

**MANGROVES AND MEANING-MAKING OVER TIME:
GLOBALIZED DISCOURSES AND ITS IMPACT ON MANGROVE USE**

Dissertation

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vorgelegt von

Anne-Katrin Broocks

Bremen, 11. November 2022

betreut durch

Prof. Dr. Anna-Katharina Hornidge

Prof. Dr. Uwe Schimank

Promotionskolloquium

am 11. August 2023

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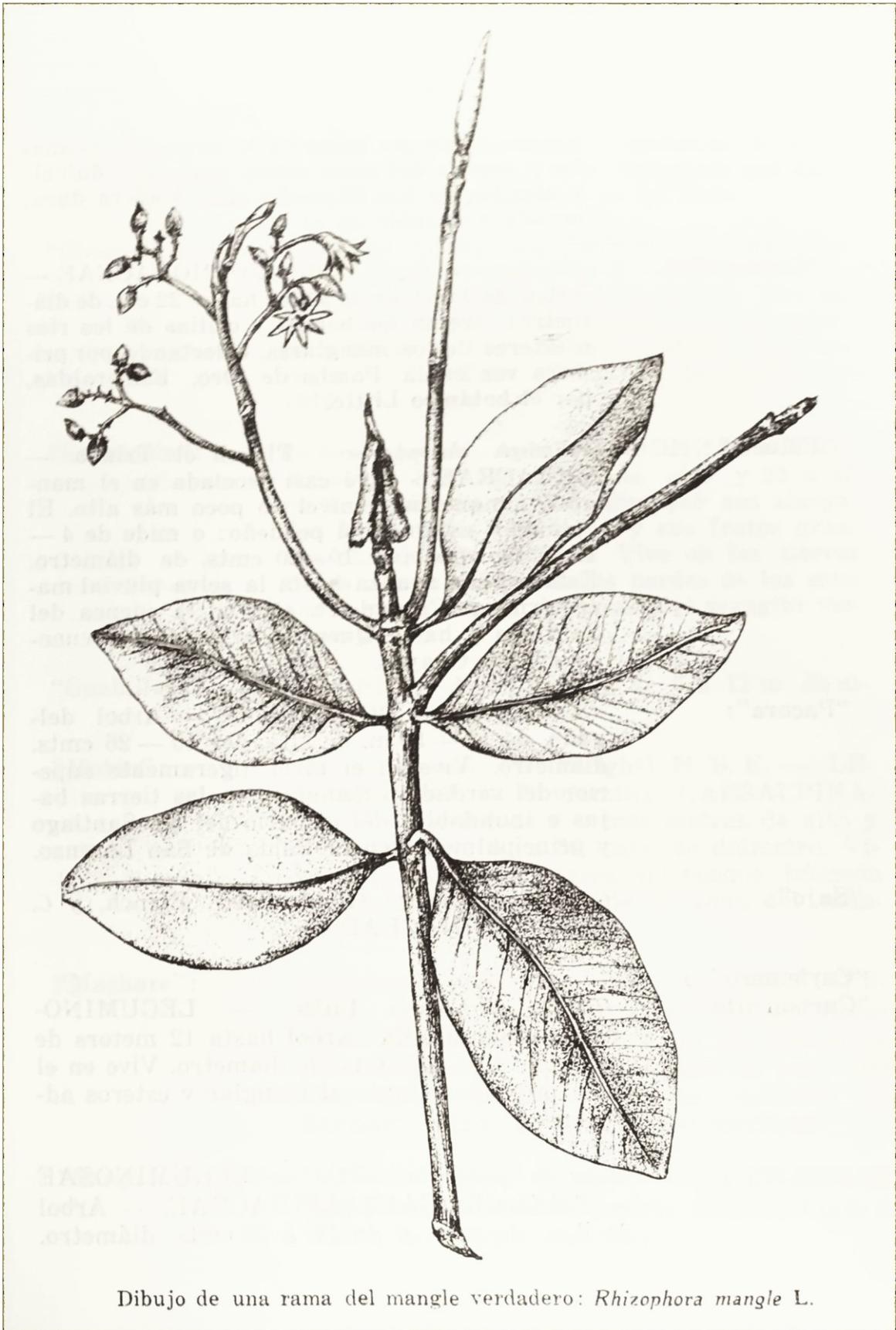
supervised by

Prof. Dr. Anna-Katharina Hornidge

Prof. Dr. Uwe Schimank

Doctoral Colloquium

11th August 2023



Dibujo de una rama del mangle verdadero: *Rhizophora mangle* L.

Drawing of a branch of the "true" mangrove: Rhizophora mangle L. (Acosta Solis 1961:25)

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At the ZMT I was a member of the "Development and Knowledge Sociology" Working Group led by Prof. Dr. Anna-Katharina Hornidge, my first supervisor, as well as adjunct to the "Mangrove Ecology" Working Group led by Prof. Dr. Martin Zimmer.

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Having chosen the Sociology of Knowledge Approach to Discourse (SKAD) developed by Prof. Dr. Reiner Keller at the University of Augsburg as the methodological framework of my research, I was grateful that just after returning from the field in March 2020, I participated in the SKAD Spring School in Augsburg, which significantly helped to change focus after the collection of empirical data to theoretical and analytical thinking for analysis.

Prof. Dr. Hornidge left the ZMT in March 2020, while I was able to stay on as a Guest Scientist at ZMT integrated in the "Social Science Department" (SSD) and "Mangrove Ecology" Group. Presenting at the SSD colloquium brought much insights and helpful comments. Especially grateful I am for the comments and contributions from Cesar Giraldo Herrera and Achim Schlüter. I would like to thank both of them for their humanity and warmth - Cesar especially for his "soundtrack recommendations" for my fieldwork. It was also refreshing and helpful to stay affiliated to the "Mangrove Ecology" Working Group of Prof. Dr. Martin Zimmer at ZMT and to discuss findings and procedures in a natural science setting. Thank you, Martin and Véronique, and the whole Working Group.

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ABBREVIATIONS & EXPLANATIONS OF KEY TERMS

<i>AHG</i>	Archivo Histórico del Guayas – Historic Archive of Guayas
<i>Balandra</i>	Small wooden sailing boat of Spanish origin
<i>CDF</i>	Charles Darwin Foundation, Galapagos Islands based Research Foundation
<i>CNA</i>	Cámara Nacional de Acuacultura National Aquaculture Chamber
<i>Cangrejada</i>	Crab feast practice of Guayaquil
<i>Cangrejal</i>	Wetland area with abundant crabs <i>or</i> restaurant serving crabs in Guayaquil
<i>Encomienda</i>	A system of serfdom introduced by the Spanish crown in colonial times, which allowed the use of nature to those who proselytised the population living on it into Christianity.
<i>ESPOL</i>	Escuela Superior Politécnica del Litoral Polytechnical College of the Littoral
<i>JUMAPACOM</i>	Junta de Manejo Participativo Comunitario Manglares Don Goyo Participatory Community Mangrove Management Board Don Goyo
<i>MangrovesCultures</i>	Heuristic term bringing together epistemologically the two distinct concepts of "nature" ¹ and "cultures", underlining with the plural of "nature" additionally the multiple facets and connections between mangrove natures and cultures.
<i>Piratas</i>	Groups of criminals with a wide variety of practices and (gang) cultures who travel on boats in the Gulf of Guayaquil and commit attacks on uninvolved parties or shrimp farms.
<i>SKAD</i>	Sociology of Knowledge Approach to Discourse
<i>Veda (de Cangrejo)</i>	Closure on Crab Fishing
<i>ASUC</i>	Agreement of Sustainable Use and Custody of Mangroves
<i>MEA</i>	Ministry of the Environment
<i>Urdesa</i>	"Urbanización del Salado" (Salado Estate), district in central Guayaquil

¹ When written in quotation marks I refer to "nature" or "culture" as communicatively constructed object in the context of a specific discourse

EXECUTIVE SUMMARY

The objective of this research was to understand the co-dependent relationship of mangrove ecosystems, public mangrove discourses and the human use of mangrove areas. Research questions were: How have mangroves been made sense of around the Gulf of Guayaquil from the 19th century until today, and how does this guide the use of mangrove areas today? Mangroves were studied from the perspective of Social and Discursive Constructivism, arguing that mangroves are being made sense of by humans by relating to them socially and discursively. The Sociology of Knowledge Approach to Discourse (SKAD) by Reiner Keller (2001, 2005, 2011a, 2011b) served as methodological framework: Methods were interdisciplinary, and span from ethnographic methods (participant observation, interviews) to archival research.

The outcomes show that some cultural groups living in the research area were historically highly underrepresented in political knowledge production and in the governance of mangroves. With the advent of a shrimp industry in the mangroves in the late 1980s globalized discourses of commodification, conservation and development entered intensively into the area, producing hybrid zones of knowledge invasion and negotiation resulting in the hybrid MangrovesCultures of today: Structural underrepresentation and socio-economic conditions reinforced marginalization of historically already marginalized and excluded groups on the one hand. On the other hand, innovative adaption strategies submerged, showing how people can make a living in and can make innovative meanings of mangroves close to the city. Understanding the impact of intensive knowledge influx in an area and the result it has for natural resource governance, helps decision-makers and stakeholders to analyse, guide and soften discourses and knowledge. It leads actions for a more sustainable co-living of mangroves and humans, at the same time increasing visibility and participation of and thus empower underrepresented groups.

KURZZUSAMMENFASSUNG

Ziel dieser Untersuchung war es, die wechselseitige Abhängigkeit von Mangrovenökosystemen, öffentlichen Mangrovediskursen und der menschlichen Nutzung von Mangrovegebieten zu erfassen. Die Forschungsfragen lauteten: Wie wurde den Mangroven im Golf von Guayaquil vom 19. Jahrhundert bis heute Bedeutung zugeschrieben, und wie hat dies die heutige Nutzung der Mangrovegebiete beeinflusst? Die Mangroven wurden aus der Perspektive des sozialen und diskursiven Konstruktivismus untersucht, der davon ausgeht, dass die Menschen den Mangroven einen Sinn geben, indem sie sich sozial und diskursiv auf sie beziehen. Die wissenssoziologische Diskursanalyse (WDA) von Reiner Keller (2001, 2005, 2011a, 2011b) diente als methodologischer Rahmen: Die Methoden waren interdisziplinär und reichten von ethnographischen Methoden (teilnehmende Beobachtung, Interviews) bis zu Archivrecherchen.

Die Ergebnisse zeigen, dass einige kulturelle Gruppen, die im Untersuchungsgebiet leben, in der politischen Wissensproduktion und in der Verwaltung der Mangroven historisch stark unterrepräsentiert waren. Mit dem Aufkommen einer Shrimp-Industrie in den Mangroven in den späten 1980er Jahren sind die globalisierten Kommodifizierungs-, des Naturschutz- und Entwicklungsdiskurse massiv in das Gebiet eingedrungen und erzeugten hybride Zonen der Wissensinvasion und -aushandlung, die zu den hybriden Mangroven-Kulturen von heute führten: Strukturelle Unterrepräsentation und sozioökonomische Bedingungen verstärkten einerseits die Marginalisierung von historisch bereits marginalisierten und ausgeschlossenen Gruppen. Auf der anderen Seite tauchten innovative Anpassungsstrategien auf, die zeigen, wie Menschen in den stadtnahen Mangroven ihren Lebensunterhalt bestreiten und innovative Bedeutungen für Mangroven entwickeln können. Das Verständnis der Auswirkungen eines intensiven Wissenszustroms in einem Gebiet und der Folgen für die Governance natürlicher Ressourcen hilft Entscheidungsträgern und Interessensvertretern, Diskurse und Wissen zu analysieren, zu lenken und anzupassen. Es empfiehlt Maßnahmen für eine nachhaltigere Koexistenz von Mangroven und Menschen und erhöht gleichzeitig die Sichtbarkeit und die Beteiligung unterrepräsentierter Gruppen, die dadurch eine bessere soziale Teilhabe erreichen können.

I INTRODUCTION



1 *Mangrove Meanings – example depictions from this research*²

The mangroves³ in and around Guayaquil, Ecuador, are a challenging, a degraded and a precious piece of nature at the same time. Due to its complexity and contradictions, it is a rich research ground to understand processes of meaning-making in the human-nature-relationship. Mangroves are not just nature. They are in fact an interconnectedness and co-dependency of different natures and various cultural groups. There are many examples of cultural groups that lived in and from mangroves in South America already in pre-Columbian and colonial times, but the intensity of use of mangrove forests has increased drastically in the last decades. Meanings of mangroves in the area span today from shrimp production zone to ancestral semi-nomad's territory to the home of the nationwide delicacy, the red mangrove crab⁴.

² Picture 1 (from left to right): AHG. Online available, photographed by Paulus Minguet: https://upload.wikimedia.org/wikipedia/commons/7/7a/Plano_de_Guayaquil_en_1741%2C_grabado_por_Paulus_Minguet_-_AHG.jpg [24.09.2020]; Picture 2: Eduard Ender: Humboldt und Bonpland am Orinoco; Picture 3: Balandra, AHG 1920-29, Online: Fotografiapatrimonial.gob.ec [05.03.2021]; Picture 4: El Universo "Advertisement of the National Acquaculture Chamber in the advent of a Greenpeace visit" 23.07.1998; Picture 5: Natura, F. (1991 [1989]). Principales Problemas Ambientales, de Salud Publica y saneamiento del Ecuador. M. d. E. y. C. Fundación Natura AID EDUNAT III (USAID), Ministerio de Salud Publica, Insituto Ecuatoriano de de Obras Sanitarias. Quito / Guayaquil. Page 15; Picture 6: El Universo "Greenpeace Scientist" 28.07.1998; Picture 7: Own photograph of a mural showing "Mangrove People" in Manglaralto, Santa Elena Peninsula 06.02.2020; Picture 8: Own photograph of a baseball cap in the communities [30.08.3019].

³ Since I understand mangroves in this work as a social construction whose subjective meaning differs greatly depending on the user group, a definition of the term is challenging. However, since at least in the studied region all user groups agree that the red mangrove (*Rhizophora* ssp.) or "mangle" is a mangrove, I define mangroves as the fluvial landscape in which red mangroves occur. For a more detailed discussions of mangrove plants and the ecosystem from the scientific discourse see Cornejo 2014.

⁴ *Ucides occidentalis*

For today's global challenges in the use and management of nature, be it mangrove forests or other environments, we need to better understand what social or cultural motivations and meanings cultural groups are embedded in. The meanings we ascribe to nature form our practices and drive our actions towards it. Today these meanings are increasingly shaped and challenged by globalization, borderless global markets and the globalized flow of knowledge and information. Old and new knowledge hegemonies invade and renegotiate meanings all around the world. In addition to understanding the land-grabbing and industrialization of new landscapes, it is important to understand the "grabbing of meanings", and the changes in practices it entails to different users' group with varying power potentials to engage in knowledge formation. Mangroves have so far been studied mainly from a natural science perspective and lack an approach that connect natural and social sciences. This study aims to contribute to this reconciliation as well as to the realization that nature and culture cannot be considered separately. Only by recognizing the hybridity of natures in all its forms, and especially the human role in constructing nature's meanings, the future challenges of environmental governance can be solved.

In order to thus approach this thicket of mangrove meanings, I adopt as a heuristic term "NaturesCultures" (Gesing, Amelang et al. 2019). It derives from Latour's "natures-cultures" (Latour 1993 [1991]) and Haraway's elaborations on "Culture/Nature" (Haraway 1991) and "NatureCulture" (Haraway 2003, Haraway 2008) developing recently into the German NaturenKulturen (Gesing, Amelang et al. 2019). By bringing together the two concepts of "nature" and "cultures" the "interconnections, mergers and circulation practices" (ibid.:7) between nature and culture become apparent. There is no clear distinction. Moreover, nature is not the same everywhere, hence the plural "natures" (ibid.). In this work, based on empirical archives and ethnographic data, I therefore elaborate how the discursive construction of mangrove natures and cultural groups results in MangrovesCultures of the greater Guayaquil area, Ecuador.

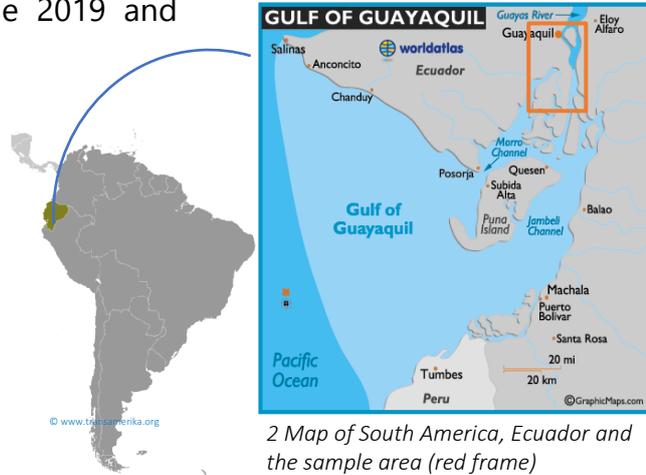
The study is innovative, as it integrates vastly understudied historical meanings and identifies mainstream and non-hegemonial discourses through which mangrove meanings are being shaped. In this context, the historical embedding of today's mangrove meanings, its *dispositif* (Foucault 1980 [1977]:194), is of particular importance. Examples include the mangrove as a symbol within a violent colonial knowledge transmission and nature appropriation, the effects that these power structures have up until this day in the mangrove regions, and the influence that global discourses have had on cultural groups using mangroves. It examines the ways in which global epistemologies have influenced and continue to influence the attribution of mangrove meanings, and what adaptive strategies have been developed to adapt or resist to hegemonic knowledge in mangrove discourses. The findings of this work call for a rethinking of the relationship between global invasive knowledge, patterns of social action and nature management initiatives.

The main objective of this research was precisely to understand the co-dependent relationship of mangroves, public mangrove discourses and the human use of mangrove areas – the “symbolic universes” (Berger and Luckmann 1966:115) spun around mangroves. Drawing from Berger and Luckmann I understand “symbolic universes [...] [as] social products with a history. If one is to understand their meaning, one has to understand the history of their production.” (ibid.). I therefore argue that neither the culture in Guayaquil, nor the mangrove swamp in and around the city can be understood without the historical development of the other. I had to decipher the history of meaning-making of mangroves and cultures in the Gulf of Guayaquil to understand today's co-dependency and future challenges. The following research question guided this endeavor:

How are mangroves being made sense of around the Gulf of Guayaquil during the 19th century until today, and how does this guide the use of mangrove areas today?

I stayed for an eight months research period in the port city of Guayaquil and its surrounding mangroves between June 2019 and February 2020 (Map 2).

Drawing on the Communicative and Discursive Constructivism, I am using the Sociology of Knowledge Approach to Discourse (SKAD) as a methodological framework (Keller 2001, Keller 2005, Keller 2011a, Keller



2 Map of South America, Ecuador and the sample area (red frame)

2011b) analyzing a combination of ethnographic and archival material (Table 3). I completed with an in-depth analysis of a chosen data corpus for each discourse based on the coding outcomes and qualitative selection processes.

AMOUNT	KIND OF DATA
48	Semi structured expert and informant interviews
6	Transect Walks
134	Scientific publications about mangroves in the area from 1800 until 2019
28 YEARS	of Newspapers, 4000 Newspapers reviewed manually in the archives
NUMEROUS	books, articles, photography's, murals, tweets etc.

3 Data Corpus Content for Analysis

After a presentation of the theoretical framework SKAD and a presentation of hegemonial Human-Nature-Understandings, I give suggestions on how to rethink the methodological framework in research settings with a colonial experience (chapter II). I argue towards a more inclusive discourse analysis, applying interpretative anthropology theory and using ethnographic material from discourses invisible in mainstream society, in order to visualize non-hegemonic groups and their practices.

In chapter III I present my methodology of data collection as a combination of ethnographic and archival research and discuss ethical considerations and positionality challenges in the field. I do a contextualization of my research area in chapter IV from different perspectives, presenting involved institutions and the main user groups while I additionally explain briefly today's de-jure and de facto- mangrove governance in the region. Chapter V serves as a profound State of the Art analysis of the scientific mangrove discourses in the last 200 years. I structure and analyse how scientific publications have developed and depicted mangroves around Guayaquil over the last 200 years, while additionally showing how prominent meanings evolved and changed over time. Consecutively, I connect the scientific perspective with common-sense mangrove knowledge, and present everyday life practices of mangroves use in Southern Ecuador over time (chapter VI).

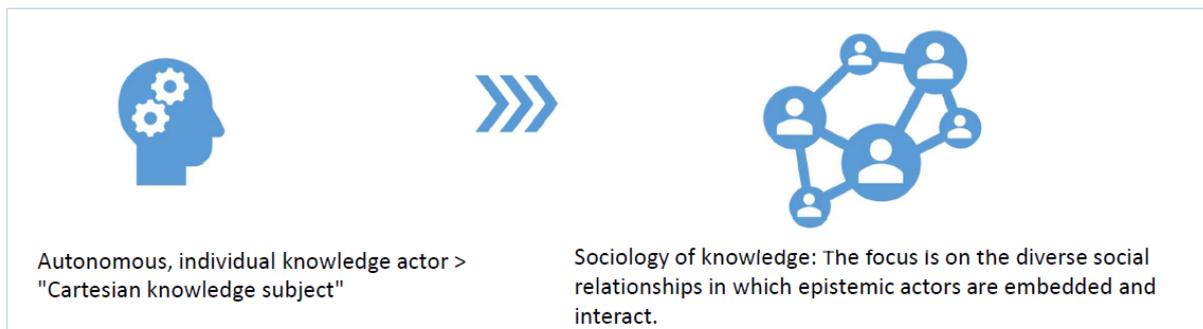
Based on the analysis of the socio-historic setting I present in chapter VII today's discursive field of Guayaquil's mangroves. I show how locally or regionally located mangrove knowledge has travelled to Guayaquil's mangroves and reshaped within Guayaquil's dispositif and in the context of knowledge globalization into three hegemonial, globalized discourses. In chapter VIII I bring the different lines of analysis together to answer the question of how globalized discourses have changed mangrove use within the last decades and in the specific socio-cultural setting of Guayaquil, and which examples of MangrovesCultures have emerged as a result. Chapter IX serves as a final discussion and at the same time formulates recommendations for international policy making related to mangrove governance.

II THEORETICAL FRAMEWORK: SKAD FOR STUDYING MANGROVE DISCOURSES

2.1 Introduction – Meaning-Making of Mangroves and Mangrove Discourses

This research work is located within the theoretical field of Knowledge Sociology. It draws from Berger and Luckmann's work "The social construction of reality" (1966), the communicative (Knoblauch 1995, Knoblauch 2013a) and especially the discursive constructivism (Keller 2001, Keller 2005, Keller 2011a, Keller 2011b).

While previous research in Knowledge Sociology focused on intellectual history and the history of ideas, Berger and Luckmann shifted the focus to "what people 'know' as 'reality' in their everyday, non- or pre-theoretical lives" (Berger and Luckmann 1966:27). Today Knowledge Sociology is concerned with the "reciprocal relationship between the 'social' and 'knowledge'" (Schützeichel 2012:17; own translation). Sociology of knowledge approaches have in common that they are no longer concerned with the autonomous and individual actor, the "Cartesian knowledge subject" (ibid.). Instead, they focus on the social relations in which the epistemic actors interact (ibid., Visualization 4).



4 Visualization based on Schützeichel 2021:17 – Developments in Sociology about the understanding of knowledge

Since the 1990s a group of mainly German social scientists have elaborated on the empirical relation between communication and reality construction in the Communicative Constructivism (Knoblauch 1995, Knoblauch 2013a). The communicative and discursive constructivism is represented especially by Reiner Keller, Hubert Knoblauch und Jo Reichertz (see e. g. Keller, Knoblauch et al. 2013). It draws

from social constructivism, but challenging and developing the concept further. Berger and Luckmann (1966) explain in their well-known book "The social construction of reality" how social actors construct their world socially as a system of symbolic order based on communication processes of externalization, objectification and internalization, as I will outline in more detail later. The communicative constructivism draws from this concept, but puts an emphasis on the role of communication as symbolic interaction and social action (Reichertz 2013:50). On the one hand, it connects to social constructivism but from an empirical research perspective, analysing how exactly the processes of communicative construction take place (Keller, Knoblauch et al. 2013:11f.). On the other hand, the communicative constructivism aims to elaborate the theory of social constructivism further, including recent communicative developments in postmodern society, as well as more diverse social contexts (ibid.:12). Within the Communicative Constructivism I draw especially from Discursive Constructivism and the methodological framework "Sociology of Knowledge Approach to Discourse" (Keller 2001, Keller 2005, Keller 2011a, Keller 2011b), often abbreviated as SKAD. Keller developed this framework for a theoretical and methodological consistency when answering social science questions related to "discursive struggles" (Keller 2011a:43). SKAD combines social constructivism with Michel Foucault's work on discourses (Foucault 1977, Foucault 2016 [1966], Foucault 2016 [1969]) and postcolonial theories (e. g. Hall 1997, Hall 2001), as I will also elaborate in more detail later (cf. 2.2).

Stuart Hall defines discourses as "ways of referring to or constructing knowledge about a particular topic of practice: a cluster (or formation) of ideas, images and practices, which provide ways of talking about, forms of knowledge and conduct associated with a particular topic, social activity or institutional site in society" (Hall 1997:4). Keller summarizes discourses on these grounds⁵ as "identifiable ensembles of cognitive and

⁵ Keller also refers to Halls's definition Keller, R. (2005). "Analysing Discourse. An Approach From the Sociology of Knowledge." Forum: Qualitative Social Research/Sozialforschung 6(3/32).

normative devices" (Keller 2005:7f) and "structured processes of sign/knowledge production and reproduction in society" (Keller 2005:8). I summarize on this premise that knowledge is created through communication and shaped in discourses.

In my empirical research I thus examine the actual communication processes of attributing meaning to mangroves in discourses over time, and visualize the differing objectivation processes leading to subjective and culturally diverse meanings of mangroves. I argue that common-sense-knowledge [Alltagswissen] is the "fabric of meanings without which no society could exist" (Berger and Luckmann 1966:27). Meaning-making I therefore define following Berger/Luckmann (1966) as the inter-subjective ordering process of everyday life guided by and leading to "mid-range concepts" (Merton 1949; Hornidge 2017:2154f) visible in discourses.

After summarizing important aspects of Social and Discursive Constructivism in the frame of my research (cf. 2.2), I will provide in section 2.3 the theoretical foundation of the hegemonial meaning-worlds that have shaped human-nature understandings in mangrove discourses, followed by theoretical suggestions to reconsider these understandings drawing from Science and Technology Studies, Feminist Studies and Social Anthropology. Based on the previous I argue in section 2.4 towards a more inclusive discourse analysis, especially in settings with a colonial experience. Based on the research outcomes I consider it necessary to include not only mainstream and public discourses into the analysis about a specific research topic, but drawing from interpretative anthropological theory to identify and include marginalized or parallel meaning-worlds and their relationship to public discourses on nature's objects.

2.2 Discursive Constructivism - Sociology of Knowledge approach to Discourse

In the 1960s, a new paradigm (cf. Keller, Knoblauch et al. 2013:9) emerged within the sociology of knowledge with Berger and Luckmann's treatise "The social construction of reality" (1966). Previously this sociological field had mainly focused on analyzing the correlations of social and knowledge order from a macro-sociological perspective, "only in view of the ideological foundations of truth or the dependence of truth on social and especially economic conditions - or it has enquired about the role of the scholar in society" (Schütz 1962:149; own translation). Important scholars included Marx, Scheler and Mannheim (Berger and Luckmann 1966:15-22). This overestimation of the role of theoretical thinking was countered by an analysis of *Alltagswissen* (common-sense-knowledge) by Berger and Luckmann, an analysis of "whatever passes for 'knowledge' in a society, regardless of the ultimate validity or invalidity (by whatever criteria) of such 'knowledge'" (Berger and Luckmann 1966:15). The analysis of common-sense-knowledge is based on phenomenological approaches by Alfred Schütz, e. g. his studies of "lifeworld" (ibid.:17) and of philosophical anthropology including Marx's early writings, and the symbolic-interactionist school (ibid.:18). According to Berger/Luckmann, the social construction of reality is characterized by simultaneous processes of externalization, objectification and internalization (ibid.:149).

Berger and Luckmann build upon earlier considerations from philosophical anthropology. The externalization of subjectively given meaning is an anthropological necessity of the human being in order to transform the biologically given world-openness into a relative world-closedness through social order (ibid.:69f.). The term objectivation derives for example from Hegel's term *Vergegenständlichung* (Berger and Luckmann 2007 [1969]:22 footnote 1) and implies that ideas become an "object of consciousness" and later a social fact guiding social action (Keller, Knoblauch et al. 2013:9f.). Internalization is defined as the key to be a member of a society, "a manifestation of another's subjective processes which thereby becomes subjectively meaningful to myself," (Berger and Luckmann 1966:149). This intersubjectively shared

reality is tangibly constructed by processes of (a) typification as a first stage of reality construction, the sorting of people and ideas into meaningful units by the individual based on habituation (Berger and Luckmann 1966:58, Hornidge 2017:214). Social structure can be understood as the sum of typification schemes (Berger and Luckmann 1966:48). Institutionalization (b) is happening when reciprocally negotiated typifications become an objective reality (ibid.:58), “a reality that confronts the individual as an external and coercive fact” (ibid.:76). While institutions represent a primary objectification, legitimizations (c) are a “second-order objectification of meaning [*Sinn*]” (ibid.:110). They become necessary when institutions are transmitted to others, who have not been habituated and cannot recollect them, hence the institutions need to be explained and justified (ibid.:111). The final stage of objectification is reification [*Verdinglichung*], the moment when “products of human activity [appear] as if they were something other than human products - such as facts of nature, results of cosmic laws, or manifestations of divine will” (ibid.:109).

Levels of Legitimation	Research Example
Objectivation through language	Mangroves
Fragments of theoretical postulates that connect structures of meaning	Mangroves must be protected
Explicit theories of legitimacy as closed frames of reference	Mangrove Ecology
Symbolic worlds of meaning: Synoptic totals of tradition that integrate different provinces of meaning and exaggerate the institutional order as a symbolic totality	(Natural) Science

Based on Berger and Luckmann 2007 [1969]:100-102

5 Overview on Levels of Legitimation as discussed in Berger and Luckmann 2007 and examples deriving from this research

Berger and Luckmann elaborate four different levels of legitimation, for each level I will designate a relevant example from this research (Overview 5): 1. Objectivation through language, for example in designated vocabulary for ideas [e. g. mangroves], 2. Fragments of theoretical postulates that connect structures of meaning [e. g. “Mangroves must be protected”], 3. Explicit theories of legitimacy as closed frames of reference [e.g. Mangrove Ecology] and 4. Symbolic worlds of meaning: Synoptic totals of tradition that integrate different provinces of meaning and exaggerate the

institutional order as a symbolic totality [e. g. (Natural) Science] (Berger and Luckmann 2007 [1969]:100-102). The symbolic world of meaning sets order and law (ibid.:104), and in order to deal with "false doctrines" or other worlds of meaning, different strategies are applied, for example through theoretical systematizations of the own world of meaning (ibid.:115), therapy (ibid.:121ff.) or nihilation (ibid.:123f.).

Additionally, Berger and Luckman point out the importance of signs and especially language as a sign system for objectivation in the social construction process (2007 [1969]:38f.). In the 1980s the empirical research interest broadened towards communication as a whole, laying foundations for the communicative constructivism in the sociology of knowledge fostered by Thomas Luckmann and Hubert Knoblauch (cf. Keller 2011a:45). Knoblauch exceeds "intersubjectivity", and states "that everything that is relevant in social action must necessarily also be communicated" (Knoblauch 2013a:27, own translation), thus including the body as prerequisite for communicative action (cf. Hornidge 2017:217). He sharpens the concept of communicative action [Kommunikatives Handeln] for the Constructivism as "characterised by a triadic structure: It relates to others, to the embodied subject and finally to the objectifications linked to it, which are perceived as part of the common environment" (ibid.:31, own translation).

It significantly expands the spectrum of actions to be considered in the construction of reality (ibid.:32), and has inspired, besides other theories, the Discursive Constructivism with the methodological SKAD framework, the Sociology of Knowledge Approach to Discourse (Keller 2001, Keller 2005, Keller 2011a, Keller 2011b). This approach is studying how and by what means reality is ordered symbolically through discourses. Originating from Berger/Luckmann's social constructivism and with an empirical perspective towards actually understanding the communication processes constructing knowledge, the discursive constructivism draws on Foucault's poststructuralist perspective of discourses and knowledge (Foucault 1977, Foucault 2016 [1966], Foucault 2016 [1969]) as "practices of power/knowledge, discursive

formations, statements, dispositifs and discursive battles" (Hornidge, Keller et al. 2018:3). Keller argues that objective reality is discursively constructed (Keller 2011a:46) and aims to combine in SKAD the two historically rather separate fields of social science discourse analysis: The interpretation of social macro-discourses inspired by poststructuralist and post-colonial theories on the one hand, and the concrete language-use analysis in discourses on the other (Keller 2005:1). While communicative action is considered a concept of social theory, discourses are to be located on the level of society theory (Knoblauch 2016:25). SKAD can therefore be seen as a methodological framework within the communicative constructivism, as elaborated by Knoblauch (2016).

Keller draws in SKAD mainly from Foucault's analytics of discourses in "The archaeology of knowledge" (1972 [1969]), pointing out that Foucault's discussions have principally contributed in three ways to discourse research and analysis in the Humanities and Social Science: 1) he introduced "given textual and institutional data as solid grounds for analysis" (Keller 2017:75), 2) he argued that textual analysis should no longer be related to language alone, but that serious speech acts must be evaluated as a form of reality determination (ibid.), and 3) he "introduced discourse for the ordered practice of knowledge-making" (ibid.).

In SKAD practices and dispositifs are the main elements of discourse. Practices are „conventionalised patterns of action, based on collective stocks of knowledge about the ‚proper‘ way of acting" (Keller 2011: 55). Keller differentiates between discursive, nondiscursive and model practices. Discursive practices are "typical, realized communication patterns which are bound to a discourse context" (Keller 2011a:55), while nondiscursive practices are "ways of acting which do not primarily use signs, but which are essential for the statements of a discourse (for example, the construction or assembly of measuring instruments in order to prove specific statements about environmental pollution)" (ibid.). Model practices are "exemplary patterns (or templates) for actions which are constituted in discourses for their addressees" (ibid.).

Foucault underlines the importance to identify the existence and quality of connection between discursive or non-discursive elements, and emphasizes its strategic and historic function (Foucault 1980 [1977]:194f).

SAKD analyzes discourses embedded in an infrastructure, the *dispositif*– a term coined by Foucault in 1977. Foucault understood *dispositif* as

“a thoroughly heterogeneous ensemble consisting of discourses, institutions, architectural forms, regulatory decisions, laws, administrative measures, scientific statements, philosophical, moral and philanthropic propositions—in short, the said as much as the unsaid. Such are the elements of the apparatus. The apparatus itself is the system of relations that can be established between these elements.” (Foucault 1980 [1977]:194).

Keller defines *dispositif* based on Foucault’s elaboration then as the “bundle of measures, regulations, artefacts, by means of which a discourse is (re)produced and achieves effect (e. g. laws, codes of behaviour, buildings, measuring devices)” (Keller 2013:73). Instead of only looking at “discursive events” that “create the typifiable material form of utterances, in which a discourse appears” (Keller 2011a:53), this approach includes therefore analysis of the surroundings, the practices, materials or institutions necessary for or as a result of the discourse within its specific socio-historical setting (ibid.).

Foucault's understanding of knowledge and power, and of the interrelation between power and discourse is especially relevant for the use of SKAD in this research. The discursive construction of reality is not a harmonious one, instead struggles arise between different positions and discourses, also within discourses. However, Foucault understood power not only negative, as other academics of his time (cf. Keller 2017). For him, the “discourse can be both an instrument and an effect of power, but also a hindrance, a stumbling-block, a point of resistance and a starting point for an opposing strategy” (Foucault 1978:101). Power and knowledge are a dynamic couple, that directly implies one another (Foucault 1995 [1975]:27), so discourses not only reproduce power structures, but power can also be challenged through discourses. Keller refers to Giddens (1986) duality of structure concept for explanation, which assumes that action can be the realization of structural pattern (rules), but at the same

time can "question, undermine and transform" (Keller 2013:4) social patterns. Every knowledge, every supposed "truth", therefore, is closely linked to power:

"[T]ruth isn't outside power, or lacking in power [...] nor the privilege of those who have succeeded in liberating themselves. Truth is a thing of this world: it is produced only by virtue of multiple forms of constraint. And it induces regular effects of power. Each society has its regime of truth, its 'general politics' of truth: that is, the types of discourse which it accepts and makes function as true; the mechanisms and instances which enable one to distinguish true and false statements, (Foucault 1980 [1977]:131)

Objects exist outside discourses, but have no meaning for the subjects (cf. Foucault 1972 [1969], Hall 2001:73). In the discursive negotiation of meaning, levels of power define the possibility of constructing objects in discourse and define access to them. At the same time the legitimization of one's own truth through discourse is often also the de-legitimization of the power of the other. In summary, SKAD and other similar approaches are therefore always "interested in discursive struggles, the trajectories, competition and interplay between discourses (and counter- discourses), the means and the social effects of such constellations" (Keller 2020:104).

2.3 Hegemonial Human-Nature Understandings – Essentials and Outlooks

Three hegemonial meaning worlds have shaped man's relationship to nature in the research area from Colonialism onwards: At first, Christianity, and later building upon it Western Natural Science and Capitalism. The supporting pillars of these meaning-worlds carry within them the fundamental ideas of modernity (Münch 1986:27ff.): rationalism, hence the striving for ever more knowledge about the nature of the world, and instrumental activism, for example the transformation of given circumstances (like nature) in the name of progress.



6 "Primer desembarco de Cristóbal Colón en América / Christopher Columbus' first landing in America" by Dióscoro Pueblo, 1862 (Prado Madrid)

The Meaning-World of Christianity was the foundation for colonial conquest in South America, showing a Western anthropocentricity in the human-human and human-nature relationship. In this meaning-world the earth is made for human's convenience, and a distinction between human and nature is clearly evident as this famous quote from the bible reflects: "Then God said, 'Let us make man in our image, after our likeness. And let them have dominion over the fish of the sea and over the birds of the

heavens and over the livestock and over all the earth and over every creeping thing that creeps on the earth.” [Genesis 1:26, English Standard Version]. But not all humans of today were then understood as humans: The first Europeans arriving in South America depicted the continent as “pure nature” without human inhabitants or a social or political past (Pratt 1992:122). The inhabitants of the Americas were reduced to being a part of nature and it was questioned for some decades if the indigenous inhabitants of the Americas were even humans (e. g. Morrison 2014). The image (6) by Dióscoro Puebla depicts this understanding particularly well in 1862. The leitmotif for the mission was guided by the idea that not all human beings were equal, but that Christians were the better humans. In addition to economic and political interests, missionary work was still guided by the religious idea of Christian charity combined with personal spiritual benefit. Conversion to God brought benefits not only to the now better person, but also to the one who converted. Only in 1537 indigenous were recognized by the pope in the *Sublimis Deus* as human beings, while at same time now calling for the Christianization. The indigenous people in the Americas could and should be converted now to become Christians, with Christianity having the intention of becoming a world religion. Incentives in South America were created by the “encomienda” (cf. Lockhart 1969, Yeager 1995) - a tribute system which appropriated “nature” through the Christianization process (Townsend 2000:51f.). In other words, the one who educated and developed the non-Christians and the surrounding nature was legitimized to use and gain from land, means of production and indigenous workforce in South America.

Science slowly replaced Christianity with the end of the colonial era as the new and most significant meaning world in Spanish-speaking South America. Early science already had had a similar notion of the human-nature relationship as Christianity did. Ancient philosophers, like Aristoteles and the Stoastics were for example convinced that plants and animals existed to serve humans (Thomas 1983:17). Descartes then laid

the foundations for the use of science to dominate nature for the benefit of mankind: “[R]ender ourselves the lords and possessors of nature” (Descartes 1986 [1596-1650]).

With the decline of the colonial era a re-conquest of the Americas by the "new" science took place, with one of the most prominent scientific visitors being Alexander von Humboldt. The scientific understanding of nature of that time was influenced both by Enlightenment as well as Romanticism, the latter reaching its peak between 1790 and 1830 (cf. Dettelbach 2001). Romanticism countered the rationality of Enlightenment with an emotional and subjective experience of nature (Christmann 1997:44). The new natural science thus moved upon an older religious and colonial dispositif (Pratt 1992:125ff.), being influenced by a similar schizophrenia of a spiritual (religious) and rational (politico-economic) nature-understanding (cf. Christmann 1997:45).

Similar to colonial legitimation strategies when constructing America as a “new continent” discovered by Columbus, Humboldt constructed the Americas as a “primal nature” with “the prospect of transformative intervention from Europe” (Pratt 1992:127). Thus the nature of the Americas became “utopia” (Moore 1965 [1516]), a concept again closely linked to colonial power structures: The primary use of utopia referred to an island invented by Moore in the year 1516, resembling the Americas discovered a few years earlier. The colonies were seen back then and within the new science meaning world as “[e]xperimental fields of the European Metropolises” (Bhatti and Turk 1998, Castro Varela and Dhawan 2015:339).

All humans, from hunter-gatherer to industrial societies, have used land and water, albeit with varying intensity, and have modified nature to survive (Selin 2003:xix). In the capitalism meaning-world, however, commodification and thus possession became fundamental. While for some cultures it is unthinkable to own land (e. g. Law 2011) or to even objectify land (Booth 2003), the ownership of nature is one of the foundations of capitalism. Rosa Luxemburg describes this process in 1923 as land grabbing [Landnahme]: She argues that a capitalist society can only expand when invading a pre-

capitalistic terrain, that helps in the accumulation of more capital for the capitalistic system, and changes the pre-capitalist to a capitalist commodity economy (Warenwirtschaft) (Luxemburg 1923:334f.). In this research I understand capitalism hence in a simple working definition as a form of society order in which in a steady process nature is invaded and nature objects are possessed and processed by a specific societal group with the aim to increase the economic value of the object through technology, wage labor and exchange in a global market system (Leitmotif: Luxemburg 1923, Marx 1963 [1885], Marx 1983 [1894], Marx 1988 [1867]).

The assumption that land can be grabbed and possessed is based on a particular understanding of the relationship between humans and nature and can be traced back to the "terra nullius" doctrine. This colonial-era construction assumes that "wild" or "underutilized" land has no owner and can be possessed through settlement (Hendlin 2014:141). This understanding of taking possession of "wild" nature has become established in international legislation over time (ibid.), but is increasingly coming under criticism due to the growing global scarcity of land, the new paradigm of nature conservation (e. g. Dowie 2009, Humes 2009) and decolonialization (Voyles 2015). The doctrine underlines the hegemonic character of the key idea of modernity, namely progress (Nisbet 1980:4, Schimank 2013ff.): In the name of progress nature must be "changed by men", therefore owned and made exploitable with the help of science and technology.

Marx describes this process similarly as the accumulation of capital. Capitalism focuses on economic success and hence chooses practices for exploitation that are economically efficient (cf. Marx 1988 [1867]). Ecological and social aspects in Guayaquil's mangrove commodification have hardly been considered until recent, which results in high ecological risks and social costs as a consequence of the Latin American face of modernity here (cf. Beck 1986). These costs are felt primarily by the economic less advantaged (ibid.), or by those who are not or not yet integrated into the system. Only with powerful actors in society experiencing nature loss and desolated landscapes as

negative, common practices may be questioned and discourses change (cf. e.g. Schimank 1983). With globalization and its delimitation of markets social inequalities and ecological costs are even externalized from Western countries to less powerful economic actors (Beck 2008, Lessenich 2016), as shrimp production shows (cf. 7.2).

I conclude that three hegemonic meaning worlds have influenced mangrove use in the Guayaquil area, which have their roots in colonial times. During the Enlightenment, the natural sciences sought to detach themselves from religion, as Darwin's theory of evolution, for example, shows very well. Nevertheless, a strong influence of Christianity on the natural sciences can still be seen today in the mangroves of Guayaquil, as science still moves within a dispositif shaped by Christian logic. The same logic can be seen in capitalism reaching the mangroves, which in a first step appears to only be concerned with the most economically efficient way of using the mangroves. But capitalism here cannot be detached from the Western idea of progress and education, building on older global economic logics, such as the colonial "encomienda" system. Unsurprisingly, capitalism in the mangroves is accompanied by other discourses influenced by Western experiences (e. g. "White Capitalist Patriarchy" see Haraway 1988:592, or the "ecological crisis of modernity" in Latour 1993 [1991]) that seek to improve or protect nature, and in the case of South America, the people in it, through technology and education.

2.4 Towards an Inclusive Discourse Analysis

The Discourse "appears as an asset - finite, limited, desirable, useful - that has its own rules of appearance, but also its own conditions of appropriation and operation; an asset that consequently, from the moment of its existence (and not only in its 'practical applications'), poses the question of power; an asset that is, by nature, the object of a struggle, a political struggle"
(Foucault 1972:120)

I argue towards a more inclusive discourse analysis when using SKAD, above all when doing research in countries with a colonial experience. "Colonial experience" I understand as a long-time power imbalance and the attempt to adjust other cultural groups to one's own with violence including a simultaneous siphoning off of existing resources of all kinds. In this context I like to address criticism made in Latin America regarding postcolonial and Subaltern Studies, arguing that the objective of "methodological purity" and the theoretical overburden (Mallon 1994, Castro Varela and Dhawan 2015:298), avoids the inclusion of narrations from marginalized groups. In this research I understand "marginalized groups" as the ones nearly or not present as "legitimate speech acts" in public discourses about mangroves in the specific setting of Ecuador. I suggest to combine SKAD with interpretative anthropology to be able to identify more than the hegemonial meaning worlds. I base my proposal on epistemic mobilities (Hornidge, Herbeck et al. 2020), arguing that scientific knowledge may also influence political de facto discourses (Hornidge 2014). The visualization of previously unheard voices in scientific publications about mangroves can this way improve political integration of marginalized groups. Interpretative Anthropology allows to identify and include ethnographic material and hence narrations of alternative meaning worlds into the data corpus (cf. Keller 2011:86ff.) for a holistic analysis.

Spivak argues that the representation of the subaltern or marginalized through science is impossible (Spivak 1988, also Steyerl 2008 for the "working class"). According to her, the scientific sites and language in turn represent and reproduce the power structures themselves and cannot be abolished (Spivak 1988). This criticism also appears in the context of the instrumentalization of indigenous movements in South America, where

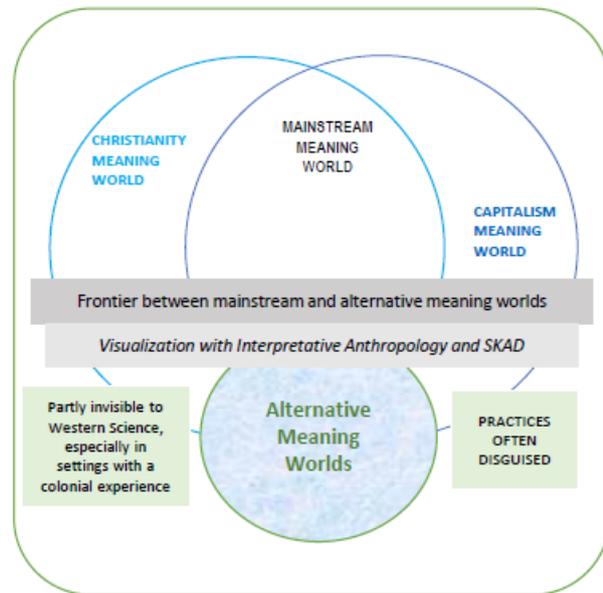
the term ventriloquism is used (e. g. Martínez Novo 2018). Ethnographic material, however, can help highlighting and analyzing marginal discourses, while also the "original" speech act is preserved. Albeit not all distortions are excluded, at least the meaning-making processes and thus the contextualization of knowledge and practices can become clearer.

In the last years researcher have applied various approaches to include ethnographic data into SKAD (Akbaba 2017, Elliker, Wundrak et al. 2017, Maeder 2017, Wundrak 2017, Elliker 2018, Hornidge and Feuer 2018). Keller suggests for example, based on theoretical considerations, an ethnography of the relationship between every-day-knowledge, practices and discourses, a "focussed discourse and *dispositif* ethnography within SKAD" (Keller 2019). He describes it as a detailed analysis of reception, appropriation and dispute of *dispositifs* in societal fields of practices and the relationship between discursive production and every-day-knowledge (Keller 2019:10). So instead of only looking at the communication, this approach includes the analysis of the surroundings, the practices, materials or institutions necessary for or as a result of the discourse within its historical setting. *Dispositifs* do not only contain infrastructure used now, but are located in a historical landscape with pre-determined surface and outstanding points, similar to planning new infrastructure within an existing and historically grown city (Keller 2019:6). In other words, depending on an actors' position within this historical landscape there is only access to a specific set of communication and infrastructure means.

Keller argues that social actors can have two relationships to discourses. On the one hand they can have the speaker position themselves, on the other hand actors serve as addressees of a statement (Keller 2011a:54). "Legitimate speech acts" by speaker positions can be used and interpreted by other social actors becoming for example role players, use them as 'patterns of subjectivation' or react to them, "accept, effect, translate, adopt, use or oppose them, and therefore 'realize' them in versatile way"

(Keller 2011a:55). The methodological framework SKAD differentiates hence between actors and speakers and can therefore “identify silent or silenced voices” (Zhang and McGee 2018:164).

Drawing from this approach, I argue for an even stronger recognition of the autonomy and greater visualisation of the discourses that are not visible to Western scholars at first glance. I have visualized these boundaries and challenges schematically in Table 7. Power advantages can lead to certain discourses developing hegemonically, hence with intentions to develop a comprehensive world view and to classify all social relations into one overall structure (Keller 2011:55). It



7 Overlapping Meaning Worlds: Mainstream and Alternative Meaning Worlds divided

interlinks with my understanding of mainstream discourses, which I define as meaning worlds within a limited setting, such as in nation states. Both concepts have their roots in the previously described “symbolic worlds of meaning”, in the synoptic totals of tradition that integrate different provinces of meaning and exaggerate the institutional order as a symbolic totality (Berger and Luckmann 2007 [1969]:100-102).

What Geertz describes vividly in the context of interpretative anthropology is even more true in the case of settings within a postcolonial dispositif: „[C]ode does not determine conduct, and what was actually said need not have been” (Geertz 1973:18). This statement can be developed even further: Practices that at first glance could be attributed to a certain meaning by an outsider were only forms of external adaptation due to power abuse, while internal attributions of meaning continued to function before power abuse led to disguise. Due to colonial power imbalances freedom of practice and discourse was severely delimited along ethnic, gender and intersectional

lines. It resulted in blurred and disguised practice and meaning, as Bhaba elaborated extensively for colonial settings (Bhaba 1984). In countries with a colonial experience the intersectionality of different categories is fundamental to the "legitimate speech act" and the resource access and use (cf. Mollett and Faria 2013:123). In other words it is important to take into account "not only male dominance, but mainstream and privileged attitudes and control over the environment" (Rocheleau, Thomas-Slayter et al. 1996:306) that have caused and continue to cause practices in a disguised appearances. Meaning worlds survived colonial oppression and have formed separate discourse often up until today invisible to outsiders. The "male gaze" (Mulvey 1989:19f.) on nature in Western knowledge systems often constructs nature discursively as an object to be possessed and dominated by men, while nature is constructed as passive and female.⁶ Haraway calls this the "White Capitalist Patriarchy [...] that turns everything into a resource for appropriation" (Haraway 1988:592). I suggest to take especially into account the historical development for intersectionality in resource use and structural aspects of gendered discourses for making an extra effort to include "passive" perspectives, including the perspective of nature itself, when doing discourse research and analysis.

Interlinking SKAD with interpretive anthropological theory can contribute to identify and include these non-hegemonial speaker and actors from an emic perspective and including discourses which are not part of the dominant meaning world. Looking at Geertz understanding of culture the relationship between discourse and culture becomes immanent: "Believing, with Max Weber, that man is an animal suspended in webs of significance he himself has spun, I take culture to be those webs, and the analysis of it to be therefore not an experimental science in search of law but an interpretive one in search of meaning" (Geertz 1973:5) He further suggests to

⁶ Mulvey (1989) introduced the term "male gaze" originally in her film theory book "Visual and other pleasures", describing the dichotomy in "pleasure in looking" (ibid.) as "active/male" (ibid.) and "passive/female" (ibid.).

understand culture as text stating that the ethnographer „inscribes“ social discourse, “he writes it down” (Geertz 1973:19).

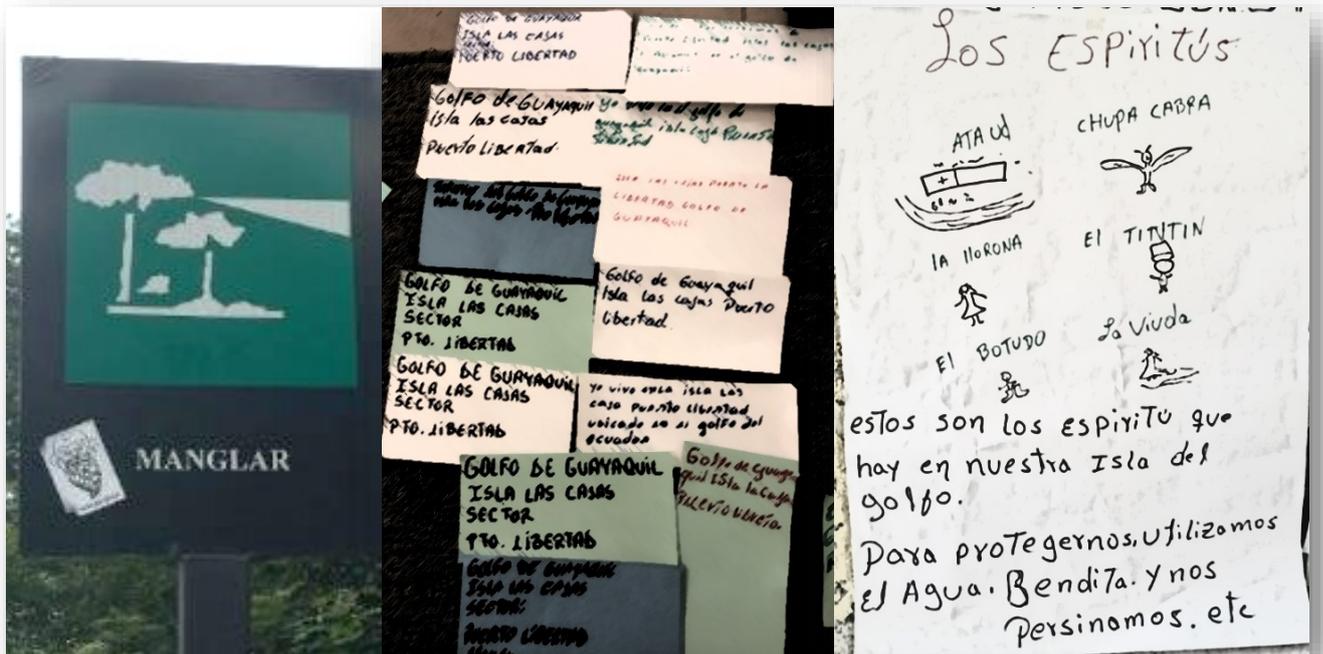
Appadurai’s theory of flows and ethnoscapas (Appadurai 1996:48ff) might additionally be of help in the SKAD corpus analysis moving away from static understandings of culture. Ethnoscapas can be seen as “landscapes of group identity” (Appadurai 1996) and cultural groups are not treated as homogenous, localized and static entities. It is instead necessary to consider mobility, self-awareness and constant exchange when doing research in the cultural realm. Appadurai's suggestion is ambivalent and points in two directions: Cultural heterogeneity can be both a strength and a weakness. The example of some mangrove user groups in this research shows that the adaptation to external conditions in the colonial context and the apparent blending into mainstream culture can go hand in hand with an inward preservation of cultural practices as a form of resistance forming alternative but invisible discourses. On the other hand, one characteristic of the subaltern is precisely that their powerlessness is primarily characterized by their fragmented and divergent nature of individual actors without an organizational structure, thus fostering and conserving inequalities and marginalization (Spivak 1988).

However, following Prakash, my suggestions are not to be seen as definitive values, but as a contribution to bring together different theories and epistemologies that keep questioning each other towards a “constructive transformation” (Castro Varela 2015:298) of the occidentally dominated knowledge systems (Prakash 1994:1490).

In summary, the inclusion of ethnography as a method for data collection in SKAD combined with the theoretical underpinning of interpretative anthropology can help include narrations of previously invisible discourses and actors. Combining these concepts can help to “have a look” at what people say they do and shed more light on hegemonial actors and marginalized or subaltern non-Western discourses. Including

the meaning worlds and discourses of all actors in research and political decision will clearly contribute to promote equality in nature use.

III METHODOLOGY OF DATA COLLECTION AND ANALYSIS



8 Examples for Data Collection Methodology – Photography [Picture taken 23.06.2019], Participant Observation, Workshops

3.1 Introduction: Access to the Field and Cooperation Partners

For the purpose of outlining my access to the field and my perspective on mangrove cultures, I will discuss in this chapter the methodology used for data collection and analysis. I will begin by contextualizing my research stay and describing the main collaborators that allowed me getting to know the differing cultural groups using mangroves in and around Guayaquil. I will also discuss some ethical challenges of data collection and archiving and reflect on my own role as a researcher.

The idea for the research framework originated at the ZMT in cooperation with the Charles Darwin Foundation (CDF). Formerly employed at the ZMT, now at the CDF, Dr. María José Barragán-Paladines had elaborated together with ZMTs Prof. Hornidge and Prof. Zimmer the “Meaning of Mangrove Project” and was my main point of contact in Ecuador. She helped establishing cooperation with organizations in and around Guayaquil: i) The Marine Science Faculty of the ESPOL (Polytechnical College of the Littoral - Escuela Superior Politécnica del Litoral). My direct contact person was Indira

Nolivos, Oceanographer. At the time of my field research, she led a scientific outreach project to two of the communities of my research sample. This led to synergies, interesting discussions and possibilities of joint visits. The objective of ESPOL's community project is to share scientific knowledge and contribute to "developing" the mangrove community. I was officially enrolled as an international student at ESPOL. The triple joint partner organizations (ii) JUMAPACOM (Participatory Community Management Board Don Goyo Mangroves / Junta de Manejo Participativo Comunitario Manglares Don Goyo), (iii) Foundation Cerro Verde, and (iv) Schutzwald e.V. established the on-the-ground support of my research. The objective of these organizations is the conservation of mangroves, the empowerment of the communities and protecting the community-owned area from mis-management. Without the existing relationship of trust between these organizations and the inhabitants of the mangrove communities, getting to know the people and recording their knowledge would not have been possible.⁷ I organized two virtual Workshops with JUMAPACOM, Cerro Verde and Schutzwald, each approximately 1.5 hours to exchange and discuss findings in November 2020 and January 2021.

Finally, from 13th to 15th November 2019 I participated in the "1st International Mangrove Conference" at UEES (Universidad Espíritu Santo), a private university in Guayaquil, to understand better the stakeholder landscape of mangroves science and activism in Ecuador. The conference had the objective to exchange knowledge between stakeholders in science, civil society and the community. It was an excellent networking opportunity.

⁷ Together with the cooperation partners I additionally supported the preparation and implementation of the research of a master student in the sample area (Doolittle 2020).

3.2 Methods of Data Collection: Ethnography, Newspaper, Archives

I prepared my research with writing a PhD proposal and defending it in various occasions in the first half of 2019, for example at the Social Science Department Colloquium of ZMT, at the BIGSSS Colloquium and BIGSSS Retreat, and at the Postcolonial Oceans Conference in Bremen. Simultaneously, in April 2019 I started with the compilation of a mangrove data corpus for doing a SKAD analysis (cf. Keller 2011:86ff.). I began with collecting scientific publications referring to mangroves in the Guayaquil area over time from 1800 onwards. I included publications into the corpus if considered by the scientific community as "scientific" - drawing here from the definition by Berger and Luckmann, that knowledge is understood as everything that a society understands as knowledge (1966:15). The final data corpus consists of 135 scientific publications, of which 24 publications are from ~1800-1989, 111 publications published from 2000-2019 (Appendix XLIII-LVI).

Publications from the 1980s onwards were more easily identifiable as "scientific" because they were published in peer-review journals or listed by "scientific websites" like Google Scholar, Web of Science, SCOPUS, the Biodiversity Heritage Library, and/or in libraries of scientific institutions (universities, research centers etc.). Earlier publications sometimes needed a more profound background research (e. g. Conde-Salazar Infiesta and Lucena Giraldo 2009, Mayer 2009, Ruales and Cornejo 2020) in combination with a scientific claim of the authors themselves. I also did snowball sampling if publications were mentioned in other scientific publications. Publications were included if available online and/or in libraries in Germany to point out the accessibility of international science, but also due to own limitations of visiting international libraries. A student assistant contributed with 10 hours in October 2019 in the systematic review of scientific online data bases, with me having set the search terms. The main languages of the publications are English, German and Spanish.

Mangroves and Meaning-Making: A mutual relationship over time? **BIGSSS**

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Introduction
 Mangrove forests are located at the in-between of sea and land. People around the world have made sense of mangroves in many different ways, ranging from mangroves as "resources", "biodiversity reserves", "coastal protection" to "home of ghosts" and "death bringers". The project is innovative, as it integrates vastly understudied historical narratives and contemporary discourses through which mangrove meanings are being shaped. The outcomes will afford a critical re-thinking of mangrove history, meanings, functions and future.

Objective
 To study the co-dependent relationship of mangrove ecosystems, public mangrove discourses and the human use of mangrove areas.

Research Question
 How are mangroves being made sense of around the Gulf of Guayaquil since the 19th century until today, and how does this guide the use and management of mangrove areas today?

Methodological Framework
 The Sociology of Knowledge Approach to Discourse (SKAD) by Reiner Keller (2001, 2005, 2011a, 2011b)

Data will be collected through
 Participant observation, interviews, transect walks, online & archival research

Expected data for discourse analysis
 Field notes
 Interviews (transcripts)
 Photographs
 Oral histories
 Land-use Maps
 Written or visual accounts, for example novels, paintings, newspaper articles, memories from farm owners, letters

Conceptual Underpinnings
 Mangroves are studied from the perspective of **Social and Discursive Constructivism**, arguing that mangroves to humans have only become meaningful through the services they provide and the values attached by humans to these services.

