework (state strength, institutional framework, and knowledge gaps) will function as guidelines.

⁵ From the 1950s onwards until 1986 Costa Rica's policy led to significant deforestation. Estimates vary, but forest coverage by 1977 dropped to about 20%. After 1977 deforestation slowed, and since 1986 forest coverage has been increasing. This is partly due to effective public policy, with support of the World Bank through the Structural Adjustment Plans. By the year 2000 it was estimated that the forest coverage was nearing 50% and has since been stable (World Bank, 2000, p.6-11).

⁶ Through efficient use of natural resources and technology, the Costa Rican electricity sector produces its energy almost exclusively through sustainable methods. Estimates vary, depending on the definition of renewable energy, but most sources, including the people interviewed for this thesis, cite that 98-99,8% of all electricity generated in the country is renewable (Mora, 2019; Quiros, 2018; Blanco, 2019; MINAE, 2018).

To start with state strength, as Diez & Franceschet (2017) note, this consists of two key dimensions: state autonomy and state capacity. With regard to state autonomy in Costa Rica, the most prevalent factor is the dependence on international financial organizations (IFOs) for the funding of large development projects, and the loans given in times of economic recession. Costa Rica lost autonomy during crisis with the adjustment plans pushed by international financial organizations, mostly the World Bank and IMF (Pérez Masís, 2015, p.51). Since economic growth has been restored, the dependence on these funds has decreased, and therefore the country is no longer strongly constrained by the conditions on these loans. This allowed Costa Rica to develop more freely, not limited by policy options that are supported by the IFOs. However, the loss of autonomy during the crisis in the 1980s has left its marks on the institutional framework that now exists. So even though the dependence on international organizations has decreased over the years, the effects of the loss of autonomy can still be seen in the transport sector.

Although the strict conditions regarding state reform like the ones tied to the loans from IFOs during the economic crisis are less impactful nowadays, a lot of development projects still require the funds of these organizations. The access to these funds also comes with certain conditions that the individual projects have to meet with regard to sustainability, equality or other socio-economic aspects of society. There is autonomy in the actions and development of policies. However if public organizations want to access development funds from these IFOs certain conditions have to be met. Seeing as development projects in Costa Rica very often are created in collaboration with these organizations, or with the support of these organizations, one could argue that this is a limiting factor on the autonomy of the state. This is also the case with two of the three plans discussed here. The Decarbonization Plan was written by Costa Rican public institutions with help of technical experts, funded by the International Development Bank (MINAE, 2019), and this same bank is the primary author of the PIMUS (IDB et al, 2017). Hence these plans will not only be held up to national standards and values, but also to those of the IFO involved, affecting the state autonomy regarding the formulation of these policies.

Then there is the case of state capacity. This regards the ability of the state to penetrate society and formulate, plan, and implement public policies. One of the largest challenges for the Costa Rican state is to overcome the short term approach in the

planning and action of the state, instead developing a culture of medium and long term strategic planning (MIDEPLAN, 2008, p.11). It is important to note that until the recent development of long term plans, Costa Rica's strategic planning revolved around four year development plans – the duration of one administration. This has been observed as a limiting factor by previous governments and international organisms.

This is contrasted by the way in which the budget is managed, which has a multi-year orientation and gets updated once a year when approval is required by the Legislative Assembly. This lack of strategic planning affects continuity of public policy and by extension, their results (Pallavicini, 2013, p.150). However, a break with this tradition can be seen in the plans for the reform of the transport sector. The three plans discussed in chapter two all have a scope of multiple decades. Costa Rica still has a four year development plan, but this plan now builds on the recommendations as described in these long term plans. However, significant additional policy action is required in this sector (OECD, 2020, p.56). The National Development Plan for 2019-2022 states that it has to be kept in mind that the impact of the plans may not be evidenced in the short term, but that following through with these plans and the actions as written in the development plan, a reduction of emissions will be seen in the medium and long term (MIDEPLAN, 2019, p.98).

The long term development plans in the transport sector are often formulated with the support of technical experts, sometimes funded by international organizations. This gives the public organization in charge the capacity to formulate these plans. As such, judging the plans individually they demonstrate the ability of long term planning. However, the main concern with these plans is the ability to implement them. There is fragmentation in the design of these plans, and not one is written with the involvement of all necessary actors. The Decarbonization Plan is written by the Ministry of Environment and Energy (MINAE) with funding of the Inter-American Development Bank, and several consultants and modellers. This plan encompasses not only transport, but all sectors that require large improvements to transition towards sustainability. As such, the plan proposes a profound transformation of these sectors, not in the least the transport sector. However, the Ministry responsible for this sector was not involved in the formulation of these plans. Similarly, the National Transport Plan was written solely by the Ministry of Transport and Public Works (MOPT). This plan therefore also provides a one sided approach to the issue. The PIMUS' main author is the IDB, in collaboration with

three ministries involved in the transition of the transport sector. These ministries are the Ministry of National Planning and Political Economy (MIDEPLAN), the Ministry of Environment and Energy (MINAE), and the Ministry of Housing and Human Settlements (MIVAH). As such, this plan has involved the most diverse actors. However, this plan again lacks the involvement of the MOPT, which is the ministry that carries the ultimate responsibility for the transition in the transport and infrastructure sector.

Pérez Masís (2015, p.166) describes that the decision to work towards sustainability is one of the state, and cannot be limited to one ministry or institution. The institutional framework is designed in such a way that there are a lot of actors involved in the creation of a sustainable transport sector. As such, the success of implementation does not depend on the performance of individual actors (institutions/ministries), but on the coordination between them. An integral approach is necessary for the success of the transformation of the sector. All plans address how the coordination between ministries and actors should be designed and carried out, but these recommendations are one sided. As such, a true integral approach for the transformation is still lacking.

This ties into the public management capacities of the Costa Rican state. As it stands, many ministries and autonomous entities lack the agile mechanisms required to properly respond and adapt to social expectation. The best example of which is the debt which has been accumulated over the years in matters of transport, which is characterized by inefficiency, unsustainability, and disconnect with social demand (MINAE, 2019, p.62). This aspect is consistent with the urgent need for reform of the Costa Rican state towards the modernization of public management. Without proper public management the implementation of the plans will be very difficult, or even impossible. As such, all three plans propose a reform of the institutional framework as the fundamental action upon which the rest of the transformation builds. The plans recognize that the current institutional framework is too fragmented, and that there is a shortage in human capital to effectively implement the policies.

This is the main argument for the urgent recommendations in the plans for an integral reform of the institutional framework in transport and infrastructure. To endow the public administration with the capacity needed to implement the ambitious plans, in line with international standards of good practice, several options are given. The Decarbonization Plan proposes as one possible option the creation of a Urban Transport

Authority. This would create a leading institutions to coordinate the transition towards sustainable mobility. Such as example could work, as it has in England and Australia (Pisu & Villalobos, 2016, p.13), but the plans lack profound analyses of the possible solutions. The depth and detail of proposed actions for transport and infrastructure in these plans strongly contrasts the recommendations for the institutional reform, which is lacking substantiation. The institutional framework and the mechanisms at work will be more profoundly explored in the next paragraph.

