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### Toward Inclusive and Collaborative Climate Change Governance at the Municipal Level in Costa Rica

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#### Abstract

In 2007 Costa Rica was the first country committing to become carbon neutral. Two years later it developed its National Strategy for Climate Change and has since generated significant efforts aimed to governmental institutions and the private sector; however, advancements at the local level remain scarce, fragmented and poorly supported, particularly limited by the technical and organizational capacity that local governments have in leading mitigation and adaptation strategies within their territories. Since climate change is a multi-level, multi-sector and multi-term challenge, it asks for a different public governance style, with a higher commitment with civil society and the private sector, and with enhanced human capacities for the collective action. Supported by a research and extension project since 2011, several municipalities have been engaging in the development of collaborative and more inclusive climate change strategies within their territories in tune with local businesses, institutions, and civil society. The main purpose of this project is to support and document the process taken by our different case municipalities in developing and implementing their local strategies, and thus, supporting other local governments in developing their own. For this, the research team has been following a participatory action research approach with three local governments over several years, and during 2016 a structured survey was also conducted to the 81 municipalities of the country regarding the incorporation of the climate change topic into their municipal governance. General results are presented with an analysis of the perceptions from the nation-wide survey; then, with the help of the three cases studied, we explain the process taken in the adoption of such strategies and the challenges emerged. We found that in spite of the existing concern about the climate issue, appropriate mechanisms and information are lacking to enable its more efficient adoption in local governance. Therefore, we conclude that in order to adequately address the issue of climate change in an inclusive and sustainable manner, local governments are required to develop both internal and external capacities ---beyond good administrative management- to allow a collaborative interaction with the actors involved, in order to generate and maintain their recognition, involvement, and commitment. Is evident that this project supports an alternative collaborative governance model, through the enhancement of individual and social local capacities leading to a more systemic commitment for collective climate action. This action requires transcending voluntary and isolated initiatives, leading the way to planned, and politically supported mitigation and adaptation strategies for inclusive development.

Keywords: civil society, community participation, inclusive climate action, local government, public administration.

#### 1. Introduction

During the last years, Costa Rica has been managing an active agenda, both national and international, on the issue of climate change (hereinafter CC). In 2007, it acquired a commitment to become a carbon neutral country by 2021. Two years later, it launched a National Climate Change Strategy, which defines the carbon neutrality of the country and reaffirms itself at the international level the commitment to convert the country into a carbon neutral economy, a goal that is still maintained by the

current government (Gutierrez, 2016). Due to the commitment made, Costa Rica began working focused on a mitigation strategy, mostly to reduce greenhouse gas (GHG) emissions from the private sector. The year 2013 was characterized by advances in the development and formulation of several Nationally Appropriate Mitigation Actions (NAMA) in various productive industries, with an increasing incorporation of the private sector into the carbon neutrality efforts (Jimenez, 2016) and a low emissions development and climate resilient strategy, mainly with the elaboration of technical guides (Corrales, 2013). At the international level, in the Paris Agreement (2015), Costa Rica presented its Nationally Determined Contribution (NDC), which set the goal of reducing emissions by 25% by 2030 with respect to the year 2012, and to seek the decarbonization of the economy by the end of this century (Gutierrez, 2016).

This set of public policies and initiatives in CC has allowed the generation of various efforts; however, these have been geared mainly toward the private sector or to centralized public institutional, but little at the local level where municipalities have been sparsely encouraged to work specifically on CC in a holistic way. Despite international efforts on this area, such as those lead by the Compact of Mayors, for example, along with a limited number of specific tools to support municipalities in tackling the issue, locally some governments have shown interest and have begun to seek alliances with other actors to incorporate the CC topic into local actions, but there is still little documented and available information on specific initiatives developed here.

According to UNDP's annual report (2014), CC is one of the most pressing issues on the global agenda for development. This asks for a different style of governance in order to overcome the obstacles of global arrangements, including the absence of enforcing mechanisms either at the international or national levels (e.g., Somanathan et al., 2014, Polhmann, 2011). It is required a more systematic engagement with civil society and the private sector, and the strengthening of human capacities for collective action to address climate adversities. Local collaborative governance arrangements or collaborative processes are proposed as alternative options for public policy decision-making and management, where different processes and structures help engage stakeholders from public, private and social sectors in a constructive form to address complex issues such as climate change (Ansell & Gash, 2008; Emerson et al., 2011).