Research Design
 Scientific mangrove knowledge ↔ Mutual influence ↔ Everyday-life mangrove knowledge

TIME LINE
 36 MONTHS
 Apr 19: Start of fieldwork in Guayaquil, Ecuador
 Apr 20: Start of fieldwork in Bremen, Germany
 Apr 21: End of fieldwork in Bremen, Germany

Literature
 Keller, R. (2001). Wissenssoziologische Diskursanalyse. Handbuch Sozialwissenschaftliche Diskursanalyse. Band 2: Theorie und Methoden. R. Keller, A. Hildebrand, W. Schneider and W. Viehöver. Wiesbaden: Suhrkamp, 315-343.
 Keller, R. (2005). "Analyzing Discourse: An Approach from the Sociology of Knowledge." *Forum: Qualitative Social Research/Socialforschung* 6(3/3).
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 Keller, R. (2011b). *Wissenssoziologische Diskursanalyse. Grundlegende eines Forschungsprogramms*. Wiesbaden, VS Verlag.
 Keller, R., et al. (2016). *The Sociology of Knowledge Approach to Discourse. Investigating the Politics of Knowledge and Meaning-making*. Devo & New York, Routledge.
 Mielich, K. and A. Hornidge (2017). *Area Studies at the Crossroads: Knowledge Production about the Mobility Turn*. New York, Palgrave MacMillan.
 Piel, K. (2007). *Relocating modern science: circulation and the construction of knowledge in South Asia and Europe, 1650-1900*. New York, Palgrave Macmillan.
 Seth, S. (2006). "Paving knowledge in its place: science, colonialism and the postcolonial." *Ethnohistory* 53(4): 373-386.
 Steadman, R. and A. Hornidge (2018). "Puting Livelihoods at Sea: Studying Meaning-Making in Marine Research." *Frontiers in Marine Science* 5(157).

ZMT LEIBNIZ CENTRE for Tropical Marine Research
CERN
SCHUTZWALD
MAPADOM
BIGSSS
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9 Poster for the Presentation at the BIGSSS Retreat shortly before the field work 2019

I went to Ecuador together with my daughter in early June 2019 for eight months to collect ethnographic and archival data. Mid-February 2020 I returned to Germany, having taken a 3-weeks holiday from Ecuador in December 2019. I expected that bringing a child with me to the field, would bring advantages and disadvantages (Korpela, Hirvi et al. 2016), although children often are a "guarantee of good intentions" (Cassell 1987:260) and help with

establishing rapport and trust in the field (Bernard 2002:352, Poveda 2011, Dörendahl 2015:21). I often had to bring my daughter to interviews or other events, as I was lacking child care.

In Guayaquil I rented small apartments via an international website in a mangrove lined neighborhood called Urdesa. The name Urdesa is an abbreviation of "Urbanización del Salado" (Salado Estate) – "Salado" referring to the name of the estuary arm "Estero Salado" and means 'salty' in English. The quarter developed in and surrounded by mangroves on an estuary⁸ arm of the Estero Salado in the 1960s, which I will describe later in more detail. I did systematic participant observations in the Urdesa Estuary Zone

⁸ An estuary understood as an area, where fresh water from rivers flows into the ocean and mixes with salty water, resulting in a brackish water area surrounded by land. This area is the main mangrove habitat.

especially between Plaza Guayarte and Malecón Salado, which meant I visited the area with its park like zones, play grounds and café's frequently and took notes, photographs and recordings. Additionally, I ran 37 times (once per week) a very similar track (about 5-7 km) the mangroves "lining parks" of Urdesa during different times of the day. About once per months, I visited the "Historic Park" (Parque Histórico), a park in the "upper class" neighborhood of Samborondón, built in and around mangroves. I also spent some time in a low budget Hostel named Ñucapacha, which helped me getting insights to tourism and globality aspects of Urdesa. The hostel and its inspiring people were also an anchor during some of the most challenging times, for some chats and leisure time.

From this base we travelled on a regular basis for a few days to mangrove areas around the city, especially to two mangrove communities in the inner estuary of the Guayas River. We spent a total of 40 days and 20 visits to mangrove zones in the surroundings of Guayaquil with each 1 to 5-day(s) duration (see Appendix II). Most of the time, against a reasonable fee, we stayed with families involved in the community management of the mangrove zone. From the urban mangrove hubs boat transport to the communities is marked by a constant lack of sufficient transport and boats tend to be overloaded. The informality of transport makes it necessary to engage in negotiations to be transported. The boats have no cover and passengers are exposed to the weather. Additionally, there is often waiting time involved due to someone not arriving in time, weather or tidal conditions or many other reasons:

"Going to "Urban Mangrove Hub [[A]]". We arrive at 08:10 and stand in the rain. It is aguaje grande [a springtide with particularly high tidal range] and there is garbage everywhere. It is raining so hard that I say that if it does not get less until 08:30 I will not go [...], but then the rain stops. We are sitting in the boat, [the captain] complains that there are more than the agreed 10 people, there were some volunteers who arrived at the last second. We sit on corrugated cardboard on the floor, plastics/jackets/bags over our legs, [one woman] also on her head. Very slow drive [...]"⁹

When I went to the mangrove areas, I stayed in one community with the pseudonym [[Community B]] for consecutive days, while I visited the other communities and rural

⁹ [Research Diary, 09th February 2020]

mangroves in the area, interviewed, held workshops, participated in everyday life activities or did transect walks with representatives of the villages.

During the eight months of research I participated in community, political and university meetings, in demonstrations and public speeches relevant for mangrove discourses. I noted down observations, reflections and planning in a Research Diary that concluded with 158 pages [Calibri 12]. Whenever possible and ethically acceptable I took photos or recordings for my own use. A major challenge was to collect ethnographic data that could later be integrated and analyzed in the SKAD framework in the same way as "expert" publications from public discourses. Many of the interviewees were not "experts" in the sense of the majority society, but experts in non-Western epistemes. The practical approach to cultural domains (Borgatti 1994, Bernard 2006:266ff., Schnegg and Lang 2008), which also assumes a cognitive knowledge order around specific sets of meanings, turned out to be useful. A cultural domain can broadly be understood as a cluster of items that members of a specific group believe belong together (Bernard 2002:299). On this methodological ground I used free listing techniques (Borgatti 1994:274ff., Schnegg and Lang 2008:21ff.) in the semi-structured interviews with non-Western experts and during a workshop on mangrove meanings.

Questions included:

- *What do you use mangroves for?*
- *What animals live in the mangroves on land?*
- *What diseases exist in the mangroves?*
- *What fish species live in the mangroves?*

In the first 1,5 months I developed the questionnaire for the semi-structured interview and for the cultural domain analysis workshop based on grand tour questions (Spradley 1979:86). Grand tour questions are broad questions that help to understand the cultural positioning and framing of a research topic, for example: Describe a typical day in your job as a mangrove crab collector. The first eight interviews had a strong focus

on grand tour questions until I had developed a set of questions, which I kept on refining (see Appendix IX). I also recorded and partly transcribed these interviews. Based on the results I developed a set of questions (see Appendix III-XIII) with special questions for each user group.

I held and recorded a total of 48 in-depth Interviews with 1-3 hours duration (average about 1-1,5 hours), thereof 28 expert interviews (6 female, 22 male) and 20 informant interviews (9 female, 11 male). I held 46 of these interviews in person during my time in the field, two expert interviews I did via Skype, one in August 2019, one in July 2020. I transcribed 39 interviews fully (81%), the other nine interviews partially according to relevance. Additionally, I did 5 "transect walks" in the mangrove communities and one at a research center for aquaculture of the ESPOL University located in Santa Elena Province. Transect Walks derive from Rapid Rural Appraisal methods for quick data gathering in community development (Chambers 2012, Pelto 2016:77). It is a systematic walk or, in this case, a boat trip through the study area accompanied by one or more experts on the region (Mukherjee 1997:52). The experts explain independently and the researcher also interview them in detail about the items they are interested in. The method helps to get an insider's view of the relevant knowledge about the research topic and detailed reports on challenges and opinions in a short period of time (ibid.). Again, I transcribed 80% of the recordings.

For a group perspective on mangrove meanings, I organized and held a workshop on 4th August 2019, in which 28 members of a mangrove fishing association participated. Firstly I discussed the name of the community and its localization within the estuary. Secondly I offered a choice of questions about major cognitive mangrove domains for group work. Questions were similar to questions of the semi-structured interview questionnaire, as I was interested to get a group consensus on certain topics, for example:

- *What parts of the mangroves have you ever used and what for?*

- *What spirits have you heard of in and around the mangroves?*
- *What medicinal plants are used in the mangroves?*

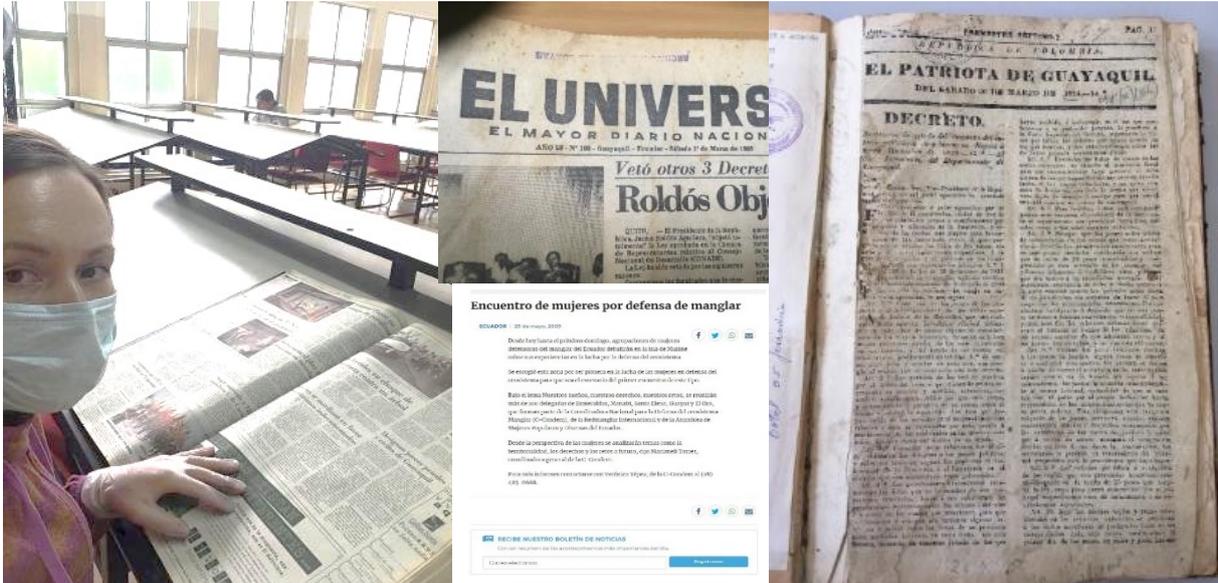
The workshop participants visualized their discussion on big paper sheets and/or small cards and presented them to the plenary. Although I had originally planned further workshops of this kind, I refrained from doing so. The group dynamic quickly drifted towards “class room setting” and it became clear that the participants felt uncomfortable. I realized it was better to discuss topics informally in a round outside or at home in the family setting.

The lack of female voices as experts or workshop participants is not only coincidentally but symptomatic (cf. Merchant 1989 [1980], Haraway 1991, Harding 1991, Beard 2015, Cormier-Salem 2017). However, I aimed to give voices to women engaged in mangrove practices therefore specifically interviewing and listening during participant observation to female voices in community and city reaching nearly gender parity in informant interviews. My own role as a woman, additionally a woman with a child, surely supported this endeavor. In conclusion, however, it should be noted that attention to women's voices has been already limited to the way the research question was formulated: The direct primary users of mangroves are male due to their structural conditions and economic dominance in resource use, and thus had to mainly be considered. This insight should be taken into account as a lesson learnt in the future. The female gaze must already be taken into account in the formulation of the research question in order to be able to expand the female perspective on nature.

The third pillar of data stems from online newspaper data bases and the archives of Guayaquil and Quito. In total I visited Ecuadorian archives 44 times. 41 days I worked in the libraries and archives of Guayaquil in (by order of frequency) the Historic Archive of Guayas, in the Municipal Library, in the Library of the Fundación Cerro Verde and in the Anthropological Museum's Library. Additionally, I spent three days in Quito in the

National Archive (Quito) and in the Library of the Universidad Católica (Quito), while the Library Eugenio Espejo, an important documentary source, was unfortunately closed during my visit. Each archive or library visit lasted between 3 to 5 hours.

In Ecuador, newspapers and media are generally strongly linked to private companies (Jordán and Panchana 2009:5) and political power (ibid.:28). Influence became more regulated around 2010 with a constitutional amendment (ibid.:9; Constitution of Ecuador Article 17). Unlike other Latin American countries, Ecuador does not have a



10 Physical review of 4000 newspaper copies in the Guayaquil Archives and Libraries, here in the Municipal Library. In the middle an example of *El Universo* headline and an online article of *El Universo*. On the right the oldest Guayaquilean newspaper.

strong journalistic tradition (ibid.:5). At least in 2009 newspaper were still the most influential “national public opinion leaders” (ibid.2009:28), as influencing all other media in the country. According to personal observation during my fieldwork, social media in Ecuador today has an incredible power in spreading news from more or less credible sources. This became particularly clear to me when I followed the reports on Twitter or Whatsapp about the political unrest in the country in October 2019 and compared them with the reports in the newspapers and own observations.

One of the biggest challenges in reviewing newspapers in Guayaquil was the lack of digitalized newspapers. Of the main newspapers in Guayaquil, namely *El Universo*, *El Comercio*, *Extra* and *El Telégrafo* (ibid.:29), only the last 10 to 20 years of publications

are available online in digital form. But I was interested in micro-developments from the 1980s onwards. As it was impossible to review 20 years of all four newspapers in paper format in the archives, I had to focus on one newspaper that still gave the most comprehensive view on the mangrove discourses. Therefore, the yellow press newspaper Extra was not an option. El Telégrafo became 2008 the first governmentally owned newspaper during Correa's presidency (ibid.:14) and said to be not entirely free of political influences (ibid.:33). El Comercio, as says the name, focusses on economics and trade specifically and is based in Quito. Hence, El Universo became the main source for discourse analysis for reflecting the broadest perspective. It is the most important newspaper in Guayaquil and also important in Quito, thus shaping the public sphere both in economics and politics (ibid.). Published by the El Universo Group (Grupo El Universo) that belongs to the Pérez family from Guayaquil, the newspaper was first published 1921 (ibid.).

I reviewed El Universo's volume 1980 and from 1993 to 2019, a total of 28 years. I had to do a physical paper review of about 4000 newspapers in the years 1980 and 1993-2002. During my work I kept an excel spread sheet with keywords for each month of review reflecting shifts and continuities in the mangrove discourse¹⁰. I took pictures of all relevant articles. 2003 to 2019 I reviewed in the online database on the newspaper website¹¹. Online I used a systematic search with keywords (for example, "Mangrove" AND "Guayaquil", "Mangroves" AND "Crabs") between October 2019 and August 2020. In addition, I was searching with snowball-searches for articles on topics that occupied me during the field research, not only in El Universo, but also in other larger newspapers with relevance for Guayaquil, for example El Telégrafo between September 2018 and February 2020. A student assistant contributed with 10 hours in October 2019 in the systematic review of the *El Universo* online, while I had set the search terms. Due to the lack of sufficient articles between 2003 and 2011, I searched explicitly in August

¹⁰ [El Universo Newspaper review 1980, 1993-2000: Keywords list in Appendix XXIII-XLI]

¹¹ www.eluniverso.com [20.11.2021]

2020 with the term "Manglar" (Mangrove) and year, e.g. 2007, until I had a base of at least 20 articles per year (chosen in order of appearance and ordered by the data base El Universo by importance). The processing, number of articles and analysis I will describe further in the following section.



11 Newspaper El Universo in the National Guayas Archive - Cut out articles 1980

I reviewed historical newspaper between 1800-1980 in the beginning of my archival research, especially the oldest newspaper, for example "Grito del Pueblo" or "6 de Marzo", but there were hardly any results for mangroves.

I also systematically searched the libraries and archives on any historic documents that refer to or contain mangroves or estuaries, which resulted in a long list of historic documents, maps, manuscripts, local (scientific) publications, leaflets and similar, which I also "collected" by photographing.

I was very much supported by all libraries and archives' teams, but of course also some challenges during archival work occurred. At times publications had disappeared. Some newspapers had articles cut out (see Image 11), the collections of some months did not exist. Also challenging was the sudden closing of the Historical Archive of Guayaquil in December 2019 due to renovations in the reading halls, causing a thick layer of dust and for me a consequent cough in January 2020.

3.3 Methods of Analysis: Coding, Typologies and Show Case Material

*“Analysis is sorting out the structures of signification – „established codes“. The aim is to draw large conclusions from small, but very densely textured facts.”
(Geertz 1973:26)*

The aim of qualitative data analysis was to discover new aspects of the research topic and to develop "midrange theories" (Merton 1962). I used society theories as described in chapter II to support the contextual understanding and as an interpretive tool. The analysis process aimed to merge the collected data for the SKAD analysis, which was:

- *Historical documents*
- *Contemporary Documents, also scientific publications*
- *Newspaper Articles and Ethnographic Data*

I used "ATLAS.ti 8" as a data management software from the beginning. Table 13 visualizes schematically the analysis process: The steps were sorting, coding of each data group separately and finally merging the data groups for the in depth-analysis (cf. Keller 2011:91ff.). I sorted the data according to their problem structure, which "includes determining the nature of the problem [...] of an utterance unit, designating the causal relationships [...], responsibilities, problem-dimensions, value-implications, moral and aesthetic values, consequences, actions possibilities and so on" (Gerhards 1992, Schetsche 1996, Keller 2013:115). There is no strict specification for the actual components of a problem structure, but the empirical data have determined the composition (Keller 2013:115). I

<i>Historical and Contemporary documents incl. Science publications</i>	<i>Newspaper articles</i>	<i>Ethnographic data</i>
<i>Turn into pdf</i>	<i>Excel list</i>	<i>Transcribe interviews +80 %</i>
<i>Sort docs into meaning groups</i>	<i>Extract most relevant articles</i>	<i>Review notes, coding in atlas.ti</i>
<i>Code data partly in Atlas.ti, develop code tree</i>	<i>Code articles in Atlas.ti, develop code tree</i>	<i>Anonymize (Qualiservice)</i>
<i>Extraction of sample articles + quotes for in-depth analysis</i>	<i>Extraction of sample articles for in-depth analysis</i>	<i>Extraction of sample quotes for in-depth analysis</i>
<i>DATA CORPUS FOR DISCOURSE ANALYSIS</i>		<i>DISPOSITIF ETHNOGRAPHY AND (MARGINAL) DISCOURSE MATERIAL</i>
<i>INTERPRETATION (GROUPS AND INDIVIDUAL) AND WRITING</i>		

12 Schematic analysis steps depending on data types

sorted and coded the data mainly between March 2020 and December 2020, starting in parallel with the in-depth analysis and writing process in August 2020.

Drawing on qualitative content analysis (Mayring 1983, Mayring and Fenzl 2014), and especially “Summarizing content analysis” (Mayring and Fenzl 2014:637), I extracted the “content-bearing paraphrases” (ibid.) in the beginning word by word.

Code	Comment	Grounded	DensityCode Groups	Created	Modified
◦ T everyday: humans as part of the mangroves	Practices or communication that shows how cultural groups are part of the ecosystem mangrove	11	0	29.04.2019	30.04.2019
◦ T everyday: M as disturbing		1	0	15.05.2019	15.05.2019
◦ T Everyday: Mangrove knowledge	Specific knowledge about mangroves in the Gulf of Guayaquil	11	0	29.04.2019	30.04.2019
◦ T everyday: Mangroves humanized	Mangroven führen ein Eigenleben, Persönlichkeit des Mangrovenwaldes	2	0	29.04.2019	29.04.2019
◦ T Everyday: Power hierarchy / Victimization	Practices showing power dynamics in all ways, but also utterances that show perceived helplessness and lack of power Foucault understood power and knowledge as a dynamic couple, that directly implies one another (Foucault 1995 [1975]:27). However, discourses not only reproduce power structures, but power can also be challenged through discourse. Keller based this on Giddens (1986) duality of structure concept, which assumes that action can be the realization of structural pattern (rules), but at the same time can “question, undermine and transform” (Keller 2013:4) structural patterns. Said with Wunderak, the analytical purpose of discourse analysis is to find “knowledge-power-language relation in the data” (2017:232).	22	0	29.04.2019	30.04.2019
◦ T: M and climate	Mangroves importance for climate change, but also what climate change can do to the mangroves	10	0Scientific Meaning-Making	27.04.2019	30.04.2019
◦ T: M are exotic	References to mangroves as “exotic” plants/areas. Exotic understood as “unusual and exciting because of coming (or seeming to come) from far away, especially a tropical country” (Cambridge Dictionary) Keywords: Edward Said - Orientalism / Otherness	14	0Scientific Meaning-Making	23.01.2019	30.04.2019
◦ T: M as aesthetic	Mangroves that are described as beautiful, mangrove paintings, mangrove art	11	0Scientific Meaning-Making	27.04.2019	30.04.2019
◦ T: M as area to be converted into something more useful	References to the destruction of mangrove forests	20	0Scientific Meaning-Making	23.01.2019	15.05.2019
◦ T: M as coastal protection	References describing mangroves as coastal protection	18	0Scientific Meaning-Making	21.02.2019	30.04.2019
◦ T: M as cradle of diseases	Mangroves are described as bringers or causing disease. Also: Mosquito references	33	0Scientific Meaning-Making	25.04.2019	30.04.2019

13 Examples of developing codes and categories – Excel extract from ATLAS.ti

On this premise I developed codes and later categories of meanings (see Table 13). In the course of the analysis, these codes and categories changed over time. At one point I had identified 203 codes, that I reduced by merging and erasing duplicating codes based on meaning groups. I finalized for example with 21 codes for the scientific mangrove discourse. I reviewed all collected publications regarding relevance for my sample again in the end and assigned each publication just one single code.

The ethnographic data consisted of a large number of photographs, the research diary and 48 recorded interviews. I transcribed 80 % of the latter, which is 38 interviews in number. I chose by relevance of interview and expected richness in usable material for discourse analysis which interview to transcribe. I transcribed all recordings and

interviews myself except one, which a student assistant transcribed. The other 20 % of the 48 interviews I transcribed partly when necessary. I uploaded all interview transcriptions and the research diary into the ATLAS.ti, each in a separate project file. I changed some data to pdf-files before uploading. Again drawing on qualitative content analysis (Mayring 1983, Mayring and Fenzl 2014) using the “Summarizing content analysis” (Mayring and Fenzl 2014:637) I started extracting the “content-bearing paraphrases” (ibid.) in interview transcripts and research diary.

For the development of the codes, I used the ATLAS.ti codebook of 203 codes already described in the previous section as a basis and reduced and modified the codes in a continuous process of aggregation and consolidation during the analysis of the research diary, the documents and the interviews, working in parallel on all the data in 2020 and 2021 (see Appendices X-XIX for a list of the templates used to develop the codes). During the continuous coding process, I exchanged the codebooks between the ATLAS.ti projects, and at the end of the analysis I was working with only 33 codes (Appendix XX), which formed the beginning of the table of contents of this paper.

After returning from the fieldwork in February 2020, I uploaded of newspaper articles and historical documents to ATLAS.ti after a brief relevance check.

1800-1999	820 uploaded documents
2000-2009	515 uploaded documents
2010-2019	199 uploaded documents

Usually, I had photographed newspaper articles in high resolution. Historical documents I also stored either as photos, i. e. as jpg files, or pdf. I had to group articles into three different ATLAS.ti projects, due to the limited functionality of the software: one article usually consists of one image, but sometimes several if the article was large. The list of codes used in this project consists of 33 codes and 5 code groups. Again I used “Summarizing content analysis” for the code development (Mayring and Fenzl 2014:637) and finally assigned one single code to each article.

The in depth-analysis of data comprised of two types of techniques of analysis, as described by Keller (2011:91): On the one hand the extraction of information, for example about events or actors, and on the other hand "the reconstruction of a discourse structure" (ibid.). In other words, I either extracted information directly from the text, or I gained information in an interpretative approach. For the latter I chose show case material during the sorting and coding process that I analyzed in more depth during writing, while adding more information and data in the process based on codes in ATLAS.ti.

Delimiting mangrove user groups (cf. 4.6) in an appropriate and politically correct way was an additional challenge as power structures reflect in the discursive construction of social groups, ethnicity and "names" in Ecuador (cf. 6.2). Instead of ethnicity, I am therefore delimiting the main groups in the sample area by a combination of practices and based on the geographical delimitation.

As discussed in chapter II, Clifford Geertz's interpretative anthropology facilitates a comprehensive analysis of the discourses in SKAD and interpretative approaches were especially useful when analyzing the data in depth and reconstructing the discourse. In conclusion, I was able not only to understand the ethnographic data as frame for analyzing the dispositif, but also to reconstruct the subaltern and dominant discourses on mangroves at the same level of meaning. For that reason I had a special focus on the elaboration of the subaltern perspective (cf. Spivak 1988) on mangroves, not only on the Northern-biased discursive construction of mangroves in media, science, economy and politics and as reflected in Guayaquil.

Concluding I like to quote Geertz to summarize my approach to in-depth data interpretation: "[A]nalysis is (or should be) guessing at meanings, assessing the guesses, and drawing explanatory conclusions from the better guesses, not discovering the Continent of Meaning and mapping out its bodiless landscape" (Geertz 1973:19). To "assess the guesses" I have continuously presented my data and interpretations with

informants, partner organizations and the wider scientific community at various conferences and colloquia, for example at the Postcolonial Oceans Conference 2019 in Bremen, the ZAC2 Conference 2021 at ZMT Bremen and the Research Seminar of the German Development Institute (GDI/DIE) 2021 in Bonn.

3.4 Ethics of Research: Declaration of Consent, Archiving and Anonymization

With the start of the "Meaning of Mangroves"-Project all involved actors discussed organizational, logistical and ethical aspects via e-mail and skype, developing and signing a Memorandum of Understanding and a Project Agreement. I obtained an ethical clearance for this study from the ZMT Ethics Committee. Therefore, I had to fill in a form, presenting some general aspects of the proposed research, discussing information and precautions in relation to the "subjects" of study and my data protection concept. This eight-page document was then read by a committee consisting of four senior researchers coming from different disciplines at ZMT, and I had to discuss with two members of the committee further details. In the end the Ethical Clearance was granted.

During the field research I was enrolled as an International PhD research candidate at ESPOL University, receiving permission for ethnographic research in the mangrove areas by JUMAPACOM and in compliance with the allowed activities of the Agreement of Sustainable Use and Custody (ASUC) as given to them by the Ecuadorian Ministry of the Environment (MEA) (cf. 4.4). During the research and analysis phase I was in regular exchange with the partner organization, that had started with a kick-off-workshop in July 2019. During my stay I presented preliminary results in two presentations at the University ESPOL with cooperation partners, key informants and experts invited. They took place in September 2019 (8 participants) and January 2020 (28 participants). I handed over a preliminary and internal report to JUMAPACOM, Cerro Verde and Schutzwald to support the draft of the new management plan 2021-2031. With all of these measures the project and I tried to support the best possible knowledge exchange.

At the same time this research project served as a pilot for the Qualiservice Data Sharing Project (www.qualiservice.org), a Bremen based research data center for qualitative data archiving and sharing. The ethnographic data used in this research is

available for secondary use (Hornidge, Barragan-Paladines et al. 2017, Broocks 2021). Data protection has been carried out based on European Data Protection Laws. While data sharing in quantitative science has become relatively common, sharing qualitative data is not as common, especially due to “practical, ethical and epistemological challenges” (Alexander, Jones et al. 2020:81). There is a vivid academic discussion about the advantages and disadvantages of data sharing, sometimes also reaching emotional level, in the context of protection of rights of participants (e. g. Cant 2020). I have discussed the topic with cooperation partners and agreements have been set in the Memorandum of Understanding I mentioned.

I argue that the discursive attributions of meaning to mangroves in Ecuador are part of a globalized construction of knowledge. The different users of the mangroves are characterized by historically grown, unequal access to communicative means and legitimation strategies in order to participate in these attributions of meaning. Especially powerful on a global level are the discourses of commodification, conservation and development (cf. VIII), but also the scientific discourse on mangroves (cf. V). And although science is an actor within a powerful global discourse, ethnographic research in particular lives from the people who participate in research (Chibnik 2020). Hence the project and thesis would not be possible without the support and without the willingness of cooperation partners and also informants of all genders participating in interviews and allowing me to participate in their everyday life.

Of course, the participation in this research was entirely voluntarily. Supporters from the communities received at the end of my stay a small monetary compensation equal to expected income loss, when supporting my research, but interviewees were not compensated. Therefore, I pondered based on the empirical data what benefits the participants would have hoped for when participating from interviews and informal talks. The answers, of course, vary. For example, residents of the communities in the mangroves would like to have more insights into their own history as residents who

live from fishing and logging in the mangroves. At the same time throughout history, they have been overlooked by the state authorities, therefore hoping for better civil rights and an improved implementation of land rights. Especially in the context of an increasing resource scarcity they ask for attention and support in their situation. Politicians would like to make others understand how political decisions were made in Ecuador and what the limitations are that they encounter. Shrimp farmers aim to present themselves as economic actors who bring benefits and tax revenues to the Ecuadorian state. The researchers at the universities wished for more insights into cultural aspects of community life so that the science projects would be more successful. At the same time there was a wish for a general increase of attention and acknowledgement to Ecuadorian science, often enough facing the challenge to find sufficient funding.

In the end, every actor had its own story and aimed for understanding and acknowledgment. This realization convinced me that for my research at least, it was justified to archive and make interview transcripts available in the future. As the interviews show different perspectives on one object and were including opinions that cannot be found in the mainstream discourses, the interviews may help with insights also for other research in the area. My view was strengthened even more during my work in the archives of Ecuador, looking through manuscripts, writings, maps and other material of the past. However, working in archives also helped me to understand the kind of information that is archived - information that comes from mainstream discourses and the most influential actors.

In a recently published book, D'Ignazio and Klein (2020) discuss the importance of data feminism to "tune into how standard practices in data science serve to reinforce these existing inequalities and second to use data science to challenge and change the distribution of power" (D'Ignazio and Klein 2020:8f.). In the context of this research on the use of mangroves, I also try to show standard practices, detailing who produces "data", in what way and why. But above all, I believe that the inequalities in the handling

and archiving of data do not only affect women, but also other disadvantaged and marginalized groups. I am convinced that I was able to record some of these stories. A conversation between a father and daughter in a community during an interview emphasizes that at least some participants also believe in this research as a way of illustrating their lives in the communities: "Tell her your name, because for sure your name is going to be in there, when one day the project is coming out...you have been interviewed, and one day your name is going to be mentioned in something."¹². I am faithful that although I had to anonymize informants, as I will explain now in detail, the overall messages deriving from this research will help contribute to a higher visibility of perspectives previously underrepresented.

I was supported by the Qualiservice project to draft and finalize the informed consent document (Appendix LXXVIII-LXXXI). The understanding of scientific work and knowledge about the rights to one's own data varied strongly between individual participants in this research. I have explained the intentions of research and participant's rights the best I could, read out parts of the informed consent in public meetings and in interviews, and left the document for a while with possible participants. I have discussed the information with the participants, cooperation partners, other scientists and Qualiservice on a regular basis. Despite all this, I am sure that not all participants have reflected on the possible scope and consequences of archiving and re-using their ethnographic accounts, even though they have signed the informed consent document. I would even add that I also only became more aware of the power structures of data use in the course of the analysis of the data and with increasing experience. Therefore, anonymization of names and attributes has had a high priority. But also, the relationships between communities and mangrove user groups in the sample mangrove zones in the South of Guayaquil vary from good relationships to healthy competition, while some have entered into conflict. Therefore, community

¹² "Ya le diga [sic!] su nombre, porque seguro va a salir su nombre ahí, cuando un día [...] este proyecto [sale]...te han entrevistado, y algún día va a estar su nombre por ahí en algo." [Interview, Community, Female 28.07.2019]

names are anonymized as well, firstly for not fostering further conflicts, secondly to protect people even more, as maybe some people could still be identified however carefully name and attribute anonymization was done. Qualiservice has taken over the anonymization process with a self- developed software for data sharing, supported by a student assistant working with the original transcripts in a safe room without internet connection. For this PhD thesis, however, I used a combination of Qualiservice strategy for anonymization and my own standards.¹³

In summary, in the context of this PhD project and through the cooperation with Qualiservice, I have followed the existing data protection rules in Europe and Ecuador and implemented them to the best of my ability in order to protect the participants in this research in the best possible way and beyond average standards. In doing so, I drew not least on my previous experience in conflict-sensitive project planning (e. g. Anderson 1999). The data was professionally anonymized and will only be made available to other research projects in the safe room at Qualiservice, University of Bremen, if the respective cooperation partners agree with each request of a research project anew.

¹³ An example of an anonymized interview transcript can be found in the Appendix LVII-LXXVIII

3.5 Positionality and Challenges in the Field

"I think first of all that the Western theoretical establishment should take a moratorium on producing a global solution [...]. I think in the language of commercials, one would say: Try it, you might like it. Try to behave as if you are part of the margin, try to unlearn your privilege."

(Spivak and Harasym 2014:30)

During my fieldwork in Guayaquil and its surroundings I came across two major challenges: On the one hand the intersectionality of being part of the Ecuadorian discourse groups "Scientist/White¹⁴" but with a child. On the other hand, I was influenced by -and suffering from- the prominent narrative of lack of safety in Guayaquil and in the mangroves. Again, this was affecting me more as I was in the field with my daughter. Only in the analysis process I realized that both challenges interlink. I will discuss them in this chapter under the notion of positionality, in which "people are defined not in terms of fixed identities, but by their location in shifting networks of relationships" (Maher and Tetreault 2001:164).

The German Alexander von Humboldt and the "new science" have played an important role in the identity construction and in the legitimization process of the "white mestizo¹⁵" elite in Ecuador. So having a German passport and working for the Leibniz-ZMT, financed from "The Meaning of Mangroves Project" and the DAAD (German Academic Exchange Service) with German Government Funds and with the clear German connection in two of our partner organisations I had to face and reflect on my own role in the Mangrove Conservation Discourse. Although being far away from my home society I had to actively work on my own 'blind spots' of how Western society's discourses influence Mangrove Discourses in Ecuador.

I was having for example my own "ecological crisis of modernity" (cf. Latour 1993 [1991]:3ff.) when trying to grasp the cultural value of "economic success" in Guayaquil's society (cf. 7.2). Also, my "modern" values of science, health and hygiene were shattered

¹⁴ "White" understood as a political category, in Ecuador often linked to the influential elite in society.

¹⁵ "Mestizo" has varying regional meanings in Latin America. It is understood here as a political construction of "white" Ecuadorians with the intention to proof European heritage.

by every-day life practices, interactions and interviews in Guayaquil's mangroves on a regular basis. Only later during the analysis process back home I understood how "commodification" and "health" was constructed in that particular way over time out of political and social necessity, which in return helped me to understand better practices of mangrove use and governance.



14 Positionality in the field: Researcher, Mum and the Mangrove
[Picture taken by Cooperation Partner 17.08.2021]

When doing my first interviews in the communities of the mangroves South of Guayaquil I also realized that I had to re-consider some of my interview attitudes. I understood that the self-reflection within a "reflexive modernity" (Beck 1986) resulted in long interviews with some mangrove user groups, while it became clear that the reflection of cultural practices were less common during interviews with other mangrove user groups. I learned to listen more and wait longer times for answers. Only slowly I

began to understand my own role as a "white" interviewer coming to the communities from the city asking about cultural practices and therewith re-constructing the Ecuadorian "Cholo¹⁶-Other" (cf. Roitman 2009). On the other hand, this role also helped me for example in being able to participate in the middle-class dimensions of Guayaquil's life and in being able to get to know people that shared important opinions about Ecuador from their view.

¹⁶ *Cholo* is an unspecific term with varying regional meanings in Latin America. In Ecuador it is often used to politically construct "the other" and "non-white" of lower class origin. The history of the term is complex: On the one hand the word "cholo" reflects practices of summarizing the diverse indigenous groups derogatively in the city of Guayaquil around the late 19th century, for example in processes of dislocation by the political elite (Coronel Valencia 2011:607). On the other hand the newly emergent indigenous identities like "cholo" and "mestizo" were also actively adopted by indigenous groups over time to escape existent power imbalances of "patrons" dominating "Indians" (Hernán Ibarra 1992, Coronel Valencia 2011:102. See also Macia Barras 2020).

Safety and health were a constant concern during the research stay for me, which also reflects in my research diary. It included many worries about my daughter's health and safety especially. It was triggered by comments from Ecuadorian friends and acquaintances, telling me stories about insufficient health care, prominent diseases or often recommending modes of behavior for not being robbed or attacked in the city. But also, the review in the archives of the newspaper El Universo in the 1990s and the review of historical documents surely contributed to my impression that health and safety have been a challenge for a long time in Guayaquil. Based on real challenges in public health and safety over decades a discourse developed, promoting the belief that Guayaquil is an unhealthy and insecure place to live (cf. 6.5). I only started to fully understand how my role as a "white privileged woman" relates with the perceived lack of safety in the city when reading Roitman's (2009) analysis about the common use of ethnicity and racism to legitimize the powerful position of the "white mestizo" in Guayaquil's society.

The lacking-safety story was especially vivid in regards to transport and traffic. There seem to have been many incidents of robbed and even killed taxi passengers and people did not get tired to tell me about it. The overloaded metro bus service was a challenge, as this extract from my research diary shows:

"Then we go to the metro, find a place to sit. I clearly have too much luggage, which I have in the footwell, people squeeze against me. It is not pleasant. [...] Arrive at the Centre. Can't get my big backpack through the turnstile. I have to lift it over the side of the fence. [[David]] helps. [My Daughter] has already gone through the turnstile [and is walking towards the traffic]. VERY exhausting for me. I won't take the metro [bus] again, even if it's faster than a taxi."¹⁷

The quote also indicates that I faced some of the challenges because I was a researcher and a mother (Braukmann, Haug et al. 2020). Being in the field as an one-parent family or doing "single parenting in the field" (cf. Ghodsee 2009) I had to transport more items and my daughter at the same time in boats, taxis and busses.

¹⁷ [Research Diary, 29th October 2019]

Additionally, the intersectionality between different social status clearly affected the process of data collection and analysis. I was “white-privileged” on the one hand, and a woman and a single mother on the other. Negotiations between these roles, role ascriptions and discriminations were drawing much energy as the following example highlights: During an expert group discussion in Guayaquil’s “high society” I had to bring my daughter. The interview was about the use of mangroves in construction - a man-dominated field. An elderly old “white” male engineer and owner of a construction company was interviewed. The contact that had helped me to set up the interview referred to him as the patriarch of the family. I felt as if I was allowed to listen, but not to speak. The prohibition of women talking in the public sphere, especially about “non-women” topics (like construction), has a long history in European culture (Beard 2015), and also noticeably in this specific setting in Ecuador. Due to the presence of my daughter, I could not camouflage my role as a woman and mother. Hence the wife of one of the informants tried to involve me repetitively in more domestic topics like child care, trying to separate me from the male conversation. I knew I had to keep on asking question about “construction” and mangroves, and ignore questions about child care, to assert my position as a researcher in a “speaking position”.

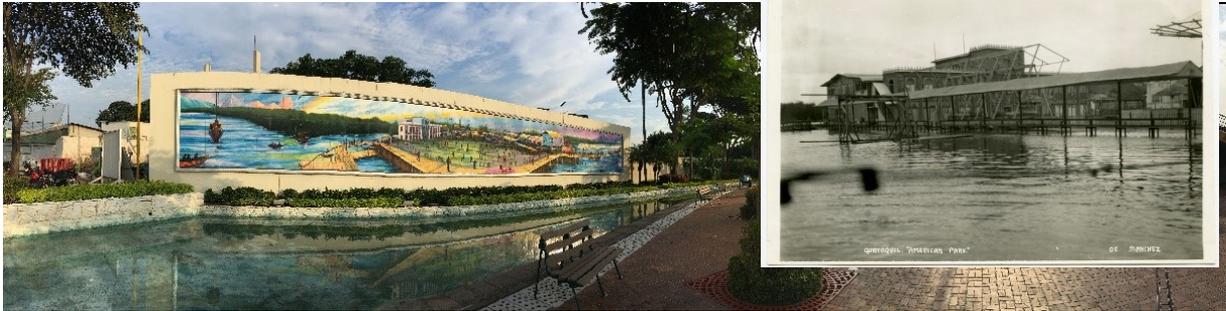
When I had to take a phone call during this interview, I left the recording on by accident. I heard later on the recording, that my role as a researcher and my affiliation with the local University was discussed by the group in my absence, until one of the men on the recording said: “I suppose she is a single mom”. No one speaks for a while afterwards, but the silence does. Without my daughter around, I seemingly turned into a German “white-scientist”, somehow without gender. With my daughter around, my gender role as the female head of a one-parent-family in a society marked by values of Catholicism and binary hetero-normative relationships was maybe even provocative.

Being a researcher at the same time was additionally challenging the “poor single mom”, as a common depiction (e. g. McLanahan and Garfinkel 1989, Wijnberg and Reding 1999, Jackson, Choi et al. 2009), for the “Single Mother by Choice” (Juffer

2006:2). This challenge is certainly not limited to Guayaquil. What was special, however, was the mixing of these seemingly opposing roles: German, "white ", scientist, mother, single. As it "is not simply social statuses, such as being a woman or a man, but the roles we undertake as women and men, and mothers and fathers" (Brown and Dreby 2013:7, Schiefer 2020). Succinctly put, I did not fit into any pigeonhole in Guayaquil's society. The combination of these roles has clearly influenced the information and data I received, and surely my snowball sampling of informants would have resulted differently with different roles. At the same time it helped me understand the varying perspectives better and allowed me to gain access to otherwise restricted knowledge (e. g. Pauli 2020).

IV THE DISCOURSE SETTING: CITY MANGROVES AND MANGROVE PERIPHERY

4.1 Introduction



15 A mural inspired by an old photograph from the “American Park”¹⁸, a recreation area in the mangrove estuary that used to be close to today’s “Malecón Salado” where the picture was taken [Picture taken 02.07.2019]

The research area is located in the mangrove swamps in and around Guayaquil, the biggest port city with more than 2.5 million people¹⁹ in the Republic of Ecuador, South America. The specific sample area of my research is in the South of Guayaquil in the inner estuary of the Guayas River up to the city district of Urdesa in the North. When delimiting the sample, I focused rather on practices than on spatial location, as I argue that neither Guayaquil nor the mangrove swamps around the city can be grasped fully without understanding their mutual historical development. An aerial photograph from 1953 (Pic. 16) reflects this particularly well, showing Guayaquil on the banks of the Guayas River, with its estuary stretching across the mangroves. Many inhabitants still refer to the city as a „relleno”– a landfill in a mangrove swamp²⁰.



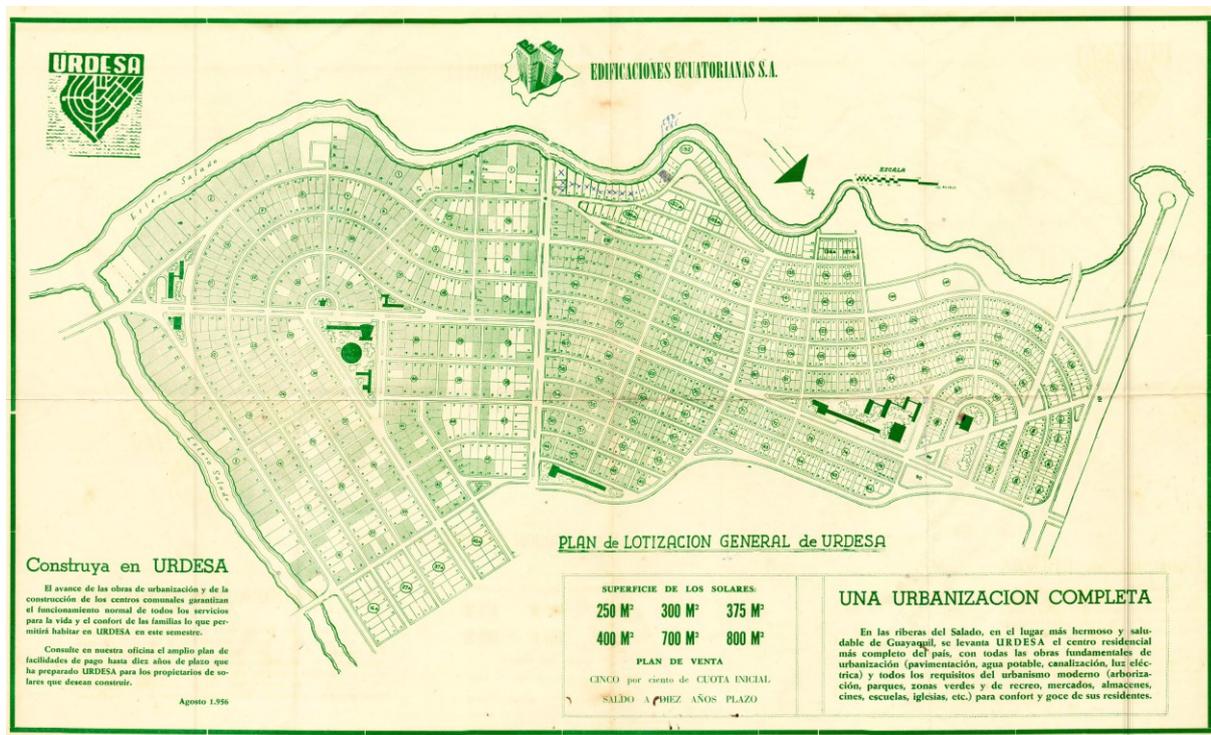
16 View on Guayaquil from the air 1953; IN: *El Universo* 27.05.1998

¹⁸ From around 1930, Photograph: V. Sanchez, Internet Data Base www.fotografiapatrimonial.gob.ec. Archive from Dr. Díaz Cueva.

¹⁹ National Statistical institute INEC 2017

²⁰ [Research Diary, 09.06.2019]

The sample included human-mangrove practices in the estuarine system of the Guayas River, especially in the inner estuary and in the Estero Salado towards Urdesa, Guayaquil. Urdesa developed on and around mangroves at an estuary arm of the Estero Salado (Salted Estuary) in the 1960s (Master Plan Pic. 17). Even though it seems that the sample includes distinct urban and rural areas, there are many linkages or flows between the two areas caused by migration and trade. Drawing from Appadurai's ethno-scape concept, I refer to the area as a "mangrove-scape" (Appadurai 1996:48ff.). I outline five distinct mangrove types in this "mangrove-scape", each area comprising of various use groups (cf. 4.6):



17 Original Master Plan of Urdesa 1956, received via E-Mail from a cooperation partner on 20.01.2020

The *urban mangroves* in Guayaquil, of which at times only the estuary waters, and often not even them are left due to urban development and land fill. Furthermore, there is the *urban mangrove hub* (the border between the city and the mangroves), *communities* in the mangroves, *shrimp ponds* and what I call here "*rural*" mangroves, the mangroves without severe anthropogenic influence.

After a brief sketch of the development of Guayaquil and its geopolitical location within Ecuador (cf. 4.2), I will give an overview about the history of the mangroves in and around the city (cf. 4.3). Afterwards I discuss mangrove governance in the sample area today (cf. 4.4). In section 4.5 I present the research sample in more detail, followed by an overview of mangrove user groups in 4.6. I end the chapter with a short summary.

4.2 Guayaquil's development within the geopolitical setting of Ecuador

Santiago de Guayaquil was founded by the Spanish in the 16th century and was a village with only a few inhabitants until the 17th century. Most of the houses were located on the hills of Santa Ana. The place of foundation at the wide mouth of the Guayas River is ambivalently discussed in historical sources. On the one hand, it was a favorable place for the supply of food, as it was located in the floodplain of a fertile river. On the other hand it was seen as "badly situated"²¹, due to its heat and uncommon location exposed high up on the hillsides (Lizárraga 1916 [1605]).

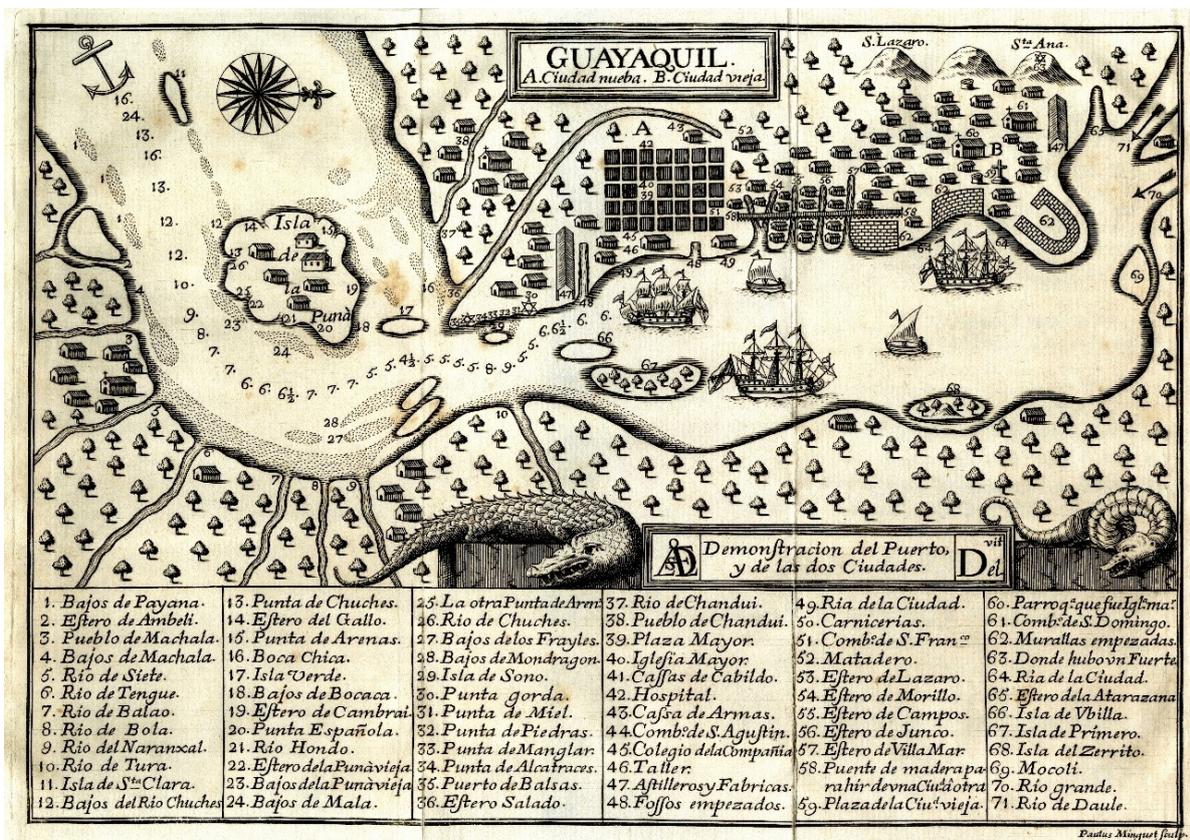
The position of the port city away from the ocean and set aside a river was additionally problematic, as bigger ships were forced to land at the island of Puná, a rough 70 km South of the city in the Gulf of Guayaquil. From Puná smaller boats took passengers and goods into the city (Chaves 2006:46). Consequently, the river was filled with ships, floats²² and boats reflecting the city as one of the most important ports in the Pacific during colonial times (ibid). The ship production developed in Guayaquil around 1580 due to the availability of adequate timbers and Guayaquil's function as a port for Quito (Conniff 1977:389). Being the trading hub of the region (Conniff 1977:386), ships along the coast line of Ecuador and also the city of Guayaquil suffered between 1680 and 1710 various pirate attacks (Moncayo, Dampier et al. 2008).

The town of Guayaquil grew slowly until the 17th century, depending on the trade with the highlands (Conniff 1977:387). Only from early 18th century onwards the city expanded into the surrounding plains, marshlands and mangrove areas (Laviana Cuetos 2006/2007). During that time Guayaquil overcame the dependency from the 'Sierra' (highland) economy with an increasing cacao trade, most of it illegally (Conniff 1977:385; see also 4.3). Cacao was produced on the surrounding *encomiendas* (a system of serfdom introduced by the Spanish crown, see e. g. Lockhart 1969, Yeager 1995), which slowly turned to plantations (Conniff 1977:388). The expropriation and

²¹ [mal asiento]

²² [balsas]

domination of indigenous people and land in the Guayas region for production was common at that time (Coronel Valencia 2011:604ff.).



18 Map of Guayaquil's New and old City in 1741 by Dionisio de Alsedo y Herrera, AHG: Online available, photographed by Paulus Minguet [24.09.2020]

Geopolitical developments brought European traders to the city (Ulloa, Juan et al. 1807:156) in the 18th century. In the 19th century the colonial development pattern of exporting natural resources continued after independence in 1822, as in other newly independent Latin American countries (Bulmer-Thomas 2003:1). The importance of cacao grew steadily until Ecuador became the most important cacao exporter in the world in 1904 (Chiriboga M 1980:261, Swyngedouw 1997:315). By 1900 salesmen were underlining Guayaquil's importance in commerce by saying "Guayaquil is Ecuador" (Simmons 1916:97). However, the plantations were in the hand of only 20 families owning 70% of the land (Chiriboga 1988:64, Swyngedouw 1997:315), demonstrating that land ownership patterns continued as unequal as in colonial times also after independence.

Migration and trade have been important influences to the city for a long time. But the city had grown only slowly. Meanwhile in the second half of the 19th century it started to show a significant influx of people during the so-called cacao boom. The public health situation deteriorated, especially in the margins of the city with many new migrants arriving (Pineo 1990). A second major increase in migration to Guayaquil occurred in the 1960s and 1970s (cf. 4.5).

In the 20th century, political instability was a certainty in Ecuador. One reason was the strong authoritarianism and militarism of Ecuador and a corresponding linkage between political and economic power. At the same time Guayaquil was Ecuador's seat of political and economic power, making the situation in the city especially unstable.

Rodriguez explains:

“Since 1895 all liberal presidents had either been *costeño*, people from the Ecuadorian coasts, or closely identified with Guayaquil's interest. The association between coastal banks and the national government convinced many highlanders that the port city dominated national politics. It was widely believed that a “corrupt coastal oligarchy” was exploiting the nation for its own selfish ends.”(Rodriguez 1997:47).

Unequal land distribution, corruption and low access to means of production for the majority of Ecuador's population caused further migration to Guayaquil and the socio-economic situation deteriorated. Social unrest in the whole of Ecuador marked much of this time²³.

Ecuadorian Presidents either came into power due to political unrest or managed to stay in power using violence. Rodriguez sees the reason for the establishment of a military elite in the history of colonialism and suppression (Rodriguez 1997:ix f) – a political and economic elite that came to wealth and power through plantations and agricultural goods. After the cacao boom followed a boom in banana production and export in the middle of the 20th century. “[A]ll it was needed, it was thought, was capital and skilled labor to unlock the natural resources in Latin America's vast unexploited interior and unrestricted access to the wealthy markets of western Europe” (Bulmer-

²³ [Expert Interview, Guayaquil, Male 12.01.2020; El Universo Newspaper review 1980, 1993-2000: Keywords list in Appendix XXIII-XLI]

Thomas 2003:2). Later on, in the 1980s/1990s followed the shrimp production and export boom, that I will discuss in more detail later (cf. 7.2).

Between 1997 and 2006 Ecuador found itself in the “cycle of instability” (Sanchez and Pachano 2019:4), further fueled by an economic restructuring inspired by neo-liberal policy-making in the 1980s and 1990s that increased socio-economic inequality. The credibility of governmental institutions was eroded and the majority of citizens turned against the political status quo.

Structural weaknesses in the economy, dependence on agricultural exports and falling oil prices led to the 1998-1999 financial and sovereign debt crisis (cf. Montiel 2014). In 1997, the El Niño weather phenomenon had caused floods and droughts that exacerbated the crisis, as credits in agribusiness could not be serviced. In addition, the white spot disease reduced shrimp export revenues severely from 1999 onwards for several years. Banks collapsed and Ecuador was forced to introduce the US dollar as its official currency, making it very dependent on the decisions of international financial institutions (ibid.). The early 2000s were marked by political unrest, constantly changing governments, an expansion of neoliberal projects, such as the export of oil, and a strengthening left and indigenous movement.²⁴

In 2007 Ecuador’s inhabitants elected Rafael Correa as president, who reigned the country until 2017. Correa's form of government, his so-called “Citizen revolution” and his performance as head of state is controversially discussed not only in Ecuador. He was part of a so-called left-wing movement of Latin America. Carlos de la Torre (2019) gives a good overview on Correa’s possible connection to populism and a comparison of his government to other governments of the “Left turn in Latin America”. Much criticism has been brought up against Correa’s government with regard to the reduction of citizen’s right, “shrinking civic spaces”, and the exploitation of natural resources (e. g. Conaghan 2008, Becker 2013, Polga-Hecimovich 2013, Latorre and

²⁴ [El Universo Newspaper review 1980, 1993-2000: Keywords list in Appendix XXIII-XLI]

Herrera 2015). From 2017-2021 Lenin Moreno, the former vice-president of Correa, was governing the country. Moreno and Correa had become by then open enemies. Moreno continued towards a more neoliberal political position supporting shrimp farming and other economic activities²⁵ - a turn that had begun already during Correa's presidency (Wolff 2018). In the time of writing in 2021 National elections were held and Guillermo Lasso became president – again a conservative and neoliberal economist with strong connections to Guayaquil's banks.²⁶

²⁵ [Expert Interview, Guayaquil, Male 21.01.2021]

²⁶ e. g. El País, 03.10.2021 (website): El entramado 'offshore' de Guillermo Lasso, el banquero que llegó a presidente de Ecuador.

4.3 A History of Mangroves in and around Guayaquil: Trade and Resistance

Mangroves have been an important place for humans in South America to source food and other resources like wood in pre-Colombian and even pre-historic times (Lacerda, Conde et al. 1993, Marcos 2005:95f., Sánchez Mosquera 2010:75, López-Angarita, C. et al. 2016:1). People in the area of today's Ecuador were living of mangrove resources, and additionally using them for trading with agriculturalists, ceramic producers and other specialized professions (Marcos 2005:95). The area in which Guayaquil was founded was seemingly occupied by various ethnic groups including the Chonos, the Huancavilcas, the Tumbecinos and the Puneños, tied together in a trade network (Estrada 1957, Benavides 2002:71). But uncertainty still exist about the ethnohistory of this area (Benavides 2002:71, 91). The modern city of Guayaquil relates to the famous Manteño-Huancavilca Empire known for their navigation skills as origin, which reflects for example in the statue paying tribute to the Huancavilca Figures 'Guayas and Quil' close to the National Unity Bridge²⁷. These two personalities represent a form of foundation myth of the city, in which Guayas was killed by the Spanish conquerors and Quil killed herself jumping into the Guayas river in order not to fall into the hands of the enemy (Benavides 2002:84).

The statue reflects, among other, the culture of resistance prevalent in Guayaquil. I argue that Guayaquil's location in the mangroves has contributed to the development of an "(illegal) commerce as a form of resistance" to the central government. The quote from a former national politician from Guayaquil reflects today's prominent meaning of trade as a capacity of resilience of the Coastal people. Trade made the Guayaquil inhabitants the more "modern", or more European Ecuadorians, understanding quickly what was worth to adopt from the newcomers:

"When the Peruvians invaded Ecuador in the 15th century, just before the Spaniards came, [...] [t]hose on the coast were more inclined to be free, to be trade oriented. They traded, they traded with other countries. When the Spaniards came they reached commercial agreements, and they were pragmatic. They didn't insist on

²⁷ Tourism Marketing Website of Guayaquil: <https://www.guayaquilesmidestino.com/en/content/guayas-and-kil-monument> [24.01.2021]

keeping their language, nor their customs, they replaced their nudity with European clothing. They were more open to change, to modernity, and there was a more real exchange with the world that came here, that they discovered, there was a greater integration.”²⁸

The quote constructs trade as a form of historic adaptability in Guayaquil. Also historic data proofs that the hideaway capacities of mangroves made estuaries an interesting area to smuggle goods for Guayaquil (Juan and Ulloa 1748 [1946]:181). Conniff underlines that already in 1620 Guayaquil was forced to start smuggling cacao to New Spain due to trade restrictions by the crown. The city was left with no other choice than smuggling if wanting to become economically independent, as the freight costs to Europe were high and there was little demand for cacao in South America itself. The mangroves of the Estero Salado functioned throughout history as alternative access to the city and helped smuggling (Conniff 1977:385). The growing economic power and smuggling “as a way of life”, as Conniff puts it (1977:405), supported an underlying culture of resistance long before the region reached independency. Tributes were paid from the illicit incomes to continue freedom, and many crown representatives gained through contraband, too (ibid). The fact that particularly troublesome crown officials were sent to the city because of its bad reputation supported this further (ibid).

The historian Nancy Rueda describes the history of Guayaquil from a rather deficient point of view. She explains that the city always aimed to be a political actor in the geopolitical setting of the region, but did not succeed, therefore opposed the union with Gran Colombia (Jordán and Panchana 2009:13). This contributed to the strong regionalism existing today still between Quito and Guayaquil and fostered the independence process that started in Guayaquil in 1820. Humphrey states: „No accident that the liberation movements surfaced in regions where smuggling had reigned and where the population was unused to colonial fetters.” (Humphreys 1820

²⁸ “Cuando los peruanos invadieron Ecuador en el siglo 15, justo antes que vengan los Españoles. [...] [!]os de la costa fueron mas propensos a ser libres, a orientarse al comercio, comercializaban, comerciaban con otros paises. En cuanto venieron los Españoles llegaron a acuerdos comerciales, y fueron pragmáticos, no insistieron en guardar su lengua, ni sus costumbres, reemplazaron pues su desnudez por una vestimenta Europea, fueron más permeables a los cambios, a la modernidad, y hubo un intercambio más real con el mundo que vino acá, que descubrió, hubo una mayor integracion.” [Expert Interview, Guayaquil, Male 23.01.2020]

[1940]:ix). Until today mangroves are considered a hiding spot for criminal groups, which are still called half-romantically pirates (*piratas*) in Ecuador. Still in the late 1980s with the overvaluation of the Sucre currency, bananas were smuggled through the mangroves from Southern Ecuador to Peru to be later exported from there to the US markets (Southgate 1992:7).

This idealization of “modernity and economic success” likely relates to Guayaquil’s striving for political importance on the one hand, but also relates to an economic necessities: Although most taxes came through port duties from the coast and especially from Guayas, resources coming back from the Nation State for public works were always scarce (Rodríguez 1985, Pineo 1990:635f.). Many state obligations, for example the vitally important public health, had to be dealt with by the city on its own and came from private donors²⁹. It is little surprising then that until today informal and illegal activities are legitimised and constructed as resistance as long as they bring income to the city.