The last aspect with regard to state capacity is the influence of knowledge gaps on the policy process. Ryan & Bustos (2019) did a survey in several Latin American countries, among which Costa Rica, to determine whether there is a significant gap in knowledge regarding climate adaptation policies. The respondents in this survey are public employees and government officials and were asked to rank several knowledge deficits on a scale from very irrelevant to very relevant with regard to the formulation, implementation and analysis of public policies regarding climate change. For instance, the deficit of historical climate information was considered relevant or very relevant by 65% of the respondents in Costa Rica. Similarly, deficits of long-term climate projections were considered relevant by 70% of the respondents. Around 80% of the government officials surveyed stated that there are relevant or very relevant deficits in knowledge relating to the effectiveness of climate policies (i.e. how to assess effectiveness? What is effective adaptation?), as well as relating to costs and benefits of climate policies and measures. Another observation in the survey is that around 80% of respondents consider the gaps in knowledge regarding socio-environmental vulnerability relevant or very relevant. This is a key piece of information needed for policy in the field of climate change (Ryan & Bustos, 2019, p.1302). This indicates that there is a lack of capacity regarding the implementation and analysis of policies in this field.

Additionally, many respondents do recognize the availability of knowledge regarding climate adaptation policy, but this knowledge is perceived as fragmented and dispersed. This was the case for 85% of the public officials surveyed in Costa Rica (Ryan & Bustos, 2019, p.1304). This indicates that there is a misalignment between science and politics and public management. What also ties into this, is the fact that many respondents recognize the relatively weak state capabilities as an important factor to find and properly use the available information. According to government officials, many public institutions

that work on climate change issues lack human capital and technical expertise to analyse the available information, and to effectively implement the policies and measures. This is one of the most impactful factors regarding the use of available knowledge, seeing as 83% of the respondents considered this relevant or very relevant (Ryan & Bustos, 2019, p.1305). There is a two way interaction between state capacity and knowledge gaps. The gaps in the information cause weaker institutions, but weak institutions lack the capacity to properly use available information. This is a vicious circle that public management has to address in order to successfully implement the policies in the transport sector that have been formulated.

3.2 Institutional Framework and Mechanisms in Transport

The institutional framework and the coordination between different public institutions is a crucial part in the execution of policies. In the Costa Rican transport sector the institutional framework is fragmented and there is a lack of strong leadership. Institutions determine the 'rules of the game', referring to the policymaking process, and determine how information is structured. The challenge institutions in the transport sector are faced with is fundamentally one of collective action. How can efficient collective action be accomplished if different institutions play by different rules? The PIMUS, the Plan de Descarbonización, and the Plan Nacional de Transporte all propose a transformation of the institutional design. These plans however, lack detailed recommendations of how to achieve this transformation. The institutional design will be analysed and a neo-institutional approach will give insight into the mechanisms of change of the institutions.

Over the last decades very few advances have been made in the generation of a network state which would allow for the balancing of the institutional framework of central government, municipalities, and non-state public space. The actions of modernization of the public administration have been the result of short term decision-making of every administration from 1986 onwards (after the economic crisis)(Pallavicini, 2013, p.16). This has created an institutional framework that lacks overview, which added to the fragmentation. At this moment, Costa Rica has 20 ministries, and a very large sector of 134 (semi-)autonomous institutions (MIDEPLAN 2010, pp.48-52). 70% of the total public budget is managed by only ten of these institutions, indicating

that many other institutions will probably have very limited budgets (Pallavicini, 2013, p.17). This is also recognized in the National Transport Plan, which indicates that the lack of budget, human capital, and trust in the ministry as leading institution in transport incapacitate the organization to improve. This inhibits the reorganization, modernization, and medium and long term planning capacity (MOPT, 2011, p.17). Also, there are very few spaces for interaction to coordinate the actions of the institutions of central government, the autonomous institutions, and municipalities. As such, planning and budgeting is mainly focused on the institutions of central government. This leads to serious problems at the moment of implementation of public policies as this requires a joint effort between different institutions and different levels of government (Pallavicini, 2013, p.17).

Regarding the institutional design of the transport and infrastructure sector, there are currently more than 40 institutional dependencies with jurisdiction in matters relative to mobility, among which an overlap of functions exist in some cases, but not one is in charge of the planification of an integral vision for mobility. Appendix 5 and 6 offer an overview of some of the most important actors that are involved in the sector.

When discussing institutions in the transport and infrastructure sector of Costa Rica it is important to understand this institutional framework. Within this framework it is important to note that JAPDEVA, INCOFER and INCOP are autonomous institutions, with an own budget and autonomy in their functioning. The other institutions listed as deconcentrated are autonomous in their functioning, but in hierarchy fall under the responsibility of the MOPT (Proyecto Estado de la Nación, 2018, p.251). This can create situations where the ministry is accountable for the actions of an autonomous council which it cannot control effectively. The MOPT formally has the power to issue these institutions (including JAPDEVA, INCOFER and INCOP) orders, these are often not acted upon as there are very few consequences to not following the orders of the ministry (Proyecto Estado de la Nación, 2018, p.251; Perez Masís, 2015, p.165).

The numerous public agencies and bodies involved in the transport infrastructure leads to excessive policy fragmentation and uncertainty. This has a negative effect on the overall policy coherence and contributes to delays of the execution of projects. In an analysis of 15 transport infrastructure projects, delays between three and ten years were found from the time of contracting to the start of construction. Some of the projects accumulated over 20 years of delay since the inception. These projects are financed for an

important part by multilateral institutions. Often the requirement to receive these funds is the completion of the project. As the projects often are delayed by many years, this leads to available unspent funds from these institutions. An example is the credit contract for the First Road Infrastructure Program (PIV 1) with the IDB, which was signed in 2009. However in 2015 this project only had a financial progress of 69% meaning that there are still large funds that go unused (Pisu & Villalobos, 2016, p.12).

The neo-institutional perspective can help gain a deeper understanding of the mechanisms at play in the transport sector. As proposed in the first chapter, the combination of three main streams of neo-institutionalism are considered to offer a balanced view of institutional operations and the policy outcomes that relate to them. These three types of neo-institutionalism are normative institutionalism, rational choice institutionalism and historical institutionalism. There are strong contradictions among these three sub-theories, but all propose certain institutional characteristics that can help explain the way in which they function. Looking at the institutions in the transport sector of Costa Rica, the first thing that stands out is the lack of coordination and strong leadership (Pisu & Villalobos, 2016, p.22). This was also stipulated in interviews conducted with Bernal Muñoz Castillo and Diego Ramírez Rodríguez, of the ICE (2019), and Ana Lucia Moya, of the DCC (2019). They emphasize that the lack of a strong leading institution is one of the biggest problem the sector is faced with. If we use a normative approach, focussing on norms and values built into institutions, one expects actors within these institutions to conform to these rules. This relates to the logic of appropriateness which posits that actors will act in a way that is expected of them. Simplified, this entails that the possible action is demarcated by the institutional values.