Local collaborative governance is key to address CC for several reasons. First, most concrete actions are executed and the effects are felt at this level (e.g., Tanner et al., 2009); thus, addressing CC is a covering umbrella to address the socioenvironmental issues that are dealt with by local governments (Dodman, 2009); thus, an opportunity to articulate the different agendas of waste, water management, mobility, risk management, reforestation, energy efficiency, and others (e.g., Lutsey & Sperling, 2008; Jones et al., 2000). In this regard, local governments have many tools at their disposal for implementing climate policy such as land use planning, residential and commercial regulations, solid waste management, transportation ordinance (Betsill & Bulkeley 2006; Kousky & Schneider, 2003). According to Rosas et al. (2012), institutions and local governments can contribute to reducing emissions (mitigation) or increasing the capacity to adapt to climate change and to climate variability; however, this requires a strengthening of institutional capacities. Second, local governments want and can contribute from their local sphere to the international and national commitments. According to a recent civil society survey, which examines the three most important aspects of implementing the NDCs in Latin America - proposed by each country at COP 21 in Paris - the third point of importance is to work with local governments (Pre-survey to the Regional Seminar on Climate Change for Civil Society Organizations of Latin America 2016). Third, constructive collaborations require according to Ansell & Gash (2008) face-to-face dialogue, trust building, and a shared understanding, factors that are often more easily accomplished at the local level. Similarly, Ostrom et al. (2009) point out that there are higher chances of success to overcome the free rider problem given the nature of common-pool resources, in local settings with lower negotiating cost as a result of higher trust, organization, and leadership.

Although in Costa Rica the incorporation of the CC topic in the municipal governance has been progressive, voluntary, and by the particular interest of some local governments without the mediation of an explicit national policy, it has been influenced by the environmental history of the country over the last several decades, following the conclusion of Sippel & Jenssen (2009), that the national framework conditions is an important determinant of local CC governance. For example, the Integral Waste

Management Law (2010) mandates local governments to promote the creation of an environmental management unit responsible of coordinating such processes (Programa CYMA, 2012, p.17). Another example is Executive Decree No. 36499-S-MINAET-2011, which mandates the develop of an institutional environmental management plans (PGAI) on each entity of the public sector (MINAE, 2011). However, according to the report of the Directorate of Environmental Quality Management (DIGECA, 2016), only 50 local governments had delivered this plan, out of a total of 90 (including 9 District Councils). In addition, the Municipal Performance Index made of 61 indicators, only considers some aspects of environmental management, and does not considers aspects or indicators related to climate action (CGR, 2016). Finally, in 2015 the Blue Flag Ecological Program created a new category directed to certifying municipalities. In its last report 16 municipalities showed as participants (PBAE, 2015), although is too soon to evaluate their performance.

Regulatory, administrative and market incentives have allowed a greater incorporation of environmental and climate related variables in the functioning of public institutions, also influencing the generation of initiatives in local governments. However, for climate management to be in line with national and international commitments, it is necessary to transcend voluntary efforts, and provide political and economic support for local climate action. Vasconcelos et al. (2013) even suggest that an approach with local institutions punishing free-riders will promote the emergence of widespread cooperation. Thus, the main purpose of this project is to support and document the process taken by our different case municipalities in developing and implementing their local strategies tackling climate change, with the aim to support other local governments in developing their own. In this article, we first present an analysis of current perceptions about the incorporation of the climate change topic into the municipal governance considering all the municipalities of Costa Rica; then, we analyze in a more specific way, the approach taken in three municipalities where the research team has been carrying-out the project. Before that, we present the general methodological approach.

#### 2. Methodology

The study has a qualitative research approach. Initially, we present and analyze the efforts that local governments throughout the country have been carrying out in recent years; for that purpose, a questionnaire was designed taking as reference the studies of Molina-Murillo (2013) and Vignola and IPN (2010). The questionnaire was administered via the Internet through the platform SurveyMonkey.com with an additional effort through telephone calls. The information was obtained from all the 81 municipalities of Costa Rica between November 2015 and May 2016, which was mainly supplied by environmental managers or mayors themselves. In general terms, the questions used in the survey referred to levels of concern and responsibility about climate change and its effects, state of local impacts and actions to mitigate or adapt to climate variability and change, as well as the state of knowledge and progress in the development of local climate policy. Once the data were collected, it was recorded in Microsoft Excel for follow-up analyses.