²⁹ [Expert Interview with National Politician, Male, 23.01.2020]

4.4 Mangrove Governance

The governance of the mangrove region around Guayaquil today is maybe best understood from the perspective of historic land ownership and possession patterns in Ecuador's coastal region, laying out the frame of today's mangrove governance. Governance I define as "structures and procedures of control and coordination by means of a complex combination of hierarchy, negotiations and networks or of regulation, incentive mechanisms and agreements in the interaction of state and social actors" (Benz 2004:19). I will not give a detailed overview about the relevant laws and policies, as other authors have discussed this topic exhaustively (e. g. Carvajal and Santillán 2019:27ff., Ortega-Pacheco, Mendoza-Jimenez et al. 2019), but I will outline briefly developments relevant for the analysis.

4.4.1 Mangrove Governance De-Jure

Pacheco-Ortega et. al. have analyzed mangrove conservation policies in the Gulf of Guayaquil and concluded with 3 phases over the last 50 years (Ortega-Pacheco, Mendoza-Jimenez et al. 2019) that show similarities with the scientific mangrove discourse that I present in chapter V. In the context of the extension of the agricultural frontier between 1976 and 1979, permissions for shrimp aquaculture production in mangroves from 1970 and 1985 were granted (ibid.:28). The conservation, protection and reposition of mangroves were declared of "public interest" in a presidential decree and via environmental land reforms in 1985, until in 1999-2000 the ASUCs (Agreement of Sustainable Use and Custody of Mangroves) were announced (ibid.:28).

The main responsibility for mangroves in Ecuador lies today still with the State. Article 406 of the Ecuadorian Constitution from 2008 states:

"The State shall regulate the conservation, management and sustainable use, recovery, and boundaries for the domain of fragile and threatened ecosystems, including among others, high Andean moorlands, wetlands, cloud forests, dry and wet tropical forests and mangroves, marine ecosystems and seashore ecosystems." (Assembly 2008).

It means that mangroves, even if they are not subject to any special protection, must be managed by the state. Therefore mangroves are part of various national

planification systems (Carvajal and Santillán 2019:21ff.), e.g. National Biodiversity Strategy - Estrategia Nacional de Biodiversidad 2015-2030 and National Climate Change Strategy - Estrategia Nacional de Cambio Climático 2012-2015. However, the State has had limited influence in Guayaquil since colonial times, and until today.

In the sample area two distinct governance forms exist. Firstly, there are nationally protected areas, like the Santay Island National Recreation Area³⁰, the Wildlife Production Reserve Mangroves El Salado³¹ and the Mangroves El Morro Wildlife Refuge³². While the first and the third are only at the margins of the sample area, the second area is of relevance, declaring protected the urban mangroves along the Estero Salado (Poveda Burgos and Avilés Almeida 2018). These areas are centrally governed by the State represented by the Ministry of the Environment (MEA) and its offices in a “command-and-control regulation” (Ortega-Pacheco, Mendoza-Jimenez et al. 2019:29). The Estero Salado has faced a series of anthropogenic influences in the city of Guayaquil like deforestation of mangroves for informal settlements and severe pollution of estuaries (cf. 6.5; 8.2).

Secondly there is the Agreement of Sustainable Use and Custody of Mangroves³³ (ASUC) that started around 2000, but was only officially implemented from around 2011 onwards. It is a second form of mangrove management, in which the MEA hands over the responsibility of mangrove zones decentralized to communities. It developed on a similar strand of argumentation, that shaped the new Constitution (Assembly 2008) demanding that the population has a right to live in a “healthy and ecologically balanced environment that guarantees sustainability and the good way of living (sumak kawsay)” (Article 14) and that the State includes communities keeping and promoting “their practices of managing biodiversity and their natural environment. The State shall

³⁰ Área Nacional de Recreación de Isla Santay

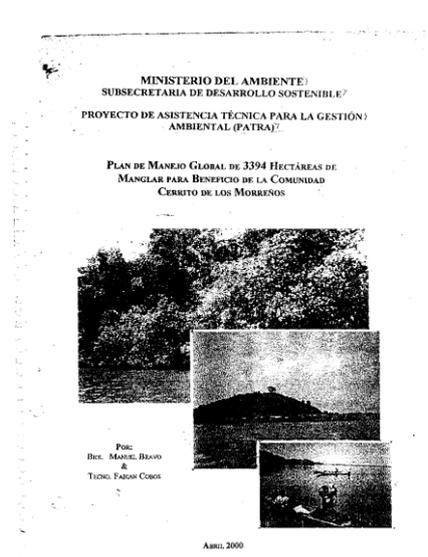
³¹ Reserva de Producción de Fauna Manglares El Salado

³² Manglares El Morro Refugio de Vida Silvestre

³³ Acuerdos de Uso Sustentable y Custodia del Manglar

establish and implement programs with the participation of the community to ensure the conservation and sustainable use of biodiversity” (Article 57.8).

Existing discourses changed significantly in Ecuador in the late 1990s, resulting in handing over mangrove use rights to communities living in mangrove (Torres Benavides and Reyes 1999).³⁴ It was supported internationally by various NGOs and bilateral cooperation. The concept of handing over mangrove use rights and custody in the research area, however, was especially fostered by a group of scientists and conservationists engaged in the PATRAS-Program. PATRAS was an UN funded program run from 1997-2001 by the Ministry of the Environment³⁵ that later turned into Fundación Cerro Verde, today’s technical advisors³⁶. The election of a mangrove



19 The first ASUC Management Plan from 2000 - Cover Page

community to implement a pilot for this new “community-based” mangrove governance project was guided by more practical considerations, like accessibility and established relationships. Therefore, one community of the research area in the South of Guayaquil became the pilot³⁷.

The first ASUC Management plan from April 2000 (Pic. 19) states that the mangrove conservation efforts in the pilot community with its 3394 ha of surrounding mangroves served to proof the operationality of the

decreed 1102 while the user rights had to be ascribed to the mangrove community in the process (Bravo and Cobo 2000:2). In a second step the ASUC was extended in 2010/2011 to the more than 10.000ha of today and from thereon included further communities. After the definition of economic cost of mangrove loss by MAE in 2011,

³⁴ [Experts Interview, Guayaquil, Male and Female 11.09.2019; Informal talk C. Beitzl 28.06.2020]

³⁵ [Semi-structured Expert Interview, Male, Guayaquil, 01.08.2019]

³⁶ [Interview with expert who drafted the first decree 1102, 11.07.2019; Expert Interview, Guayaquil, Male 01.08.2019]

³⁷ [Informal talks Technical Advisors; Introduction speeches at UEES Mangrove Conference Guayaquil 13.11.2019]

the monetary incentive SocioManglar for AUSC was introduced that is not applied for in the sample region, however (Ortega-Pacheco, Mendoza-Jimenez et al. 2019:28).

Apart from the MAE setting up and controlling the legal framework for the ASUC there are various other governmental actors engaged in mangrove governance. Important ones are subdivisions of the Ministry of the Environment (Undersecretary for Aquaculture, Undersecretary for Fisheries), the Military and the Coast Guard for safety aspects, the Provincial Government of Guayas and the Municipality of Guayaquil. The breaching of environmental law, like the pollution of an estuary by discharges, is for example municipality responsibility.³⁸

4.4.2 Mangrove Governance De-Facto

In the sample area the community institution that received the right to use and the responsibility of custody from MEA is JUMAPACOM, who was a cooperation partner in this research. JUMAPACOM is the head organization of the communities' Fishing Associations of the mangroves South of Guayaquil. Each community used to have one association. Due to internal community conflicts, however, groups were splitting away from the firstly founded ones,³⁹ or merged in the process of changing mangrove forest associations to fishing associations.⁴⁰ The associations today are for fisher of mangrove species and their names often include the term "bio aquatic resources" (recursos bioacuáticos) reflecting the influence of the scientific discourse. They are open to all sexes. The socially ascribed role, however, makes mostly men responsible for non-domestic economic activities, which made the associations rather male-dominated. It is therefore mainly men who influence mangrove governance on the community level. The directory of JUMAPACOM for example only consists of men, too, and to my knowledge has not had any women in their directory since its foundation.

³⁸ [Expert Interview, Guayaquil, Male 21.01.2020]

³⁹ [Kickoff Workshop, 15.07.2021]

⁴⁰ [Expert Interview, Guayaquil, Male 13.08.2019]

The JUMAPACOM also carries out the administration of the Management Committee for the RAMSAR area supported by the Provincial Government of Guayas⁴¹ (Maldonado, Torres et al. 2014:55) and headed by the Ministry of the Environment (ibid.). The ASUC outlines what activities are allowed in the area, which are fishing, aquaculture (if not affecting mangrove cover or dynamics of waterbodies), controlled forest management, mangrove reforestation, eco-tourism and other leisure activities not destroying mangroves, conservation, protection, education and scientific investigation (ASUC Sample region 2011, Article 2). This agreement needs to be renewed every 10 years.

At the time of writing the next application phase for the Management Plan 2021-2031 for the sample region's AUSC was in preparation. Various actors advice, support or cooperate with JUMAPACOM in the preparation and implementation of the Management Plan, and in various other administrative, technical and executive tasks. The official technical advisor is the Ecuadorian Foundation Cerro Verde. They are cooperating with the German Schutzwald-Foundation in exchanging volunteers and in financial and technical support. Both are cooperation partners of this research, too. National organizations supporting communities living in mangrove zones include for example C-CONDEM, and in the 1990s also the Foundation Natura (cf. 7.3). Also, smaller Guayaquil-based NGOs exist, focusing on raising ecological awareness in the urban mangroves.⁴²

A common saying in Guayaquil is that "Everyone's business is nobody's business" (Hassaurek 1868:326f., Pineo 1990:637), referring to the well-known tragedy of the commons (Hardin 1968) and a lack of responsibility for public concerns. Also a scientist explains: "Who is the user of the mangrove? The common popular ardot says: He who arrives and takes it, he who arrives and fishes it!"⁴³, continuing that the denial of these

⁴¹ Gobierno Autónomo Descentralizado Provincial Guayas

⁴² [Expert Interview, Guayaquil, Male 14.10.2019]

⁴³ "¿Cuál es el usuario del manglar? Dice el ardot popular común, dice: El que llega y lo toma, el que llega y lo pesca. - La pesca no es suya, la pesca aquí no captura! Y ahí hay conflictos." [Expert Interview, Scientist, Male 25.11.2019]

communal rights, is a cause of conflict over mangrove use.⁴⁴ The consultant involved in the drafting of the legal framework of the ASUC confirms that there was a need to designate someone as an “owner” with the rapid continuation of mangrove deforestation (Example of the Discourse: Image 20).⁴⁵ There is indeed national data confirming that the deforestation of mangroves has slowed down significantly after the introduction of the ASUC⁴⁶. But there is also doubts if it is to be traced back to new regulations or also to other influences like the El Niño floodings 1997, the economic crisis around 2000 and the White spot disease affecting shrimp farming in the same time span⁴⁷.



20 Example of the Discourse on Mangrove Cutting and Sanctioning: Newspaper Article “Insisting on trials for mangrove cutter”. In: *El Universo*, 10.05.1997

In recent years there have been conflicts over rural mangrove areas between communities, but also between communities and independent mangrove users, and the intensity is increasing with a rising scarcity of resources.⁴⁸

These conflicts are mainly about fishing and crab collection rights, and about sustainability of fishing methods. As the independent mangrove users have no areas they can officially use, or which are reasonable to access, they continue using areas, which have officially been handed over to communities represented by the JUMAPCOM. There is also a lack of communication channels between the two groups. At the same time, the capacities and resources of the community organization are limited to be able to control the vast borders of the 10 000 ha territory. Some inhabitants even doubt that there is any control by the JUMAPACOM at all, because previously visible boat patrols and controls of mangrove

⁴⁴ [Expert Interview, Guayaquil, Male 25.11.2019]
⁴⁵ [Expert Interview, Guayaquil, Male 11.07.2019]
⁴⁶ [Expert Interview, Guayaquil, Male 23.01.2020]
⁴⁷ [Expert Interview, Guayaquil, Male 13.08.2019]
⁴⁸ [Research Diary, 28.07.2019]

deforestation are according to them hardly observed now.⁴⁹ The AUSC says little about the management of the different species in the mangroves, but focuses on stopping mangrove clearing and protection.

Leal and Restrepo (2003) describe for the forest of the Colombian Pacific what also seems to have happened in the mangroves of Guayaquil in a similar way: The State considers the forest property of the Nation State, issuing concessions and licenses for exploitation, without considering people living in the area with their own ownership and management systems (Leal and Restrepo 2003:98). But management, for example for fishing with *caleta*⁵⁰, existed in the communities of the sample area still in the early 1980s.⁵¹ Designated owners existed for certain fishing grounds and non-owners had to ask permission, if they wanted to use them. Other management rights existed for the fishing technique *bolsa*, too.⁵² The appropriation of land and the restriction of using mangrove areas by the shrimp industry then marks a tipping point and made disappear previous management systems quickly. Southgate (1992) describes that a main problem of mangrove overuse in the 1980s and early 1990s by shrimp farms was indeed the lack of ownership restrictions, control and sanctions. I also argue that the communal rights existing were not respected. Everything below the high tide line was (and still is) National Patrimony, but the use of land above that line, like coastal beaches and salt marshes, was unrestricted (at least by official law), therefore community settlements in mangrove areas was not restricted or controlled (Southgate 1992:7).

It appears that previous to the arrival of the shrimp industry only a few people were competing for mangrove use, and where resources were scarce management system had developed on community level. The sudden use of a great proportion of mangroves for shrimp production, however, limited the availability of mangrove

⁴⁹ [Interview, Community, Female 28.07.2019]

⁵⁰ A fishing technique in which nets are stretched along certain sections of the mangrove estuary shore with the tides.

⁵¹ [Expert Interview, Guayaquil, Male 03.07.2020]

⁵² [ibid.]

resources for all other user groups and at the same time stopped previous management systems suddenly. Some scientists also argue that the loss of mangroves has caused an imbalance, supporting diseases and plagues, which in return limited the production capacity of the ecosystem.⁵³

For shrimp farming and the construction of ponds a license was needed to be obtained by the General Merchant Marine Directorate and sometimes by other governmental institutions depending on location (ibid.:8). Often the issuance of permits was delayed for months, so that some shrimp farmer looked for partners in government positions (ibid.). Others started construction before having the license. Fees ranged by around 10 \$/hectare per year (ibid.).

Users of mangrove resources when interviewed, no matter if community user or shrimp industry, complained about the challenges of receiving services from the various governmental levels, especially the service providing institutions of Ministries. An example is the Vice Ministry of Aquaculture and Fisheries, responsible for some of the services for mangrove fisher, as well as for shrimp business administration. The Vice ministry is located in Manta, an important port for industrial fishery. It is about 200 km from Guayaquil, which makes it difficult, if not impossible for the mangrove fisher and artisanal aquaculture producers with limited resources to go there. They are thus left unwanted with expired licenses or in the illegal realm of aquaculture production.⁵⁴ But also, bigger shrimp farmers complain about the location in Manta, considering that the shrimp industry is one of the most important export industries in Ecuador and clearly has its hub in Guayaquil. A former politician affirms in this context, that the businessmen from Guayaquil implemented Shrimp Farming “despite the national government”.⁵⁵ Even if strategy sometimes seems to be assumed where there is none, there are clearly challenges in the administration of mangroves due to widespread

⁵³ [Expert Interview, Guayaquil, Male 22.01.2020]

⁵⁴ [Expert Interview, Guayaquil, Male 25.11.2019]

⁵⁵ [Expert Interview, Guayaquil, Male 23.01.2020]

government infrastructure and coordination challenges between Guayaquil and the National Government, as well as between the different user groups.⁵⁶

⁵⁶ [Research Diary, 08.07.2019]

4.5 The Research Site: Between Urdesa and the Mangrove Communities

The research site spans geographically between the Guayaquilean quarter of Urdesa (*the urban mangroves*), where I lived during the 8 months of fieldwork, and the communities in *the rural mangroves* where I visited regularly. Although mangroves were cut and estuaries filled in the 1960s for developing Urdesa, today some of the mangrove areas are successfully rehabilitated and designed as public spaces in the quarter. Improvements in Guayaquil's infrastructure, linked to political interests, were brought forward with the mayors Leon Febres Cordero (1992-2000) and Jaime Nebot (2000-2019).⁵⁷ It included improvements along the Estero Salado, with estuary sides being converted from illegal settlements into public space projects (Gonzalez, Gonzalez



21 A Villa in Urdesa at the Estero Salado. Picture taken: unknown. Possibly in the 1960s, as the house was a film location in the movie "Romance in Ecuador (1966) by A. Corona Blake. Published Online in the article "Urdesa, 60 años de memoria e historia"

et al. 2012). After a phase of deterioration from the 1980s and 1990s, Urdesa was part of a relatively successful urban recovery project in the 1990s which focused on re-establishing street life (Pic. 22).

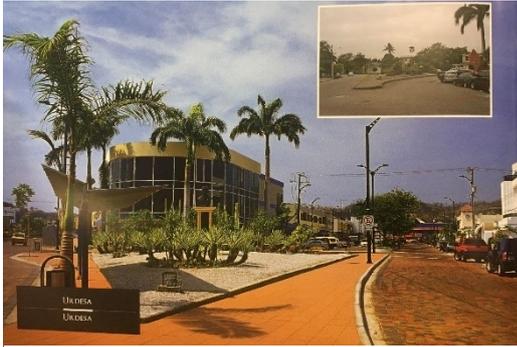
Today the glory of its rebirth, however, is not as shiny

anymore as it was ten years ago and as shown in the publication by Gonzalez, Gonzalez et. al. (2012:164ff.). Memories of the first years in Urdesa illustrate the importance for local recreation that the mangroves had at the time (Pic. 21), without, however, ascribing any special significance to the mangrove tree per se:

"So, around 1965 you could see, it was a show, people were going water-skiing on the Salado, on both sides. On the left and right side of the Urdesa entrance. And the motor yachts were going around without any problems. Because the estuary was extremely wide. And you see the pictures of this moment, which I'm sure are on the internet, and there was zero mangrove. Zero mangrove."⁵⁸

⁵⁷ One highlight was the prestige project of the Malecon 2000, the improvement of the city center riverside (Tiepolo 2007:22). [Expert Interview, Guayaquil, Male 13.08.2019]

⁵⁸ "Entonces, alrededor de 1965 tu podías ver, era un espectáculo, la gente iba a hacer esquí acuático en el Salado, de ambos lados. Del lado de la izquierda y de la derecha de la entrada Urdesa. Y los yates a motor daban

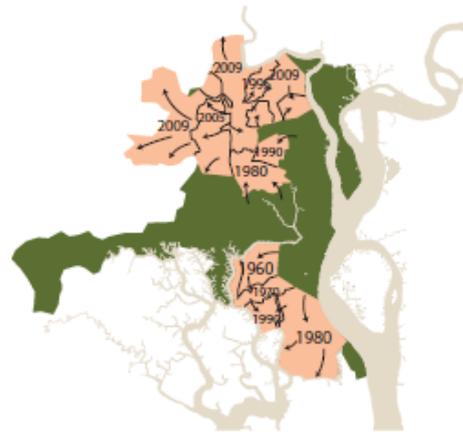


22 Example of the improvements in Urdesa from Gonzalez Gonzalez 2012:168

Still, today Urdesa has many privately owned shops, restaurants and bars, as well as chain stores, and maybe supported by the closeness to the State University's main campus, it is one of Guayaquil's most culturally active and innovative zone. This manifests in art exhibitions, subculture music, party and theatre events or politically

charged murals. However, safety, air pollution and contamination remain a concern also in Urdesa. Many families, who can afford it, move to gated communities further away from the city center.

As the *urban mangrove hub* I understand the frontier between the city and the mangroves to the South of the city. When coming from Urdesa and travelling to the communities I went through two of these areas in the South of Guayaquil regularly. There is no public boat service to the



23 Map showing the expansion of Guayaquil by Glad 2012:29

communities and they are not accessible by road. Both hubs are in the South of Guayaquil, one in the Peninsula de Guasmo and the other on the Isla Trinitaria. These zones developed due to settlements in the mangroves from the 1960s onwards (see Map 23) and have had insufficient infrastructure for a long time⁵⁹. Political

vueltas sin ningún problema. Porque el estero era sumamente amplio. Y tú ves las fotos de este momento, que estoy seguro que están en internet, y hay cero manglar. Cero manglar.” [Expert Interview, Guayaquil, Male 23.01.2020].

⁵⁹ El Universo: “Nuevo suburbio con graves problemas - New suburbs with severe problems” 01.04.1980; “Cólera se concentra en ciertos sectores – Cholera is concentrated in certain sectors” 14.06.1998; Mapping El Universo 29.08.1993



24 Urban mangrove hub [[A]] – One of the landing areas for boats from and to the communities in the mangroves

mismangement, corruption and criminal groups operating in the area contributed significantly to the uncontrolled and highly conflictive development of the zones, resulting in a high percentage of the population not having access to basic services like sanitation or water⁶⁰. Push factors in Ecuador's rural areas towards

Guayaquil include industrialization, e. g. deterioration of subsistence agriculture especially in the Andean provinces due to soil erosion, land fragmentation and neoliberal agricultural reforms and later also the shrimp industry changing mangrove subsistence zones along the coast (Bravo-Ureta and et.al. 1996, Swanson 2007:708). Pull factors towards Guayaquil include better infrastructure e. g. in health and education (ibid.), and the oil boom of 1972 with its economic developments (Delgado 2013:520). Surely also the superiority discourse of progressive city life and family linkages in the city added towards decisions to migrate (cf. 8.3).



25 A racially exaggerated and politically incorrect cartoon depicting migratory movements from other regions to Guayaquil with an approximation of the regions of origin from 17.07.2000 in *El Universo*.

Today, in the urban mangrove hubs housing is still simple (Pic. 24), but the infrastructure has improved (Delgado 2013). Shops, pharmacies and banks have opened branches in the last decade. One major challenge today is the vulnerability of

⁶⁰ El Universo: "Concejo solo legalizará terrenos en Guasmo a quienes la entidad donó - Council will only legalise land in Guasmo to those who donated it to the entity" 17.12.1980; "Solucionados problemas de disputas de tierras en la zona de El Guasmo - Land disputes in the El Guasmo area resolved" 17.12.1980

the Southern zones of Guayaquil to climate change and sea level rise induced flooding (Stenfert, Rubaij Bouman et al. 2016:14).

Going to the communities I passed through two urban mangrove hubs in Southern Guayaquil, each different in setting. Urban mangrove hub [[A]] (Pic. 26) is a landing area for the shrimp producers and therefore a possible area for “pirate” attacks. Barges arrive here loaded with smaller trucks containing containers of the freshly “harvested” shrimps. Private security companies have been hired by the bigger shrimp producing companies to protect the transport ships. Guards with machine guns protect the arrival



26 Urban mangrove hub [[A]]: Landing area filled with rubbish [Picture taken 05.07.2019]

of the barges in the morning, as shrimps are harvested at night and especially during spring tides. The other urban mangrove hub [[B]] is described as an “auténtico balneario criollo”⁶¹ maybe best translated as an authentic bathing area for the local people of the area. Next to a party zone with a

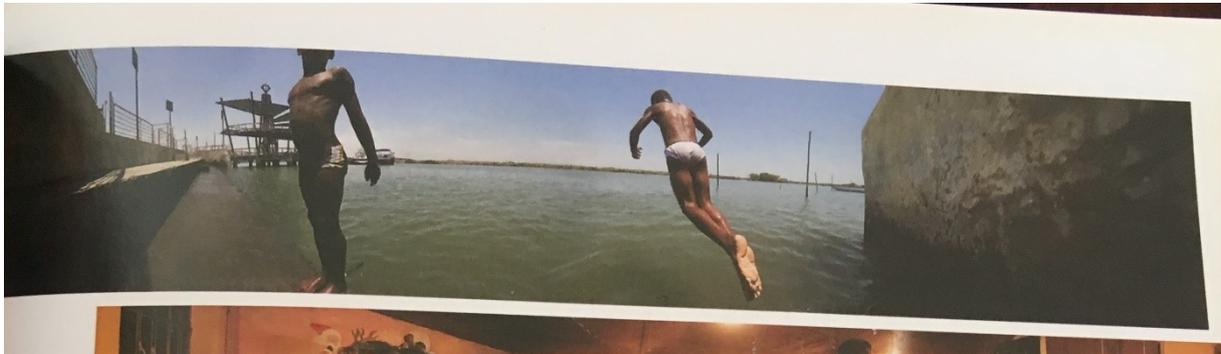
beach-like area and access to the estuary is an improvised landing spot and an informal fish market. The waste disposal is not working as good as it could, so that fish giblets and other leftovers are deposited right to the estuary banks to be taken away by the flood. The estuary also replaces public toilets. Assaults and drug abuse happen, sometimes openly⁶². Besides alcohol, a drug called ‘H’ (pronounced ‘ache’) has caused problems in the area. “H” apparently stands for ‘helado’, meaning ‘ice’, a synonym for Crystal Methamphetamine. Drug abuse in the Guasmo area has been common,

⁶¹ [El Universo: Un auténtico balneario criollo 16.02.1994]

⁶² [Research Diary 29.07.2019]

already in the 1980s and a subculture with own language expressions had developed around it⁶³.

From the suburbs of Guayaquil, the drug has spread to some of the mangrove communities in recent years⁶⁴. A newspaper article reports that the drug contains



27 Urban Mangrove Hub [[B]], as depicted by Photo Journalist (Verdezoto 2008:53)

different types of chemicals including heroine⁶⁵. Urban mangrove hub [[B]] (Pic. 27) is usually busy, some people are wearing a rather gang-oriented dress code with oversized pants, big branding symbols, flashy jewelry. Youth Gang culture had been a severe problem in Guayaquil especially in the 1990s⁶⁶, until successful rehabilitation programs have improved the situation.⁶⁷

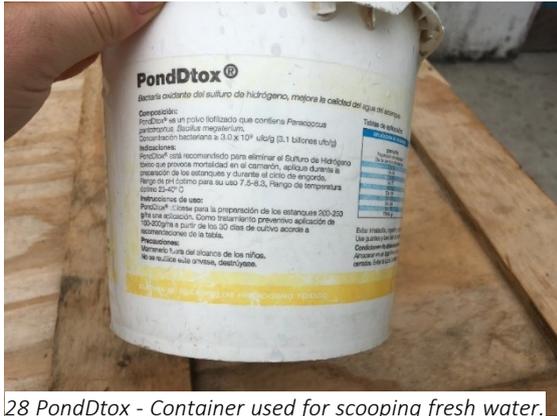
⁶³ [Informal Talk, Scientist, 20.11.2019]

⁶⁴ [Informal Talk, Community Leader, 20.07.2019]

⁶⁵ El Comercio: Droga H puede tener hasta 80% de heroína – The drug H can contain up to 80% heroine 22.03.2017

⁶⁶ e. g. El Universo: Violencia urbana y pandillas – Urban Violence and gangs 06.04.1994; Epidemia de pandillas – Gang epidemic 03.02.1996; S.O.S. Jóvenes en peligro – SOS Youth in danger 07.05.1999

⁶⁷ A program called “Barrio de Paz – Peace Neighborhood” gained special attention, implemented by Nelsa Curbelo (Curbelo 2003). See also <https://youtu.be/Ct3JOmat-q4> [Barrio de Paz, Global Oneness Project. Online: 11.03.2021]



28 PondDtox - Container used for scooping fresh water. Given by shrimp farm. [Picture taken 27.07.2019]

The mangrove communities (Pic. 29) situated in the inner estuary have been founded around 100 years ago. They can only be reached by boat and infrastructure is basic with no running water and without sewage system. Electricity is produced only in the evenings or at weekends during the days by diesel generators. Generators were purchased

with the help of the municipality of Guayaquil, while the community members share the costs for fuel.⁶⁸ The housing is made from concrete blocks, but also housing on stilts made from mangrove and bamboo or plywood still exist. People live mainly from using and trading mangrove resources, but also from working at the shrimp farms (cf.



29 Community in the Mangrove [Picture taken 19.07.2019]

8.3). Various household items like washing machines, fridges, and articles for everyday use, e. g. plastic toys and sound systems, proof the integration into the capitalistically organized society. The externalization of health and ecological risks from Western countries in the context of reflexive modernity becomes visible here (Beck 1986, Beck 2008, Lessenich 2016). The use of containers marked “Do not reuse, destroy it” from chemical residues from shrimp farms for scooping drinking water is just one example (Pic. 28).

⁶⁸ [Informal talk, President Fishing Association]



Mangroves in the sample area that are relatively untouched by industrial development and human settlement I refer to as rural

30 A shrimp farm in the sample area as seen from the estuary [Picture taken 09.02.2020]

mangroves. But many shrimp farms line the estuary on the way to the communities. They form another distinct setting in the sample area. The only infrastructure visible from the estuary are the landing zones for the barges that transport small lorries filled with boxed shrimps, the tubes for water exchange for the ponds and some basic housing (Pic. 30). A line of red mangroves covers up the shrimp farms, stabilizing the pond walls.⁶⁹ When passing by on a boat the whole dimension of the farms is hardly visible. The great expansion becomes visible especially from the air (Pic. 31).



31 Southern end of Guayaquil on the right bordering mangrove areas with shrimp ponds [Picture taken 29.11.2019]

⁶⁹ [Expert Interview, Guayaquil, Male 10.12.2019]

4.6 Mangrove User Groups

The mangroves of the sample region are used and governed by a diverse set of groups,



30 Extract from mapping at the Kick-Off-Workshop 15.07.2019 with cooperation partners sketching the relationship between "Actors in the Mangrove Sample Area"

involving various actors and institutions. A conflict mapping (Fisher, Matovic et al. 2000:22ff.) shows a perspective from the kick-off workshop of actors and groups relevant for mangrove use and governance in the sample region (Pic. 32). I would like to point out the hybridity and interconnectedness of all of these mangrove user groups, so that this labelling is to be understood primarily as a fuzzy outline and a categorical name that helps to draft the structural dynamics in which each individual acts and exercises different use practices (Table below).

NAME	LOCATION	PRACTICE
URBAN MANGROVE USERS	Urban	<ul style="list-style-type: none"> • Mangroves for Leisure • Consumption of mangrove products
INDEPENDENT MANGROVE USERS	Urban Mangrove Hub	<ul style="list-style-type: none"> • Extracting mangrove products, subsistent use and trade • artisanal fishing • mostly without mangrove concession or ownership • informal economic activities in the city
MANGROVE COMMUNITIES	Rural Mangroves / Mangrove Communities <i>Represented by JUMAPACOM</i> <i>Technical Adviser:</i> <i>Fundación Cerro Verde, Schutzwald</i>	<ul style="list-style-type: none"> • Extracting mangrove products, subsistent use and trade • artisanal fishing • Working on shrimp farms, Provision of services for shrimp farms • Sport fishing industry (sporadically)

SHRIMP FARMER	Shrimp farms in Rural Mangroves, Owners live in Guayaquil <i>Represented by the National Chamber for Aquaculture</i>	<ul style="list-style-type: none"> • Production of shrimps for the global market • Highly diverse group, with shrimp farmers coming from a variety of social urban backgrounds • Shrimp production for the market economy
SHRIMP CONSUMER	Worldwide	<ul style="list-style-type: none"> • Consumption of shrimp from Guayaquil's mangroves
"PIRATES"	Urban and Rural Mangroves	<ul style="list-style-type: none"> • organized groups who carry out criminal acts from vessels, especially serious forms of armed robbery
SCIENTISTS	Mainly in the Rural Mangroves and Mangrove Communities, occasionally also in the Urban Mangroves	<ul style="list-style-type: none"> • research mainly on ecological, economic and social effects of shrimp farming, as well as mangrove conservation • linked to private and public research institutes and universities
THE PRESS	Mainly in the Rural Mangroves and Mangrove Communities, occasionally also in the Urban Mangroves	<ul style="list-style-type: none"> • accompanying political delegations, taking pictures and talking briefly with inhabitants of the rural and urban mangroves

31 Mangrove User Groups according to Location and Practice

The "Urban mangrove users" utilise mangroves with a city perspective, for example exercising in the lining parks along the Estero Salado or buying mangrove crabs along the "value chain". The group is very heterogenous and people from all social classes and areas of the city engage in cultural practices related to mangroves.

"Independent mangrove users" are a second group living mostly in what I call the "Urban Mangrove Hub". The most common mangrove practice is the collection and sale of crab in Guayaquil, but also artisanal fishing is common. Even more often inhabitants of the area engage in informal and wage labour in the city. Although some of these "independent" mangrove user are in fact associated to Urban Fishing Associations, they officially have no mangrove areas ascribed to them.

Inhabitants of various of the communities use mangroves for their income, either for subsistence or for sale to aquire monetary resources. Today's practices are crab

collection, artisan fisheries for subsistence and sale (cf. 6.4), as well as shrimp production in self-made ponds. Historic practices include the mangrove wood industry, while mangrove wood is today only used occasionally for subsistent use e.g. for house or peer construction. Some communities work on shrimps farms, too, or provide services along the shrimp value chain. Also, involvement in sport fishing occurs.

The “Shrimp Farmer” in this context is understood as the producer of shrimps in aquaculture ponds in the mangrove sample region for commercialisation. This user group is also not homogenous and mostly distinguished by informants according to the size of the production:

“There are those who export and have “I don't know how many” certifications, and they take great care [to obey the law]. There are the medium-sized ones, [the owners] are usually the ones who were foremen of the big shrimp farms. They learnt to manage and built their own shrimp farm. And then there are the others who have [small] shrimp ponds.”⁷⁰

Today the majority of shrimp production for export is owned by a handful of Guayaquil's most influential families⁷¹. Although I am constructing these businesses as one group united by their practice of shrimp production, there are great differences between the various businesses in relation to social status, conflict level with other user groups and power within society.⁷²

Additionally “shrimps” are a product on a delimited world market and are indeed a result of global flows and -scapes (Appadurai 1990) that have influenced the demand for shrimps globally. Shrimp production is therefore understood here in its global setting, including also transnational actors like “shrimp consumers” as mangrove users.

There are only a few people needed to work on the shrimp farms daily, as shrimp production is not very labor-intensive. The owners of shrimp farms do not live on the farms, but mainly in Guayaquil.⁷³ The shrimp farmers are represented by the Nacional

⁷⁰ Hay los que exportan y tienen “no sé cuántas” certificaciones, y se cuidan mucho. Hay los medianos, que normalmente son los que eran capataces de las camaroneras grandes. Aprendieron a manejar y se hicieron su camaronera. Y hay los otros que son de pozas. [Expert Interview, Guayaquil, Male 13.08.2019]

⁷¹ [Expert Interview with National Politician, Male, 23.01.2020]

⁷² [Expert Interview, Scientist, Male 25.11.2019; Expert Interview, Aquaculture Institution, Male 10.12.2019]

⁷³ [Experts Interview, Guayaquil, Male and Female 11.09.2019], For an insight of practices on the farms see Dietrich 2013.

Chamber for Aquaculture (Cámara Nacional de Acuicultura) in Guayaquil – an important actor in national politics and in international lobbying for Ecuador’s shrimp aquaculture.

A clandestine use group is the "*piratas*" (pirates), which I define here as organized groups who carry out illegal and rent-seeking activities from vessels, especially serious forms of armed robbery, in the waters of the Gulf of Guayaquil. They are feared alike by all mangrove users attacking and stealing valuables, groceries and outboard engines and by shrimp farmers for stealing the shrimp harvest or attacking the transporting barges. Due to their informality, it is difficult to say, who "the pirates" are. What is remarkable is that any group of "pirates" needs someone able to navigate and manouver a boat in mangrove zones. This suggests that it may include people familiar with mangroves, who have been expelled from their previous territory or still live around mangroves. The data indicates that at times also members of communities in the mangroves have been involved in helping with storage places for stolen equipment against revenues⁷⁴. But most reports appear during the economic crisis in the early 2000s, suggesting that people had to get involved in illicit activities due to their own economic suffering.

Various scientific actors carry out research and implement community-outreach programs, including the ESPOL University and the University of Guayaquil. Scientists often also carry out consultancies for international donors or NGOs⁷⁵. When the shrimp industry developed, no scientific infrastructure existed in Ecuador about aquaculture in estuarine systems⁷⁶. Aspects of environmental sustainability or the social effect of the shrimp farm development were neither planned nor evaluated until the 1990s⁷⁷. Today

⁷⁴ [Informal Talks, Research Diary 17.08.2019, Newspaper review (10 articles about piracy between 2000-2002)]

⁷⁵ [Research Diary 18.08.2019]

⁷⁶ [Aquaculture Scientist, University of Guayaquil, Presentation at UEES Mangrove Conference 13.11.2019, Expert Interviews Aquaculture Scientist ESPOL 25.11.2019]

⁷⁷ [Expert Interview, Research Center, Male 06.02.2020]

there is institutes and research center focusing primarily on Aquaculture at the University of Guayaquil and the ESPOL University.

Another actor relevant for mangrove discourses is of course "The Press". During my visits in the communities various journalist groups arrived, often accompanying political delegations, taking pictures and talking briefly with inhabitants. Older articles confirm that the sample region was written about as early as 1984 (Padilla Guevara 1984). The still existing rural mangroves are considered crucial for all mangrove users: for artisanal fisheries, the collection of crabs and the reproduction of the species caught by the communities. They are the "conservation object" of the global mangrove movement and its filtering capacities are for example necessary for shrimp production, the city's pollution and carbon dioxide storage. These capacities outline a whole series of other important but implicit users, for example the global population in the context of climate change.

4.7 Summary

Guayaquil has been built on an estuarine system and has culturally developed in a dynamic relationship of trade and mangrove use. In this chapter, I have given an overview over the research setting, the history of the region, mangrove governance, key actors and the setting of the mangrove-related discourses. The mangroves were already used in pre-Colombian times as a source of food, building materials, but also transport infrastructure. Due to its economic success the city was marked by a strong immigration and therefore expanded over the century further and further into the mangroves. Estuaries were filled and rural communities in the mangroves were incorporated into the city. The wider area around Guayaquil was marked by a plantation economy focusing on the export of nature products from the city's port. ´

Due to Guayaquil's special position in the river delta of the Guayas, but also due to its geographical and social distance from the center of national power, Quito, a culture of independence and resistance developed. I analyze the legal framework in which the mangrove use of the sample region takes place and outline the actors and the status of mangrove governance today. The field of tension in the sample region in relation to mangrove governance is spun between a historically grown distrust between regional and national government, as well as between different groups on society, a colonial and global infrastructure supporting the export and consumption of natural products from Ecuador, a responsibility for mangrove "services" spreading over various governmental institutions, and a lacking coordination and communication between the various mangrove user groups and actors.

I describe the geographic and socio-cultural setting of the sample region and outline five specific areas within this "mangrove-scapes": The urban mangroves of Guayaquil, the urban mangrove hub on the outskirts of the city, the communities set within mangroves, the rural mangroves without settlements and the shrimp ponds. On this premise I develop the various mangrove user groups, distinguishing them by

geographical setting and practices. Groups include urban and independent mangrove users, communities, shrimp farmers, shrimp consumers, scientists, “pirates” and the press.

V THE MEANING OF MANGROVES IN SCIENCE 1800-2019

5.1 Introduction: Miasmas, Science and Knowledge Supremacy

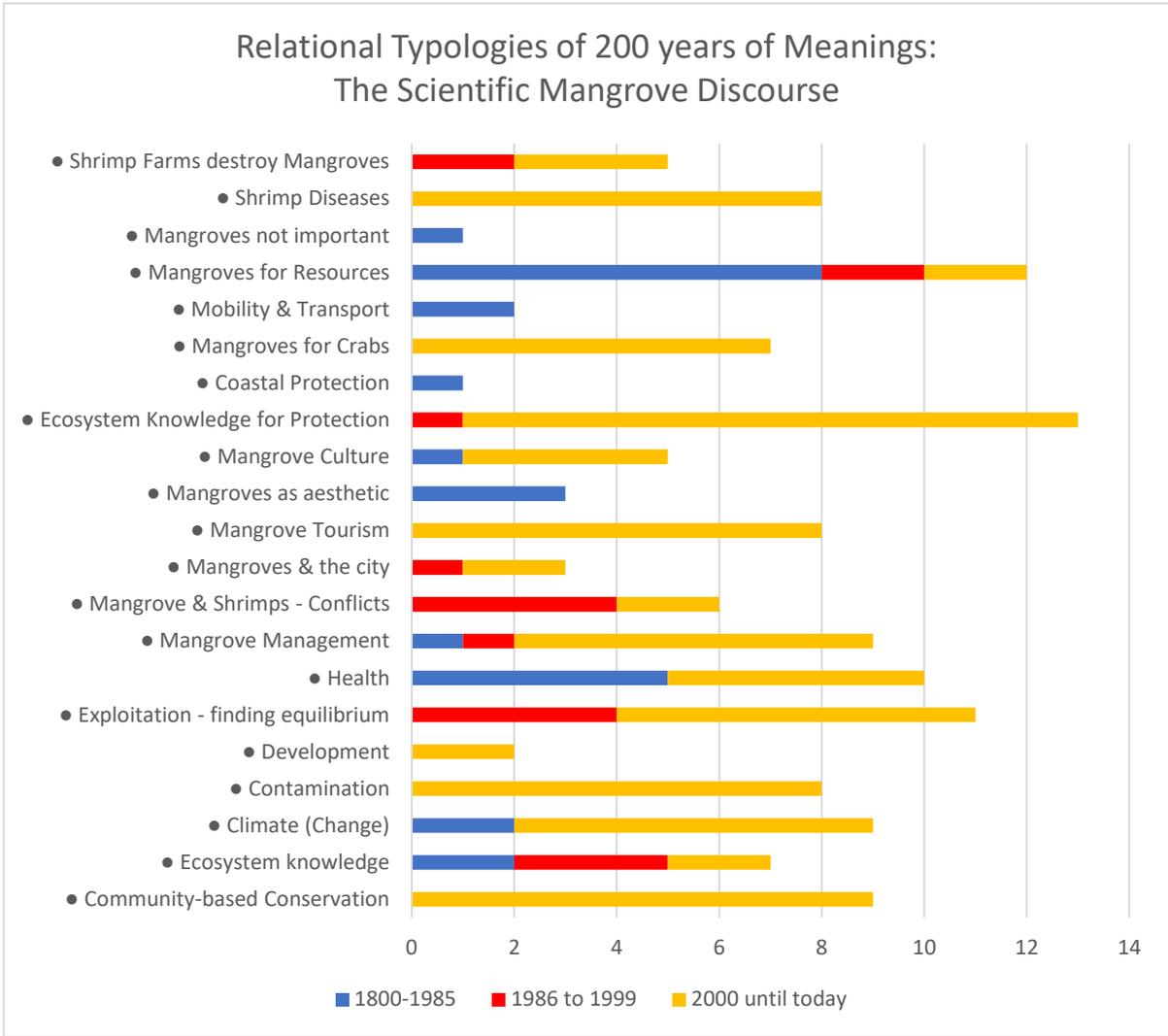
Science was at least since the Renaissance an activity, the wealthy and educated European upper class engaged in, creating also much prestige for the scientists themselves (Mokyr 2017:103-114, Whitley and Gläser 2019:14). Scientific production over time was on the one hand a demonstration of power between different population groups, but on the other also demonstrated and consolidated white, male power in society. The natural sciences in particular were and still are shaped primarily by male protagonists (cf. e. g. Lederman and Bartsch 2001). It is therefore not surprising that it was not until 1996 that the first female researcher published on the natural science topic of mangroves (Bell and Cruz-Trinidad 1996). Hence, for over two hundred years, it was a very specific group of scientists who studied mangroves and constructed mangrove meanings in the scientific discourse: white men with European roots.

Recalling the concept of the "white male gaze" and the "White Capitalist Patriarchy" (Haraway 1988:592)" (cf. 2.3), I will use the analogy provided by Traweek (1988:103) to highlight the reasons behind: „The scientist is persistent, dominant, and aggressive, ultimately penetrating the corpus of secrets mysteriously concealed by a passive, albeit elusive nature. The female exists in these stories only as an object for a man to love, unveil, and know“. Traweek portrays the scientist as an "active/male" hunter in search of his "passive/female" object of desire. Not only nature but also knowledge became a resource for appropriation in the scientific mangrove discourse. The search for scientific understanding about mangroves included the "hunt" for "passive" local knowledge in order to make mangroves usable or better usable as a resource in the European economic system. Local knowledge and its bearers are seen merely as a means to an end like nature itself and hardly appear as actors in the natural scientific knowledge production over time.

In addition to economic interest, scientific knowledge was also used to legitimize the rule of European actors in regions where colonial rule had ended. In Latin America the “new” or “Humboldtian” science (cf. Cannon 1978:105) was promoted actively by the Spanish at a time when the colonial era in Latin America was coming to an end. It was used to re-establish influence and power in the colonies of the “New World” (Canizares-Esguerra 2005:69) answering increasing struggles with the Creole Elites seeking independence (Pratt 1992:114).

Later Science was used by the very same now independent Creole Elite in Ecuador to legitimize their new political hegemony and to distinguish themselves from the “common people” (cf. Durisch Acosta 2007, Durisch Acosta 2009). Science and Technology Studies have raised attention to the embeddedness of science and scientific practices in inequality structures, for example related to race, gender or political power (e. g. Keller 1985, Harding 1986, Watson-Verran and Turnbull 1995, Keller and Longino 1996, Verran 2001, Schiebinger 2004, Seth 2009, Daston 2017, Subramaniam, Foster et al. 2017, Daston and Galison 2021). Accessing or representing the only “true” knowledge - science - and using it in meaning-making became a strategy to gain advantages in using mangroves in Guayaquil.

Various meanings of mangroves emerged in the scientific mangrove discourse over the last 200 years (Table 34). It is hardly possible to compare the publications quantitatively due to the great difference in publication numbers and types over the years. However, it becomes clear that there are shifts in prominent meanings in the course of the discourse, making it possible to describe the emergence, disappearance or transformation of mangrove meanings chronographically. The evolution of mangrove meanings over time points the reasons why mangrove meanings in Guayaquil have evolved into the globalized mangrove discourses of today in their specific way.



32 Results of the Analysis of 135 Scientific Publications of Mangroves in the Guayaquil area. Relational Typologies of the discourses suggest three groups: a) Miasmas, Public Health and Mangrove Imperialism from 1800-1985 (Blue); b) Mangrove Conflicts from 1986-1999 (Red); c) Mangrove Conservation and Management from 2000 onwards (Yellow).

In this chapter, I will on the one hand present the most important meanings of the scientific mangrove discourse over the last 200 years. On the other hand, I exemplify the relation between mangrove access and meaning-making with the scientific meaning connecting “mangroves and public hygiene”. I use epistemic mobilities as a conceptual lens: travelling knowledge entering and exiting various epistemic realms, and transforming in the process (Hornidge, Herbeck et al. 2020).

On this premise I discuss political power and the politics of naming mangroves in the wider setting of imperialism and the quest for natural resources in Guayaquil’s mangroves in section 5.3.1. The connections of public hygiene and mangroves appear

already in the publications of Alexander von Humboldt when visiting the Americas. I argue that he has applied meanings of hygiene which originate in Europe. His depictions reappear in later publications about mangroves and in the public mangrove discourses in Guayaquil. I redraw how these scientific meanings have been used over time as a legitimation strategy, with not only mangroves being considered unhygienic, but also the people who live in them. European meanings and the Guayaquilean *dispositif* have blended to create new mangrove meanings, which have continued to the present day, reinforcing historical power inequalities between use groups. The political elite excluded certain use groups in this way, using mangroves for their own purposes (cf. 5.3.2).

With the arrival of the shrimp industry and a worldwide increased interest in mangrove areas, the scientific studies diversified: Conflict analysis and legitimization strategies for mangrove use related to differing scientific position, for example from aquaculture studies, economy and ecology. I present the conflict phase from the late 1980s onwards analyzing 18 publications (cf. 5.3.3). Hygiene was also associated with mangroves during this phase; however, the categorization was reversed and the "invaders" of the mangroves, the shrimp farms in the hands of the economic elite, came to be considered unsanitary in some of the publications discussing for example plagues emerging in the monoculture of shrimp production. During this time aquaculture and economy disappear slowly from the mangrove discourse, now discussing "shrimp production" without linking the estuary land used for aquaculture to mangroves anymore. From the 2000s onwards the scientific mangrove discourse was marked by ecology and conservation, and mangroves were constructed discursively in science as worthy of protection (cf. 5.3.4).

5.2 The Politics of Naming Mangroves

Descriptions of mangroves and of Guayaquil in the travel reports since 1800 were either focusing on diseases and mosquitos, or describing mangroves as highly aesthetic, lush and beautiful. This ambivalence could relate to political objectives often intended with these kind of reports (Bauer, Gelpi et al. 2003:4). Hence, in this section I will examine the names used for mangroves with a particular focus on the 19th century to exemplify how mangrove names have been negotiated and transferred in science over time until a common agreement was established. I will then introduce and discuss the role of science as an educational tool.

In the first publication of this corpus, the Expedition of Malaspina from 1789-1794 the name "manglares"⁷⁸ is used various times (e. g. Malaspina 1885 [1789-94]:107, 108, 110, 545, 549), as is "mangles"⁷⁹ (Malaspina 1885 [1789-94]:108, 117). Humboldt talks in his earliest German and English editions of his travels to the Americas about "mangroves" (Humboldt 1815:368), "Reizophora [sic!] mangle" (ibid.) and "Avicennia" (Humboldt 1815:356, 368) in English. In the German edition of 1859 he referred to "Manglebäume" (Humboldt 1859 [1815]:306, Humboldt 1859 [1815]:80ff., 246) or "Wurzelbäume" (root trees) (Humboldt 1859 [1815]:95), also mentioning the Latin names, e.g. Rhizophora and Avicennia (e. g. Humboldt 1859 [1815]:81). In the German transcription of the 1854 book from Andersson that was first published in Swedish, Andersson refers to "Amerikanische Wurzelbäume" (American root tree), not mentioning Latin names albeit being a botanist. Andersson quotes Humboldt (Andersson 1854:86) shortly before, when talking about fruits in Peru, indicating that he has read Humboldt's book on the Americas.

Almagro describes Guayaquil and refers to the vegetation on the side of the river which is up until today including mangrove trees: "The two banks, adorned with beautiful vegetation are detected, and after a course of 25 leagues, one finds the city of

⁷⁸ manglares [Spanish Plural for mangrove]

⁷⁹ mangle [Spanish Singular for mangrove]

Guayaquil, situated on the west bank of the river.”⁸⁰ (Almagro 1866:77, own translation). He does not mention mangrove, mangle or manglares, and also does not mention Latin names. In the diary of the botanist of the same expedition, however, Juan Isern Batlló y Carrera, states he has seen the mangrove: “he visto el mangle” on 16th November 1864 (Batlló Carrera 1862-1866:177) and mentions mangroves in another place calling them “mangle(s)” (Batlló Carrera 1862-1866:174). Wilhelm Reiss also refers similar to De Almagro only to the lush vegetation, “üppige Vegetation” (Reiss 1868-1876 [1921]:127), along the river Guayas, while Mera just refers to “complicated fluvial systems” (Mera 1884 [1875]:37f.) and the location names “Manglar-alto”(Mera 1884 [1875]:104) and Isla Manglares (Mangrove Island) (Mera 1884 [1875]:7).

In contrast, Theodor Wolf who has written in Spanish, mentions “manglares” often (e. g. Wolf 1892:19, 20, 23, 25, 107, 108, 110, 111, 112, 295). It appears that in the second half of the 19th century the scientific interest in mangroves had increased, so did publications and more commonly used names were established. From then on the Latin names “Avicennia” and “Rhizophora”, as well as “manglares” (Eggers 1892, Wolf 1892) and “mangroves” (Ball 1887, Guppy 1906, Strong 1915) were used solely.

Said underlines that imperialism was a movement aiming to “modernize, develop, instruct and civilize” people also in Latin America and its foundations are in educational institutions like universities, scholarly societies and hospitals (Said 1993:223). Although these institutions may have lost over time much of the more aggressive aspects of colonialism, they continue to support the “Westerner” / “native” divide subliminally: Western paradigms representing the “fundamentals of modern life” keep also Latin American populations subordinated to authorities based elsewhere (ibid.). But Latin America appears as a special case. Cañizares-Esguerra (2005:69) supports the previously stated ethnic divide historically, explaining that during the colonial period

⁸⁰ Las dos orillas, adornadas de bella vegetación se perciben, y después de un curso de 25 leguas, se encuentra la ciudad de Guayaquil, situada sobre la ribera O. del río.

the Spanish colonies developed as kingdoms (*ancient regime*), with a strong racial component. Indigenous formed the peasant population, the blacks the slaves. But in contrast, he says, the Creole upper classes had great independence from Spain and developed strong patriotic local identities (ibid.). For science, this meant however, that often “local colonial” versions of Western scientific concepts emerged in the colonies (ibid.). Looking at mangroves, this may explain the interest of the Ecuadorian government and hence the creole elite, to have foreign scientists like Eggers (1892) and Wolf (1892) live for longer periods of time in the country, supporting scientific publications in natural science coming from Ecuador.

The empirical data suggests that universities, scientists and students had a decisive influence on the development of an environmental and mangrove movement in Guayaquil in the late 21st century. One interviewed leading activists of that time explains:

“The truth is that the nineties were a time of environmental work, of activism. I organized at the end of the eighties the first environmental organization in a university that was the Ecological Committee of the [Name University], which lasted until the year 96. Then it was the Littoral Ecological Committee as an NGO. [...] One of the objectives [...] was the defense of the mangrove. [...] In any case, the whole decade of the nineties was dedicated to making the population and especially the original mangrove communities aware of the importance of this ecosystem [...]”⁸¹

This quote supports the idea that science has in Ecuadorian society still an educational role, and maybe still as a distributor of Western concepts. Interestingly the quote underlines the need for rising of environmental awareness within communities living in the mangrove areas. Although there is no doubt, that also people living in mangrove areas have used mangroves, sometimes also excessively, it is evident that it was commodification within a capitalistically organized system and urbanization that led to the rapid deterioration of mangrove resources in Guayas over the last decades. Therefore, the need to increase “awareness” within the communities is at least a noteworthy or even a questionable aspect. In an interview with a person working for

⁸¹ [Transcription of Voice Message via WA when setting up Interview, Expert, Male, Guayaquil, 05.08.2019]

the German Development Cooperation, there is a similar interest and connection between science, development and communities:

“Well my profession is Natural Resource Management with participatory methodologies, so I provide advice to communities and improve the management of their ecosystems. [...] I provide advice both to universities and also to improve their advice to communities, and also with the communities providing direct advice”⁸².

In recent years policies linking science and society were fostered in Ecuador (Herrera-García 2017), probably also due to increasing demands by the industrial sector like the shrimp industry⁸³. But up until today, little funds are available on the national level to make national research possible, and the only funds often come from development cooperation fostering research according to own interests⁸⁴. During my fieldwork, the university where I was enrolled, was also running a science promotion programme initiated by the national government. It aimed at improving the living conditions of the communities in the study area. In a society where education and science were used as tools for political legitimation, power questions arise when representatives of universities go to communities to teach them (cf. 7.4.).

⁸² [Expert Interview, Female, Guayaquil, 15.11.2019]

⁸³ [Acuaculture Scientist University of Guayaquil, Presentation at UEES Mangrove Conference 13.11.2019, Expert Interviews Acuaculture Scientist ESPOL 25.11.2019]

⁸⁴[Research Diary 10.02.2020, Informal Conversations with Scientists, Newspaper EL Universo 28.02.2021: Ricardo Zambrano. Title: Conseguir fondos para realizar investigación científica ha sido siempre complicado en Ecuador // Getting funding for scientific research has always been difficult in Ecuador.]

5.3 Meanings over time

5.3.1 *Mangrove Imperialism - The Quest for Resources*

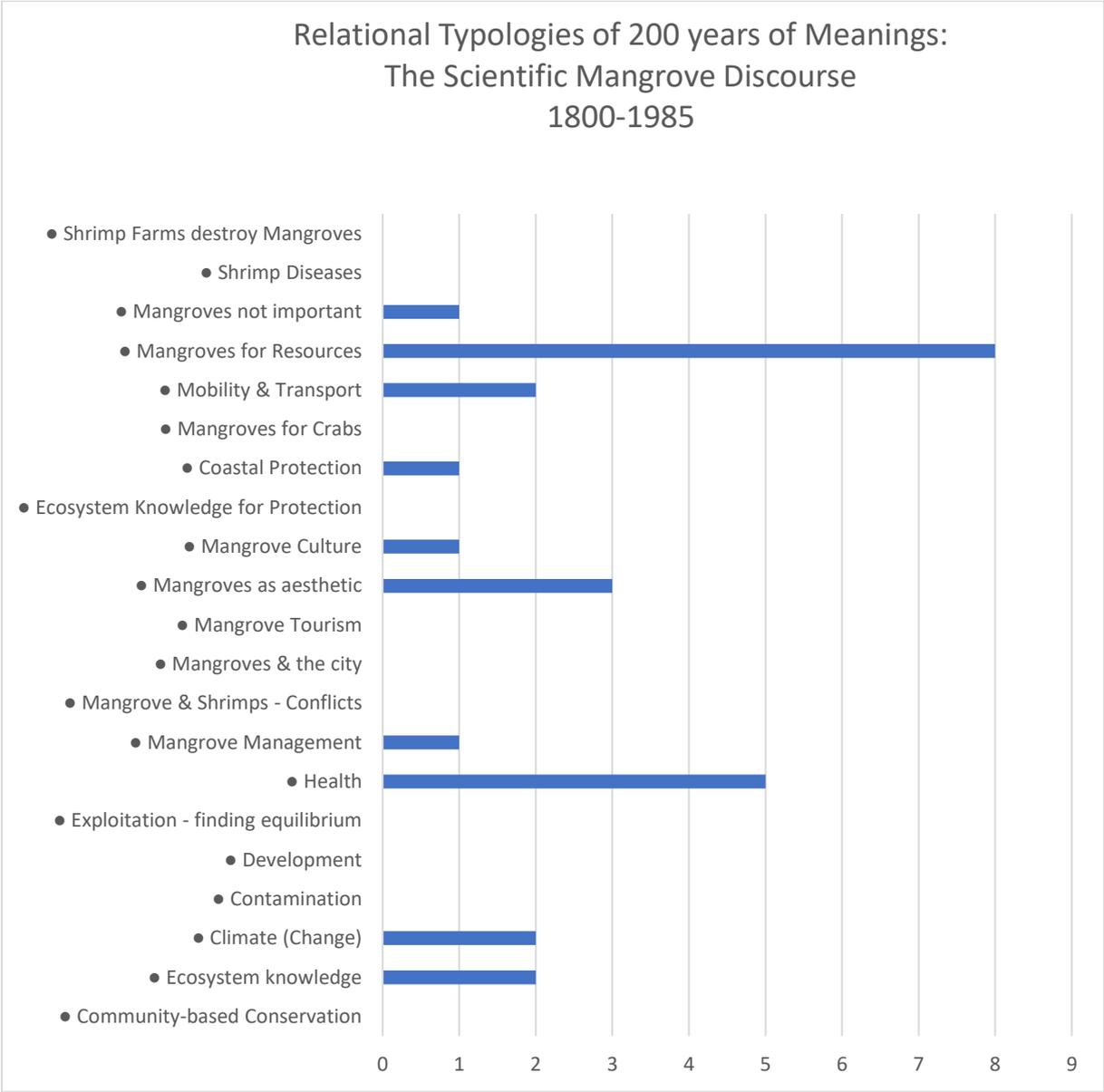
Understanding mangroves as a natural resource is the dominant meaning in what I call the phase of "Mangrove Imperialism". I have chosen the word "Imperialism" to emphasize the dominant role that humans have taken on in relation to nature, referring to older understandings of the word empire (Steinmetz 2014:78f.): Imperialism as "objectless disposition on the part of [humans] to unlimited forcible expansion" (Schumpeter 1951 [1919]:6)⁸⁵.

The word "resource" derived from the Latin verb *surgere*, exemplifying nature's ability to resurrect in spring, an equivalent of "life" (Shiva 1992:228). The meaning changed with the interest of colonialists, who had come for gold and ores to Latin America. In the 17th century European "naturalists" were starting to look for "Green Gold" as well, for commodifiable plants and medicines (Schiebinger 2011:110ff.). Also, scientific representations of mangroves were influenced by colonial and economic power relations in the Guayas region in Ecuador. The protagonists, who set out in search of these different kinds of "gold", were not always easily labeled. The first "scientific" report of red mangroves in the Guayas province was for example done by the British national William Dampier in 1684 (Cornejo 2014:28). Cornejo labeled him an "explorer" or "buccaneer" (ibid.). Shipman called him a "seaman-scientist" (1962). From a postcolonial perspective, he could also be understood as an imperialist, colonialist or even pirate. The first collection of mangrove plants around Guayaquil was also done by a "scientist" during the Spanish colonial Malaspina Expedition, by the Czech Botanist Thaddäus Haenke in October 1790 (Cornejo 2014:28).

In the 18th century the most important good imported from Peru to Europe was sugar and the most valuable was the Peruvian bark, better known as the medicine quinine

⁸⁵ my own substitute [humans]. The original refers to "a state"

(ibid.). The legends spun around quinine’s discovery are quite rich and the area around Loja in what is today Ecuador plays a prominent role (Kreig 1964:165ff., Kaufman and Rúveda 2005, Schiebinger 2011:114). It was one of the most important drug for the expansion of the colonies as it was used as a treatment against malaria, a disease clearly connected with “miasmas”, wetlands and mangroves (cf. 5.1).



33 Types of the group “Miasmas, Public Health and Mangrove Imperialism from 1800-1985 (Blue)” as a Result of the Analysis of 135 Scientific Publications of Mangroves in the Guayaquil area over 200 years.

For the researched time frame the definition of natural resources from 1870 by Yeats reflects a meaning predominant up until today: “In speaking of the natural resources of any country, we refer to the ore in the mine, the stone unquarried, the timber

unfelled, the native plants and animals - to all those latent elements of wealth only awaiting the labor of man to become of use, and therefore of value." (Yeats 1870:2). The meaning of nature changed from "life" to "resources for the production of goods". (Shiva 1992:228). Also the understanding of mangroves in the scientific discourse changed from "unhygienic"/ "aesthetic" to "resources", as visualized in table 35. Most publications in this time frame were published from the late 19th century to the First World War. During that time, imperial interests in natural resources worldwide were especially strong and publications come from countries with strong hegemonic interests: Germany, Great Britain, Spain and later the USA. Examples include the 'Expedición Malaspina' from 1789-1794, a Spanish Maritime Scientific Expedition led by Alessandro Malaspina and José de Bustamante y Guerra still during colonial times (Malaspina 1885 [1789-94]). Secondly, the 'Comisión científica del Pacífico 1862-1866', a Spanish scientific expedition on the Pacific Ocean (Almagro 1866, Almagro and Litvak 1984). Thirdly Guppy's "Observations from a naturalist in the Pacific 1896-1899" (Guppy 1906) and Ball's "Notes of a Naturalist" (1887). The Harvard Medical Expedition to South America in 1913 (Strong 1915) is an example of a US-American science endeavor focusing on public health and sanitation for Guayaquil, and most of all to secure economic trading with this important Pacific Port (Parks and Nuernberger 1943:202).

