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Degree of Master of Science

Debunking of a super wicked problem: could it be that climate justice rooted community-based adaptation and mitigation strategies are a possible solution?

Case studies: Community Forest Management in Costa Rica

Simona GETOVA

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MESPOM

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Author's declaration

No portion of the work referred to in this thesis has been submitted in support of an application for another degree or qualification of this or any other university or other institute of learning.

Simona GETOVA

CENTRAL EUROPEAN UNIVERSITY

ABSTRACT OF THESIS submitted by:
Simona GETOVA
for the degree of Master of Science and entitled: Debunking of a super wicked problem: could it be that climate justice rooted community-based adaptation and mitigation strategies are a possible solution? Case studies: Community Forest Management in Costa Rica.

June, 2016.

The main purpose of this study is threefold: to deconstruct the super wicked problem of a lack of climate justice policy approach for community-based adaptation and mitigation strategies, create conceptual and analytical climate justice frameworks on the decomposed bases of the problem, and analyse community-based synergized adaptation and mitigation strategies against it. Designed as an exploratory, qualitative study, the research overall takes an applied forward reasoning approach; uses a deductive approach and method triangulation to respond to the first two sub-research questions in order to develop conceptual and analytical climate justice frameworks, and an inductive approach of both method and data source triangulation to provide analysis of on-the-ground community forest management (CFM) strategies considered a synergy of both adaptation and mitigation efforts, as a response to the third sub-research question. The completion of the latter uses a snowball sampling to reach out to CFM implementing communities, as well as to various relevant local, national and international actors. To draw empirical conclusions, the study uses fieldwork with ethnographic and phenomenological elements, conducts scoping, conversational and in-depth interviews, participant observation, and participatory action research (PAR). The analysis of the findings for the research takes advantage of the narrative inquiry approach, to conclude that the seemingly small scale instances of community forest management with some aspects pertaining to climate justice are the ones that need to be nourished and catered to by local, national and international actors, as they are the ones on the frontlines of the changing climate.

Keywords: Climate Justice, Super Wicked Problem, Community-based Solutions, Adaptation and Mitigation, Conceptual Climate Justice Framework, Applicable Climate Justice Framework, Local Actors, National Actors, International Actors, Community Forest Management, Costa Rica, Method Triangulation, Data Source Triangulation, Ethnography, PAR, Narrative Inquiry.

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List of Acronyms

ACJF	Applicable climate justice framework
ADI	Asociacion de Desarrollo Indigena
BID	Banco Interamericano de Desarrollo
BMUM	Environment Ministry of Germany
CELAC	Comunidad de Estados Latinoamericanos y Caribeños [Community of Latin American and Caribbean States]
CFG	community forest governance (used interchangeably with CFM)
CFM	community forest management (used interchangeably with CFG)
CJ	climate justice
CR	Costa Rica
CRC	Costa Rican Colon
DCC	Dirección de Cambio Climático [Directorate of Climate Change] (Costa Rica)
ENCC	Estrategia Nacional de Cambio Climático [National Strategy on Climate Change] (Costa Rica)
FAO	Food and Agriculture Organization
FID	Fincas Integrales Didacticas [Integral farms]
FOEE	Friends of the Earth Europe
FOEI	Friends of the Earth International
FOMIN	Fondo Multilateral de Inversiones
FONAFIFO	Fondo Nacional de Financiamiento Forestal [National Forestry Financing Fund]
GCF	Green Climate Fund
GEF	Global Environment Facility
GJEP -	Global Justice Ecology Project
GMO	genetically modified organism
IAFN/RIFA	International Analog Forestry Network/ Red Internacional de Forestería Análoga
ICIJ	International Consortium of Investigative Journalists
ICJ	International Court of Justice
IFRC	International Federation of Red Cross and Red Crescent
IMF	International Monetary Fund
INDC	intended nationally determined contributions
IPCC	Intergovernmental Panel on Climate Change
MAG	Ministerio de Agricultura y Ganadería de Costa Rica [Ministry of Agriculture and Livestock of Costa Rica]
MCF	Monteverde Community fund
MDVCC	Mercado Doméstico Voluntario de Carbono de Costa Rica [Voluntary Domestic Carbon Market of Costa Rica]
	MINAE – Ministerio de Ambiente y Energia [Ministry for Environment and Energy] (Costa Rica)
NAMAs	Nationally appropriate mitigation actions
NAPAs	National Adaptation Programmes of Action
NGO	non-governmental organization
NRDC	Natural Resources Defense Council
PAR	Participatory Action Research

PES	Payment for Ecosystem Services
PSA	Pago de Servicios Ambientales (PES in Spanish)
RCP	Representative Concentration Pathways
REDD/REDD+	Reducing Emissions from Deforestation and Forest Degradation
SGP	Small Grants Program
SINAC	Sistemas Nacional de Areas de Conservación [National System of Conservation Areas]
UN	United Nations
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
UNHCR	United Nations High Commissioner for Refugees
UNOPS	United Nations Office for Project Services
YFoEE	Young Friends of the Earth Europe
WEDO	Women's Environment & Development Organization

"There is a systems problem. These are not one-off issues. They are interconnected and we have to look at the system as a whole. […] It's time to talk about alternatives. It's time to talk about what's next. (Gal Alperovitz, The Democracy Collaborative) [...] Nothing is more important right now than to discuss how can we bring about this change." (Daniel Elsberg, whistleblower)

The Next System Project (2015)

1. INTRODUCTION

Background

The construct *climate justice* has been coined and initially used by individuals and groups advocating for and acting towards environmentally and socially just responses to climate change (Widick 2015). Putting *justice for the systemically disadvantaged* at the heart of any solution, climate justice is a cross-cutting issue the narrative of which has been instrumental in highlighting the systemic inequities and the struggles of the most affected over their lands, forests, water, culture, livelihoods, food sovereignty, social and collective rights (Rising Tide North America & Carbon Trade Watch 2010), all of which are highly interconnected. The notion of *climate justice* entered the discourse on global environmental governance more heavily at the beginning of the new millennium, when the Bali Principles of Climate Justice were adopted by an international alliance of environmental and social justice groups at the Earth Summit in Johannesburg in 2002 (CorpWatch 2002). Ever since, a number of activists, grassroots groups, NGOs, political philosophers, scholars and decision makers have been making use of the term to express not only their demands, struggles, their questions and/or guiding values, but also the linkages between the current social, political and economic reality with the problem of climate change, as well as potential theories and pathways to a more just and environmentally sound world.

Problem definition

Research perspective

The world of academia and climate justice scholarship though, seems to be coming late to the party. Much of the existing literature around *climate justice* predominantly elaborates, although not exclusively, on: the 'justices' in climate justice (Ikeme 2003; Paavola & Adger 2006; Schlosberg 2007; Walker 2012:10); the social and climate justice groups' response to climate injustices (Stephenson 2015; Jamieson 2015); the constitutionalizing of climate change and developing policy responses accordingly (Brand & Abramsky 2009; Thorpe 2014); the (diluted) global environmental governance responses

(Posner & Weisbach 2010; Thorpe 2014); and the ways of sharing the responsibility to act on climate change (Duus-Otterström & Jagers 2012; Caney 2014). Notwithstanding, a structured academic discussion on how a theory of climate justice should be developed and how the principles of climate justice should be safeguarded, is missing (Bell 2013). And while scholars agree on the point that best solutions can only come about after having understood the individual concepts and the opportunities for their consolidation (Ikeme 2003; Schlosberg 2007), the climate justice scholarship so far has not focused on developing the relationship between the theory of justice and an implementable climate justice model for addressing climate change issues on the ground, where actual embodiment of the climate justice principles is crucial (Schlosberg 2013; Popke *et al.* 2014).

Practical perspective

The lack of literature on the issue of what I am going to term for the purposes of this study an *applicable climate justice framework* reflects the lack of focus being put on it by global decision and policy makers. Within the international climate governance arena, issues pertaining to justice are mainly centered around state actors, ignoring the climate injustices that local communities - the ones most adversely impacted by climate change - are facing daily (Burnham *et al.* 2013:228-229). These climate injustices toward which the international climate governance community is turning a blind eye refer to the inequalities that disproportionately subject individuals and communities to higher vulnerability in light of the fast changing climate. The inequalities gap is further widened by the current system setup that works in favor of big businesses and the fossil fuel industry, failing its people and accelerating the changing climate, and with that, further exacerbating the created and maintained inequities (Dossa *et al.* 2016; Klein 2014; Marino & Ribot 2012). Climate justice associated issues pertaining to the societal response to climate change - via adaptation and mitigation actions - are likewise ignored by the international climate governance community (Marino & Ribot 2012; Burnham *et al.* 2013:228-229).

While criticizing the lack of consideration of climate justice related issues of local communities in their adaptation and mitigation responses to climate change by global decision makers, Burnham *et al.* emphasize the importance of distributive and procedural justice being delivered and retained for the communities as a response to the problem (2013). They equally stress how crucial the "scale interactions" among international, national, local and individual actors in the process are (2013:234). The significance of their active involvement and commitment to tackling the issue is also pointed out by Dossa *et al.* (2016).

Defining the problem addressed in this thesis

With a fast changing climate in a world of increasing inequalities, it is essential that an applicable climate justice framework exists, one that clearly portrays the concepts necessary to be taken into consideration so that a climate justice based policy approach for community-based adaptation (addressing the short-term community benefits) and mitigation (addressing the long-term community benefits) strategies is provided. The framework should portray the climate justice principles and the interactions between them, through the cooperation between the actors from the local, national and international community (Figure 2, under conceptual framework, Chapter 3: Literature Analysis). The goal for the newly created framework is to provide recommendations as to what should be ensured by each actor from each level of the tier so that community-based adaptation and mitigation response enables delivery of the distributive and procedural justices needed for it to be rooted in climate justice.

The problem of a desperately needed yet successfully ignored by global decision makers, climate justice based policy approach to community-based responses to climate change, is inarguably very complex. It 'fulfills' the four key features to be characterized as a 'super wicked' problem[1]: time is running out; those that caused the problem are the ones mandated to provide a solution; the central authority

[1] Originally used to frame the complexity of climate change policy and climate change legislation creation by Levin *et al.* (2012) and Lazarus (2009) respectively. I am appropriating the *super wickedness* framing to the problem at hand: lack of an applicable climate justice based framework (Chapter 3: Literature Analysis).

needed to address it is fairly ineffective; and, partly as a result of that, global responses discount the future irrationally. I go on to frame it as such so as to deconstruct the different aspects to it and ease the identification of interactions between these aspects that are relevant to coming closer to providing an applicable climate justice framework.

Research Design

Table 1: Research Design

RESEARCH DESIGN				
Research Question	**Research Objective**	**Individual Task**	**Research Method**	
Main RQ: How can a climate justice based policy approach be ensured in community-based responses to climate change (adaptation and mitigation)?	**Research perspective**: Identify the relationships between climate justice related theories and concepts and weave them in a conceptual climate justice framework.	*Conceptual question* - **sub-RQ1**	Deductive approach to desk research	
	Practical perspective: Develop an applicable, on the ground tested climate justice framework addressing the considerations required by local, national and international actors.	*Practical question* - **sub-RQ2**		
		Applied question - **sub-RQ3**		
Sub-RQ1: How should the problem of lack of an applicable climate justice based policy approach in addressing climate change issues be conceptualized?	**OB 1.1.**: Understand the complexity of the problem better.	**Task 1.1.1.**: Examine the four super wicked features of the problem - frame it as such and unpack it accordingly.	METHOD TRIANGULATION Phase 1	DEDUCTIVE RESEARCH Phase 1
	OB 1.2.: Investigate the relevant theories and concepts.	**Task 1.2.1.**: Analyse climate justice definitions and concepts associated with it from climate and social justice groups and movements' perspective.		
		Task 1.2.2.: Analyse climate justice definitions and concepts associated with it from climate justice related scholarship perspective.		
	OB 1.3.: Provide the background information on the interactions among the concepts.	**Task 1.3.1.**: Merge Task 1 & 2 => Analyse the relationships between the defined concepts from CJ groups' defiitions under the umbrella of available CJ scholarship.		
Sub-RQ2: What should a climate justice based policy approach address so as to tackle climate change issues and be consitent with both short-term and long-term community benefits?	**OB 2.1**.: Develop a **conceptual climate justice framework** for community-based adaptation and mitigation solutions by idenfitying the required actions to be taken by local, national and intenational actors.	**Task 2.1.1.**: Determine & visualize the local, national and international actors whose mutual collaboration is important for delivering a climate justice based policy approach for community-based adaptation and mitigation strategies.	METHOD TRIANGULATION Phase 2	DEDUCTIVE RESEARCH Phase 2
		Task 2.1.2.: Examine the responses to climate change - adaptation and mitigation strategies - and the synergies between the two. Justify the use of community forest management strategy as a case study.		
		Task 2.1.3.: Merge Task 1 & 2 => Place the outcomes of the identified interactions between relevant concepts (from the answer to sub-RQ1) under an 'already existing alternatives for a better world' theme addressing the necessary actions by local, national and international actors as a response to the four super wicked characteristics of the problem.		
	OB 2.2.: Create an **applicable climate justice framework** (ACJF) to be an analytical tool for community-based adaptation and mitigation strategies.	**Task 2.2.1.**: Introduce and visualize the ACJF portraying the findings from Sub-RQ1 as indicators for analysis of climate justice based policy approach by the different local, national and international actors.		
Sub-RQ3: How do the concepts of the ACJF interact in different CFM (synergized community-based adaptation and mitigation strategy) case studies in Costa Rica? What are the lessons learnt?	**OB 3.1.**: Identify the lessons that can be learnt from the real life interactions between the climate justice concepts according to ACJF and the relevant actors in CFM case studies in Costa Rica.	**Task 3.1.1.**: Understand the country context.	METHOD & DATA SOURCE TRIANGULATION	INDUCTIVE RESEARCH
		Task 3.1.2.: Fieldwork observation of different CFM case studies in Costa Rica.		
		Task 3.1.3.: Operatinoalize the ACJF to analyse the interactions between the concepts and the actors from various levels on the observed CFM case studies.		
		Task 3.1.4.: Determine the lessons learnt (that can contribute to refining the ACJF and/or the conceptual CJ framework).		

Research Aim and Research Questions

As it can be established based on the Table 1 above, the objective of this thesis is to address the aforementioned lack of a systematic, yet applicable climate justice based policy approach to climate change responses - adaptation and mitigation strategies - that is tailored to deliver climate justice to local communities and plant the seeds for it to be maintained. For that reason, an *applied climate justice framework* (hereinafter: ACJF) is being developed. Instead of it being based solely on theory, real life examples of community-based adaptation and mitigation strategies are being analyzed against the developed ACJF, to point out the interactions of the actors from each of the three levels and to improve its implementability.

Related to this endeavor, the following questions are being examined throughout the study and provide guidance for its completion:

> Main RQ: How can a climate justice based policy approach be ensured in community-based responses to climate change (adaptation & mitigation)?
>
> > Sub-RQ1: How should the problem of lack of an applicable climate justice policy approach in addressing climate change issues be conceptualized?
> >
> > Sub-RQ2: What should an climate justice based policy approach address so as to tackle climate change issues and be consistent with both short-term (from adaptation) and long-term (from mitigation) community benefits?
> >
> > Sub-RQ3: How do the concepts of the *applicable climate justice framework* interact in different community-based forest management (synergized community-based adaptation and mitigation strategy) case studies in Costa Rica and what are the lessons learnt?

The main research question is tailored to the research aim in way that it is by intention phrased broadly enough so that the answer to it seeks to address the considerations required by the actors from each of the three levels, local, national, and international, yet specific enough to provide the necessary response to fulfill the research objective. In order to gain a more in-depth analysis to respond to the

main research question, three sub-questions were developed. The response to sub-Q1 aims to identify the relevant concepts of the problem; inspect its super wickedness; and, with that, provide the necessary background of the interactions among these concepts. The response to sub-RQ2 seeks to take the relevant concepts identified by answering sub-RQ1 to the next level and portray the interactions between them systematically and alongside one another through an *applicable climate justice framework* - potentially an appropriate analytical tool to address the super wicked problem at hand. Finally, sub-RQ3 aims to study the previously identified interactions among actors of the three levels in community forest management strategies (as a synergy between adaptation and mitigation practices[2]) in Costa Rica and put the *applicable climate justice framework* to practice by analyzing these community responses against it. The analysis from the field inquires potential interactions between various actors on the ground that may be strengthened over time and can provide meaningful insights as to which interactions between actors from the three levels are crucial for a climate justice based approach to a community-based adaptation and mitigation strategy. The analysis of the findings from the fieldwork as a response to sub-RQ3 provides for suggestions for refinement of the ACJF.

Limitations and scope

Choice and circumstance limitations

One of the major limitations by deliberate choice is the inclusion of analysis of the definition of *climate justice* by grassroots groups and movements (the ones most affected); i.e. the ones that in their definition of climate justice imply the importance of both distributive and procedural justice being delivered for an approach to be fully rooted in climate justice. There is no exhaustive literature analysis on *all* the existent definitions around climate justice as the ones used for the purposes of this thesis and the creation of the ACJF are the ones pertaining to a definition of climate justice guided by social and environmental justice groups. Although literature analysis as a subgenre of academic writing is

[2] See justification under conceptual climate justice framework, Chapter 3: Literature Analysis.

expected to be a comprehensive synthesis of an extensive research about the specific topic that includes both agreements and disagreement around it (Ravitch & Riggan 2012:13), because of the complex nature of the topic and page limitation, most of the analyzed literature is directed towards taking the definition of climate justice by movements and struggles as a base and not presenting an extensive review of other discursive and disagreeable definitions.

I also chose not to provide an extensive theoretical discussion around all the justices considered in, mostly 'environmental justice' ss most literature dealing with the justice issues associated with climate change uses the constructs of climate justice and environmental justice interchangeably, which can distort the meaning of either one of them.

This literature analysis, therefore, does not include adaptation and mitigation strategies that are regarded as false solutions by the climate justice consideration, though it does elaborate on which ones are *not* taken in consideration. Briefly, strategies that are not community-based though still represent adaptation and mitigation synergies, but do not fall under 'real solutions' according to a climate justice understanding are also not included in the analysis.

This thesis is also neither about historically tracking how certain discourses around climate justice evolved and have found their way in the international environmental governance spaces or as community-based solutions to climate change, nor is it about tracking or evaluating the developments of the international community around the issue of climate change.

Circumstantial limitation is acknowledged in conducting some of the data collection and interviews in Spanish, where slight 'loss in translation' would not be a surprising factor.

Scope

While this thesis relies on very instrumental concepts for making the world a better place, it might seem to be a bit idealistic to some readers. A disclaimer here is that the thesis presents actual solutions that are not 'politically/economically impossible': it is just that we do not live in a system that enables

their proliferation and this thesis tries to highlight the kernels of the applied justices that are not only possible, but are done and implemented on the ground.

Ethical considerations

> *"Our research affects both our environment and ourselves. We are neither detached from the world around us nor from our research environment. The best we can do is to acknowledge the mutual influence and act ethically, towards ourselves – in defining our ethical boundaries – and towards our research surroundings. Define our own ethical considerations depending on the context we work at and consistently (or constantly) keep on defining the dynamic 'do no harm'. Acknowledge that participants in our study enter our work with certain choices and prejudices, whether or not limited by power relations and societal boundaries."*
>
> Kristin Crowder Tisdale on *Ethics in Research* (in DeMarrais & Lapan 2004:30)

Topic of choice, Influence of decision

Ravitch and Riggan explain very well the inevitable personal bias and considerations that every researcher encounters upon the beginning of their work: "*[...] own curiosities, biases, and ideological commitments (what [one thinks] is interesting or important), theories of action (why [one thinks] things happen), and epistemological assumptions (what constitutes useful or valuable knowledge), all of which are profoundly influenced by [one's own] social location (race, ethnicity, social class, gender, sexual identification, nationality and other social identities), institutional position, and life experience[s] […] personal background, professional role, and social location need to be viewed as methodological considerations worthy of critical attention"* (Ravitch & Riggan 2012:10-11). Thus, it comes as no surprise that I have chosen to explore this exact topic for my thesis. The decision for creating an ACJF for community-based adaptation and mitigation strategies was indirectly influenced by my involvement in the international youth climate justice movement, and directly by the witnessed inequalities in global environmental decision making processes (in representation and participation); the observed inefficiencies of the adaptation and mitigation projects funding allocations; the identified commercialization of community-based responses to climate change; the inherent urge for a just distribution of natural and social resources; and in general, the firm convictions about what is wrong

about the world nowadays and how we can (for the purpose of this thesis, I, as a researcher, but also as a citizen of the world), improve it.

Collaborating organization

The case study-based research was supported by La Asociación Comunidades Ecologistas la Ceiba – Amigos de la Tierra Costa Rica (COECOCEIBA-AT). The support by the collaborating organization entailed provision of office/working space, access to relevant information and publications for better understanding of the country context, assistance in reaching out to a couple interviewees, and some logistical support. While the logistical support by COECOCEIBA-AT enabled me to conduct research in the indigenous Bribri community in Talamanca, it did not include any sort of financial transactions.

Fieldwork conducted

When not in the field, interviews were conducted in an environment and location of interviewee's choosing: an office, a cafe, etc. All the interviews began after I introduced the collaborating institutions, my research topic and myself. Interviews were recorded using my phone after having asked for the interviewee's approval. My main contact information was made available to the ones I interacted with. Statements by interviewees are checked with them before a final version of this thesis is made public. The outcome of the research is to be shared with interviewees who expressed interest in viewing it.

Audience

The outcomes and recommendations of this thesis are beneficial to multiple audiences: from local, to national, to international bodies dealing with climate change related issues for the super wickedness of the problem requires a global application of solutions based in climate justice. The wide variety of actors from the three scales involved in this study expressed an interest in viewing the outcomes and recommendations of the thesis. This points to the need for a literary work which addresses the problem at hand.