When applying this to what is formally supposed to be the leading institution in the sector, the MOPT, we expect the values of the MOPT to be the guiding factor for action. However, within the institutional framework of the transport sector we can see many institutions (even those that fall under the MOPT) not conforming to the values and rules of the MOPT. This non-compliance may have multiple causes. A cause that is addressed in the theory is the fact that norms and values built into an institution may not be adequate to fulfil the objective of the institutions. Within the normative approach this leads to a failed institution. Rational choice institutionalism may posit that other institutions acting within the framework seek “personal” gain (in this case referring to an individual

institution) or utility maximization. Seeing as the prevailing thought in Costa Rica is one of understanding that climate issues are a pressing matter, as articulated by Laura Mora during an interview conducted during the fieldwork (2019), the utility maximization might be larger steps in the direction of sustainability.

If norms are inadequate to fulfil the objective, hence implying the failure of the institution, then change is expected (Peters, 1999, p.56). However, formal change has not taken place on a large scale (at least since the Structural Adjustment Plans in the 1990s). Looking at the situation of the transport sector, which has been characterized by mismanagement and underfunding, we expect changes in the norms or 'rules of the game' in order to facilitate the institutions to then fulfil the goals. The absence of these changes have led to even greater incapacitation of the institutions that are active in this sector. Ana Lucia Moya (advisor at the Directory for Climate Change) stipulated in an interview conducted in 2019 that the biggest problem in transport is not money, but the fact that the sector is very segmented and that not one institution has full leadership. She addresses the contradictory character of the autonomous institutions that formally fall under the responsibility of the MOPT, and the ineffectiveness of the order that come from the MOPT as a consequence. She points out that the actual issue of leadership in the sector has now come down to a tug of war between the institutions.

As historical institutionalism states; policy choices at the inception of an institution will influence policy outcomes down the line. This dynamic is called path dependency and causes inertia when trying to change the direction of policy. As the MOPT is a very old institution, the historical mechanisms and values are strongly embedded into the contemporary design of the ministry. Changing the way in which the MOPT functions therefore requires a strong enough political figure, as change will be met with resistance. This political figure should not fear losing its reputation as a consequence (Moya, 2019). This statement by Ana Lucia Moya is reinforced by the theory of historical institutionalism and the fact that the MOPT suffers highly volatile leadership as a consequence of political struggle. Between 1978 and 2018 the MOPT has had 24 different ministers of transport, none of which succeeded in serving an entire term of four years. The average time a minister served during these 30 years was 1,7 years (Proyecto Estado de la Nación, 2018, p.251).

This is the reason that over the past 20 years there has not been a political force strong enough to implement a comprehensive transformation of the institutional framework of the transport and infrastructure sector. However, the absence of formal changes in the institutional framework and their mechanisms does not mean that change has not taken place. The formal changes that have taken place have often been aimed at individual smaller institutions within the framework, such as the CNC or CONAVI. However, a trend can be seen when addressing informal institutionalism. This addresses the rules of the game that are not formalized in government institutions (i.e. legally). Change that can be seen however, is the fact that other institutions that are not necessarily main actors in transport have taken up the responsibility to push for change (Moya, 2019), be it through policies that improve urban transport or even aimed at a more institutional level. In doing so, some steps forward have been achieved.

These informal changes tie into the theoretical perspective of rational choice institutionalism. If we posit that utility maximization in this case is making bigger and faster steps toward sustainability, then the institutions that have taken up responsibilities that formally should be carried by MOPT are rational actors. They in this case make the rational choice to not comply with the current institutional mechanisms, and seek other ways in which the ultimate objective of decarbonization in transport can be reached. The fact that the policies regarding sustainability in the transport sector as previously discussed are written mostly by other ministries and organizations (with the exception of the National Transport Plan, which is written by the MOPT alone) also matches with the image of fragmentation.

Although there is consensus that the transport sector is one of the most important sectors to transform in order to achieve carbon neutrality and later decarbonization, this lack of involvement of the MOPT will only hamper the speed of development. The MOPT is not necessarily to blame for this, as they themselves acknowledge that the ministry lacks capacity, funding and trust (MOPT, 2011, p.17). This issue is of course a self-reinforcing mechanism. The lack of trust leads to less funding and that in turn leads to less capacity (in the form of human capital and knowledge). However, the lacking capacity creates distrust in the ministry to be an effective leader in transport sustainability issues. This is a complex issue that is not easily changed, as it involves a mechanism that has

reinforced itself through the years and has now created an almost gridlocked institutionality.

The mechanisms of change in the Costa Rican transport sector bear strong resemblance to those described in historic institutionalism. The change is described as a punctuated equilibrium, where short periods of rapid change are followed by long periods of stasis. The reforms of the sector in the 1990s were an example of such rapid change. The MOPT, which had until then been expanding steadily, suddenly decentralized through the creation of autonomous councils. This change however, was never especially effective, as since then the transport and infrastructure situation kept deteriorating. With the formulation of the current policies however, a renewed collective understanding has been created regarding the necessity of an integral and comprehensive transformation of the sector. The plans do not address the way in which this change has to take place, but rather focus on specific goals that have to be met. As such, this institutional understanding of the underlying mechanisms are crucial for the effective implementation of change.

3.3 Private Participation in Transport

The final aspect regarding the policies in the Costa Rican transport sector that will be analysed is the private participation in the sector. For the effective implementation of the policies and to give impulse to the process of transition, not only an institutional transformation has to take place, but an improved framework for the attraction of private investments is equally important (Pisu & Villalobos, 2016, p.7; MINAE, 2018, p.64). Private participation can take place in many different ways, but the main aspect that is addressed in the Decarbonization Plan and the PIMUS is the private companies involved in public transport. The National Transport Plan focusses on private involvement in transport infrastructure. Even though these two types of private participation are different in their outputs, there are similarities in the ways in which the participation takes place. In Costa Rica most of the Public Private Partnerships (PPPs) are realized through a process of concession. This is true for both the public transport companies as well as project companies that are involved in transport infrastructure.

There is an urgent need for the mobilization of private funds in transport, in order to reach the goals as set in the different plans. This is addressed by Laura Mora, of the

DCC, in an interview conducted in 2019 (Mora, 2019). There is interest from the private sector to invest in Costa Rica. In the past years an increasing interest has been registered to invest in infrastructure in the country. This opportunity should be taken advantage of to improve the system of transport, through an improvement of the legal framework, towards a more modern and effective model of concessions management. (MOPT, 2011, p.58)

For public transport the Costa Rican government has formulated outputs in the form of bus routes, the size of the vehicle fleet, and frequency of the buses. These bus routes are then divided between different bus companies. There are more than 40 companies that drive buses around the metropolitan area of San Jose (IDB, 2017, p.12). The Public Transport Council (CTP) and the Regulatory Authority for Public Services (ARESEP) are responsible for the management of the concession contracts with these companies, and setting the tariffs. Private participation in transport infrastructure is managed and coordinated by the National Concessions Council (CNC), through law no.7762 "General Concessions Law of Public Works with Public Services" (Pisu & Villalobos, 2016, p.19).