As said, two European scientists lived for longer periods in Ecuador and described mangroves as something useful and positive, laying foundation for mangrove conservation. Baron H. Eggers, a Danish botanist who lived in Ecuador from 1891-1897, had published 1892 the first publication solely on mangroves in Guayaquil in a German botanist journal (Eggers 1892). In this article, he describes the qualities of the plant and the importance of mangroves as a forestry resource. Around 1900, the German Geologist Theodor Wolf, who became the State Geologist in Ecuador, published about the region, too. His work about the Guayas province includes depictions of mangroves and highlights the importance of the ecosystem for sedimentation: "Here is the great

importance of the mangroves as preservers and enhancers of the land!"⁸⁶ (Wolf 1892:295). So, while Eggers depicted mangroves as a resource, Wolf understood them as an important part of the landscape, protection against erosion and as land enhancers. Having a "State Geologist" investigating on an ecosystem with these potentials, illustrates the great importance of soil, rock and territory in this time frame.

From the second half of the 20th century onwards, longer publications appeared, focusing now solely on mangroves and their importance as natural resources. The Ecuadorian Natural Scientist named M. Acosta Solis published various works from 1944 to 1971, highlighting their importance as forestry resource, of which two (Acosta Solis 1960, Acosta Solis 1961) have entered into the corpus as being available in Europe or online.

⁸⁶ "Here is the great importance of the mangroves as preservers and enhancers of the land!" [AB own translation]

5.3.2 Humboldt's view on Mangroves: Miasma and Public Health

Alexander von Humboldt's descriptions of "Rhizophora trees" (*Rhizophora* spp.) in his book about the America journey (Humboldt 1859 [1815]) are an important starting point to analyse scientific meanings of mangroves in the time frame I am investigating and in relation to South America. This is due to his fame as a scientist while still alive and until today. Apart from colonial representatives, he was one of the first European visitors, who was allowed by the Spanish crown to explore the region. Humboldt attributed this permission to the Spanish King's love to science (Humboldt 1859 [1815]:11). As elaborated earlier, the king's permission surely also encompassed imperial considerations of its own in relation to a colony seeking independence. Humboldt published various books about this journey, the most famous first in French [1815] and later officially translated into German [1859] "Personal narrative of a journey to the equinoctial regions of the new continent"⁸⁷. His writing was acknowledged by a wide European audience.

In his publication, even more so in the German edition, Humboldt only describes a third of his travels and leaves out much of his stay in Guayaquil (Beck 1999:10f). He stayed from 4th of January 1803 in Guayaquil coming from Lima and stayed until the 17th of February leaving to Mexico (Biermann, Jahn et al. 1983). Besides travelling inland on the partly mangrove lined River Babahoyo he visited the island of Samborondón on 1st February 1803 (ibid.), which houses today the "Parque Histórico", a botanical garden and history museum, built around the mangrove ecosystem. As any traveler arriving by ship, he must have come to the port of Guayaquil passing the island of Puná covered by mangroves and through the partly mangrove covered estuary of the Guayas River, which he referred to as Guayaquil River. Even though he is not referring to the mangroves of the Guayas province specifically, he refers to Guayaquil various times and talks at length about mangroves in other parts of Northern South America.

⁸⁷ Reisen in de Aequinoctial-Gegenden des neuen Continents

In most parts of his books he describes nature in all its beauty, but he portrays the mangroves rather negatively. This view on mangroves from European travelers in the Americas is not new, looking back for example to colonial writings however political their interests might have been (cf. Bauer, Gelpi et al. 2003):

“[...] [M]eanwhile, Francisco Pizarro and his pals crossed between those rivers and mangroves, being tormented by the mosquitos, experiencing unbearable efforts and misfortunes, and were tired for being forced to walk in that hell, and they all wanted to go back to Panama [...]” (Cieza de León 1541-1550 Chapter XII:170, Chronicles of Spaniards soldiers accompanying Pizarro in the conquest journey of Peru).

The relationship between climate, environmental conditions and public health was a prominent discussion in science in the 18th and 19th century. Glacken (1976) traces the roots of this debate back to Hippocrates and his treatise “Airs, Waters, Places” (Hippocrates 1881 [400 BC]:91ff.). According to this tradition, marshes, dampness and winds were especially fostering unhealthy conditions (Glacken 1976:94). Thus, it is little surprising that Humboldt relates the “mangle” tree with miasmas and diseases. He describes and analyzes the tree in a rather scientific, descriptive tone. Just after the following quote, he describes experiments with the tannins of roots and branches of mangroves:

“It is attributed to this scrub, but especially to the exhalations of the root-bearers or mangle trees [Note AB: Red Mangrove: L. Rhizophora Mangle], that the air here, as everywhere in both Indias, is so unhealthy. When we landed at 30 to 40 m, we were met by a bland, sweetish smell, similar to the smell spread by the mildew-covered carpentry in abandoned mining tunnels, where the lights begin to go out. The air temperature rose to 34° as a result of the reverberation of the white sand that stretched between the bushes and the high-peak forest trees. Since the ground has a very insignificant fall, the roots and part of the trunk of the mangle trees, however weak the tides are, are nevertheless sometimes submerged and sometimes drained. When the sun heats up the wet wood and causes the muddy soil, the fallen, decomposed leaves and the seaweed hanging in the alluvial deposits to ferment, the mollusks are likely to produce the harmful gases that escape chemical analysis. On the whole coast, the sea water shows a brown-yellow coloring where it comes into contact with the mangle trees.” [AB own translation](Humboldt 1859 [1815]:72)⁸⁸

⁸⁸ Original: “Diesem Buschwerke, besonders aber den Ausdünstungen der Wurzelträger oder Manglebäume [Anmerkung AB: Red Mangrove: L. Rhizophora Mangle], schreibt man es hier, wie überall in beiden Indien, zu, daß die Luft so ungesund ist. Beim Landen kam uns auf 30 bis 40 m ein fader, süßlicher Geruch entgegen, ähnlich dem, den in verlassenen Bergwerksstollen, wo die Lichter zu verlöschen anfangen, das mit Schimmel überzogene Zimmerwerk verbreitet. Die Lufttemperatur stieg auf 34° infolge der Reverberation des weißen Sandes, der sich zwischen dem Buschwerke und den hochgipfligen Waldbäumen hinzog. Da der Boden einen ganz unbedeutenden Fall hat, so werden, so schwach auch Ebbe und Flut hier sind, dennoch die Wurzeln und ein Teil des Stammes der Manglebäume bald unter Wasser gesetzt, bald trocken gelegt. Wenn nun die Sonne das nasse Holz erhitzt und den schlammigen Boden, die abgefallenen, zersetzten Blätter und die im angeschwemmten Seetang hängen- den Weichtiere gleichsam in Gärung versetzt, da bilden sich wahrscheinlich die schädlichen Gase, die sich der chemischen Untersuchung entziehen. Auf der ganzen Küste zeigt das Seewasser da, wo es mit den Manglebäumen in Berührung kommt, eine braungelbe Färbung.”

He refers again to fever and diseases in mangrove covered areas in other parts of the book (Humboldt 1860 [1815]:71f). The miasma theory, as mentioned by Humboldt [Ausdünstungen], was prominent in the 19th century and also prevalent in Guayaquil. The oldest newspaper in Guayaquil, El Patriota, from 1825, also mentions miasmas in various occasions. The word derives from the Greek word for pollution and is understood as 'bad air' or poisonous vapours. It reflects the concept that 'miasmas' transmit diseases and a similar thinking was recorded already in ancient Rome:

"For when the morning breezes blow toward the town at sunrise, if they bring with them mist from marshes and, mingled with the mist, the poisonous breath of creatures of the marshes to be wafted into the bodies of the inhabitants, they will make the site unhealthy" (Vitruvius P. 1960 [70 BC-15 BC])

Even the word for Malaria - male aire or bad air - derives from a similar belief (Lalchandama 2014:3f). It becomes clear that the connection of swamps, marshlands and 'bad air' disease in Europe has a long tradition, in which Humboldt's discussion of the relationship between water, climate, public health and in this case mangroves is located. At the same time his writing and thinking were of particular importance for the development of science how it is today and much has been written about it.

In the following I will discuss briefly the two binary oppositions. Humboldt's publications on the one hand are perceived "as a big step forward in the development of the scientific travel report" (Troelstra 2017:13). Related to his role in science he is often understood as the last "Universalgelehrter" (polymath) and Cannon sees Humboldt as the founder of a "professional science" (Cannon 1978:105): A "Humboldtian science, the accurate, measured study of widespread but interconnected real phenomena in order to find a definite law and a dynamical cause" (ibid.). Ette describes him as a "pioneer and representative of a new conception of science"⁸⁹ (Ette 2006:32). He also points out his "Weltbewußtsein" – his consciousness of the global (Ette 2002), explaining Humboldt's increasing relevance in the last decades. Ette and

⁸⁹ Own translation: "Pionier und Vertreter einer neuen Wissenschaftskonzeption"

many others discuss Humboldt in the context of Romanticism or locate his thinking in the transfer from Enlightenment to Romanticism (e.g. Dettelbach 2001). Walls goes even as far as stating, that Humboldt began the environmental discourse in The Americas, "creating a counternarrative to the drumbeat of the imperial progress" (Walls 2009:8).

Pratt on the other hand attributes him an "estheticized scientism" (Pratt 1992:181) devolving from his "ideological distinction between knowledge and conquest" (ibid.). She argues that Humboldt and other travel writers following the naturalist discourse constructed an image of "anti-conquest" (Pratt 1992:38). They are differing "sharply from overly imperial articulations of conquest, conversion, territorial appropriation, and enslavement" (ibid.), however still constructing an "Utopian, innocent vision of European global authority" (ibid.) based on science.

Seth outlines similarly along Bhaba's mimicry concept (Bhaba 1984), that science functioned for example in colonial times as a "knowledge supremacy" and justified colonialism in itself. On the other hand it kept the colonial system going because of a dubious hope of the colonized to gain the presumably powerful knowledge, too, one day (Seth 2009:377). The same can be said about post-colonial dependencies and ideals of modernity. According to Pratt nature is inflated in Humboldt's descriptions of South America and the people are not appearing as overly important, apart from being part of nature (Pratt 1992:126)⁹⁰. Weigl attested Humboldt a lasting influence by Buffon (Weigl 2001:125). Georges-Luis Leclerc Comte de Buffon was a French Natural Historian in the 18th century, author of a questionable theory of comparison of nature in the Old and the New World, which Humboldt criticizes. However, Humboldt, according to Weigl still believed following Buffon's tradition that "nature needs to be liberated by man. Left to its own devices, it would suffocate in its own disorder and be subject to continuous decay which would weaken it more and more." (Weigl 2001:125).

⁹⁰ For further discussions on Pratt's "Imperial Eyes": Lindsay, C. (2011). Beyond Imperial Eyes. Postcolonial Travel Writing - Critical Explorations. J. Edwards and R. Graulund. London, Palgrave Macmillan: 17-35.

It is especially interesting to look at Pratt's and Weigl's suggestions in the context of mangroves. Humboldt had intensively studied already in the early 19th century the connection between climate change, deforestation and agriculture (Rajan 2006:27), influenced by the earlier mentioned Hippocrates tradition (Glacken 1976:94). Nevertheless, and without wanting to belittle the fact that Humboldt brought science forward, at least his perspective on estuaries and mangroves reflects his desire to change and dominate nature for the sake of public health. On top of his connection of mangroves with diseases, Humboldt describes the mangrove lined River Guayaquil as one of the places where the mosquito nuisance was the worst on his whole journey (see also Ulloa, Juan et al. 1807:159f., Humboldt 1860 [1815]:158). He describes in colorful pictures a few pages before and on the following page with anecdotes from his journey how irritating and useless he finds mosquitos, and flying insects altogether (Humboldt 1860 [1815]:144, 157f).

In line with what Weigl says, Humboldt subsequently expresses his hope in the quote following his description of mosquito nuisance, that the humans will change the soil along the Orinoco, and thus will change the air consistency. Then there will be less insects, less old trees in the forest and instead modernization will take place with villages along the rivers, the plains full with meadows and fruit fields:

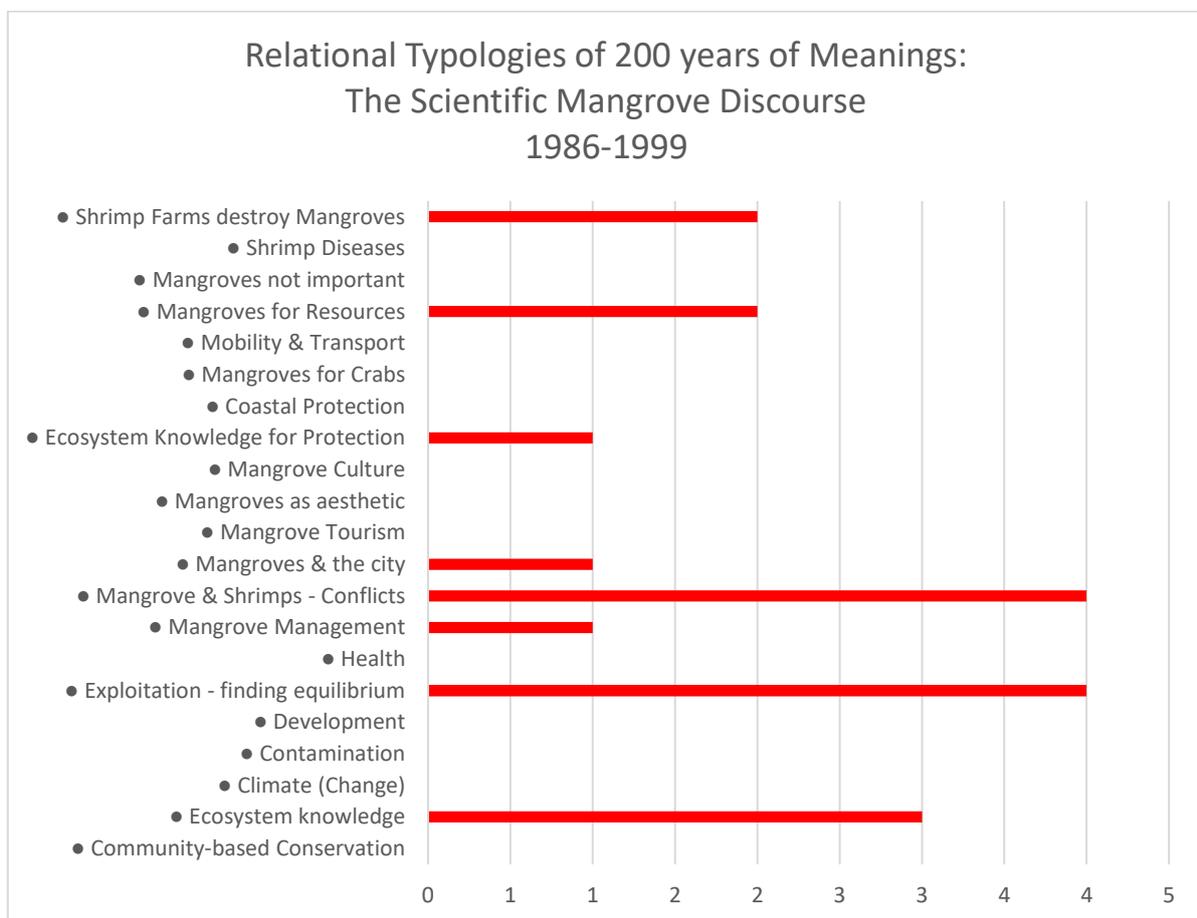
"It is to be hoped that man, by changing the surface of the soil, will also gradually change the nature of the air. The insects will diminish once the old trees in the forest have disappeared and one sees in these barren lands the river banks occupied with villages, the plains covered with pastures and crop fields."⁹¹ (Humboldt 1860 [1815]:157; own translation)

There is no question, that for Humboldt mangroves were fostering "bad health", thus he saw a need for the modernization of nature, for developing it, especially in areas with "bad air" and mosquitos.

⁹¹ Es ist zu hoffen, daß der Mensch, indem er die Bodenfläche umgestaltet, damit auch die Beschaffenheit der Luft allmählich umändert. Die Insekten werden sich vermindern, wenn einmal die alten Bäume im Walde verschwunden sind und man in diesen öden Ländern die Stromufer mit Dörfern besetzt, die Ebenen mit Weiden und Fruchtfeldern bedeckt sieht.

5.3.3 The 1990s: Mangrove Conflicts

Shiva (1992:229) explains that the exploitation of natural resources in the colonies had two phases: First the phase, when resources were abundant and could be plundered seemingly limitless. In the second phase, resources started to become scarce and needed to be “managed” to ensure continuous supply for the trade and industry (ibid.). In regards to Ecuador’s mangroves, however, the extraction of mangrove resources went on smoothly since colonial times, and only some management systems had to be put in place (cf. 6.3). Long after colonial times, in the late 1980s, however, scientific publications start indicating a phase of resource scarcity and conflicts after extreme exploitation of mangrove zones in the context of shrimp farming.



34 Types of the group “b) Mangrove Conflicts from 1986-1999 (Red)” as a Result of the Analysis of 135 Scientific Publications of Mangroves in the Guayaquil area over 200 years.

Conflicts over mangroves appear in the scientific publications from the 1980s onwards with the intensive expansion of shrimp farms and mangrove deforestation for shrimp

production (Hamilton 2019). Ecuador had started exporting shrimps to the world markets which allowed for nearly unlimited shrimp production and increase of shrimp businesses. The export of shrimps had increased according to the Ecuadorian Chamber of Shrimp Producers from 1984 with 21,700 tons to 116,315 tons in 1992 (Robadue 1995:78). The resulting deforestation of mangroves in shrimp ponds fostered imbalances of the ecosystem, affecting also shrimp farming itself at least from the 1980s onwards. A major problem that emerged in the mid-1980s was the scarcity of shrimp larvae - at that time still caught in the wild for the ponds - and bringing half of the industry to an hold (Robadue 1995:78ff.). Therefore, in the early 1980 publications were starting to focus on understanding mangroves from an ecological viewpoint as an ecosystem (Stevenson 1981, Cintrón 1982, Horna 1984).

In 1978 the National Forest Agency had issued the decree 2939-B, which prohibited for the first time to install shrimp ponds in the mangroves (Robadue 1995:26). Before nearly no mangrove regulations existed or the existing ones were hardly implemented. In 1981 new mangrove cutting regulations were issued with forestry law 74 and the Ecuadorian Navy received responsibility for patrolling the law (ibid.). In 1985 the Executive Decree 824 (published Official Register 64 of June) declared mangrove conservation, protection and restoration (ibid.). In the same year also the Fisheries law was adapted according to the previous stated regulations (ibid.). However, mangrove deforestation continued at high speed (Robadue 1995:47f.). A coastal wide Project for the Management of Coastal Resources⁹² financed by USAID and implemented by the University of Rhode Island – Coastal Resource Center in cooperation with the Ministry of Energy and Mines, Directorate General for the Environment (Ministerio de Energía y Minas – Dirección General del Medio Ambiente) was carried out in Ecuador from 1985 to 1993. At that time the Ministry for the Environment did not exist yet and was only established in 1998⁹³. Publications came out in context with this project (Lahmann,

⁹² Proyecto de Manejo de Recursos Costeros

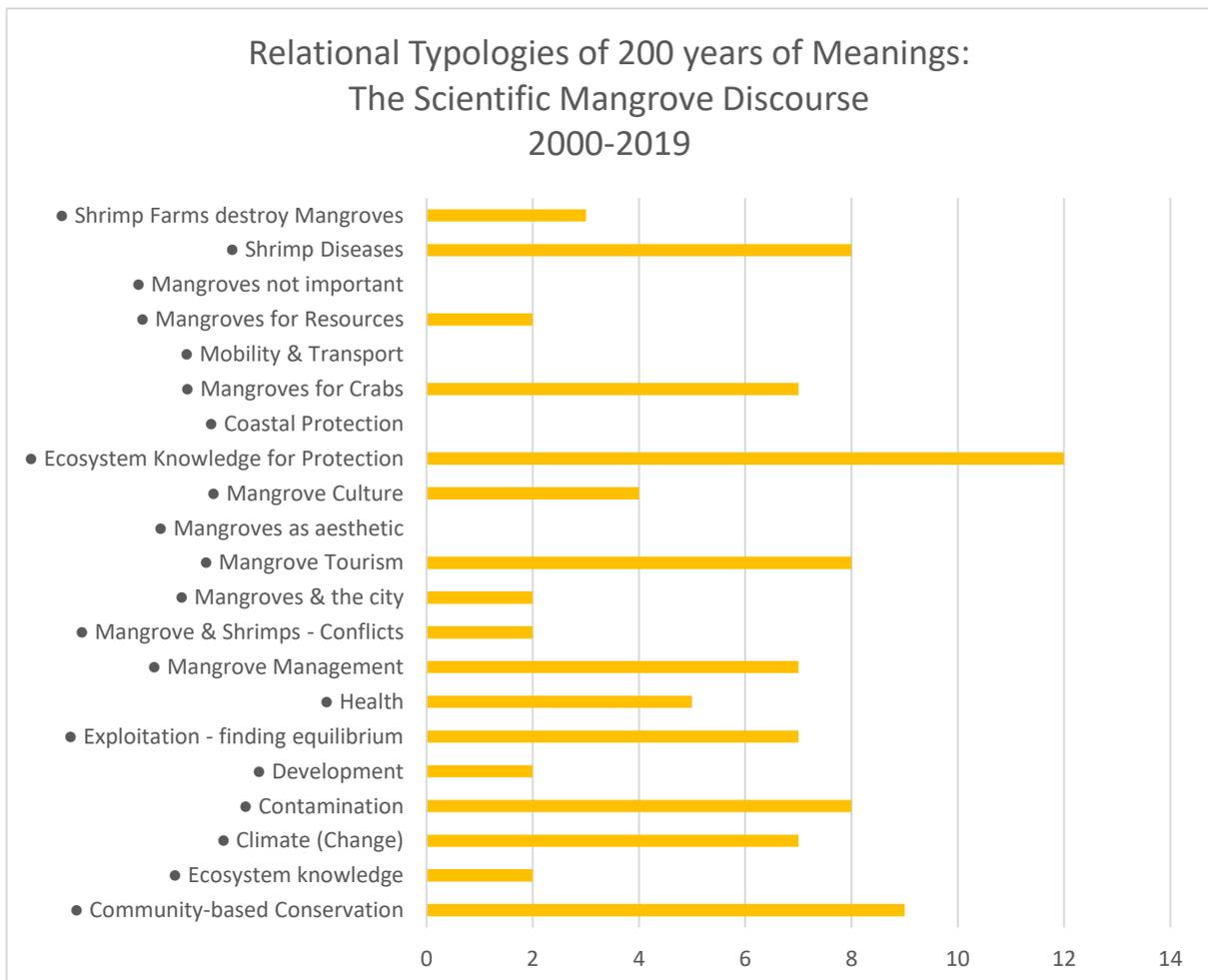
⁹³ [Semi-structured Expert Interview, Male, 01.08.2019].

Snedaker et al. 1987 , Snedaker, Dickinson et al. 1988 - not part of the corpus, Turner 1989) and natural science investigations on the impact of shrimp farming for mangroves began (Horna 1984, Terchunian 1986). Also cultural aspects of mangroves started to be considered: An anthropological project in collaboration with German universities researched fishing techniques in the sample area (Degen 1988). With high levels of migration, social problems in the suburbs of Guayaquil arose from the 1960s onwards (cf. 4.5), showing also a raising interest for example in the politics of water in Guayaquil (Swyngedouw 1997).

In the 1990s more detailed ecological analysis of mangroves (Gara 1990, Félix 1994, Cifuentes 1996, Twilley 1997) appeared in the scientific mangrove discourse and opportunities on how to combine ecology and economy (Hueting 1992, Bell and Cruz-Trinidad 1996, Colburn 1997, Twilley 1998) were discussed. But not only ecology and economy had conflicting interests. Also differing economic interests suddenly came into competition as well. Banana producers and shrimp farmers were engaged in conflicts over a shrimp disease caused by a virus, the Taura syndrome, which initially was thought being caused by pesticide run offs used in banana production (Colburn 1997, Stern 1999). Already with the Coastal Resource Management project the call for "sustainability" appeared as an element in mangrove management and became louder (Bodero 1993, Parks and Bonifaz 1994).

5.2.4 2000s: Mangrove Conservation

With the phase of conflict in the 1990s mangrove wood was no longer used and policy changes were fostered to ensure mangrove reforestation and conservation. This call coincides with the time of the Brundtland Report from 1987 where it states in the first lines that the inability of humans to fit itself into the patterns of the earth's planetary system "must be recognized – and managed." (UN 1987:11, cf. Sachs 1992:24). Shrimps had become the new most important mangrove commodity replacing mangrove wood, and tensions had increased with other mangrove users and over mangrove deforestation in the 1990s (Martinez-Alier 2001, Hamilton 2013, Hamilton 2019 (not part of the data corpus)). It was obvious that better mangrove management was needed and deforestation needed to be enforced. A turning point was probably also the outbreak of plagues in shrimp ponds caused by the monoculture production



35 Types of the group "c) Mangrove Conservation and Management from 2000 onwards (Yellow)" as a result of the Analysis of 135 Scientific Publications of Mangroves in the Guayaquil area over 200 years.

(Jimenez, Barniol et al. 2000, Jimenez, Barniol et al. 2001, Motte 2003, Bayot, Sonnenholzner et al. 2008), for example the highly contagious and mortal white spot syndrome around 2000 (Rodriguez, Bayot et al. 2003, Munoz-Naranjo, Gilbert-Jaramillo et al. 2018). But industrial shrimp farming had turned the mangrove ecosystem into a "one-commodity machine" (c. f. Scott 1998:27) over-exploiting land and water of coastal and estuarine systems. Science got engaged to investigate and understand causes for dysfunction, calling for a "mangrove hygiene" (c. f. Scott 1998:28) to stop the spreading of plagues and to implement a resource management system.

With the increasing disputes over mangrove deforestation for shrimp production, mangrove forests received an increasing attention demonstrated also by the sudden increase of publication numbers. Some publications underline the importance of shrimps as a mangrove commodity discussing shrimp aquaculture aspects (Sonnenholzner and Boyd 2000) - many more publications exist that are not part of this corpus focusing on mangroves. A controversy discussed in the scientific mangrove discourse is, if shrimp farming could become more sustainable in the future and how (Dietrich 2013, Crespo, Calderon et al. 2016, Crespo, Leon et al. 2016, Uzcategui, Solano et al. 2016). Besides the review of policies (Mario, Jose et al. 2015, Ortega-Pacheco, Mendoza-Jimenez et al. 2019), options for mangrove management are being discussed and analyzed (Thomas, Lucas et al. 2015, Manrique, Barragan et al. 2018).

The interlinkage between health and mangroves as known from Humboldt's depictions reappears in various constellations: Ecologists show a rising interest in understanding better effects of environmental pollution for mangrove "health" (Borbor-Cordova 2006, Arcos, Mero et al. 2010, Guimaraes, Betancourt et al. 2011, Fernández-Cadena 2014, Quevedo and F. 2017, Calle 2018, Navarrete-Forero, Morales Baren et al. 2018, Pernia, Mero et al. 2018, Quevedo and al. 2018, Barletta, Lima et al. 2019), or for shrimp farming (Greenberg, Hull et al. 2000). At the same time, new technological devices and systems to supervise shrimp health and to increase "shrimp hygiene" are published (Bayot, Sonnenholzner et al. 2008, Dominguez-Borbor, Chalen-Alvarado et al. 2018, Conforme,

Crespo et al. 2019, Dominguez-Borbor, Ardiles et al. 2019). The mangrove-health-connect also appears in the context of developing the health of communities living in mangrove areas (Silva and Plaza 2014, Avelino and Luis 2015, Mora and Lourdes 2015, Yanza Montalván and Tomalá Espín 2016).

As was already the case in the 1990s ecological research about the mangrove ecosystem as a whole is published (Twilley 2001, Molina and Moreno Pavon 2018, Poveda Burgos and Avilés Almeida 2018), but publications seem to start focusing more on smaller topics and methodologies of mangrove ecology (Alava 2005, Alava and Carvajal 2005, Carvajal, Saavedra et al. 2005, Aguirre, Shervette et al. 2006, Álava, Saavedra et al. 2011, Cornejo 2014, Flores, Licandeo et al. 2014, Rovai 2015, Barrera Crespo 2016, Sierra Apolinario 2016, Ball, Cornejo et al. 2017, Basyuni 2017, Reynaud 2018, Villegas, Mena et al. 2018, Barletta, Lima et al. 2019, Beitzl, Rahimzadeh-Bajgiran et al. 2019, Diringer, Pretell et al. 2019). Only few anthropogenic aspects in regards to the ecosystem are taking into account (Felix 2017). Also new mangrove resource besides shrimps gain importance, for example the mangrove crab (Zambrano and Aragon-Noriega 2016, Zambrano, Aragon-Noriega et al. 2016, Zambrano 2017, Zambrano and Meiners 2018, Schuiteman, Pozo-Cajas et al. 2019) or the mangrove cockle caught by communities living in mangrove areas investigating the effects of shrimp farming on it (MacKenzie 2001). But scientific publications also start analyzing the effects of shrimp farming for communities living in its surrounding (Müller 2013, Latorre 2014, Schönig 2014).

Publications show in general a rising interest in science to understand how humans live in mangrove areas and how they use mangrove resources (Estrella Benavides 2007, Moser 2010, Beitzl 2011, Bauer 2012, Beitzl 2014, Beitzl 2015, López-Angarita, C. et al. 2016). This may also relate to the government having handed over mangrove use and custody rights to communities living in mangroves areas in 2000 and science starting to evaluate it (Leonidas and Arcentales 2013, Beitzl 2014, Patino Chiriboga 2015, Beitzl 2016). In general, publications show a rising interest in cultural aspects of communities

surrounded by mangroves (Smith 2016, Macías Pinargote 2018), in the urban context (Delgado 2013), from an archeological perspective (Pearsall 2016) or in the context of climate change (Chávez 2018). Publications on climate change and its effect for mangroves and people increase in general (Eguiguren-Velepucha 2016, Seillès 2016), for example related to carbon storage loss by deforestation for shrimp farming (Hamilton and Lovette 2015) or for nature-based solutions for sea-level rise (Van Coppenolle and Temmerman 2019).

Authors analyze and argue for connecting economy and ecology in the context of communities managing mangrove zones (Aviles, de la Torre et al. 2019, Aviles, Vera et al. 2019), for example through reimbursements for ecosystem services (Darquea 2016). The policy changes towards conservation made it necessary to look for alternative livelihoods for the communities. So, the interest of scientists in researching eco-tourism opportunities for communities as alternative livelihood strategies is increasing (Diaz-Christiansen, Lopez-Guzman et al. 2016, Munoz-Fernandez, Correa et al. 2017, Maldonado, Caicedo et al. 2018, Carvache-Franco, Carvache-Franco et al. 2019, Carvache-Franco, Segarra-Oña et al. 2019, Moreira, Baquerrizo et al. 2019, Torres 2019). At the same time researcher design utopian-like forms of living (cf. 6.2.3) in the mangroves (Sánchez Toro 2016), including solidarity economy (Pena and Frias 2018) or eco-villages (López Agüera, Domingues Azevedo et al. 2012).

5.4 Summary

The discussion of the publications about mangroves in the sample area since around 1800 until today has shown that some depictions have lasted over time, while others have changed. Some have lasted in their broad theme, but internal variation exist, as is the case for example with "mangroves and health". These changes may relate to changes in every-day life practices in the sample region itself, but can also be traced back to changes in scientific paradigms as for example the development from miasma to germ theory (e. g. Karamanou, Panayiotakopoulos et al. 2012, Lalchhandama 2014).

At the same time also everyday mangrove practices have influenced scientific paradigms locally and beyond. A pronounced example is the changing use of mangrove resources from mangrove wood to intensive shrimp production. Shrimp production in ponds was not aiming for resource extraction, but for changing the ecosystem in a "one-commodity machine" (c. f. Scott 1998:27). The sudden disappearance of mangroves around the city of Guayaquil -and worldwide- has led to an increase in attention for mangroves in everyday life, later in science, shaping also new emphases. One example is that mangrove conservation designates communities from mangrove zones as key actors for management. The increase in pressure on mangrove resources, communities' responsibilities and differing typologies on what is the right use for mangrove areas has clearly contributed to a diversification of scientific publications on mangroves in the sample area. But it was also science's inventions providing alternatives to objects previously coming from mangroves: for example, the use of concrete pillars instead of mangrove logs in foundations for multi-story buildings from the 1980s onwards.

Finally, science has played a significant role in influencing everyday life practices and has even been declared by its protagonists a knowledge supremacy aiming to educate rural communities in the sustainable use of mangrove resources after a phase of resource overuse. In the Ecuadorian sciences also, the international cooperation defines

objectives and finances research, at the same time supporting own interests. In congruence with the "Westerner" / "native" divide proposed by Said (1993:223), in the case of Ecuadorians mangroves there seems to be a city-rural divide as historically explicable (cf. Canizares-Esguerra 2005:69). Albeit mangrove inhabitants were often not actively involved in the overexploitation, they were identified as important actors in the implementation of resource management in mangrove areas as supported by international cooperation.

VI THE HISTORICAL SETTING: EVERYDAY LIFE PRACTICES OVER TIME 1800-2019

6.1 Introduction: Mangroves and Culture

„Guayaquil isn't more than a mangrove swamp with the attitudes of a city. “

(Estrada Ycaza 1995:56 [translated from Spanish AB])

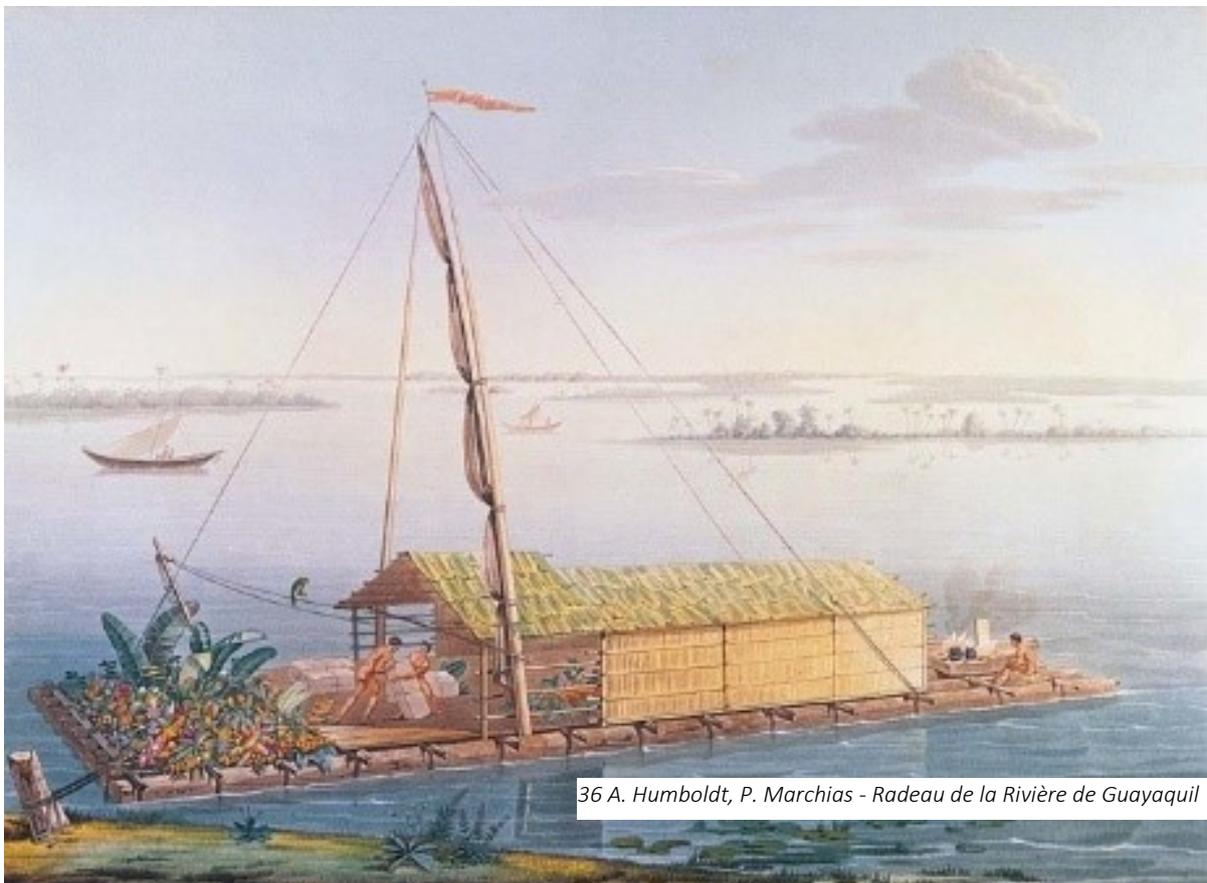
Living within the estuary system of the Guayas River shaped cultural practices of residents over time until today. The historical foundation – the *dispositif* – of today's mangrove discourses is the stage on which mangrove practices have evolved. The realization that culture is closely linked to the conditions of the natural environment is hardly surprising, however. There are several important works that have already dealt with this subject in depth in the case of mangroves. Already in 1984 in a conference on mangrove governance Saenger (1984), Veal (1984) and Bailey (1984) discussed different meanings of mangroves in Northern Australia, and its effects for coastal governance. Saenger (1984:16f), using quotes from naturalist's travel accounts and modern literature, classified four types of perceptions on mangroves: Fear/Nuisance, Sinister mystique, scientific curious and utilitarian (Saenger 1984:16).

In the Latin America context, Viegas shows the ritual and social importance that crab collection and consumption in the mangroves has for the Tupinambá in Brazil and how it contributes to their social construction of kinship, territory, body and identity (Viegas 2010). Alves shows in his dissertation a media ethnography on crab fishers in Vitória, Espírito Santo (Alves 2004). Koedam et. al. analyzed how a Dutch landscape painter in Brazil, for the first time in science, painted mangroves in detail in the 16th century (Koedam, Dahdouh-Guebas et al. 2016).

In the Spanish-speaking South America context exists an ethnographic account from Colombia by von Prah et. al. (1990). Additionally excursions exist on the social construction of mangroves within a broader research objective, for example Oslender refers to mangrove meanings within Afro-Columbian communities' identity and resistance formation (Oslender 1999, Oslender 2003). Giraldo Herrera writes about cultural reflections of the Pacific Ocean in music and dancing practices, including

Colombian communities living in mangroves (Giraldo Herrera 2009). The imagined borders of territory in the mangrove forests on the Ecuadorian-Colombian border are described by Velásquez (2014) and Orcés analyses the use of mangrove products from a gender perspective in Esmeraldas, Ecuador (Orcés 1999). In this chapter, I want to show the connection between historical and contemporary practices in the MangrovesCultures of Guayaquil, and highlight relevant developments having influenced the way how today's discourses have evolved.

Firstly, the long history of trade and commerce in Guayaquil and the whole coastal region is particularly noteworthy. Settlements on Puná Island from the Middle Valdivia phase (around 2000 BC) (Porrás 1973, cf. Stahl 2003:184) suggest that already back in pre-historic times the waterways of the estuary system were a territory of people navigating and trading around the islets. Already in pre-colombian times a trading network existed along the Coast of today's Ecuador consisting of various indigenous groups, of which the Huancavilcas that settled in today's Guayaquil area were especially



36 A. Humboldt, P. Marchias - Radeau de la Rivière de Guayaquil

influential (Estrada 1957, Marcos 2005). Thus, it is hardly surprising that trade in Guayaquil is still of utmost importance today. The history of trade also suggests that the Spanish colonizers used and built on existing practices in Guayaquil when they arrived.

In addition to the use of waterways for transport and trade, other practices also developed in response to the natural conditions within the Guayas River delta. For example, the construction of houses on stilts evolved as a reaction to the seasonal floods still occurring today in Guayaquil and in the communities. The river was also known for bringing in much drift wood and “vegetable materials [...], huge tree-trunks and floating islands” (Guppy 1906:488) to the Gulf of Guayaquil and finally to the open waters of the Pacific. This natural occurrence only made the development of balsa rafts possible: Tree trunks that came floating into the Gulf of Guayaquil included balsa wood, *Ochroma piscatorial* (Estrada 1990:148), serving as the wooden base of the famous balsa-floats of the Ecuadorian residents of the coast (Estrada 1990). Also, Humboldt had sketched a *balsa*, a picture later elaborated by Marchias (Pic. 38). Mangrove wood was used in balsa floats as cross braces joining the Balsa trunks together⁹⁴. Up until today there is people knowing and appreciating the floating capacities of *balsa* in water, as does for example an Ecuadorian surf board shaper in Manglaralto, having brought balsa into modern times and “building surfboards from balsa wood”⁹⁵.

In the following chapter and after this short introduction I will present more examples which show an interconnection of natural conditions and cultural practices in the sample mangrove region. I will first discuss ethnicity under this perspective analyzing identity constructions of mangrove user groups followed by a contextualization and discussion of the “ancestrality” discourse that developed in recent decades in Ecuador (cf. 6.2). The rights to access natural resources in Ecuador’s history has strongly been influenced by belonging to a certain ethnic group (e. g. Middleton 1979:318, Coronel

⁹⁴ [Expert Interview, Guayaquil, Male 29.03.2021]

⁹⁵ construir tablas de surf en madera balsa [Interview, Expert, Manglaralto, Male 07.10.2019]

Valencia 2011). The question of ethnicity, affiliation and stereotyping of mangrove user groups is therefore a fundamental one for this research that needs to be addressed thoroughly, as it has influenced the use of mangroves over time up until today. After a brief history and anthropological description of the communities in the rural mangroves (cf. 6.2.1), I will first attempt a ethnic deconstruction and historical positioning of Guayaquil within Ecuador (cf. 6.2.2), in order to then develop a microanalysis of Guayaquil's society in relation to mangroves (cf. 6.2.3). In the next section I elaborate on the development of the practice of cutting mangrove wood since colonial times on this premise (cf. 6.3). Subsequently I will present an overview on the importance of mangroves for alimentation in the area (cf. 6.4), followed by introducing understandings of health and disease in the communities connected to mangroves (cf. 6.5). I will close the chapter with a short summary.

6.2 A Mangrove People? Ethnicity in the Mangroves

*"[O]ver stagnant, dead water and among thick, leafy trees, these houses are so sickly that many people die in them. Entire families disappear in an instant and infect the main city every year. They are also politically and morally detrimental, because in these neighbourhoods evildoers have safe confinement and are inaccessible most of the year to the investigations of the judges and the administration of the sacraments."*⁹⁶ (Laviana Cuetos 2006/2007:51: Military engineer Francisco Requena in a representation to Governor Ugarte in 1772.)

6.2.1 Characteristics of Mangrove User Communities in the Rural Mangroves

Although the region shows archaeological traces of early settlements, I could only trace back recent historical documentation and oral history of the communities' settlements in the inner estuary until around 1900 (Flores 1953, Degen 1988:10).⁹⁷ Today's residents appear to have arrived coming from the Santa Elena Peninsula around that time, especially from the Village El Morro and surrounding settlements on the Southern end of the Santa Elena Peninsula (ibid.). Therefore, I will sum up some cultural aspects of the inhabitants of El Morro during colonial and Republican times and trace back the movements of inhabitants towards the inner estuary of the Guayas River. People from El Morro were described during colonial times as "very famous and highly skilled seafarers, sought after and highly paid by all ship owners"⁹⁸ (Garay Arellano 2004:206; own translation). Flores' descriptions from El Morro, in the late 1940s, although couched in a rather pathetic language, show a surprising similarity with the cultural practices I experienced today in the communities in the mangroves (Flores 1953:117-123, 163f., 171ff.).

Degen quotes Flores when he describes the first settlers coming from El Morro into the inner estuary in 1890 (Degen 1988:10). Even though Flores does not say clearly that people went to the inner estuary, he does describe how a severe drought led to a

⁹⁶ "[S]obre agua estancada y muerta y entre árboles frondosos y tupidos, estas casas son tan enfermizas que mueren en ellas mucha gente, se desaparece en un instante las familias enteras y contagian anualmente a la ciudad principal, siendo también perjudiciales para lo político y moral, porque en estos barrios tienen segura reclusión los malhechores y son inaccesibles lo más del año a las pesquisas de los jueces y a la administración de los sacramentos [...]" Ingeniero militar Francisco Requena en una representación al gobernador Ugarte en 1772.

⁹⁷ [Interview, Community, Male 12.01.2020]

⁹⁸ marinos famosísimos y muy diestros, buscados y muy bien pagados por todos los dueños de las naves

“diaspora” of inhabitants to Guayaquil, Playas and other villages in the surrounding in between 1890 and 1910. He explains the reason for an extreme drought in the overuse of the wood resources of the zone caused by a great demand for wood to rebuild Guayaquil after the great fire in 1896, combined with a year of drought in 1895 (Flores 1953:177-180). The wells went dry and the cattle breeding collapsed (ibid.). The prevailing stories in the oral tradition in the communities also bear witness to similar motives of resource scarcity and economic opportunities: One is that residents of the El Morro region were hired to work on a cattle ranch in the inner estuary⁹⁹ (cf. Aguilera Malta 1955 [1933]). A second one is the recurring story that individual men ventured into the inner estuary in search of wood to build boats, and in the process discovered the food wealth (fish, oysters) of the mangrove region¹⁰⁰.

Both in the past and in the present, the residents are characterized by diverse economic activities and a combination of subsistence, artisanal production and trade of natural resources. Besides their involvement in cattle and mule breeding, people from El Morro were also documented as fisher, carpenters, boatbuilder (Flores 1953:172f.). In the late colonial, early Republican time they also traded salt from the nearby salt-springs¹⁰¹ (Flores 1953:32) and made hats from *paja toquilla*, a palm leaf, today known colloquially as “Panama hats” (Flores 1953:34). Especially women were also involved in the production of cotton, which continued for community use until recently¹⁰² (Flores 1953:174, Alvarez 2001:251). Flores already underlines that the cultural practice of agriculture was never of too much importance (Flores 1953:172f.).

Community inhabitants report that in the sample area a burial site had been found a few years ago, which was not investigated scientifically¹⁰³ (Degen 1988:9). During my field work some ceramic fragments of this site were kindly analyzed by the ESPOL

⁹⁹ [Interviews Elderly People, Community, Male and Female 27.07.2019, 02.08.2019, 01.09.2019]

¹⁰⁰ [Interviews Elderly People, Community, Male and Female 27.07.2019, 02.08.2019, 01.09.2019]

¹⁰¹ [pozos]

¹⁰² [Interview, Community, Female 28.10.2019]

¹⁰³ [Transect Walk, Community, Male 17.08.2020]

archeologist Dr. Jorge Marcos in agreement with a representative of JUMAPACOM. He assured that the remains come from the Regional Development phase, referring to cultural groups living around 500 B.C. and 500 A.C..¹⁰⁴ The community living in the area state, however, that the island was unpopulated when the founders arrived around 100 years ago.¹⁰⁵ An explanation could be the effects of natural disasters, like floodings and volcanic eruptions, that forced the resettlement of former groups in the early colonial time (McEwan and Delgado-Espinoza 2008:505f).

The political structure of the communities is best described as a segmental society - or a "clan" society¹⁰⁶. The term "clan" was coined by Durkheim and then later applied to African societies by British anthropologists (e. g. Evans-Pritchard 1990 [1951]). Durkheim defined clans as "the horde which has ceased to be independent by becoming an element in a more extensive group" (Durkheim 1960 [1893]:175), "segmental societies" are accordingly "constituted through an association of clans" (ibid.). In this form of society, the clan has a family-like character, even if not necessarily related by blood, while just as prominent is its concurrent political character (ibid.). Even without blood relations, residents of the sample area consider themselves related to neighboring settlements¹⁰⁷ (Durkheim 1960 [1893]:176).

Politically, clan systems are acephalous and political power is strongly influenced by age. Having said this, the practice seems to change with the present generation and new young community leaders¹⁰⁸. I also witnessed egalitarian practices (Woodburn

¹⁰⁴ [Transect Walk, Community, Male 17.08.2020; Phone call with Dr. Marcos 25.09.2020]. Dr. Marcos connects the remains found to research done by the US-American Archeologist Dr. Thomas Aleto from the University of Illinois, who studied the "Guayaquil Phase" on the island of Puná. Aleto describes two archeological sites on the island Puná located in mangrove surroundings, one close to an estuary called Estero Cauchice (Aleto and Elwell 1990), the other directly at the Gulf of Guayaquil. Both belong to the Guayaquil Phase Aleto and Elwell 1990:12), a phase of the Chorrera Culture (Parducci and Parducci 1970, Parducci and Parducci 1975, Aleto 1988). Chronographically this phase was roughly around 850-50 B.C. (Raymond and Burger 1995:514f). This may indicate that the mangrove islands in the sample region were used by Pre-Colombian Groups at least as burial site around 850-50 B.C.

¹⁰⁵ [e. g. Interview, Community, female 29.10.2019 ; Interview, Community, male 12.01.2020]

¹⁰⁶ [Interview, Guayaquil, Male 25.11.2019]

¹⁰⁷ [Various Informal Talks, Community]

¹⁰⁸ [Transect Walk, Community, Male 28.10.2019]

1982): For example the understanding that mangrove resources belong to all clans (cf. Durkheim 1960 [1893]:175f.), and in terms of economic practices, that all genders are allowed to fish, at least at a young age¹⁰⁹. However, due to the role attribution of women to take care of the household and children, this access is weakened in women's later years due to immobility. At the same time, I witnessed critique by women that husbands did not allow women to participate in economic activities outside the village (in this case crab catching) when the children had grown up¹¹⁰. The women expressed here their understanding of having the equal right of participating in any economic activity, which was also agreed with by men¹¹¹. Marriage rules are endogamous, meaning marriage within the society is permitted.

Durkheim elaborated that in a segmental society the individual clans must resemble each other in order to create a sense of community, but at the same time they must also differ from each other in order not to merge into one another (Durkheim 1960 [1893]:177). The commonalities of the clans in the mangrove area can be seen in their similar lifeworld and practices, for example in their common past as mangrove cutter and in the way the settlements are organized. But especially with the increasing resource scarcity the pronouncement of differences has increased, for example in the involvement of the management of the mangrove concession ASUC. Also, the emergence of new and innovative practices is expressing individual differences between communities¹¹², leading to a varying level of integration into the capitalistically organized society. Examples include the level of engagement with the shrimp industry, with some communities providing boat services and working as day laborers, others not.

There is evidence that the groups living in the communities in the mangroves today have a connection to pre-colombian ethnic groups, but centuries of colonial and post-

¹⁰⁹ [Interview, Community, Male 02.08.2019]

¹¹⁰ [Interview, Community, Female 30.08.2019]

¹¹¹ [Interview, Community, Male 02.08.2019]

¹¹² [Interview, Expert, Male 12.01.2020]

colonial development have blurred this shared history beyond recognition for outsiders. Flores has called the people of El Morro around 1940 still “indios morreños” (Flores 1953:33) that have forgotten their language (Flores 1953:164). The missionary will of the Catholic Church has certainly contributed to the disappearance of an “indigenous” culture as priests have been doing their mission in the village at least since 1761 (Flores 1953:148ff.). The resistance, however, of the inhabitants of the Santa Elena Peninsula, the Huancavilcas, against the Spaniards was expressed above all in the apparent adoption of cultural practices and values, which were then applied from within for their benefit (Alvarez 2001)¹¹³. In the case of the communities in the inner estuary I argue that this strategy was quite successful, since the outside adaptation resulted in the maintenance of cultural practices, expressed for example by an own mangrove meaning world today.

¹¹³ For an overview of the complex ethnic adaptation strategies in the region during the colonial period see Alvarez 2001.

6.2.2 Political and Power Aspect of Ethnicity: A Micro and Macro Perspective

Ethnicity in Ecuador has been researched from various angles (Middleton 1979, Smith Belote and Belote 1984, Colloredo-Mansfeld 1998, Ibarra 1998, Rahier 1998, Espinosa Apolo 2000, Muratorio 2000, Rivera Velez 2000, De la Torre 2002). *Mestizos*, a term once used to create a national sense of belonging in Ecuador, in fact created a binary system of “white mestizos” and “the mass”, while indigenous and all other ethnic groups were included in the latter (Colloredo-Mansfeld 1998, Roitman 2009). Albeit the discussion about diversity in Ecuador has increased in recent years, the stereotyping of certain groups continues (Novo 2014:122). “Indigenous” are constructed in a rather passive way as subordinates of the Nation State who are lacking opportunities to obtain civil rights and ensure access to natural resources (ibid.). In practice the (white) *mestizos*, in reality mostly people living in the urban centres or with European colonial heritage, are still often seen in society as more “advanced” than other groups (Novo 2014:119f., 122).

Collard-Mansfeld thus argues that it is not only ethnicity but also class structure, that needs to be considered (Colloredo-Mansfeld 1998). Especially Roitman’s work about the “white-mestizo”, the upper-class Guayaquilenos (Roitman 2009), and the history of land rights and subaltern politics in the Guayas province (Coronel Valencia 2011) have been helpful for this work to understand and describe the position of mangrove users in the ethnic map of Ecuador.¹¹⁴ Ethnicity I understand here as a sense of affiliation to a certain group based on similar cultural practices.

The distinct regionalism between Quito and Guayaquil -still prominent today- developed along historically grown ethnic and political stereotypes between the capital city and the commercial centre of the region. In historic accounts the building of an Ecuadorian National state is described as a coherent and functioning process (Coronel

¹¹⁴ People living in the communities were occasionally labeled “cholos” during my field research or in literature. I do not use the term due to its political ambiguity as elaborated earlier [Kick-Off-Workshop discussion with Mangrove User Community Leaders, 15.07.2019; Interview Female Inhabitant Community, 28.07.2019, Recorded Interview and spontaneous discussion at the dock of community A, 28.10.2019].

Valencia 2011:47ff.). The description often leaves out the regional challenges and the fragility of the Ecuadorian state in the periphery, far away from the capital (ibid.). In Guayaquil, the economic elites were in fact working against the newly established State shortly after independence: Alliances between hacienda owners and the Republic were fragile and the privatization of state resources by the elites was preferred over building up the new country (Coronel Valencia 2011:947ff.). Unsurprisingly it was the well educated and wealthy elite of Guayaquil with its links to international trade starting to uprising against the government, for example in the "March Revolution" in 1845 (Coronel Valencia 2011:118).

The "aristocracy" from Quito in return used ethnic attributions to deligitimise Guayaquil's attempt for power: The leaders of the "March Revolution" were the businessmen Vicente Ramón Roca and Diego Noboa, who were discredited through their heritage and their economic activity, "as social climbers" with "mixed blood" doing "undignified businesses" (ibid.).

Similar ethnic stereotypes describes Middleton in the 1970s with the term "montuvio". The "rural dweller of the coast is depicted as an independent, violent person who is not really humbled by class differences, [...] a racial hybrid who is melancholy, oversexed, and hopelessly attached to his machete, which he readily uses in his many fight" (Middleton 1979:318). The term "montuvio" is used within Guayaquil as social pressure regardless of class belonging, discrediting anyone not behaving appropriately and restricting thus access to scarce resources (ibid.). In return, the capital's society, shaped by administration and politics, is belittled by its alleged docile subservience (ibid.). Similar stereotypes still appear today in the discourses between shrimp farmers and the central government, as shows this statement from an Ex-National Politician from Guayaquil:

"[I]n Quito they hate shrimp farmers, because it is a stigma, to produce and to be a shrimp farmer. It's a bad word. It is for them almost like being a criminal. That really is true. Explanation: It reminds them of how useless they are, and the parasites that they are. And that makes them angry. It's like envy."¹¹⁵

This regional positioning of shrimp farmers from Guayaquil in relation to the Capital is important to consider when it comes to mangrove use, as mangroves are the property of the Ministry of the Environment, which is part of the central government based in Quito. At the same time mangroves only occur far away from the highland capital along the coast.

Hall underlines that difference and binarity is fundamental to the creation of cultural meaning (Hall 1997:236), but that it also can be the foundation for negative practices, as "[s]table cultures require things to stay in their appointed place" (ibid.). While the Andean elite after independence sought closer ties to the catholic church to control the indigenous population in textile production and subsistence agriculture, the Coastal elite had an interest in the liberalization of labour and commerce to find employees for cacao production (Roitman 2009:17). Political and economic power were linked, a condition again with roots in colonial history. Spanish colonial Officers had the combined role of economic and political actors (Argones 1985:13), which was often not overcome with independence. Instead each region's political and economic elite had specific interests shaping their political interaction with the inhabitants.

The combination of these pre-conditions resulted in Guayaquil in a society discursively constructed into the "oligarchy" and the "mass" and a binarity based on fear as Roitmann worked out empirically (2009:17ff.): The mass was afraid of what the oligarchy might steal, the oligarchy was scared of what the "mass" might destroy when uprising. The main challenge of these politics of "mestizaje", as Roitman calls it, namely of mixing discursively diverse ethnic groups in one "mass", is that it de-racializes

¹¹⁵ "[E]n Quito odian los camaroneros, porque es un estigma, producir y ser camaronero, es mala palabra, es casi como ser delincuente para ellos. Ciertamente. Explicación: Le recuerda a lo inútil que son ellos, y los parásitos que son ellos. Y eso le da rabia. Es como una envidia." [Expert Interview, Male, Ex-National Politician from Guayaquil, 23.01.2020]

discrimination of lower-class mestizos and thus is not researched or recognized as such (Roitman 2009:6).

6.2.3 Mangrove "Wilderness": A discursive construction of "ancestral" mangrove users

In recent years, there has been a movement in Ecuador, and in the whole of Latin America, aiming to reclaim ethnic group rights for natural resources. Also today an organization of the Ecuadorian Mangrove Movement suggests in an interview to reconstruct the history of the "cholo" people, as having derived from the Huancavilca, arguing, that "[w]hen you build yourself historically and culturally in a territory, that gives you ancestry"¹¹⁶. This development was viewed with concern by the economic elite in Guayaquil, as the "cholo" started using "ethnicity as a means to appropriate what had previously been denied to them by the very ethnic structure they are now emphasizing" (Roitman 2009:141) and created their indigenous identity as a political tool (ibid.). In the course of this movement, also the "people of the mangroves", especially of the province of Esmeraldas, declared themselves ancestral and thus righteous user and inhabitants of the mangroves with the construction of a "multiracialized indigenous ecosystemness" (Latorre 2013:85):

"The ancient peoples and communities of the mangrove ecosystem of the Ecuadorian Coast [...] declare: to reaffirm our status as Ancient Peoples in light of the Ecuadorian Constitution and the Ancestral Law [...] The destruction of the mangrove ecosystem is the main threat to our rights and our territory; we demand measures to stop the industrial activity conducted by the Shrimp Aquaculture."¹¹⁷

Nature thus became a central reference point in the cultural identity building politics of that time, also of the "ancestral" mangrove users, and a tool to negotiate for resource rights with the Nation State (Smith 2016). Besides the handover of use rights of the mangroves to the communities in the sample region, it also resulted in Ecuador being the first country that introduced nature, or "Pacha Mama" in the State Constitution (2008) as a subject with own rights (Assembly 2008 Chapter 7). However, there are also critical voices that call these processes ventriloquism, meaning that in these processes

¹¹⁶ "Cuando tú te construyes histórica- y culturalmente en un territorio, eso te da la ancestralidad." [Interview, Guayaquil, Male and Female 11.09.2019]

¹¹⁷ "Declaration Ancestral People of the Mangrove Ecosystem" 2007, Translation S. Latorre (Latorre 2012:20)

non-indigenous speak for indigenous people, to achieve ownership for example of natural resources in indigenous territories (Martínez Novo 2018).

“Wilderness” I understand not as a landscape, but as a romanticized, utopian-like construction of a counter pole worthy of protection to the advancing civilization, urbanization and “the ecological crisis of modernity” (Latour 1993 [1991]:3ff., Cronon 1996, Lewis 2007). A key element of romanticism, and especially of German romanticism, was the belief that nature can refine the human being: “That a life, which is inspired by nature resp. the beauty of nature, is also a ‘good life’” (Gebhard 2012:31 own translation)¹¹⁸.

The turn towards the experience of nature as something exclusively positive became only possible due to the separation between humans and nature through science and technical progress (ibid.). Therefore, the prevalence of science and technology in the mangroves, resulting in overuse and significant loss of the mangrove landscapes, coincides with peaks in romanticized mangrove depictions over the past 200 years in the sample area: Firstly, in the early 1900s in the overuse of mangrove wood (cf. 6.2.1), secondly, with the peak of deforestation and contamination of mangroves in the late 1980s, early 1990s, as I will discuss in more detail later. A vivid example of “mangrove wilderness” is the book *Don Goyo* (Aguilera Malta 1955 [1933]) written by the upper-class author Aguilera Malta from Guayaquil. Since the book was often mentioned by representatives of the mangrove movement, it most likely has influenced the romanticization of mangroves and communities within it. The following exemplary excerpt shows well the romanticization of mangroves, and how inhabitants are “naturalized”, too:

“[...] the oldest *mangle* [mangrove] on the islands –its voice strange and sad spoke: - we are going away, Don Goyo. Going away. The evil White Man has come. Has come to uproot us from the earth we were born in, has come to corrupt us with gold that makes slaves, has come to make us enemies of each other, even though your race and mine have always lived together, and always were loving and beloved. [...] Don Carlos woke up. [...] Slowly he came to understand that was what the White Men wanted when they had come to work on the islands: to rob the *cholos* of what was theirs; to make them work for the White Man’s benefit, to wait quietly in their houses for the *cholos* to bring them stumpwood, or firewood, or mangle bark, so they could buy it for a pittance

¹¹⁸ cf. also Kant (1790): *Kritik der Urteilskraft*

and then sell it for much more in Guayaquil. Yes, it was true, undoubtedly true. The day would come when there wouldn't be a stick of mangle left, nor a place on the islands in which the poor *cholos* could live."¹¹⁹

It describes an inequality and injustice between "the white man", who represents the "white mestizo" invading "mangrove land", and the "cholo", the "non-white" that have "always lived together [with the mangrove], and always were loving and beloved". The "white mestizo" appears as the negative pole of modernity, stereotyped as money-oriented capitalist, dominant and using unfair means. The "cholo" in contrast represents nature, worthy of protection, and in balance with the mangrove landscape, depicted as innocent and unable to uprising against this force.