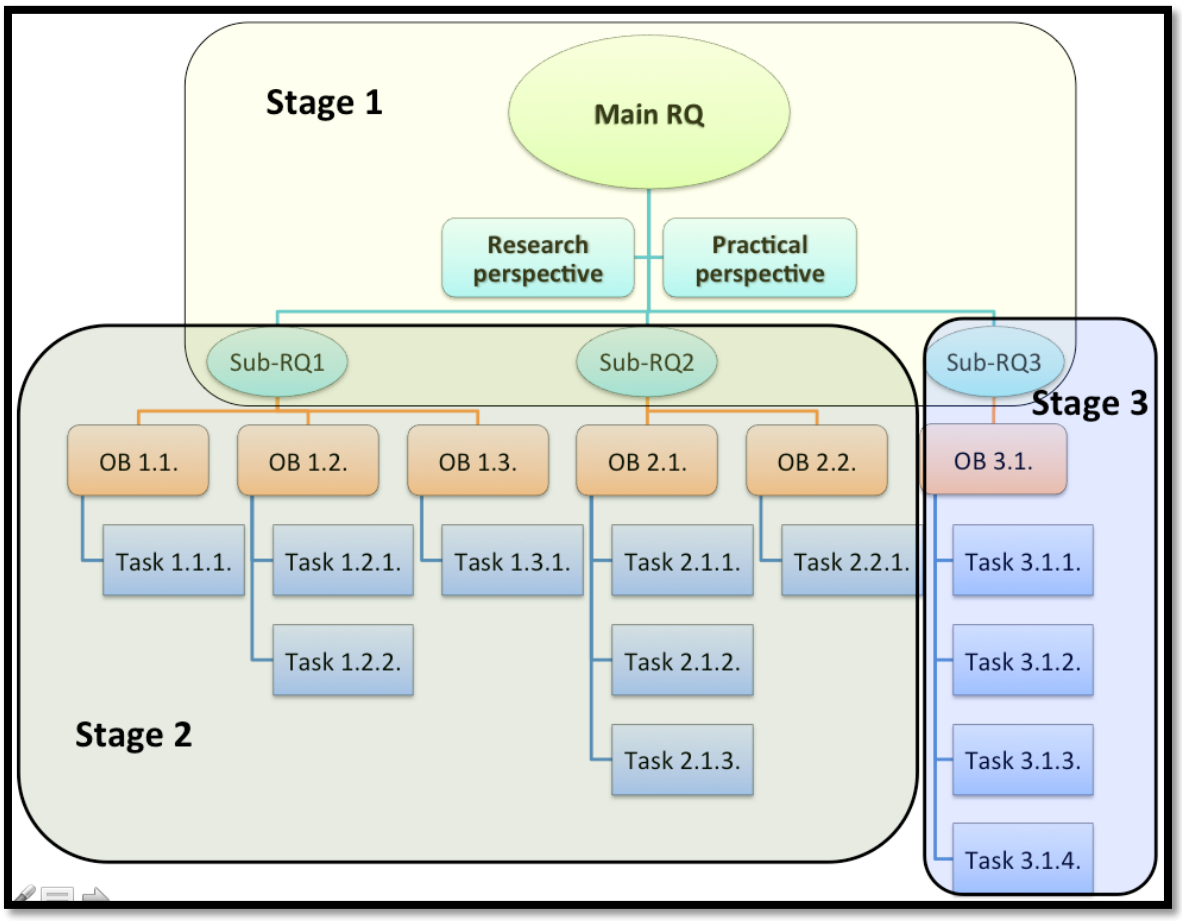
Large part of what countries' I/NDCs submissions include forest management as a strategy for adaptation and mitigation; thus, this thesis exploring that can add to the discussion within and among nations by bringing community-based practices rooted in climate justice.

2. METHODOLOGY

> *'I need to begin by insisting that I cannot write a chapter about methods as though methods were technical skills. I see them as practices of enquiry, shaped by the questions we ask, and by what we experience. This is, then, more in the way of an account of why I have been doing what I have been doing lately, my methods evolving as my questions emerge, and as I find myself wanting to account for things I may not have noticed before, or which may not have been around earlier.'*
>
> Monica Heller (cited in Gardner & Martin-Jones 2012:24)

As Heller puts it, much of why something throughout this research was done the way it was done influenced the question(s) asked and vice versa. This chapter elaborates on the methodology applied to formulate the research questions for this study, and the methods, tools and approaches used to go about responding to them. The research went through three major methodological stages: *Stage 1* addressing the identification of the problem and questions to be tackled with this research; *Stage 2* addressing the response to sub-RQ1 and sub-RQ2, being a two phased stage as a result and *Stage 3* addressing the answer to sub-RQ3 (see Figure 1: Methodological Stages in below and Research Method column in Table 1: Research Design above). Overall, this thesis was approached as an exploratory, qualitative study, seeking to increase the understanding of the problem of lack of climate justice based policy approach in community-based responses to climate change; provide an alternative analytical tool for further use; and inspect the real life interactions between the concepts associated with climate justice and various actors from the local, national and international level.

Figure 1: Methodological Stages



Stage 1

In order to identify a problem to be addressed in this research, a deductive approach was taken in conducting desk research and analyzing literature around *existing applicable climate justice frameworks*. The main research question was formulated after a gap in the literature was identified from a research perspective and from a practical perspective (see Problem Definition section). Three categories of sub-RQs to support the studying of the main research question were then constructed, an approach suggested by Turabian (2013:6-8) (see Table 1: Research Design): 1) a conceptual question the response to which would provide the reader with a better understanding of the problem, thus sub-RQ1; 2) a practical question the answer of which would provide a lead for improvement of a problem, therefore sub-RQ2; and finally, 3) an applied question the solution to which provides suggestions around what must be found out before a solution to a problem is provided, thus the sub-RQ3 - the response to which is the findings from the fieldwork in Costa Rica. It was at this stage that the research

objectives of each sub-RQ were determined together with the appropriate individual tasks required to be fulfilled so as to address the particular objective and with that contribute to the answer of the sub-RQs (see Table 1: Research Design), but it was not until the later stages of the research that the specific tasks were tackled (see Figure 1: Methodological Stages). The labeling of the *objectives* and *tasks* was done so as to provide a clarified and eased navigation throughout this study, and it was completed in the following manner: the first number after the objective (OB #._.) refers to the number of the research question. The second number refers to the number of the objective (OB _.#.), and the third number after the specific tasks refers to the number of the task (Task _._.#.). Therefore, the first task identified to fulfill the second objective of sub-RQ2 is labeled as *Task 2.2.1.*

Stage 2

The methodology in Stage 2 is two-phased, although both phases took deductive approach to method triangulation for the literature analysis for each, and an *applied forward reasoning approach* for addressing what I characterized to be a *super wicked problem* as a main research question. While method triangulation refers to the uses of various methods to collect data related to a single phenomenon (Polit & Beck 2012), the applied forward reasoning approach is utilized to firstly better understand the constraints of a problem, and secondly, to lay out the basis for an alternative analytical tool as a solution. The use of variety of methods also provides for a greater insight into the topic of research.

Phase 1

In *Phase 1*, in order to tackle sub-RQ1 *(How should the problem of lack of an applicable climate justice based policy approach in addressing climate change issues be conceptualized?)*, I used the applied forward reasoning approach to explore the super wickedness of the problem and attempt to understand it better (Task 1.1.1 in Table 1.). This complex, cross-cutting issue demanded defining all of the relevant concepts and theories around it (Task 1.2.1. & Task 1.2.2.). To analyze relevant literature, I conducted open coding of definitions and concepts of climate justice by climate and social justice groups (see Table 3 of CJ definitions in Appendices) and of existent climate justice related scholarship, both manually.

Corbin and Strauss define open coding as the analysis through "identification, naming, categorizing and describing phenomena found in the text" (2008) and it is an approach that helped me then fulfill OB 1.3. by describing the analyzed relationships between the climate justice related constructs from CJ movements under the CJ scholarship umbrella (Task 1.3.1.).

Phase 2

In the second, *Phase 2* of the second major methodological stage, in answering sub-RQ2 *(What should a climate justice based policy approach address so as to tackle climate change issues and be consistent with both short-term and long-term community benefits?)* I continued making use of the applicable forward reasoning approach, this time to set the foundations of a new analytical tool. Highlighting potential climate justice solutions from the analysis in *Phase 1*, I developed a conceptual climate justice framework (OB 2.1.) taking into consideration likely actions by actors from local, national and international level and constructed the applicable climate justice framework (ACJF) (OB 2.2.) as an alternative analytical tool for community-based adaptation and mitigation strategies. To accomplish the former (OB 2.1.), I identified three individual tasks (see Research Design Task 2.1.1, Task 2.1.2. and Task 2.1.3.) that I fulfilled through a *topical research approach.* According to Ravitch and Riggan, by describing the "what" of the study, a topical research approach clarifies the relationships between the theories and concepts - the "why and how" of the study (2012:10). With regards to this research, this approach was especially useful in guiding the fulfillment of Task 2.1.3. The result was framing the potential climate justice based solutions by the various actors under a common theme of "already existing alternatives for a better world" and as a response to the super wickedness of the problem. This was done by merging Task 2.1.1. - determining and visualizing the important local, national and international actors in the climate justice relevant arena, and Task 2.1.2. - the exploration of adaptation and mitigation responses to climate change and the introduction of the *community forest management* as a strategy representing a community-based synergy between the two. The conceptual framework developed here guided me

throughout the rest of the study and influenced the framing of the conclusions and recommendations resulting from this research.

The second research objective for answering sub-RQ2 (OB 2.2.) was obtained by the individual Task 2.2.1. To introduce and visualize the ACJF, I identified proxy indicators that mostly came out of *Phase 1* of this stage, but were indirectly reinforced in the conceptual climate justice framework from *Phase 2*. It was in the next stage that the ACJF was operationalized in community forest management case studies from around Costa Rica.

Stage 3

This methodological stage was characterized with an inductive research through method and data source triangulation for the fieldwork conducted in Costa Rica, in response to sub-RQ3 *(How do the concepts of the ACJF interact in different CFM (synergized community-based adaptation and mitigation strategy) case studies in Costa Rica? What are the lessons learnt?).* In line with the inductive approach seeking specific and more insightful observations, various methods of data collection elaborated on below were applied. Also, various actors from different levels were approached so as to provide for multiple perspectives on the country context and the case studies, and with that, ensure understanding of why certain lessons learnt from the case studies researched are 'circumstantial' - the way they are – and bear in mind this contextual background when concluding and generalizing findings from the study. Data source triangulation refers to the data collection from various types of individuals, groups, organizations, communities (Carter *et al.* 2014) that was appropriate for each of the particular tasks (Task 3.1.1. and Task 3.1.2.) for having the foundation for completing Task 3.1.3. and Task 3.1.4 in order to reach OB 3.1.

To gain an insightful yet holistic picture of the Costa Rican context for Task 3.1.1., I used snowball sampling as a data collection method. The color-coded Data Collection Appendix 1 summarizes whom I approached for an interview and how/by whom I was directed to them. The bubbles include the respondent's surname and the first initial of their name (exceptions made in the case of Los Cipreses

and Bribri case studies where the respondents were assigned pseudonyms to protect their privacy), their position/line of work, their organization (if applicable), and the date of the interviews. This approach allowed me to interact with and be further referred to relevant actors in the area of climate change governance and adaptation and mitigation projects funding and management. By attending lectures, seminars and conferences (dark blue bubbles), I was able to identify and/or connect with individuals whose work is key in national (purple bubbles) and municipality (yellow) level climate governance, environmental law (dark red), adaptation and mitigation project funding (light red), community engagement and capacity building (some of the light blue ones), climate justice activism and justice scholarship (orange bubbles). An indicator that the snowballing approach was effective was the fact that towards the end of my stay in Costa Rica and during the last interviews I was conducting, my interviewees would suggest that I meet with someone whom I had already met and spoken with. The data collection for completing Task 3.1.1. involved conducting a number of scoping, informal, conversational, semi-structured and in-depth interviews, visiting organizations that have facilitated my research (light blue), reviewing relevant documents[3] I was directed to by my interviewees, and finally, going into the field for ethnographic, phenomenological work for the chosen case studies. The snowball sampling strategy resulted in a convenience selection of case studies, an expected outcome of such sampling (Shakir 2002). In hope to take a closer look into the on-the-ground connections of climate justice concepts and actions by various relevant actors, I chose case studies that allowed me to reveal practices, interactions, and rationalizations (Hays in DeMarrais & Lapan 2004:217-219) about real life community-based responses to a complex issue such as the lack of climate justice based policy approach.

Case studies

The case studies based research occurred as a response to Task 3.1.2. My case study based fieldwork involved phenomenological and ethnographic elements such as participant observation, Participatory

[3] See "Document Review" in Glossary

Action Research (PAR), and mostly conversational interviews, as those approaches seemed appropriate after a lengthy review of literature around fieldwork research methods (Greenwood & Levin 1998; DeMarrais & Lapan 2004:53, 61, 162-164; Blommaert & Jie 2010:5, 12-13, 24-27). See Table 2 below for a specific methodological approach according to a case study:

Table 2: Methodological approaches in case studies

CASE STUDY	METHODOLOGY
Los Cipreses	• 2 site visits • 6 conversational interviews • PAR and participant observation • Visual documentation
Bribri community	• Several site visits – spent 3 days in the community, hosted by locals • 11 conversational interviews • PAR and participant observation • Visual documentation
Finca Fila Marucha	• 1 site visit – spent a day at the farm • 3 conversational interviews regarding this farm • 1 in-depth interview with owner • Participant observation • Visual documentation
Finca Armonia	• 1 site visit – spent an afternoon at the farm • 2 conversational interviews regarding this farm • 1 in-depth interview with owner • Participant observation • Visual documentation

Interview process

After introducing myself and asking for a permission from the interviewee, I recorded the interviews and transcribed them later on. Notes were taken throughout the interactions and so was visual documentation (pictures and videos) whenever appropriate, in order to capture the situational circumstances.

It was in a response to Task 3.1.3. that the analysis of all the data collected occurred. This is when the ACJF was empirically tested: field notes and interview transcriptions were open coded; pictures, videos, and collected leaflets, or else, were all organized in files either under each case study or under 'general country context', all clustered accordingly. While in the field, but also throughout this step, I kept in mind the inevitable *observer's effect* I had on my respondents (Blommaert & Jie 2010), and considered how this influenced my findings. In order to capture not only what was answered by my interviewees, but also the witnessed and documented ways of how they go about their day, what their mentality was like, how their interaction with other individuals from their immediate surroundings was or with a representative actor from a different level, etc., I applied *narrative inquiry* to put everything together in writing. As this approach assumes "personal involvement" by the researcher and is used in the literature to give voice to deliberately silenced groups (Kramp in DeMarrais & Lapan 2004:121), it seemed like an appropriate tool for conveying my analysis and with that addressing Task 3.1.4.

3. LITERATURE ANALYSIS

This chapter is a product of a literature analysis of the climate justice concepts and interactions between them relevant for formulating the answer to the main research question by formulating the responses to sub-RQ1 and sub-RQ2. Firstly, the analyzed literature provides justification of the need for development of a conceptual framework, followed by a deconstruction of the super wickedness of the problem addressed with this study and with that partially answers sub-RQ1 while also bringing the research a bit closer to answering the main research question. The latter is topped up with an analysis of the literature around the constructs important for an applicable climate justice framework for addressing community-based adaptation and mitigation responses to climate change; by climate and social justice groups and movements and by scholars. This analysis continues responding to sub-RQ1 and is followed by a literature analysis of the interaction between the identified concepts and relevant existing theories (theoretical frameworks), important for tackling sub-RQ2. These are then weaved in together to provide the basis for the development of ACJF and with that, the basis for responding to sub-RQ2. The outcome of this chapter is the conceptual framework that informs and guides the consecutive research; it is a framework according to which the main problem is studied and which assists the structure of the data source triangulation for answering sub-RQ3. The conceptual framework results with ACJF - an analytical tool for evaluating the findings of the ethnographic study and providing enriching insights for answering the main research question.

Justification for building own conceptual framework

Conceptual framework in the literature is known for providing the overall idea on how a research is designed and conducted. Essentially, conceptual framework provides the mortar or the connection between the fundamental concepts (the basis of the house) relevant for the study and the various theories (the bricks) they interact with. While the theoretical frameworks portray the relationships between identified concepts, the conceptual framework of a research embodies the complexity of incorporating complementary theories so as to apprehend the various aspects of a studied problem

and justify the appropriateness of their integration into it (Regoniel 2010; Ravitch & Riggan 2012). Engaging various theories/theoretical approaches allows for a deeper understanding of the different aspects of a complex problem and brings the study closer to providing answers to the research questions than any theory or approach alone can do independently (Jennifer Greene in Mixed Methods in Social Inquiry, cited by Maxwell; in Ravitch & Riggan 2012). Since the lack of applicable climate justice approach is a super wicked problem[4], the integration of various concepts and theoretical approaches is crucial in order to articulate the understanding of the studied problem and the rationale behind the approaches to providing solutions. The variety of theories united later on in this chapter when answering sub-RQ2 represents a logically structured assembly of the conceptual pieces and the relations between them which, as suggested by Morse (2004), is instrumental to building the/a conceptual framework, (cited in Ravitch & Riggan 2012:13).

Climate justice approach to community-based responses to climate change: A Super Wicked Problem

To set the scene, I am taking an *applied forward reasoning approach* by unpacking the *super wickedness* of the lack of applicable climate justice approach in addressing responses to climate change issues on the ground. This includes the deciphering of some of the complex environmental, social, political and economic matters associated with climate change, an approach deemed necessary by Levin *et al.* (2012:125) so as to obtain more in-depth understanding of the problem to providing legitimate arguments for generating an applicable approach as an answer to the main research question.

Although originally used to frame the complexity of climate change policy and climate change legislation creation by Levin *et al.* (2012) and Lazarus (2009) respectively, I am appropriating the *super wickedness* framing to the problem at hand: lack of applicability of a climate justice approach to climate change community-based (adaptation and mitigation: CFM) responses. Making use of *applied forward reasoning* here as Levin *et al.* propose its appropriateness for addressing climate change from a social

[4] Further elaborated on in a bit.

scientist viewpoint (2012), I framed the constraints of the studied problem in the four pertinent characteristics of super wickedness: 1) time is running out; 2) those who caused the problem also seek/are mandated to provide a solution; 3) the central authority required to address the problem is weak/ineffective or it does not exist; and 4) policy responses discount the future irrationally.

Time is running out

Scientific evidence around climate change: environmental crisis = humanitarian crisis

The Earth is about 4.54 billion years old and it has experienced various natural changes of its surface throughout its lifetime. About 200.000 years ago, the homo sapiens - a species that the modern humans are scientifically known to have evolved from – started populating the planet and coexisting with other species that have already been here before the homo sapiens came along (Boenigk *et al.* 2015). Over long time periods, the Earth and its climate have endured various natural changes triggered by volcanic activity, changes in solar power, natural alterations in greenhouse gas (GHG) concentrations, etc., as well as changes as a result of the activities of the species that have existed on it (Clark n.d.). However, it was not until after the 1700s and the Industrial Revolution that scientists could not attribute the changes in global warming solely to natural causes (IPCC 2013; UNEP 2012). Scientific evidence has shown the high correlation between human activity and the changing climate, particularly post 1950s (UNEP 2012; IPCC 2013; US EPA n.d.). It is now scientifically proven that the current environmental crisis is mostly anthropogenic and that it is the humankind that has been causing and reinforcing the rise in global temperatures (IPCC 2013; IPCC 2014; Zeebe *et al.* 2016). Global warming is mostly attributed to human activities like the burning of fossil fuels such as oil, natural gas and coal, and emitting unprecedented amounts of carbon dioxide and other GHGs in the atmosphere (US EPA n.d.) to generate power and provide for heat and transportation. With that, we have contributed to and accelerated immensely the melting of ice caps, loss of mountain glaciers, fragmentation of ice sheets, loss of crops, extinction of species, ocean acidification, severe floods and droughts (Magdoff & Bellamy Foster 2010); and undoubtedly crossed four of the nine planetary boundaries (Rockström

et al. 2009; Steffen 2015). Thousands of scientists from across the world involved in the development of the Fifth Assessment Report (AR5) and the preceding reports by the Intergovernmental Panel on Climate Change (IPCC) – the leading international body on research around climate change - attest to the anthropogenic causes of the current climate crisis with over 95% certainty (IPCC 2014).

Social scientists, economists, academics and researchers alike point out that the world today does not face an environmental crisis solely: we are rather in a social, economic, and generally, a humanitarian crisis (UNHCR 2008; Klein 2014; Anderson 2015). A study conducted by the World Economic Forum involving 750 experts has concluded that a climate change related catastrophe is the biggest threat to the global economy in 2016 (Elliott 2016). There are identified, complex linkages between climate change we face nowadays and the social consequences, from food production and food security, to adverse impacts on land cultivation and availability of arable land, to droughts, floods and water scarcity, to loss of biodiversity; and with all these, loss of habitats, employment, and healthy, dignified life for many (UNEP 2012; UNHCR 2008). We have managed to wrack ecosystems around the world that support both the human and nonhuman life and with the current rate of global warming we are entering uncharted territories (Robertson 2016; Wagner *et al.* 2016). Scientific assessments demonstrate, and many international organizations also argue, that the most vulnerable ones and the ones most affected by the environmental crisis are the already marginalized groups of our societies: children, women, the elderly, and the poor (NRDC 2011; IPCC 2014), all of whom are even more adversely affected by the changing climate in developing countries (IPCC 2013; WEDO n.d.). Other researchers such as Adger *et al.* (2009) also attest that these societal groups are disproportionately affected by the changing climate and emphasize that one of the major concerns is also their much lower resilience and capacity to adapt to the changes as compared to groups with higher social standing; this being particularly visible in poor as compared to rich countries. Moreover, conducted studies demonstrate the greatest climate risks and impacts affecting countries that have contributed to this

crisis the least (Samson *et al.* 2011; IPCC 2014). And with only another five years until 2021, before we part with the possibility of not locking ourselves out of the 1.5 degrees Celsius (Carbon Brief 2016), it is that much more important to take immediate actions on every scale possible.

Central authority necessary to address the problem is weak

The international community has responded to the climate crisis by initiating the United Nations Framework Convention on Climate Change (UNFCCC). The fundamental principles and provisions that underpin this legally non-binding Convention signed at the 1992 Rio Earth Summit are well in line with some of the core principles of climate justice: *equity, CBDR and respective capabilities* (discussed later on) (UNFCCC 2014; FoEI 2015; Cameron & Bevins 2012). The parties to the Convention meet annually at the Conference of the Parties (COP) where agreements around national and international actions to curb climate change are being taken, guided by these underlying principles. There are, however, a number of contentious issues around how effective these spaces are when it comes to curbing the root causes of the climate crisis, as well as preventing the reinforcement of the systemic privileges of corporate and other elites over the most afflicted, from participation to decision making (Gorman & Ranke 2015; TierrActivaPerú 2015).