In the public transport sector, the PPPs are quite similar to contracting. The executive power has determined the routes and frequency, after which the private companies provide the service. The CTP acts as an interinstitutional coordinator between the public sector, private companies, and users and clients of the services of public transport, and international organisms (CTP, 2021). Although the concession contracts in public transport can barely be called PPPs as the partnerships are more akin to contracting out of services, there is private participation built into the regulatory institution itself. In many of the decentralized institution that fall under MOPT, private parties also take seat. This is also the case for the CTP. The board of this institutions is made up of 7 representatives; three from the executive power, one from the municipalities, and three representatives of private actors, in particular taxi drivers and bus companies (Proyecto Estado de la Nación, 2018, p.251). This was originally designed to facilitate participation from the private sector and civil society. However, this representation of different sectors within these councils that belong to the MOPT create conflicts of interests, as the public parties and private parties have different approaches and goals.

Regarding the effectiveness of such public-private partnering there are pros and cons. In public transport, the main criticism in the way the current concession structure is designed is the ability to analyse the output. One of the key aspects of a successful PPP is the fact that the private party delivers the desired output, as established in the concession contract. However, as addressed in the Decarbonization Plan, the PIMUS, and the National Transport Plan, the lack of an integrated electric payment system makes it very difficult to effectively analyse the output. As such, Muñoz and Ramírez (2019) stipulate in an interview conducted by the author in the context of the fieldwork for this thesis, that it is essential to create an integral payment system; not only for the convenience of users, but also to give the CTP and ARESEP (who determine the tariffs) the tools to better monitor the services that are delivered.

Moreover, these PPPs are not the most efficient framework for change. The private companies are not proponents of change if it does not improve their position. The CTP has been relatively 'soft' towards these companies. The fact that these bus and taxi companies also have a position on the board of the institution that regulates them creates conflicts of interest. There have been plans for structural reforms of the bus system before, but these have been blocked by the bus companies who effectively lobbied against this change. Ana Lucia Moya discusses in an interview that this process leads to the ultimate result of the discharge of the minister, installing a new minister that did not push for these changes (Moya, 2019). With regard to other crucial aspects of PPPs, such as the proper allocation of risk, and generating higher efficiency at lower cost, these concessions do seem to fulfil their purpose. This is not surprising as the concession model used in Costa Rica is very similar to models used all over the world, although be it with a relatively large number of private bus companies involved in the system.

For private investment in transport infrastructure, the framework for PPPs is more diverse and elaborate. In Costa Rica, these PPPs are managed and coordinated by the CNC. The exact role of the CNC is to (dis-)approve tender documentation, to oversee bidder selection, to sign concession contracts as the public counterpart, and monitor the contracts. The CNC is mainly funded by central government, with additional funds coming from the annual fees on operating concessions. The concession contracts that the CNC manages are themselves forms of public-private partnership, but the CNC itself, like the CTP, has private participation built into its board of directors. This board is presided by

the minister of public works (from MOPT). The rest of the board is made up by the minister of finance, the minister of planning, the president of the central bank, and three representatives from the private sector (one from labor organizations, one from the Federation of Professional Boards, and one from private sector chambers)(Pisu & Villalobos, 2016, p.19-20).

This board is not designed effectively to yield the best results for the CNC. The Comptroller General of the Republic in Costa Rica has analysed the absence rate of board member over a 4 year period (2006-2011) and found that the minister of finance was the member with the highest absence rate (73%), followed by the president of the central bank (68%) and the minister of planning (28%). As such, most decision were taken by the minister of public works and the representatives of the private sector (CGR, 2011). This creates an imbalance in public decision making, as private parties enjoy a majority in cases of absence of public representatives.

The previous reform of the transport sector in the 1990s, including the creation of the CNC as manager of private investment in transport infrastructure has been unsuccessful. The problem that Costa Rica had regarding the deterioration of transport infrastructure has persisted over the last twenty years (Perez Masís, 2015, p.62). Moreover, delays on new projects have increased and suffered delays up to 11 years from the time the bidding process was performed to the start of construction (Pisu & Villalobos, 2016, p.20). Part of the reason for this is the fact that the CNC was an institution that was born "empty" regarding human capital and the fact that this institution carried the responsibility to execute a new legal construction with which the country had no prior experience (Perez Masís, 2015, p.62). This form of knowledge gap negatively influences the capacity of the CNC to fulfil its objective.

Although the CNC suffers from insufficient capacity, the MOPT states in the National Transport Plan that the experience with the management of concessions is one of their strengths. The fact that the ministry does have over 20 years of experience with this legal construction, inviting private participation in infrastructure, is positive. Even though mistakes have been made and only few projects were successful, the acquired knowledge and lessons can prove useful in future endeavours in PPPs (MOPT, 2011, p.50). The plan recognizes, in line with OECD principles for effective PPPs, that any partnering with the private sector or any private initiative, be it already underway or in the

exploitation phase, that does not clearly contribute towards efficiency and the goals as formulated in the plan should not be admitted (MOPT, 2011, p.9).

This recognition of the key aspect of PPPs – the fact that it should produce higher efficiency at a lower cost, when compared to public sector procurement – in the National Transport Plan is hopeful. However, as is the case for the recognition that an institutional reform is necessary, the true path towards a more suitable legal framework to make the PPPs more efficient is unclear. The NTP proposes a comprehensive rework of the law that regulates the implementation of the PPPs, in order to give the MOPT full control over the processes of concession, or over the organisms that manage the concessions. The law should include regulatory norms for PPPs with the goal of attracting more investment in transport infrastructure (MOPT, 2011, p.100-101). This addresses one of the issues with the management of PPPs in infrastructure, namely the legal framework. This is a very important aspect that does indeed require a rework as Costa Rica lacks mandatory guidelines for public sector institutions and no cost-benefit analysis is conducted to decide whether a project is procured by concession or through the traditional procurement scheme. (Pisu & Villalobos, 2015, p.21) However, a better legal framework will not automatically lead to more capacity, as this is also strongly tied to human capital and funding. These last two aspects would still be lacking, and are not addressed properly in the any of the policies studied in this thesis.

One more aspect that negatively affects the use of PPPs is the lack of a project pipeline. Costa Rica lacks a reliable project pipeline, as the execution of infrastructure projects are often discretionary decision making processes by political authorities, or at least this has been the case for most of recent history. The policies regarding transport, infrastructure and sustainability studied here do concern themselves with the long term. As such, this provides a clearer path towards the established goals. This will enable a more reliable project pipeline.

The lack of such a pipeline, and the substantial delays on existing projects⁷ has damaged the confidence that private investors have in this sector. Therefore solid public policy, and its stability over time, is required to regain the trust of investors. The long term scope of the three policies discussed in this work offer a more reliable vision for the future actions of government, and therefore can help in attracting more private actors and private funds to the transport and infrastructure sector. This is however, not achieved simply by formulating a vision and the actions of government are crucial for the faith that investors have in the policies. As the interest of investors may increase, it is equally crucial that the public actors treat these partnerships with care and with the principles of effective PPPs as described in chapter one in mind.