Aguilera Malte elaborates an ambivalent symbolic depiction of the use of nature in its two extremes, domination versus submission, which as well reflects the ambivalence of the human psyche itself (cf. Gebhard 2012:39). Gebhard argues that it is perhaps precisely this reflection of one's own ambivalence that allows humans to experience nature as so positive, since human's own ambivalences loses its dread (ibid.). In other words, the ambivalence of modernity in Guayaquil could be projected particularly well into the surrounding nature as a place of "sentiment" (Benavides 2006) and longing.



37 Mural in an Ecuadorian tourist town on the coast depicting the romanticized "Half Man-half Mangrove"[Picture taken 06.02.2020]

Already on the first page of the book Don Goyo appears another example of the naturalization of mangrove communities:

"They had set out the *mangle*, the mangrove stakes early, in the shifting mud of the inlet. Half man, half fish, their naked bodies-streaming, magnificent- were like the young mangles, veined and knotty." (Aguilera Malte 1955 [1933]:1)

People of a community in the rural mangroves are represented as "half man, half fish" and their bodies are like the "young mangroves". Nature and culture merge into one in this representation, but in comparison to the modern culture of Guayaquil, they

¹¹⁹ Demetrio Aguilera Malte, DON GOYO English ed. [1909] 1980:90ff.

equate the inhabitants of the mangroves with nature, constructing them as the paradise to return to. This romanticized depiction of people who are half nature-half mangrove is present today still and can be found for example, as a mural in a backpacker tourist town on the coast (Pic. 39).

Holders of mainstream discourses, for example the urban elite, scientists, tourists and international NGOs, thus integrate the inhabitants of the mangroves as part of “mangrove wilderness” into nature and conserve them as passive, romanticized groups. Power structures are reproduced, refusing agency to the mangrove communities themselves to decide what knowledge and practices may be integrated into their own epistemes.

6.3 Cutting Mangroves: Forced labour and a way of life

As early as around 1700, mangrove rods were exported from the port of Guayaquil to other parts of the colony (Hansen-Holm and Pino-Roca 2009:222). Cutting and logging mangroves was done for various different purposes over time. Mangrove wood was used in the construction of housing, bridges and estuary infrastructure (Simmons 1916).¹²⁰ With Guayaquil constantly expanding (Laviana Cuetos 2006/2007) and having burned down various times, there was an never ending demand for mangrove wood for their durability in brackish water (Chavez Franco 1985:X, Morán Ubidia 1988:23). With no electricity around yet 200 years ago, the wood and charcoal of the mangroves were additionally important in the city.¹²¹ Mangroves were used in ship construction (Cornejo 2014:28f.), for light poles¹²², for railroad tracks (Degen 1988:12) and is used until today for various household purposes¹²³ and fishing practices (Degen 1988)¹²⁴. Up until today some elderly inhabitants of the islands still produce charcoal¹²⁵, an activity that used to be a work also women could do in their socially ascribed role of taking care of children¹²⁶.

Apart from the high demand for mangroves in Guayaquil, reports document that mangroves were also exported, for example to treeless coastal Peru (Stevenson 1825 [2011]:138). Little surprising hence that evidence shows from the 17th century onwards that wood resources had become scarce in the surrounding of Guayaquil (Stevenson 1825 [2011]:128f., Morán Ubidia 1988:21). Although nature conservation or management appears often as a fairly new topic that emerged since the 1970s, the overexploitation and subsequent regulation of natural resource use has a history dating as far back as ancient times not only, but also in the Americas (e. g. Simonian 1995,

¹²⁰ [Interview, Guayaquil, Male 23.01.2020]

¹²¹ [Interview, Guayaquil, Male 22.01.2020]

¹²² [Expert Interview, Guayaquil, Male 21.01.2020]

¹²³ [Interview, Community, female 28.07.2019, Participant observation Community]

¹²⁴ [Transect Boat ride, 03.08.2019]

¹²⁵ [Research Diary 27.07.2019; own observation]

¹²⁶ [Interview, Community, Female 30.08.2019].

Foster 2000, Miller 2007, Jacoby 2014). First wood management systems in Guayas were established for example already by the Cabildo in 1660, restricting use and punishing fraud with strict fines and even exile (Morán Ubidia 1988:21).

During Spanish colonial times systematic mangrove felling strategies were introduced to meet the demand for mangrove wood. A manuscript in the Archives of Guayaquil (AHG) written by Joseph Morán de Butron “the Executor of the city of Guayaquil and defender of the Indians”¹²⁷ describes in the early 18th century this process. At the same time he criticizes the hardship that “indios” (a formerly used Spanish term for “indigenous”) from Puná Island and Machala had to suffer when cutting mangroves for the Spanish crown. In addition to providing an insight into the beginnings of mangrove cutting and a starting point of what later became a way of life for people in the zone, the document also allows conclusions to be drawn about the political role of indigenous settlements in the sample area. The manuscript is called “The Indians of Puná and Machala, about [...] to be exempted from the work of removing mangroves and stands that is forced on them with grave prejudice”¹²⁸ of which this is a small excerpt:

“[...] I have been informed of the miserable state in which they find themselves with their wives and children without having a place to work, to dress, eat and repair their houses, to such an extent that they have come to want to absent themselves from their villages, leaving them deserted. All of this is caused by the immense work that they have been doing for more than seven years, tearing down mangroves and carrying them on their backs, stuck in these [flooded] islands and because of the thickness of their [forests], and among (?) the roots of the mangroves, carrying the sticks and sills that are asked of them, with very serious danger to their lives [...]. They are exposed not only to the disease that results from the continual wetting they experience, but even more so to the danger of their lives when they cut down other mangroves below or cut their feet with axes or drown in their diggings [...]”¹²⁹

The title of the manuscript indicates that the indigenous population was forced to work as a tribute to the colonial power: A common practice during colonial times and already in the Republican years in the Guayas area (Townsend 1997:53, Townsend 2000:52). It

¹²⁷ [Historic Archive of Guayas, 1730, Manuscript No. 1862, AB own translations]

¹²⁸ [own translation AB]: “Los indios de la Puná y Machala, sobre [...] se les exima [sic!] del trabajo de sacar mangles y soleras a que se les obliga con grave perjuicio”

¹²⁹ [Historic Archive of Guayas, 1730, Manuscript No. 1862, AB own translations]. Question marks stand for questions of correctness in deciphering the (handwritten) manuscript

was also common throughout colonial times to send labour groups out far distances to harvest timber and valuable plants (Murra 1946:814, Newson 1995:251f.) But the decreasing population numbers along the coast, especially due to diseases brought into Guayaquil's port from the arriving ships, resulted in a severe decrease of people that could be taxed for work (Newson 1995:256ff., Townsend 2000:53) – and a need to improve conduct by the colonial power. Additionally the inner estuary served as a politically relevant puffer zone, protecting the city of Guayaquil from invasions (Degen 1988:9f, [E. Estrada Manuscript]). The resident population assumed a role either as guides for the invaders through the mangroves, or as an entity that warned the city of attackers (ibid.). Hence to secure the mangrove supply and to protect the city and the trade routes, it was important to keep a good relationship with people of the area and the population needed to stay loyal to the city's authorities. The manuscript states the concern that "because of this predicament, of so much work that other Indians must do, has spread among many of them to withdraw from their villages"¹³⁰. The political elite feared loss in mangrove supply, but also betrayal and resistance. This fear, however is combined with a Christian message of compassion protecting the "indigenous".

I additionally argue that this manuscript documents a change in discourse, changing mangrove cutting from a forced labour tax, to an independent, entrepreneurial economic activity carried out by the "indigenous" themselves: Building on culturally existing practices of trade and economic diversification within indigenous culture, this mangrove cutting economy could only develop because of their politically relevant location in the mangroves near the city and because of the high demand for mangrove wood. Eggers reported already in the late 19th century that whole families were at that time living on balsas in the mangroves South of Guayaquil and making a living from cutting and transporting mangroves (Eggers 1892:51).

¹³⁰ [Historic Archive of Guayas, 1730, Manuscript No. 1862, AB own translations]

In a romanticized contrast to the colonial manuscript appears the description of cutting mangroves as a way of life in the book "Don Goyo" (Aguilera Malta 1955 [1933]). He describes the inhabitants of the area as even auto-identifying with their activity of cutting mangroves:

"My father is a mangrove cutter, a *manglero*. My grandfather is a *manglero*. My brothers are *mangleros*. Everybody here – from the time they are born - is a *manglero*. They learn to swing an axe while still in their mother's womb. -That's true. -And I have to marry a *manglero*." (Aguilera Malta 1980 [1933]:58).



38 Balandra, AHG 1920-29, Online: Fotografiapatrimonial.gob.ec
[Download: 05.03.2021]

As described in the previous section, such romanticisation of mangroves and their users has occurred at times when mangrove use was under threat: Mangrove were overexploited from around 1900 again with the great fire of 1896 having caused a high demand for wood in general in Guayaquil and its surroundings

(cf. 6.2.1). Additionally, shortly after, mangrove pillars were started to be used for stabilizing muddy grounds when building multi-storey buildings with a "foundation on mangrove piles, timber piles"¹³¹. Compressed air hammers rammed the blocks into the ground, the length of the steels depending on the planned building height¹³². Therefore the demand for the "longer and stronger" mangroves, the colloquially called "mangle caballero" was high.¹³³ While in the first decades it came from the region South of Guayaquil, already in the second half of the 20th century it mainly came from the Northern Province of Esmeraldas due to overexploitation in the South¹³⁴. Especially big mangroves trunks were transported with balsa rafts (Pic. 38 and 41):

¹³¹ "cimentacion sobre pilotes de mangle, pilotes de madera" [Experts Interview Round, Guayaquil, 05.07.2019]

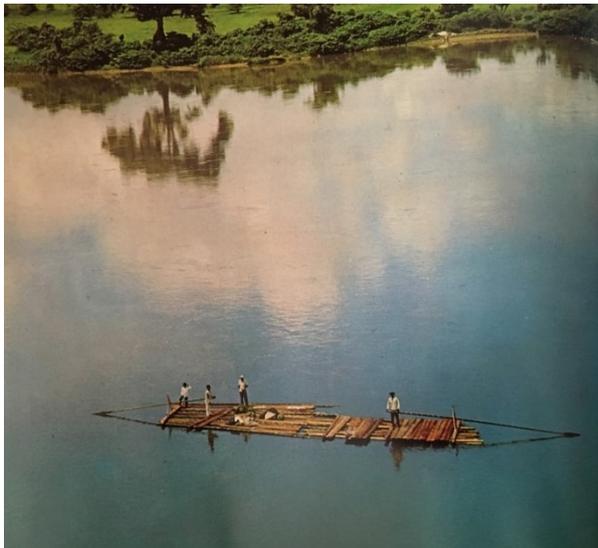
¹³² [ibid.]

¹³³ [ibid.]

¹³⁴ [Expert Interview, Guayaquil, Male 22.01.2020; Experts Interview Round, Guayaquil, 05.07.2019].

“[W]hen they went unloaded, they join them, the buoys, they do it like [tóngolo? - Float form with the middle trunk being to longest], they put them like that. But when they take the mangroves, there they open the balsas and in the middle they make..they put the mangroves. There they tie it up [...] with [...] the bejucos [type of tropical climbing plant], we call them, [...] that the big trees in the dry forest drop. That were the caos, they [used to] tie them up. [...] Yes, there were also the balsas; it took them three to four days to arrive [in Guayaquil]. Because they go the with the tides, nothing else”¹³⁵.

Although this community leader could not actively remember balsa floats in his community, he assured that his grandfather still had one. The floats seem to have been



39 Transportation of wood on the Rio Esmeraldas by Ken Gosney. IN: (Gartelmann 1979 [1975]:71)

in use until the 1970s.¹³⁶ Other boats were reported to have replaced the *balsa* floats, possibly because the size of the mangroves to be felled had decreased due to overuse, and other boats appeared more suitable and faster. Other boats in use were *canoas* and *balandras* (Pic. 40) that were similar but differed in the types of sails they had.¹³⁷ Descriptions of balsa boats today are surprisingly similar to

descriptions from colonial times, for example by missionary Father Cobo (Cobo 1653 [1990]:238).¹³⁸

But not only the wood of mangrove was used and commercialized. The communities south of Guayaquil report that some residents were specialized in peeling the

¹³⁵ “[C]uando van descargado lo juntan, las boyas, lo hacen como [tóngolo?] ya, ponen asi. Pero ya cuando cogen los mangles, ahí ya abren las balsas y en medio hacen la, lo ponen los mangles. Ahí lo amarran [...] con [...] los Bejucos, que le llaman, [...] este botan los árboles grandes en bosque seco. Eso era un caos que amarran. [...] Si hubo tambien las balsas; esos duraban tres-cuatro días para llegar. Porque van al son de la marea no mas.” [Expert Interview, Community, Male 12.01.2020]

¹³⁶ [Expert Interview, Community, Male 12.01.2020]

¹³⁷ “[T]here was a *canoas* and there was a *balandra*. [...] If you look at the boats, the boat, they have a pole at the front. [...] The *canoas* [...] only had the [main] sail and the *trinquetilla*, it is called. And the *balandra* had the *focke*, the *anti-focke* and the *trinquetilla*.” // “[H]abía canoa y había balandra. [...] Si ves las barcos, la barca, así tienen un palo para adelante. [...] La canoa [...] solo tenía la vela y la trinquetilla, que le llama. Y en cambio la balandra tenía focke, anti-focke y trinquetilla.” [Expert Interview, Community, Male 12.11.2019]

¹³⁸ “The largest balsas are used by the Peruvian Indians near woodlands, such as those of the ports of Payta, Manta and Guayaquil. These balsa rafts are made of seven, nine or more balsawood logs in the following way. These logs are placed on top of others set cross-wise and all lashed together with lianas or cords; since the middle log is the bow, it is longer than the others, which are gradually shorter towards the sides; thus the bow takes on the shape of a person’s finger when the hand is laid out flat, but the stern is square.” Cobo 1653 [1990]:238

mangrove bark.¹³⁹ It was sold to the leather tanneries of Guayaquil that existed already in the early mid 1800s,¹⁴⁰ but the bark was also exported to markets in the whole of the American Continent and Europe still around 1900 (Campos 1894:223). Also leather was produced in Guayaquil and was exported still in the late 19th century to the USA.¹⁴¹ A newspaper article from 1980 describes in the second half of the 20th century, however, the problems the Ecuadorian tanning industry was facing: Obsolete machines, low quality leather and a limited internal market in Ecuador.¹⁴² With the disappearance of mangrove logging due to the intrusion of shrimp farms and increasing conservation efforts, the sale of mangrove bark also stopped and tanneries replaced the mangrove product with chemical solutions.

¹³⁹ [Interview, Community, Female 28.10.2019].

¹⁴⁰ [Newspaper 6 de Marzo 14.10.1851]

¹⁴¹ (Pacific Rural Press, 22.11.1876), online available at the California Digital Newspaper Collection: <https://cdnc.ucr.edu/> [16.03.2021]

¹⁴² [El Universo 23.04.1980]

6.4 Mangroves for alimentation

From prehistoric times people consumed food from mangroves (Lacerda, Conde et al. 1993, Marcos 2005:95f., López-Angarita, C. et al. 2016:1). The collection and hunting for food around estuaries has been an economic activity ever since people lived around



mangroves and can be traced back to the Vegas Culture (~8000 to 4600 B.C. (Raymond and Burger 1995:35)) for the Santa Elena peninsula (Marcos 1995:12). Mangroves have played in history an important role also in Guayaquil's food supply. *Anadara grandis* (locally: Pata (de) Mula) and *Anadara*

tuberculosis (locally: Concha Prieta), shell fish typical for the mangrove ecosystems of the region, were exploited already in prehistoric times (Marcos 2005:83) and are until today (Pic. 42). Shells of these species have been also found further inland in Ecuador.

Fishing, consuming and trading fish, shrimp species, shellfish and crab were especially important for the alimentation of people in the region. People living around mangrove estuaries have possibly already in prehistoric times systematically exploited and exchanged or even commercialized mangrove species (ibid.). Trading was an important activity, as nothing grew in the region due to lacking precipitation. Again, the practices of the city showed their resonance in the rural mangroves and vice versa, as this statement suggests: "Guayaquil is famous for its seafood dishes [...]. [W]hoever comes to Guayaquil has to eat a ceviche, a seafood rice, a crab, otherwise you haven't come to Guayaquil."¹⁴³ The demand for fish and seafood in Guayaquil thus also determined

¹⁴³ "Guayaquil es famosa por sus platos de mariscos [...]. [Q]uien viene a Guayaquil tiene que comerse un ceviche, un arroz marinero, un cangrejo, sino es que no has venido a Guayaquil." [Interview, Guayaquil, Male 21.01.2020]

the practices and especially the intensity of involvement in the food supply by the communities in the surrounding mangroves. Other aspects also played a role, of course, such as the possibility to engage in other money-earning activities, the cost-benefit ratio and existing cultural practices.



41 Depictions of Mangles (I) on the left and people on balsa floats fishing in the mangroves (L) in Guayaquil from 1741. In: (Morán de Butrón and de Alcedo y Herrera 1741:33)

Especially fishing practices used to be complex and manifold over the last two centuries. An excellent overview of the various artisanal fishing techniques still common in the

1980s in the area can be found in Degen (1988). Today some of the traditional ones still exist, for example *caleta* where nets are stretched along certain sections of the shore with the tides. However, trammel nets (*trasmallo*) and fishing with hooks (*anzuelo*) are becoming increasingly important. In addition, there has been a strong increase in the importance of crab fishing compared to the 1980s (Degen 1988:12), which is related to an increasing commercialization of crabs in Guayaquil and the prohibition of mangrove cutting in the 1990s (Section 8.2). It is rather the older people still fishing with traditional methods, but common fishing practices differ from community to community. Each species is caught with a specific technique or mesh size.¹⁴⁴ Also other animals, like smaller crab or snails are collected and eaten, when fishing falls short.¹⁴⁵

¹⁴⁴ [Formal Talk, Community, Male, unrecorded – Research Diary 19.07.2019]

¹⁴⁵ “Since we are fishermen here, we are like cats. Sometimes we already go 3 days, 4 days without fish, walking around, wanting it. Then one takes his little rod that he has there, with a lure. He aims to get these little crabs

There are hardly eating regulations on animal species in the communities. The only animal marked with a strict taboo is the dolphin for his similarities with the humans.¹⁴⁶ Today regulated by conservation efforts, in earlier times also the crocodile [lagarto, cocodrillo] and turtle species (*Kinosternidae*, *Chelydra serpentina*, *Chelonia mydas*) (cf. Sánchez Mosquera 2010:12) were consumed. The turtles [tortugas] are said to have seven different types of meat tastes, including for example chicken and beef.¹⁴⁷ Also drinking the blood of turtles used to be a practice for good health.¹⁴⁸

While today the resource abundancy is in decline, in pre-Colombian times some scientists believe “it was paradise before, before the arrival of Spanish. All this area was paradise, full of food. Different kind of food.”¹⁴⁹ Today the increasing population pressure, the overexploitation of mangrove resources by various user groups, but possibly also by the imbalance caused by the loss of great extents of mangroves has resulted in a resource decrease which is regarded as worrying by all user groups.



42 Various fishing methods use mangrove roots. Fish caught is sold or used for subsistence – depending on species and size.

Besides the collection and sale of larva for the shrimp industry from 1980 to 1990, the mangrove crab *Ucides occidentalis* became a product commercialized by the mangrove communities from the 1990s onwards. Before, when the people were still

from the [mangrove] roots on the hook. But one looks along the shore, the shore inside the estuaries, all over. [...] They call it “going sweeping.” [Interview, Community, Male 11.09.2021]

¹⁴⁶ [Interview, Community, Female 29.10.2019; Interview, Community, Male 10.09.2019]

¹⁴⁷ [Interview, Community, Male 10.09.2019; Interview, Community, Female 29.10.2019]

¹⁴⁸ [Interview, Community, Male 10.09.2019; Informal Talk, Community, Female]

¹⁴⁹ [Expert Interview, Guayaquil, Male 22.01.2020]

engaged in cutting mangroves, people were only catching crab for food, not for sale.¹⁵⁰ The consumption of crab is a social practice of outstanding importance also for social interaction in Guayaquil, therefore I will describe and discuss the “cangrejada” [the crab feast] in more detail in an own section (cf. 8.4). Meanwhile in the communities it is not typical to do crab feasts: “It is not done here, it is not a custom”¹⁵¹, and in this case the crab collector continues:

“We don't want crab, no more crab. [...] I eat the crab, but yes, when the veda [closure of crab catching as part of the governmental regulation] is over, for example for a few days. The first few days that we catch crab, I eat one or two, and then from then on, we don't eat them anymore. I don't like it, it's because I'm in contact with the crab all day long.”¹⁵²

Crab has, however, been an occasional food also during the mangrove cutting phase until the 1990s. In some communities further South the mangrove oyster (*Crassostrea columbiensis*) occurs and is collected by the women.¹⁵³

Hunting animals around the estuaries, especially water birds like grebes, ibises, ducks, and coots was proofed by Zooarchaeology in Formative Times (Stahl 2003:186f.). Mera, refers to lagoons in the Guayas province that appear with the rainy season, in which the “wild Indians” (indios salvajes) hunt waterbirds (Mera 1884 [1875]:40f.). The hunting of water birds still is an occasional activity for some in the sample area¹⁵⁴, while others do not hunt these animals anymore, stating that it is better to leave them alive and buy meat from Guayaquil.¹⁵⁵ Formerly the bird hunt was carried out also in forms of tournament on boats and with bow and arrow, some community elders remember explain.¹⁵⁶

¹⁵⁰ [Interview, Community, Female 29.10.2019]

¹⁵¹ “No se hace aqui, no es costumbre.” [Semi-structured Interview, Community, Male 11.09.2019]

¹⁵² “No queremos cangrejo, no mas cangrejo. [...] Yo como cangrejo, pero si, cuando sale la veda, por ejemplo unos días, los primeros días que ya cogemos cangrejo, ahi me como uno, dos, y de allá no comemos. No me gusta, es porque tengo todo el dia el contacto con el cangrejo.” [Semi-structured Interview, Community, Male 11.09.2019]

¹⁵³ [Interview, Community, Male 01.09.2019]

¹⁵⁴ [Interview Community, Male, 09.09.2020]

¹⁵⁵ [Interview Community, Male, 10.09.2020]

¹⁵⁶ [ibid.]

The hunting and consumption of small mammals like wild boar [saíno], and deer living in the mangroves and dry forests (*Odocoileus virginianus* [venado de cola blanca] (Sánchez Mosquera 2010:70f.)) is also reported until very recent: “The deer [...], hunters caught and sold it [...]. I remember as well that my grandfather also hunted deer. My grandfather hunted deer and with that we had enough meat for a few days. Healthy meat, free of vaccines, just living in the bush [...].[T]hat's what the elders used to say: Healthy meat.”¹⁵⁷ Today freezers are used to keep perishable products fresh also during the day when the electricity is off. In earlier times fish and meat was dried in the sun.¹⁵⁸ Plantain (*verde*) and rice are a staple food, and the whole plantain stalk can often be found hanging in the kitchen.

Fishing and trading salt from the mangrove salt flats was documented during colonial times in the communities on the Santa Elena Peninsula (Cicala 1771 [1994]:127, Garay Arellano 2004:206). Salt was produced on the mangrove-covered island Puná (Lenz-Volland and Volland 1990) not far from the sample area, but was also traded from El Morro (Flores 1953:32). Collection of salt by the resident population can be traced back from pre-colombian until the late 16th century in the naturally flooded areas (Lenz-Volland and Volland 1990:90). Later, artificial flood zones were created for salt extraction (ibid.). The soil around the mangrove areas is muddy and not apt for settlements, but certain areas within the wider estuary zone are covered by sandy soils and are called “*lomas dulces*” [literally: sweet hills – non-salty sandy terrain]. The tamarind tree appears in various location names, probably because its fruits are eatable, but also because they indicated “*lomas dulces*” - terrain that people could walk and also settle on.¹⁵⁹

¹⁵⁷ “El venado [...], cazadores cogían y vendían eso [...] [M]e acuerdo yo, más de eso, que mi abuelo también cazaba el venado. Mi abuelo cazaba venado y ya con eso ya teníamos para unos cuantos días comer carne. Carne sana, libre de la vacuna, solo que vivan en la montaña no más. [...] [A]sí decían los mayores: Carne sana.” [Interview, Community, Female 09.09.2019]

¹⁵⁸ [Interview, Community, Female 30.08.2019]

¹⁵⁹ [Interview, Female Inhabitant Puerto Libertad, 28.07.2019]

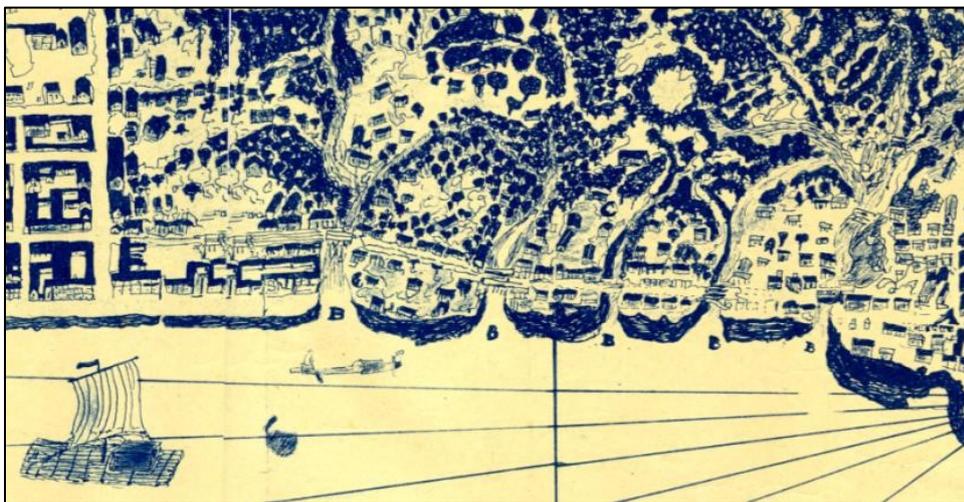
6.5 Mangroves, Hygiene and Power

“[D]irt is essentially disorder. There is no such thing as absolute dirt: it exists in the eye of the beholder. If we shun dirt, it is not because of craven fear, still less dread of holy terror. Nor do our ideas about disease account for the range of our behaviour in cleaning or avoiding dirt. Dirt offends against order. Eliminating it is not a negative movement, but a positive effort to organize the environment.”

(Douglas 2001 [1966]:2)

I will untie the reasons for the mangrove-hygiene-connection from two angles: On the one hand I will recall briefly the history of mangroves, science and public health in Guayaquil showing how depictions of mangroves and hygiene have travelled over time and in discourses, and on the other hand show how this knowledge mobility has reinforced hegemonic positions of political and economic elites.

The origins of the mangrove-hygiene nexus in Guayaquil can be traced back to the 17th century. At that time the Old City [Ciudad Vieja] on and around the hills of Santa Ana in the 17th century was starting to expand into the marshlands and swamps, setting up the New City [Cuidad Nueva] (Laviana Cuetos 2006/2007:53).



43 Close up of a map by Ramón García de León y Pizarro

1738 onwards the quarter El Bajo [The Lowland] (Laviana Cuetos 2006/2007:54). A close up of a mapping by Ramón García de León y Pizarro (Pic. 45), governor of Guayaquil in the late 18th century, shows the area covered with trees, most likely mangrove trees.

Laviana Cuetos describes El Bajo as filled with poor and indigenous people and little attractive for people to live in as it was constantly flooded by the tides and the brackish

In between these new parts of the city a wooden bridge was built over five estuary arms and around it formed from

water from the Estero Salado, leaving “unhealthy lagoons” [lagunas insalubres] (Laviana Cuetos 2006/2007:54). However, it was probably well attractive for people used to fishing and adapted to the tidal system to live close to the estuary arms and with direct access by boat to the river. It is also likely that people have lived there already before the expansion of the city. The City Council however agreed to fill the area up with soil in 1772 as they “are the cause of so many illnesses and the public will enjoy good health if they are filled”¹⁶⁰ (Sesiones del Cabildo, Guayaquil, 13 y 27 de Marzo 1772, Laviana Cuetos 2006/2007:54).

With Guayaquil steadily growing there was a constant need to urbanize land, causing disputes with indigenous groups originally living in the areas (Coronel Valencia 2011:607ff.). I argue that already back then public health arguments were deployed to dispossess ethnic minorities of the land they had previously lived on and to promote urbanization and thus modernization. The striving for progress was considered more important than nature: Mangroves were cut and estuaries filled up in the name of health and progress. However, this normative classification does not only apply to the mere assumption that change and thus culture is better than nature. This assumption seems to have laid foundation also for the normative classification of the different population groups living in Guayaquil. It could even be traced back to the core dispute of colonization, namely whether indigenous people were human beings (Morrison 2014:38). The political and economic elite, representing progress and modernity, was seen as more important than the indigenous groups that appear to live close to nature. Bashford sees a deep connection between the practices of public health and hygiene and the ‘imaginary geographics’ of exclusion by which, ‘others’ of all kinds were located ‘elsewhere’ (Bashford 2003:5). Sibley writes: “There is a history of imaginary geographies which cast minorities, ‘imperfect’ people, and a list of others who are seen to pose a threat to the dominant group in society as polluting bodies or folk devils who

¹⁶⁰ respecto a ser la causa de tantas enfermedades y hallándose ciegas gozará el público de salud cabal

are then located 'elsewhere'. This 'elsewhere' [...] might be some spatial periphery, like the edge of the world or the edge of the city" (Sibley 1995:49).

Public health measures became even more important in the late 19th century in Latin America with the stronger integration into the global economy. "[S]ociety would be sanitised in the name of progress" (Abel 1996:3), turning hygiene at the same time into a powerful tool of political control and exclusion along ethnic lines (cf. Zimring 2016).

The science discourse, which fed the commodification discourse and thus strengthened the powerful elites, played a significant role here. Guayaquil started to be known as "unhealthy" in scientific and traveler reports from the mid-18th century onwards with the first reported yellow fever outbreak in 1740 (Ulloa, Juan et al. 1807:161f, Reiss 1868-1876 [1921]:101, 145, Ball 1887:39, Guppy 1906:476, Parks and Nuermberger 1943:198ff., Guayas and Zambrano Giler 1987, Pineo 1990, Abel 1996). Ulloa et. al. describe for example after a description of the unbearable wildlife - the insects, millipedes, snakes and rats, and the winter floods (Ulloa, Juan et al. 1807:159ff.)- that the "black vomit" (yellow fever) arrived in the city in 1740 causing many deaths especially among foreigners (ibid.:161). Most reports that followed were critical about Guayaquil's public health situation and repeated the established discourse. Guayaquil was "reputed to be unhealthy" (Reiss 1868-1876 [1921]:145), as Reiß also noted, and describes that those who did not pay the taxes in Ecuador were put into the army and sent to Guayaquil "to feed the yellow fever" (Reiss 1868-1876 [1921]:101). The yellow fever was even said to have decimated the city of Guayaquil by half in 1844 (Borja 1896:76, Parks and Nuermberger 1943:200).

Until the 20th century, it was assumed that the yellow fever was caused by miasmas, and miasmas were caused by mangroves at least in the science discourse (cf. 5.3.2). The mangrove-miasma knowledge had obviously travelled from the science discourse to the political de facto discourse of Guayaquil to an extent that the city of Guayaquil still tried to drive off yellow fever miasmas with cannon shots in the middle of the city

around 1880 (Moreira 1955:259, cf. Pineo 1990:615). Also other cultural practices were shaped by the repetitive outbreaks of epidemics (e. g. Huerta 1987). Even the today very famous practice of burning larger-than-life papier-mâché figures called "monigotes" on the last day of the year is said to have derived from a yellow fever outbreak in 1895 in Guayaquil: During a yellow fever epidemic, the clothes of the dead were stuffed with combustible material and burned on the last day of the year as an appeal to the fight against the pandemic¹⁶¹.

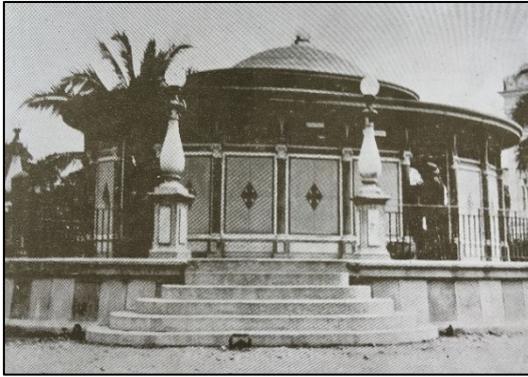
in 1902 the science discourse changed and the mosquito became known as the vector for yellow fever (Parks and Nuermberger 1943:202). The mosquito is again closely linked to the mangroves, especially to the fluvial system and the inundations during rainy season. Finally the construction of the Panama Canal by the USA led to the decision to as well sanitize Guayaquil as being on the trade route – brought forward hegemonically by the United States (Strong 1915, Parks and Nuermberger 1943:202ff.). Through rigid hygiene measures fostered by the USA and a significant improvement in the water supply, Guayaquil was declared free of yellow fever in 1920 (Parks and Nuermberger 1943:219), although cases returned later again (Swyngedouw 1997:321).

The interest of the USA was not grounded in charity, but in political and economic interests. The pandemics had caused significant economic costs, not only for Ecuador, but also for the Western trade companies: Ships that had anchored in Guayaquil were forced to quarantine in Guayaquil, but also in other ports, and thus refused calling in Guayaquil (ibid.). The companies were thus losing greatly when trading natural resources from South America. The cooperation for the improvement of public health had an ulterior motive, as "the power to govern is often presented as the power to heal" (Waldby 1996:5).

The public health situation stayed relatively well until the second half of the 20th century. In the meantime the municipality tried to improve their reputation, for

¹⁶¹ El Universo, "En Guayaquil los 'viejos' son cosa seria", 08.01.2016

example with the publication of a Municipal Guidebook about Guayaquil in 1929, serving explicitly to improve “misconceptions issued by unobservant travelers and



TIPOS DE SERVICIOS HIGIENICOS

Elegante modelo de servicios higiénicos, establecido por la Municipalidad en uno de los ángulos de la Plaza del Centenario y ejecutado en la forma más artística a fin de que guarde relación con ella y constituya además de una comodidad un motivo de ornamentación. Está hecho con todas las comodidades y consultadas todas las necesidades de un servicio moderno.

44 Extracts from the Municipal Guide from 1929 highlighting the importance of sanitation and hygiene in this guide for travelers: Top left a toilet building described below, highlighting its artistic elaboration. Top right showing the works for drainages in the city. (Concejo Municipal 1929)

chroniclers”¹⁶² that have “grossly distorted the reality”¹⁶³ (Concejo Municipal 1929:prefacio). Many of the chosen pictures and descriptions in the guidebook highlight the cleanliness of the waters of the mangrove lined Estero Salado, the excellent public health and hygiene infrastructure and the drainage efforts done in the city. Guayaquil “will be able to carry out the most attractive works, preparing as it does the formation of an immense sanitized area to make room for a true citadel”¹⁶⁴ (Concejo Municipal 1929:Las Riberas del Estero Salado).

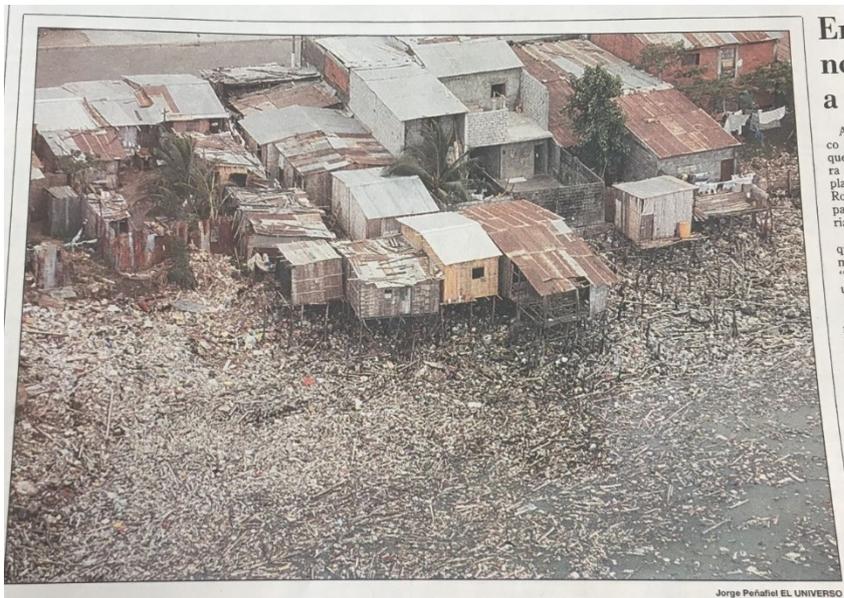
But in the 1960s and 1970s two major migration waves into Guayaquil resulting in massive informal settlements extending deep into the mangroves: The first one caused

¹⁶² “conceptos erróneos emitidos por viajeros y cronistas poco observadores”

¹⁶³ “falseado notablemente la realidad”

¹⁶⁴ “podrá realizar las obras de mayor atracción, preparándose como está la formación de una inmensa área saneada para dar cabida a una verdadera ciudadela”

by modernization politics of the Nation State and the banana bonanza, the second caused by the oil boom (Swyngedouw 1997:323ff., Glad 2012:29). Verrewaere and Wellens (2010) argue that this population increase caused a deterioration of the mangrove ecosystem that served before as a natural processing plant. It resulted in a sharp increase of pollution in the estuaries. An overlapping of political competencies added difficulties (Delgado 2013:517ff), and illegal land trading in the second half of the 20th century added another momentum to the already challenging situation¹⁶⁵. Swyngedouw summarizes that the lack of sewage and drinking water infrastructure led to the Guayaquilean suburbs being “sunk in water but dying of thirst” (Swyngedouw 1997:321).



45 The situation in 1998 - Waste floating in the estuaries lined with informal settlements - Picture in *El Universo* 19.10.1998

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In the 1990s then the public health situation was disturbing with a very high population density in informal settlements, resulting in epidemic outbreaks, extreme levels of contamination, severe lack of drinking water and hardly any existing

health infrastructure in the suburbs, resulting in social unrest.¹⁶⁶

As introduced in the beginning of the section, Douglas had elaborated that there is no absolute “dirt”, but that “dirt” as a social construction “offends against order. Eliminating it is not a negative movement, but a positive effort to organize the environment.” (Douglas 2001 [1966]:2). But practices of organizing the environment in

¹⁶⁵ El Universo 06.02.1980: El Concejo sólo legalizará terrenos en Guasmo a quienes la entidad donó

¹⁶⁶ [El Universo Newspaper review 1980, 1993-2000: Keywords list in Appendix XXIII-XLI].

a certain way also expresses the belonging to a certain group. Coming close to marginalized or abnormal people may endanger thus one's own social status (Douglas 2001 [1966]:98f.). "Dirt" or "people living in dirt" become a marker for exclusion.

For Ecuador, this can be illustrated by the still widespread notion of the "dirty Indian" (Collredo-Mansfeld 1998), or in the way that people living in the city construct people living in mangroves as "unhygienic"¹⁶⁷. Stoler elaborates how practices of race, sexual



46 Poverty destroys the environment - Article in El Universo 20.06.1999

and body hygiene in the tropic served as "micro-sites" of colonial and hegemonic discourses supporting political power of the "European" (Stoler 1995:11). In the city of Guayaquil, the negation of dirt goes hand in hand with the embracing of the urban, "modern" and progressive identity – and shows clear reflections with the power aspects of ethnicity as

discussed in section 6.2 and visible for example in article (48). But up until today the estuaries in Guayaquil are marked by severe contamination, as a biologist summarizes:

The "Estero Salado? Contamination, full contamination. Several lines of contamination, several types of contamination. The Estero Salado is a toilet wipe. Literally. We don't have a system. [...] [P]iscinas de oxidacion, oxidation pools, they are not solving. I tell you, in many parts, along the estero salado in those parts that are inside the city of Guayaquil, the conducts from human waste are directly, directly, directly...you can see [it]..."¹⁶⁸

With this preface, it is all the more significant that the blame for poor sanitary conditions in Guayaquil of the second half of the 20th century is placed on the so-called "invasores" (land "invaders") living on the rim of the city themselves: They are "uneducated" and thus "used to throwing waste and sewage out of the window or into the estuaries" (e. g. Pineo 1990:612)¹⁶⁹: The practices of "the marginalized" brought contamination into the city. But as Douglas states: "It seems that if a person has no

¹⁶⁷ [Research Diary 08.07.2019]

¹⁶⁸ [Interview, Guayaquil, Male 22.01.2020]

¹⁶⁹ [Interview, Guayaquil, Male 21.01.2020]; Picture 48

place in the social system and is therefore a marginal being, all precaution against danger must come from others. He cannot help his abnormal situation." (Douglas 2001 [1966]:98). City inhabitants who want to avoid becoming unhygienic and marginal as well, have to withdraw from these marginal areas of Guayaquil - and hence from the mangroves. This may explain why there was little interest by the ruling power in changing the sanitary situation for decades. The meanings were turned upside down, when former president Rafael Correa declared during his presidency to significantly improve the water quality of the Estero Salado and even promised to "swim in the Estero Salado"¹⁷⁰. In fact, he never did, and although water quality has improved a little in some parts of the estuary around the city centre, contamination and marginalization continue.¹⁷¹ City inhabitants who want to avoid becoming unhygienic and marginal as well, have to withdraw from these marginal areas of Guayaquil - and hence from the mangroves.

¹⁷⁰ [El Universo, 16.02.2016]

¹⁷¹ [Interview, Guayaquil, Male 10.07.2019]

6.6 Summary

The people who live today in the communities in the mangroves of the inner estuary have come to the region mainly from El Morro on the Santa Elena Peninsula towards the end of the 19th century. Due to resistance strategies the indigenous people along the coast and in the mangroves have outwardly adapted to the dominant colonial culture of the time, for example in their clothing, religion and language, but to this day many practices and discourse contents suggest a connection to pre-Colombian culture. Structures of a segmental society are visible today. Changes in the natural environment and droughts, possibly also man-made through increasing wood and meat demands from the larger cities, seem to have been the trigger for migratory movements into the inner estuary. Economically, the inhabitants of El Morro have had widely diversified practices at least since colonial times, with a strong connection to the sea (navigation, boat building, fishing) and trading, but also further processing, of naturally occurring products like wood, fish and salt.

Structural racism, especially between white elites and indigenous groups, is not only still visible in Ecuador today, but has also been used for many years to preserve existing political conditions. In this context, the apparent dissolution of racist structures in the term "mestizo" in Ecuador is of particular importance, as it often does not lead to the dissolution of the problems, but to a concealment of the actual inequality. In addition, there is a special power dynamic between Quito and Guayaquil that can be traced back to colonial times and evolved due to political, social and economic differences. The resulting stereotypes and difficulties also play into the political management of mangroves, especially since mangroves are centrally managed from the highlands, but occur on the coast. Nature and especially the mangroves around Guayaquil were constructed and romanticised by the politically influential middle and upper class in Guayaquil as a place of longing, wilderness and utopia. Similarities to the human-nature-relationship in Romanticism in Europe occur, which also reflect in the book *Don Goyo*. In this way, however, the communities in the mangroves were equated with the

surrounding nature and resulted to be constructed from outside groups rather than from the inside as the “ancestral owners of mangroves”.

The felling of mangroves had evolved in the region from a labour tribute to an entrepreneurial activity within several centuries. The already known mobile way of life and the ability to trade were certainly not accidentally widespread in this region in particular in pre-colombian times. Mobile mangrove cutting and trading in small family groups was certainly a convincing resistance strategy against the colonial power, but also later against the subsequent mainstream society. The communities in the mangroves had diverse economic practices for several centuries combining subsistence and marketing of mangrove species. In recent decades the fundamental structural change has led to a redistribution of the usable mangrove areas to new user groups like the shrimp industry. User groups in the communities need to specialize due to less mangrove area, less species and competition between user groups also fueled by demographic change.

Mangroves in Guayaquil's recent history are also closely linked to impurity, hygiene and public health measures. Based on the Cartesian separation of man and nature and the modernist idea of progress, public health arguments were used to cut down mangroves and fill in estuaries to make way for the city. Cultural groups that lived off the resources of the mangrove area were hardly considered in the urbanization process, linking to power structures deriving from colonial times.

Various diseases appeared again and again in Guayaquil, including yellow fever, affecting cultural practices. For political and economic reasons during the construction of the Panama Canal, the USA also intervened hegemonically to sanitize Guayaquil, with the aim of making the Pacific trade run more smoothly and without quarantines. The city of Guayaquil tried to recover from its unhealth image in the cause of the 20th century. But from the 1960s onwards two massive waves of migration occurred, accelerating informal settlements in Guayaquil's surrounding and especially in the

mangroves. Due to the lack of infrastructure, public health worsened again and social insecurity grew. At the same time, the settlers themselves, mainly from the rural areas, were blamed for the difficult situation, justified by their allegedly uneducated hygienic behaviour. Together with ethical considerations outlined above, this depiction certainly helps to understand why the situation was not taken on politically and improved.

VII GLOBALIZED MANGROVE: THE DISCURSIVE FIELD OF GUAYAQUIL'S MANGROVES

7.1 Introduction



47 Mural in Manglaralto with depictions of hybrid human-animal mangrove inhabitants [Picture take 06.02.2020]

The commodification of mangroves and their components for a delimited global market (cf. Deutschmann 2015), which I refer to here as globalized mangrove commodification, only began with the arrival of the shrimp industry in Guayaquil in the late 20th century. However, mangroves have been commodified since at least pre-columbian times with parts of mangroves traded between cultural groups along the Pacific coast and into the highlands. Later, in colonial times and after independence, mangrove wood and bark were traded regionally and between Europe and the Americas. But the international production and marketing of shrimps as a mangrove species not only meant the use of a "local" animal as a global product, but its economic success simultaneously led to a great interest in mangroves as capital and with it an intensive penetration of other forms of knowledge and practices into existing cultural systems. I understand the Americas and to a certain extend as well the globe as a "space

of entanglement" (Kaltmeier 2017:58) with an increasing intensity of "entanglement" over the last decades.

Therefore, in the case of mangroves, instead of analyzing local discourses, it is necessary to identify the dominant discourses of the last three decades and contextualize them with the help of globalization theories. The combination of discourse theory with Appadurai's globalization theories proved particularly insightful here. The *scape* concept presented by Appadurai makes the multi-layered and interwoven global knowledge systems and practices more tangible (Appadurai 1990:295f.). While using it, I do not want to look at the "disjuncture and differences" (ibid.) of "disorganized capitalism" (Lash and Urry 1987) from the five dimensions proposed by Appadurai, but want to enrich the discourse analysis above all with his conceptual use of the suffix "scape" in the globalization of knowledge. Appadurai underlines that "scapes" are "not objectively given relations which look the same from every angle of vision" (Appadurai 1990:296), but as "deeply perspectival constructs, inflected very much by the historical, linguistic and political situatedness of different sorts of actors" (ibid.). In SKAD this socio-historical setting is called *dispositif*. Discourses are thus not only a localized production and reproduction of knowledge and practices, but also developed as hegemonic and globalized discourses in the course of globalization. At the same time this "knowledge invasion" can lead locally to new forms of knowledge through the "indigenization" of it (Appadurai 1990:295).

I argue that the commodification of shrimps accelerated intense social change in the region, brought in new discourses and created new practices and new forms of mangrove knowledge – a discursive field. I understand "discursive fields" as "social arenas, constituting themselves around contested issues, controversies, problematizations, and truth claims in which discourses are in reciprocal competition with one another" (Keller 2011a:52). It comprises in the case of Guayaquil's mangroves of three main discourses: 1) The (International) Commodification Discourse, 2) the

(international) Conservation Discourse and 3) the (international) Development Discourse. All of these discourses have developed within an existing dispositif fueled by the already introduced epistemic mobilities: travelling knowledge entering and exiting various epistemic realms, and transforming in the process (Hornidge, Herbeck et al. 2020). For each discourse I will analyze selected data and give a detailed overview on the phenomenal structure in the end of each section.

Although the term "globalized discourse" has appeared in scientific publications sporadically (e. g. von Nahl 1997, Thompson 2007), the theoretical underpinning and a clear definition of the term is lacking. Having defined the term discourse previously, the adjective "globalized" refers to the active character that the globalization process has on these discourses, and that in return discursively shapes the globalization process. Globalized discourses are thus discourses that have gone through the globalization process on a wide variety of levels, for example through their hegemonic role in world politics, as a localization in national policy discourses, or as a direct impact on practices and knowledge formation processes in cultural contexts, influencing the character of globalization at the same time (cf. Hornidge 2014, Hornidge, Herbeck et al. 2020).

7.2 The (International) Commodification Discourse



PHENOMENAL STRUCTURE: (GLOBALIZED) MANGROVE COMMODIFICATION DISCOURSE

(elaborated based on Keller 2011:103ff.)

DIMENSIONS

Causes for Discourse

CONCRETE IMPLEMENTATION

Commodification: Mangroves as exploitable and passive, Mangroves to be turned into a commodity in a (globalized) market for profit and society's prosperity

Responsibilities as defined by discourse today

Shrimp Businesses must produce and export shrimps globally with the highest possible profit. **International Costumers** must buy shrimps in globalized markets, national consumers must buy crabs in markets and consume crabs in restaurants. **Marketing, Restaurants and/or Import Companies** must improve sales by successfully marketing shrimps for example as "luxury" item or crabs as social event. The **Government** must improve the legal framework conditions for the shrimp industry, foster export. **Communities** must provide markets in Guayaquil with sea food, especially mangrove crabs. **Science** must support aquaculture and improve shrimp's resistance to diseases.

Discourse changes over times **1800-1980s** Wood Resources from red mangroves for the growing city: Logs to construct housing, as pillars for multistorey buildings, as fire wood, bark for leather products (tanning); **From 1980** no mangrove pillars needed anymore, replaced by concrete; **From late 1990s** onwards prohibition of mangrove cutting, sale of thin mangrove bars allowed to construct housing for “poor” people in Guayaquil’s suburbs until early 2000s. Mangroves turn into an area exclusively for shrimp production; **From 2000** decline in shrimp production (white spot disease), increase in crab demand / commodification of crabs in restaurants; **Today:** Trying to find equilibrium between shrimp and crab commodification in the mangroves.

Problem Level(s) **Low Problem Level, but on alert against “the mass uprising”**
 Shrimp Businesses, Science and government institutions cooperate to regulate and manage resources and to ensure society’s progress – some problems exist with legal framework conditions.
Low Problem level today, but rising
 Communities are experiencing rising resource scarcity, conflicts on crab collector’s level on the rise.

Problem Solving Strategy and involved actors Shrimp Farmers must find a strategy to gain similar income from shrimp export, but must do it more environmentally friendly, as pollution and cutting of mangroves may affect national crab consumption and raise international attention. Crab Collectors must become more “environmentally aware”, conserve mangroves better and improve custody in cooperation with government. Therefore:
National, Regional and Local Government: Ministry of the Environment and sub entities as “mangrove tree owner” must develop and enforce a legal framework for forest / land management to regulate shrimp farming; **Viceministry of Aquaculture and Fisheries** must develop and enforce a legal framework for estuary resource management, like crab,

shrimps etc.; **Municipality** must develop a legal framework for and control the pollution in estuary arms + control markets with mangrove seafood products (hygiene, pricing, etc.); **Universities and Science** must support shrimp farmers and local mangrove crab fisher with technical knowledge for production and resource management. **Local Mangrove Fishing Associations** and Umbrella Organization (**JUMAPACOM**) must execute legal framework as implemented by Government and ensure long-term mangrove use and custody. Communities should constantly give information to government about the situation on the ground; **Technical Assistance (Fundación Cerro Verde)** must give advice to and train Fishing Associations and Umbrella Org. to execute legal framework as implemented by Government, “translate” between Fishing Associations/JUMAPACOM and government. **Urban Crab Collectors** must stop entering the JUMAPACOM mangroves and collect their crabs elsewhere, or instead find other economic activities in the city.

Self-Positioning

Shrimp Producers represent the sociocultural, scientific and technical progress, improving society’s standards of living by commodifying mangrove resources, while crab collectors are in fact criminals living in the mangroves without land rights. Shrimp production leads Ecuador out of the “dark ages into the light”, competing successfully in international markets opening further business opportunities.

External Positioning

Development and Conservation Discourse: The shrimp producers represent a handful of the Coastal oligarchic elite exploiting mangroves and people: Shrimp production does not lead to the common good of society, but to the destruction of nature and the further impoverishment of the “underdeveloped mass” (Roitman 2009).

Regionalism Discourse Quito perspective: Shrimp Farmers are “social climbers with mestizo background doing undignified businesses” (Coronel Valencia 2011:118; cf. 6.2.2)

Within Crab commodification: Lack of knowledge who catches crabs, but the “Cholos” live their own “untouched” life, only they understand and are better left alone as long as they “deliver crabs” to the city.

Values and System Reference

Laissez faire – Capitalism, Science, Christianity background: Performance and Economic success as most important societal values of modernity and base for identity building in Guayaquil. Global Markets give rise to prosperity for all. The humans have a right to the dominion of nature, thus nature should be commodified and optimized – if nature stops producing properly it needs to be managed by governmental institutions and through technology.

Mangrove-Human-Interaction

Mangroves as exploitable and passive, Culture dominates Nature.

Mangrove commodification, here understood as the transformation of a mangrove into a barterable or tradable object (cf. Appadurai 2005:35) is not new to this region of the world. It already existed when the first colonial ships arrived (Estrada 1957, Benavides 2002:71) and even before (Marcos 2004, Marcos 2005). The objectification of the mangroves was sometimes more, sometimes less pronounced (see Table 52) and was occasionally accompanied by ecological disintegration and conflict.

RESOURCE	USE	SPATIAL DIMENSION OF COMMODIFICATION
Wood / Timber	Housing, Infrastructure (light poles, train tracks, foundations, bridges)	Communities, City, Regional (Callao / Mexico), Americas
Mangrove Bark	Leather tanning	City: Leather Factories, America and Europe
Estuarine Ecosystem	City Sanitation	Communities, City, (highlands)
Medicine / Spirits	Healing, Spiritual Security	Communities
Animals	Food (Water birds, Fish, Sea Food)	Communities, City
Land along estuaries	Cattle and Dairy Farming	City

Salt Flats, Land along estuaries, Estuary water, Shrimp Larvae	Shrimp production	World (Commodity in a global Market)
Carbon Dioxide Storage, Coastal Protection	Climate Change Mitigation	World Conservation Commodity

49 Examples of some Mangrove Resource Use Practices in Guayas over time and the changing importance of the mangrove resource in its spatial commodification [based on data corpus, chapter VI]

But from the 1980s onwards the intensity of commodification increased significantly (cf. 5.3.3) caused by a significantly enlarged marketing area -worldwide- due to globalization and delimited markets (Table 52). The severe increase of shrimp production, met an historically grown infrastructure of power imbalances within Guayaquil's mangroves (cf. 6.2). Therefore, the globalized commodification discourse today meanders around people who are legitimate to produce shrimps and people who are worth eating them – delegitimizing other mangroves users.

These power imbalances grew out of older meanings, which I will introduce exemplary with an in-depth analysis of a short section of the "Libro Blanco de Camarón" / "The White Shrimp Book"¹⁷². It was written by the Cámara de Productores de Camarón / Chamber of Shrimp Producers (CPC), out of which later emerged today's influential National Aquaculture Chamber (CNA), the umbrella organization of Ecuador's shrimp farmer. Both organizations chose Guayaquil as the headquarter:

"Twenty-five years ago, there was no aquaculture in Ecuador. The shrimp that was exported in modest volumes came exclusively from sea fishing. There were no technicians or specialized workers and the only references that a few courageous pioneers had was that in Southeast Asia shrimp was "planted" in pools at the foot of the sea. In 1968 the first attempts were made to reproduce this experience in El Oro, but it was not until 1977 that aquaculture gained momentum in the country. A decade later, Ecuador is one of the world's leading exporters of farmed shrimp. We are cultivating more than 133,000 hectares and producing 115,000 net tons of whole shrimp. Exports have quadrupled in ten years, from US\$122 million in 1982 to US\$526 million in 1992. Shrimp constitutes 31% of private exports, and is equivalent to two thirds of the International Monetary Reserve."¹⁷³(Camarón 1993 [1989]:1)

¹⁷² The book was recommended to me by various informants and can be considered "a classic" in aquaculture history in Ecuador.

¹⁷³ "Hace veinticinco años no existía la acuicultura en el Ecuador. El Camarón que se exportaba en modestos volúmenes provenía exclusivamente de la pesca en mar. No había técnicos ni trabajadores especializados y las únicas referencias que tenían unos pocos y audaces pioneros era que en el sudeste asiático se "sembraban" camarones en piscinas al pie del mar. En 1968 se hicieron primeros intentos para reproducir esa experiencia en El Oro, pero no fue sino hasta 1977 cuando la acuicultura cobró impulso en el país.

Una década después, el Ecuador es uno de los principales exportadores de camarón de cultivo del mundo. Estamos cultivando más de 133.000 hectáreas y produciendo 115.000 toneladas netas de camarón entero. Las exportaciones se han cuadruplicado en 10 años, pasando de US\$122 millones en 1982 a US\$526 millones en

The writing style shows similarities with one of the best-known known creation myth in the Western world, the Genesis 1 of the bible. As in Genesis¹⁷⁴, the quote starts in underlining what does not exist (no aquaculture, no knowledge, no specialists). Following a description of the shrimp farmers depicting themselves as persistent and persevering “pioneers” without support (Camarón 1993 [1989]:1), having no access to knowledge or specialists. It suggests a depiction of Guayaquil as independent and technologically innovative, that does not receive, but also does not need support. This depiction is also immanent in the separation movement from the National Government that some political actors still support today.¹⁷⁵ It points to the strongly pronounced regionalism between Quito and the coast, with Guayaquil being the main coastal city, based on historical competition. It could also be interpreted further back in line with the independence movement from a local elite against the Spanish Crown. The quote points out the importance of the Ecuadorian people from the coast, when underlining that development started in El Oro, an Ecuadorian Coastal Province.

In Genesis 1,4 it says “And God said, “Let there be light,” and there was light” (Bible English Standard Version). Also the coastal shrimp farmer depict themselves as creators, people creating something important from nothing - without giving up: Scientific Revolutionaries, dominating and mastering nature actively with new techniques and machines (cf. Merchant 1989 [1980]:1f). Finally, the last three sentences and a predominant part of the quote refer to economic success that the Coastal People have achieved (“Exports have quadrupled” (Camarón 1993 [1989]:1)) and how this has remarkably positively influenced Ecuador as Nation State (“equivalent to two thirds of the International Monetary Reserve” (ibid.)). This positive evaluation of the shrimp

1992. El camarón constituye el 31% de la exportaciones privadas, y equivale a los dos terceras partes de la Reserva Monetaria Internacional.”

¹⁷⁴ In Genesis 1, 3 it says: “The earth was without form and void, and darkness was over the face of the deep. And the Spirit of God was hovering over the face of the waters.” (Bible English Standard Version)

¹⁷⁵ [Expert Interview with National Politician, Male, 23.01.2020]

farming development again can be compared to Genesis 1,5 where it says: And God saw that the light was good (Bible English Standard Version).

The strongest message that speaks from this quote is the assumption that the group of shrimp producers has significantly improved the general situation in Ecuador through economic success by domination of nature through science and technology. The value of "economic success" has a long history in Ecuador, but especially in Guayaquil. Resources coming from the Nation State were always scarce. Economic success was the only possibility to create necessary infrastructure privately and independently, and also turned in a form of resistance against the Nation State (cf. 4.2). However, this value is not the explanation, but the legitimacy.

It was only because there were certain mangrove meaning groups and structures that it was possible for a specific group in society to clear vast areas of mangroves and convert them into shrimp farms: The explanation is that mangroves and the people living in them were considered of little value by the Ecuadorian economic and political elite.

The asymmetry of the nature-culture relationship in both the dispositif and the commodification discourse has significantly contributed to the legitimization of mangrove deforestation and commodification. "Culture", as in the "white mestizo" elite is considered higher than "nature" as in the "mangroves" or "(cholo) people". The expropriation of land that had previously belonged to indigenous people took place in Guayas over the last two centuries as part of the expansion of cocoa production, as Coronel describes based on archival documents (Coronel Valencia 2011:604ff.). Land grabbing by the economic elite was also evidenced in the expropriation of indigenous mangrove regions in the context of Guayaquil 's city planning in the early 19th century (Coronel Valencia 2011:607ff.). Mangrove land was unprotected due to insufficient or inexistent land laws, missing supervision and sanctioning of law, or because land law of cultural groups living in the zone was simply not considered (cf. 4.4).

People in the area report, that they did not only lose the land they settled on without compensation, but that mangrove cutter and fisher were also not allowed anymore to enter certain mangrove areas.¹⁷⁶ They were protected by shrimp farmer's security companies.¹⁷⁷ To justify the commodification of mangroves and the exclusion of previous use groups, shrimp farmer delegitimize community members as criminals:

"Let's see, these islands, maybe over a hundred years ago historically, most of the time, nobody was out there. It was the refuge of the criminals, that is to say, all the criminals who killed someone, escaped, and ended up in this area. Then those spots were forming small villages, and, today, some of them are...uh...some of them are in the good part and they are in the crab, the shell..not much, the...not the charcoal, they don't do it anymore. I haven't seen them make charcoal, but...and they have the artisan fishing, of which they use trammel, but an electronic trammel."¹⁷⁸

Due to the groups' own exclusion or marginalization from mainstream society, mangrove users have not been able to adequately participate in the political discourse to draw attention to this situation or to correct this view. They did not have the necessary speaking position in the public discourse. Again, we are operating within the dispositif of Guayaquilean society, where the "(cholo) mass" is perceived as a possible criminal threat: The elite was afraid of the mass uprising since colonial times. The "criminal mangrove inhabitant" reflects with organized criminals operating today in the inner estuary and along the whole coast of Ecuador¹⁷⁹, mainly stealing tons of shrimps and equipment for their activities. This is why the criminalization of the dispossessed groups works particularly well as a strategy of deligitimisation. It delegitimizes the civil and mangrove use rights of people that have lived in communities in the mangroves for over 100 years. At the same time, it justifies the commodification of the mangroves and the presence of the shrimp industry, as it takes away the mangroves from people "who are not worth it".