While the application of equity in international environmental policy is supposed to be rooted in *common but differentiated responsibilities* so as rectify for the obvious differences in *capabilities* to pay for climate protection and for the *historical emissions* of nations to avoid widening the current inequalities gap, more often than not specific national interests prevail the discussion. As a matter of protecting state interests rather than actually protecting the environment (Kandlikar and Sagar, 1999, cited in Ikeme 2003), climate negotiations are only able to tackle justices or rather injustices on a very particular scale - the national - resulting with conflicting justice outcomes for individuals, marginalized groups and communities that are on the front lines of changing climate (Burnham *et al.* 2013:228). The lack of justice among state actors in the process is attested by Tomlinson (2014), as well as by Charman in

pinpointing the needed *urgency* of action to prevent runaway climate change as one of the major justifications of industrialized countries of the Global North to overlook their historical responsibility, especially when differentiated responsibilities in international climate governance spaces are being discussed in the light of just and equitable distribution of action (2008). As discussed in the previous section, the *climate emergency/urgency* the world is at is scientifically backed (IPCC 2013; Robertson 2016; Wagner *et al.* 2016) and on this basis also demanded by major climate justice organizations and movements (FoEI 2015; The People's Test on Climate 2015; Civil Society Review 2015). Aware of the fundamental provisions of the UNFCCC, Hurlbert has done an extensive research around perception of the concept of climate justice in the UNFCCC spaces drawing upon a few different perspectives including legal, distributive, participatory and ethical (2011). Her finding on how climate change can be seriously tackled at the COPs taking into consideration the climate justice principles is as follows:

> *"[..] a legally binding, enforceable agreement incorporating a fair allocation of GHG reduction commitments, monitored by an institutional structure at the UNFCCC in which all countries participate, have their concerns addressed, and endorse decisions. In addition to countries, participatory process should be expanded to give non-governmental organizations [a space for] meaningful input. As many state and municipal actors are making significant inroads into mitigation and adaptation efforts, these actions and commitments should build legally binding commitments in a bottom-up manner at the Conference of the Parties (COP). Most importantly, all should be guided by an ethical practice of leximin[5] in which the needs of the most vulnerable to climate change are taken care of"*
>
> (Hurlbert 2015).

COP21 Paris Agreement - a historic success or a historic failure?

If we were to evaluate the process and outcomes of the most recent 21st Conference of the Parties held in Paris in December 2015 according to Hurlbert's characteristics of a climate justice rooted COP, COP21, much like the other COPs, would fail gloriously. In Paris leaders adopted the Paris Agreement

[5] See "Leximin" in Glossary

– an instrument applicable to all Parties of the Convention for post-2020 action on climate change. The Agreement is to enter into force 30 days after at least 55 Parties of the Convention have ratified it (UNFCCC 2015:30) and it is regarded as the Kyoto Protocol successor on global climate action. Despite the clear existent science and justice-based guidelines by civil society and academics (Civil Society Review 2015; Hurlbert 2015), the Paris Agreement does not put forward binding obligations, standards or policies to back up the pathway towards limiting global temperature to 2˚C, and even less for limiting it to 1.5˚C above pre-industrial levels, as it sets for itself (UNFCCC 2015; Raman 2016; Voskoboynik 2016). There is an enormous gap between: what was pledged by countries through their intended nationally determined contributions (INDCs; now termed NDCs) (national action on climate change) which sets the world on a trajectory towards 3.5˚C level of warming (Johnston 2015); what was agreed upon in Paris*:* "*holding the increase in the global average temperature to well below 2˚C above pre-industrial levels and to pursue efforts to limit the temperature increase to 1.5˚C above pre-industrial levels*" (UNFCCC 2015:21); and what Southern negotiators and justice movements beseech for their survival "1.5 – we might survive" (Brown 2015; Raman 2016). With the month of April 2016 being 'the hottest month on record globally,' scientists already deem the 1.5˚C goal as 'wishful thinking' (Slezek 2016). The reactions to the Agreement, however, staying true to environmental governance throughout history, have been very positive by the rich countries who celebrate the signing of it (Obama 2015), while developing countries (Raman 2016), policy analysts (Deen 2015), activists (Chivers & Worth 2015; Voskoboynik 2016), most adversely affected communities (Chivers & Worth 2015), and climate scientists, condemn it. As Kevin Anderson puts it for a news report: "*[to] the poor, climatically vulnerable…, typically non-white, living in the southern hemisphere, the current [Paris deal] is somewhere between dangerous and deadly"* (Lascaris 2015). With adopted '2˚C towards 1.5˚C as much as possible,' but really towards 3˚C of warming or (much) more by national pledges (Civil Society Review 2015; Johnston 2015) and according to recent research (Tan *et al.* 2016), the Paris decision is inconsistent also when IPCC's scenarios are taken into consideration. IPCC's Representative Concentration Pathways (RCPs) are

projections based on major human GHGs drivers as parameters: lifestyle, technology, energy use, economic activity, climate policy, population size, and land use patterns (IPCC 2014:8). And although according to adopted decision we should swiftly get on RCP2.6 – the most rigorous mitigation scenario, we are headed on a pathway in between RCP6.0 and RCP8.5 – scenarios that are representative of almost 'business as usual' (IPCC 2014:22). The response strategies are insufficiently ambitious despite adaptation, mitigation, loss and damage, finance and technology transfer being discussed in Article-d in the Paris deal. The inefficiencies of the Paris Agreement have been pointed out by many, economists and scientists alike. Radical emission cuts in the next five years are required globally so that a 2°C lock out is avoided, as well as sound national plans for urgent fossil fuels phase out - neither of which is put on the table with the Paris deal (Goldenberg 2016). Yet, even more new studies of modelling energy use per person by Wagner *et al.*, suggesting "dangerous global warming will happen sooner than thought" (Robertson 2016; Wagner *et al.* 2016). The UNFCCC, however, has not proved to be a platform where an equitable process (to give space and voice to the most affected ones) nor where an equitable outcome (to address the climate urgency/emergency) can be reached.

Those who caused the problem are the ones mandated to provide a solution

Economic, political, and social interlinkages to climate change effects on a systemic level

The interconnections of the climate crisis to the myriad crisis humanity is facing nowadays are actively explored by a number of scholars, activists, and climate and social justice organizations. Many of them denounce the current neoliberal, capitalist, market and profit-driven economic system as a fundamentally flawed system that is big businesses and corporate elites oriented rather than being people oriented and an ultimately incompatible with planet's physical boundaries (Magdoff & Bellamy Foster 2010; Dawson 2010; Koch 2011; Gorman & Ranke 2015; TierrActivaPerú 2015; FoEI 2015; GJEP n.d.). Although others explore ways to potentially do damage control from within the system (Newell & Paterson 2010; Harrison & Mikler 2014), their recommendations can be contested in light of climate justice (Klein 2014; GJEP n.d.) when even researches from yours truly, the International

Monetary Fund, attest to the increased inequalities the neoliberal system has created (Ostry *et al.* 2016). The Global Justice Ecology Project (GJEP) defines climate justice as the understanding of the profound links between a number of struggles on environmental, social, political and economic fronts (GJEP n.d.). It expands further explaining that the climate justice narrative denounces the interconnections between the market-driven, neoliberal, systemically unjust economic system, and the extractivism that the developing world of the Global South has been subjected to by the industrialized economies of the Global North historically. Dawson (2010), Gorman & Ranke (2015), TierrActivaPerú (2015), and ActionAid (2016) also unpack the significance of recognizing the layers of privilege and/or systemic oppression individuals and/or groups are born in. The discussion revolves around the disproportionate exposure to climate change impacts and systemic injustice on the basis of one's race, gender, religion, ability, socio-economic class, sexual orientation and other social categories that create one's social identity (Dawson 2010; TierrActivaPerú 2015). The GJEP, much like in the Bali Principles of Climate Justice (CorpWatch 2002), Adler *et al.* (2009) and the NRDC (2011), go on arguing that on a societal level, it is again the groups that are already on the margins that are most negatively impacted by climate change, i.e. women, youth, coastal communities, peasant communities, Indigenous Peoples, the elderly, the poor (n.d.). The case of environmental racism related to Hurricane Katrina witnesses for the exposure to even greater climate change associated risks of already marginalized groups on a national level (Ruether 2006; Wright 2011). Similar is the case of exclusion of indigenous peoples' voices from national, and consequently, international decision-making levels (Thomson Reuters 2015). The importance of an *intersectional approach* to addressing injustice associated with climate change, to seeking and implementing solutions to the current climate and humanitarian crisis, and to addressing the systemic injustices, is further developed in a blog by TierrActivaPerú (2015).

Despite the fact that certain groups are inherently disadvantaged, they are even more so when it comes down to being exposed to climate change inequalities as they are not even part of the global discussion around solutions (Hurlbert 2015). When living in a world where the wealth of the poorest 3.5 billion people combined equals the wealth that only the richest 64 individuals control (Krozer 2015) and where the richest 1% have accumulated as much wealth as the other 99% together (Hardoon *et al.* 2016), the preserved status quo in inequality gap between the rich and powerful, and poor and deliberately silenced is not surprising. The Panama Papers with the 11.5 million leaked documents for over 214,000 offshore business entities helping to do exactly that attest to much of the actions of the elites in ensuring that inequality gap stays as enormous as it (ICIJ 2016). In an opinion piece published by the Guardian, Stuart Hall summarizes the current economic system well:

> *"What is new about this phase of capitalism? Its global interconnectedness, driven in part by new technologies, and the dominance of a new kind of finance capitalism mean that, while a crisis of this system has effects everywhere, these effects are uneven.* [...] *The breakdown of old forms of social solidarity is accompanied by the dramatic growth of inequality and a widening gap between those who run the system or are well paid as its agents, and the working poor, unemployed, under-employed or unwell."*
>
> (Hall 2013)

Groups and networks like the Corporate Europe Observatory and ALTER-EU have time and again exposed the lines of lobbying in favor of the elites. The business as usual is safeguarding the economic neoliberal system through various channels, from local to national, to international decision making and politics on climate change, the benefits of which keep on being reaped by the elites (Magdoff & Bellamy Foster 2010; Byanyima 2016).

Explored above in the elaborate second characteristic of the super wickedness of the problem, the dynamics of decision making on climate change related issues on international level is disproportionately curved towards the powerful countries of the Global North, which is why climate justice groups have denounced the UN climate negotiations as a 'rigged game' (YFoEE 2015b).

> *"The inability to manage stresses does not fall from the sky. It is produced by on-the-ground social inequality; unequal access to resources; poverty; poor infrastructure; lack of representation; and inadequate systems of social security, early warning, and planning. These factors translate climate vagaries into suffering and loss"*
>
> (Ribot 2010:49)

The Global Climate Fund can be considered a perfect example of this super wicked characteristic: it is a fund that the developed countries need to put resources in so as to help developing countries deal with climate change. Yet, the countries that are to provide the funds for solving the problem are the same industrialized ones that are profiting from the system setup. It goes without saying that the fund is way underfunded at present.

Policy responses discount the future irrationally

Small quick fixes of the sort of improved technologies for enhanced energy efficiency, reduction of water usage and the like are no rocket science and they are not the big discoveries that will save the world (Magdoff & Bellamy Foster 2010). Neither are big agro-industry projects for 'green' agrofuels, genetically modified organisms (GMOs) and Climate Smart Agriculture; mega dams; large-scale engineering solutions like carbon sequestration schemes and enhanced sunlight reflection schemes; nuclear power and hydraulic fracturing (fracking); market-based/cap and trade (carbon offsetting) schemes, alternatives to fossil fuel extraction (Magdoff & Bellamy Foster 2010; Rising Tide North America & Carbon Trade Watch 2010; Gorman & Ranke 2015; Young Friends of the Earth Europe 2015; Voskoboynik 2016).

On an international environmental governance level in the UNFCCC spaces in particular, Charman refers to some of the false solutions being put forward in international climate change agreements that are merely 'realistic' for today's capitalist-driven, until recently fossil fuels addicted world (2008) while echoing the injustices these 'solutions' go with. Kill also denounces the 'greening' of economy through market-based schemes like REDD (Reducing emissions from deforestation and forest degradation),

PES (Payment for ecosystem services), carbon offsetting and forest restoration credits, and the like as a swindle well supported by international bodies whose actions are supposed to embody the climate justice principles instead (2015). When nature is seen as a 'free good' and is divided into 'units of ecosystem services,' broken up, measured and quantified so that someone profits out of the transactions, there is *financialization of nature* (Kill 2015). For this purpose, the management of large patches of forest is being centralized (as in REDD/REDD+ for instance), communities that depend on these ecosystems are losing control over their territories and are sometimes even evicted from their homes; thus, new inequalities are produced (Marino & Ribot 2012; Burnham *et al.* 2013) as price is put on nature and consequently given up for sale.

The major issue surrounding the above listed false solutions is that they are all designed so as to enable the current global economy setup proceed on the same catastrophic path it is set on (Magdoff & Bellamy Foster 2010). They all enable further destruction of the planet; increase the gap between the existent and produce new inequalities; and above all, are primarily harmful to the individuals and communities that are dependent on these natural resources substantively (GJEP n.d.; CorpWatch 2002; Rising Tide North America and Carbon Trade Watch 2010). Moreover, as these false solutions are given a priority for they are fostering the capitalist driven system, local needs and community knowledge are been overlooked and kept out of decision-making processes (Burnham *et al.* 2013).

With the most adverse effects of global climate change being felt locally (Burnham *et al.* 2013): from water scarcity, to soil erosion, to dying crops, to loss of biodiversity, etc., it is most notably local communities' vulnerability that is exacerbated. Nevertheless, it is also local communities that are the ones delivering alternative solutions to the problem (Shreshta 2016). Real solutions that address adaptation and/or mitigation efforts are already being implemented on the ground by local communities across the globe as alternatives to the big false solutions (Gorman & Ranke 2015; Rising Tide North America & Carbon Trade Watch 2010). Community operated renewable energy solutions,

community management of the ecosystems, and climate and environmentally friendly, sovereign food systems based on agroforestry principles, are all very real, already existent and applied solutions tackling climate change as well as the unjust and unsustainable economic system (Gorman & Ranke 2015; Via Campesina 2015; Repower Balcombe (n.d.); We Are The Energy Revolution 2015).

As the applied forward reasoning approach suggests unpacking of all concepts that can be associated with the problem so as to better understand it and provide an informed alternative analytical tool for potential solutions, I continue conceptualizing the climate justice relevant terms, constructs and theories in the following sections.

Climate justice concepts

Bearing in mind the above leads provided by deconstructing the super wickedness of the lack of applicable climate justice approach in community-based adaptation and mitigation solutions, the content in the following section continues conceptualizing the issue thus, continues responding to sub-RQ1 and leads to the response to sub-RQ2. For this, the construct of *climate justice* and the relating aspects are defined below. Defining climate justice at this stage of the thesis is important for: scoping the research; specifying the *justices* it consists of; deciding how the different climate justice aspects fall under these *justices* and how they interact with one another as part of an ACJF; and importantly, safeguarding it from potential disagreements stemming from different conceptions of climate justice. A conscious choice of reviewing definitions and underlying principles of *climate justice* as compiled by activists, grassroots groups, academics, movements, non-governmental, and international organizations was taken, with most of the analysis done around how climate and social justice groups and the most vulnerable understand the concepts associated with climate justice under the umbrella of climate justice scholarship.[6]

[6] See Limitations and Scope section

Invaluable contributions in the analysis of the *justices* that are encompassed by *environmental justice* have been done by a number of scholars, namely Ikeme (2003), Paavola & Adger (2006); Schlosberg (2007), Walker (2012), Burnham *et al.* (2013), Forsyth (2013) - some of whom use the notions *environmental justice* and *climate justice* interchangeably, and others who distinguish the differences among those two. Not distinguishing these two constructs can obscure the meaning of either, but as this is not a pivotal point in my research, I have opted to use the construct *climate justice* in my study as I have so far for two reasons. One, because the perceptions by climate and social justice groups use that one to express the rights and justices that need to be preserved for an approach to be based on climate justice, and two, because I am exploring the justices in community-based forest management as a response to *climate* change (a strategy representing synergy between adaptation and mitigation). While I go on elaborating on the latter later on, the former is unpacked in the section that follows.

Climate and social justice groups and movements perspective

In order to voice the perceptions of climate and social justice groups, a review of a number of definitions of *climate justice* was conducted.[7] The summary of the most relevant concepts surrounding climate justice that were emphasized by these groups can be understood by reviewing the two following definitions on *climate justice*:

> *"Climate Justice is a struggle over land, forest, water, culture, food sovereignty, collective and social rights; it is a struggle that considers "justice" at the basis of any solution; a struggle that supports climate solutions found in the practices and knowledge of those already fighting to protect and defend their livelihoods and the environment; a struggle that insists on a genuine systematic transformation in order to tackle the real causes of climate change."*
>
> From the 'Hoodwinked in the Hothouse: False Solutions to climate change',
>
> By Movement Generation, Carbon Trade Watch, and Rising Tide (2010).

[7] See CJ groups and movements' definition, Table 3

"The heart of climate justice is the understanding that the urgent action needed to prevent climate change must be based on community-led solutions and the well-being of local communities, Indigenous Peoples and the global poor, as well as biodiversity and intact ecosystems."

(GJEP n.d.)

A coalition of groups organizing around environmental, social and human rights issues on a local, national and global level have been putting together declarations and lists of principles of climate justice throughout the years. The core climate justice concepts are summarized below from the various people's agreements and declarations, for these agreements present landmarks both in terms of variety of *participating* (both climate and social justice) groups and in terms of *scale* of groups that have adopted these principles. The Bali Principles of Climate Justice (2002), the People's Agreement of Cochabamba (2010), The Margarita Declaration of Climate Change (2014), the Maputo Declaration of African Civil Society on Climate Justice (2015) and The People's Test on Climate (2015), revolve around:

- *equity*: the right to a just and dignified life for all past, present and future living things (*intergenerational equity)*[8], free from oppression and ecological destruction; the right to equal access to fundamental resources and participation in local and global decision making spaces, especially to societal groups (youth, women, elderly, poor), communities (peasant, fisherfolk, Indigenous peoples) and nations most impacted by the climate crisis; the recognition of diverse identities and experiences as well as disproportionate privileges and exposures to systemic oppression and with that to the most adverse impacts of climate change; the right to a low-carbon development of developing countries provided with the means by developed countries; the fair distribution of the ecological space and a limited carbon budget between nations; the right to participation in relevant decision-making processes;

[8] See "Intergenerational equity" in Glossary

- *common but differentiated responsibilities (CBDR) and historical responsibility*: the recognition of accountability of rich industrialized nations and transnational corporations which have historically put the most pressure on the climate system to take responsibility for their ecological debt; rich countries to take the lead in addressing climate change by cutting their emissions and providing the necessary funding for climate change adaptation, mitigation, loss and damage (reparations for impacted communities), technology transfer and capacity building to developing nations;
- *respective capabilities:* the responsibility of nations with greater financial, institutional and technological capacities to do their fair share in solving the climate crisis by stopping subsidies for false solutions of the sort of coal, oil, gas, peat, nuclear, mega dams, etc. energy projects, and providing the necessary finance for climate change adaptation and mitigation, technology transfer, loss and damage, capacity building, and platforms for community owned renewable energy, as well as take the lead in transformation to just and sustainable production and consumption patterns; the consideration of distribution of resources between but also within nations *(intragenerational equity).*[9]

Another concept central to the climate justice movement is *solidarity* (ActionAid values; FoEI mission; both from CJ definitions table). Being the intersecting issue it is, climate justice encompasses the recognition of the variety of struggles that are born as a result of the injustices that groups of people and communities are subjected to; injustices that stem from the same foundation of a rotting system that fails to deliver to the ones most in need, more often than not, the same ones that bear the brunt of the changing climate. Seen from a climate justice perspective, standing in solidarity has a pivotal role in "inspiring, strengthening and complementing each other's capacities," and amplifying each other's voices in the demand for and creation of a better world.

[9] See "Intragenerational equity" in Glossary

Beyond the listed principles, what climate justice grassroots groups and movements all have at heart, which has also gained popularity among some scholars (Tokar 2013; Hurlbert 2015; Norton 2016), activists (Gorman & Ranke 2015) and leading policy research organizations in the field of environment and development such as the International Institute for Environment and Development and the International Centre for Climate Change and Development, is addressing the links between global climate change and the its impacts on local communities (CorpWatch 2002; People's Agreement of Cochabamba 2010; Lang 2014; Yes to Life No to Mining 2015; FoEI 2015; Civil Society Review 2015). Ultimately, climate change is a global issue the governance of which is done globally, making it a state affair that is being tackled on an international level (Burnham *et al.* 2013:232). While some scholars suggest that there is potential for addressing the links between global climate change and the impact of it on communities in light of the Paris Agreement (Norton 2016), climate justice groups condemn the UNFCCC climate talks as a 'rigged game' (YFoEE 2015b). And though the issue of climate change is known to be addressed on an international level, the risks, vulnerabilities and impacts are felt mostly on a community level (Burnham *et al.* 2013:232). Additionally, as elaborated on earlier, it is communities that are already implementing solutions to the climate change crisis through various community-based adaptation and mitigation practices.

> *"Local actors are the key to achieving real impact on the ground. While international donors and agencies and national governments play important roles in establishing effective enabling environments and channeling resources and technical support, ultimately effective adaptation [and mitigation] takes place through the dynamics of local governance, civil society engagement, and economic development building from the actions of local authorities, civil society organizations, and private sector businesses.*"
>
> (IFRC 2009:4)

Climate justice scholarship umbrella: the justices

Bearing in mind the preceding paragraphs, it becomes clear that for a community-based response to climate change to be rooted in climate justice according to the perceptions of it of grassroots groups

and movements and the most vulnerable, certain rights and justices need to be preserved for local communities, by local, national, and international bodies alike.

To put the previous concepts under the climate justice scholarship umbrella, I have once again taken the *applied forward reasoning* approach and instead of looking backwards and pointing out what is potentially missing from each existing theory or approach for it to deliver climate justice to community-based responses to climate change, I analyzed the literature on justices connected to climate change issues and took the aspects of each that address the screams of the most impacted as described in the previous section and should be weaved in together and included in an ACJF.

Relationships between equity, distributive and procedural justice

Ikeme (2003), for instance, refers to *equity* as a principle that is concerned with both distributive and procedural justice; the former relating to the outcomes one receives and the latter relating to the processes and procedures of distribution. Having quoted Nozick: "The complete principle of distributive justice would say simply that a distribution is just if everyone is *entitled* to the holdings they possess under the distribution" (Nozick 1974:151), Ikeme suggests that *entitled* means on the base of *equity*, or in other words: "equitable distribution based on what each agent *owns, deserves, or [has] rightfully earned*" (Ikeme 2003:199).