Regarding the case studies, the research team has been following a participatory action research approach over several years with the municipalities under study —San Rafael (2011-present), Grecia (2012-present), and Belen (2014-present)— denominated: "participatory strategies for climate change at the local level". This approach allows to work the issue of CC in a comprehensive manner. The execution and analysis involves a mixed-methods approach that combines many field visits, personal interviews, participant observations, analysis of records, stakeholder workshops, teaching activities, development and execution of projects, participation in fairs, and others. The municipalities (counties) included in the study present differences in their economic, social, and environmental settings; however, they all showed high self-interest in participating in the project. After this contextualization, we discuss the component of local governance and participation based on the dimensions reported by Rosas et al. (2012) on the institutional capacities of local governances to address CC. We point general challenges and opportunities to strengthen local climate governance.

#### 3. Results and Discussion

3.1 An overview of the integration of climate change aspects into local governance in Costa Rica

In recent years, the issue of CC has become more relevant in social spheres because of the availability of information and its perceived impacts. Thus, 85% of the staff consulted indicated being very familiar or familiar with the concept. When asked about the level of concern about the possible consequences of climate change in the territory of its local government, in the first place and with 83.5% the problems of water scarcity are mentioned. Infrastructure problems for water supply and potability, pollution, and increased demand, are linked to the effects of droughts that in recent years have occurred in much of the country, this being the second climatic effect of concern by municipal officials. **Figure 1** below shows the negative impacts that these effects can produce such as loss of agricultural productivity, disappearance of biodiversity, diseases and others. Although it is still worrying, it is particularly noteworthy that the consequences on public infrastructure are not yet a major concern in local governments, a key aspect of their management and responsibility in Costa Rica.

**Figure 2** shows that the management of local governments is primarily focused on land use planning, which is the priority action for more than a third of municipalities (38%). This aspect should concern us if we consider that 62% of the municipalities do not have an official land use management plan (Programa Estado de la Nación, 2014). The same report indicates that management of solid wastes and providing water in good quantity and quality are elements that the population perceives as services that local governments are responsible to attend given their greater involvement and control over them. Although management of the above-mentioned aspects is linked to climate actions, at least at present, only one tenth of local governments prioritize the issue of climate change, placing it in fifth place in the list of priorities.



Figure 1. Level of concern with possible consequences of climate change in the territory under local government management.



Figure 2. Priority themes where local authorities (municipalities) in Costa Rica consider they should pay more attention.

Of the total staff consulted, it is encouraging that 90% of them consider that it is the municipal responsibility to reduce the negative effects of climate change; although they stated that this responsibility is shared mainly with national governments but also with communities and individuals. Given the strategic positioning of municipalities between national governance institutions and local organizations and citizens, it is necessary to strengthen mutual cooperation mechanisms to translate global and national policy to local territories and their inhabitants. In this sense, only 64% of respondents indicated being knowledgeable with national climate change policies that promote and encourage their work at the local level.

Among the actions currently being carried out by the municipalities, three out of four of them already have a municipal recycling program that includes a separation facility, and also, they actively promote actions to avoid flooding through drainage, cleaning campaigns, or prohibition of constructions in the margins of rivers or other zones of protection. In general, of the 10 actions considered, only one third of the municipalities are implementing more than five of them. Unfortunately, only 21.3% of municipalities have a CC commission (or its equivalent) and 18% have carried out an inventory of GHG emissions (see **Figure 3**), essential activities, and often the starting point, to plan appropriately any local climate strategy. Consequently, 56% of the municipalities do not have a CC strategy at all, 37% are in the process of developing one, and only 7% of them —5 municipalities— have it formalized.



Figure 3. Climate related actions that are currently being developed by local governments.

#### 3.2 The work with three municipalities

The approach took with our case municipalities is shown in Figure 4. Although the process is presented in phases, some of them take place simultaneously and little variations occurred across local governments. Initially our aim was to map as best as possible in a cooperative manner the current situation in order to create a baseline and more deeply understand the socioeconomic, political, and environmental characteristics, and levels of risk. On this first stage, we also aimed at creating an inter-institutional climate change commission -organized, trained and empowered with a wide participatory level. Members of this commission function as representatives from the multiple sectors, districts, and businesses within the municipal territory. Having them engaged from the beginning of the process is paramount to have an active and committed participation. Second, an official municipal climate change strategy was developed cooperatively, one that is executed and monitored by the inter-institutional commission. With such a strategy, climate policies, objectives and key projects are established along with climate risk management actions. Climate scenarios and the perceptions from organized groups, institutions, private sector, local development associations, producer associations, and other key actors were key inputs here. Third, projects are approved for key sectors on each county, informed by the diagnostic and the analysis of future risk. A goal with these projects has been also to document lessons to benchmark in other counties. Projects relate to water use, agricultural production, emission reduction, waste management, transportation, and others according to the priorities and possibilities of each county. Hence, one assume that these local territories are more adapted to the treats of climate change, becoming more resilient and with higher opportunities for development. Off course, none of this could be possible without a cross-cutting process for building capacities on local actors through awareness, education, and their empowerment. The educational component is conducted formally with school teachers of the public system and informally with members of the CC commission, municipal personnel, private actors and civil society in general.