⁷ Thus far only 4 projects have materialized since the concession law was approved over 20 years ago. These are Route 27, Grain Terminal of Caldera Port, Passenger Terminal of the Liberia International Airport and Moin Container Terminal which was recently started. The modernization of Juan Santamaria International Airport and Caldera Port were also developed with private capital, but under the Administrative Contracting Law (No.7494). Other 2 projects, the Metropolitan Electric Train and Route San Jose-San Ramon were suspended against political and media pressure. However, the project for the electric train in the metropolitan area has been restarted since. Furthermore, the few projects that moved forward suffered from up to an 11-year delay from the time the bidding process was performed to the beginning of the construction phase (Pisu & Villalobos, 2016, p.20).

Conclusion

Public policy regarding climate change mitigation and sustainability is still a widely debated topic. This complexity lies in multiple factors, some of which are the question of responsibility and available knowledge. These complexities lead to a public policy process that can experience a lot of resistance. However, these policies are necessary in the transition towards sustainability, with the ultimate goal to decarbonize the Costa Rican economy. These policies have a normalizing effect, accelerating culture change. In this regard, Costa Rica does benefit from its image as a “green” country. Regardless of political views, there is a general consensus in the country that preservation of nature and mitigation of climate change is essential.

As such, the Plan de Descarbonización 2018-2050, the Plan Integral de Movilidad Urbana Sostenible en San José, and the Plan Nacional de Transporte 2011-2035 address this issue. The plans express the desire for change that is necessary to give impulse to the transition. All three of these policies propose a profound transformation of the transport sector, based on institutional reforms. These institutional reforms are the foundations on which the transformation builds. However, given Costa Rica’s history of ineffective reforms in the transport sector, this poses a great challenge for the public administration.

With regard to state strength, Costa Rica has become more autonomous over the past two decades. The strict conditions tied to loans that were made during the economic crisis are less impactful now, and most of the current dependencies relate to funding of individual projects. Costa Rica formulates plans that are in line with the developments that IFOs desire, therefore there is no large gap in interests and as such, no significant effect on the state autonomy of Costa Rica regarding these policies in the transport sector. Looking at state capacity, one of the major improvements that Costa Rica has made is in its strategic planning capacity. Until recently the planning by the Costa Rican state was limited to four year development plans. However, the formulation of these long term policies demonstrates understanding that long term planning is essential with regard to sustainability and its ability to strategically plan for such a long period.

It can be concluded that these plans demonstrate ambition. There is no doubt that if these plans are implemented, the effects would be overwhelmingly positive for the transportation sector. But it is in this implementation where the greatest challenge lies.

There is fragmentation in the design of these plans, as not one plan is written with the inclusion of all crucial actors. Although there is consensus that the MOPT should be the leading institute for transport and infrastructure development, this ministry was only involved in the formulation of the National Transport Plan, which is written by the ministry alone. The transformation of the sector requires an integral approach, with effective coordination between all involved actors. Such an approach is still lacking.

This has to do with the public management capacity of Costa Rican institutions. Many institutions lack capacity in the form of human capital, knowledge or funding. This is recognized in the plans, but comprehensive solutions are absent. This is a vicious circle, as knowledge gaps create weak institutions, but weak institutions lack the capacity to properly find and use available information. Therefore, the biggest issue regarding state strength that has to be addressed is to endow the public administration with the capacity it needs to implement the policies.

Another factor mentioned in the policies is the fact that the institutional framework is too extensive and fragmented. The policies emphasize the importance of a modernized institutional framework in order to facilitate the implementation of the recommendations. The policies lack detailed recommendations on how to achieve this transformation. In its current design the institutional framework for transport and infrastructure is not effective. The MOPT as formal leading institution lacks strong leadership capacity. The lack of trust in the ministry to fulfil its objective has led to even more fragmentation of responsibility as other ministries and institutions have taken over part of the responsibility. This has not happened through formal mechanisms, but rather informal institutional change.

The pushing factor behind these informal changes is the fact that making formal changes in this sector is extremely difficult. Historical values and norms are strongly embedded in the MOPT. As such, changing the course of action requires a strong political force that should not fear losing its reputation. The highly volatile leadership of the ministry is a testament to this. No other ministry in Costa Rica has had so many different ministers between 1978 and 2018. In the current system an almost gridlocked institutionality has been created, where the lack of capacity impedes effective change. There is need for an very strong push for integral change. This is not impossible, as it happened before during the Structural Adjustment Plans. Putting it in terms of historical

institutionalism; change happens through a punctuated equilibrium and in order to facilitate the implementation of the plans, the equilibrium has to be broken.

Regarding the private participation in the transport and infrastructure sector the policies acknowledge that there is a need for the mobilization of private funds. The way in which private participation takes place differs in the sector. For public transport, the PPPs are based on a concession contract, managed by the CTP, with for example bus companies. This model of concessions is sound, and the problem in public transport is not in the construction of private participation, but in the model of public transport itself. Such a model of concessions is used in many other countries as well, with success. One big difference however, that complicates the management of these contracts, is the fact that there are relatively many companies active in this sector.

For private participation in transport infrastructure the PPPs are managed and coordinated by the CNC. This institution however, was born 'empty'. This means that at the inception of the institution in 1998, it was not equipped with sufficient capacity in the form of human capital, knowledge and funding to fulfil this new legal construction. This problem has persisted over the years, with many project delays as a result. Moreover, a conflict of interest is very likely to happen in the current design of these institutions. Both in the CTP and the CNC, the private sector has multiple seats on the board. On paper, in both institutions the public sector has a majority on the board. However, in practice these boards are characterized by high absence rates of public representatives, leaving the public decision making power and the responsibility of regulation in the hands of a body where private sector representatives then have a majority.

The management of PPPs in Costa Rica has not been efficient, which is one of the key aspects of effective partnering. Herein lies another challenge for the Costa Rican public administration. For future partnering with the private sector, more attention has to be paid to the principles for effective PPPs, including extensive cost-benefit analyses to determine whether private procurement or public procurement methods are more suitable for a project. There are plans to rework the legal framework surrounding private participation in the sector, which would be an important first step towards more effective implementation of PPPs, to ultimately work towards the goals as set in the policies.

In conclusion, the policies discussed in this work demonstrate a clear vision for the future, with detailed plans of action to reach the goals that they set. This is an important step forward for Costa Rica, and demonstrates the capacity for long term strategic planning that is essential in matters of sustainability. For all policies however, the foundations on which these actions build is the modernization of the institutional framework of the sector. Without an effective institutionality, the chances that the recommendation in the plans will be implemented become smaller. Therefore, the absolute first priorities of the Costa Rican transport sector should be the transformation of the institutional framework and to endow its institutions with sufficient capacity to plan, coordinate and manage the process of transition towards sustainability. This is acknowledged in the policies, but a clear path towards an institutional modernization is still lacking. Therefore most attention should be directed towards creating a well-coordinated sector, with a strong leading institution, before considering the implementation of the sector specific actions as proposed in the policies.