In summary of the extensive in depth scholarship around *distributive justice* (conceptualized by scholars like Rawls 1971 and Nozick 1974) and *distributive justice* in relation to climate change issues (tackled by Paavola & Adger 2002; Ikeme 2003, Paavola et al. 2006, Walker 2012, Forsyth 2013, Burnham *et al.* 2013): distributive justice is only delivered if there is equitable allocation or sharing of (environmental and social) resources and impacts (risk and vulnerability) over space and time according to one's capabilities (Nozick (1974:151), Walker (2010:10), and Burnham *et al.* (2013:240). In summary of what is understood by procedural justice in the works of the above mentioned authors, namely, Paavola & Adger (2002), Ikeme (2003), Paavola *et al.* (2006), Walker (2012), Forsyth (2013), and Burnham *et al.*

(2013): procedural justice is only delivered in a process where all impacted parties participate in the decision-making of the allocation of the resources and impacts. Scholars have also acknowledged the significance of *capabilities* (Sen 1985; Adger *et al.* 2006; Schlosberg 2007) and *recognition* (Schlosberg 2007; Walker 2012; Marino & Ribot 2012; Burnham *et al.* 2013) as instrumental theoretical approaches on their own that have to be taken into account if an approach is to be rooted in climate justice.

The most comprehensive work so far in incorporating all the concepts and justices mentioned above related to climate change issues that most affected communities face is done by Schlosberg. He introduced the *recognition and capabilities approach* so as to address both 'individual and community-based needs as well as the functioning of both human and nonhuman systems' (Schlosberg 2007). Arguing that existing approaches addressing the impacts of climate change are primarily developed and applied to *mitigation strategies*, Schlosberg introduces *the recognition and capabilities approach* to provide a framework for addressing policy related climate justice issues in adaptation. I suggest that an expanded *capabilities approach* can serve as basis for developing an *applicable climate justice framework* addressing community-based adaptation as well as mitigation strategies. I elaborate on this in the last section of the literature analysis, after having explored the relationships between the rest of the climate justice relevant constructs.

Relationships between capabilities, participation, recognition, intersectionality, vulnerability and resilience

What the notion of *capabilities* adds to the discussion around community-based climate justice responses to climate change is its focus on whether or not human and nonhuman systems have the various capabilities necessary to transform whatever available goods there are out there into a fully functioning life (Schlosberg 2013). Schlosberg advocates the flexibility of the *capabilities approach* for leaving room for individuals/communities' own determination of the capabilities they need for dignified life (n.d.) and this is crucial to climate justice. *Democratic participation* and *control over one's*

environment are identified as key capabilities (Schlosberg n.d.) and central to building community-based responses rooted in climate justice. When it comes to the notion of *recognition*, Burnham *et al.* refer to it as the recognition for the 'existence of rights of different cultural and social groups, with *respect* given to these differences in the face of climate change' (2013:240). What recognition adds to the debate is that, when considered, it provides "*exposure and deconstruction of cultural and political institutions' beliefs and practices that make some people invisible or misinterpreted or devalued."* (Schlosberg 2013). According to Schlosberg, the link between climate justice and recognition focuses on "*the relationship between lack of social recognition and [the] creation of climate vulnerability.*" (2013). To add on to this, I argue that recognition approach would be incomplete unless it takes an *intersectional approach*. Intersectionality, conceived by Crenshaw in 1989 from an angle of black feminist struggles (1991), deals with how aspects of one's social identity as gender, race, ethnicity, socio-[economic] class, sexual orientation, ability, religion and else, interact on various levels and factor into social inequalities and systemic injustices that one is subjected to (TierrActivaPerú 2015). Thus, recognizing, acknowledging and acting upon the various levels of privilege that certain groups enjoy while others are systematically deprived of and the reflection of this on exposure and access to resources as well as exposure to climate change impacts and *vulnerabilities* in light of these levels of privilege, is central to intersectionality. Not tackled by scholars whose work revolves around climate is the concept of *solidarity* that builds upon taking an intersectional approach in recognition and acknowledgement of the different vulnerabilities of different social groups and communities. It is the practice of individuals and groups grounded in empathy for each others' struggles and the recognition of common united vision for a better world. In that line, the recognition of *vulnerability approach* that I am incorporating in the context of climate justice refers to a united *outcome/environmental* and *contextual/social vulnerability* acknowledgment so as to take account of the system's sensitivity to harm from exposure to both environmental (increased temperature, sea level rise, changes in agricultural patterns, etc.) and social aspects (discrimination against marginalized groups and the unequal access to resources, poverty, lack of infrastructure, etc.)

in the light of climate change, as well as in the absence of *adaptive capacity* (Adger 2006; Burnham *et al.* 2013). Nelson *et al.* define *adaptive capacity* as the "*way to describe the preconditions necessary for a system to be able to [respond and] adapt to disturbances [...]; and includes the capacity to design and implement effective [...] strategies to cope with current or future events*" (2007:400) which ensures *resilience* of the system for the time being. In that sense, resilience of a community is possible if the systems' ecological, economic, social and governance systems are able to quickly recover and adapt to unexpected disruptions. For the purposes of the development of ACJF to be an inclusive analytical tool, I suggest that the *necessary preconditions* identified for resilience of a community as a system refer to the *necessary capabilities* that the community identifies for itself to ensure the core capabilities for well-being but also beyond that - the capabilities to be resilient in its response to climate and social disturbances. Biggs *et al.* suggest the application of a resilience thinking approach based on seven principles which I include in the ACJF (2015).

In order to finalize the complex relationships between the defined theoretical constructs in the context of community-based responses to climate change rooted in climate justice for the conceptual framework, the *timeliness* of reaching solutions to combat super wicked problems as the lack of climate justice, is also an important aspect to consider. In this respect, I expand the discussion to include community-based adaptation and mitigation strategies; adaptation accounting for (capabilities for) the short-term community benefits; and mitigation addressing the long-term community benefits.

Conceptual Climate Justice Framework

The alternatives for a better world are already here

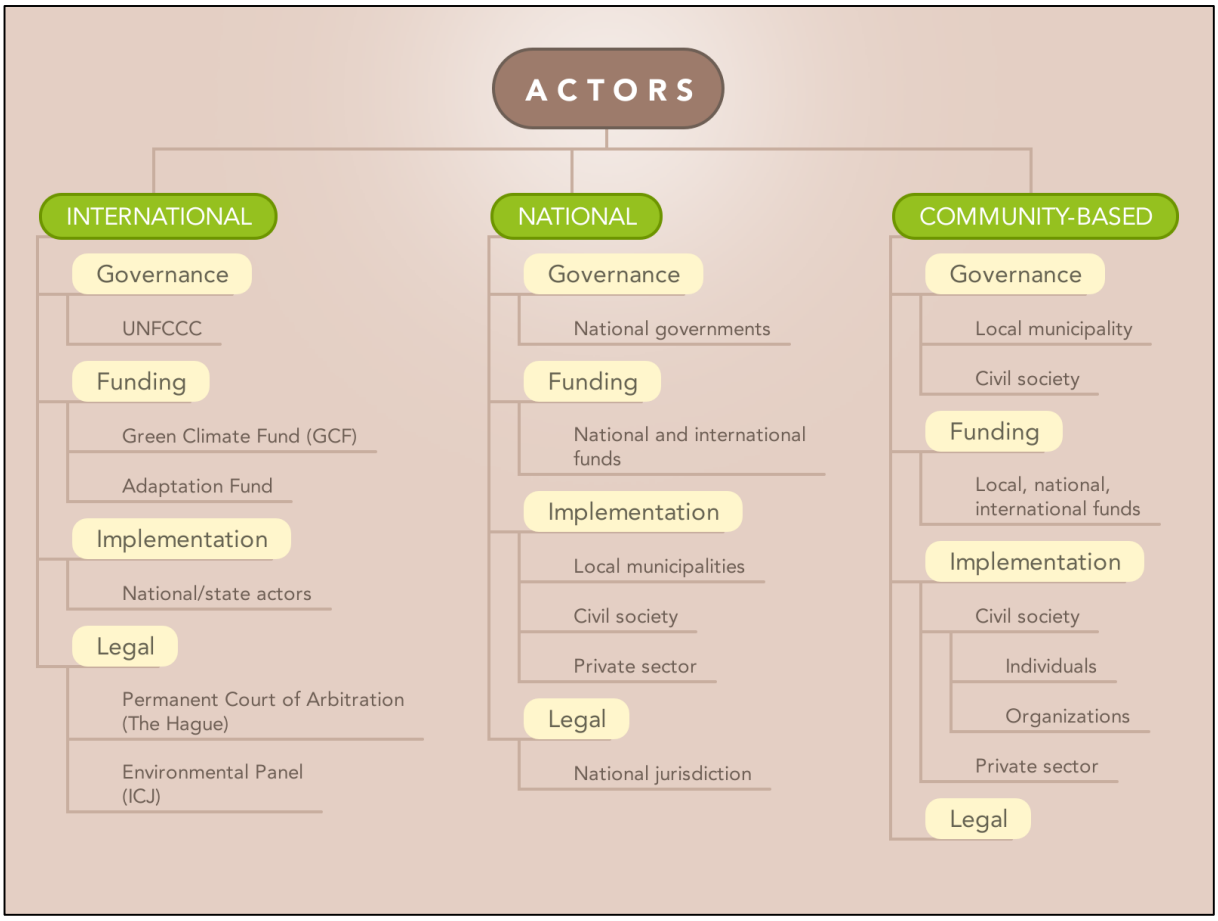
The following section lays out the conceptual framework under which the analytical framework - ACJF - falls. The conceptual framework responds to the four characteristics of the wicked problem and puts them in an overarching theme of "already existing alternatives for a better world" where recommendations for actors from the various (local, national, international) levels are put forward in order to bring about climate justice based policy approach to community-based adaptation and

mitigation strategies. It also justifies the use of community-based forest management as a case study. Finally, the concepts taken from CJ definitions from movements and from CJ scholarship are woven into the analytical framework - ACJF - which is introduced by the end of this section.

> *"As systems fail, individual and community creativity explodes. And that's what we've seen. People [...] are solving the problems themselves. They are coming up with new models and strategies. And within those models and strategies are the kernels of a systemic way to move forward."*
>
> Angela Glover Blackwell, Policy Link,
>
> The Next System Project (2015)

Having highlighted the super wicked characteristics of lack of climate justice in (community-based) responses to climate change, defined the concepts associated with it and explored the interactions between them, I proceed with making use of the applied forward reasoning approach. I do so in order to lay the basis for a conceptual framework that addresses the above mentioned issues through a structured discussion on potential solutions being brought by actors from different sides from the spectrum of action on climate justice and to provide an alternative analytical tool for assessing community-based adaptation and mitigation strategies' basis in climate justice. The various actors whose mutual collaboration and interaction is indispensable are seen in Figure 2 (author's own) below:

Figure 2: Relevant actors



Actors from each and every level of action have their own role in bringing about ensured climate justice based policy approach for community-based responses to climate change. To begin to discuss the alternatives, I apply the super wicked framing of the problem to also frame the conceptual framework accordingly.

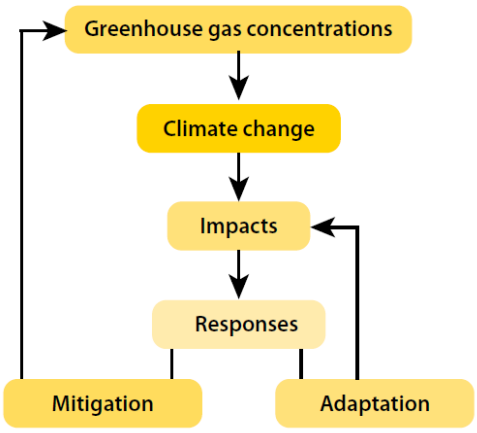
Time is running out

Consistency with both short-term and long-term community benefits: Adaptation and mitigation - complementary strategies in response to climate change

The responses to the even greater climate havoc already experienced by many particularly in the Global South, and expected in the years to come in many areas of the planet lie in balanced climate change adaptation and mitigation strategies. The difference in these two approaches to tackling climate change issues is in their underlying objective: mitigation options focus on reducing causes of climate change by reducing GHG emissions in the atmosphere, and adaptation options address the social and

economic impacts of climate change by putting forward strategies for increased resilience of natural and human systems in response to actual and/or expected climatic changes and their effects (IPCC 2014). And with that there is a difference in the benefits these strategies deliver space- and time-wise: adaptation provides short-term community benefits and mitigation produces long-term community, as well as global benefits (see Figure 3: Locatelli 2011:1 below). There are limitations to addressing climate change challenges by focusing on one set of solutions only, be it mitigation or adaptation strategies. A lay instance: even if we were to stop emitting GHG right this moment (which is of course unrealistic), GHGs that have been historically emitted in the atmosphere will keep on causing the climate to change; hence, the importance of adaptation strategies being put forward. If we were to focus only on adaptation options, however, the negative effects will not necessarily be reduced, and most certainly not at the pace we need them to stabilize so that a runaway climate change is avoided. Although there are boundaries to the effectiveness of using solely one or the other and trade-offs even when coordinating the implementation of the two simultaneously, there are also significant synergies attached to strategies that incorporate both objectives (IUCN 2016; Rizvi *et al.* 2015). These vary among a range of sectors and between different regions of the world (IPCC 2014:98; Locatelli 2011; Tol 2005):

Figure 3. (left) ***Difference in approach: adaptation and mitigation strategies***;
(right) Difference in providing benefits (figures adopted from Locatelli 2011:1)



	Mitigation	Adaptation
Spatial scale	Primarily an international issue, as mitigation provides global benefits	Primarily a local issue, as adaptation mostly provides benefits at the local scale
Time scale	Mitigation has a long-term effect because of the inertia of the climatic system	Adaptation can have a short-term effect on the reduction of vulnerability
Sectors	Mitigation is a priority in the energy, transportation, industry and waste management sectors	Adaptation is a priority in the water and health sectors and in coastal or low-lying areas
	Both mitigation and adaptation are relevant to the agriculture and forestry sectors	

Areas of benefits of treating adaptation and mitigation strategies together

Tol (2005), Locatelli (2011) and Rizvi *et al.* (2015) set aside the agriculture and forestry sectors where the synergies of adaptation and mitigation strategies are most relevant (Figure 3, right). According to IPCC's AR5, there are a number of scientifically identified benefits to treating these two strategies together while harnessing their synergies found in the following areas (2014:20):

- *Improved energy efficiency and cleaner energy sources, leading to reduced emissions of health-damaging, climate-altering air pollutants;*
- *Reduced energy and water consumption in urban areas through greening cities and recycling water;*
- *Sustainable agriculture and forestry; and*
- *Protection of ecosystems for carbon storage and other ecosystem services.*

A study by the World Economic Forum suggests that the unsuccessful action around climate change adaptation and mitigation has a very high likelihood of bringing about "major and unpredictable impacts" by other global risks that are greatly interrelated with climate change like great water stresses, involuntary migration, harsh energy shocks, etc. (Elliott 2016). Having established that strategies towards climate change adaptation and mitigation are imperative, the actions planned towards these

responses would be more effective if coordinated actions on every level of society are taken, from the individual, to the community, to the national, to the international level (IPCC 2014:19. Taking economic, social and ethical considerations into account, the Fifth Assessment Report by the IPCC reiterates the calls of the climate justice narrative for provision of conditions and platforms for complementary local efforts to respond to the changing climate, to the protection of most vulnerable groups, to provision and fair access to finance, information, policy and legal frameworks (IPCC 2014:17-19). Furthermore, when it comes to adaptation practices, the climate justice oriented plead for consideration of diverse experiences and circumstances as well as differentiated societal contexts is echoed in the IPCC's acknowledgment of the need for procedural justice and participation (IPCC 2014:19). There is a high agreement among scientists putting together the AR5 also around the significance of community practices, Indigenous Peoples' holistic view, traditional ecological knowledge (TEK) and coordinated activities by local administration to increasing the benefits of climate change adaptation options (IPCC 2014:19).

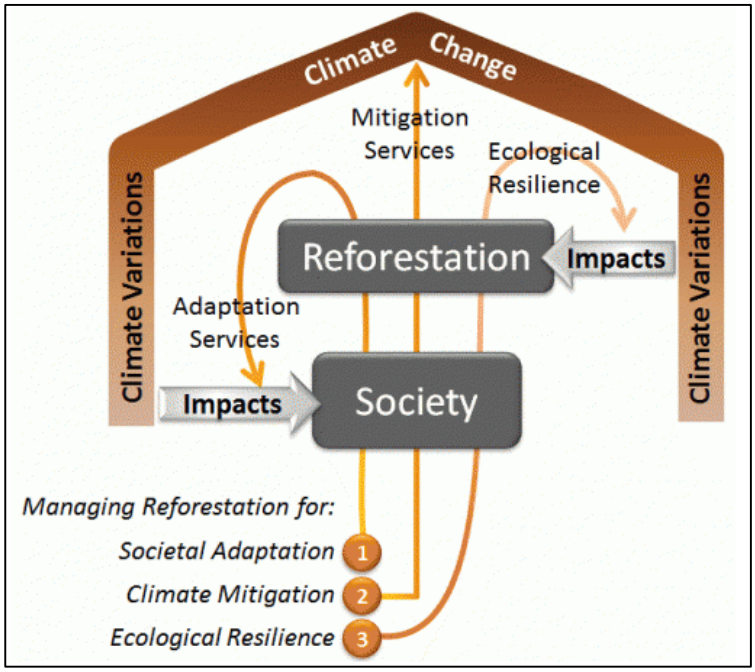
The interactions and links of adaptation and mitigation strategies and the benefits of their employment as such towards sustainable development and poverty eradication is another major topic elaborated in IPCC's AR5 as well as considered in the Paris Agreement (IPCC 2014:17, 70, 75-76, 90; UNFCCC 2015:20, 21-23). This is very relevant for strengthening the implementation of synergized adaptation and mitigation strategies at a community-based level where climate change hits the already most marginalized directly in every socio-economic sphere of life.

Community-based forest management as a case study: justification

There are numerous reasons as to why I chose community-based forest management as a case study. Across the globe, forests have a pivotal role both in maintaining the natural balance of the planet by providing ecological services and traditionally contributing to human population's adaptation to hazards by providing for a variety of sources for livelihood (Locatelli *et al.* 2015; Seguin 2016).

Throughout history, humans have depended on the forest and its products for reducing their vulnerability to extreme climate change and weather related events and increasing resilience for coping during and after storms, floods, droughts, and heat waves; for decreasing the effects of water stresses; for providing wood for heating, construction and livelihoods with a microclimate conducive for growing food, fishing and hunting (Locatelli *et al.* 2015; Seguin 2016). Although pointing out the important role of "reforestation" per se in Figure 4 below (Moss 2015), the significance of managing forests alike is central in bringing about benefits in societal adaptation, climate change mitigation and overall system's resilience.

Figure 4: Community based management benefits. Adopted from Moss (2015)



Johnson (in Baltodano *et al.* 2008) and Booker (2015) attest to improved forestry management with proven benefits in and beyond the three areas mentioned above if a gender balance is stricken in the approach. *Community-based forest governance* has the potential to deliver on many climate justice related fronts, from securing tenure; to allowing for clarity on community forest boundaries and ownership; to encouraging gender parity and participatory community design, management, monitoring, and sanctioning; to ensuring consistency in enforcement of rules and regulations; to strengthening of local

(administrative and other) entities; to enhancing community wide sharing of interests, vision and benefits; to providing the platform for robust capacity for conflict resolution; to receiving legal nation-wide recognition of efforts. All these have been studied by many scholars and activist-scholars (Pagdee *et al.* 2006; Baltodano *et al.* 2008; Stevens *et al.* 2014; FoEI 2015c) and it is my intention to provide analysis from community forest management cases from Costa Rica to give weight to the arguments above.

Weak necessary central authority + solutions provision mandate at the ones who caused the problem

Besides advocating for going to the other side of the spectrum in providing community-based solutions to the super wicked problem unpacked, strengthening the actions of international bodies on climate justice is imperative: both as a means in itself and for a more just and eased response to climate change by communities. Therefore, starting from the very basics and tackling the problem heads on, a number of activist-academics have examined several of the aspects of what I framed to be a super wicked problem and have structurally laid out alternatives for a systemic way forward. To name: The Kilburn Manifesto (Hall et al. 2013), The Leap Manifesto (2015), The Next System Project (Alperovitz et al. 2015); all of which explore the nature of the neoliberal system governing the present of the Western world, be it in the United Kingdom, Canada, or the United States respectively, but also hint on the implications of and ways away from it globally.

Bearing in mind the calls by climate and social justice movements (see CJ definitions table in Appendices) and a number of scholars (Ribot 2010; Grasso 2010; Hurlbert 2015) for climate justice policies based fundamentally on catering to the most vulnerable, marginalized individuals and groups, many more have either explicitly or implicitly suggested reinforcing human rights for both present and future generations. They have done so by calling on the international community as well as on specific state jurisdictions to make and protect the environment as a human right and endorse recognition of the instrumental role of women, indigenous peoples and local communities in preserving the forests,

the fresh waters - natural resources crucial for the natural balance of the planet, yet resources they subsist on (Kennedy 2015; Dossa *et al.* 2016). Additionally, what the international community can assist with is in strengthening the actions of the international bodies dealing with climate, ensuring the processes at the UNFCCC are based on distributive and procedural justice (Paavola & Adger 2002), taking into consideration the climate justice related principles discussed earlier and included in the ACJF I introduce below. A just allocation of the Adaptation Fund for building community capacities for adaptation and resilience (Adaptation Fund 2015) and the delivery of the promised $100 billion a year by 2020 by developed countries for the implementation mechanism of the Green Climate Fund so that adaptation and mitigation in developing countries is funded, are important steps in the right direction (Green Climate Fund n.d.; Dossa *et al.* 2015; FoEI 2015b). Holding corporations accountable for their wrongdoings on climate and for disrespecting human rights, and enforcing global economic regulations that will prevent corporate capture of global decision-making processes is another significant action towards achieving climate justice that can be attained with the right willingness and pressure by international actors (Kennedy 2015; Dossa *et al.* 2016; Treaty Alliance 2016). To have the above recommendations legally enforced, the reconstitutionalization of an environmental panel mandated to handle environmental disputes at the International Court of Justice and/or taking advantage of the environmental wing at the Permanent Court of Arbitration in The Hague can be made (Kennedy 2015). Carbon and wealth tax - independently, and in combination with one another - can be enforced so that false solutions are disincentivized and funds for climate justice based solutions are ensured, as well as enormous inequality gap decreased (Magdoff & Bellamy Foster 2010; Dossa *et al.* 2016; Hardoon *et al.* 2016).