Figure 3. Approach taken in order to help municipalities incorporate climate change into their governance.

In order to create a context to the reader about the proposed analysis for the three municipalities (counties), first we provide a brief description of the territories and initiatives developed there. Although the three counties are located within the Greater Metropolitan Area or Central Valley, their biophysical and socioeconomic characteristics vary, generating different challenges for the incorporation of the climate topic into their local governance.

San Rafael is an urban-agricultural county with an area of 48.3 km<sup>2</sup> and 45 965 people, rich in natural resources, forests, and with great importance for the supply of water to a high percentage of the population in the Central Valley. Originated through a pilot project for carbon management in 2011, the committed participation of the local government and various sectors of the community made possible the prioritization of areas of work. As a result, today there is a community organized and represented by different sectors, with an established environmental education process, with a well-defined working agenda lead by an official climate change commission, working in areas such as organic waste management, recovery of protection zones through reforestation campaigns, and baseline information of GHG emissions and carbon storage, paramount for local climate decision making.

The experience acquired in San Rafael allowed the transition of the project to the urban-agricultural municipality of Grecia in 2012. Grecia has 76 898 inhabitants (as of 2011) and an extension of 254.2 Km<sup>2</sup>, with a large forests reserves, an intensive agricultural activity, mainly coffee, sugar cane and pineapple crops, which are important sources of employment, but at the same time, GHG generators. As part of the project, efforts have been made to raise awareness in the different sectors of the county, as well as the collection of technical information, metrics for GHG emissions and carbon storage to support the decision-making of the climate change commission, which was developed and has been trained and empowered since.

Finally, we began the work with the municipality of Belen in 2014. This urban-industrial zone is strategically located between the urban center of the capital city and the main international airport of the country. With abundant water in the subsoil, has allowed the concentration of a large number of industries in its territory of 11.8 km<sup>2</sup>, which also houses a population of 21 633 inhabitants and an additional floating population of about 25 000 people, resulting on real estate pressure, increased motor transportation along with congestions, air pollution, among other environmental problems. In view of this situation, a strategy is presented to address the effects of the climate, which has led to the development of an inventory of GHG emissions and carbon storage which happen to be the key motivator of subsequent actions. Such balance of emissions comparing the years

2006-2013 let the actors of Belen understand that they are the emitters of 2.78 million tonCO2-eq annually, representing approximately 23% of all the emissions of Costa Rica. This generated a sense of preoccupation and urgency that evolved in the discussion and development of projects around organic residues, transportation, and construction permitting, all under the guidance of a municipal climate change commission, which is highly trained, representative, and committed.

#### 3.2.3 Dimensions that affect the capacities of local governments to meet the challenges of climate change

According to Rosas et al. (2012), the factors that can influence the capacity of local governments that address climate change are: shared responsibility, institutional work, governmental and social transcendence, social interaction, and government responsibility. These dimensions are briefly analyzed for the three municipalities under study, recognizing that they are relevant and helpful to identify weakness and strengths to improve the local climate governance.

The dimension of *shared responsibility*, i.e., the commitment or obligation to be assumed by both government authorities and members of a society, is visualized in all three case studies. The methodological approach of the research project contemplates the organization and citizen participation since the initial stages of the process. On one hand, the development of climate capacities and education is sought for local government officials and for other local actors; and on the other hand, this wide participation ensures the sustainability of the initiative. The assessment of this dimension favors cases 1 and 2, since they have a greater interaction with society, resources are allocated for research, and there is a commitment between the parties for the development of joint climate actions. Case 3 still requires strengthening organizational capabilities and integrating other social actors to achieve greater representativeness. We noticed that in communities with a stronger bottom-up governance approach for environmental issues where municipal officials are not the main actors but another participants, climate actions are easier to develop and maintain over time.

In the dimension of *institutional work*, which has to do with the internal capacities of local governments, the three local governments show a different behaviour. Although in the previous dimension we mentioned that municipal officials are just another actor in the overall set of participants, their formal and active participation is key in the process since they represent official voice of the local territory. Therefore, all meetings, projects, and budget allocations are officially approved by the CC commission established officially within the formal structure. Case 1 for example, has the best evaluation regarding having public policies on the subject, allocation of public resources and training, although it presents some deficiency in prepared personnel in the subject and incidence of internal procedures and regulations, both intimately related aspects. For case 2, the decision-making process is acceptable, but it presents shortcomings in prepared personnel in different areas and thus, their incidence of internal procedures. Finally, case 3 is working its way on the allocation of public resources, although it is evaluated positively on the topics of qualified personnel, training, and incidence on internal procedures.