¹⁷⁶ [Semi-structured Interview, Community Member, Female 28.10.2019. Semi-structured Interview, Community Leader, Male 12.01.2020]

¹⁷⁷ [Expert Interview, Guayaquil, Male 03.07.2020]

¹⁷⁸ [National Chamber for Acuaculture (CNA), Interview 10.12.2019]

¹⁷⁹ [Workshop presentation Instituto de Pesca 02.09.2019, Introduction Speech of Community Member "Manglares de Churute" at 1st International Mangrove Conference 13.11.2019 at UEES, and various articles in El Universo 1980, 1993-2019, On the CNA: <https://www.cna-ecuador.com/policia-desarticula-banda-de-piratas-en-el-golfo-de-guayaquil/> [11.05.2020]

The delimitation of markets today also leads to a global reproduction of power imbalances, based on the hegemonies of the Global North: Once a domestic food item in tropical countries, shrimps became a luxury food product for the global market over the course of a few years (ADB/Infofish 1990, Primavera 1998:269). The marketing of shrimps has not only marketed the taste or quality of shrimps, but is targeting the selling of a lifestyle of luxury and elegance (Hansen 2005:50). Until the white spot disease started in 1999 the industry was additionally strongly dominated by transnational agrobusiness knowledge (technoscapes (Appadurai 1990:297)) and international investments (financescapes (ibid.:298)). Transnational or global influence continues through agro-businesses, and their products like feed and chemicals for production today.¹⁸⁰

The objectification of nature including mangroves for export was already shaped by the trade structures of the colonial era. Latorre (Latorre 2012, Latorre 2013, Latorre 2013, Latorre 2014, Latorre and Herrera 2015) has analyzed what she calls 'environmental dispossessions' of mangroves. She summarizes in her research in Ecuador that using mangroves as resources "not only remains intact but is now becoming a political project of the Ecuadorian state". She refers to Svampa (2019), who calls this "the new commodities consensus" (Swampa 2019:1) in Latin American countries. Exporting "nature objects" keeps being a Nation State policy.

Shrimps became the most lucrative business in the last decades in Ecuador, fostering the extension of shrimp businesses even more. Very high profits could be achieved with little investment, as an aquaculture scientist underlines: "And I say, there is no shrimp farmer that is poor, nor a poor shrimp farmer. That does not exist. The business is very good."¹⁸¹ Florida Gastronomy Experts in the US state already in the 1980 in a hearing that shrimps are not a luxury product, but an easy to handle, omnipresent

¹⁸⁰ [Expert Interview, Scientific Institute, Male 06.02.2020]

¹⁸¹ "Y yo digo, no hay camarero pobre, ni pobre camarero. No existe. El negocio es buenísimo." [Expert Interview, Aquaculture Scientist and Consultant, Male 25.11.2019]

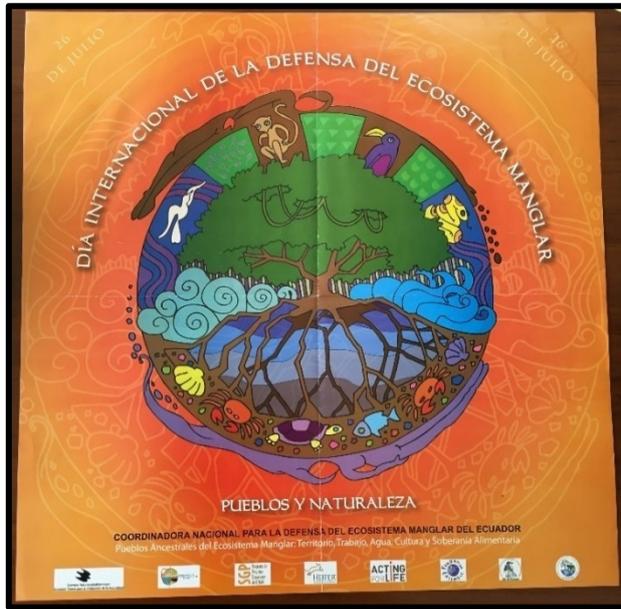
necessity to fulfill customer demand for seafood and protein (Environment 1982:218f.). However, shrimps keep having the touch of a luxury item, possibly due to earlier price skimming (Rao 2009:170) and marketing strategies (Hansen 2005), and have a constant high level of world-wide consumption.

To understand the underlying logic it is helpful to draw on Appadurai's global culture economy understanding (Appadurai 1990:306). Commodities are marketed in an

"illusion created by transnational production loci, which masks translocal capital, transnational earning-flows, global management and often faraway workers [...] in the idiom and spectacle of local control, national productivity and territorial sovereignty" (Appadurai 1990:306)

At the same time the consumer is not an actor anymore, and can only choose influenced by a globalized flow of knowledge and practices, which he calls "commodity flows" and "mediascapes", what to consume (Appadurai 1990:307). The demand for shrimps, according to Appadurai, is therefore not only fostered by consumers, but by an institutionalized marketing illusion.

7.3 The (international) Conservation Discourse



50 Poster from the National Archive in Quito informing about the International Day to defend the Mangrove Ecosystem [Date unknown]

PHENOMENAL STRUCTURE: (GLOBALIZED) MANGROVE CONSERVATION DISCOURSE

(elaborated based on Keller 2011:103ff.)

DIMENSIONS

Causes for Discourse

CONCRETE IMPLEMENTATION

Conservation: Mangroves need to be protected for the (international) good of society. Sole Commodification causes ecological reintegration as shown in the West (ecological crisis of modernity). People living in mangroves have developed ancestral sustainable mangrove practices and are committed mangrove custodians that can help overcome ecological desintegration. Representing “nature in its best” “mangrove people” also need to be protected: The preservation of creation.

Responsibilities as defined by discourse today

Government must create, adapt and enforce environmental law and regulations to protect mangroves; must support communities in mangrove protection. **Shrimp Businesses** must stop deforestation of mangrove areas, follow environmental regulations and pay compensation to mangrove users. Best if they redraw from the mangroves alltogether. They represent the irresponsible side of

capitalism that has led to ecological disintegration, only concerned with profit. **Communities** must protect mangroves from destruction, and manage its resources sustainably. They are not allowed to become “modern”, but must stay “nature”. **International Costumers** must stop buying shrimps from Ecuador, as long as they are not “sustainable”. **International NGOs** must fund and support mangrove activism. **Science** must research about mangroves and inform activists and communities how to manage mangroves responsibly - also under hardship. **Mangrove User (City)** should stay in the city. The rural mangrove does not belong to them, as they have decided for city life. Some of them are possibly criminals, and all of them indulge in capitalist pleasures making them “unworthy” of the mangroves.

Discourse changes over times

1920-1950s Use of mangrove pillars for the growing city results in mangrove overexploitation. A first countermovement with romanticism aspects evolves using ethnic stereotyping stating that “nature” (“Cholos”/indigenous as “embedded” in nature”) is better than “culture” (Westerner/Modernity abusing nature). Discussion of ethics of mangrove use.

1980s/1990s Mangrove Reforestation Movement in Northern Ecuador proclaims reforestation of mangrove zones, blaming shrimp farming for mangrove loss.

1998 Globalization of mangrove movement, International Environmental Movement joins forces with Ecuadorian Mangrove Movement.

1999/2000 Change in governance, communities in the mangroves receive temporarily custody and use rights. The situation calms down combined with decline in shrimp production (white spot disease).

Since 2010 Resource decline, overuse of fish, crabs etc. due to diverse socio-ecological reasons. Increasing conflict between mangrove user groups from the communities and

between community and city groups. Increasing commodification of mangrove resources by communities.

Problem Level

Today: medium problem level, increasing

In the 1990s high problem level

Decline in Shrimp Farming, improvements in legislation and land right changes have regulated shrimp industry. Science has improved knowledge for more sustainable farming strategies. The white spot diseases had raised attention for more sustainable shrimp farming. Communities lack support of the government to do mangrove custody, unclear resource rights. The resource decline has started to increase problem level for communities in recent years.

Problem Solving Strategy and involved actors

Communities must be “educated” to become more “environmentally aware”, conserve mangroves better and improve custody in cooperation with government and NGOs. Therefore:

National, Regional and Local Government: Ministry of the Environment and sub entities as “mangrove tree owner” must develop and enforce a legal framework for forest and land management; **Viceministry of Aquaculture and Fisheries** must develop and enforce a legal framework for estuary resource management, like crab, shrimps etc.; **Municipality** must develop a legal framework for and control the pollution and illegal settlements in estuary arms; **Universities and Science** must support mangrove custodians with technical knowledge for mangrove conservation. **Local Mangrove Fishing Associations** and Umbrella Organization (**JUMAPACOM**) must execute legal framework as implemented by Government and ensure long-term mangrove use and custody. Design ways of how to stop extracting mangrove resources, but find alternative ways of livelihood. Communities should constantly give information to NGOS/government about the situation on the ground; **Technical Assistance of Communities** must give advice to and

train Fishing Associations and Umbrella Org. to execute legal framework as implemented by Government, develop non-extractive economic opportunities like tourism, “translate” between Fishing Associations/JUMAPACOM and government. **Mangrove Users (City)** must stop entering the JUMAPACOM mangroves and instead find other economic activities in the city.

Self-Positioning

Conservationists represent the sociocultural, scientific and technical progress, improving society’s standards of living by conserving mangroves for the world’s benefit. Moral superiority to commodification discourse.

External Positioning

The Commodification Discourse: The global scientists are hegemonically entering state territory, destroying the economic backbone of Ecuador’s society. The communities represent an “uneducated and criminal mass” that has no right to live in the mangroves.

Regionalism Discourse Quito perspective: Mangrove conservation is scientific progress, improving the society’s standard of living for future generations, “buen vivir” and “Pachamama”.

Development Perspective: It is important to protect “mangrove wilderness”, but it is equally important to control the mangroves and “its people” because they are a threat. The “civilized” have an obligation to educate the “uncivilized”.

Values and System Reference

Christianity and Science: Protect creation. The “ecological crisis of modernity” (cf. Latour 1993 [1991]:3ff.) has shown that society must return to nature and do so with the help of science.

Mangrove-Human-Interaction

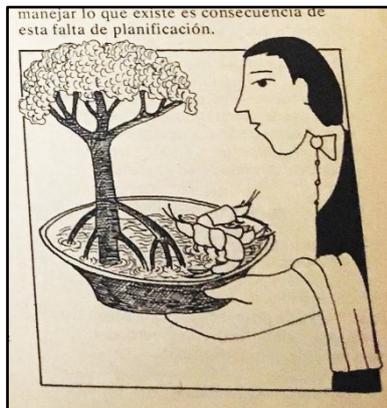
Mangroves as nature that the humans must return to. Mangrove “wilderness” as lost paradise. Culture must protect Nature.

The most tangible effects of the globalization of the commodification discourse was the steep increase of mangrove deforestation along the whole Coast of Ecuador (cf. 5.3.3). It resulted in the development of a counter-discourse: the conservation discourse. Already in the early 20th century first tendencies of such a discourse had developed as an answer to intensive mangrove cutting for construction use. One example is the book *Don Goyo* (Aguilera Malta 1955 [1933]) with the message later being carried into de facto political discourse by Acosta Solis (cf. Acosta Solis 1960, Acosta Solis 1961, Acosta Solis 1968, Cuvi 2005). But only in the late 1980s a more pronounced mangrove conservation discourse developed in Ecuador, highly influenced by global developments and supported by international actors in conservation. The main objective of this discourse is to stop cutting mangroves, to “give back mangroves to the indigenous people for protection” and to achieve reforestation of already deforested areas. Until today, the aim of the Mangrove Action Plan of the Ministry of the Environment is to reach a “no cutting” policy (Carvajal and Santillán 2019:56) as cutting of mangroves is understood as the main threat (Carvajal and Santillán 2019:9).

Criticism about mangrove deforestation carried out by the shrimp industry seems to have existed already in the early 1980s, as an article in *El Universo* shows. The title “Mangrove destruction continues” was published by “an ecologist” on 18th May 1980. But the half page article was published only in a kind of supplement between short stories and crossword puzzles, not in the “serious” part of the newspaper.

The conservation discourse had its peak in the 1990s. One of the most important Ecuadorian NGOs working in conservation at that time was *Fundación Natura*, based in Quito. Comparing publications, mangrove conservation slowly started being on their national agenda in 1989 and gaining importance in the early 1990s. In a publication on environmental degradation from 1982 the mangrove deforestation was not yet mentioned, only deforestation was mentioned as a general problem (Natura 1982). In 1989 the Mangroves are mentioned briefly, but the article complains lacking information about mangroves and insufficient governmental policies (Natura 1991

[1989]:15). From the 1990s onwards activism and publications in relation to mangroves increased.¹⁸²



51 Visualization of mangroves destroyed by shrimp consumption with a connect to shrimps as a luxury item (Fundación Natura 1989:15)

The picture (53) from the before mentioned Fundación Natura publication from 1989 exemplifies the implicit moral connotations of the Conservation Discourse. The “ecological crisis of modernity” (cf. Latour 1993 [1991]:3ff.) becomes visible together with a form of capitalism critique: The waiter in the picture is dressed as if working in a more expensive restaurant with a suit, a fly and a white towel over his hand. He could be representing the shrimp farmer, carrying the mangrove forest on his plate, ready to

be eaten and destroyed by the possibly well-heeled client of the restaurant. The client could represent the (Western) shrimp consumer. The two main opponents in the conservation discourse are thus the shrimp farmer and shrimp consumers.

The stylized counterpart of this “Western consumer” is what I call the “eco warrior” – the (Western) natural scientist arriving to protect the mangroves. The “eco warrior” appeared in Ecuador with the “Rainbow Warrior” campaigning ship from Greenpeace landing as the spearhead of a global campaign for mangrove protection in the mid-1990s in Esmeraldas Province (Northern Ecuador). Women Associations together with local NGOs were included in the campaign as the main Ecuadorian actors, but the message was clear from the beginning: The marginalized groups (women/ancestral) are the righteous owner of the mangroves, wanting to conserve them. Previously marginalized groups received in this way not only a speaking possibility in the mainstream discourse of Guayaquil or Ecuador, but were suddenly globally visible. The women belong to ethnic groups living from shellfish collection, many with a history of slavery, and were previously invisible in Ecuadorian mainstream discourse. The question

¹⁸² [Semi-structured Expert Interview, male 26.08.2019]

remains whether the women's message can independently form and also get through at all when the realities of the speakers and receptors are so different. Even if it cannot be answered conclusively within the scope of this study, the question remains to what extent these actors in this discourse have been in a subaltern position with limited possibilities to decide what message should be conveyed (cf. Spivak 1988, Steyerl 2008).



52 El Universo – Advertisement by the National Chamber of Aquaculture [24.07.1998]

Guayaquil’s newspaper El Universo before and after the event. The mangrove inhabitants, previously declared as criminals within the commodification discourse, were represented now in conservation discourse as the rightful owner of mangroves. It caused literally headlines: A publication series from the National Chamber for Aquaculture (CNA) in Ecuador was published 2 days before the arrival of the Greenpeace ship in June 1998.

The visit of Greenpeace was approached by the organized shrimp industry with a stiff, if not concerned, attitude (cf. 7.3). The CNA ran at least two advertisements aiming at directly influencing the readership’s opinion about shrimp farming¹⁸⁴.

But the Greenpeace’s media campaign supported the changing of mangrove meanings nationally and internationally (Torres Benavides and Reyes 1999)¹⁸³. The visit was widely reported in

¹⁸³ [Expert Interview, Guayaquil, Male and Female 11.09.2019; Informal talk C. Beitzl 28.06.2020]

¹⁸⁴ El Universo 24.07.1998 “A balanced ecosystem is Ecuador’s greatest asset” and El Universo 23.07.1998: “One of every 5 inhabitants at the coast live from the shrimp”

One is article 56: It shows a picture of an area that was previously a mangrove estuary, now to a great extent covered with shrimp farm pools. Some small lines of red mangrove remain. The headline assures that "A balanced ecosystem is Ecuador's greatest asset". The text gives an overview how the CNA helps mangrove protection and re-forestation, supporting the government in doing its job. It is also underlined what huge importance the shrimp exports have for the local economy. The last sentence reads "The shrimp is positive" and the whole article aims to convince the reader that "The Shrimp Farmers are the good ones". What appears as a marketing strategy for shrimp farming underlines the threat that Greenpeace had caused within shrimp producers. The "white man scientist" comes to "help give nature back to its people", as is shown emblematically in the picture of *El Universo* from 28th July 1998 (Pic. 54).



53 "Scientist" helping in mangrove reforestation, *El Universo* from 28th July 1998

The shrimp farmers' concern is justified: The discourse change gave rise not only to the already discussed new "Agreement of Use and Custody" (ASUC) between Ministry of the Environment and "Mangrove Users" (cf. 4.4). The shift in public perception about who is the rightful owner of mangroves, helped also the recognition of people living in mangrove zones. The inhabitants of the communities in the inner estuary for example were finally recognized by the authorities as Ecuadorians with civil rights in 2000 after settling in the same island for more than 100 years¹⁸⁵.

¹⁸⁵ [Semi-structured Expert Interview, Male, Community, 12.01.2020]

The commodification discourse and the conservation discourse reflect the differing understanding of how nature should be used. While according to the commodification discourse, mangroves should serve as means of production and help to gain profit, the mangrove conservation discourse aims for the "return" to nature (cf. 6.2) and charges its protection morally and with scientific language. It is nature scientists (Newspaper Article 53) that are creating an utopian dream of returning to nature, and "giving back" the mangroves to the people living "embedded in nature", a "mangrove wilderness" (cf. 6.2.3). In any case, the latter is a response to the first, and would not exist without it. Both discourses objectify nature. In the previously described context of power imbalances (cf. 7.2), the protection of mangroves by a globalized movement can also be read as a form of possession, and approaches the mangrove areas and their users with a capitalist logic of ownership and management rights.

7.4 The (international) Development Discourse

54 El Universo article: Social Bomb - The Poverty in Ecuador [12.03.1995]



PHENOMENAL STRUCTURE: (GLOBALIZED) MANGROVE DEVELOPMENT DISCOURSE

(elaborated based on Keller 2011:103ff.)

DIMENSIONS	CONCRETE IMPLEMENTATION
Causes for Discourse	<p>Development: The “Nature-other” must be dominated and civilized. Mangroves, as part of the “nature-other” are terrifying and unhealthy. People living in mangroves are also part of the “nature-other” and are equally terrifying, ignorant and unhealthy. The “civilized” have an obligation to educate the “uncivilized”, so that they can escape their misery of poverty. Superiority thinking of Western Culture.</p> <p>Ambivalent counter-discourse within creating “mangrove wilderness” as a possibility for modernity to regress to nature.</p>
Responsibilities as defined by discourse today	<p>The Government (“the economic and political elite”) must support development programs in the communities (“the poor”) and fight poverty. Shrimp Businesses (“the economic and political elite”) have an obligation to donate money and material items to help educate the people living in the mangroves (Charity). Communities (“the poor”) must stay passive, protect the mangroves and develop gratefully according to Western objectives. Also: Communities must</p>

develop agency to escape “poverty”. Also: Communities must stay ancestral. **(International) NGOs** have a responsibility to help “the poor” due to an socioeconomic “superiority” background. **Science** must help develop “the poor”. **The Church** must support charity, “civilize” the nature-other.

Discourse changes over times

Colonial Times: “Domination and education of nature-other”

Since Colonial Times: “Domination and education of nature-other”

Around 1920s/1930s: Use of mangrove pillars for the growing city results in mangrove overexploitation. A first subliminal urban/Western discourse with romanticism aspects evolves using ethnic stereotyping stating that “nature” (“Cholos”/“nature”) is better than “culture” (Westerner/Modernity abusing nature). Starting ambivalence between “domination and education of nature-other” and romanticizing of people living in “mangrove wilderness”.

Today: Ambivalence between “domination or education of nature-other” and idealizing of people living in “mangrove wilderness” as having the answer for the ecological crisis of modernity.

Problem Level

Problem Level Medium

The “Nature-Other” will strike back or uprising if it is not controlled or educated. Fear is discursively constructed within society and omni-present. At the same time Western/urban “longing and sentiment” for “mangrove wilderness” as lost paradise.

Problem Solving Strategy and involved actors

Mangroves must be dominated to avoid natural disasters and destruction. Communities must be dominated or educated to avoid uprising.

Therefore:

National, Regional and Local Government: All ministries must develop measures and practices to control “nature” and educate the “uneducated”. **Municipality** must develop a legal framework for flooding control and develop protective

infrastructure around mangroves (e.g. bridges, piers) especially with sea-level rise; **Universities and Science** must “develop” communities and give technical and scientific “superior knowledge” for mangrove communities, infrastructure and estuary management. **Local Mangrove Fishing Associations** and Umbrella Organization (**JUMAPACOM**) must execute legal framework as implemented by Government and ensure education and development of communities; **Technical Assistance (Fundación Cerro Verde)** must give advice to and train Fishing Associations and Umbrella Org. in a participatory manner to draft a sustainable future strategy for “development” of mangroves (and its people). **Shrimp Farmers** can make profit, but must do so in accordance with a Corporate Social Responsibility strategy. **The communities** must stay the same, and at the same time develop, protect the mangroves and “educate themselves” to rise out of poverty. **Mangrove Users** (City) must stop entering the area and develop themselves in the city. **Women** must “be developed”.

Self-Positioning

Development protagonists are protecting society from nature’s thread, standing also for moral superiority, compassionate and merciful, leading the way out of poverty.

External Positioning

Conservation Discourse: The development of nature must stop if it is dominating nature. People living in mangroves must not be developed too much, as capitalism is not the answer, but ancestrality and conservation is.

Commodification Discourse: People living in mangroves are criminals that must not be developed, but chased away.

Regionalism Discourse Quito Perspective: Nature must be controlled and the “uncivilized” must be educated.

Values and System Reference

Christianity and Science:

Protect creation. The ecological crisis of modernity has shown that society must return to nature and do so with the help of science. Missionary thought: Christians must convince non-

believers and show compassion, practice charity, so that they can receive nature's goods (*encomienda* system).

Mangrove-Human-Interaction

Ambivalence between a) "Culture" must "civilize" mangroves (and its people), and b) Mangroves are the nature that humans must return to. Mangrove "wilderness" as lost paradise.

According to Sachs (1992:xvi) the term development or specifically the supposed "underdevelopment" was invented after II World War by the United States to manifest their position in the world. Truman invented the term "underdeveloped areas" shifting "the old imperialism" to "a program of development" at eye-level (Truman 1967). Sachs describes the (international) development discourse on this premise as follows:

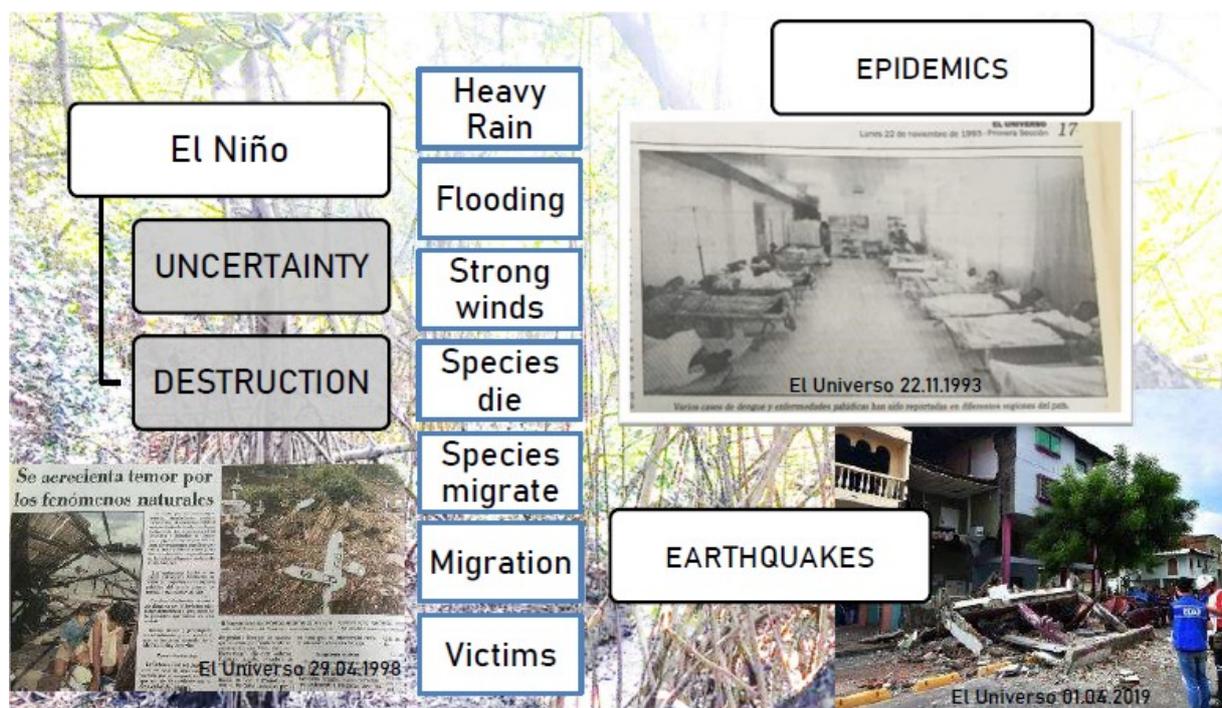
"The development discourse is made up of a web of key concepts. It is impossible to talk about development without referring to concepts such as poverty, production, the notion of the state, or equality. These concepts first rose to prominence during modern Western history and only then have they been projected on the rest of the world. Each of them crystallizes a set of tacit assumptions which reinforce the Occidental world-view. Development has so pervasively spread these assumptions that people everywhere have been caught up in a Western perception of reality." (Sachs 1992:xix)

Based on these premises, I argue that the development discourse in the mangroves of Guayaquil comprises actually of one main and one subliminal discourse that actually contradicts each other. One has its roots in a Western claim to develop and civilize nature (and its people) that has been nurtured since colonial times. This claim is fueled by a fear of the alien and uncontrollable nature or the unpredictable people who live in this nature. At the same time, the civilization efforts can be used to justify the exploitation of nature for own interests having its roots in the Christian *encomienda* system.

The subliminal discourse aims for the regression of "culture" to "nature" and developed due to the overexploitation and destruction of mangroves in various moments over time. Mangroves are discursively constructed as a "mangrove wilderness" (cf. 6.2.3): A romanticized place of longing in this discourse. The development discourse is therefore particularly characterized by ambivalences and contradictions.

Therefore, civilizing or returning to nature are the two objectives of this discourse. The depiction of communities as part or equal with nature laid the foundation for “civilizing” and developing these “mangrove inhabitants”, too, “from their primitive, backward states of embeddedness in nature” (Shiva 1992:229). As development stands more generally speaking for the improvement of the status quo of an object, it is important to understand the meanings of the specific “nature” of Guayaquil. It is indeed unique in this area because of three characteristics:

Firstly because of “El Niño”, a meteorological effect that causes every few years uncertainty and destruction along the whole coast of Ecuador. Heavy rains affect Guayaquil especially for being built within an estuary system and cause immense floodings and victims each time (e.g. El Universo 11.03.1998, 26.01.1998, 19.01.1998,



55 Depictions of Nature in the newspaper El Universo

14.01.1998, 25.11.1997, 12.11.1997). The timing of El Nino is unpredictable and if a year will be an El Nino year was constantly discussed in the newspaper (e.g. El Universo: 23.03.2001, 24.03.2001, 02.05.1998, 02.02.1997, 30.05.1997, 19.06.1997, 30.06.1997, 03.08.1997). El Universo reported about bird (El Universo 26.01.1998), snakes (El Universo 14.08.1997) and fish species migration (El Universo 11.04.2000) and sudden

mass deaths of marine species (El Universo 27.11.1997). Articles speak about epidemics and health problems caused by the inundation of whole regions (e.g. El Universo 26.11.1997, 09.02.1998, 07.09.1998) and migration to Guayaquil related to destruction in other areas of the country (e.g. El Universo 14.06.1998). Additionally heavy rains and thunderstorms happen every year in rainy season (*invierno*), affecting especially people with more informal housing (e. g. El Universo 29.04.1998, Pic. 57).

Secondly, Guayaquil is in seismic active zone and earthquakes are common. I was told by an inhabitant that he fears that the city will be swallowed by the earth in an earthquake and inundate. Here, the real experience of repeated seismic activity seems to be mixed with the specific dispositif of the region. The apocalyptic depiction of Guayaquil disappearing in mud and water is reappearing also in literature of the region (Mackenzie 2003, Valencia 2006, Rodríguez 2019), to my knowledge for the first time in Gallego Naranjo's book "Guayaquil – Novela fantástica" from 1901:

"Long live the Republic of Ecuador, eternal glory to you, beautiful CITY OF GUAYAQUIL! After seven minutes, a violent, universal earth tremor, accompanied by terrifying subterranean noises, filled all the inhabitants of the world with horror. The city of Guayaquil sank to a depth of seventy meters. Immediately afterwards, a copious rain of muddy earth filled the void, leaving a vast savannah behind."¹⁸⁶ (Gallegos Naranjo 1901:104; own translation)

Rodríguez suggests with Berman (1988) that this depiction of the city's end may be interpreted as the struggle of modernity in Guayaquil, on the one hand "trying to unify human beings under the banner of development, but at the same time modernity generating a turmoil of disintegration and renewal, of struggle and contradiction, of ambiguity and anguish" (Rodríguez 2019:8; own translation), so that "nature" often seems to win. According to Kermode apocalyptic depictions in fiction might also offer a possibility to bring time into the "right" order, "a satisfying consonance with the

¹⁸⁶ "¡Viva la Republica del Ecuador! ¡Gloria eterna para tí, bella CIUDAD DE GUAYAQUIL! Transcurridos siete minutos, violento sacudimiento terrestre, universal, acompañado de ruidos subterráneos espantoso, llenó de horror a todos los habitantes del mundo. La ciudad de Guayaquil se hundió a setenta metros de profundidad. En seguida, lluvia copiosa de tierra arcillosa llenó aquel vacío, dejando visible una extensa sabana."

origins and with the middle” (Kermode 2000 [1967]:17): Apocalyptic ideas as an offer of solace, putting in chronographic relativity the every-day life.

The fear of living with nature is reflected in discourse practices trying to eliminate mangrove “nature” altogether, turning the land into something more “useful”. This is certainly the case for the city of Guayaquil, where over centuries many estuaries have been filled, transforming them into roads and urban terrain. It is also possible that the fear of the city's demise is rooted in the knowledge of this practice. But also, innovative projects based on science and technology have been invented to control mangrove “terror” in other ways. A recent example of the latter is the newly built pier in the estuary harbour of Puerto El Morro (Pic. 58). The old port is depicted in the small picture on the left. It shows a muddy beach, allegedly flooded twice a day, making it certainly difficult to pass from the boat to land during low tides.



56 Re-designing the malecón of Puerto El Morro (Gonzalez, Gonzalez et al. 2012:349)

The result of the development discourse is an undulating concrete pier with no mud and controlled nature, planted in concrete beds, as seen in the large photo.

However, such a rigid and inflexible architecture is not always best suited to the dynamics of an estuarine system with ever-changing tides and brackish water. The image illustrates the common practice of controlling nature in the Guayaquil region with a seemingly robust concrete and steel infrastructure. Science and technology have contributed significantly to enabling this form of mangrove development.

"Schools are in fact poor, both inside and outside; the teachers, sowers of civic-mindedness, struggle heroically with their hardships where everything is lacking: from teaching materials to adequate and hygienic desks. If the people are to rise from their misery, they must be educated"¹⁸⁸ (Flores 1953:147, own translation).

Flores also states that visitors would prefer not to stay in the mangroves with the mosquitos and the bad smell in Puerto El Morro, and instead find the village of El Morro with shops and attractions more interesting (Flores 1953:175).

The moral superiority of the Western meaning world is expressed here through "superior" scientific knowledge, hygiene and material consumption. One of the main concerns of the development discourse is thus not only the dominance of nature, i.e. flora and fauna, but also the "civilization mission" of the people who live embedded in this nature and who contradict the protagonists because of their otherness. The fear of the unpredictable nature and its people, the "ethnic nature-other" has reoccurred since colonial times leading the elite's discussion of how to best "civilize the savages" through "aid or punishment" (Roitman 2009:17).

The discourse is strongly influenced by Christian and scientific understandings of a nature-culture-divide (Descartes 1986 [1596-1650]: Part VI, Genesis 1, 28 ESV) and by the Christian understanding of mission and superiority of the Occident. Berger and Luckmann (1966:104ff.) speak of false doctrines that can endanger the social order of the world of symbolic meaning. One way of dealing with this is "therapy" (ibid.:121ff.). Within this theoretical context, one could call the development discourse a therapy for the "ignorant" of Western knowledge.

In summary, the development discourse is guided by two contradictory goals, the civilization of the "nature-other" on the one hand and on the other the romanticized preservation and returning to it. A quote from a newspaper article from 1984 reflects the ambivalence of this objective particularly well. It additionally picks up on elements

¹⁸⁸ Escuelas en realidad pobres, así en lo interior como en lo exterior; los maestros, sembradores de civismo, luchan heroicamente con sus avatares en donde falta todo: desde el material didáctico hasta el adecuado e higiénico pupitre. Para que el pueblo se levanta de su miseria es menester educarlo.

from the book "Don Goyo" (Aguilera Malta 1955 [1933]) re-constructing mangrove "wilderness":

"The loneliness of the endless estuaries infested us with an indescribable anxiety. What if we get lost? What if the motorboat's engine dies?...What to do in this exile of mangrove and foamy tides? On the horizon we could only see the ghostly silhouettes of a few uninhabited islands. Occasionally, the installations of a few shrimp farms betrayed the presence of "civilization" [...] Good, humble, hospitable people... How to define the inhabitants of the island... Fragile children, fragile as *comején* [termites' nests] smoke, ebony-skinned women, men forged in the hard work of the mangrove. There is no police, no political representative. There are no problems here."¹⁸⁹ (Padilla Guevara 1984)

The mangrove areas are constructed as the opposite of civilization, a wilderness - somewhere a "modern" person cannot survive. At the same time, the reader senses the fascination of the author for this "naive nature people" and the absence of "modern" problems.

¹⁸⁹ "[L]a soledad de los esteros interminables nos contagiaba de una ansiedad indescriptible. ¿Y si nos perdemos? ¿Y si se apaga el motor de la lancha?... ¿Qué hacer en este destierro de mangle y mareas espumosas? En el horizonte solo se veían las fantasmagóricas siluetas de unas cuantas islas deshabitadas. De vez en cuando, las instalaciones de algunas camarónicas delataba la presencia de "civilización" [...] Gente buena, humilde, hospitalaria...¿Como definir a los habitantes de la isla?...Niños frágiles como humo de comején, mujeres de piel de ébano, hombres forjados en las duras faenas del mangle. No hay retén de policía, ni teniente político. Aquí no hay problemas.

7.5 Summary

In this chapter, I have laid out the main aspects of the three globalized discourses that have influenced mangrove use in Guayaquil's mangroves over the last decades. Firstly, I showed that the commodification discourse aims to objectify and commodify nature in order to make it useful for society. Nature and humans are understood as separate entities: Nature must serve the human. While nature manipulation is known in all cultural groups, the spatial dimension of commercializing mangrove objects, the export of shrimps for a global market, has been crucial for the conflict intensity caused by this discourse' knowledge and practices.

The conservation discourse has gained momentum in Ecuador in response to the results of the commodification discourse. The West, through its own experience of the ecological crisis of modernity, has played a leading role in making the problems and the actors in the mangroves visible. However, the different meaning worlds of these groups of actors raise doubts about the extent to which certain mangrove use groups can actively participate in this scientifically driven discourse. As in addition to the goal of conserving the mangroves, the conservation discourse sometimes paints a pre-designed picture of the people living in the mangroves. According to this discourse the communities in the mangroves need to be protected just as much as the mangroves, or support mangrove protection because they, too, are nature.

The third discourse influencing the use of Guayaquil's mangroves today is the development discourse. In Guayaquil, it has developed from a fear-based understanding of mangroves – and of the people living in mangroves that I call "the nature-other". I have shown that this discourse can be traced back to colonial times shifting between the two poles of education of or longing for the "nature-other". "Poverty" and "ignorance" is used in this discourse and attributed to non-Western mangrove users to justify an education mission. The protagonist of this discourse is responsible for educating the ignorant so that they can rise out of poverty. Christian missionary ideas are evident.

VIII MangrovesCultures– EFFECTS OF DISCOURSES ON MANGROVE USE

8.1 Introduction: Travel, Invasion and “Indigenization” of Mangrove Knowledge



58 Mural near the Estero Salado in Guayaquil's Urdesa: Elements of urban MangrovesCultures [Picture taken 12.01.2020]

In the 1980s, as demand for shrimps increased around the world, the globalized commodification discourse entered the mangroves of the Guayas Basin¹⁹⁰ (Luzuriaga 1984). The mangroves around Guayaquil had been hitherto “the last frontier of capitalism” (cf. Weisser, Bollig et al. 2014, Mbembe 2015). Soon also other globalized discourses expanded towards Guayaquil's mangroves, bringing with them new knowledge and practices (cf. VII).

The three globalized discourses of commodification, conservation and development are based on simplified bipolarities of nature vs. culture. As such mangrove dichotomies are insufficient to understand the complex and fragmented web of meanings between mangrove use groups, cities, mangrove natures and the globalized discourses in the Guayas River Delta, I will “retie the gordian knot” (Latour 1993

¹⁹⁰ [Interview, Expert, Male 12.01.2020]

[1991]:3ff.) in this chapter. I analyze and present hence the "MangrovesCultures" (cf. Latour 1993 [1991]: NaturesCultures, Gesing, Amelang et al. 2019) of Guayaquil. The concept disrupts the meaning of "culture" and "nature" as binary entities and as singular, and challenges the assumption that there is only one mangrove nature or one mangrove culture. Instead, it helps to ponder the very different socio-historically shaped mangrove realities and the mangrove-nature-culture linkages that evolved on the interaction between cultural groups and mangroves, and vice versa.

The new knowledge arriving in Guayaquil's mangroves encountered already existing mangrove discourses, and was by no means adopted unquestioned by mangrove users in and around Guayaquil. Existing knowledge and practices had developed in the socio-historic infrastructure the arrival culture was embedded in, now mixing with new knowledge and resulting in innovative meanings: The globalized knowledge became "indigenized" (Appadurai 1990:295). As stated earlier (Chapter II), Foucault elaborates that the dynamics of power and knowledge directly relate to one another (Foucault 1995 [1975]:27), and that power can also be challenged through discourses. Knowledge deriving from the globalized discourses is renegotiated and takes on new meanings when it arrives in new cultural systems (Hornidge, Herbeck et al. 2020). "Indigenization" (cf. Appadurai 1990:295) is often not a peaceful process, but instead a lively process of negotiation, with various claims to legitimacy and also conflicts taking place.

At the same time, older structures of power inequality may be reproduced again through discourses, leading to the reproduction of hegemonial knowledge systems, or even erasing others as de Souza Santos (2014:369) elaborates: "It may well be that this global South will end up reproducing, under new forms and with different kinds of discourses, the same social processes that for centuries were enacted by the global North." He speaks of "epistemicides" as the "massive destruction of ways of knowing that did not fit the dominant epistemological canon" (ibid.:371). At the same time, he describes the importance of discourse restructuring practices and resistance to

hegemonic knowledge systems in the global South (ibid.:369f.) for epistemological justice. In the mangroves of Guayaquil, the indigenisation processes oscillate between these two extremes of “epistemicides” and “epistemologies of the South” (ibid.). In order to trace these negotiations, I show how meanings are shifting with globalized mangrove discourses arriving. I am particularly interested in showing their effects on marginal, not mainstream mangrove practices and knowledge.

New meanings and practices became visible on two levels for mangrove users in the city and in the rural mangroves of Guayaquil: The externalization effects of ecological and social disintegration into the mangroves caused by the commodification and development discourse (cf. 8.2), and the direct impact of the commodification, development and conservation discourses on the practices of rural communities’ mangrove use (cf. 8.3). I argue in this section that rural mangroves were on the one hand invaded by hegemonial knowledge regimes, while on the other embodied structural inequalities in Guayaquil’s mangroves were reproduced. I finish the chapter by elaborating as a show case the direct and indirect effects of globalized discourses on crab meanings, and the effects the changing meanings had on mangrove use (cf. 8.4), concluding with a short summary (cf. 8.5).

8.2 Urban Mangroves Cultures in Crisis: Re-Negotiating Mangrove Ownership

*"[T]he 1990s was a time of environmental work, of activism [...] one of the objectives, one of the symbols of struggle, we could say, at this time was the defence of the mangrove [...]"*¹⁹¹

Ecological Activist, Transcribed Whatsapp Voice Message, 05.08.2019

The direct effects of the commodification discourse in Ecuador led to ecological and social disintegration in Guayaquil and its surrounding mangroves. The creation of huge

MEANINGS OF RURAL MANGROVES DEVELOPED FROM "INDIGENOUS ZONE" TO "PLACE OF SHRIMP PRODUCTION" → CHANGING THE MODE OF USE IN THE CITY FROM LITTLE KNOWN "WOOD PROVIDER" TO "PRECIOUS LAND FOR MAKING REVENUES"

numbers of shrimp farms had led to severe mangrove deforestation. The advent of the



59 Informal settlements along the estuaries of Guayaquil, example from *El Universo*, 04.11.1996 at the Estuary Mogollón

commodification discourse elsewhere in Ecuador caused in combination with other factors high migration numbers to Guayaquil from the 1960s onwards (Bravo-Ureta and et.al. 1996, Swanson 2007:708, Delgado 2013:520; cf. 4.5). These "invasions", as the spontaneous settlements of migrants and marginalized groups are called in Guayaquil, resulted in informal housing along the estuaries (cf. 6.5)

MEANINGS OF CITY MANGROVES DEVELOPED FROM "IRRELEVANT" TO "MIGRATION ZONE AROUND THE CITY" → CHANGING THE MODE OF USE FROM "WOOD AND FISH PROVIDER" TO "SEWAGE SYSTEM" AND "LAND FOR HOUSING CLOSE TO THE CITY"

and in the city mangroves. The mangroves were cut for settlements. Also, formal

¹⁹¹ "[L]os años noventa fue un tiempo más que todo de trabajo ambientalista, de activismo [...] uno de los objetivos, uno de las banderas de lucha, podíamos decir en este tiempo fue la defensa del manglar [...]"

housing projects led to mangrove deforestation, for example in the Urdesa area.¹⁹² With housing not connected to any sanitary or disposal system, domestic waste, sewage and chemicals ended in the estuaries. By the 1990s the estuaries were suffering severe deforestation and contamination.

The commodification discourse created mangroves as economically meaningful in the mainstream society of Ecuador. The realization that the mangroves are being destroyed led to a political debate in Guayaquil and later in the whole of Ecuador. In the mainstream discourse the possession of mangrove nature was re-discussed, and this is "how the idea came about: from one concession to destroy to another concession to conserve."¹⁹³ The "mangrove forest" was previously understood as collective good, but of little interest for most of Ecuador's society. The conservation and the development discourses entered the Guayaquilean mangroves on this premise. The social disintegration caused by uncontrolled migration and its consequences in the city's outskirts fueled the discussion further. The concept to protect Ecuadorian mangroves as a "conservation concession" and to give them to the "ancestral" mangrove dwellers, was developed by a law firm consultant and presented to the ministry of the environment in the 1990s¹⁹⁴. The priority of the ASUCs (cf. 4.4) was at first not primarily ecological protection, but to clarify mangrove ownership within the difficult legal framework¹⁹⁵.

A neo-romantic resistance arose with the destruction of nature, as observed in other cultural and historical contexts (cf. Schimank 1983; 6.2.3): When the pollution and the deforestation of the mangroves was at its greatest (cf. 5.3.3) in the late 1980s, early 1990s, romanticizing constructions of mangrove nature emerged in the city arts and

¹⁹² [Expert Interview, Guayaquil, Male 23.01.2020]

¹⁹³ „so kam ja dann auf die Idee, von der einen Konzession, um zu zerstören zur anderen Konzession um zu erhalten“ [Interview, Expert, Male 11.07.2019]

¹⁹⁴ [Interview, Expert, Male 11.07.2019]

¹⁹⁵ „Ökologisch das kommt alles später, die Besitzverhältnisse, wie sind die Besitzverhältnisse, wie regel ich die Besitzverhältnisse, dass nicht der eine in den anderen reingeht. [...] wie man hier sagt auf Spanisch, was allen gehört, gehört niemandem.“ [Interview, Expert, Male 11.07.2019]

science. Meanings of mangroves changed in the mainstream discourse from an unhygienic and unsafe place (cf. 6.5) and instead were again romanticized as a place of recreation, primarily by the Guayaquilean middle-class (cf. 6.2.3). Mangroves had been important before for recreation until the middle of the 20th century, for example in the recreation area “American Park” (cf. 4.1). Romantic depictions had also existed, for example in the book *Don Goyo* (Aguilera Malta 1955 [1933]). But in the second half of the last century, this meaning had weakened again.

The Historical Guidebook Collection on Guayaquil from the 1990 is a publication



60 Painting by Estrada 1995:1 showing a “mangrove wilderness”, exemplifying the negotiation of new mangrove meanings in the 1990s

referred to in newspaper articles and art exhibitions around mangroves until today¹⁹⁶. The picture on the first page (Pic. 62) shows “culture” (two male, “white” humans on a rowing boat dressed in white as the surrounding herons) enjoying the unpolluted mangrove nature. Humans are transcendent on small boats, but

seem to sink into their nature surrounding resembling the white herons. It shows them as skillful and in balance, suggesting that they have mastered the element of water and the mangroves – they have mastered nature and must not be afraid of it. The Guayaquilean historian Estrada Ycaza calls in the same guide for a recovery of the mangroves and estuaries of the city, and states that this is how also the Guayaquilean spirit may be recovered:

¹⁹⁶ The third volumen “D-G”, e. g. “Ínfulas de Manglar”, Art Exhibition in Guayaquil in 12/2018 by Cesa Design; El Universo, “La exposición ‘Ínfulas de manglar’ se instala en un espacio de arte en Guayaquil. 12.12.2018.

"These pages are not written to remain a banal account of something that is gone; they aspire to be a call to the inhabitants of Guayaquil, and above all to the authorities not to cease in their efforts to recover estuaries and mangroves as a transcendental element in the revitalization of the spirit of guayaquilenismo."¹⁹⁷ (Estrada Ycaza 1995:53).

This quote is exemplifying the Guayaquilean depiction of "mangrove wilderness", guided by the idea that nature can lead to an improvement of the individual. In this case it is even suggested to lead to a transcendental experience of unity and social

CHANGING MEANING OF MANGROVE FROM "UNHYGIENIC, UNSAFE PLACE" TO "PLACE OF RECREATION" → CHANGING THE MODE OF USE FROM "ECONOMIC EXPLOITATION" TO "CONSERVATION OF MANGROVES FOR RECREATION, EDUCATION AND OWNERSHIP".

experience of a collective. The return to nature represents the return to the "nature-other" (the counterpart of technology) which is worthy of protection (cf. 6.2.3). However, the change in significance also led to a change in the way mangroves were used and who possessed them. Instead of being the social margin of society and the living place of "poor" ethnic groups, or used economically for wood or shrimp production, mangrove meanings changed towards protection and education for conservation and recreation of the middle and upper class as a matter of priority.

Although the discourse derived from the Western "ecological crisis of modernity" (cf. Latour 1993 [1991]:3ff.) and was brought to Guayaquil by the well-educated Guayaquilean upper middle class with European and US connections, the way the mangrove conservation and the development discourse developed was strongly influenced by the Guayaquilean dispositif. Mangroves were used as a projection space in the surrounding of Guayaquil to create an utopian "mangrove wilderness". They served as an answer to the "ecological crisis of modernity" but also as an colonial appropriation of a "primal nature" in which transformation and trade can be pursued.

¹⁹⁷ "Estas páginas no están escritas para quedar como banal recuento de algo que se fue; aspiran a ser un llamado a los habitantes de Guayaquil, y sobre todo a las autoridades para que no cejen en su empeño de recuperar esteros y manglares como elementos trascendentales en la revitalización del espíritu de guayaquileñismo."

At the same time the city mangroves were changed by the municipality into model practices (Keller 2011a:55) of the commodification discourse, reflecting the hybridity of new meanings: Cemented mangroves were pressed into straight lines, for example in the Estero Salado of Urdesa. Like other attractions in Guayaquil, and again because of the city's history (cf. VI), the line park was planned to finance itself and was therefore flanked by a wide variety of eating and paying amusement opportunities.¹⁹⁸

In certain peaks of the crisis in Guayaquil, it is the city itself representing the Western Metropolis of colonial utopian departure, designing the mangroves and the community within as counterparts to the challenges of modernity in the city (Benavides 2006). Benavides underlines that the "feeling of postcolonial misidentification so central to Guayaquil's social identity" (ibid.:144) has contributed to the design of an idealized, sentiment-driven past: Historical traditions, often of a minor elite, have been partly re-invented, partly unrealistically idealized, in order to escape Guayaquil's conflictual and challenging present in the second half of the 20th century (ibid.:145). Claims of mangrove possession in this context are for example visible in the redesign of the waterfront promenade of the Estero Salado, where past poets are commemorated and in the "Historic Park" (Parque Histórico), a park in the "upper class" neighborhood of Samborondón, built in and around mangroves. All these examples show most vividly diverse contradictions and ambivalences between urban mangrove meanings and discourses over the last decades in Guayaquil.

Who claims to take care of the mangroves, also designates oneself as its owner. This attitude is not only present in the middle and upper glass of Guayaquil, but also in the rural mangrove communities around Guayaquil.¹⁹⁹ Legitimation strategies include the nihilation of certain groups and meaning systems (cf. Berger and Luckmann 2007

¹⁹⁸ [Expert Interview, Guayaquil, Female 06.08.2019]

¹⁹⁹ "He says that today everything is artificially made of plastic. People from Guayaquil take their *tarinas* (their lunch [in plastic boxes]) with them to go crabbing and then throw the packaging everywhere. He has already found corners where everything is full of bottles and packaging. Orlando says that's not them. No, [he says], it's the Guayaquil people." [Research Diary 25.07.2019]

[1969]:123f.), or differentiation strategies from one community to another (cf. Durkheim 1960 [1893]:177) with exclusion attempts from mangrove use. Two clearly articulated demarcation patterns exist between the crab catcher groups (urban/rural and rural/rural in certain zones) and between the shrimp farmers and fisher. Certainly, an indication that the conflict around mangrove use is particularly pronounced at the moment. In the case of crab collectors, the delimitation takes place via the practice of using or not using traps. Traps are basically a piece of netting spun with 4 sticks above the crab hole resulting in the catching of male and females alike. The "good" crayfish catcher I am told in one community only takes males and can tell from the tracks whether it is a male or a female²⁰⁰: The "traditional" crab catcher in this case is said to have a "special knowledge" at his disposal, another way to claim legitimation.

In the case of shrimp farmers and fisher, the fisher accuse the shrimp farmers of destroying their food base by dumping chemical products into the estuaries during the shrimp harvesting process.²⁰¹ Yet shrimp farmers demarcate themselves also along the conservation discourse, accusing fisher of using unsustainable nets: Transparent nylon nets degraded by the Shrimp Farmers Association as "electronic trammel nets killing all fish"²⁰². This strategy expresses the position of the shrimp farmer indicating that the fishers are destroying their own livelihoods due to their own "ignorance". Each group indicating, that the one who does not take care of the mangroves has no legitimate right to use them.

In conclusion, the arrival of the conservation and the development discourse brought two main changes for the communities in the rural mangroves of the inner Guayas estuary: 1) They received legitimize ownership of a delimited mangrove area with the

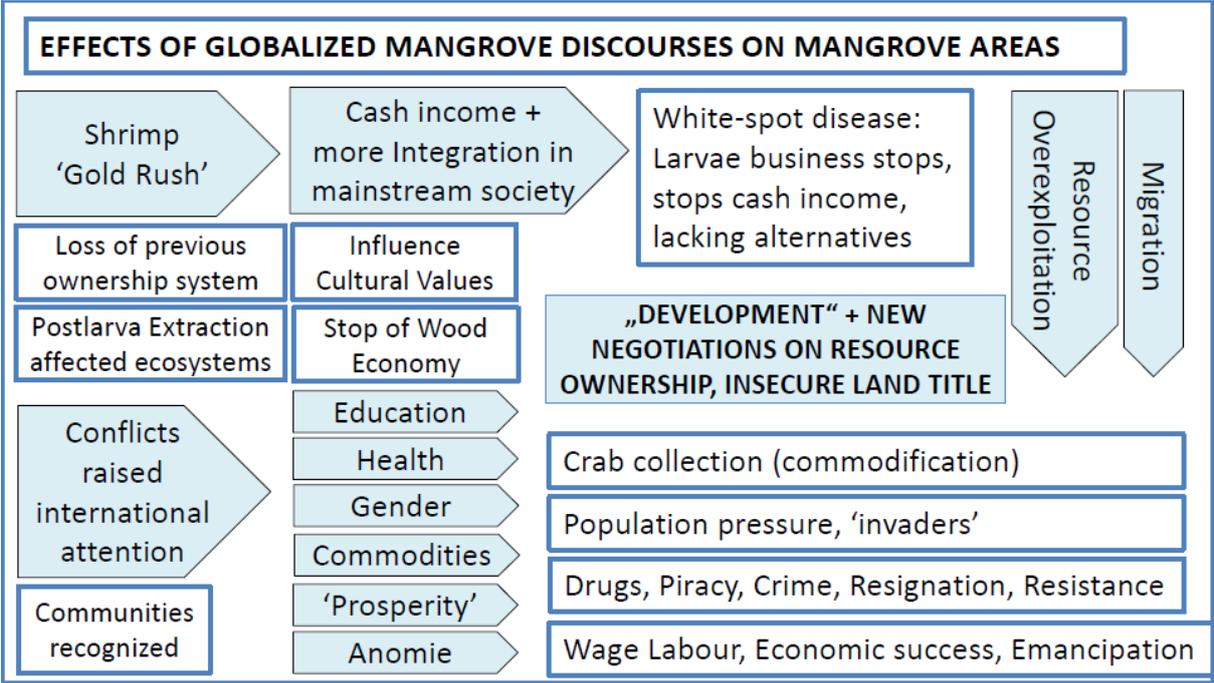
²⁰⁰ [Formal Talk, Community, Male, unrecorded – Research Diary 19.07.2019]

²⁰¹ [e. g. Formal Talk, Community, Male, unrecorded – Research Diary 19.07.2019; Interview, Community, Female 28.07.2019].claim

²⁰² [Interview, Guayaquil, Male 10.12.2019]

ASUC (cf. 4.4) and 2) their own legitimation as citizens with civil rights (ibid.). At the same time the active influence and interest of new groups like the conservationists or the middle class looking for recreation and education of "the nature-other" in the mangroves increased significantly. New knowledge was brought in and new practices emerged, taken over voluntarily, out of necessity or enforced through legal regulations.

8.3 The direct Impact of Globalized Discourses on Rural Mangrove Use



61 Globalized discourses affecting mangrove practices in the Guld of Guayaquil from 1980s to today.

The globalized discourses were received and indigenized differently in the city than in the rural mangrove communities due to the specific sociocultural setting, the dispositif, and differing ways of how and with what force the knowledge entered. The conservation discourse had evolved in the city carried in the beginnings by a small but influential elite (cf. 8.2), able to influence politics and changing existing mangrove laws and regulations. Hence, the cutting and trading of mangroves was prohibited in the late-1990s (cf. 4.4). Many families in the rural mangroves still lived during that time from cutting and selling mangrove wood (cf. 6.3). Corruption and slow implementation of the new laws made the families settle down only a while after the laws were implemented, with cutting and trading mangroves eventually becoming impossible.²⁰³ With their main income breaking away, new livelihoods needed to be found. Some families were able to grow service provision businesses for the shrimp industries, some started working as day laborer’s on the shrimp farms and many former *mangleros*

²⁰³ [Interview, Community, Female 30.08.2019]

started to get engaged in the supply of postlarvae to the shrimp ponds (cf. Müller 2013). At the same time the demand for mangroves crabs increased in the city (cf. 8.4),

MEANINGS OF RURAL MANGROVES DEVELOPED FROM "TERRITORY" AND "PLACE TO MAKE A LIVING" TO "PLACE OF SHRIMP PRODUCTION" AND "CONSERVATION ZONE"

➡ CHANGING THE MODE OF USE IN THE RURAL COMMUNITIES FROM "WOOD CUTTING" TO "EXTRACTING AND SELLING RESSOURCES FOR MONEY"

turning crab catching in a lucrative activity. With the conservation discourse, the pressure was taken off the mangrove wood, but at the same time the pressure on all other mangrove organisms increased due to changing practices. Ironically, the effects of the mangrove conservation discourse led to the mangrove cutters themselves becoming protagonists in the commodification discourse, however with their own epistemes (cf. 8.4).

The "invasions" (the immigration into Guayaquil's outskirts from the 1960s onwards) had increased income for the mangrove cutting industry in the communities significantly. The newly arriving people in the city needed great amounts of mangrove wood for their informal housing built over the estuaries²⁰⁴. Additionally catching and selling postlarvae to the shrimp industry and catching and selling crab were attractive businesses²⁰⁵. The times of larva catching are even described as an "El Dorado" - a gold rush²⁰⁶. Inhabitants of the communities confirm an increasing availability of monetary resources, with the routines of going shopping in the city increasing²⁰⁷ - and with more influx from new discourses coming from the city. Various shops opened in the communities themselves.²⁰⁸ The cash influx through larva catching brought "prosperity" in a sense of increasing goods and inclusion in trade systems, but also

²⁰⁴ Y se notaba también, se iba un tiempo en un lugar y después otro tiempo a otro lugar. Ya cuando allá no había mangle, acá ya había, y andaba rotando uno. Por distintos lugares. [Naming the locations that mark the territory], Todo eso se rotaba haciendo el corte selectivo del mangle para la invasión de la casa de suburbio en Guayaquil. [Interview, Expert, Male 12.01.2020]

²⁰⁵ [Interview, Community, Male 09.09.2019].

²⁰⁶ [Informal talk, Fundación Cerro Verde]

²⁰⁷ [Interview, Community, Female 28.10.2019, Interview, Community, Female 30.08.2019]

²⁰⁸ [Interview, Community, Female 10.09.2019]

increased dependency on money. Changing practices replaced more and more products from the natural surroundings and subsistence practices. Houses were for example no longer built from mangrove wood but from cement, steel and plywood.

However, the “gold rush” of the commodification discourse stopped in the mangroves very suddenly, when the White spot disease reached Ecuadorian shrimp farms. The shrimps were dying in the pools in the late 1990s, and no remedy could be found. Shrimp farmers were desperate, trying everything to stop the virus from spreading. Chemical, antibiotics and even esoteric crystal pyramids in the middle of shrimp pools, as a last resort, showing the desperation of the shrimp farmer²⁰⁹. The resulting collapse of the shrimp industry affected further the weak state of Ecuadorian banks and a profound economic crisis was taking place that caused the dollarization of the country. No larva was needed anymore from the communities, and the new commodification

CHANGING MEANING OF RURAL MANGROVES FROM “CATCHING SHRIMP LARVAE” TO “PLACE OF EXMIGRATION” → CHANGING THE MODE OF USE OF CITY MANGROVES FROM “PLACE TO TRADE” TO “LAND TO LIVE CLOSE TO THE CITY”.

practices had created a dependency that was difficult to overcome. Many former fisher and larvae catcher decided to move to the city as the newly achieved standard of living could not be held in the communities. Many inhabitants of the rural mangroves started looking for land closer to the city. Community members became “invadors” into the city’s mangroves themselves. Certainly, the practices that had already changed previously, contributed to making the decision to migrate easier, as the city practices were more familiar. Previously the city mangroves were seen as a place to sell mangrove wood or to buy products. Many migrants started working informally or in the factories.²¹⁰ The ones that stayed in the rural mangroves got involved in fish and crab sales, which increased resource pressure significantly. Due to migration, marginalization and the social crisis in the communities and the suburban areas of

²⁰⁹ [Expert Interview, Male 06.02.2020]

²¹⁰ [Research Diary 25.07.2019]

Guayaquil, also criminal activities increased and drug abuse appears in its climax. Table 58 (in the beginning of the chapter) summarizes this and other effects of globalized mangrove discourses in the mangrove areas around Guayaquil.

The exchange of goods and practices between the city and the rural mangroves has both diversified and intensified as a result of these developments – in both directions. The sale of fish and crab species from the mangroves as products to the city has intensified. The fishers today sell directly to travelling trader who buy the products already in the community or even from the boat - often for a much worse price, but it saves the fisherman the costs of going to Guayaquil. At the same time, economic structures with products from the city have become established in the communities. For example, fresh products such as fruits or juices are in high demand because they are difficult to obtain, transport and store. The knowledge about the importance of vitamins from fruits, which is taught extensively in schools as part of the development and science discourse, certainly contributes to this. But also, other products in great variety, from clothing to plastic toys, to ice cream, are either offered in small shops or brought to the communities by travelling traders today.

The knowledge from the commodification discourse has led in some communities to a profound integration into market structures. An example is the involvement of one community in the sport fishing industry. The community has managed a good contact with the shrimp farms, as well as a good exchange with sport fishermen from the city. Yachts owned by Guayaquil's high society stop during fishing season in the community on their way to fish and buy shrimps as bait. The shrimps are produced by community inhabitants in shrimp ponds behind the village, what they learnt while working on the shrimp farms. Focusing on the "bait market" saves the villagers the marketing costs in the city. Some villagers also started working in the sport fishing industry offering services to less prosperous costumers.

While the development discourse creates a dependency on outside knowledge bearers who provide the necessary means to drive this development, capitalism promises the agency of the consumer. The supposed freedom of commodification and the accumulation of resources, can also be interpreted as economically constructed unfreedom within the global economic system (Appadurai 1990:307). Appadurai explains this „Fetishism of the consumer“ based on Karl Marx’s “Warenfetsch“:

„[The] consumer has been transformed, through commodity flows (and the mediascapes, especially of advertising, that accompany them) into a sign [...] and in the sense of a mask for the real seat of agency, which is not the consumer but the producer and the many forces that constitute production. [T]he consumer is consistently helped to believe that he or she is an actor, where in fact he or she is at best a chooser.“
(Appadurai 1990:307)

It becomes apparent that there is a close relationship between the commercialisation and the development discourse, as both discourses are oriented towards the Western, postmodern ideal of technological progress. Another example from the “White Shrimp Book” exemplifies this: “Perhaps more significant is the social impact [of aquaculture], especially in hitherto neglected and marginalised regions such as villages near the sea”²¹¹ (Camarón 1993 [1989]:2). And after a listing of employment and trade opportunities that the shrimp aquaculture brings, the supposing evidences of development are listed: “Housing of fisher with TV antennas, company vehicles parked in front of many of them, fibre glass boats replacing the old canoes made from balsa” (ibid.:3). Success is obviously aligned with a capitalistic possession logic, achieving certain vignettes like cable TV signifies “development”. Here again, it is important to consider the cultural context, the dispositif of the recipient culture, to understand why development is constructed around Guayaquil in this specific way.