None of these recommendations would be fully implementable without nations endorsing them and putting forward national initiatives and firm actions on climate. Most countries, especially from the Global North, need to do so much more in order to pay up the ecological debt that they have due and

provide for the needs of the most affected ones, in and within impacted nations. Within states, quality health system and quality education, livable wages, union rights, etc. - prerogatives that are not a climate justice issue on first sight need to be ensured. State actors can also establish laws and implement relevant regulations nation-wide so as to tackle the current and potential climate crisis (Magdoff & Bellamy Foster 2010), by increasing resilience of most vulnerable communities through capacity building and freeing up space for meaningful contributions by local actors in what are seemingly 'national' affairs.

Going down Figure 2 depicting relevant actors in achieving climate justice based policy, it is essential to acknowledge the significant work of civil society that is mainly overlooked in the area of international environmental governance. Individuals and civil society organizations exercise pressure on local, national and international governance bodies through advocacy, campaigning and information sharing and hold these governance bodies accountable for living up to the promises they make. It is imperative that they continue to do so. Civil society is already doing so much to ensure climate justice oriented policy making on various scales (Firmin et al. 2015; Lobo n.d.; Canales n.d.) but it just needs to be given the space.

Moreover, local communities are already implementing community-based solutions rooted in climate justice in one way or another (although this is not necessarily how they would refer to their practices) to the climate crisis themselves to reduce their outcome and context vulnerability. Numerous instances are available from across the globe: from vertical underwater farming off the coast of Connecticut, United States (Smith 2016), to community park management in Chile, to community initiatives for non-timber products in Amazonia, to community-based forest and other resources management and its governance in Haití, Mozambique, Malaysia, Greece, Papua New Guinea, El Salvador, Bolivia, throughout Costa Rica, and in many other countries (Pagdee *et al.* 2006; Baltodano 2008). To narrow down relevant actors' scale even further, women's role in bringing about an ultimately climate justice

approach to responding collectively to climate change has historically been and currently is more than ever before, indispensable (Johnson 2016). More gender parity in every social area, especially governance and policy making, is of paramount importance as women, together with indigenous communities, the global poor, the elderly, youth, peasant communities, and others, have been kept on the margins of society with respect to decision- and policy-making processes (Niki Johnson in Baltodano *et al.* 2008; Johnson 2016), despite being on the frontlines of fighting for and ensuring social and climate justice for themselves and their communities. These are the individuals and communities who bear the brunt of the systemic injustices, yet, are providing community-scale solutions at the same time. It just goes to show that a climate justice policy approach has to make sure they are seated at the table and given the platform and space for a significant participation every step of the way while also having their solutions acknowledged and accounted for when decision-making processes happen: locally, nationally, and internationally.

No market instruments and quick fixes: cater to the CJ principles

Finally, the right mix of policies needs to be delivered to set the foundations for community-based response to climate change rooted in climate justice. As elaborated in the fourth feature of the super wickedness of the problem in the Literature Analysis chapter, the current "solution" schemes pushed forward by actors of the international community are not only not based on climate justice principles, but also not tackling, but contributing to the core, overarching problem of systemic crisis of myriad injustices that keep on deepening the gap between the ones who are most impacted by the changing climate and the ones profiting from it all. Therefore, an immediate action is required by actors from all levels of the spectrum: from local, to national, to international; with emphasis put in this study on what can be learnt from how communities are tackling the issue on the ground through a synergized adaptation and mitigation approach.

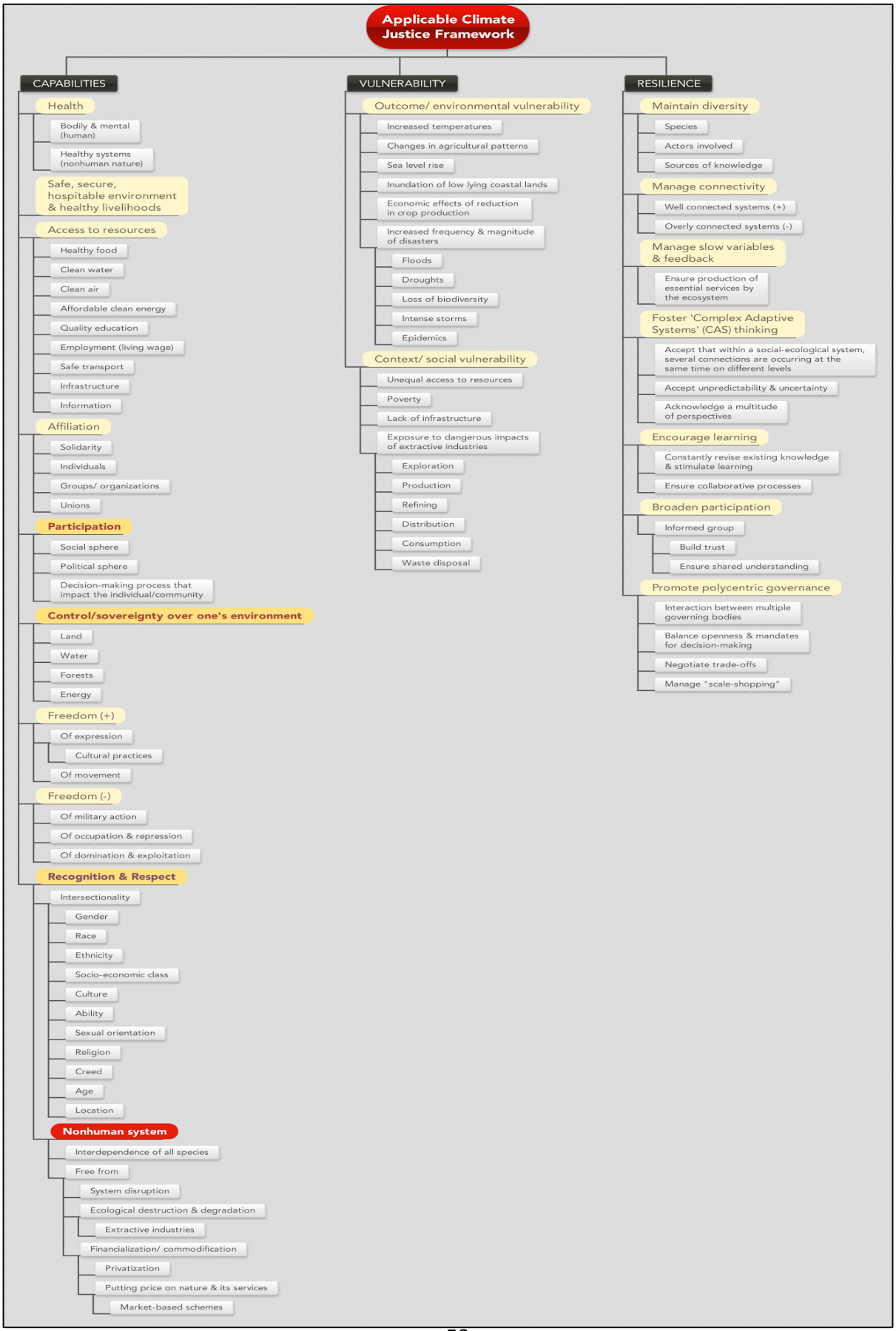
Introduction of ACJF

A climate justice oriented policy approach for community-based responses to climate change should take into consideration all of the climate justice concepts and theories explored earlier. The result from the analysis throughout the study so far is the *applicable climate justice framework* below: Figure 5. It can be regarded as an alternative analytical tool that can be applied by any of the actors from local, national and/or international level, so as to evaluate the climate justice principles an implemented or to-be-implemented adaptation and/or mitigation strategy addresses. Though it can speak to actors from all levels in the climate policy making scene, I proceed referring to it as an approach for a climate justice based response to climate change by a community as I go on exploring sub-RQ3: the interaction between the presented concepts in community-based forest governance in the next section of the thesis.

In order to introduce the ACJF, here I reiterate the definitions of distributive and procedural justice; the former addressing how are *resources (goods, capabilities)* and *impacts (vulnerabilities)* shared over space and time, and the latter addressing *how and by whom* the decision-making or allocation is happening. The capabilities (or the resources that enable them), vulnerabilities and the process used for these to be shared are central to these justices. Thus, the ACJF includes an extended list of principles as indicators that potentially enable the capabilities (the left column) deemed necessary by communities for a fully functional, dignified life - a fusion of an extended Schlosberg's capabilities approach and concepts relevant to climate justice movements, it also extends the recognition and respect indicator to nonhuman systems. Under the capabilities column, the ACJF emphasizes the indicators of participation, control/sovereignty over one's environment and recognition with an intersectional approach as focal ones. The intersectional approach to recognition is required to pay respect and account for the various levels of vulnerability in light of both environmental (outcome) and social (context) aspects - the indicators of which are listed in the middle column, a mash-up of what Burnham

et al.'s analysis (2013) has identified as relevant vulnerabilities and what climate justice movements consider to be significant ones (CJ definitions table in Apendices). Finally, the column on the right provides indicators that can be used for enhancing system's resilience, as introduced by Biggs *et al.* (2015) and topped up by constructs from climate justice groups' definitions on what climate justice is and how to achieve it.

Figure 5: Applicable Climate Justice Framework



It is important to acknowledge that in the field there is so much more than just 'ticking' which of these indicators are taken into consideration in a community-based adaptation and mitigation strategy. There is a complex and inevitable interaction among many of them that can witness of good practices on the ground, highlight weaknesses and shed a light on channels for improvement of approaches to adapt and mitigate. For this reason, I go on implementing the ACJF to analyze a community-based climate justice response on the ground and connect the findings with what has been discussed from the analyzed literature so far and presented in the conceptual framework. I am analyzing community-based forest management - a community-based synergy between adaptation and mitigation strategy - in Costa Rica. The following section provides background on the country context, introduces the case studies and narrates the analyses of each of them. The Discussion chapter delivers a look back in what has been learnt so that conclusions are drawn based on what has been found in the field compared with what was obtained from the analyzed literature.

4. FINDINGS AND ANALYSIS

Context: international to national

Costa Rica is far and wide known for its forward looking climate policies: from powering the whole country for a number of months only from renewable energy sources (big hydroelectric dams, that is); to being announced the "greenest country in the world" by the New Economics Foundation in year 2009; to scoring high on the Environmental Performance Index years in a row; and to being the 'rich coast' of *pura vida* (pure life).

While the IPCC reports that the main climate change-driven risks for Central America are related to water scarcity, agricultural productivity and disease patterns (2014) Appendix xx, Costa Rica's leadership is celebrated in both the regional as well as international UNFCCC climate negotiations arenas. Costa Rica was the host of the latest CELAC (Community of Latin American and Caribbean Countries) meeting where the country put forward a proposition for intensified family farming for increased food supply and security and reduced negative effects on the environment. Internationally, the 'tico' government declared their big plans on leading the country to reach carbon neutrality as early as 2021 (MINAET 2009; MINAE 2015; Girot April 15, 2016, personal communication).

The National Directorate for Climate Change (Dirección Nacional de Cambio Climático or DCC in Spanish) under the Costa Rican Ministry of Environment and Energy (MINAE) manages the country's climate change work nationally. I discussed Costa Rica's national plans towards carbon neutrality with Mr. Girot, a sectorial coordinator for climate change at the DCC and among the leading authors of Costa Rica's national strategy for climate change (Estrategia Nacional de Cambio Climático or ENCC in Spanish); with Mr. Morales, an environmental lawyer involved in the country's voluntary domestic carbon market (MVDCC); and with climate justice activists. While Mr. Girot acknowledges the long path Costa Rica still has to go through especially in its transport and agricultural sectors, Mr. Morales and the climate activists highlight the discrepancies in transparency of accounting for emission

reductions required to balance out the remaining emissions (Girot April 15, 2016, personal communication; Morales April 5, 2016, personal communication; COECOCeiba, personal communication). In Monteverde Community Fund's draft white paper, Brenes also suggests the need for "extensive and transparent" calculation of emissions (Brenes 2016). Although among the first countries in the world to create the MDVCC, the launch of which was in 2013, Costa Rica is still struggling with a consistent account for the carbon units it markets. The inconsistency stems from the fact that the National Forestry Financing Fund (Fondo de Financiamiento Forestal de Costa Rica or FONAFIFO in Spanish) and a private entity like The Earth University, for instance, are both carbon certifiers; and when it comes to calculating the carbon units regulated at the official market, only FONAFIFO's activities are taken into consideration despite the great work done by The Earth's carbon program (Morales April 5, 2016, personal communication). This, in turn, messes up the calculations for national contribution of emissions reduction on an international level too. From yet another perspective, activists see the MDVCC as a platform allowing private firms to continue polluting as long as they pay compensation for it. In the environmental activism circles in Costa Rica this is referred to as *pecar (sin) y pegar (pay)* – or *to sin and to pay* (a translation from Spanish), for the fundamental problem of continued pollution is not really tackled (COECOCeiba, personal communication).

In a conversation around the current international and national political-economic setting and the actions put forward to protect the environment and its people, Mr. Rivas Ducca, denounced the international and national market-based "solutions," saying: "*We are in humanitarian crisis. The promise of development is broken. […] Now is the moment for keeping up with the ideological fight and [build and maintain platforms for] grassroots organizations' alliances*" (Rivas Ducca April 1, 2016, personal communication). Referring to the "successes" of the global neoliberal economy in actively creating and maintaining the vast inequalities gap hitting the already marginalized communities the hardest, the current

humanitarian crisis was reiterated by Ms. Rossi and Ms. Pereira Varela at the The Dominant Economic Model and the Destruction of the Environment lecture (Modelo Económico Dominante y Destrucción Ambiental in Spanish) (attended April 13, 2016). The teachings of Sumak Kawsay - *"good living" in harmony with our communities, ourselves, and most importantly, our living, breathing environment* - were put forward as an alternative to strive for, highlighting the role of communities, especially indigenous ones, in already providing solutions to the crisis.

Context: national to community

One way that communities could be part of the grand ENCC is through the two schemes: Payment for Ecosystem Services (PES or PSA from Spanish) and Reducing Emissions from Deforestation and Forest Degradation (REDD+). Over half of Costa Rica's territory is covered with forests (International Day of Forests presentation or Dia Internacional de los Bosques in Spanish). According to the Food and Agriculture Organization, about a half of that forest cover is 'bosques primarios' or prime forest, providing natural services that benefit the local, national and international community. This forested land is protected under the 7575 Forestry Law and the National System of Conservation Areas - SINAC (Sistama Nacional de Areas de Conservación in Spanish), receiving financial support from FONAFIFO. FUNDECOR is a non-governmental organization that works closely with the Costa Rican government and especially with MINAE. Their role in the PES scheme is to "*serve the public interest"* and *"give value to the forest and its goods and services,"* currently having contracted 5000 forest owners (Carazo April 13, 2016, personal communication).

In theory, however, no one is entitled to "own" these lands and the services they provide, for they are considered public services. Yet, they are commercialized under these market schemes and this expands the inconsistency of not only sequestered carbon calculations, but also of entitlement over land and land rights (Morales April 5, 2016, personal communication; COECOCeiba personal communication). With that, these schemes allow for a "centralized management" of the world's forests which "produces new inequalities" (Marino & Ribot, 2012). Beyond the initial excitement and bragging about the

"success" of these schemes by the top governmental officials, in reports and in negotiations, is the question of how exactly these "poverty reduction, enhancing biodiversity and ecosystem services schemes affect the ones that are supposed to be the primary beneficiaries: the farmer communities and the indigenous peoples of Costa Rica. While big land owners (as the Finca Fila Marucha case study will touch upon later on) are able to enter the PES scheme and benefit from it, many small farmers cannot even afford to ensure fulfilling all of the requirements by the scheme.

Whatever happened to recognition, participation and information sharing? Follow the money.

In a truck ride back from an unofficial gathering ("junta" in Spanish) in a remote location of the Bribri indigenous community, one of the participants of the junta was sharing his experiences with attempting to become part of the PES scheme: "…*they* [the Indigenous Development Association or ADI – Asociacion de Desarollo Indigena in Spanish] *told me to plant the species they wanted me to plant first and that only then I will be able to receive the payments. I did my part by buying the seeds for planting exactly what they wanted and I planted them, although I was short on money, but never saw any of the payments. Whenever I go ask about it, I am referred to someone else or I am told to wait longer"* (Jeffrey April 9, 2016, personal communication; witnessed during the fieldwork on the Bribri case study).

The ADI did not seem to be very popular in the area; other individuals from the community too complained about the work, or the lack thereof, throughout my three-day stay in Bribri, Talamanca, Limón. "*Once REDD+ money started flowing in, the ADI members forgot about their role as representatives of the actual community, made changes of the ADI statute as they please and did not consult their actions with anyone. Rather, they "consulted" with some communities of the [Bribri] area that approve of what the ADI has done with the statute without even checking it,"* – explained Patricio while sitting in the shade at one of the junta participants' yard. Ignacio and Sandra whose house we visited kept on nodding. Ignacio added to the discussion, *"It's true! Beyond the failure of REDD+, the ADI now wants to approve of a project with the national program for biological corridors* (El Programa Nacional de Corredores Biológicos in Spanish) *apparently … For this,*

people will have to go to nurseries to buy the exact seeds that the program requires them to plant … and that has never ever been present in our culture and most definitely against the laws of nature… We have always been planting our own seeds coming out from our own gardens, and now the land would have to endure non-native species and that, at a cost…. Just another system to charge people unfairly" (Ignacio April 9, 2016, personal communication; witnessed during the fieldwork on the Bribri case study). Sandra reiterated the problem by pointing out the need for shared knowledge and information. She gave an example of how they have solved river pollution problems in the past only with their own ancestral practices in line with the Bribri culture and no 'outsiders.' They went on talking about how participation in the changes of the ADI statute, as their representation body in the national affairs, together with unbiased, free from corruption information delivered to the communities, is essential.

At a yet another junta (attended on April 10, 2016), another major problem witnessed by the Bribri community was discussed, closely related to participation, and that is recognition. Facilitating the junta, Felipe mentioned the Convention 169 (officially: the Indigenous and Tribal People's Convention of 1989). Although Costa Rica has ratified it over 20 years ago, "*about 60% of the land is still not in the indigenous people's hands*" (Felipe explained on April 10, 2016, personal communication). Morales also spoke about the "shamefully slow process" in recognizing Costa Rica's indigenous peoples' rights: "*There is an environmental law principle, what we call in Spanish: the division [el devido] with consideration [con sentimiento], informing (knowledge sharing) the people [informado de los pueblos], and the right to participate [el derecho de participation], that is established in our constitution; but, there is an important jurisprudence of the right of participation, especially of indigenous peoples. […] And that is the right to participate of indigenous people, there must be a, what we call, [an] 'electoral process,' in which those people both and/or the representatives according to their tradition, decide [themselves] if they want or not to be part of the project or not […] The thing is, sometimes those processes are not very well managed. Sometimes they do not represent the real intention, the real thinking, the real perception and wishes of these peoples. Because what happens is, sometimes there are a couple of persons that decide, they*

are not the people that were elected according to tradition; there is infiltration of other schemes and institutions, or organizations, are not part of their traditions but still have power that the country, the state has given them: the ADIs [Los Associaciones de Desarollo], those are not part of their culture and/or the way to make the political organization, sometimes there is corruption, sometimes the people are not properly informed the audiences where it will take place to decide these things…." (Morales April 5, 2016, personal communication).

These injustices, however, are more often than not overlooked both nationally and internationally in the decision-making arenas. Internationally, the REDD+ and *"other national schemes around the world are being designed taking Costa Rica's PES as a successful example"* (a statement proudly presented at the Launch of PES for Results event at MINAE or Lanzamiento de PSA por Resultados, attended April 13, 2016). A similar statement, but with much less enthusiasm in his voice, was made by Mr. Aguilar Salas from FUNDECOR, while giving me the gist of Costa Rica's Emissions Reduction Program Document, its official transposition in regulation and theory and its practical implications (Aguilar Salas April 14, 2016, personal communication).

Funding and support for community initiatives

The importance of funding for community adaptation and mitigation responses cannot be overstated. In order to scope the various available (or seemingly so) opportunities for community-based climate and social justice initiatives, I reached out and was referred to individuals coordinating or otherwise involved in the work of various funding bodies, namely:

- Ms. Reyes, project officer at Fundecooperacion (managing the Adaptation Fund in Costa Rica for community adaptation benefits, among else);
- Mr. Mata, project coordinator at the GEF SGP (the Global Environment Facility's Small Grants Program under UNOPS for community-based projects in organic farming, water protection, forest fires prevention),

- Mr. Welch, executive director of the Monteverde Community Fund (mobilizing local resources and providing access to capital to small community initiatives),

- Ms. Perez de Madrid, livelihood and climate change unit, regional officer at IUCN Costa Rica, Central America and South of Mexico (ecosystem-based adaptation project management, community management of natural resources in terms of ecosystems, water management and community-based adaptation),

- Mr. Azofeifa, sustainable production department officer at the Costa Rican Ministry of Agriculture and Livestock).

Below is a summary of the activities relevant for community-based adaptation and mitigation strategies by each of these bodies:

Fundercooperacion promotes the implementation of projects on topics of sustainable development. From the beginning in 1994, they were receiving funds from the government of the Netherlands in order to promote such projects and while they had to report to the Embassy of the Netherlands, the funds they received were non-refundable. In 2007, they transformed their operations and from a traditional microfinance organization became one that created a credit program for supporting sustainable development projects benefiting individuals and groups that, for whatever reason, have little possibility of obtaining financial support with traditional financing systems. Since then this credit program became their priority. Some of their last projects are the South-South project, projects around the NAMA-Café, and the allocation of the Adaptation Fund. The South-South project is a project supporting grassroots generation of knowledge, empowering stakeholders, reducing poverty and mobilizing the civil society, the private sector, the academia, and national governments in between Benin, Bhutan and Costa Rica, to review and reinforce commitments to sustainable development. There are seventeen project beneficiaries that were chosen under lengthy consideration and

involvement by various decision-making stakeholders. The projects hold $5 million in counterparts. Finally, Fundecooperacion collaborates with the DCC and MINAE, as well as with the GEF SGP (on the water preservation project ASADAS) and the National Program for Biological Corridors (Reyes April 21, 2016, personal communication).