Further analysis of the policies and their outcomes are necessary to determine whether Costa Rica will eventually reach its goal of decarbonization of the transport sector. The plans have been recently formulated, and implementation cannot yet be seen on a large scale. Therefore this thesis has addressed the mechanisms in the policy process. Additional research will be necessary at a later point in time to determine whether the mechanisms, and the challenges they bring with them, have been effectively handled to create an efficient transport sector that can and will succeed in ensuring sustainability through effective public management and coordination.

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List of Interviews

Interviewee	Affiliation and role	Subjects discussed	Date and place
Blanco, Alan	CNFL, head of electro mobility program	Transition to electric vehicles Competitive market for electric vehicles Electromobility	17-01-2019 Plantel CNFL
Mora, Laura	Technical assessor for the DCC	Climate change Climate policy in different sectors PPPs and bureaucracy	21-01-2019 Dirección de Cambio Climático
Moya, Ana Lucia	Advisor for the DCC in fields of climate change metrics and transparency, and transportation coordination	Electromobility Transition to electric vehicles Policy and implementation	21-01-2019 Dirección de Cambio Climático
Muñoz Castillo, Bernal & Ramírez Rodríguez, Diego	ICE, head of the corporate programme of electric mobility ICE, head of the fast charge net	Electric vehicle infrastructure Competitive market for electric vehicles Implementation of policies Legislation regarding sustainable transport	16-01-2019 ICE building
San Gil, Andrea	Office of the first lady, focus on sustainable transport	Electromobility Transition to electric vehicles	16-04-2019 Via e-mail
Jairo Quirós-Tortós	Professor at the University of Costa Rica, specialized in electromobility	Electromobility Transition to electric vehicles Legislation regarding this transition	17-12-2018 School of Electrical Engineering, UCR

**Appendix 1:
Public and private provision of infrastructure**

	Public Project	Public-Private Partnership					Private Project
Contract Type	Public Sector Procurement	Franchise (Affermage)	Design-Build-Finance-Operate (DBFO)	Build-Transfer-Operate (BTO)	Build-Operate-Transfer (BOT)	Build-Own-Operate (BOO)	
Construction	Public sector	Public sector	Private sector	Private sector	Private sector	Private sector	
Operation	Public sector	Private sector	Private Sector	Private Sector	Private sector	Private sector	
Ownership	Public sector	Public sector	Public sector	Private sector during construction, then public sector	Private sector during contract, then public sector	Private sector	
Who pays?	Public sector	Users	Public sector or users	Public sector or users	Public sector or users	Private-sector offtaker, public sector, or users	
Who is paid?	n/a	Private sector	Private sector	Private sector	Private sector	Private sector	

Yescombe (2007, p.12)

Appendix 2:

Elaboration on the Plan de Descarbonización 2018-2050; cross-cutting strategies and axes of decarbonization

10 Axes of Decarbonization		Cross-cutting strategies	
1.	Development of a mobility system based on safe, efficient and renewable public transport, and on active mobility schemes.	A.	Integral reform for a new bicentenary institutionality.
2.	Transformation of the light-duty vehicle fleet to zero-emissions alternatives, sustained by renewable energy sources.	B.	Green fiscal reform.
3.	Promotion of zero-emissions or low emissions technologies and modalities for cargo transport.	C.	Financing strategy and investment attraction for transformation.
4.	Consolidation of the national electricity system with the capacity, flexibility, intelligence, and resilience necessary to supply and manage renewable energy at competitive costs.	D.	Digitalization and knowledge-based economic strategy.
5.	Development of buildings for different uses (commercial, residential, institutional) under the standards of high efficiency and low emission processes.	E.	Labor Strategies of "just transition".
6.	Transformation of the industrial sector through processes that use renewable energy sources or low emission sources.	F.	Inclusion, human rights and promotion of gender equality.
7.	Development of an integrated waste management system based on separation, recycling, revaluing and final disposal of maximum efficiency and low emissions of GHG.	G.	Transparency, metrics, and open data strategy.
8.	Promotion of highly efficient food agriculture systems that generate export goods and local consumption with low carbon emissions.	H.	Education and culture strategy: the Bicentennial Costa Rica free of fossil fuels.
9.	Consolidation of an eco-competitive cattle ranching model based on efficient production and reduction of GHG emissions.		
10.	Consolidation of a rural, urban, and coastal territory management model that facilitates the protection of biodiversity, the increase and maintenance of forest coverage and ecosystem services based on natural solutions.		

(MINAE, 2019)

Short term goals of axes directly related to transport and infrastructure

Axis 1: Development of a mobility system based on safe, efficient and renewable public transport, and on active mobility schemes.

Goals 2019-2022	Actions for change
<ul style="list-style-type: none"> Modernize public transport and create an intermodal system that allows for efficient use of different modes of transport. 	a. 8 main railways routes in function.
	b. At least one mode of public transport that functions with an integrated electronic payment system.
	c. Electric passenger train licited.
<ul style="list-style-type: none"> Promote the decarbonization of public transport by electrification and adoption of zero-emission technologies. 	a. Pilot electric buses on at least 2 routes of public transport.
	b. Concessions contracts of bus services should include goals and conditions associated with the use of electric buses or zero-emission technology.
	c. Design and officialize the roadmap for the consolidation of the Hydrogen Cluster.
<ul style="list-style-type: none"> To promote urban development schemes low in emissions integrating the focus "development aimed at transport" in planning tools and territorial management. 	a. At least three municipalities have implemented practices of development aimed at transport and low emissions.
	b. 16 municipalities participate in the Carbon Neutral Program.

(MINAE, 2019)

Axis 2: Transformation of the light-duty vehicle fleet to zero-emissions alternatives, sustained by renewable energy sources.

Goals 2019-2022	Actions for change
<ul style="list-style-type: none"> Accelerate the transition of the vehicle fleet towards zero-emission technology. 	a. National Plan for Electric Transport and complementary regulations to operationalize law No. 9815.
	b. To have at least three new public institutions acquire zero-emission vehicle fleets.
	c. To have 69 rapid charge stations in operation in 2022.
<ul style="list-style-type: none"> Improve the efficiency of the fleet of internal combustion engine vehicles. 	a. Incorporation of between 5-10% of ethanol in both petrol and diesel.
	b. Create a roadmap for the production of biodiesel.
	c. Design an Eco-label for efficiency on designed vehicles.

(MINAE, 2019)

Axis 3: Promotion of zero-emissions or low emissions technologies and modalities for cargo transport.

Goals 2019-2022	Actions for change
<ul style="list-style-type: none"> • Consolidate a logistical cargo program to reduce emissions. 	<ul style="list-style-type: none"> a. Have at least 1 cargo pilot project under low emissions parameters.
	<ul style="list-style-type: none"> b. Electric cargo train of Limon (TECLA, Tren Eléctrico Limonense de Carga) in operation.
<ul style="list-style-type: none"> • Promote efficient technology in the heavy and light cargo transport sector. 	<ul style="list-style-type: none"> a. Create an elaborate plan to improve efficiency and reduce emissions in the cargo transport sector.
	<ul style="list-style-type: none"> b. Have 1 pilot project for the improvement of efficiency in the cargo transport sector (the use of biofuels and LPG).