Firstly, trade and materialism has always been of uttermost importance for the political survival of Guayaquil depending on the capital Quito (cf. 6.2.2). Economic diversity has been a strategy of adaption and successful resilience by the communities’ ancestors coming from the Santa Elena Pensinsula (cf. 6.2.1). Their arrival was marked by the

²¹¹ “Más significativo quizás sea el impacto social, sobre todo en regiones hasta hace poco olvidadas y marginales como son los pueblos que se hallan cerca del mar.”

knowledge hubs of the region: Many families had arrived around 1900 to work for the *haciendas* in the mangroves, small farms producing milk or cattle for the city. Due to their connection to other epistemes and the influx of people from other area, these farms became gateways bringing new knowledge into the rural mangroves. The sailing vessel predominant in the last century in the mangrove region, the commonly used *balandra*, is for example said to have been introduced by farm owners²¹².

Considering that illegal activities like smuggling have also been a survival strategy in the port city for a long time (cf. 4.3), it is no coincidence that with the shrimp industry also various form of illicit trade related to shrimps and other commodities emerged. One criminal activity were delinquents use boats and focus on robbery is called "piracy" in the region. Based on the newspaper reviews some "*pirata*" groups already existed in the area in the 1980s, but only attacked cargo ships in the waterway "Cuarantena" in the inner estuary close to the main Guayaquil port²¹³. In the 1990s, however, the criminal activity had grown significantly targeting now shrimp transports and other cargo, and were connected to drug trafficking²¹⁴. The mangroves started to become interesting for criminals from the late 1980s onwards, as valuable shrimp transports from the shrimp farms to the city took place. Around the same time there was an increasing availability of goods in the gulf due to community members engaged in larva-sales. It is possible to draw a connection between marginalization and criminal activity in the mangroves as members of an NGO describe:

"The pirates, that I have seen and lived with and talked about, are the people who were most beaten, who were most impoverished, who had no chance of anything. I have talked about it with my colleagues [and] [...] a human rights defender. And I was saying to him, but who are the pirates? Because it is said "the pirates". Who are the pirates? It is the people who were expelled from the mangroves"²¹⁵.

²¹²[Interview, Community, Male 28.10.2019; Informal Talks, Communities, Male 27.07.2019, 02.08.2019, 01.09.2019]: The *balandra* is an example of how recently introduced knowledge and material culture has become indigenous. The disappearance of these vessel with the breaking away of the mangrove logging due to conservation efforts, is even considered a "lost tradition" of the mangrove farmers.

²¹³ [El Universo 24.08.1980]

²¹⁴ [El Universo Newspaper review 1980, 1993-2000: Keywords list in Appendix XXIII-XLI]

²¹⁵ "Los piratas, lo que yo he visto y vivido y conversado, es la gente más golpeada, la que más se empobreció, la que no tuvo ninguna posibilidad de nada. De lo que yo he conversado con los compañeros, [...] un defensor de derechos humanos. Y yo le decía, pero quienes son los piratas? [...] Por qué son "los piratas". Quiénes son los piratas? Es la gente que fue expulsada del manglar." [Experts Interview, Guayaquil, Male and Female 11.09.2019]

I suggest to take into account the Anomie Theory by Merton (Merton 1938), stating that some social actors may well aim for the pursuit of cultural goals but are rejected because of their social position and approved opportunities to reach those. The cultural goals that arrived with the commodification discourse were related to material ownership, technology and monetary resources. The marginalization of the Southern suburbs and the already existing organized crime (Murphy 2009, Regan 2018:29) appear therefore to have fueled the rising of "piracy". Representatives of the community institutions for mangrove management, however, suggest that safety today has improved due to the increasing measurements the shimp farm owners have implemented. Measurements include for example armed staff or accompanying boats from private security companies²¹⁶. I suggest to also take into account for explanations improved living conditions in the suburbs and in the communities, and a slowdown in migration to the city.



Still, inhabitants of the communities in the rural mangroves express severe concerns about their safety in regards to piracy.²¹⁷ During a demonstration for more security along Ecuador's coasts in the center of Guayaquil, artisanal mangrove fisher staged pirate attacks to raise awareness²¹⁸. All the more interesting that community inhabitants themselves wear symbols of a gang culture often associated with organised crime (Pic. 64). It appears to be a mimicry practise protecting oneself from criminal groups in

pretending to be part of them (cf. Bhaba 1984).

²¹⁶ [Expert Interview, Guayaquil, Male 12.11.2019]

²¹⁷ [Transect Boatride, 04.08.2019], [Research diary 19.07.2019, 17.08.2019, 20.08.2019, 24.09.2020,

²¹⁸ [Research Diary 20.08.2019]

I argue that the arrival of the globalized discourses have further fueled a hierarchy based on an assumed "natural" difference between man and woman, in an intersection with an assumed difference between people from different groups with different



63 Image: *Mujer Arbol – Tree Woman* 1969 from the Central Bank of Ecuador Collection. Pictorial semiotics represented in the novel *Don Goyo* (Aguilera Malta 1955 [1933]) Photograph taken from (Sánchez Ludeña 2012:42).

bodies in their relation to nature (cf. Bauhardt 2008:316). Mangrove commodification and appropriation by globalized discourses in the mangroves around Guayaquil was communicatively constructed using different types of bodies (cf. Sánchez Ludeña 2012:42f., Hornidge 2017:217). Men and often members of the "social elite" with their "white male" bodies had the power to create mangrove ontologies

constructing themselves as the "culture" worth striving for. People living in the rural mangroves were discursively constructed with a "white" "male gaze" (Mulvey 1989:19f.) as representations of "nature". Additionally, the binary gender system has not always reigned in the region (e. g. Gillison 2013). Only beginning with colonization Christian gender dichotomies replaced previous more diverse systems.

The mangrove realities in and around Guayaquil are often depicted in this Christian influenced binary structure: The seemingly urbanized "mangrove culture" in Guayaquil contrasts with the "mangrove nature" in the rural mangrove surroundings. The social power imbalance "city-periphery" is also activated, making the message clear that the aim is to strive towards "culture". Understanding "culture" as superior to "nature" is strongly rooted in history (cf. 2.3) and in a seemingly different attitude of social groups towards "nature" (cf. 6.2). The alleged "closeness to nature" of indigenous groups has been used over time to justify the cultural superiority of Western groups and thus to legitimize cultural invasion (cf. 2.3).

Existing power inequalities, defined through body and sexual attributions, became visible in the conflicts of knowledge invasion in the mangroves. Gender-based

sexualized violence was for example used as a tool in the displacement for land around the city of Guayaquil. During the period when the shrimp industry emerged, women and children in particular, as well as indigenous-rooted groups in the mangroves, were displaced without compensation from their land on a regular basis.²¹⁹ Male, sexualized power was also used during land occupations for housing plots, the so-called "invasions" into the mangrove surroundings of Guayaquil from the 1960s onwards: "And sometimes there have even been deaths in land disputes. Issues of sexual violence [...]: "I want a piece of land. I want your daughter" - "Or I want your wife", [statements] like this when [the land trader] is with the gun."²²⁰

Stories of sexual abuse in children and women appeared over-proportionally in the mangrove communities, but also in the city. Women from the communities have for example worked in the city especially as children workers, house maids in higher class households and dismissed when falling pregnant for example when abused by the head of the family²²¹. As said before, people from communities in the rural mangroves were until the turn of the century not recognized as civilians neither had civilian rights, and women experienced additionally an intrinsic power imbalance in their home culture. Various stories from women underline that the combination of being a woman and "living in the rural mangroves" have led to particularly strong exploitation due to the combination of two or even three power imbalance intersections (man/women; high class/low class; indigenous/white). It resulted in a lacking access to society's support structures like the legal system or the police. Domination structures follow the dichotomy white-male towards female-colored, relating additionally to the construction of hegemonial human-nature meanings, in which an alleged superior occidental culture dominates an "inferior indigenous" being part of nature.

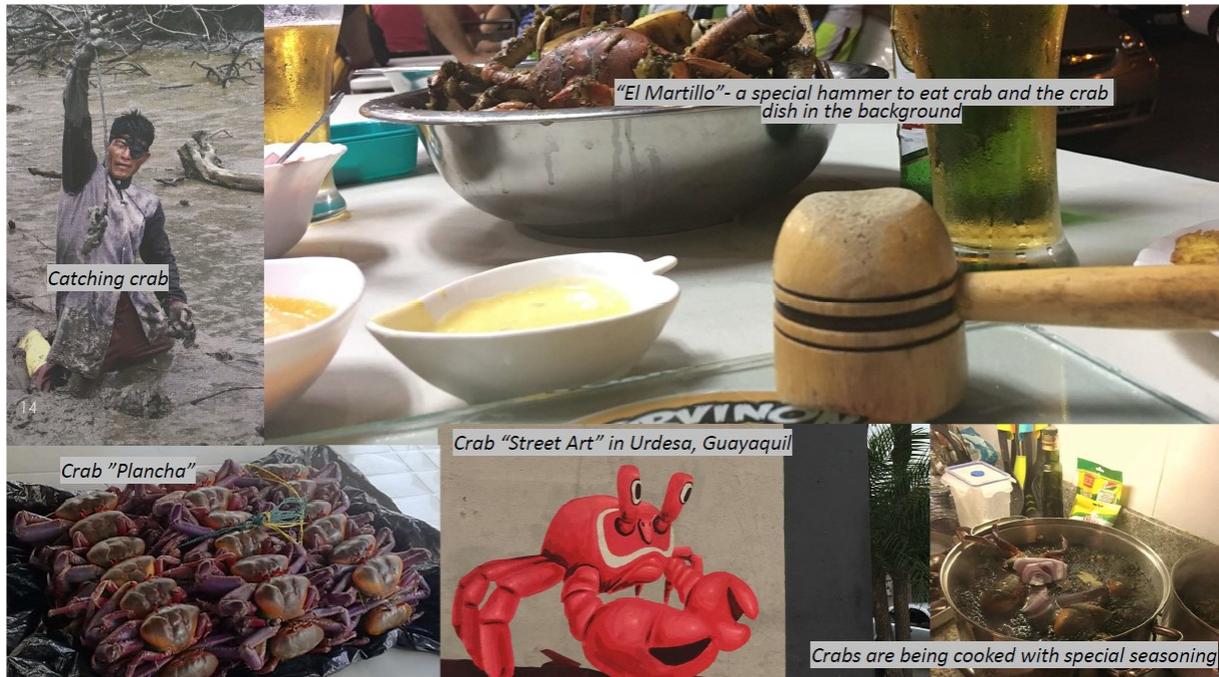
²¹⁹ [Interview, Community Member, Female 28.10.2019]

²²⁰ "Y ha habido a veces en la disputa de tierras hasta muertos. Temas de violencia sexual [...]: "Yo quiero un terreno. Yo quiero a tu hija" - "O quiero a tu esposa", así cuando esta con la pistola" [Interview, Expert, Male 21.01.2020].

²²¹ [Interview, Community, Female 28.10.2019]

8.4 Changing Crab Meanings: How Social Cohesion and Crab Scarcity relate

“For the people from Guayaquil crabs are the most tangible benefit of the mangroves.”²²²



64 Pictures of practices concerning the mangrove crab in Guayaquil (all pictures my own, except “Catching Crabs” (Ministerio de Cultura y Patrimonio 2013:14)) [Pictures taken (clockwise) 02.07.2019; 10.11.2019; 14.10.2019; 10.11.2019]

The newspaper Ecuvisa suggests an historical depth of several hundred years of crab consumption stating that “historians and chefs agree that inhabitants have eaten crab in Guayaquil since 1526”²²³. The statement, however questionable, certainly underlines the importance that crab and the crab feast have in Guayaquil’s culture. Being surrounded by mangroves caused many challenges in urban life over time, while a constant positive was the availability of mangrove seafood delicacies²²⁴. Many people

²²² “Para el Guayaquileño el beneficio más tangible del manglar es el cangrejo.” [Interview, Guayaquil, Male 10.07.2019].

²²³ “El cangrejo es parte de la historia gastronómica de Guayaquil”: ECUAVISA, 10.07.2013

²²⁴ “Y sabe que es otro aspecto importante de manglar, es que Guayaquil es una ciudad cangrejera. Guayaquil es un ícono gastronómico del cangrejo. [...] Vendía la gente, vendía aquí con unos charoles en la cabeza: Cangrejo, Cangrejo! Vendían. Ya ahora hay grandes cangrejales en Sauces, en Alborada.[...] [L]os Guayaquileños saben que mucho de este marisco solamente viene del manglar, por ejemplo el cangrejo, la concha, los ostiones solo hay en el manglar, no hay en el mar. En el mar hay otro tipo de marisco. Entonces Guayaquil está muy ligado con el tema del cangrejo.” [Expert Interview, Guayaquil, 21.01.2020]

stated, when asked what they know about mangroves, that they are “the home of crabs”.

The crab feast, the *cangrejada*, is not only about eating crab - it is an important activity to form and secure social relationships celebrating Guayaquil’s advantages. It served as a unifier for families in Guayaquil for a long time and its social importance starts already before the actual feast. The family feast used to take up a whole day, beginning with the buying of crabs in the markets. In the markets an own measurement system for live crabs bind together (Pic. 66) exists, as they are highly perishable once dead: In most markets and communities one “plancha” contains 48 crabs, subdivided into four “atados”, each comprising of 12 crabs²²⁵.

Responsibilities for the *cangrejada* are often divided by gender even though these rules appear to loosen up. While mostly the men have to buy, kill and clean the crab, the women prepare them in a pot with boiling water adding spices like salt, pepper, oregano, onion, garlic, green pepper, plantain or beer. Everyone seems to have its own favourite recipe. The crab is usually eaten by hand with the help of a *martillo*, a little wooden hammer, and accompanied by side dishes like different types of rice, fried plantains and a sauce called ají made from onion, coriander, salt and the water the crab was cooked in (cf. Ministerio de Cultura y Patrimonio 2013:14).

Everyone helps in the preparation of a *cangrejada*, but without rush, so that chit-chat during the preparation is welcomed and underlines the social importance of the feast. The quote from my research diary underlines the passion of eating crab, to internalize this mangrove animal and also shows how the knowledge of eating crab is passed on to children:

“Silvia tells me that her parents gave her a crab foot to suck on when she was 1.5-2 years old and then she gradually got a whole crab. Silvia and Jovana eat the shell with the stomach contents of the crab mixed with rice and onion and tomato salad. This is too gross for me. But I like the crab itself. You take the uña (the claw) of the crab to scrape the meat out of the individual parts. It takes me 45 minutes to eat one crab, the others eat five in the same time.”²²⁶

²²⁵ Varieties exist in the counting system depending on the collectors’ community.

²²⁶ [Research Diary 10.11.2019]

From the 1990s onwards the crab feast was systematically commercialized in crab restaurants the so-called *cangrejales*, and even food chains specialized on crabs emerged all over the city²²⁷. I argue that the commodification discourse of the shrimp industry had resulted in more formal and informal work opportunities, an increasing dependency on monetary resources and changing gender roles in the city and also in the community. While in the past it was mainly family ties that were important and strengthened through the *cangrejada*, today crab feasts with friends have raised in importance reflecting the relevance of networking as a resource. Crabs form part of events of social cohesion still today, reflecting for example in crab prices rising with the match of Guayaquil's famous football club Barcelona²²⁸.

MEANINGS OF CRAB FEAST DEVELOPED IN THE CITY FROM "UNIFIER FOR FAMILIES" TO "NETWORKING OPPORTUNITY" → INCREASING DEMAND FOR MANGROVE CRABS WITH INCREASING NEED FOR SOCIAL COHESION DUE TO MIGRATION

In other words, economization and emancipation resulted in an increasing demand to "reproduce" the meaning of the *cangrejada* in restaurants, constructing new social meanings at the same time. An older inhabitant describes the changes, underlining his opinion that the crab feast has lost its previous importance for social cohesion, especially for women:

"The *cangrejada* [...] has changed a lot. Because the crab was, it was always a cheap product. [...] Before it was very popular, [...] it was not a problem to unite people [...], it was cheap. [...] It is the whole processing of the crab, it unites the women, because it is said that is where they are talking: while they are washing the crab, while they are putting it in the pot. [...] I don't think it's the same now. Now, yes people invite each other, but as a table act, in which I am going to give you a crab [...]. Now the restaurants are there, before it was the house."²²⁹

²²⁷ Discussion with expert group after presentation at ESPOL, 06.09.2019, Interview, City/Community, Female 10.09.2019, Research Diary 13.07.2019 and 10.11.2019

²²⁸ Interview, Guayaquil, Male 21.01.2020

²²⁹ "La *cangrejada* [...] ha ido cambiando mucho. Porque el cangrejo era, siempre fue un producto barato. [...] Antes era muy popular, [...] no era problema coger gente [...], te cuesta barato. [...] Es todo un procesamiento del cangrejo, une a las mujeres, porque dice ahí están conversando mientras están lavando el cangrejo, mientras le están poniendo en la olla. [...] Yo no creo que ahora sea igual. Ahora, si se invita, pero como un acto de mesa, en el cual te voy a dar un cangrejo [...]. Ahora se ha hecho el restaurante, antes era la casa." [Interview, City, Male 10.12.2019].

However, women I talked to argued differently, stating that they now buy and prepare their own crabs by choice and with the friends they choose and consider important²³⁰.

A female inhabitant of Guayaquil states that the main reason why the location has swapped from home to restaurant is “because cleaning-up afterwards is such a mess” [Informal talks, inhabitants Guayaquil]. The statement uncovers various developments, for example changing understandings of gender roles, time necessities and possibly even changes in understandings of hygiene. With higher needs to earn money and to engage in income gaining activities especially for women in changing gender roles, time for domestic work became a scarcer resource.

In an urban zone suffering historically from resource scarcity, the formation of smaller units of belonging and reciprocity was of particular importance (Broocks and Hornidge 2020; Research Diary 06.02.2019). Even more so with a growing population. The last decades were marked by migratory movements and knowledge intrusions into the city. Power imbalances based on ethnicity in the migrant city caused additional division (cf. 6.2.2). I argue that the crab feast turned into a symbolic practice to strengthen social cohesion. I suggest that it is no coincidence that a practice emerged in which an identity marker of the city is celebrated without associating oneself too much with nature and mangroves themselves. As stated earlier the Guayaquilean mangroves in the last decades are equated with poverty, environmental pollution and hygiene problems, especially the mangroves close to the city (cf. 6.5).

But not only Guayaquil has had an increasing demand for crabs, the practice of eating crabs has extended all over Ecuador and has become especially popular in the highlands²³¹. The social reasons behind it remain unclear and have not been studied

²³⁰ Discussion with expert group after presentation at ESPOL, 06.09.2019

²³¹ “En la Caraguay [the most important market for mangrove products in Guayaquil] forman cartones de cangrejo y lo mandan a Quito, a Loja, a Ambato, casi todos los dias. Hay un consumo en la sierra de Ecuador, bastante, de cangrejo. [...] [El] cangrejo [...] [también] cocina[n], y lo hacen la pulpa, las tarrinas.” [Interview, Expert Municipality, Male 21.10.2020].

yet, but inland migration may have been a contributing factor, "exporting" not only the crab but probably also the social meaning of cohesion.

However, the increasing demand for mangrove crabs due to changing *cangrejada* practices, coincided with a decline in existing income opportunities in Guayaquil's rural mangrove communities. Members of the communities were highly integrated into the cash economy by that time already (cf. 8.2). The prohibition of the mangrove cutting industry in the 1990s and a little later the decline of the shrimp larvae caused a severe decline of income opportunities²³². While larvae-catching for the shrimp industry supported community households around Guayaquil for a while still, the white spot disease in 2000 stopping all shrimp trade increased the need for an alternative economic activity in the communities²³³. Catching mangrove crab became the new principal income generator, as a strong increase in the importance of crab fishing compared to the 1980s shows (Degen 1988:12).

"Indigenized" meanings connecting crab collection and richness exist today in the communities. In the mangrove crab, one arm is thicker than the other. The *pata gorda* is considered a special delicacy as it contains the most meat. In the community a myth

MEANINGS OF CRAB DEVELOPED IN THE RURAL MANGROVES FROM "OCCASIONAL FOOD" TO "RESOURCE FOR MONEY" → INCREASING AND SYSTEMATIC CATCHING OF MANGROVE CRABS

exists that promises richness to the one who finds the crab with two "big" claws:

"Here are some who say that there is a two-handed crab in the mangrove. They always take the crab with the big hands and say that one, that one has a small stone, and that one takes the stone away from it, and [...] when he goes [crabbing] again [...] it makes one collect quickly."²³⁴

²³² "Ya no, no pues, ya no había como trabajar, dijo mi papá. Y aquí ya nos vamos a morir de hambre, dijo así una vez." [Community member describing the situation for her family, when mangrove cutting was prohibited. Interview, Community, Female 30.08.2019]

²³³ "[E]n el año 2000 también, aunque la gente está pendiente de dinero, guardado en esto...en el trabajo no había [...]. No alcanzaba para mantener a la familia. Entonces la gente migró a Guayaquil, migró a [otros lugares]." [Interview, Expert, Male 12.01.2020]

²³⁴ "Aquí hay unos que dicen que en el manglar hay un cangrejo de dos manos gordas. Siempre cogen al cangrejo manos gordas y dice que ese, ese tiene una piedrita, y ese uno le saca la piedrita, y ese ese cuando [uno] va de nuevo, o al otro día coge, se hace rápido." [Interview, Community, Male 30.08.2019]

And another crab fisher adds that he had already found around four crabs with two big clams, but that he was never on his own – the legend says one has to find it when alone and then the crab will hand over the pearl and die²³⁵. Although it is unclear in what time the myth originated, it can be read as a form of statement that catching crabs for personal gain is the right thing to do. In this myth working alone is constructed positively, although usually people tend to work in smaller family groups. The crab dies when handing over the pearl – giving richness to the receiver, similar to the crab catcher catching the crab and delivering it to death for their income. The myth may serve to justify these changing practices, and is probably related to older narratives.

Catching crab is an activity that can only be done when the tide is low, so the crab burrows lie above water level. People from the communities confirm that they prefer to leave early and be home early around midday again²³⁶, but this statement may also relate to the increasing competition and conflict with crab catchers from surrounding communities and the city: First come, first serve. The crab catcher has to immerse oneself into the mud, with the hand and a metal hook in the burrow. People wear a distinct outfit of old clothing and rubber boots to protect themselves. People catching crab from the community claiming their ancestral status as mangrove community in contrast to the Guayaquilean crab fisher. The latter are often accused by the technical advisor, but also by the communities for the increasing resource scarcity catching crab with inappropriate means like traps.²³⁷ Some crab collectors of the rural mangroves designate themselves as protectors of the mangroves following ancestral practices.

²³⁵ “Pero yo si he capturado si quiera, como unos 4, pero nunca tenía perla... pero a veces lo encontraba pero ya cuando estaba en la canoa, contando el cangrejo, ta ta ta, aho salir el cangrejo con dos patas gordas, entonces ya estabamos los demas viendo, porque dice que soy que, uno solito, si tú lo ves al cangrejo, que lo cogiste... Si, para ver, y ahi sale la perla que te dice, y eso es, porque mi abuelo si cuenta, que había unos señores, iban a suerte de encontrar eso, y coger la perla, que le llaman, la piedra, y cogían muchísimo cangrejo. Y tú quedas, el cangrejo muere, y tú quedas con la perla.” [Interview, Community, Male 11.09.2019]

²³⁶ [Interview, Community, Male 11.09.2019]

²³⁷ “Ya, y muchas veces con estas trampas cogen hembras, que esta prohibido, o cangrejo de menos de [...] este cephalothorax [cual] tiene que tener mínimo 7.5 centímetros. Entonces cogen cangrejo pequeño, y todo eso, no. Entonces solo lo que se permite es el tema del brazo, y el gancho, un ganchito de fierro. Entonces, si, ha habido conflictos, porque la gente muchas veces viene de Guayaquil, y quiere sobreexplotar el recurso.” [Expert Interview, Guayaquil, Male 21.01.2020, Research Diary 18.08.2019]

Fact is that the increasing crab scarcity all actors describe, is neither the fault of the crab catcher whether from the city or the rural mangroves. It is a combination of globalized knowledge influx leading to movements of people and practices and affecting all cultural groups related to the mangrove crab in a complex hybrid web of meaning.

8.5 Summary

The commodification, the conservation and the development discourses brought globalized knowledge into the Guayaquil area from the 1980s onwards, creating the shrimp industry and a diverse web of effects on a hybrid web of meaning of natures and cultures: MangrovesCulture. The chapter has analyzed in what ways the meanings of mangroves have changed in this process, and how this has affected mangrove use in the city and the rural mangroves. The analysis has taken into account that differences and existing structural inequalities between individual groups may also be reproduced in the transmission of knowledge. One pole in this dichotomy is “epistemicides” (de Sousa Santos 2014:371), where knowledge is eradicated by other knowledge systems. The other pole is the indigenization process of knowledge, in which knowledge travels and with the arrival in other societies creates new meanings.

A result of the impact of commodification and conservation discourses and the changing mangrove meanings, was the ecological crisis related to mangroves in and around the city through deforestation by shrimp production, informal housing and sewage discharge. The destruction of mangroves led to a social debate about mangrove ownership in Ecuador. Mangrove areas became of concern for various groups, especially members of the middle class constructing mangroves discursively as place for conservation and recreation. The idea of the ASUCs emerged, concessions given to communities for using mangroves sustainably and at the same time protecting them. The ASUCS led to the legitimation of the mangrove communities, allowing them to receive legal rights.

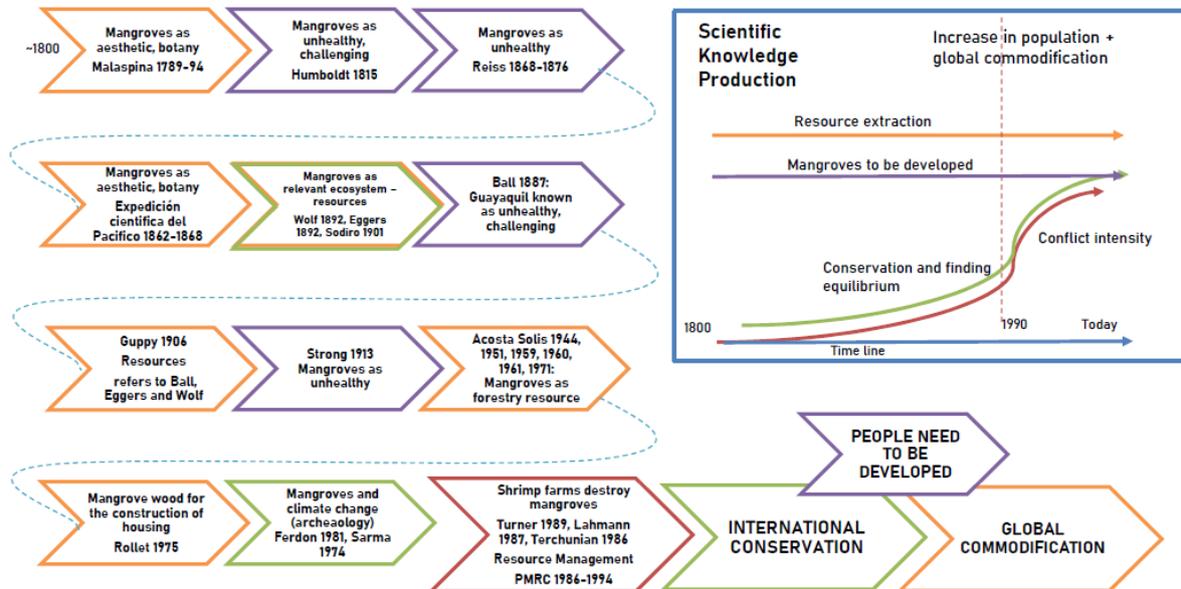
At the same time, the conservation discourse stopped income generating opportunities for the people living from mangrove wood. People in Guayaquil’s surrounding had to find new ways of making a living. Through larvae catching and crab sales people started to become even more engaged into the monetary system with more goods entering the communities and use practices changed from natural material to industrial goods.

When the white shrimp disease led to an economic collapse, people had to start commodifying crabs – or move to the city. While the development discourse legitimizes the intrusion of Western knowledge elements into the mangroves through the construction of poverty, the conservation discourse is a direct response to ecological and social disintegration through commodification of nature.

In the city the shift from consuming crab at home to the outside restaurants relates to an increasing availability of wage labor in the shrimp industry and the adjacent sectors, as well as changing gender roles. The higher mangrove crab demand from the city coincided with the prohibition of the most important income generating activity in the communities, the cutting of mangroves. The industry together with the sale of larvae had created a strong dependency on monetary resources in the communities. With the breaking away of both income generating options, the only way to gain money was through the commodification of crabs. Instead of accusing the actors involved it is important to understand that due to the intrusion of globalized discourses a complex and entangled MangrovesCultures setting in and around Guayaquil changed, causing a severe increase in crab demand and the resulting resource scarcity today.

IX DISCUSSION: MANGROVE HYBRIDITY AND CONSEQUENCES

9.1 The Past, Present and Future of Mangroves Cultures



65 The development of Mangrove Meanings over time - Examples from Science and Politics

Mangroves are not an enclosed space or an ecological system that can be dealt with on its own. Instead, mangroves are a hybrid entanglement of “natures” and “cultures” meanings. Nature(s) and humans intersubjectively shape these meanings, produce and reproduce different forms of discourses within specific mangrove settings. Discourses interrelate and also its subjects and objects are interconnected within their socio-historic infrastructure. Neither the science discourse, nor the commodification, conservation or development discourses stands on their own, and also within discourse ambivalences exist. As I have shown, all these discourses arise from an infrastructure that has become increasingly globalized over time, having its roots, however, also in a knowledge supremacy carried by (post-) colonial meanings within a natural science structure.

Today’s globalized mangrove discourses have been shaped and are still shaped by occidental science meanings. Table four shows exemplarily the development of some of these meanings over time leading into today’s globalized commodification,

conservation and development discourses. For nearly two hundred years, the new natural science discursively constructed mangroves as a place hostile and unhealthy to humans, that at the same time can and should be cleaned up and made utilizable for humans: Mangrove must be dominated in the name of progress. Progress and commodification interlink and resulted in the hegemonial and occidental discourses of commodification and development. At the same time and as early as in the 1800s, scientific meanings were attributed that constructed mangroves as a positive wilderness – leading to an emotionally charged depiction of nature as aesthetic: A depiction of a nature that the human being has controlled, “civilized” and is now able to enjoy. On this premise the commodification, the conservation and the development discourses developed further. The scientific mangrove discourse is the foundation and keeps fuelling the three hegemonial mangrove discourses.

The results of this work confirm that a core problem in resource overuse and mangrove destruction in Guayaquil is the expansion into the mangroves for shrimp production and the export of shrimps to a delimited global market. At the same time, the expansion contributed to a greater enrichment of already rich families, around Guayaquil and worldwide through company ownership or the ownership of shares in transnational businesses. But also for the majority living in Guayaquil’s mangroves the shrimp industry became a promise of prosperity and better living standards fuelled by the development discourse. New mangrove meanings in the West developed fostering interest for the mangroves and causing the hegemonial influx of globalized knowledge to the area. The development discourse created “poverty” and informed mangrove user groups that they have the choice to stay “underdeveloped” or trade in their work force and nature for “the better life”. Building upon existing structural power imbalances this knowledge invasion supported a wide social acceptance when turning mangroves into shrimp farms in Guayaquil’s surrounding.

The conservation discourse started in the West with the “ecological crisis of modernity” (cf. Latour 1993 [1991]:3ff.) in the 1980s, while later the occidental crisis was externalized worldwide, for example into Guayaquil’s mangroves. The conservation discourse promised use groups that had lost mangrove access to get back their territories and live in liberty again. The price they often had to pay was to become instruments of mangrove conservation institutions. Mangroves are owned officially by the communities, while it was decided for them, what they are allowed to do in the concessions, e. g. touristic, recreational and scientific activities.

Due to awareness rising in Western societies, consumers demand sustainable shrimps. Therefore, a trend in shrimp farming is trying to combine commodification, development and sustainability, for example in corporate social responsibility projects and organic shrimp farms. But the results in the mangroves of Guayaquil are hardly visible so far (cf. Dietrich 2013). Power imbalances between mangrove user groups have not changed since centuries and the more powerful user groups continue producing and reproducing mangrove knowledge in the science and globalized discourses.

Power is reconfirmed and secured by the elites: Ecuadorian families with a colonial background of wealth accumulation, transnational businesses and the high and middle class in Latin America and in the industrial nations including Europe, the USA and China. All profit directly or indirectly through high living standards or profits that can be traced back to capitalistic land grabbing. At the same time, institutions from Europe and the USA criticise the ongoing natural resource extractivism of Latin American governments and promote peace, nature protection and development. While Ecuador’s shrimps are exported above all into these countries. The conservation discourse pretends to level out the externalization of ecological costs and allows the “industrialized” countries to keep up a high standard of living. Having said this, I emphasise once again that the “blame” for resource exploitation lies not in the actions of local individuals, but in the

complex reproduction of power by globalized discourses. Science and politics have the best possibilities to influence these discourses.

Some of the use of the mangroves still lies, at least in part, with the "ancestral" mangrove users. The integration into the capitalist system has meant that they themselves are now compelled to adapt their practices to commodification, conservation or development. A return to the pre-capitalist system is impossible. Even if the family of the crab fisherman, for example, make a living, the earnings from the mangrove product are many times higher when the product is marketed along the value chain: revenues stay with the owner of the crab restaurants and with the export company for shrimps. So access to the mangroves has in fact changed deeply and way more than visible at first glance towards the hegemonic middle and upper class. Today, access to use mangroves is even more shaped by body and heritage than ever before. Women, especially women with indigenous roots, are even more excluded from mangrove use than before and are additionally exploited as cheap working force in factories. People with "non-white" bodies have only apparent access to mangrove use - they are driven by hegemonic discourses to exploit the surrounding nature and their bodies still today.

Two poles clearly emerged in the mangrove depictions in natural science: the threat posed by nature and the ability of humans to overcome this threat through technology, knowledge and exploitation. This bipolarity reflects the basic human needs for protection, safety and food - for survival in a hostile environment. I argue that the way mangroves and people living in the mangroves have been exploited over time has been supported by a human-immanent fear of lacking sufficient resources. As said before, the domination of nature by technology reflects nature as something hostile that must be controlled to secure survival. The extraction and accumulation of goods in the colonial and today in the capitalist world of meaning, compares to the collection of

"winter reserves"- only that the dimensions have long since reached a pathological size. It is now a matter of coming to grips with these fears, control them and achieve a new form of hybrid, peaceful coexistence with nature.

But also nature has its ways of adapting and resilience. An Ecuadorian botanist, Xavier Cornejo, said in an interview:

Botanist: [Mangroves] will continue growing, expanding, expanding, as ecosystem. Of course, the ecosystem that was before was transformed, was partially destroyed was altered, damaged [...]. I think mangrove will live forever.

Author: They are very resistant is that what you say?

Botanist: They are very torrent, and they have a huge capacity of adaption, yeah.²³⁸

On this premise I argue, not only mangroves, but MangrovesCultures will continue to exist, even if they are modified severely and very different than before. However, we have the power to consider and discuss to what extent we want to continue allowing these alterations. Having started with an analysis of Alexander von Humboldt's perspective on mangroves, I now close with a famous quote from the diaries of his travels through the Americas: "Alles ist Wechselwirkung" (Humboldt 1803/04:27r) – everything interrelates. In this sense, the results of this research suggest that we need to include and consider all groups and all interrelations when designing and co-creating MangrovesCultures in the future – for a peaceful co-existence of all species.

²³⁸ [Expert Interview, Guayaquil, Male 22.01.2020]

9.2 Outlooks on (International) Policy Making

„Anyone who [...] wants to create usually has a strong interest in scientifically sound knowledge about their design object. ” (Schimank 2013:18)

The results of this work are not only relevant in terms of social justice related to the benefits of mangroves or for academia. They are particularly relevant for the local and international economic elites, the main users of mangroves for example for shrimp production, and also for economic science, for two reasons:

1) Shrimp production in its current mode of production is economically unsustainable in the region and will not be able to survive in the long term.

2) The form of capitalistic shrimp production around Guayaquil is not only economically unsustainable; it poses a long-term threat to human life by depriving all humans of their livelihoods. It also excludes some social groups particularly intensively and rapidly from mangrove use - their livelihoods - which is likely to foster social conflicts and riots in the short to medium term (cf. Abramovitz 2004). This is already evident in the armed groups attacking shrimp transports on the estuaries around Guayaquil. Both will make economic production impossible in the medium term.

Even if this argument is by no means new, this work shows once again that **it is necessary to leave local, territorial thinking behind and understand territory and nature as a globalized good.** Understanding the impact of intensive knowledge influx in an area and the result it has for nature use, can support decision-makers and stakeholders to analyse, guide and soften effects of globalized discourses and knowledge. It leads actions for a more sustainable co-living of mangroves and humans, at the same time increasing visibility of power imbalances and guiding the way on how to empower underrepresented groups to speak or not speak up for themselves in nature use. At the same time, it is important to accept mobility and moving goods, people, practices and allow cultures to change. The question should not be how mangrove culture can be

conserved, but how all mangrove user groups, from subaltern to dominant, could be supported in coming to terms with their own history, and also overcoming cultural trauma where necessary. It could pave the way for a more **equitable use of the mangrove, in which not only different use groups but also nature's rights are taken into account. It is necessary to develop new methodologies for an interepistemic dialogue including not only cultures but also natures.**

Having said this, **territorial rights for mangrove use groups in Ecuador continue to play an important role. In order to achieve a more equitable distribution of access to nature, it is also necessary to question capitalist land-grabbing processes today and in the past.** Capitalism has made goods and basic services available to many of the world population. But the majority of the population was incorporated into the system through the invasion of land and a severe knowledge influx. With less pre-capitalistic nature available, **capitalism must be tamed in the future and ways must be found to support more circular economies.** In order to avoid future land acquisition processes **global, transnational policies and legal systems must be enacted that regulate land acquisition and protect resources worldwide, as well as allows the sanctioning of offenses.** Examples include the taxation of transit routes or supply chain laws. Such massive forms of exploitation were only possible because of the accumulation of capital over centuries. Historic regulation or reconciliation could therefore learn from the return of stolen art objects: As part of the development cooperation, **scientific historical forensics of land grabs, as well as previous land use practices, and an initiation of dialogue processes could support the return of land rights in the future with including women as land owners in parity.** Expropriation should obviously be avoided, but intergenerational inheritance could be examined more closely. **The inheritance of land, land use rights or revenues made from land grabs could be reconsidered globally: a hereditary ceiling could be considered.** This could permanently change power relations and prevent individual families from determining both economic and political life in a democratic country like Ecuador. It should also be considered as a lever in

worldwide wealth distribution. Any surplus could make room for redistribution within global society towards use groups that have lost access throughout history.

Harding and others underline that the focus of science is driven by its founders and its sponsors - that means, by Western actors in politically and economically powerful positions (cf. Harding 1991). Based on the results of this work it implies for mangroves that three mainstream discourses not only dominate mangrove knowledge and mangrove practices but also influence the financing of scientific mangrove research: A scientific knowledge that creates "truth" in society shaping again mangrove knowledge and practices.

At the same time the result confirms and highlights different power levels between mangrove use groups, with some groups having been marginalized over centuries and especially in recent decades within a globalizing world. The aim should be to empower these groups to achieve more equality in access to mangroves. To do so it is first of all important to question funding lines that solely deal with mangroves as a nature science object. The discourse approach of this work illustrates the relativity of scientific "truth" in relation to mangroves, and thus the importance of **supporting more interdisciplinary and transdisciplinary approaches to scientific nature investigation**. As has been shown, mangroves are not just nature. They are a hybrid nature-culture amalgam. This truth must also be reflected in the scientific approach: There is a strong need to develop **"hybrid" science approaches to understand NaturesCultures**. But instead of developing funding lines in this realm only in Western countries, politics need to focus on **strengthening hybrid science approaches in Non-Western countries and improve visibility of non-Western or marginalized groups' perspectives in research**.

The purposefulness of mangrove area use must be reconsidered, too. In this way, intact areas could be better protected and areas that have already been severely degraded could be modified for the use of certain species as e. g. the "ecosystem-design" concept suggests (e. g. Zimmer 2018). However, a special focus should be placed on the

question of how voices from marginalized groups can be included into these scientific studies to avoid continuing the reproduction of historically grown power imbalances. **Methods of cultural translation processes should be investigated, promoted and supported more** taking subaltern voices into account significantly improving previous attempts of inclusion. We must ask how other discourses and meaning-worlds can be made more visible - and how marginalized and subaltern actors can be involved in monitoring these processes. A new form of "citizen" science should be considered that includes not only citizens in the sense of city dwellers, but also the inhabitants of rural regions and urban peripheries. The knowledge flows between the different regions need to be studied more and understood better. The structural problems in the participation in scientific infrastructure in countries of development cooperation should also be scrutinised more closely. Science needs to become more inclusive in many ways, to understand better MangrovesCultures challenges.

Finally, Bauhardt formulated in 2008 for gender equality what I would also like to propose for social equality in the mangroves: **research contracts must be awarded that are dedicated to the search for environmentally and socially compatible concepts that do not lead to additional work for marginalized or subaltern groups but contribute to their relief** (cf. Bauhardt 2008:318).

Globalized discourses influence not only science ministries and science projects. Activists who have been campaigning for the rights of subaltern mangrove users for decades often also have instrumentalized the mangrove inhabitants in their interests - albeit with the best of intentions and backed up by "the truth" of conservation and development discourses. **It is necessary to question the narratives of conservation and development, foster reflection for more inclusive approaches and stop hegemonial use of globalized discourses.**

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APPENDIX

Overview of they Days spent in Mangrove Areas around the city of Guayaquil:

<i>ID</i>	<i>Dates(s)</i>	<i>Days</i>	<i>Comments</i>
I	15.06.2019	1	Exploratory Visit
II	22.06.2019	1	Community Meeting
III	29.-30.06.19	2	Exploratory Visit
IV	05.07.2019	1	Grand Tour Qs, informal talks
V	14.07.2019	1	Community Meeting
VI	18.-20.07.2019	3	first overnight stay
VII	25.-29.07.2019	5	Transect Walk
VIII	02.-04.08.2019	3	Transect Boat trip, Workshop Free Listing
IX	16.-19.08.2019	4	Participant Observation, Transect Walks, Interviews
X	29.09.-31.09.2019	3	Interviews, mapping of houses
XI	31.08.2019	1	Interviews, exploratory Qs
XII	01.09.2019	1	Interviews, exploratory Qs
XIII	03.10.2019	1	Children´s birthday Yacht Club
00XIV	09.-11.09.2019	3	Interviews
XV	05.-8.10.2019	4	Exploratory Visit, Problems due to political unrest and road blockings
XVI	20.10.2019	1	Community Meeting, return via Communities and GYE outskirts
XVII	28-29.10.2019	2	Transect walks in 2 communities, in depth interviews in 2 communities
XVIII	12.11.2019	1	Outskirts Guayaquil
XIX	06.02.2020	1	Visit of a research station on Aquaculture
XX	09.02.2020	1	Community Meeting and Goodbye
	TOTAL DAYS	40	

INTERVIEW QUESTIONNAIRE I

Preguntas de las entrevista semi-estructurado

Version 28.08.2019

Habitantes de las comunidades en el área de manglar rural / Expertos de temas específicos

A) Introducción

- 1) Nombre:
- 2) Edad:
- 3) Comunidad donde vive?
- 4) Cuando venía a la comunidad?
- 5) De dónde venía Usted o sus padres?

B) Historia y cultura

- 1) ¿Cómo se ha cambiado la vida en el golfo en las islas del golfe? ¿Qué comentaron sus padres sobre su vida y como eso difiere a su vida hoy en día?
- 2) ¿Sus padres tenían un lugar fijo (como casa) donde vivieron o vivieron en su barco? ¿Qué tipo de barco tenían?
- 3) ¿Cómo funcionó la vida en barco de sus padres?
- 4) ¿Cómo funciona la vida en barco hoy, p. e. cuando uno va a pescar por ejemplo varios días? (¿Por favor, también puedes describir me las reglas de higiene en el barco (lavar, usar baño etc.))
- 5) ¿Qué importancia tiene el barco? ¿Hay personas que no tienen un barco? ¿Hay reglas o rituales que uno tiene que cumplir para asegurar/dar bendición el barco? ¿Dónde compraste tu barco? ¿Hay gente que está construyendo barcos en el pueblo?
- 6) Sobre la historia de la región: ¿Porque piensas que hay gente que se sentaron en este pueblo y otros en [[Community A]]? ¿Qué diferencias hay entre [[Community A]] y [[Community B]]?
- 7) ¿Qué significa “pueblo ancestral”? ¿Este miembro de un pueblo ancestral y que es el nombre de este pueblo?
- 8) ¿Te sientas miembro de una cultura denominada? ¿Sí sí, como se llama esta cultura?

C) Influencia de Guayaquil

- 1) ¿Ya una vez pensaste en moverte a otro lugar?
- 2) ¿Ya una vez has hecho otro trabajo? ¿Por qué lo cambiaste?
- 3) ¿Qué productos son los más importantes que compras fuera del pueblo? ¿Dónde compras? ¿Siempre has comprado en este(s) lugar(es)? ¿Has pensado ya una vez en cambiar el lugar de venta?
- 4) ¿Qué productos son los más importantes que vendes? ¿Dónde vendes? ¿Siempre has vendido en este lugar? ¿Has pensado ya una vez en cambiar el lugar de venta?
- 5) ¿Qué haces en Guayaquil cuando vas por allá?

6) ¿Qué dicen otras personas sobre [[Community B]]?

D) Género y poder

- 1) Que tienes que hacer para ser un buen hombre/mujer/niño?
- 2) ¿Como estas involucrado en el trabajo que haces tu esposo?
- 3) Hay comida que una mujer no puede consumir durante la embarazo/ menstruación/ después del parto?
- 4) ¿Hay comida que hombres no deben que comer?
- 5) ¿Hay comida que niños no deben que comer?
- 6) ¿Hay enfermedades que demandan que uno no debe que comer ciertas cosas?
- 7) ¿Qué rol juegan mujeres en la toma de decisiones? ¿Formal (en reuniones de tipo oficial) versus informal (en casa p.e.)?
- 8) ¿Qué temas deben que decidir mujeres? ¿Por qué?
- 9) ¿Te acuerdas de [[Jefferson]]? ¿Era un líder bueno o malo? ¿Por qué?
- 10) ¿En qué momentos te sientes poderoso?
- 11) ¿En qué momento te sientes sin poder?

E) Cangrejos: recolección y venta

- 1) ¿Desde cuándo recoges cangrejo?
- 2) ¿Me puedes describir tu trabajo como cangrejero lo más detallado posible?
- 3) ¿Hay reglas o rituales que pueden ayudar que sea una buena colección?
- 4) ¿Hay días cuando uno no debe coger cangrejo?
- 5) ¿Porque te gusta coleccionar cangrejo?
- 6) ¿Porque no te gusta coleccionar cangrejo?
- 7) ¿Dónde vendes el cangrejo? ¿Quién lo compra, quien lo consume?
- 8) Me puedes describir en detalle que haces en [[Mangrove Hub B]] para vender cangrejo...por ejemplo Llegas a la muelle, buscas un espacio, es difícil, buscas alguien que cuida tu barco, ¿cuánto cobra? Etc.
- 9) Yo he notado que hay gente, que tiene ropa como pandillero en [[Mangrove Hub B]]. ¿Quién es, porque piensas que llevan esta ropa?
- 10) ¿Colectar cangrejo siempre ha sido una actividad típica de la zona?
- 11) ¿Siempre coleccionaron cangrejo cada día o antes era una cosa más temporal/algunos días por mes/año?
- 12) ¿Que sientes cuando ves, durante la veda, ¿que pasan los barcos con los cangrejeros de Guayaquil?
- 13) ¿Me puedes describir los cangrejeros de Guayaquil?
- 14) ¿Qué piensas sobre la oportunidad de vivir en [[Mangrove Hub B]] o en Guayaquil en general?
- 15) ¿Qué diferencia hay entré cangrejeros de [[Community B]] y [[Community A]]?

F) ¿Los manglares

- 1) ¿Para describir una persona donde vives/de dónde vienes, que dices?
- 2) En tu vida diaria, qué importancia tiene el mangle/el río?
- 3) ¿Qué animales uno puedo comer que viven en las islas del Golfo en el agua o en la tierra (no importa si lo comen todavía)?
- 4) ¿Qué plantas hay en las islas del Golfo que puedo comer o usar? ¿Y para que lo usan?
- 5) ¿Qué plagas/animales peligrosos hay en las islas des Golfo y como me puedo proteger/tratar heridas?
- 6) ¿Qué tipos de enfermedades hay y como se puede curar?
- 7) Que plantas medicinales hay en las islas del Golfo y para qué/cómo se usa?
- 8) ¿Para que usan los diferentes tipos del mangle?
- 9) ¿Qué espíritus hay en las islas del Golfo y cómo me protejo?
- 10) ¿Qué peces pescan con que técnica (por ejemplo, trasmallo / caleta) en el Golfo?
- 11) ¿Qué peces no quiero pescar y por qué?
- 12) ¿Qué tengo que hacer para ser un “buen hombre”?
- 13) ¿Qué tengo que hacer para ser “una buena mujer”?
- 14) ¿Qué diferencia hay entre „el mar“ y „el río“?
- 15) ¿Hay lugares importantes en el alrededor de la comunidad, por ejemplo, donde pasó algo especial o donde se recuerdan a una historia, accidentes, fantasmas o similar?

G) Gobernanza de los manglares

- 1) ¿Quién está el dueño de los manglares? ¿Quién está el dueño del río? ¿Quién está el dueño de la comunidad?
¿Qué responsabilidad tienen los dueños?
- 2) ¿Cómo funciona la concesión [[Community A]]? ¿Funciona bien?
- 3) ¿Estuviste involucrado cuando entregaron la concesión? ¿Cómo funcionó?
- 4) En tu opinión, ¿que debe que cambiar para que se mejora la situación de la pesca?

H) ¿Que, en tu opinión es el significado de los manglares?

- 4) Hay gente que está preocupada por la seguridad en el Golfo de Guayaquil. ¿Has escuchado algo sobre eso?
- 5) ¿Qué importancia tienen las camarónicas para Guayaquil?
- 6) En tu opinión, ¿qué relación hay entre camarónicas y manglares?

J) ¿Que, en tu opinión es el significado de los manglares?

Development of Interview Questions from 23.07.2019

Possible Interview Questions, Expert (community) and semi structured

Introductory Questions

What is the difference between „el mar“ and „el rio“?

What is the difference between [[Community B]] and the other mangrove communities?

What is special about [[Community A]]?

Species in the mangroves and practices

What plants are mangrove plants?

What parts of the mangrove tree is being used? What for?

What other parts of the mangrove tree have been used before / historically?

What are the main fishing activities here?

What fish live in the river which is adjacent to mangroves? What fish are being caught in the “sea”?

How did you become a crab fisher/fishermen/wife of a fishermen?

Are you proud to live in [[Community B]]?

Do you like fishing? Would you rather do something different? What would that be?

Do you have idols (rephrase Gangster style)?

Would you prefer to still cut wood?

Moving on the river – the river as home:

How do you learn to navigate in the river around home?

Can you describe what is important for navigation?

Do you remember when your people were still living on balsas? How did they move around? Semi-nomads?

Why do you think people from the [[Community C]] Association have called their association by the name of the estuary?

EXAMPLE LIST FOR CODE DEVELOPMENT

CODE	COMMENT
"DEVELOPMENT" PERSPECTIVES	
"INVASIONES" GUAYAQUIL	
ANCESTRALIDAD	
CHALLENGES IN M GOVERNANCE	
CHANGES IN MANGROVE MEANING	
COLONIAL TIMES	
CONTAMINATION	
CONTEXT SCIENCE-TIME	
CULTURAL DEVELOPMENT OF THE REGION	
CULTURE PESCADORES GOLFO	
DISPOSITIF ECUADOR-EUROPA	
DISPOSITIF GULF OF GUAYAQUIL MANGROVES	<p>Information about the Study Area Gulf of Guayaquil: History Cultural, Political or Social developments "The dispositif" / Infrastructure in a Foucault sense; Foucault understood dispositif as "a thoroughly heterogeneous ensemble consisting of discourses, institutions, architectural forms, regulatory decisions, laws, administrative measures, scientific statements, philosophical, moral and philanthropic propositions—in short, the said as much as the unsaid. Such are the elements of the apparatus. The apparatus itself is the system of relations that can be established between these elements." (Foucault 1980 [1977]:194) . Secondly Foucault underlines the importance to identify the existence and quality of connection between these elements, that can be discursive or non-discursive, and thirdly emphasizes its strategic and historic function (Foucault 1980 [1977]:194f). Keller defines dispositif based on Foucault’s elaboration as the “bundle of measures, regulations, artefacts, by means of which a discourse is (re)produced and achieves effect (e. g. laws, codes of behaviour, buildings, measuring devices)” (Keller 2013:73).</p>
DON GOYO AREA	

ECOLOGICAL KNOWLEDGE OF MANGROVE ES	Scientific "state of the art" knowledge about Mangrove Ecosystems that could be interested for my own background knowledge
ECOLOGY GULF GUAYAQUIL MANGROVES	
EL MORRO	
EQUALITY	
ESMERALDAS	
ESTERO SALADO AREA	
GAS IN THE GULF OF GUAYAQUIL	
GUAYAQUIL IDENTITY	
HISTORIC DESCRIPTION GOLFO	
HISTORY BEFORE 1800	Background information about the study area explicitly before 1800 (and thus before start date of discourse analysis) - dispositif / historic roots
HISTORY GOVERNANCE	
HISTORY GUAYAQUIL	Subcategory of „Background Information Don Goyo" Information about Guayaquil that could be relevant for the mangrove discourses/knowledge in the Gulf of Guayaquil
HISTORY SHRIMP FARMS	
HISTORY: CUTTING MANGROVES	
HISTORY: INTERNATIONAL CONTEXT	
HISTORY: NATIONAL LEVEL	
HISTORY: SOCIAL MANGROVE MOVEMENT	
HOGAR DE CRISTO	
LEGISLATION MANGROVES ECUADOR	
M EVERYDAY: M SHELLS FOR COOKING CORN	
M EVERYDAY: MANGROVE NOMADS	
M EVERYDAY: MANGROVES TO BE MANAGED	
M EVERYDAY: REASONS FOR MANGROVE DEFORESTATION	
M GOVERNANCE - COMMUNITY STRATEGIES	

M GOVERNANCE - IMPROVEMENTS SUGGESTION	
M GOVERNANCE – ZONING	
MANGROVE CONSERVATION POLICIES	
MANGROVE GOVERNANCE	Anything related to the use or non-use of mangrove areas, management efforts, institutions, conflicting mangrove user groups and possible solutions etc.
MANGROVE POLICIES AND POLITICS	Policies and Politics on a regional, local and national level that regulate mangrove resources and its use. Also: Practices related to mangroves in Politics
MANGROVE STAKEHOLDER	
MANGROVES AND GENDER	
MANGROVES AND SCIENCE DEVELOPMENT	
MANGROVES AND TERRITORY	
MANGROVES AND THE CITY	
MAPPING MANGROVE DEFORESTATION	
MAPS	Maps of the area
MARGINALISATION	
METHODOLOGY	
NAMES MANGROVES	names of mangroves names of specific mangrove related resources used in the Gulf of Guayaquil area
NATURE AND DEVELOPMENT	
PALO SANTO	
PEOPLE/ORG TO INTERVIEW, INFORM FOR RESEARCH	Note to myself: Interesting source for further research

PIRACY	
PLAYITA DEL GUASMO	
PRACTICES	<p>Alle Praktiken von kulturellen Gruppen im Golf von Guayaquil, die im Zusammenhang mit Mangroven stehen > Handlungsmuster über die ein kultureller Konsens besteht</p> <p>Praktiken: According to Keller, practices and dispositifs are the main elements of discourse. Practices are „conventionalised patterns of action, based on collective stocks of knowledge about the ‚proper‘ way of acting“ (Keller 2011: 55).</p>
PUNÁ	
SCIENTIFIC KNOWLEDGE EXCHANGE BEFORE 1950	References to moments in which scientific knowledge between travellers and "travelled" or between scientists was exchanged and influenced each other
SECURITY	
SOCIO-MANGLAR	
SOLIDARIDAD	
T EVERYDAY: M AND TRADE	
T EVERYDAY: ANCESTRAL AS SHRIMP FARMER	
T EVERYDAY: ANCESTRAL VS SHRIMP FARMS	
T EVERYDAY: Balsa USE IN M	
T EVERYDAY: BOW USE AND HUNTING IN M	
T EVERYDAY: COMMUNITIES ARE THE ANCESTRAL/RIGHTFUL OWNER OF MANGROVES	
T EVERYDAY: COMMUNITIES NEED HELP	
T EVERYDAY: COMMUNITIES THREATEN MANGROVES	
T EVERYDAY: HUMANS AS PART OF THE MANGROVES	Practices or communication that shows how cultural groups are part of the ecosystem mangrove
T EVERYDAY: M AND HEALTH	

T EVERYDAY: M AND HORTICULTURE
T EVERYDAY: M AND HYGIENE
T EVERYDAY: M AND MIGRATION
T EVERYDAY: M AND POVERTY
T EVERYDAY: M ARE THREATENED FROM OUTSIDE
T EVERYDAY: M AS CRADLE OF DISEASE
T EVERYDAY: M AS DISTURBING
T EVERYDAY: M AS HOME
T EVERYDAY: M AS SEWAGE
T EVERYDAY: M AS TRANSPORT ROUTES
T EVERYDAY: M FOR BIODIVERSITY
T EVERYDAY: M FOR BIRDS
T EVERYDAY: M FOR BOATS
T EVERYDAY: M FOR CHARCOAL
T EVERYDAY: M FOR CONSTRUCTION
T EVERYDAY: M FOR CRAB PRODUCTION
T EVERYDAY: M FOR FISH
T EVERYDAY: M FOR LEATHER PRODUCTION
T EVERYDAY: M FOR OYSTERS
T EVERYDAY: M FOR SHELLFISH COLLECTION
T EVERYDAY: M FOR SHIPBUILDING?
T EVERYDAY: M FOR SHRIMPS
T EVERYDAY: M FOR SPORT FISHING
T EVERYDAY: M FOR WOOD
T EVERYDAY: M IN AN EGALITARIAN SYSTEM
T EVERYDAY: M IN BATTLE / FIGHTS
T EVERYDAY: M IN MUSEUMS AND EXHIBITIONS
T EVERYDAY: M IN TRIBUTE
T EVERYDAY: M TO SMUGGLE
T EVERYDAY: MANGROVE AS CAUSE OF CONFLICT
T EVERYDAY: MANGROVE ECOSYST AS COMMODITY

T EVERYDAY: MANGROVE KNOWLEDGE	Specific knowledge about mangroves in the Gulf of Guayaquil
T EVERYDAY: MANGROVES AND CULTURE	
T EVERYDAY: MANGROVES AS "NO-MAN'S LAND"	
T EVERYDAY: MANGROVES FOR DRUG SMUGGLE AND PRODUCTION	
T EVERYDAY: MANGROVES FOR SHRIMP FARMS	
T EVERYDAY: MANGROVES HUMANIZED	Mangroven führen ein Eigenleben, Persönlichkeit des Mangrovenwaldes
T EVERYDAY: MANGROVES TO BE CONSERVED	
T EVERYDAY: PLANTING MANGROVES	
T EVERYDAY: POLITICAS	
T EVERYDAY: POWER HIERARCHY / VICTIMIZATION	Practices showing power dynamics in all ways, but also utterances that show perceived helplessness and lack of power Foucault understood power and knowledge as a dynamic couple, that directly implies one another (Foucault 1995 [1975]:27). However, discourses not only reproduce power structures, but power can also be challenged through discourse. Keller based this on Giddens (1986) duality of structure concept, which assumes that action can be the realization of structural pattern (rules), but at the same time can "question, undermine and transform" (Keller 2013:4) structural patterns. Said with Wundrak, the analytical purpose of discourse analysis is to find "knowledge-power-language relation in the data" (2017:292).
T EVERYDAY: PRISONERS IN THE M	
T EVERYDAY: SALT PRODUCTION (SALT FLATS)	
T. M FOR CRAB	
T: ANCESTRAL VERSUS SHRIMP FARMS	
T: BALSA	

T: M AND CLIMATE	Mangroves importance for climate change, but also what climate change can do to the mangroves
T: M AND MIGRATION	
T: M AND PORTS	
T: M AND POVERTY	
T: M AND TRADE	
T: M ARE EXOTIC	References to mangroves as "exotic" plants/areas. Exotic understood as „unusual and exciting because of coming (or seeming to come) from far away, especially a tropical country" (Cambridge Dictionary) Keywords: Edward Said - Orientalism / Otherness
T: M AS A CHALLENGE	The human describes mangroves as difficult environment
T: M AS AESTHETIC	Mangroves that are described as beautiful, mangrove paintings, mangrove art
T: M AS AREA TO BE CONVERTED INTO SOMETHING MORE USEFUL	References to the destruction of mangrove forests
T: M AS BURIAL SITES	
T: M AS COASTAL PROTECTION	References describing mangroves as coastal protection
T: M AS CRADLE OF DISEASES	Mangroves are described as bringers or causing disease. Also: Mosquito references
T: M AS GLOBALLY IMPORTANT	
T: M AS HOME	Humans are home in the mangroves - not only "living in the mangroves", but more in the German sense of "Heimat", practices and communication that developed over generations

T: M AS HYBRID AND HETEROGENOUS	The mangroves are not a homogenous area but have strong differences within, ecologically but also socially hybrid
T: M AS IRRELEVANT	References describing mangroves as not important to humans or practices showing abuse of mangrove areas Much of the focus on mangroves during this period was on reclamation, which illustrates that society and the scientific community only valued mangroves for what they could be converted into (Ellison and Farnsworth 1996).
T: M AS LAND PRODUCING T: M AS OUTLAW'S HOME	Misfits or "dangerous people", or "people that do dangerous things" that live in the mangroves
T: M AS RECREATION	Mangroves used for recreational activities (e.g., tourism, bird watching, but also daydreaming)
T: M AS REPRODUCTION ZONE T: M AS RESILIENT/EXTREME SPECIES	Quotes referring to mangroves as "survivors" of extreme conditions
T: M AS SPIRITUAL LOCATIONS	Any reference to spiritual aspects in the mangroves
T: M AS UNIQUE AND SPECIAL T: M BIODIVERSITY	Quotes referring to the high biodiversity in the mangroves or the relevance mangroves have for biodiversity (cradle for juvenile fish e.g.), biodiversity understood as the number of different species living in a set location.