The **GEF Small Grants Program** exists for 24 years now, and during this time 620 communities were supported with small grants that are around $25.000. Communities are able to contribute to the global environmental problems through their own, diverse projects by receiving funding from the SGP. The program supports communities located in the biological corridors, for biodiversity preservation is one of this program's priorities. Other supported activities include community initiatives around preserving water (ASADAs, together with Fundecooperacion and the Biological Corridors program), expanding of organic agricultural produce, preventing forest fires, seed exchange between indigenous communities, and rural sustainable tourism. With regards to the application for any of these community-based programs, applicants must go through an organization. The SGP is providing the applicants with all the information needed and communities are looking for a way of how they can help nature and their surroundings. After visiting the location, SGP is helping applicants to form a proposal and a project documentation which is being sent to a National Committee. A group of organizations and people inspect the documentation, give proposals, and write the project document. If this is accepted, and the two parts are signing the contract and SGP provides the necessary training for the applicant - community. The communities that successfully pass the application process at first receive a 50% of the funds, then 40% and at the end the last 10%. This process is followed by the necessary reports that are both narratives and financial statements and are made after a year, and after year and a half post receiving the funds and starting a program. The end of the program is followed by the final report and external evaluation report for each of the projects. Co-financing for all of these projects and programs is provided by corporate money, with organizations such as UNDP and GEF - 133 countries from all around the world are a part of this program in the UNDP. The funds are given

directly to the GEF then to the UNOPS and then to the communities. SGP is present only as a supervisor and support. There are about 120 projects that the SGP has assisted in Costa Rica (Mata April 18, 2016, personal communication).

One of **Monteverde Community Fund's** main initiative is the small grants program mobilizing funds for local projects that address local environmental, social and economic problems. Currently, the MCF offers a Climate Change Fund in addition to an Environmental Fund which aim to create an incentive for local stakeholders to develop climate-oriented initiatives. The aim is to acknowledge the existing social and environmental concerns among those in the local climate change movement and deliver a pragmatic, well-informed approach to develop a strategic, region-specific response which is in line with national and international frameworks. Through the Technical Assistance Program, the MCF identifies opportunities to connect disperse community-based organizations with common objectives through initiatives which create synergies and economies of scale. One strategy of this program is to focus financial resources on such common causes, while another is to search for new resource opportunities that may only be available to community groups when they work together. Overall, the objective now is to also connect top-down nation-wide mechanisms with bottom-up, community-oriented processes (Welch April 4, 2016, personal communication; Brenes 2016, draft white papar).

All of the current **IUCN Costa Rica** are related to ecosystem-based adaptation. Projects are there to assist communities to better manage natural resources in terms of ecosystems, water management, and various community-based adaptation strategies. The Environment Ministry of Germany (BMUM) funds all of the projects. The office collaborates on projects with the Biological Corridor of Talamanca. Other projects, such as the current one, have to do with seed exchange among communities and integral farms. The Integral farms project was developed as a methodology, as a measure in itself for Fincas Integrales Didacticas (Integral farms in Spanish). The program of this project is not finalized yet as the participating farms are still in the selection process. There will be 5 farms on the Costa Rican side and 5 farms on the Panamanian side eventually to benefit from this project. The program of

Integral farms is also funded by Environment Ministry of Germany (BMUM), receiving both technical and financial support for each of the farms, the size of which varies from 2ha to 10ha (Perez de Madrid April 21, 2016, personal communication).

The goal of the **Sustainable Production Department at MAG** is to foster adaptation practices since it was founded in 1997. Currently, beneficiaries are encouraged to use live fences, biodigestives, organic pastors, residues for organic fertilizers and more. Much of the present work revolves around the NAMAs and NAPAs, in trying to better understand how these practices can affect the reduction of GHG emissions and the resiliency of the systems. Since 2004, the Department has worked on the `payback` program (Reconocimiento de Beneficios Ambientales in Spanish), which means that the Ministry pays the farmers for the work they did earlier if it had a positive effect on the environment. This had proven to be a very successful mechanism because many have been stimulated to do more than they would. General policies and the training have made the process smoother - farmers are taught to use organic fertilizers. First, they have to pass a soil test, get trained to design a fertilizer program, and share knowledge and information. The funding for this payback program comes from two sources: taxes from oil (0.1%), which goes for organic agriculture, while the second source is public budget which comes from other taxes and public debt. The Integral farms (Fincas Integrales Didacticas) program is another line of work for MAG. Environmentally friendly land management forms a productive action plan which is based on production capacity, applied to both improve the availability and quality of food - maximizing the use of resources and energies of the system. Various activities are integrated in this program and the conditions are to receive and exchange experiences with groups of farmers interested in developing sustainable production systems and to support each other. The data on the success of this program is not available because the program has not ended, and therefore data has not been collected. The FID program ended because the loan from IDB - International Development Bank - ended in 2010. Nowadays, the methodology used in FID program is used once again by the different programs like Reconocimiento de Beneficios Ambientales, funded

by Government of Costa Rica. The projects around the NAMAs and NAPAs are supported by international funds for coffee and are funded by BID – FOMIN. Most of the money comes from the NAMA facility. Finally, there is the Good Agricultural Practices Initiative oriented to have food without any residues or pesticides. The main goal of this initiative is health of the consumers. This organization is private sector. In the short times all of the farmers will need to have a certificate that prooves their good quality products. Farms must be controlled and visited throughout year in order to get this certificate. (Azofeifa April 18, 2016, personal communication).

Climate justice definitions by interviewees

In response to what *climate justice* means and should deliver to communities (in Costa Rica, but not exclusively), some of my respondents replied:

"Climate justice means creating and maintaining capacity and solidarity and support from everyone to everyone, not only the government. It includes being able to access the right information and to take decision on your own for a decent life" (Reyes April 21, 2016, personal communication).

"Equity and equality are very important concepts that refer to justice and they should be integrated into the law handling of environmental topics impartially. It means that what environmental and social justice is, it is the exercise of environmental rights, and implementation of environmental law. That implementation needs to be based on this concepts, and the social justice has to be granted to everybody. […] And the environmental law has to be applied without discrimination, taking into consideration the different social groups; for example, indigenous peoples and certain communities that need more of some of the necessities. They have to be considered first and implementation of the law has to be done in a proportionally just and rational way. […] If a law in another excludes some social groups that are limited by certain social or economic specifics and for one reason or another are not represented in the law making [that affects them], and thus, they are not able to participate, this law would not be just to those communities" (Morales April 5, 2016, personal communication).

"[Reaching] climate justice needs a multiple ways of action. Actions where system itself would not be so effected by climate, and be founded on diversity of actions and [fair] economy. The problem of [tackling] climate change must rely on information and knowledge. People, communities must work together, rely on each other and also on their natural resources. A global community that understands the role of everybody, a role of unity and interaction" (Azofeifa April 18, 2016, personal communication)

"Climate justice has two dimensions. One has to do with the relationship between states within the international process. […] The degree of vulnerability and exposure of small [island/developing] countries is vastly higher [as compared] to other countries. [The second dimension] has to do with more vulnerable communities within states, where the risks are socially distributed and the burden of risk between poor communities or communities located in more vulnerable areas obviously makes them more vulnerable and more susceptible to having loss and damages attributable to climate change. […] Obviously, vulnerability is very locally defined and you need to have that degree of specificity to how risk is distributed between different social groups, between different geographical areas, between different sectors and how issues of justice have to do with how do you compensate that injustice. How do you guarantee rights to those most vulnerable, that means access to resource to protect their assets and to protect themselves and to give priority to the protection of those most vulnerable" (Girot April 15, 2016, personal communication).

Community forest management in Costa Rica

The reason to choose Costa Rica as a case study country was because there are quite a few relevant examples of community forest management alternatives across the country. I was able to learn of a few more instances at the International Day of Forests (Día Internacional de los Bosques in Spanish) where ten farms were awarded for their efforts in managing the forest (attended April 7, 2016). If analyzed against the ACJF, I am including them here especially for their efforts in catering to the nonhuman systems' recognition and respect, and contributing to natural systems' resilience. Table 4 below summarizes them:

Table 4: Awarded case studies of community forest management in Costa Rica

Case Study	Description	Objectives
FUNDECOR	Location: Sarapiquí, Heredia Area: 42,000 hectares Biome: tropical forest and subtropical moist broadleaf forest Type of Forest: native and plantation forests	Promote sustainable management of forest resources in order to increase the value of forest goods and services. Support commercial timber production. Maintain the various functions of the forest.
GRUPO LOS NACIENTES	Location: Santa Rosa de Pocosol, San Carlos, Alajuela Area: 13,400 hectares	Work under sustainability principles and criteria accepted globally. Seek excellence and growth

	Biome: tropical rainforest and tropical montane forest Type of Forest: plantation forests and secondary native forests	through the production and marketing of innovative high quality products and timber trees.
FERLO S.A.	Location: Pital de San Carlos, Alajuela Area: 521 hectares Biome: tropical rainforest Type of Forest: primary native forests	Sustainable management of natural forests in second crops aimed at obtaining sawn timber while complying with the principles, criteria and indicators as established in forest management.
CENTRO AGRICOLA CANTONAL DE HOJANCHA	Location: Hojancha, Guanacaste Area: 26,239 hectares Biome: moist tropical rainforest and very moist tropical rainforest Type of Forest: secondary natural forests, plantation forests, agroforestry, coffee and fruit crops, improved and traditional pastures	Generating employment opportunities for the local community while promoting the diversification of the production of farms.
BARCA S.A.	Location: Jicote, Parrita, Puntarenas Area: 331.11 hectares Biome: tropical forests and subtropical broadleaf forests Type of Forest: plantation forests	Sawmill production of high quality commercial timber using highly efficient and sustainable techniques.
FINCA FILA MARUCHA	Location: Aguirre, Puntarenas Area: 94 hectares Biome: very moist tropical rainforests Type of Forest: primary forests, secondary forests and anthropogenic forests	Integrated and diversified management of natural forests and sustainable production of timber and non-timber products.
UNIVERSIDAD EARTH	Location: Guacimo, Limon Area: 3.376 hectares Biome: montane broadleaf tropical humid forest with transition to basal Type of Forest: Secondary natural forests, primary forests and forest plantations	Incentivize the preservation and regeneration of forests. Promote eco-touristic, academic, and research activities and the sustainable management of forest plantations.
RESERVA NATURAL MONTE ALTO	Location: Hojancha, Guanacaste Area: 275 hectares	Watershed management in order to achieve the regulation of water resources

	Biome: moist tropical rainforest and very moist montane Type of Forest: riparian forests and secondary forests	and the conservation of biodiversity.
FINCAS CACAO Y OROSI	Location: Santa Cecilia de la Cruz, Guanacaste Area: 150 hectares Biome: Very moist tropical rainforest with transition to montane Type of Forest: natural primary and secondary rainforests, forestry plantations and agroforestry systems of cacao, vanilla and other forms of tropical broadleaf forests	Align two usually conflicting objectives across investment: maximization of private economic benefits while providing quality ecosystem services to society.
FINCA KAMINAL	Location: Puerto Viejo de Sarapiqui, Heredia Area: 1025 hectares Biome: moist tropical rainforest and moist subtropical broadleaf forest Type of Forest: natural primary forests and forestry plantations	Sustainable timber production for national primary industry except for forests with secondary crops and timber for local industries in the case of forest plantations.

Another big reason for selecting Costa Rica as a case study country was the already available analysis of some shared characteristics of successful cases of community forest management/governance across the country, by groups such as COECOCeiba and Friends of the Earth International. In summary, the identified key features of successful community forest governance instances revolve around the following:

- Recognition of transparent tenure rights, ownership and community forest area boundaries; by the community and by the state;
- Sharing and consistency in community knowledge around the biophysical and socioeconomic boundaries of the resources as well as the benefits of them;
- Shared vision for the governance of the community forest;

- Capacity for active participation in decision-making on rules enforcement and sanctioning, as well as conflict resolution (Baltodano *et al.* 2008; FoEI 2015c).

In an interview with Baltodano, he said that the current injustices revolving around the market-based solutions put forward on a national and international level are fundamentally around land tenure: "*There are a lot of capitalistic forces that want to capitalize on the [community-based resource management] problems […] but the real problem in modern times is the same problem since colonial times, and that is land tenure. […] Capacity building in communities to understand this problematic is what really matters."* In a response to 'what does climate justice mean for local communities,' he said: *"[an environment] free from fossil fuels. Rapid reduction of GHGs pumped in the atmosphere. A binding protocol delivered from an international level, channeling capitalistic forces towards repayment of the damage they have caused. Provided resources for 'survival' – [for many] it is not only about 'adaptation' any more, but literally, survival. I believe that the government needs to deliver clear land rights to indigenous peoples and local communities [are essential] so that they are in charge of the resources they need, [as is] knowledge sharing and laws and regulations for good governance. Education on community-based resource governance and basic infrastructure for irrigation [are also crucial]"* (Baltodano April 19, 2016, personal communication).

Case studies: operationalizing the ACJF

After giving a background to the international and national contexts as an important consideration for an analysis of the four case studies within the posed conceptual framework, I operationalize the ACJF as an analytical tool in the upcoming section. The first two case studies represent more of what was discussed around capabilities and context vulnerability, while the last two are more concentrated on the ecological benefits of forest management, the recognition of nonhuman systems and resilience.

Los Cipreses

Summary of the interview with Mrs. Sanchez, Forest Engineer, Watershed Program of Municipality of San José (April 14, 2016, personal communication):

Los Cipreses is a site by Rio (river) Torres in Barrio Mexico (Picture 1 and 2). Rio Torres' is one of the three watersheds that are part of the program around the three most polluted rivers started by the local municipality in 2011 (Picture 5). The municipality started working on establishing biological corridors and rehabilitating the areas of protection as specified in the 7575 Forestry Law (Picture 3). Although there are a few institutions that provide some funding for the overall project, there are no international funds invested in the preservation of the trees by the river that have such a substantial role of maintaining the ecosystems around them. The municipality donates the trees themselves (both fruit and non-fruit trees), but the specific projects are very underfunded. One of the reasons is that when it comes to watershed management, not only one community is responsible, but all of the communities along the river. High investments are needed to cover not only for technical support in decontaminating the river, but also for education and training seminars of the communities involved in watershed connectivity: "If you pollute here, this will be reflected down the river too." The downside that makes the work of the Watershed Program even more challenging is the fact that there is no *law* on urban biological corridors. It is only rural biological corridors that are *recognized* as contributing to adaptation and mitigation efforts.

The main objective is to improve the quality of life of the populations along the watershed. Biodiversity will be enhanced, mental health improved, environmental education heightened, and there will be much less dirt to live in. For this, *everyone's effort is needed:* from public institutions' capacities to private entities' capacities, to, most importantly, community capacities. Mrs. Sanchez sees environmental education as a key factor promoting the engagement of the local population more actively in the process.

Summary of the interview with Mrs. Macdonald, Office Manager of IAFN/RIFA – the International Analog Forestry Network, the organization leading this project (April 7 & April 21, 2016, personal communication):

They have been involved in the Los Cipreses project for over two years now and have helped with workshops on organic gardening, vegetable gardening, the Children's forest: tree nursery (Picture 4). As there is a big problem with an invasive grass on the site, much effort has been put into getting rid of it. The work of volunteers from Thomson Reuters has been essential to the process: they come to the site once a month, and together with members of the community work on cutting the grass, planting new trees and cleaning by the riverside. The site is also part of a tour organized by the Association of Friends of the Rio Torres that organize tours once a month to several communities, and Los Cipreses is one of the communities. The idea is that the participating people on the tour will see the broken infrastructure, but also the progress made with the Children's Forest, and be willing to donate. The funding for the current efforts has come from Thomson Reuters and has covered the purchase of the tools for maintaining the nursery and trees that have been planted. In short, the Children's Forest is a tree nursery by Rio Torres where the kids from the community adopt a tree (or a few of them), put their name on it/them, and are responsible for taking care of the them and for keeping them healthy (Picture 6). This enhances the children's informal environmental education and provides a safe and fun space for community engagement, in a community that has been having a lot of social issues: form lack of appropriate infrastructure, to problems with drugs and an unsafe environment. The majority of the kids involved are 2 to 13 year olds. Some of the trees are fruit, so this will be also beneficial to the community. Currently there are 60 trees, but the plan is that there will be another 600 trees planted. This will in turn safeguard the closest houses from potential floods as the rainy season is approaching, but also contribute to some carbon sequestration.

Field diary: I visited the Los Cipreses site twice. Both times I was accompanying Mrs. Macdonald. The first time we only went to give out some flyers to inform the community for the upcoming clean-up/planting day the coming weekend. We also went to check out the tree nursery and we spoke with a few people from the community whowere sitting around in the shades in that very hot and humid

afternoon. Danilo, a 7 year old boy ran towards us when he saw us and in a clearly upset voice asked Mr. Macdonald: "*Why do I only have three trees to guard now? I used to have to take care of 5!"* Mrs. Macdonald, in a very attentive manner answered: "*Because other kids joined and they also want to take care of some of the trees, dear. Worry not, though, we shall plant more trees and you can adopt some of the new ones!"* Although Danilo was not convinced, he stuck around and tried to be even more dramatic about his "loss." The whole situation was quite amusing. We continued walking while Mrs. Macdonald was giving me the background of the project when a beautiful little ten-year-old girl approached us and gave Mrs. Macdonald a big hug. Mrs. Macdonald asked Celia, the girl, if she will be joining that Saturday's clean up. She smiled and nodded, and added that she will "spread the word."

The second time around, a couple of weeks later, we went to Los Cipreses in the very early morning. It was a Thursday. This time, a few volunteers from Thomson Reuters were also there, in Thomson Reuters t-shirts and equipped with tools. A few community members were also there, but this time none of the kids were around. I was told that they are all at school. We were digging out some of the invasive grass for an hour or so, after which we could feel the sun becoming very strong. We took a break and during this half an hour, I was able to chat with some of the volunteers from Thomson Reuters, but more importantly, with Adriana and Katerina – the two ladies from the community that were there. I asked Adriana what was her motivation behind her work at the site when she started telling me: *"Before we started with this, you could barely walk through this site. The garbage was literally everywhere and you could not reach the river,"* she continued: *"Now we have a great recreational place for our children. My daughter dragged me here the other day, although it was not a day when everyone was coming together at the site, so that she 'checks on' the tree she adopted."* Adriana was saying with a big smile on her face. "*The site is not only good for the environment, for we are cleaning up the river and planting trees – nature's lungs – but there will be some fruits from the trees soon too! Most importantly, though, is that the engagement in the nursery allows our kids to learn being caregivers, have a place where they can meet up and play, and prevent them from getting into alcohol, drugs, violence…."*

Katerina was walking around and speaking to everyone meanwhile. She was around there the first time I came to the site too. I could tell she was one of the gatekeepers in the community. When I finally got to talk to her and asked her about her involvement in the project, she gave me a lengthy answer: *"It has been 15 years or organizing, meetings, cleaning, and raising awareness. It all started with this emergency of what is happening to the rivers and our ecosystems globally, this environmental deterioration. The community junta (council), that I am part of, we have been trying to raise awareness and include as many people as possible actively in this project. And although lately, in the past couple years, there has been a little improvement with regards to including more people, women, children, we still have neither been able to get the attention of our neighbors from the other river bank that keep on dumping rubbish in the river,"* she said as she showed to the other side, *"nor have we been able to get the attention of the government to support us in any of our efforts…"* I then asked her what the biggest benefits of the project were. The answer was: *"There are huge benefits both in health and social terms. By keeping our environment healthy we are keeping ourselves healthy. In social terms, not only we have a nice space especially for the youngsters, but we also have a great platform for participation and collaboration of members of our community and also the neighboring communities."* In response to 'what kind of support they could use from the government,' she added: *"An enormous help would be if there were fines to pay for everybody who pollutes the river. We need monetary help, yes, but more important is the collaborative participation. And if we [the community of Los Cipreses] work towards bettering our environment, and even our neighbors from across the river get on board* (which they are not, (Picture 7)), *if the neighbors from just up the river still pollute, none of our efforts will matter."*

Having heard and witnessed all that, I could not help but run the ACJF checklist: *health, participation, safe and secure environment, training and (informal) education, diverse involvement, need of regulation, disasters' prevention, and some food security.* Finally, the provision of *fun environment* and *greater engagement of children* and *women* is quite central to this case.

Picture 1: Some of the houses in Los Cipreses.

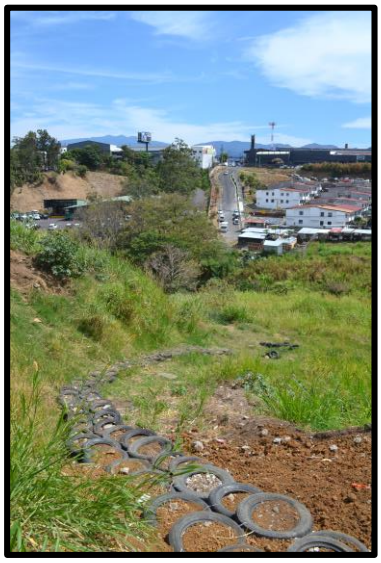
Picture 2: Poor infrastructure in Los Cipreses.

Picture 3: "Community Forest Los Cipreses" – a sign leading down towards Rio Torres.

Picture 4: "Children's Forest"

Picture 5: The still very polluted Rio Torres.

Picture 6: Some of the 'adopted' trees.



Picture 7: Tire steps leading down to the site. The community across the river that would not collaborate can be seen in the background.

Bribri

There are a total of 24 indigenous territories and 8 indigenous groups in Costa Rica. The members of the Bribri community are the most organized and outspoken ones (Baltodano April 19, 2016, personal communication). They speak Spanish and the local indigenous language Bribri.

Field notes: I was able to spend a few days in the Bribri community in Talamanca, Limón. I got there with another 3 scholar-activists from Costa Rica. The other three individuals I was with are part of or associated with a program through the University of Costa Rica (UCR), that has been doing work in the area together with the Bribris for some six years. The fact that I was there with them, and also the fact that I was associated with COECOCeiba (the collaborating organization) made me feel welcomed, as the local indigenous community was not seeing me solely as a student/scholar/researcher, but also as someone who is also actively part of the "struggle," although on different arenas. We all stayed together with one of the most outspoken Bribri families in the area. During my three-day stay there, I was able to speak to quite a few members of the community, participate in community junta-s and witness the way they organize themselves, visit a couple of their farms and learn more about their forest governance practices.

It was Elena and Manuel, as part of the university group coming to the region for the past years and being familiar with many of the practices that gave me some lead into the Bribri culture: *"The Bribri community revolves around the strength of the women. It is believed that it is the women who are inherently related to Mother Earth [Pachamama], and that have an internal urge to care about it and all living creatures"* said Elena in one of our conversations (Elena April 9, 2016, personal communication).