(MINAE, 2019)

Appendix 3:
Elaboration of the goals as formulated in the Plan Integral de Movilidad Urbana Sostenible en San José (PIMUS)

Objectives of PIMUS		
1.	To incentivize active modes of transport	It is necessary to realize investments in both cycling and pedestrian infrastructure. Moreover, the perception of these modes of transport has to change, as it is now seen as dangerous and for people with economic difficulties
2.	To have high quality public transport	It is necessary to generate an integrated and efficient transport system, with high capacity and frequency that shorten travel times, with tariff policy that produces equity and affordability of transport, and with acceptable comfort levels, as to attract new users
3.	To have safe, efficient and clean mobility	Smart mobility can help organize vehicle transit without losing sight of sustainable mobility objectives. The incorporation of clean technologies is paramount to reduce the impact of emissions. Besides that, some road interventions are of high priority to organize the travel movements.
4.	To have universal access	No area should be isolated. Also, financial accessibility of the different modes of transport has to be ensured. To establish this, equity has to be kept in mind. Another aspect is the equality of gender, and the current distinct patterns of the use of public space.
5.	The creation of a sustainable city	To make AMSJ a future proof urban centre, the focus has to be on TOD (transport oriented development). In this sense, the focus should be to contain urban expansion, and generate a territorial mix of uses (living, working, etc.) and create public spaces of high quality.
6.	Ensure integral, participative metropolitan planification	The execution of the proposed measures requires an institutionality that can tackle that mobility issue in an integral way, with a metropolitan scope, and with specific resources and technical capacity to plan, regulate and control all aspects that make up mobility, in a transparent manner, and with participation of all involved actors, especially the academic sector and civil society.

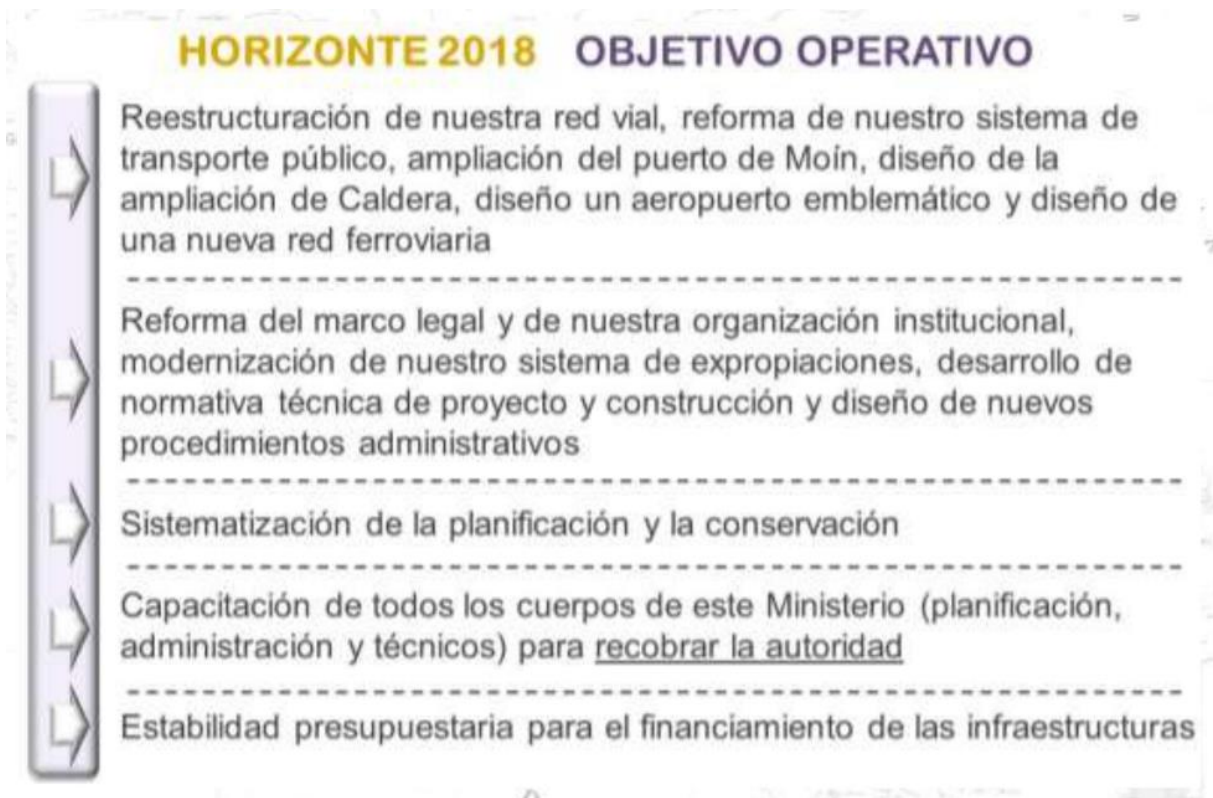
(IDB et al., 2017)

Appendix 4:

Elaboration on the goals as formulated in the Plan Nacional de Transporte 2011-2035

Goals for the period 2011-2018	
1.	Execute the actions in progress and actions as planned in the short term.
2.	The modernization of the legal framework and institutional organization, promoting the leadership of the MOPT as the sole official authority in the matter, and adapting models for the management of infrastructure.
3.	The modernization of the complementary legal framework for the activities of the MOPT (laws regarding concessions, expropriations, etc.).
4.	The development of specific technical regulations for the design and construction of transport infrastructure.
5.	The design of the administrative procedures necessary for the different processes associated with the planning, design and construction of infrastructures, as well as the management and inspection of the concessions.
6.	To centralize the planning activities for the transport system in the MOPT.
7.	Training all bodies of the ministry dedicated to directory, planning, and management tasks, as well as training of the technical body dedicated to the work of design and conservation of infrastructures.
8.	Foresight, design, and management of the financial resources necessary for the modernization of the transport system.

(MOPT, 2011)



(MOPT, 2011, p.43)

Goals for the period 2019-2035

1.	To provide a modern system of transport, in which intermodality, functionality, capacity, and adequate conservation are fundamental aspects.
2.	To integrate within the transport system a road network of rational hierarchy, with the railway network, airports, and ports.
3.	Create economies of scale in port areas, concentrating traffic that ensures the profitability of the facilities, having a large port on each slope and ensuring alternatives for strategic traffic (oil and grains).
4.	To provide an emblematic international airport, which is the entrance gate for international tourism.
5.	To facilitate the entrance of the private sector in the management of infrastructure, under the control of MOPT, without giving up aspects relating to strategic planning or to management of safety services, navigation or regulation of traffic.
6.	To contribute to the promotion and facilitation of activities of tourism.
7.	To integrate themselves into international commerce in accordance with international 'good practice' recommendations and technical regulations.
8.	To establish a case of good practices in the management of transport systems in the continental area.
9.	To enhance cohesion and equilibrium of the territory, facilitating internal mobility.
10.	To minimize the impact of the transport system on the environment, ensuring sustainability for the years to come.
11.	To achieve a point of self-financing of international (air-)port infrastructures through an adequate tariffs system on the services.
12.	To ensure the stability of the budget contribution from the state for the conservation of the transport system, which falls under direct control of the MOPT.