The third dimension, *governmental and social transcendence*, considers how important and urgent is climate change to both, the local government and the citizens. Cases 1 and 3 present similar positive levels of coordination intra and inter-institutional on climate change; there is evidence of decision making around the issue, and there are people assigned to the coordination of the CC topic. Case 2 has a less focused approach on the issue of CC as a matter of public interest.

*Social interaction* considers relationships that show the importance of society for the success of climate policy, and is related to the acceptance by citizens, entrepreneurs, and non-governmental organizations. The analysis of this dimension shows that case 1 and case 2 have a very similar assessment, with an acceptance of the topic by key actors with important levels of participation. Although overtime Case 3 is showing a higher importance to the subject, its acceptance is not obvious by some actors, particularly companies who might be viewing climate actions as restriction to the production.

The last dimension is *government responsibility*, manifested in the need to have an organization responsible for the CC issue and entrust the institutionalization of CC as a public problem. This dimension is well-valued in all three cases, since it has a

commission —conformed and official— dedicated to the topic, with an important experience (more than 3 years), and integrated by different social actors.

#### 5. Key take-away messages

Formal political support on the part of the City Council and the Municipal Administration is essential for the development of the climate change strategy at the local level. Likewise, strengthening the political capital of community members is important to obtain the endorsement and participation of the formal political structures. Thus, robust municipal internal and external capacities —beyond good administrative management— are required to allow collaborative interactions and a systemic commitment for collective climate action. An official climate change commission is a fertile ground to generate within a formal structure the much-needed legitimacy, involvement, and commitment across actors. Unfortunately, both streams are often weak in local governing settings, limiting the potential and desirable success.

A local climate strategy requires highly motivated, trained and committed actors in order to provide a room for analysis, reflection, creativity and innovation in order to develop climate smart actions. Local socio-environmental problems are often threated in the same usual ways, disconnected from development opportunities and lacking a long-term vision. As discussed by Molina-Murillo (2016), the changing climate provides opportunities beyond just mitigation or adaptation, but most importantly, it provides an opportunity for sustainable development by changing many of the long-time problems that developing countries confront rooted on poor governance. Addressing climate change locally requires a clear planning strategy (designing, planning, execution, and evaluation) that provides concrete, evident and relevant results for a wide spectrum of actors, especially those more vulnerable.

Climate change education has served as a dynamic driver for strengthening the local environmental system and local development initiatives. This component must be conceived from the beginning as a continuous process, sometimes as an end, or sometimes as a means, to achieve greater governance and community wellbeing. Members of the CC committees later on became facilitators of processes of formal and non-formal environmental education, which promoted their empowerment. This type of initiative linking research, extension and teaching, contributes with a more comprehensive training, where we all learn from each other becoming more climate-smart agents.

Working with multiple actors in groups such as the CC commissions entails on itself a structure with roles, positions, and norms. Regardless of the good intentions we all might have; the participation and commitment depends on the legitimacy, leadership, and capacity of actors to solve internal problems. After all, the group is itself a psychosocial phenomenon that evolves, and needs to be flexible and open. Working cooperatively and empowering members through training, decision making, overseeing initiatives, public speaking, and others, happen to be fundamental. An alternative governance style with al systemic participation and commitment from multiple actors will result in more and better cooperative climate actions.

#### 6. Conclusions

We found that in spite of the existing concern about the climate issue, appropriate mechanisms and information are lacking to enable its more efficient adoption in local governance. Therefore, we conclude that in order to adequately address the issue of climate change in an inclusive and sustainable manner, local governments are required to develop both internal and external capacities —beyond good administrative management— to allow a collaborative interaction with the actors involved, in order to generate and maintain their recognition, involvement, and commitment. Is evident that this project supports an alternative collaborative governance model, through the enhancement of individual and social local capacities leading to a more systemic commitment for collective climate action. This action requires transcending voluntary and isolated initiatives, leading the way to planned, and politically supported mitigation and adaptation strategies for inclusive development. According to the subsidiarity principle, government functions are assigned to the lowest level capable of efficiently undertaking the task; thus,

local governments should be supported to fully and efficiently address the climate change challenges in order to properly deliver in a sustainable manner the expected array of public goods and services on their territories.

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