One of the community members managing his own forest farm I got to speak to was Marcel. *"The main crops on my farm are bananas and cocoa. I used to cultivate polyculture, meaning more crops on the same plot of land, but now this has changed. I had to adapt according to the trading system. […] Despite this, my monoculture cultivation is still organic, non-chemical, because the company requires that."* (Marcel April 9, 2016, personal communication). Asking more about the 'trading' reason change that he made I received an explanation that big companies like *Chiquita* and *United Fruit Company* are not able to rent out plots of land, so they contract small farmers to buy out their produce, in this case -bananas. I asked Marcel how he felt about the amount he was getting paid and what, if anything, could be done better. He answered: *"The company pays me 60 CRC (Costa Rican Colones) per kilo and then sells at 500 CRC per kilo. Their explanation is that this enormous raise is due to transportation and other arrangements. This has been happening, more or less, since 1995. And we have seen changes in the crop pattern too,"* I inquired what he attributed this to and he said: *"Climatic changes. But people do not know much about it. […] To improve the situation, the state should protect our rights as indigenous people and enhance our unions so that we can get better prices and improve our living standards. Importantly, we need alternative markets. We cannot be dependent on these huge corporations, it is not right"* (Marcel April 9, 2016, personal communication).

On our way to Sandra's place, I could see the enormous banana plantations on the side of the paths. On some of the plantations the bananas had blue plastic bags around them while other plantations did not. Turning to Patricio, Elena and Manuel, I wondered why this was the case. *"The corporations want it that way. The western markets are used to big bananas, and they grow bigger and lose the natural sweet taste they have*

in the plastic. But look more 'western,' so people out the bags in order to be able to sell their produce to the big corporations that are exporting. The local/regional markets are almost non-existent," explained Manuel (Pictures 1 and 2).

Getting to Sandra's farm and listening to her story was something else. Her father, Ignacio was also around. I began by asking Sandra about the matriarchal mentality that leads their culture, the relationships with one another and how this reflects their management of their forests. She elaborated on that. They work their forests as a clan. Women own the lands and their children inherit them from the women. Husbands are a part of another clan working on the lands of their mothers. Grandchildren also belong to the clan in case if you only have daughters (women). That is to keep the matriarchal community. Their land only is inherited by their children, nobody else, because, when they marry, their grandchildren belong to the clan of the women of their children. However, problems arise when there is a big mixed population. The 'macho' men not respecting this indigenous tradition threaten the matriarchal society as more and more men think that it is them who must manage the land. This is more preserved in the upper mountain area where there are more indigenous people and the matriarchal system is better maintained. Being asked her about her farm and her produce, she said: *"I don't use chemicals and grow everything on the same plot here, the maracuyá (passion fruit), the granadina, the pineapple…"* (Picture 4). To this, Ignacio added: *"Our chemicals are our machetes!"* Sandra continued: *"Most of what I produce is for my family's consumption, but I do sell cocoa, bananas and plantains. Rotational cultivation works. My clan and I use this technique that we call "restrojo" – letting the land rest. So what we do is we plant a few native crops for a few years and then let this plot of land be. Then we plant somewhere else so as not to exploit our lands, but let it rest, replenish itself."* I then wondered if she is able to feed her family from the products she has on her farm. She told me: *"I am, through barter. I exchange some of the food that I have more of with others from the community. If I am short on something, only then do I buy. But always from someone from the community"* (Sandra April 9, 2016, personal communication).

The next day we went to another junta, in a very remote area (Picture 5). There I was also able to speak to Elisa. She also grows everything organically; there is really no other way. She makes compost too.

When asked about the land ownership she told me: *"It is women that own the land. But we work together, both men and women. On my plot, we cultivate bananas, cacao, papaya, tubers, all together. We are able to sell some of the cacao and the bananas, but the tubers are mostly for our own consumption. The prices we get on the market are not fair at all. I wish there was a way for us to unite and make our voice heard to get better price and better access"* (Elisa April 10, 2016, personal communication) (Picture 3).

In the hour and a half walk back from the second junta I attended, I walked back with Hector. He was telling me about the small store that he had, the insufficient income, and basically reiterated the problems that the others were voicing with regards to markets set up for the big corporations. I asked him what in his opinion had gone totally wrong and what our biggest failure as society was. to which he responded: "*there are many problems, but some are crucial. For example, today's education. It teaches us to work for others, not for ourselves, our families, and our immediate environment. It teaches us to produce more and more for someone else's benefit at our own cost and at the cost of our nature"* (Hector April 10, 2016, personal communication).

Analyzing my Bribri experiences against the ACJF, I had to think about the central role of *education.* The mentality that traditional Bribri communities live with, in the matriarchal society they are, is evident in their care towards their forests. An important role plays the need for *participation*, especially reflecting their struggle against REDD+ (elaborated on in the Country to community context section above). *Recognition of and respect* towards their tradition is crucial.

Picture 1: Banana plantation with plastic bag for corporations.

Picture 2: Banana plantation without plastic bags.

Picture 3: Bananas and cacao plantations.

Picture 4: Sandra's maracuya, cacao and bananas.

Picture 5: At the junta.

Finca Fila Marucha

I was told about the great "analog forestry" work done at Finca Fila Marucha by several individuals. Milo Bekins, the owner, was one of the awarded farm owners at the International Day of Forests, where I had the change to meet him and arrange a visit. My visit to Finca Fila Marucha was a day trip; I went to Quepos, Puntarenas (the Pacific coast), where Milo picked me up from the bus station to go to Londres, where he lives with his family on a big 94 hectares 'jungle' farm. On our way up to the forest which was around a 40 minute drive, he was telling me about the forest around the road. He was telling me that it is part of a biological corridor, and the importance of connectivity of the systems:

"*Connecting biodiversity - that is a community product. Connectivity of this farm and the next farm, the water uses, and the water shortages, all of it will be put back into the ecosystem. Many animals and birds are the taking advantage of this corridor, and it is important that the community acknowledges this."* (Bekins April 20, 2016, personal communication).

There are 39 biological corridors within these governmental protected areas, but also on private lands. The national parks forests connect these areas and the forest stretches from the Pacific Ocean, all the way to the Caribbean, as well as across the border (the only biological corridor going across a border) to the Panamanian side. *"For all I know, my neighbor (across my jungle farm) might be on the Caribbean!"* – Milo joked.

He was a telling me a story about a family that "appropriated" a big plot of land to themselves. This incident changed the social dynamic of the whole community. The very long stretch of land that this family deforested in order to farm cows raised the importance of *clear land tenure.*

When we got into talking about community forest management and the importance of a joint community action, Milo highlighted the negative environmental and social impacts of the inability to do this. He sees the municipality's role as an important one, just as the actions of watershed associations and NGOs are. *"Everyone has a role and everyone's role is important. Forest governance is not easy; the ecosystem affected from one side, reflects this one the other site. Farming takes time and dedication."*

When we got to the heart of the forest, Milo was telling me about the little store that they have by the farm and what do they sell in there (Pictures 1 and 2). Then we went into the forest farm (Picture 3) and he was showing me some of the things that they built for protection of some of the species.

Later on, he talked about what the technique of analog forestry is, how it is mimicking the actual forest, mapping the landscape and the degraded are, attributing percentages to certain levels of (tall, short) trees and then reproducing it. *"When I started I didn't know anything about the forest, about the structure, anything…"* shares Milo with a smile on his face. *"I just started to plant different species in random areas- and it took me 12 years to finally understand that even if this is working it is not the right way, it is not sustainable. This*

is when I started reading about agroforestry, and came across Dr. Ranil's teachings" – the Sri Lankan considered the father of analog forestry. *"I was reading and learning how to create stable ecosystem with the forest structure, and here I am now."*

Picture 4 shows a plot of land that only two years ago had nothing on them. Milo spoke about the importance of *rotation of crops and also about food security. "Every crop should have a period of time when in the future you will replant it, but depends on the plant. It is the natural cycle of things."*

Milo went on showing me the machine and explaining me the technique that they use to make natural oils (Picture 5). *"I would ideally have a smaller one too, so that I can experiment."*

Finca Fila Marucha, besides being well known because of the analog forestry technique, is also known for the training and education of next generation of forest trainers. *"The forest is a classroom,"* but there was also an actual classroom too (Picture 6).

I presume my enchantment with the bamboo forest was obvious (Picture 7 and 8). Milo laughed and showed me to the bottom of the classroom: *"I have been able to do so much with the bamboo. Look at these bee houses – the bees just came here and I thought maybe I can set this up here. They are still in the process of adopting it I think."* (Picture 9).

We also got to talk about Milo's satisfaction with hoe the PES has worked for him and the big jungle farm. *"I am content. It has been 10 years not that I am beneficiary of the PES scheme, and it pays off."* Of course, it should be borne in mind that Finca Fila Marucha is 94 Ha farm owned by one family.

Picture 1: The store, view from outside.

Picture 2: The store, view from inside.

Picture 3: Entrance to Finca Fila Marucha.

Picture 4: Two year-old species.

Picture 5: Milo in front of the essential oils machinery.

Picture 6: The classroom for trainings on analog forestry.

Picture 7: Bamboo forest in Finca Fila Marucha.

Picture 8: Bamboo forest in Finca Fila Marucha.

Picture 9: Bamboo bee houses.

Picture 10: Rice on Finca Fila Marucha.

Picture 11: Alternative water flow.

Finca Armonia

Finca Armonia (Picture 1) is a family owned jungle farm 3.5 km deep in the primary forest from Punta Uva. Mike Humphrey lives on a 48 Ha jungle farm with his family. I got to the farm on a late Monday afternoon, but was able to walk around, meet Mike's family and talk to him about the farm, what has worked well for him, and what his vision was around this land. He started: *"It took me a long time to finally be able to pull out of the system and start living in the way that I thought made more sense. It is more of a sustainable*

*type of lifestyle where you are in touch with nature - you have your own shelter and you're in control of your own food. A lot of people are getting sick of the system. It's a b******* system.*" – the frustration in his voice was evident. "*You have to work and "get things" because "things" are everything. The corporate plan is to lure you into a position where you can do nothing but work your whole life and miss your life."* Mike spoke about the importance of being able to grow one's own food, be without a mortgage on your house and be able to be a part of nature.

It was 13 years ago that Mike took ownership over the farm. He bought the place from a few farmers that we selling theirs and "started living his my dreams." "*Then my little daughter came along and this changed some of the way I view things. Our local community here is fantastic"* (Humphry April 11, 2016, personal communication).

On this 48 Ha farm now there are about 1100 vegetable (Picture 2 and 3). *"My technique of farming is symbiotic in some ways. It's agroforestry. It's experimental farming. I try different things. I adapt what I read about the tropics and I just try. I go to people and I learn from them. Some of these systems I use are ancient. I listen to people and I try new things. Now I want to introduce charcoal. This goes back to ancient rainforest cultures. They had charcoal in the Amazon thousands of years ago."*

On non-native species on the farm, their survival and the effect on the land: "

There's a lot of food here which is not indigenous to Costa Rica. For instance, I grow this Indonesian plant and it's an incredible source of protein. It requires absolutely no maintenance. Also, I grow a type of Pacific spinach (Picture 4). It grows like crazy," Mike laughs. "I*t's not native to Costa Rica, but it is native to the central region of the tropics around the world."*

Mike elaborated on how these plants do not need a greenhouse to grow perfectly, and though this is not their perfect environment, they are still surviving very well. "*There is kale and lettuce and bab choi* (Picture 2). *We call this cauliflower in English it's not supposed to grow here. This region is supposed to be too cold for kale, but look at that – there it is!* "

I aksed him how does he maintain the soil for all these non-native plants. *"Costa Rica has a beautiful soil. My friend has an organic farm. What we do is that we amend the soil; we go to the jungle and use the logs to create material. But another thing that has been critical to me in my journey is learning how to use the lunar cycle. I am not supposed to cut certain types of plans unless it's the right time."*

On a question on seed exchange Mike said that he gets the seeds for local species from the locals. "*I go to someone who has an organic farm in the area."*

When asked whether he has noticed a change in some of the ecological patterns, he said: "*All of the old rules are off the table now. They don't make any sense anymore. Last year it was rain all the time and now it's dry. We can feel dramatic changes. Last year it was crazy - I could not grow anything because it was too cloudy and there was too much rain. There are climatic changes and this is absolutely true. Mitigating those problems is difficult because we don't know what is coming. I think we just have to plan for dry times, or rather, all kinds of times"* (Humphry April 11, 2016, personal communication).

Picture 1: Finca Armonia entrance.

Picture 2: non-native species.

Picture 3: native and non-native species.

Picture 4: Pacific spinach.

Picture 5: native species.

Picture 6: native species.

Summary of analysis

In a brief summary of the analysis of my findings against the ACJF: although none of the case studies presented above deliver the perfect example of climate justice based approach, all of them tell a real life story around various climate justice concepts that they are concerned with to a certain extent. The case of Los Cipreses for instance, values safe and secure environment, health and social benefits, as much as it values the benefits of the trees from the Children's Forest per se. In addition, it is evident that a law on fining polluters, something that only the government – an actor from different level – can assist them with. The importance of recognition of the adaptive capacity enhanced and the mitigation efforts provided by the urban biological corridors, and not only the rural biological corridors, can also be regarded as an important aspect the government can help community efforts such as Los Cipreses' with. When it comes to the Bribri community, nothing seems to be more central

than legal recognition for them as an indigenous community. Beyond the vague directives and opening the indigenous forests to big corporations, the Bribri community's most important assistance in continuing their efforts in preserving the forests through a number of techniques, but the one of women's centrality being most pertinent, is providing them with a clear land rights, legitimate recognition and respect, and platforms for meaningful participation in what affects them the most. With Finca Fila Marucha, the conversation around ecological connectivity and te need of communities' acknowledgement of the importance of that was significant. With Finca Armonia, the exhaustion with the neoliberal setup was central to the findings, as well as the need for one's own bodily and metal health, safe and secure environment, sovereignty over food system and providing own food security, was all interestinsting to hear about and see. Finally, nuances of constant learning and informal environmental education through being in touch with nature seemed to be present in each of the case studies.

5. DISCUSSION

Methodological/Theoretical/Analytical choices

Having in mind the extensive literature analysis as to which methodological approaches would be the most appropriate for my fieldwork, I would most probably only rethink the choosing of convenience case studies. The alternative to this might be a lengthier country context scoping so that case studies are picked according to certain specific characteristics. This alternative approach, however, would most certainly produce different findings and analysis.

If anything, if I were to do this research from the top, I would spend even more time on keeping a field diary, as well as give myself longer period of incorporating nuances from the everyday life of the interviewees and/or their immediate environment. These very particular instances seemed to be invaluable to understanding the community context more, and trying to give back both to the literature and the community, as a researcher, as much as possible.

The conceptual climate justice framework and the ACJF were only a natural result to what I did throughout my thesis, as responses to two of the sub-questions relied heavily on providing the answers that laid the foundations of the two frameworks: conceptual and analytical. However, even more importantly so, neither the research nor the practical perspective of my problem definition would have been fulfilled, had I not decomposed the issue through the frameworks that I did.

Legitimacy

As far as legitimacy is concerned, I would suggest that further research on and refining both the conceptual and the analytical climate justice framework, would never hurt. What is more, further research that could have been tackled here had this thesis been longer, is, on visually mapping the interactions of the various actors for each case study. Visual representation oftentimes provides a much clearer view of something that is not too evident if only written down in the form of paragraphs.

Sensitivity analysis

For most of my fieldwork I was being introduced, in one way or another, by a trustworthy person/group to the individual/community that I was to study, this affected the way I was seen by

individuals/communities and impacted my partiality. The use of the participatory action research and my natural urge of being present and in the centrality of the happening might have also made me more subjective in my research and my findings, but perhaps also made me be viewed as someone approachable and someone easy to talk to, which in turn, provided me with a big scope of participants in the study.

Generalizability

With Blommaert & Jie (2010:11-13) being impeccably convincing that generalization of a case study is "perfectly possible," I must say that when it comes to study looking at the competencies and interactions of such variety of actors ad this one, as well as the super wickedness of the lack of climate justice as a problem and community forest management as a solution, it is both much and very little from the study that can be generalized. Climate justice is a cross-cutting issue that (should) concern(s) everybody, and the climate relevant actors internationally are the same for the whole world. Even the national actors are not too different in structure and enforceability throughout the world, besides a few exceptions to the rule, of course. It is therefore, the community forest management as being one of the few strategies that embodies the synergy of benefits of both adaptation and mitigation efforts that might not be completely generalizable. Nevertheless, the inspection of interactions between the actors on a local, national and international level can be extended to other problem policies, especially if they fulfill the key features of super wickedness.

6. CONCLUSIONS

In order to conclude, I look back at the main problem I identified: "how can a climate justice based policy approach be ensured in community-based responses to climate change?" and I think: my research hardly provided a perfect answer to this question. Then why ask it? – one might wonder. The response to that is the evident gap in both research and praxis. When it comes to climate justice, the ones most affected by the adverse consequences of changing climate are the ones least heard, represented, or even consulted at all. With the response to sub-RQ1 on "how should the problem of lack of climate justice based policy approach in addressing climate change issue be conceptualized?" I debunk the super wickedness of it and later on, provide the basis of a conceptual climate justice framework and an analytical climate justice framework as a response to sub-RQ2. By the end of the study, empirical work around the concepts of climate justice and the interaction among actors from various levels (local, national, international) on the ground in community forest management strategies in Costa Rica, was done, to only show that no perfect project can be implemented, delivering to all climate justice related aspects. Nevertheless, different interactions each case study showed an incredible potential and room for improvements by the actions of multiple actors from all levels. What is important to note is that beyond whatever environmental and/or social disruptions, small scale instances of relevant justices are existent and actively pushing for and demanding climate justice by delivering real life solutions. It is these small, existent instances, ultimately based on provision for good, healthy life for both the human and nonhuman nature, safeguarding against climate and social disturbances in one way or another, that make all the difference; thus, it is to these seemingly small solutions that various level actors should cater to, and provide the channels and platforms for their proliferation.

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GLOSSARY

Triangulation

"Triangulation involves using multiple data sources in an investigation to produce understanding. Some see triangulation as a method for corroborating findings and as a test for validity. This, however, is controversial. This assumes that a weakness in one method will be compensated for by another method, and that it is always possible to make sense between different accounts. This is unlikely. Rather than seeing triangulation as a method for validation or verification, qualitative researchers generally use this technique to ensure that an account is rich, robust, comprehensive and well-developed."

http://www.qualres.org/HomeTria-3692.html

Deductive approach

"Researchers taking a deductive approach […] start with a social theory that they find compelling and then test its implications with data. That is, they move from a more general level to a more specific one. A deductive approach to research is the one that people typically associate with scientific investigation. The researcher studies what others have done, reads existing theories of whatever phenomenon he or she is studying, and then tests hypotheses that emerge from those theories."

http://catalog.flatworldknowledge.com/bookhub/reader/3585?e=blackstone_1.0-ch02_s03

Document Review

"Document review provides additional information pertaining to the group being studied. Documents are records relating to the persons of subject, to a situation, project, or an event, and can even supply empirical evidence that supports the sociological theories. However, Bryman (2006) suggests that in order for documents to be useful in review, they should fulfil the following four criteria: (1) *authenticity*, which relates to genuine evidence and of credible origin; (2) *credibility*, which relates to whether information is free from error; (3) representativeness, is the evidence typical of its kind; and (4) *meaning*, in whether the evidence is clear and comprehensive." (Bryman 2006)

Inductive approach

"In an inductive approach to research, a researcher begins by collecting data that is relevant to his or her topic of interest. Once a substantial amount of data have been collected, the researcher will then take a breather from data collection, stepping back to get a bird's eye view of her data. At this stage, the researcher looks for patterns in the data, working to develop a theory that could explain those patterns. Thus when researchers take an inductive approach, they start with a set of observations and then they move from those particular experiences to a more general set of propositions about those experiences. In other words, they move from data to theory, or from the specific to the general."

http://catalog.flatworldknowledge.com/bookhub/reader/3585?e=blackstone_1.0-ch02_s03

Intragenerational equity

"Intragenerational equity is concerned with equity between people of the same generation. This is separate from intergenerational equity, which is about equity between present and future generations. Intragenerational equity includes considerations of distribution of resources and justice between nations. It also includes considerations of what is fair for people within any one nation."

http://www.uow.edu.au/~sharonb/STS300/equity/meaning/intragen.html

Intergenerational equity

"Hold the natural and cultural environment of the Earth in common both with other members of the present generation and with other generations, past and future" (Weiss 1990:8).

http://www.uow.edu.au/~sharonb/STS300/equity/meaning/integen.html

Ethnographic research (fieldwork)

"Ethnographic research usually involves observing target users in their natural, real-world setting, rather than in the artificial environment of a lab or focus group. The aim is to gather insight into how people live; what they do; how they use things; or what they need in their everyday […] lives."

https://www.gov.uk/service-manual/user-centred-design/user-research/ethnographic-research.html

Super wicked problem

"Super wicked problems comprise four key features: time is running out; those who cause the problem also seek to provide a solution; the central authority needed to address it is weak or non-existent; and, partly as a result, policy responses discount the future irrationally." (Levin *et al.* 2012).