(MOPT, 2011)

HORIZONTE 2035 OBJETIVO ESTRATÉGICO



Disponer de una red vial estratégica de alta y mediana capacidad de ámbito nacional, de dos grandes puertos (Moín y Caldera), de un aeropuerto emblemático y de una moderna red ferroviaria nacional.



Que el sector privado participe en la gestión de las infraestructuras, bajo el liderazgo, rectoría y control de este Ministerio, sin ceder la planificación, la ordenación, la regulación del tráfico y la seguridad.



Contribuir al turismo, cohesionar los territorios e integrarnos en el comercio internacional asumiendo toda la normativa y recomendaciones.



Que Costa Rica constituya un caso de buenas prácticas en la gestión de sistemas de transporte en el ámbito continental.



Apoyar un sistema de transporte público eficiente, y mediante un régimen tarifario adecuado, contribuir al financiamiento de carreteras y ferrocarril y lograr el autofinanciamiento de puertos y aeropuertos.

(MOPT, 2011, p.44)

Appendix 5: Actors in mobility in the Metropolitan Area of San José

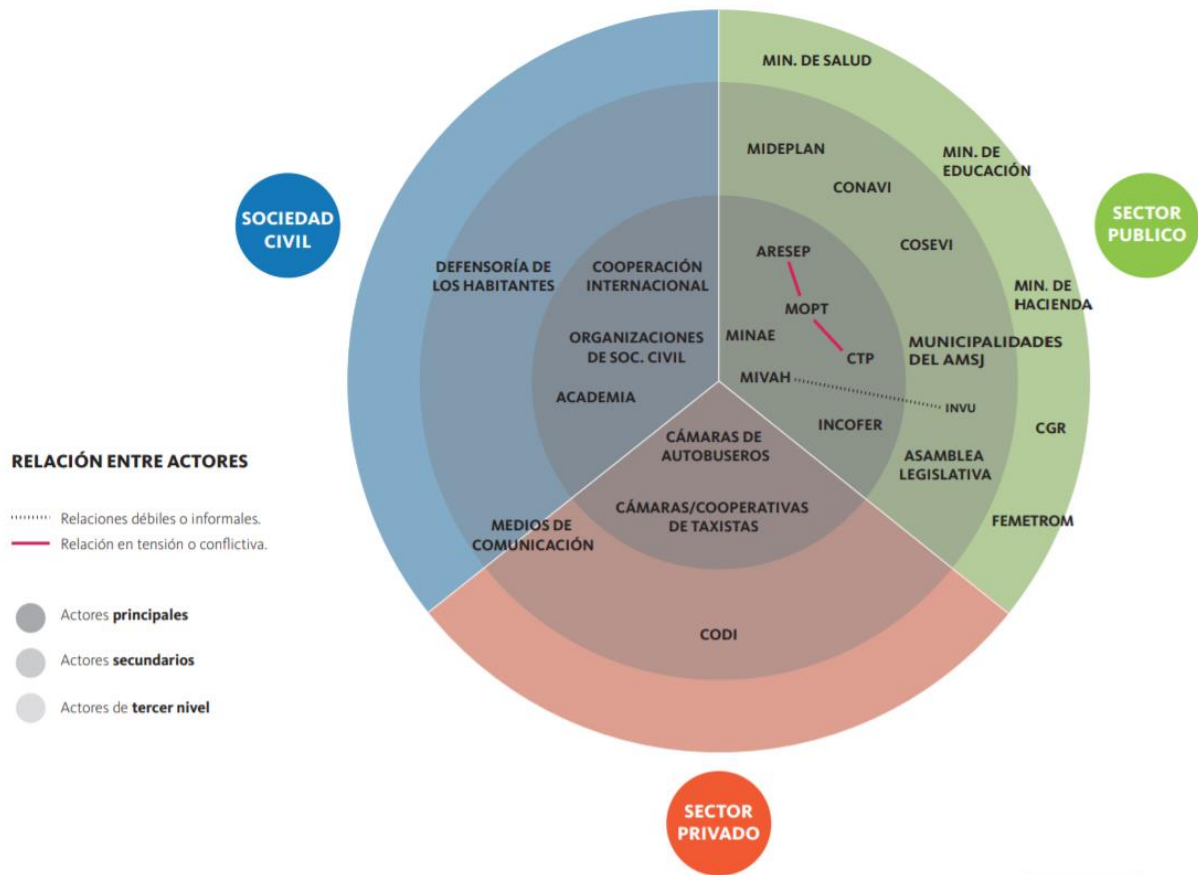


figura 10. Mapa de actores del AMSJ

(IDB et al., 2017)

Appendix 6: Key Public Institutions in the Transport Sector

Institution	Type (budget allocation)	Year of creation	Governing Law	Responsibilities
Institutions with Specific Responsibility for the transport infrastructure sector				
Ministry of Public Works (MOPT)	Ministry (Central government)	1963	No.3155	Planning agency; issue the National Transport Plan
Technical Civil Aviation Council (CTAC)	De-concentrated agency under MOPT	1973	No.5150	Issuing regulations on air transport and promoting development of airport infrastructure
Road Safety Council (COSEVI)	De-concentrated agency under MOPT	1979	No.6324	Issuing regulations to increase the safety of the road transports
National Concessions Council (CNC)	De-concentrated agency under MOPT	1998	No.7762	Promoting private participation through concessions and PPPs
National Road Council (CONAVI)	De-concentrated agency under MOPT	1999	No.7969	Issuing regulations relating to public road transport (i.e. taxis, buses, coaches)
Costa Rican Institute of Pacific Ports (INCOP)	Non-financial public company	1953	No.1721	Port authorities for Pacific ports
Port Management Board of the Atlantic Coast Development (JAPDEVA)	Non-financial public company	1963	No.3091	Port authorities for Atlantic ports
National Railway Institute (INCOFER)	Non-financial public company	1985	No.7001	Managing the railways system (stations, tracks and rolling stock)
Institutions with a horizontal role				
Regulatory Authority of Public Services (ARESEP)	De-centralized institution	1928	No.7593	Setting tariffs for buses, taxis, trains and ports
Ministry of Planning (MIDEPLAN)	Ministry	1974	No.5525	Coordinating agency and issuing the National Development Plan
Ministry of Finance	Ministry	1885	Decree No. 55	Authorizing tax exemptions to incentivize private-sector participation
Ministry of Environment and Energy (MINAE)	Ministry	1990	No. 7152	
National Environmental Office (SETENA)	De-concentrated agency under MINAE	1995	No.7554	Issuing environmental permits

(Pisu & Villalobos, 2016)