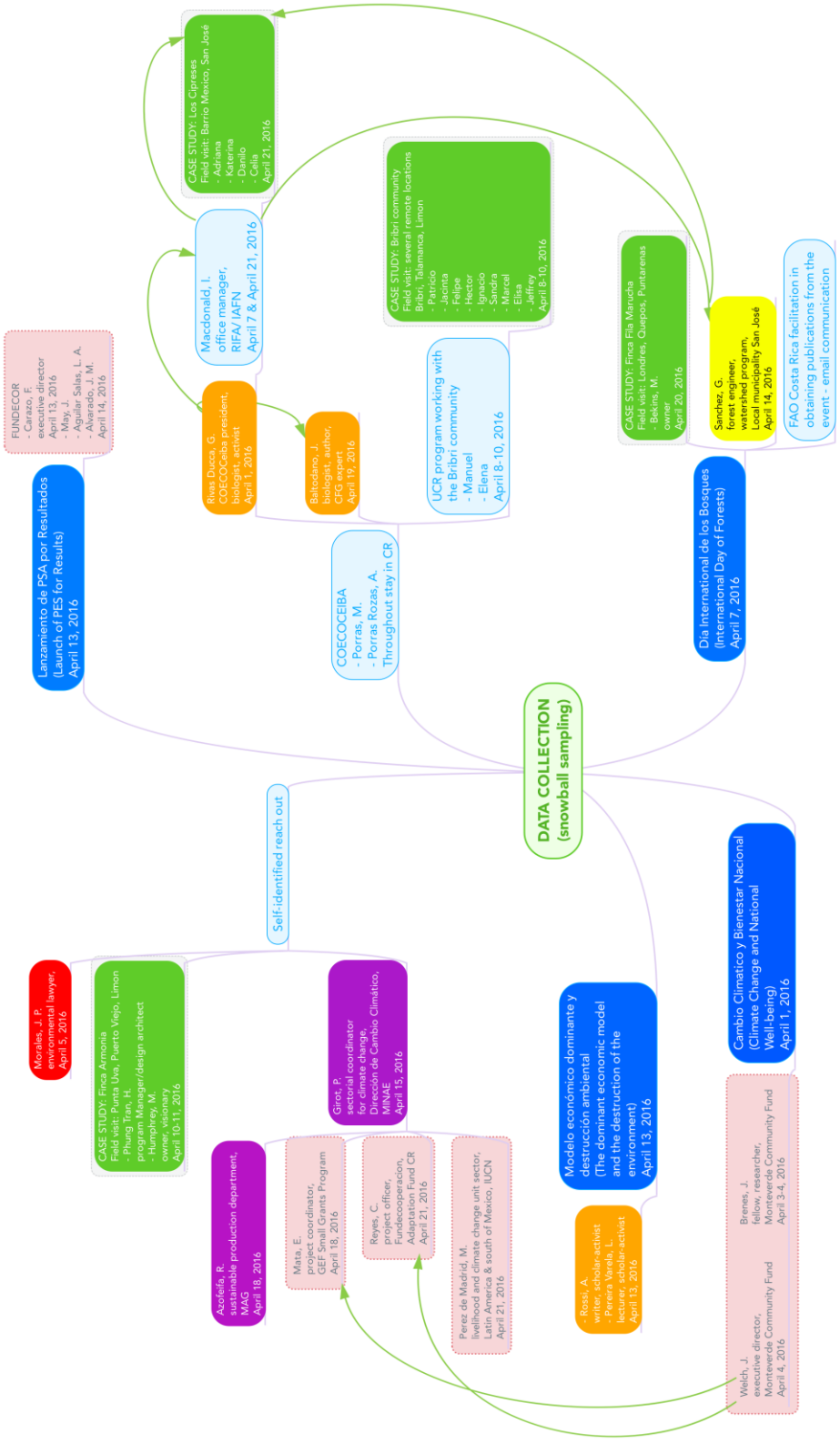
Leximin

"This is the principle that the concerns of the "neediest" must be taken into account and in respect of climate change these are the people most vulnerable to climate change as defined by exposure, sensitivity, and adaptive capacity (Adger et al. 2006). Within the context of climate justice and environmental decision making, the "neediest" or least favoured are those experiencing a disproportionate share of environmental burdens, pollution, and climate change risk that lack capacity to adapt to changing climate. As such a vulnerability-based leximin rule suggests that when the neediest are taken care of then the second neediest are then taken care of (Kolm 1996, p. 59). If this component is not adopted, a danger of participatory mechanisms for decision making is that marginalized people continue to be marginalized and the hegemonic power structures continue to operate in participatory environmental decision-making bodies (Adkin 2009, p. 309). Adopting a philosophy of the principle of leximin, or making decisions taking into account the position of the least favoured, neediest person,

or most vulnerable in society, alleviates the potential of hegemony. Adopting this principle as an objective of the UNFCCC would create a new tool to achieve climate justice." (Hurlbert 2011)

APPENDICES

Appendix 1: Data Collection



Appendix 2: CJ groups and movements' definitions reviewed

Table 3: CJ definitions

BALI PRINCIPLES OF CLIMATE JUSTICE (http://www.corpwatch.org/article.php?id=3748):
Whereas climate change is a scientific reality whose effects are already being felt around the world;
Whereas if consumption of fossil fuels, deforestation and other ecological devastation continues at current rates, it is certain that climate change will result in increased temperatures, sea level rise, changes in agricultural patterns, increased frequency and magnitude of "natural" disasters such as floods, droughts, loss of biodiversity, intense storms and epidemics;
Whereas deforestation contributes to climate change, while having a negative impact on a broad array of local communities;
Whereas communities and the environment feel the impacts of the fossil fuel economy at every stage of its life cycle, from exploration to production to refining to distribution to consumption to disposal of waste;
Whereas climate change and its associated impacts are a global manifestation of this local chain of impacts;
Whereas fossil fuel production and consumption helps drive corporate-led globalization;
Whereas climate change is being caused primarily by industrialized nations and transnational corporations;
Whereas the multilateral development banks, transnational corporations and Northern governments, particularly the United States, have compromised the democratic nature of the United Nations as it attempts to address the problem;
Whereas the perpetration of climate change violates the Universal Declaration On Human Rights, and the United Nations Convention on Genocide;
Whereas the impacts of climate change are disproportionately felt by small island states, women, youth, coastal peoples, local communities, indigenous peoples, fisherfolk, poor people and the elderly;
Whereas local communities, affected people and indigenous peoples have been kept out of the global processes to address climate change;
Whereas market-based mechanisms and technological "fixes" currently being promoted by transnational corporations are false solutions and are exacerbating the problem;
Whereas unsustainable production and consumption practices are at the root of this and other global environmental problems;
Whereas this unsustainable consumption exists primarily in the North, but also among elites within the South;
Whereas the impacts will be most devastating to the vast majority of the people in the South, as well as the "South" within the North;
Whereas the impacts of climate change threaten food sovereignty and the security of livelihoods of natural resource-based local economies;
Whereas the impacts of climate change threaten the health of communities around the world-especially those who are vulnerable and marginalized, in particular children and elderly people;
Whereas combating climate change must entail profound shifts from unsustainable production, consumption and lifestyles, with industrialized countries taking the lead;
We, representatives of people's movements together with activist organizations working for social and environmental justice resolve to begin to build an international movement of all peoples for Climate Justice based on the following core principles:
1. Affirming the sacredness of Mother Earth, ecological unity and the interdependence of all species, Climate Justice insists that communities have the right to be free from climate change, its related impacts and other forms of ecological destruction.
2. Climate Justice affirms the need to reduce with an aim to eliminate the production of greenhouse gases and associated local pollutants.
3. Climate Justice affirms the rights of indigenous peoples and affected communities to represent and speak for themselves.
4. Climate Justice affirms that governments are responsible for addressing climate change in a manner that is both democratically accountable to their people and in accordance with the principle of common but differentiated responsibilities.
5. Climate Justice demands that communities, particularly affected communities play a leading role in national and international processes to address climate change.
6. Climate Justice opposes the role of transnational corporations in shaping unsustainable production and consumption patterns and lifestyles, as well as their role in unduly influencing national and international decision-making.

7. Climate Justice calls for the recognition of a principle of ecological debt that industrialized governments and transnational corporations owe the rest of the world as a result of their appropriation of the planet's capacity to absorb greenhouse gases.
8. Affirming the principle of ecological debt, Climate Justice demands that fossil fuel and extractive industries be held strictly liable for all past and current life-cycle impacts relating to the production of greenhouse gases and associated local pollutants.
9. Affirming the principle of Ecological debt, Climate Justice protects the rights of victims of climate change and associated injustices to receive full compensation, restoration, and reparation for loss of land, livelihood and other damages.
10. Climate Justice calls for a moratorium on all new fossil fuel exploration and exploitation; a moratorium on the construction of new nuclear power plants; the phase out of the use of nuclear power worldwide; and a moratorium on the construction of large hydro schemes.
11. Climate Justice calls for clean, renewable, locally controlled and low-impact energy resources in the interest of a sustainable planet for all living things.
12. Climate Justice affirms the right of all people, including the poor, women, rural and indigenous peoples, to have access to affordable and sustainable energy.
13. Climate Justice affirms that any market-based or technological solution to climate change, such as carbon-trading and carbon sequestration, should be subject to principles of democratic accountability, ecological sustainability and social justice.
14. Climate Justice affirms the right of all workers employed in extractive, fossil fuel and other greenhouse-gas producing industries to a safe and healthy work environment without being forced to choose between an unsafe livelihood based on unsustainable production and unemployment.
15. Climate Justice affirms the need for solutions to climate change that do not externalize costs to the environment and communities, and are in line with the principles of a just transition.
16. Climate Justice is committed to preventing the extinction of cultures and biodiversity due to climate change and its associated impacts.
17. Climate Justice affirms the need for socio-economic models that safeguard the fundamental rights to clean air, land, water, food and healthy ecosystems.
18. Climate Justice affirms the rights of communities dependent on natural resources for their livelihood and cultures to own and manage the same in a sustainable manner, and is opposed to the commodification of nature and its resources.
19. Climate Justice demands that public policy be based on mutual
respect and justice for all peoples, free from any form of discrimination or bias.
20. Climate Justice recognizes the right to self-determination of Indigenous Peoples, and their right to control their lands, including sub-surface land, territories and resources and the right to the protection against any action or conduct that may result in the
destruction or degradation of their territories and cultural way of life.
21. Climate Justice affirms the right of indigenous peoples and local communities to participate effectively at every level of decision-making, including needs assessment, planning, implementation, enforcement and evaluation, the strict enforcement of principles of prior informed consent, and the right to say "No."
22. Climate Justice affirms the need for solutions that address women's rights.
23. Climate Justice affirms the right of youth as equal partners in the movement to address climate change and its associated impacts.
24. Climate Justice opposes military action, occupation, repression and exploitation of lands, water, oceans, peoples and cultures, and other life forms, especially as it relates to the fossil fuel industry's role in this respect.
25. Climate Justice calls for the education of present and future generations, emphasizes climate, energy, social and environmental issues, while basing itself on real-life experiences and an appreciation of diverse cultural perspectives.
26. Climate Justice requires that we, as individuals and communities, make personal and consumer choices to consume as little of Mother Earth's resources, conserve our need for energy; and make the conscious decision to challenge and reprioritize our lifestyles, re-thinking our ethics with relation to the environment and the Mother Earth; while
utilizing clean, renewable, low-impact energy; and ensuring the health of the natural world for present and future generations.
27. Climate Justice affirms the rights of unborn generations to natural resources, a stable climate and a healthy planet.

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Adopted using the "Environmental Justice Principles" developed at the 1991 People of Color Environmental Justice Leadership Summit, Washington, DC, as a blueprint.
Endorsed by:
CorpWatch, US; Friends of the Earth International; Greenpeace International; groundwork, South Africa; Indigenous Environmental Network, North America; Indigenous Information Network, Kenya; National Alliance of People's Movements, India; National Fishworkers Forum, India; OilWatch Africa; OilWatch International; Southwest Network for Environmental and Economic Justice, US; Third World Network, Malaysia; World Rainforest Movement, Uruguay

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PEOPLES GLOBAL ACTION
(https://www.nadir.org/nadir/initiativ/agp/free/pga/hallm.htm):
1. A very clear rejection of capitalism, imperialism and feudalism; all trade agreements, institutions and governments that promote destructive globalisation.
2. We reject all forms and systems of domination and discrimination including, but not limited to, patriarchy, racism and religious fundamentalism of all creeds. We embrace the full dignity of all human beings.
3. A confrontational attitude, since we do not think that lobbying can have a major impact in such biased and undemocratic organisations, in which transnational capital is the only real policy-maker;
4. A call to direct action and civil disobedience, support for social movements' struggles, advocating forms of resistance which maximize respect for life and oppressed peoples' rights, as well as the construction of local alternatives to global capitalism.
5. An organisational philosophy based on decentralisation and autonomy.

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RISING TIDE (http://risingtide.org.uk/about/political and https://risingtidenorthamerica.org/):
The Rising Tide international network advocates:
1. A just transition to locally-controlled, low carbon, low consumption economies.
2. Immediate, drastic reductions in greenhouse gas emissions.
3. Solutions to the climate crisis that are defined by those most severely affected and foster local autonomy and self-sufficiency.
4. Redress of the ecological and social debts of the North to the South and from elites to popular control, enabling communities to rebuild themselves and restore their environments.
5. Freedom of movement and an end to migration controls.
6. Current and future support for all displaced people, and for those who attempt to create a better and safer life for themselves and their families by crossing international borders.
The Rising Tide international network opposes:
1. New fossil fuel exploration and extraction.
2. Nuclear power generation and other techno-fixes such as large scale geo-engineering, industrial agrofuels, genetic modification and carbon capture and storage.
3. The false solutions being used as a way to evade responsibility for emissions reductions, including emissions trading, carbon offsetting, REDD, the Clean Development Mechanism and Joint Implementation projects.
4. The commodification and privatisation of the world's natural resources, and the opening of new large scale resource extractive infrastructure, especially where it is opposed by local communities.
5. Northern governments using financial aid for climate change mitigation as a means of increasing the debt owed by non industrialised nations.
6. Criminalisation of and violence towards grassroots environmental and social justice movements by states and corporations.

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2009 CJA NETWORK (https://en.wikipedia.org/wiki/Climate_Justice_Action):
The Network has a strong emphasis on climate justice and has the following goals:
1. To promote and strengthen the rights and voices of Indigenous and affected peoples (including workers) in confronting the climate crisis. To support reparations and the repayment of ecological debt to the Global South by industrialized rich countries

2. To build a global movement for climate justice that encourages urgent action to avoid catastrophic climate change.
3. To highlight the critical role of biodiversity in weathering the climate crisis, and to defend the existence of all species.
4. To expose the roles of false and market-based climate "solutions" as well as corporate domination of climate negotiations in worsening the climate crisis.
5. To advance alternatives that can provide real and just solutions to the climate crisis.
6. To both sharpen our understanding of, and to address, the root social, ecological, political and economic causes of the climate crisis toward a total systemic transformation of our society.
7. Our network is committed to working with respect, trust and unity towards these goals.

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CLIMATE JUSTICE NOW
(http://www.carbontradewatch.org/index.php?option=com_content&task=view&id=227&Itemid=95):
CLIMATE JUSTICE NOW! PRINCIPLES:

- Communities in the Global South as well as low-income communities in the industrialised North have borne the toxic burden of this fossil fuel extraction, transportation and production. Now these communities are facing the worst impacts of climate change - from food shortages to the inundation of whole island nations.
- Inside the global climate negotiations, rich industrialised countries have put unjustifiable pressure on Southern governments to commit to emissions reductions. At the same time, they have refused to live up to their own legal and moral obligations to radically cut emissions and support developing countries' efforts to reduce emissions and adapt to climate impacts.
- Climate Justice Now! will work to expose the false solutions to the climate crisis promoted by these governments, alongside financial institutions and multinational corporations - such as trade liberalisation, privatisation, forest carbon markets, agrofuels and carbon offsetting.
- We will take our struggle forward not just in climate talks, but on the ground and in the streets, to promote genuine solutions that include:

1. leaving fossil fuels in the ground and investing instead in appropriate energy- efficiency and safe, clean and community-led renewable energy

2) radically reducing wasteful consumption, first and foremost in the North, but also by Southern elites
3) huge financial transfers from North to South, based on the repayment of climate debts and subject to democratic control. The costs of adaptation and mitigation should be paid for by redirecting military budgets, innovative taxes and debt cancellation
4) rights-based resource conservation that enforces Indigenous land rights and promotes peoples' sovereignty over energy, forests, land and water.
5) sustainable family farming and peoples' food sovereignty. We are committed to building a diverse movement locally and globally for a better world. Climate Justice Now!

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EYFA (eyfa.org):
Core Objectives, EYFA has three core objectives at the centre of everything we do:
1. Capacity building: Supporting groups develop the skills to gain access to the tools, funding and training to articulate, debate and enact their ideas.
2. Civic engagement and participatory processes: Supporting grassroots groups to critically engage with existing decision-making processes and politics, while also developing egalitarian and participatory alternatives.
3. East-West cooperation: Developing closer cooperation through joint initiatives and the sharing of ideas, histories and experiences amongst grassroots groups working in Eastern and Western Europe.

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ActionAid (http://climatenetwork.org/profile/member/actionaid-usa)

Vision: A world without poverty in which every person can exercise his or her right to a life of dignity.
Mission: ActionAid's mission is to work with poor and marginalized people to eradicate poverty by overcoming the injustice and inequality that cause it.
Values: Action Aid lives by the following values:

- Mutual respect and recognizing the dignity and worth of all people and the value of diversity is one of the core values of ActionAid.
- Equity and justice, requiring us to work to ensure that everyone -- irrespective of sex, age, race, color, class, religion, creed, physical handicap, ethnic group, sexual orientation, physical ability, health, culture, trade union activity or social background -- has equal opportunity for expressing and utilizing their potential.
- Honesty and transparency, requiring us to be accountable for the effectiveness of our actions and open in our judgments and communications with others.
- Solidarity with poor and marginalized people, so that our only bias will be a commitment to the interests of the poor and powerless.
- Courage of conviction, requiring us to be creative and radical, without fear of failure, in pursuit of the highest possible impact on the causes of poverty.
- Humility, recognizing that we are a part of a bigger alliance against poverty, and requiring our presentation and behavior to be modest.

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Friends of the Earth International (**http://www.foei.org/about-foei/mission-and-vision**)
Our vision is of a peaceful and sustainable world based on societies living in harmony with nature. We envision a society of interdependent people living in dignity, wholeness and fulfilment in which equity and human and peoples' rights are realized.
This will be a society built upon peoples' sovereignty and participation. It will be founded on social, economic, gender and environmental justice and be free from all forms of domination and exploitation, such as neoliberalism, corporate globalization, neo-colonialism and militarism.
We believe that our children's future will be better because of what we do.
Our mission:

- To collectively ensure environmental and social justice, human dignity, and respect for human rights and peoples' rights so as to secure sustainable societies.
- To halt and reverse environmental degradation and depletion of natural resources, nurture the earth's ecological and cultural diversity, and secure sustainable livelihoods.
- To secure the empowerment of indigenous peoples, local communities, women, groups and individuals, and to ensure public participation in decision making.
- To bring about transformation towards sustainability and equity between and within societies with creative approaches and solutions.
- To engage in vibrant campaigns, raise awareness, mobilize people and build alliances with diverse movements, linking grassroots, national and global struggles.
- To inspire one another and to harness, strengthen and complement each other's capacities, living the change we wish to see and working together in solidarity.

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CARE International (http://www.care-international.org/about-us/core-values)
At the core of all we do, CARE values:
Respect: We affirm the dignity, potential and contribution of participants, donors, partners and staff.
Integrity: Our actions are consistent with our mission. We are honest and transparent in what we do and say, and accept responsibility for our collective and individual actions.
Commitment: We work together effectively to serve the larger community.
Excellence: We constantly challenge ourselves to the highest levels of learning and performance to achieve greater impact.
Vision and Mission
Our vision is to seek a world of hope, tolerance and social justice, where poverty has been overcome and people live in dignity and security. CARE will be a global force and partner of choice within a worldwide movement

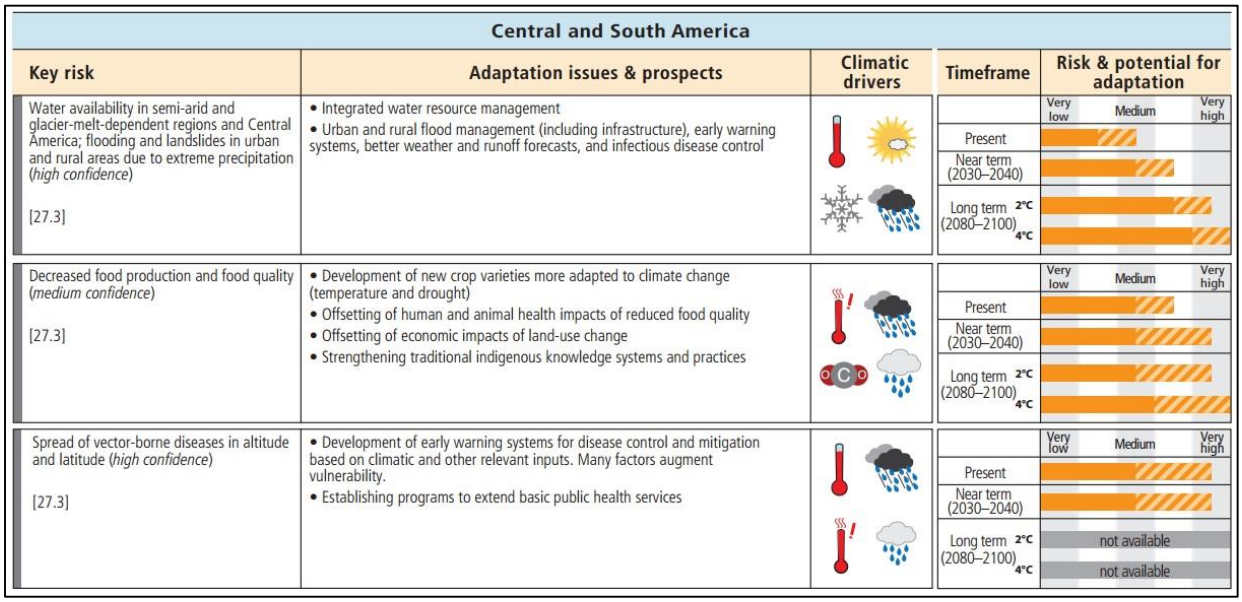
dedicated to ending poverty. We will be known everywhere for our unshakeable commitment to the dignity of people.
We strive to serve individuals and families in the poorest communities in the world. Drawing strength from our global diversity, resources and experience, we promote innovative solutions and are advocates for global responsibility.
We promote lasting change by:

- Strengthening capacity for self-help
- Providing economic opportunity
- Delivering relief in emergencies
- Influencing policy decisions at all levels
- Addressing discrimination in all its forms

Guided by the aspirations of local communities, we pursue our mission with both excellence and compassion because the people whom we serve deserve nothing less.

Appendix 3: IPCC for Central America

The key climate change-driven risks listed by the IPCC for Central America are on water availability, agricultural productivity and disease patterns, which are linked to changes in temperature and precipitation patterns. Source: IPCC 2014



Appendix 4: Events attended

What	Cambio Climatico y Bienestar Nacional	Día International de los Bosques	Lanzamiento de PSA por Resultados	Modelo económico dominante y destrucción ambiental
Date & time	April 1 (Friday), 10:30am	April 7 (Thursday), 8:30am	April 13 (Wednesday), 9am	April 13 (Wednesday), 4pm
Place	Auditorio de CONARE	Colegio de Ingenieros Agronomos, Moravia	MINAE building, San José	Escuela de Biologia, UCR
Organized by	Centro para la Sostenibilidad Urbana	MINAE	FONAFIFO	UCR