T: M CLEAN WATER	References showing how mangroves clean water or ascribing mangroves the ability to clean water
T: M ECOSYSTEM-SALT FLAT SALT PRODUCTION	
T: M FOR BOATS	
T: M FOR CANGREJOS	
T: M FOR COLORING - DYE	
T: M FOR CONSTRUCTION	Mangrove is used for construction of houses, important resource for growing Guayaquil
T: M FOR FISHING	
T: M FOR FOREST	
T: M FOR SHELLFISH	
T: M FOR SHRIMP PRODUCTION	References that describe shrimp farming in the mangroves in an aspect
T: M FOR WOOD	
T: M REGION AS DEVELOPMENT PROJECT	
T: M USED IN ANCIENT TIMES FOR RESOURCES	
T: M'S BETWEEN LAND AND SEA	The hybridity of mangrove forests - the "in between" of ocean and river
T: M'S ECONOMIC RELEVANCE	Quotes referring to mangroves economic importance or mangrove practices related to economy
T: M'S FOR COCKLE COLLECTION	Practices and communication about cockle collection in the mangroves

T: MANGROVE RESOURCES - EQUILIBRIUM OF USE

Considerations, rules, institutions etc. that regulate the use of mangrove resources, possibly ensuring sustainability or equal distribution etc.

AND/OR

Developments/practices that caused misuse/overuse/abuse in the mangroves

T: MANGROVES AND CATTLE

T: MANGROVES AND TIDES

T: MANGROVES AS CONFLICT OBJECT

- ancestral communities are the only ones who can sustainably conserve mangroves
- latent good-evil narrative (shrimp farmer versus ancestral communities)
- NGOs are here to "help" the ancestral communities to their rights
- "eco warrior"

T: MANGROVES RECOVERING

T: MANGROVES TO BE CONSERVED/RESTORATION

References to the importance of mangrove protection, restoration, conservation

T: M-HUMAN RELATIONSHIP

References describing the relationship between human and mangroves

T: NOMADIC LIFESTYLES IN THE MANGROVES

T: SHRIMP FARMS AS CRADLE OF DISEASE

TD: ANCESTRAL PEOPLE AS CUSTODIANS OF MANGROVES

TD: CITY VS. NATURE

WATER AND ECUADOR

EXAMPLE CODE LIST AT THE END OF ANALYSIS

CODES	CATEGORIES			
“Ancestrality” and the international conservation discourse	Global Flows		Mangroves and the City	
“Invading” the mangroves versus urban developments			Mangroves and the City	
“Invading” the mangroves, filling the estuaries: The development of Guayaquil			Mangroves and the City	
A global science authority in the Mangroves	Global Flows			
A Mangrove People? Between Essentialism, Ancestrality and Families				Post-colonial Mangroves
Access to the Field and Cooperation Partners				
Capitalism in the Mangroves				Post-colonial Mangroves
City-Rural and Marginalization of Mangrove People				Post-colonial Mangroves
City-Rural and Marginalization of Mangrove People and the effects of cash				Post-colonial Mangroves
Conservation				
Cutting Mangroves – forced labour and making a living the mangrove forest		Mangrove Practices		Post-colonial Mangroves
Data Collection and Methodology				
Dispositif Ethnography – Inclusive Discourse Analysis				
Exclusion, Drugs and denial of resources – Making Pirates	Global Flows			Post-colonial Mangroves
Gender				Post-colonial Mangroves
Haciendas and comunas in the Mangroves		Mangrove Practices		

Hygiene, Health and Development	Global Flows			Post-colonial Mangroves
Innovative Projects to face the challenges				
Man and Mangrove: Dominance and Co-Existence			Mangroves and the City	
Mangrove´s medical and spiritual meanings		Mangrove Practices		
Mangroves and hygiene		Mangrove Practices		
Mangroves as territory mobility and trade in the mangroves		Mangrove Practices		
Mangroves for food		Mangrove Practices		
Mangroves for timber, wood and bark		Mangrove Practices		
Mangroves in Art and Leisure		Mangrove Practices		
Mangroves to be cut and estuaries to be filled: The development of Guayaquil			Mangroves and the City	
Mangroves, Climate (Change)and Carbon Offset: Programa Socio Manglar Finding Solutions	Global Flows			
Mobility in the mangroves		Mangrove Practices		
Money in the mangrove				Post-colonial Mangroves
New People arriving in the mangroves – haciendas, expeditions, volunteers and tourists		Mangrove Practices		
Ownership and Possession				
Ownership, Possession and Governance in the Mangrove				Post-colonial Mangroves
Positioning myself in the field: Gender, Culture, Safety				
Reclaim the Mangrove: Mangroves in the city´s identity			Mangroves and the City	
Reclaim the Mangrove: Urban Mangrove Parks			Mangroves and the City	
Recovery of the Estero Salado				

Shrimp versus Conservation				
Shrimps and diseases				
The “Invasions” to Guayaquil and the marginalization of the Guazmo			Mangroves and the City	
The Crab feast as a social practice – From family ritual to commercialization			Mangroves and the City	
The postcolonial Role of Science – Shaping Mangrove Meaning	Global Flows			Post-colonial Mangroves
The Shrimp production development				Post-colonial Mangroves
The Worldwide Shrimp Demand – The economization of Animals	Global Flows			
Tourism and Conservation				
Use of mangrove parts in everyday life		Mangrove Practices		

KEYWORD LIST NEWSPAPER REVIEW

YEAR	MONTH	NEWSPAPER	REVIEW	KEYWORDS								
1980	January	El Universo		mentions Guasmo del Sur/balnearios and its bad sanitary conditions	Water problems	Trees, Green areas in the city	Overall importance drought/rainfall / Cold war					
1951	31 March	Jornada		No mention of mangroves								
1826	29 January	El Patriota de Guayaquil		Division of Guayaquil in Circuits								
1826	21 January	El Patriota de Guayaquil		No mention of mangroves								
1911	06. Apr	La Prensa (Quito)		No mention of mangroves								
1849	09 October	La Prensa Guayaquil		Leather tannery at the river								
1849	10. Apr	La Prensa Guayaquil		No mention of mangroves								
1848	17. Apr	La Prensa Guayaquil		No mention of mangroves								
1849	19. Jun	La Prensa Guayaquil		No mention of mangroves								
1849	22 May	La Prensa Guayaquil		No mention of mangroves								
1850	17 May	El Convencional Guayaquil		No mention of mangroves								
1850	24 May	El Convencional Guayaquil		No mention of mangroves								
1851	14 Oct	El Seis de Marzo, Guayaquil - Libertad y Orden		Mention of the river that washes away the blood (page 4)	describes sale of hacienda, rio Daule							
1851	21 Oct	El Seis de Marzo, Guayaquil - Libertad y Orden		describes sale of hacienda, rio Daule								

1980	26 January	El Universo	1 and 2 page and big headlines/ pictures	Coffee and Cacao as most important export due to shown prizes in world market	No mention of shrimps or logging in Plan de Desarrollo								
	February	El Universo	1 and 2 page and big headlines/ pictures	Drugs in Machala/El Oro	Puerto Azul for sale	Problems with drinking water	Problems with diseases and sanitation	tourism development					
	March	El Universo	Revision of head line of the 6 first pages, page 12-14 regional, last page of second section	no mention of mangroves									
	April	El Universo	1 and 2 page and big headlines/ pictures	Guasmo Sur migration	floodings	Port							
	May	El Universo	1 and 2 page and big headlines/ pictures	Mangroves need to be protected	Mangroves for shrimp farms	Mangroves uncontrolled	Mangroves for construction "pilares"						
	June	El Universo	1 and 2 page and big headlines/ pictures	Mangrove channels need to be deepened for port	Guayaquil invaders need to be sanctioned	mangrove areas for agriculture at ancestral times	Mangroves as "falla" geológica/problem for infrastructure	Mangroves for Yacht club					
	July	El Universo	1 and 2 page and big headlines/ pictures	Energy plant at estuaries	Water contamination	Mangroves for shrimp production							
	August	El Universo	1 and 2 page and big headlines/ pictures	Pirates at port/mangroves	Mangroves to be cut for luxury housing	Mangroves to be cut for housing	Water of estuary/rivers contaminated, to be cleaned						
	September	El Universo	1 and 2 page and big headlines/ pictures	Mangroves cut for industry	Water contamination, concern for shrimp farms	Mangroves are cut for shrimp farms	Mangrove resources decline	Exploitation gas/petrol Golf of Guayaquil needs to consider ecosystem mangrove	Salt water of Estero Salado affects drinking water in Guayaquil	Submarine building Guayaquil 1838			

	October	El Universo	1 and 2 page and big headlines/ pictures	Estero Salado as infrastructure challenge	Mangroves as Port	Fishing shall be extended	Gas exploitation Golf	"Invasions" in the south on mangroves				
	November	El Universo	1 and 2 page and big headlines/ pictures	Health	Mangroves for water sports	Mangrove lagoons as health issue	Clean up estero Salado	Drinking water salty				
	December	El Universo	1 and 2 page and big headlines/ pictures	Cleaning and deepening of rivers	everglades	rubbish and waste water in rivers	drinking water problems	Oceans in danger because of contamination				
2002	January	El Universo	Big headlines and pictures	Estero Salado	Macon 2000	Tourism	Dengue/malaria/plague (grillos)	Birds				
	February	El Universo	Big headlines and pictures	Tourism	Wetlands biodiversity	Art (Murals) of mangroves	Surf Montanita	Flooding in suburbs				
	March	El Universo	Big headlines and pictures	Mangrove conservation	Relleno	water sports	Flooding in suburbs	Dengue Guayas	Crab food			
	April	El Universo	Big headlines and pictures	Diseases	bad conditions in Guasmo	Shrimps eating	Shrimp production	White spot disease	Mangroves as port	Organic shrimp production		
	Mayo	El Universo	Big headlines and pictures	South Guayaquil and gangs	Piracy	White spot disease	Estuary as rubbish dump	Shrimp production	gas exploration golf of GYE			
	June	El Universo	Big headlines and pictures	Mangroves for tourism	Shrimp food	Greywater discharge river	Mangroves as port	Diseases				
	July	El Universo	Big headlines and pictures	Recuperation of Estero Salado	Recuperation of Shrimp industry	Diseases	History Estero Salado	Piracy	Invasion suburbs	Mangrove recuperation	Gas exploitation and contamination	Conflicts in rowing associations in GYE
				ART: ¡No me baño en el estero!								
	August	El Universo	Big headlines and pictures	Recuperation of mangroves	Mangrove food	Recuperation of shrimp industry	Mangrove waterways deepening	River suicide	Johannesburg Earth Forum	diseases	Shrimp production (Rey camarón)	
	September	El Universo	Big headlines and pictures	Genetic map of shrimps, science	floodings	Boat construction	Rubbish in estuary	Malecon 2000	Caraguay	development south Guayaquil	transport routes	Strike of Fisher Machala
	October	El Universo	Big headlines and pictures	El Niño and Mangroves	installation of protected area Don Goyo	mangrove tourism	mangrove food	Malecon Salado				
	November	El Universo	Big headlines and pictures	Malecon 1900, Parque Histórico	Crab catcher	Balsas as brothels	boat construction	Sanitation GYE	Port deepening	Port deepening and shrimp production	shrimp production and white spot	mangroves and tourism

	December	El Universo	Big headlines and pictures	Mangroves and poverty	Mangroves and clams/conchas	Art and music for River Guayas	Autoveda Puerto Bolivar "colección concha y cangrejo"	Mangroves and birds	Mangrove port/Shipping channel	Tourism and mangrove resources (Esmeraldas)	Mangroves food	Mangroves crickets
2001	January	El Universo	Big headlines and pictures	Recovering Estero Salado	Mangroves diseases	Mangrove Tourism	Protection of mangroves	Suburbs and malaria	flooding	La Playita Tourism		
	February	El Universo	Big headlines and pictures	Seafood from mangroves	River for transport /Sand bank	Boat trips to Puna	Autoveda concha	Malecon Family time	Alga in the river and estuaries	Veda Marine Shrimp	Malaria and Mangrove zones	Environmental damage (oil spill)
				Hogar de Cristo	Rubbish Estero	Mangroves and fear/neglections						
	March	El Universo	Big headlines and pictures	River for transport /Sand bank	Malaria and suburb	floodings	crab fisher and market	mangroves and diseases	Oil platform in Brazil might break and threatens mangroves	Memories about Salado	El Niño	Mangroves tourism
			River water sports									
	Abril	El Universo	Big headlines and pictures	dredging Port	Sand in estuaries problem for navigation	wildlife trafficking caiman	crocodile attack	Estuary for rowing (sport)	Plan forestal (pic mangrove)	Shrimp production reactivation	Isla Santay protection	
	May	El Universo	Big headlines and pictures	Sand bank in river Guayas hinders traffic	dengue	sitios Ramsar	Trees, Green areas in the city	poverty/marginalization mangroves Esmeraldas	Ecological art	Aquaculture studies Puna abandoned	Ecological damage Cuenca Guayas	
	June	El Universo	Big headlines and pictures		Shrimp production in the highlands	dengue/malaria	sand in estuaries problem for navigation	Mangroves for tourism	mangroves and rubbish	mangroves and art	Protection Isla Santay, illegal logging	Isla Santay hospital
				fumigation	rowing	water in the suburbs	Malecon Salado	Guayaquil climate change				
	Julio	El Universo	Big headlines and pictures	diseases	El Morro Turismo	dredging	Nature in Guayaquil, local tourism	Gas in Golf	Mangrove tourism	Water Quality suburbs	Boat Construction	Film: Batalla de Jambeli
				Food July Festivities Crab and Shrimp	City recovery	Swimming from Guayaquil to Duran	Bridges over river and estuary					
	August	El Universo	Big headlines and pictures	Mosquito diseases	Papagayo de Guayaquil, nearly extinct species	Local Tourism Guayaquil, Parque Histórico, Parque El Lago	Shrimp dish "El delfin magico"	Reina de langostino	Bridges over Salado	Problems with Shrimp Farm		

	September	El Universo	Big headlines and pictures	Shrimp with fresh water	Resistance against change of sea food market Portete	Cleaning Estero Salado of rubbish	Larvicidas contra mosquito, government bought product without effect	dredging					
	October	El Universo	Big headlines and pictures	Mangrove users, Guayaquil Barrio Garay	pre-discussion sociobosque	Malecon Salado planned	Proyecto dredging: Estudio ambiental including people	Hogar de Cristo	Carlos Rubira infante Autor	Artisanal Fishing around Guayaquil	El Niño foreseen 2002	Parts of stolen cars found in estuary	
				Mangroves for ecotourism	Mangrove people in Guayaquil in San Pedro	Esmeraldas Danger and poverty	Turn mangroves into Airbase in esmeraldas	Resource abuse	Relevance gasoline for fishing	Resources at the coast (problems)	overcoming Mancha Blanca		
	November	El Universo	Big headlines and pictures	Mangroves in Guayaquil for recreation and tourism	Diseases: Meningitis, Diarrheal, Tuberculosis	Recover Salado	Mangroves for scientific interest in archive	Shrimps for food. Encebollado soup.	Mangrove fill for industrial land	Huancavilcas (Balsa) Dance show	Hygiene	Shrimp Veda	
				Collection concha prieta	Art inspired by nature								
	December	El Universo	Big headlines and pictures	dredging Port	Bahia ancestral museum	Shrimp Veda	Diseases. Bronquiolitis	Bridges	coastal tourism	Missing sanitation. Hygiene near rivers	Shrimp production	Problems drinking water supply	
				Malecon in art	Marineros in Puerto Roma education	Pandilleros sur Guayaquil							
2000	January	El Universo	Big headlines and pictures	Estero Salado, Mother earth is sick	Hogar de Cristo	Lagarto in Salado	Sailing around Guayaquil	Caraguay	Isla Santay	diseases. Malaria. Dengue.	Rehabilitation Las Playitas	floodings in Guayaquil city centre	
	February	El Universo	Big headlines and pictures	Diseases and fighting against them. Dengue, Diarrhoea, Malaria.	wood industry	Shrimp industry	Mangroves in Guayaquil for recreation and tourism	Playitas rehabilitation					
	March	El Universo	Big headlines and pictures	Tourism mangroves	Diseases and fighting against them. Dengue, Diarrhoea, Malaria.	Mangroves in Guayaquil for recreation and tourism	Shrimp production	Crab sale during carnival	Malecon 2000	National poverty reduction plan	crab catcher and their villages	Image of the wetlands in Guayaquil	
				living with mosquitos									
	Abril	El Universo	Big headlines and pictures	Diseases and fighting against them. Dengue,	Shrimps as food	White spot disease	floodings	Fish/Shrimp and water temperature	Overexploitation Shrimps	Isla Santay	Water sports (Rowing GYE-Posorja)	Estuary as Port Canal	

				Diarrhoea, Malaria.								
				Shrimp exportation to USA	Mangroves as rubbish dump	River/Estuary for tourism						
May	El Universo	Big headlines and pictures	Mangrove contamination	Rubbish in the suburbs	Mangroves to drop dead bodies	Perimetral (bridge over mangroves)	Virus and Shrimp production	Malecon Salado				
June	El Universo	Big headlines and pictures	Murder in suburbs	Use of dollar at fish trader in Perimetral	Ecological Day Guayaquil	Estero Salado contamination	Mangroves and poverty	Bridges over Salado	Planting trees Guasmo	Concha prieta festival Esmeraldas	Pirates of the Gulf of GYE executed	
				Shrimp production								
July	El Universo	Big headlines and pictures	Guasmo and health	Snake (constrictor) in Guasmo/Estero Salado	Sea food dishes	Global resource of Ecuador: wetlands/mangroves	Bridges over Salado	Mangroves and poverty	Shrimp production reactivation	shell extraction, resource overuse, ceviche	trafficking of endangered species, police is now an ally	
				Malecon 2000	Puna	Veda control. Crab returns to the ocean						
August	El Universo	Big headlines and pictures	Muisne Fiesta del manglar, Conservation	Esmeraldas, reconstruction white spot/earthquake, poverty	river contamination Guayaquil	Estuary recovery Guayaquil	Diseases and fighting against them. Dengue, Diarrhoea, Malaria. Others	Aquaculture fair	submarines	Mangrove zones/Beaches can be sold to foreigners (camaroneras, ley trole2)		
September	El Universo	Big headlines and pictures	Security at Estero Salado	Cuenca del Guayas development	Development of econ. sectors, mentioned tourism, shrimps	Esmeraldas: Poverty/Mangrove	CENAIM, fattening of clams	Diseases and fighting against them. Dengue, Diarrhoea, Malaria.	Isla Santay	Esmeraldas: Security/border around Rio Mataje	Esmeraldas: no drinking water	
				White spot disease	Clam collection	Perimetral and murderer	sushi	Young adults thrown into Estero Salado	Plane crashed into mangroves	Recuperation of Estero Salado	bridges over estuary	Mangroves and tourism
October	El Universo	Big headlines and pictures	Crab sale, end of Veda	Galapagos beach pic, tourism commercial, background mangrove	Tourism Crab El Oro	Recuperation Estero Salado	Shrimp production	Greenpeace Mangrove campaign, Muisne and Isla Santay	Parque Histórico	Crab eating	Mangrove cutting and missing sanctions	
				Diseases and fighting against them. Dengue, Diarrhoea, Malaria.	student movement nature protection	Tilapia production within shrimp production						

	November	El Universo	Big headlines and pictures	Diseases and fighting against them. Dengue, Diarrhoea, Malaria. Others	Crisis shrimp production	Education over estuary, Isla Trinitaria	Sedimentation affects shipping, Rio Guayas	Guasmo governance challenges	Perimetral	Fotos from Guayaquil estuary zone Isla trinitaria etc. In International Book "30 anos de Latino America" Photos David Mangurian	Contamination in the mangroves	60 days no catch of shrimp to prevent extinction
				Puerto Hondo Estuary education								
	December	El Universo	Big headlines and pictures	Shrimp exportation	Mangrove poverty	High cost water Isla Trinitaria	Outboard shipping tournament	Drug cartel Guayaquil	Malecon 2000 and Isla Santay project	Crisis in shrimp production	Mangrove cutting and missing sanctions	Illegal Shrimp farms
				Sanitation Suburbs	Diseases and fighting against them. Dengue, Diarrhoea, Malaria. Others	Fundación Natura needs help	Mangrove reforestation	Clam collection decrease, overproduction	Tourism in Guayaquil	Balsa house Babahoyo	Toxics transportation over river	Grillos
1999	January	El Universo	Big headlines and pictures	Ceviche	Rehabilitation Los Esteros Parque	Roads washed away Esmeraldas	Mangroves renew the soil, other positive aspects of mangroves	Grillos	Diseases and fighting against them. Dengue, Diarrhoea, Malaria. Others	floodings and fighting against them	La nina and effects on fishing	Sanction of cutting mangroves increases
				Collection of Jaibas in Jambelí	Ecological shrimp for export	Estero Salado contaminated and "cries for help"	Sanitation suburbs	Electricity Ship	Expulsion of illegal settlement Puerto Liza	MANGROVE IN RISK		
	February	El Universo	Big headlines and pictures	Seafood intoxication	Parque Histórico	Diseases and fighting against them. Dengue, Diarrhoea, Malaria. Others	Recuperation Public Life Urdesa	Legalisation of Shrimp farms, critics	cleaning/digging canals, estuaries etc	Perimetral rubbish	Gov. funds for improving marginalised housing	Sanitation Guasmo
				Hogar de Cristo	floodings							
	March	El Universo	Big headlines and pictures	Parks and Iguanas	floodings	Water scarcity Machala	Motorboat race	Dead body found in estuary	Picture: Shrimp production	boat trips	Fishing in the estero Salado, bagre	diseases caused by hygiene and mosquitos
				rowing regatta Guayaquil-Posorja								

	April	El Universo	Big headlines and pictures	Diseases and fighting against them. Dengue, Diarrhoea, Malaria. Others Cholera.	Pirates and fisheries (open ocean)	Living in mud, Babahoyo	art from Guayaquil wood	FIRST DETECTION White spot disease (07.04. see year summary 31.12.99)	Malaria and shrimp farm	Stealing at Port	Las Playitas	Fragat bird - Galapagos book Paradise in danger
				Killing of Shrimp seller (?) in Guayaquil								
	May	El Universo	Big headlines and pictures	Burglary Cdl. Esteros	Hogar de Cristo	Diseases and fighting against them. Dengue, Diarrhoea, Malaria. Others Cholera.	White spot disease	Water scarcity	boat race	street kids bathing in estero	industry controlling environmental contamination	balsa patrimonio cultural
				gas exploitation and nature protection	perimetral							
	June	El Universo	Big headlines and pictures	Isla Santay	Ecuador biodiversity	Estero Salado, bridges	painting nature, mangrove	Ecological thinking	Ancestral cultures, crab art	fusion of shrimp producers	contamination estero Salado	Art and mangrove (fragat bird)
				shrimp production with natural products	Singer: Carlos Rubira Infante, songs about Guayaquil							
	July	El Universo	Big headlines and pictures	Drug in Shrimp cargo	fire brigade from estuary to protect houses from fire	public infrastructure connected to estuary and river	Diseases and fighting against them. Dengue, Diarrhoea, Malaria. Others Cholera.	pirates kill administrator of shrimp farm	Malecon 2000	Water sports	comida with seafood, Guayaquil encebollado	contamination and cleaning estero Salado
			river for transport	water temperature and shrimp/fish for fisher	Decree: Prohibition of mangrove exploitation	Reforestation mangroves Esmeraldas	Pirates at Ecuadorian coast	Isla Santa Clara, tourism, conservation	Fundación Natura, their work for nature and mangroves			
	August	El Universo	Big headlines and pictures	Estero Salado, bridges	Earthquake, 1 year later Esmeraldas	Settlements destroyed along estero	river cruises Guayaquil	Diseases and fighting against them. Dengue, Diarrhoea, Malaria. Others Cholera.	volunteers Guasmo	Estuary as home for the homeless/marginalized, Guayaquil		
	September	El Universo	Big headlines and pictures	Contamination of estuary by industry	Don't eat the dead turtles	Estero Salado, bridges	control fishing sector	Guayaquil: protests against bridge that destroys mangroves	Contamination Estero Salado	Painter Pinto Luque	Water temperature affects fish species, fish industry	collective clean up estero Salado

	October	El Universo	Big headlines and pictures	Water temperature affects fish species, fish industry, shrimps	Malecon 2000	dredging Rio Guayas	Pirates at the coast	People living at and from the river Guayas	Parque Histórico	Shrimp export	Recover someone from estuary, exercise	Ecological activism
				Water sports	Pirates in the history of Guayaquil	Shrimp production after Mancha Blanca	Isla Santay					
	November	El Universo	Big headlines and pictures	Shrimp production	Caraguay	Drain estero	Narcotraffic, fighting border Colombia	Churute: Ways of life in the mangroves	stop animal trafficking	Cycling demo for saving mangroves		
	December	El Universo	Big headlines and pictures	eco shrimp	bad harvest incl. shrimp	Housing in south Guayaquil, above estuary	Grillos	Conservation (comunas)	Shrimp fishing will improve due to water temperature	shrimp production problems	pirate attack Esmeraldas	mangrove island Esmeraldas for tourism
				White spot disease	Diseases and fighting against them. Dengue, Diarrhoea, Malaria. Others	mangroves and poverty	Ecological project ESPOL	cleaning canals of estuary	infrastructure related to estuary			
1998	January	El Universo	Big headlines and pictures	Water temperature affects fish species, fish industry, shrimps	Guasmo Sur	shrimp production	Shrimp export	El Niño	Diseases and fighting against them. Dengue, Diarrhoea, Malaria. Others Cholera.	Estero Salado contamination gasoline	Blue-footed boobies dying	floodings
				Bridges over estero Salado	course about sustainable economy	housing over estuary, sur	cleaning estero Salado	dredging port	dredging and shrimp production			
	February	El Universo	Big headlines and pictures	Problem trafficking land	housing relocation estero	Diseases and fighting against them. Dengue, Diarrhoea, Malaria. Others Cholera.	balsa regatta	contamination Salado	El Niño	bridges over estuary	illegal wood trafficking	
	March	El Universo	Big headlines and pictures	El Niño floodings	Oil contamination estero salado	pirates stealing shrimps	Diseases and fighting against them. Dengue, Diarrhoea, Malaria. Others Cholera.	El Niño	Restaurant Red Crab Urdesa	recovery estuary Salado	Cerrito de los Morreños	high tides
				regatta outboard Guayaquil-Vinces								

	Abril	El Universo	Big headlines and pictures	Mangroves to clean water	Diseases and fighting against them. Dengue, Diarrhoea, Malaria. Others Cholera.	El Niño	suburbia rubbish collection	rowing on mangroves GYE-Posorja	sea birds dying of malnutrition (El Niño)	flooding	port in the mud	Guayaquil new image, Malecon 2000
				estuaries and flooding	world conservation day	stealing shrimps	flooded airport due to bad drainage					
	May	El Universo	Big headlines and pictures	Diseases and fighting against them. Dengue, Diarrhoea, Malaria. Others Cholera.	El Niño declines	Bridge estuary	contamination ecosystem mangrove	Isla Santay	stealing shrimps, court case	El Niño and mangrove ecosystem	bad drainage system/hygiene	Cholera epidemic
				Mangrove logging illegal	Shrimp tasting of maize (abundance of fresh water, El Niño)	red claw production	no water/no electricity in Guayaquil	Malecon (antigua), not maintained	ley de adjudicación de camaronera	Recuperation of Estero Salado	Security at its worst Guayaquil	illegal mangrove cutting
				shrimp export	shrimp in the ocean, El Niño water temperature	algae cause problems with drinking water	oysters from mangrove disappeared					
	June	El Universo	Big headlines and pictures	bridges estuary	Cholera epidemic	drainage	rubbish	shrimp exportation	Diseases and fighting against them. Dengue, Diarrhoea, Malaria. Others Cholera.	malecon 2000	El Niño and migration	Playitas
				fishes come back to the ocean, water temperature	gasoline in estuary salado	Fundacion Natura fight against contamination of estuary						
	July	El Universo	Big headlines and pictures	Cholera epidemic	Contamination Petrol rio esmeraldas	Caravana ecologica Quito	Diseases and fighting against them. Dengue, Diarrhoea, Malaria. Others Cholera.	After El Niño	Drinking water Posorja	Corruption port	drainage sur	Shrimp producers affected by banana pesticide Taura
				bad infrastructure coast, beach used as street	Greenpeace analyses mangrove cutting in Ecuador	Invasion of land Guayaquil	rowing	History of Guayaquil	Guia historico, photo of estuaries	Waste and its treatment	Guayaquil, identity, estero Salado	Greenpeace activist dies in Esmeraldas of heart attack

				Cámara de acuacultura donates housing via hogar de cristo	connection judges and narcotraffic	Attack on shrimp transporter, one death	Greenpeace boat not allowed to leave the country, destruction of shrimp farm Muisne	intoxication via shrimps	land titles in sur	shrimp exportation		
August	El Universo	Big headlines and pictures	Foto de la semana: Mangrove reforestation Greenpeace Muisne	Diseases and fighting against them. Dengue, Diarrhoea, Malaria. Others Cholera.	Politicians need to take responsibility for mangrove management	hygiene suburbs	poverty and mangrove hut	poverty, migration	migration because of El Niño Esmeraldas	exportation shrimps	motor water sport outboarding	
			boat construction Samborondón	Urdesa drainage/sanitation	Esmeraldas after El Niño, earth quake, malaria	Rehabilitation estero Salado						
September	El Universo	Big headlines and pictures	Diseases and fighting against them. Dengue, Diarrhoea, Malaria. Others Cholera.	El Niño	Perimetral protests	water as challenge for transport Esmeraldas	migration and resettlement	contamination Salado	dredging port	art: dying dolphin	cleaning estero Salado	
			Ecuadorian shrimp	Malecon 2000								
October	El Universo	Big headlines and pictures	cleaning of estero Las Ramas	gangs in the south Guayaquil	fire in settlements along estero Salado	Diseases and fighting against them. Dengue, Diarrhoea, Malaria. Others Cholera.	Effects of El Niño	waste in the estuaries of GYE	El Niño effect	Caraguay	Parks Conservation	
			migration and resettlement	INP Veda Shrimps								
November	El Universo	Big headlines and pictures	Diseases and fighting against them. Dengue, Diarrhoea, Malaria. Others Cholera.	Outboard Regatta	Playitas	Malecon 2000	Urdesa, Recuperation of sidewalks	Relocation Caraguay	relocation houses estero Salado	IV Conference Climate change, gas emission reductions	Cleaning of Estero Salado	
			dredging River	Fund. Natura ecological claims GYE	lobo marino in River Guayas	Urdesa without water	Legalization of housing Guasmo	Isla Trinitaria. Everyday life				
December	El Universo	Big headlines and pictures	Los Esteros without finished municipal work/marginalisation	overproduction Artisanal fishing Posorja	cutting trees, alborada	14 years Fundación Natura, Mangroves	Relocation at estuaries	dredging River Guayas	Contamination worsens in Pacific Ocean and countries worried	balsa craft tour	relocation houses estero Salado	

				crickets arrived	Shrimp Ceviche Guinness World record	Diseases and fighting against them. Dengue, Diarrhoea, Malaria. Others Cholera.	Talks about mangroves and sustainable development by foreign speakers, Fund Natura	Invasion Cerro Blanco	Contamination Rivers/Estero Salado			
1997	January	El Universo	Big headlines and pictures	pirates Golf Guayaquil	Problems to plan marginalised areas of Guayaquil	treasure hunting golf of Guayaquil	challenging weather conditions, ecological influences, rainy season	Hygiene challenges Guayaquil	Diseases and fighting against them. Dengue, Diarrhoea, Malaria. Others Cholera.	Land speculation Santa Elena	crickets	Malecon 2000
				balsa raft regatta								
	February	El Universo	Big headlines and pictures	Foundation working in Guasmo	El Niño forecast	Relocation at estuaries	Going by boat from Guayaquil to Puna, tourism	Playitas rehabilitation	Manglares Churute, new visitors centre, F Natura	Child dies after falling from Home into estero	Diseases and fighting against them. Dengue, Diarrhoea, Malaria. Others Cholera.	Pacific dolphins endangered
				floodings Guayaquil								
	March	El Universo	Big headlines and pictures	Cholera study in relation to cultural conflict	Flooding	mangrove and ecotourism	Diseases and fighting against them. Dengue, Diarrhoea, Malaria. Others Cholera.	Outboard Regatta	Mangrove logging continues in Esmeraldas	El Morro - Tourism	Esmeraldas-everyday life	floodings related to logging
				Rowing regatta GYE-Posorja	dredging canal to port	kid dies in estero salado						
	April	El Universo	Big headlines and pictures	Ecotourism	Flooding	outboard boat racing	recovery Estero Salado	Diseases and fighting against them. Dengue, Diarrhoea, Malaria. Others Cholera.	Triathlon	drainage system	Survey Golf of Guayaquil	pirates, shrimp farms
				Art (?)	Posorja abandoned	Mangroves as local recreation destination	migratory birds	bridges	Shrimp certification	dredging port		
	May	El Universo	Big headlines and pictures	Shrimp exportation	bridges	mangrove deforestation	Mangroves as local recreation destination	sea lion in mangroves	Isla Santay	World Tree Day	illegal housing, drainage	recovery Estero Salado
				Mangroves as view from villa								

	June	El Universo	Big headlines and pictures	Diseases and fighting against them. Dengue, Diarrhoea, Malaria. Others Cholera.	mangrove deforestation	Mangroves contaminated	environmental day	Marine ecology table game (Environmental Education)	Conservation of mangroves	El Niño	Gas exploitation, Golf of GYE	Flooding Estero Salado high tide
				flooding El Niño								
	July	El Universo	Big headlines and pictures	Biodiversity	mangrove deforestation	dredging	Mangrove resources for seafood Guayaquil	Posorja Artisan fishing	marginal housing at estuary	outboard boat racing	contamination estero Salado	shrimp drying, hygiene
				Diseases and fighting against them. Dengue, Diarrhoea, Malaria. Others Yellow Fever								
	August	El Universo	Big headlines and pictures	Hospital waste in estuary	El Niño flooding	El Niño and shrimps	Commercial: Shrimps on pick up car	contamination Salado	land rights South GYE	outboard boat racing	Snakes migrating to city (El Niño? Rains)	Mangrove resources for seafood GYE
				Mangrove deforestation	Conservation of parrot	Flooding Estero Salado high tide	Historic Maritime Institute	Rowing				
	September	El Universo	Big headlines and pictures	contamination of river	fair aquaculture	areological findings Gulf of Guayaquil	Rowing	sea lion in Playas	contamination Golf	waste water GYE	Flooding Estero Salado El Niño	child drowned Estero
				living conditions South GYE	Perimetral	Island may overflow El Niño Esmeraldas	Esmeraldas					
	October	El Universo	Big headlines and pictures	Forgotten Esmeraldas	Study Estero Salado German Consultants	Isla Trinitaria	Simulation evacuation El Niño South GYE	Mangrove deforestation (out of control, new laws?)	cholera threat floodings	Diseases and fighting against them. Dengue, Diarrhoea, Malaria. Others Cholera.	Rescue training for school @ estero	world conservation meeting Quito
				El Niño and marginalised housing estero								
	November	El Universo	Big headlines and pictures	Rowing	Homeless people living around estero	El Niño hits GYE, floodings, evacuations	outboard boat racing	Diseases and fighting against them. Dengue, Diarrhoea, Malaria. Others Cholera.	water energy plant Trinitaria	Health El Niño		

	December	El Universo	Big headlines and pictures	floodings Samborondón	conservation mangroves Esmeraldas	Tree cutting worried habitants of GYE	flooding Urdesa	drainage fail Guasmo	Urdesa Estero Salado gasolinera burns down	dredging	floodings GYE	contamination in GYE
1996	January	El Universo	Big headlines and pictures	Cangrejal sauces	Perimetral	abandoned Guasmo	Sopa de camaron	cutting of mangroves, Churute	resettlement of housing estero Salado	exporting cultivated langosta, crayfish	dredging port	plagues and fighting against
				Jambelí ecotourism/ mangrove zone	selling of land that used to be beach Playas							
	February	El Universo	Big headlines and pictures	cutting of trees GYE	gangs in the south Guayaquil	balsa race playas	floodings GYE	export, shrimps	Guasmo NO RUBBISH COLLECTION; PLAGUES	seafood festival playas	perimetral	mangrove conservation
				reina del carnaval las playitas	exportation needs reforms							
	March	El Universo	Big headlines and pictures	flooding GYE	dredging Port	history El Morro	deforestation	epidemic de dengue	Diseases and fighting against them. Dengue, Diarrhoea, Malaria. Others Cholera.	drug economy	shrimp pizza at pizza hut	
	April	El Universo	Big headlines and pictures	Rowing	Guasmo sur relleño	marginal housing at estuary, falling into water	Perimetral	Water scarcity	world degradation ecologists warn	election campaign with pic of shrimp industry	sushi with shrimps	bridges over estero, las monjas
	May	El Universo	Big headlines and pictures	water scarcity	Fund. Natura pressures national politics on environm. problems	cutting trees GYE	Water sanitation GYE	stealing of shrimps	art Malecon Luis Miranda	swimming in Salado (?)	Chupacabra's	artists Guayaquil
				Diseases and fighting against them. Dengue, Diarrhoea, Malaria. Others Yellow Fever	import duties on shrimps set by EU	Santay	fishing for export Esmeraldas, illegal	Water scarcity, national				
	June	El Universo	Big headlines and pictures	Air contamination GYE	marginalized housing along estero	Water scarcity	cutting trees GYE	marginalized housing estero	black water in school	La Playita abandoned	bridges over Salado	
	July	El Universo	Big headlines and pictures	political use of ecology as something to achieve	pirates of the Gulf	mangrove cutting affects shrimp industry	Bagre dies in river Guayas, virus?	coast guard in the gulf of Guayaquil	Balsa/mangrove in GYE museum	Quito: illegal settlers vs ecologists	outboard motorsport estero	ceviche

				fish vendor	Churute mangroves	Baños del mar/baños del salado – American Park	Guayaquil in the 30s was a bathing spot					
	August	El Universo	Big headlines and pictures	Esmeraldas photo mangrove	marginalized housing along estero	Shrimp Industry Lobby	Mangrove threatened by invaders	Crab Veda	Whale decomposing in mangroves	Diseases and fighting against them. Dengue, Diarrhoea, Malaria. Others Cholera.		
	September	El Universo	Big headlines and pictures	Galapagos Conservation	Construction new road southeast to north GYE	Modernization Port	Shrimp disease	Deforestation ECU picture mangrove cut	Isla Santay	dredging Golf	Perimetral	high prices incl. shrimps
				Ecology and Development								
	October	El Universo	Big headlines and pictures	crab recipes, end of Veda	conference on "environmental optimism"	mangroves protect coast	marginalized housing estero	exporting shrimps to China				
	November	El Universo	Big headlines and pictures	Road bad Playas-El Morro	marginalized housing along estero	crab commercial	drug production / Trafficking	contamination Salado	Diseases and fighting against them. Dengue, Diarrhoea, Malaria. Others Cholera.	historic photos	Church El Morro	
	December	El Universo	Big headlines and pictures	outboarding motor regatta estero	protecting estero, mural by students	25 years of hogar de cristo						
1995	January	El Universo	Big headlines and pictures	Perimetral robbery	Veda Shrimps	Mangle Cabalero	Santa Marta, migrant urbanisation GYE; marginalized	perimetral	catching shrimp larvae	disease Taura Shrimp		
	February	El Universo	Big headlines and pictures	Floodings GYE	Invasion Estero GYE	Shrimp export	unprotected mangroves Esmeraldas	Bridges over Salado	fishermen dies in boat accident in mangroves El Oro	Esmeralda's mangroves cut for shrimps	malaria	
	March	El Universo	Big headlines and pictures	Ortiz, author: La entundada	cholesterol and sea food	UN conference and marginalized housing/poverty	poverty (pic marginalized housing estero)	Parque Urdesa abandoned	marginalized housing estero	Conservation area mangrove Esmeraldas		
	April	El Universo	Big headlines and pictures	traditional dishes Guayas crab	Ecological clubs, pupils GYE	pirates of the Gulf, stealing shrimps	Bosque seco reforestation Fund. Natura					

	May	El Universo	Big headlines and pictures	Perimetral abandoned	Fund. Natura: Order to stop cutting of mangroves	tree burnt with acid, Urdesa, to replace for sign	recovered stolen shrimps	pirates of the golf steal shrimps	Manabí: discussion prohibiting trasmallo	cutting tree av. Machala	case ridemar: Theft of shrimps	marginalized housing estero
				Tree is life	abandoning of small land, farmers	public services don't get to Los Esteros - El Guasmo	Ecuador biodiversity	churute mangroves, plan de manejo				
	June	El Universo	Big headlines and pictures	biodiversity management in Ecuador	marginalized housing along estero	trucks with shrimps stolen and recovered	Manglares Churute	patrolling golf of Guayaquil (pirates)	mangrove conservation	packaging plants shrimps, cost elevation	playa Villamil	
	July	El Universo	Big headlines and pictures	Guayaquil, 1600, export mangrove	Taura syndrome	Boat construction history GYE	iguanas	recovery estero Salado	shrimp farmer against US pesticide industry (Taura)	Stealing shrimps	oysters	Taura syndrome / bacteria
				estero Salado tourism	bosque seco - Eco Desarrollo							
	August	El Universo	Big headlines and pictures	El Morro	investigate resistance of shrimps against diseases	plan to reforest Jambelí	golf pirates kill fisher					
	September	El Universo	Big headlines and pictures	Shrimp farms vs Mangroves, Esmeraldas	mangroves, FAO	rubbish, picture maybe estero	CNA recommends how to do shrimp farming without affecting mangroves too much					
	October	El Universo	Big headlines and pictures	Fundación bosque, protect birds and their habitats	water motorsports	gender and migration GYE	Taura syndrome, pesticides	recommendation for the municipality related to "invasions"	Mangroves Esmeraldas, protection/exploitation	mangrove cutting		
	November	El Universo	Big headlines and pictures	Diseases and fighting against them. Dengue, Diarrhoea, Malaria. Others Cholera.	no drainage, marginalized parts city	burning of trees	community defend shrimp farms	carbonero - coal trader	corpse at perimetral	rescuing the golf of Guayaquil	deforestation mangroves	
	December	El Universo	Big headlines and pictures	Perimetral, rubbish dump	the environmental debate analysis	outboarding motor water sport	shrimp production decrease	cholera	shrimp packaging station closed	bridges estero Salado	poverty	shrimp production affects artisanal fishing Esmeraldas

1994	January	El Universo	Big headlines and pictures	shrimp Veda terminates 14th January	perimetral abandoned	Fund. Natura does an eco-competition	Diseases and fighting against them. Dengue, Diarrhoea, Malaria. Others Cholera.	shrimp production drops	taurus syndrome	Golf water quality drops due to shrimp farms	rubbish everywhere	one suicide per day in Guayaquil
				Environmental awareness, article	pandillos	mosquitos	marginalized housing estero					
	February	El Universo	Big headlines and pictures	Taura syndrome	rubbish problem all over GYEY	new plan to save mangroves 1994	Diseases and fighting against them. Dengue, Diarrhoea, Malaria. Others Cholera.	Fund. Natura on ecological challenges, e.g. Taura	Esmeraldas comment, shrimps	La Playita	Musician in mangrove playing music afrocubana	biodiversity plan Ecuador
				Taura syndrome expands	Perimetral, corpse found							
	March	El Universo	Big headlines and pictures	Guasmo full of mud	Taura syndrome	production decrease shrimps	Shrimp / Banana and Taura	Churute Mangroves				
	April	El Universo	Big headlines and pictures	Regatta Guayaquil-Posorja rowing	poverty	Guasmo Sur, street mud	commission to manage mangroves	mangrove a resource that is disappearing	gangs / pandillas	shrimp theft	Shrimp investments lower in Ecuador due to Taura	campaign against mangrove deforestation Esmeraldas
				Guayaquil contaminated								
	May	El Universo	Big headlines and pictures	commercial shrimps, food production firm	crime rising, Guasmo	Destruction of mangroves, Esmeraldas, WWF	concession control shrimp farms	Taura	optimization shrimp production	commercial private security shrimp farm	shrimp farms destroying Esmeraldas	car fell into estero
				mangroves Churute								
	June	El Universo	Big headlines and pictures	Hide away from pirates found in Isla San Ignacio	Environmental special El Universo	Puerto Hondo	threatened species	competition Fund. Natura	train, construction history	clubs ecological	Shrimp price improves	Looking for Taura causes
				Scientific study on marine life in Gulf before gas exploitation	Taura syndrome and feed	Manabi, Rio Chone manglares deforestation	manglares Puerto Azul invasion marginal housing	reforestation Chone River				
	July	El Universo	Big headlines and pictures	Marginalized housing estero	Taura syndrome	GYE: Ciudad de Rio Grande y estero	mangrove species extinction	Veda de mangler 5 years	marine shrimp fleet disappearing	Guarda Costa	marginalized housing south suburbs	international mangrove seminar

				catching wild shrimp larva								
	August	El Universo	Big headlines and pictures	"ecocidio", pic mangroves	cleaning estuary	Plan against contamination of Golf	migration, land trafficking	artisanal fishing	Seminar on the management of mangroves	Shrimp theft Manabi-Guayaquil Road	Pirates in the Golf/Estero	
	September	El Universo	Big headlines and pictures	Recuperation of marine resources with "no catch", alarming situation	tilapia - production in shrimp ponds	shrimp production Ecuador	natural resources economy Ecuador	contamination estero Salado	theft of shrimps - Don Goyo zone	Gulf: Analysis of contamination by UN	rubbish at perimetral	uncertain future of shrimp production
	October	El Universo	Big headlines and pictures	deforestation mangroves Cojijimies	Pirates of the Gulf	Guayaquil y corvina	Research on Taurus syndrome	contamination gulf	perimetral shooting	Fund. Natura: Adaption of species as fundraising, e.g. crocodile	photo exhibition	mangroves at perimetral cut by neighbours
				American Park	Don Goyo							
	November	El Universo	Big headlines and pictures	Strike in shrimp transport	invaders perimetral	president unites with shrimp producer	shrimp production declines	Balsas houses in Babahoyo	Due to strike in fishing industry canoe fishing returns to be profitable	malaria Esmeraldas	Shrimp export to EU	Shrimp theft on the road
				contamination gulf								
	December	El Universo	Big headlines and pictures	Esmeraldas's larvae fisheries	Anniversary Fund. Natura/Manglar es Churute	flooding GYE	bad year for shrimp	Chachis, Esmeraldas Mangroves				
1993	January	El Universo	Big headlines and pictures	dengue	contamination	insecurity in the golf needs attention claim fisher	Puná	shrimp farms sanctioned for transporting shrimps without protection / pirates	marginalized housing estero and suburbs	gangs		
	February	El Universo	Big headlines and pictures	children die due to wave from port dredging in Trinitaria	flooding Puerto Liza	estero El Muerto contaminated	fighting poverty and pic of estuary housing	Estero bravo	dengue Puerto Liza / flooded area	drainage problems	cholera	coast guard against pirates
				attack on shrimp farm	golf of Guayaquil (Don Goyo zone) labyrinth							

	March	El Universo	Big headlines and pictures	estero bravo endangers neighbourhood	marines abuse 2 youths	cholera	estero Salado improved water quality	shrimp theft on the road	Manglares Churute	environmental protection necessary for peace on earth	Guasmo road neglected	marginalized housing along estero, Puerto Liza
	April	El Universo	Big headlines and pictures	killings at perimetral	pirates at Esmeraldas coast	context invasion and floodings, estero las ranas	regatta GYE-Posorja	sea food for eastern	Red alert, shrimp farms in crisis	management settlements suburbs	filling of estuaries has caused floodings	shrimp production: International competition rising
				biotechnology in shrimp farms								
	May	El Universo	Big headlines and pictures	Just 40% of GYE receives water from tap	corpse at Perimetral	Malaria	Gas Gulf	lynching of two pirates in Puna	world tree day	deforestation	agreement centro de manglar in Puerto Hondo	
	June	El Universo	Big headlines and pictures	environmental problems Ecuador	Fountain in Urdesa Estero Salado, oxygine	100 000 trees for Guayaquil	shrimp production	pirates	El Oro -Poverty and ecotourism potential	cisticercosis	manglares churute	
	July	El Universo	Big headlines and pictures	recovery of estero salado	poverty and marg housing estero	shrimp production	shrimp industry threatened by contamination	drowned in estero	pirates steal fishing boat, el oro	marginalized housing, relocation	exhibition: Conservation of nature	historicals aspects guayaquil
				pirates	transporting drugs in shrimps							
	August	El Universo	Big headlines and pictures	pirates Golf Guayaquil	contamination estero	art exhibition houses esmeraldas	Shrimp production, multi-species ponds, CENAIM	shrimp producers lost millions due to pirates	census: houses along esteros will be relocated, trinitaria	malecon abandoned	contamination gulf	provision of basic services GYE
	September	El Universo	Big headlines and pictures	malaria	deforestation	shrimp production declines	Acuaculture congress					
	October	El Universo	Big headlines and pictures	commercial Crab Restaurant	env problems increasing	cholitas cangrejas	food, crab, Gye	Pandillas	shrimp theft road	shrimp production	boat accident estero saldo	taura syndrome
				construction of new rubbish dump	shrimp larva dies							
	November	El Universo	Big headlines and pictures	perimetral abandoned	52th anniversary of hygiene institute	possible epidemic dengue	shrimp production and contamination	shrimp production decline	dumping rubbish, stones at riverside of estero	oxygenation of estero salado	discussion sustainable fishing, trasmallo	cutting of tallest mangroves in the world, esmeraldas, for shrimp farms

	December	El Universo	Big headlines and pictures	Muisne: taking municipality for not attending the needs of the population	environmental defense necessary, pics estero full of rubbish	muisne: mangroves disappear	solution for the invasions	mangrove management	Last name Quinde: pirates detained	'Shrimp stealing gang caught	pirate attacks	Extract Enrique Gil Gilbert: El rio
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NO	YEAR	Name	Author(s)	Info
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2	1988	Die Fischerei in den Mangrovensümpfen des Golfes von Guayaquil	Degen, P.	Bonn: Holos. Mundus Reihe Ethnologie, Bd. 22
3	1987	Structural comparisons of mangrove forests near shrimp ponds in southern Ecuador	Lahmann	Interciencia Sep-Oct 1987, 12:5
4	1986	Mangrove Mapping in Ecuador: the Impact of Shrimp Pond Construction	TERCHUNIAN, A. et al	Instituto Nacional de Pesca, Biblioteca "Dra. Lucía Solórzano Constantine
5	1984	Diagnostico del Ecosistema de Manglares, Ecuador	Horna, R.	Proceedings of the International Conference: Marine Resources of the Pacific, Vina del Mar, 1983 Chile (ed. Arana, P.)
6	1982	Algunas observaciones sobre el desarrollo del manglar en la costa continental del Ecuador y Peru	Cintrón, G. et al.	OCEANOLOG ICA ACTA. 1982. N' SP
7	1981	VARIACIONES ESTACIONALES EN EL GOLFO DE GUAYAQUIL, UN ESTUARIO TROPICAL	Stevenson, M.	Environmental Management Vol. 10, No. 3, pp. 345-350
	1971-1980			
1	1975	Les utilisations de la mangrove. Les usages forestiers	Bernard, R.	In: Journal d'agriculture tropicale et de botanique appliquée, vol. 22, n°10-12, Octobre-novembre-décembre 1975. pp. 297-340
2	1974	Holocene Paleoecology of South Coastal Ecuador	Sarma A.	Proceedings of the American Philosophical Society, Vol. 118, No. 1
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1	1960	Manderas economicas de Ecuador y sus usos	Acosta Solis, M.	
2	1961	Los Manglares del Ecuador	Acosta Solis, M.	Revista geografica, Rio de Janeiro T28, Nr. 54. S.69-88
	1951-1960			
	1901-1950			
1	[1914] 1909	Reise in Ecuador und Peru	Sievers, W.	Verlag von Duncker und Humblot, München und Leipzig
2	1915	Report of First Expedition to South America 1913	Strong, Richard	Harvard School of Tropical Medicine, Harvard University Press, Cambridge
	1851-1900			
1	1896-1899	Observations of a naturalist in the Pacific between 1896 and 1899	Guppy, H.	London, Macmillan and co., limited. (scanned 2007, University of California Library Archives)
2	1892	Geograia y geología de Ecuador	Wolf, Tedodoro	Brockhaus, Leipzig
3	1892	Die Manglares in Ecuador	Eggers, H.	Botanisches Centralblatt 52, pg 49-51
4	1887	Notes of a Naturalist in South America	Ball, J.	Kegan Paul, Trench & Co. London.
5	1884 [1875]	Catecismo de geografía de la república del Ecuador	Mera, Juan León	Imprenta Nacional, Quito.
6	1868-1876 [1921]	Reisebriefe aus Südamerika 1868-1876	Reiss, Wilhelm	Aus dem Nachlasse herausgegeben und bearbeitet von Karl Heinrich Dietzel; Von Duncker und Humblot, München und Leipzig.
7	1862-1866	El estudiante de las hierbas: Diario del botánico Juan Isern Batlló y Carrera (1821-1866) , Band 18	Batlló Carrera, J.	Miembro de la Expedición Científica del Pacífico (1862-1866) del Real Jardín Botánico Ruizia. Eds.: Paloma Blanco Fernández de Caleyá, Dolores Rodríguez Veiga Isern, Pilar Rodríguez Veiga Isern [2006]

8	1866	Breve descripción de los viajes hechos en América por la Comisión Científica enviada por el Gobierno de S.M.C. durante los años 1862 a 1866 : acompañada de dos mapas y de la enumeración de las colecciones que forman la exposición pública	Almagro, Manuel de	Edición digital basada en la de Madrid, [s.n.], 1866 (Imprenta y Estereotipia de M. Rivadeneira)
9	1854	Eine Weltumseglung mit der schwedischen Kriegsfregatte Eugenie (1851-1853)	Andersson, N.	Hausbibliothek für Länder- und Völkerkunde, 1. Band. Lork: Leipzig
	1800-1850			
1	1859 [1814-1825]	Reise in die Aequinoktial-Gegenden des neuen Kontinents	Humboldt, A.	Cotta: Stuttgart; Translation: Hermann Hauff;
	vor 1800			
1	1789-94	Viaje político-científico alrededor del mundo por las corbetas Descubierta y Atrevida	Malaspina, A.	
24	TOTAL			

SCIENTIFIC DATA CORPUS 1989-2020

NO	YEAR	Name	Author(s)	Info
	2011-2020			
1	2019	Integrated Wireless Prototype with Monitoring Applications to Measure Water Quality in Shrimp Farms	Conforme, R; Crespo, R; Arguello-Velez, M; Molina-Miranda, MF; Yanez, E	COMPUTER AND COMMUNICATION ENGINEERING, ICCCE 2018, 959:31-42
2	2019	The marine symbiont <i>Pseudovibrio denitrificans</i> , is effective to control pathogenic <i>Vibrio</i> spp. in shrimp aquaculture	Dominguez-Borbor, C; Ardiles, V; Bermeo, M; Bolivar-Alvarado, C; Tomala, C; Sonnenholzner, S; Rodriguez, JA	AQUACULTURE, 508:127-136
3	2019	The Perceived Value and Profile of Protected Areas Visitors: a Case study of the Guayas Province, Ecuador	Carvache-Franco, M; Carvache-Franco, O; Solis-Radilla, MM; Carvache-Franco, W	GEOGRAPHICA PANNONICA, 23(2): 135-147
4	2019	Factores productivos que inciden en el desarrollo económico y comercial de la "Asociación de Cangrejeros 6 de Julio" en el Golfo de Guayaquil	Aviles, HEM; Vera, ASB; Erazo, FYM	Universidad Y Sociedad, 11(2), 387-394.
5	2019	Análisis de los canales de comercialización que inciden en la captura del cangrejo rojo (<i>Ucides occidentalis</i>) de la "Asociación de cangrejeros 6 de julio" del Golfo de Guayaquil	Aviles, HEM; de la Torre, KGA; Aguirre, COR	REVISTA UNIVERSIDAD Y SOCIEDAD, 11(1), 93-100
6	2019	SUSTAINABLE COMMUNITY TOURISM IN PUERTO EL MORRO: ANALYSIS OF ITS APPLICATION AND ECONOMIC IMPACT	Torres, GA	REVISTA UNIVERSIDAD Y SOCIEDAD, 11(1), 289-294
7	2019	THE SANTAY ISLAND, AS A TOURIST ATTRACTION IN THE CITY OF GUAYAQUIL, ECUADOR	Moreira, MZ; Baquerrizo, JC; Paredes, TC	REVISTA UNIVERSIDAD Y SOCIEDAD, 11(1): 303-313
8	2019	Genetic structure, phylogeography, and demography of <i>Anadara tuberculosa</i> (Bivalvia) from East Pacific as revealed by mtDNA: Implications to conservation	Diringer, B; Pretell, K; Avellan, R; Chanta, C; Cedeno, V; Gentile, G	
9	2019	A description of <i>Ucides occidentalis</i> Ortmann, 1897 (Crustacea : Decapoda : Ocypodidae) zoea I.	Schuiteman, M; Pozo-Cajas, M; Dominguez-Granda, L; Jarrin, JM	JOURNAL OF NATURAL HISTORY, 53(21-22): 1255-1261

10	2019	HEAVY METALS CONTAMINATION IN THE GULF OF GUAYAQUIL: EVEN LIMITED DATA REFLECTS ENVIRONMENTAL IMPACTS FROM ANTHROPOGENIC ACTIVITY	Navarrete-Forero, G; Morales Baren, L ; Dominguez-Granda, L; Ponton Cevallos, J; Marin Jarrin, JR	REVISTA INTERNACIONAL DE CONTAMINACION AMBIENTAL, 35(3): 731-755
11	2019	A global exploration of tidal wetland creation for nature-based flood risk mitigation in coastal cities	Van Coppenolle, R; Temmerman, S	ESTUARINE COASTAL AND SHELF SCIENCE, 226
12	2019	Distribution, sources and consequences of nutrients, persistent organic pollutants, metals and microplastics in South American estuaries	Barletta, M; Lima, A.R. A.; Costa, M.F.	SCIENCE OF THE TOTAL ENVIRONMENT, 651: 1199-1218
13	2019	Segmentation by Motivation in Ecotourism: Application to Protected Areas in Guayas, Ecuador	Carvache-Franco, M., et al.	Sustainability 2019, 11, 240
14	2019	New Valuation for defying degradation: visualising mangrove forest dynamics with remote sensing in coastal Ecuador	Beitl, C. et al.	Geoforum 98, 123-132
15	2019	Mangrove Conservation Policies in the Gulf of Guayaquil	Ortega-Pacheco, D, Maria J. Mendoza-Jimenez and Paul Herrera	IN: Filho, W. et al. "Handbook of Climate Change and Biodiversity", Springer Nature, Cham (Switzerland)
16	2018	SUSTAINABILITY STUDY IN ENVIRONMENTAL TOURISM ENTREPRENEURSHIPS IN SANTAY ISLAND	Maldonado, MVA; Caicedo, GET; Cantos, JPB	REVISTA UNIVERSIDAD Y SOCIEDAD, 10(5): 348-356
17	2018	THE SOLIDARITY ECONOMY FOR THE DEVELOPMENT OF COMMUNITY TOURISM ON SANTAY ISLAND	Pena, VMV; Frias, CCHR	REVISTA UNIVERSIDAD Y SOCIEDAD, 10(3): 159-164
18	2018	Survival in juvenile shrimps (<i>Penaeus vannamei</i>) exposed to inactive against active white spot virus: a challenge bioassay perspective	Munoz-Naranjo, D; Gilbert-Jaramillo, J; Marcillo-Gallino, E; Marcillo-Morla, F; Munoz-Naranjo, M	LATIN AMERICAN JOURNAL OF AQUATIC RESEARCH, 46(1): 225-229
19	2018	A simple in vitro method to evaluate the toxicity of functional additives used in shrimp aquaculture	Dominguez-Borbor, C; Chalen-Alvarado, B; Rodriguez, JA	METHODSX, 5:90-95

20	2018	HEAVY METALS CONTAMINATION IN THE GULF OF GUAYAQUIL: EVEN LIMITED DATA REFLECTS ENVIRONMENTAL IMPACTS FROM ANTHROPOGENIC ACTIVITY	Gabriela NAVARRETE-FORERO, Lady MORALES BAREN, Luis DOMINGUEZ-GRANDA, José PONTÓN CEVALLOS and José R. MARÍN JARRÍN	Rev. Int. Contam. Ambie. 35 (3) 731-755, 2019
21	2018	Data imaging acquisition and processing as a methodology for estimating the population of frigates using UAVs	Villegas, P; Mena, L ; Constantine, A; Villalba, R; Ochoa, D	2018 IEEE ANDESCON (Conference)
22	2018	Situación de los manglares de la ciudad de Guayaquil - provincia del Guayas - Ecuador	Poveda Burgos, G.; Avilés Almeida, P.	Revista DELOS Desarrollo Local Sostenible n. 31(febrero 2018)
23	2018	Socio-Ecological Conflicts and the Challenges of Climate Change Case Study: Manglares Don Goyo, Gulf of Guayaquil.	Chávez, W.	Master thesis. Faculty of Engineering Science. Department of Architecture.
24	2018	Morphological responses of <i>Rhizophora harrisonii</i> by pollution in the main port zone of Guayaquil – Ecuador	Quevedo, O. et al.	AIP Conference Proceedings 1982, 020023 (2018)
25	2018	Determination of cadmium and lead in water, sediment and bioindicator organisms in Estero Salado, Ecuador	Pernia, B; Mero, M; Comejo, X; Ramirez, N; Ramirez, L; Bravo, K; Lopez, D; Munoz, J; Zambrano, J	ENFOQUE UTE, 9(2): 89-105
26	2018	Tide-dominated deltas in active margin basins: Insights from the Guayas estuary, Gulf of Guayaquil, Ecuador	Reynaud, J. et al.	Marine Geology 403 (2018) 165–178
27	2018	Notas sobre taxonomía, biología y pesquería de <i>Ucides occidentalis</i> (Brachyura: Ocypodidae) con énfasis en el Golfo de Guayaquil, Ecuador	Zambrano y Meiners	Revista Peruano de Biología 25 (1): 55-66
28	2018	Mercury assessment, macrobenthos diversity and environmental quality conditions in the Salado Estuary (Gulf of Guayaquil, Ecuador) impacted by anthropogenic influences	Calle et al	Marine Pollution Bulletin 136 (2018) 365-373
29	2018	Recurso didáctico para fortalecer la identidad cultural en los estudiantes de cuarto y quinto año de educación básica de la escuela Padre Luis Garzón Jiménez de la comunidad Cerrito de los Morreños del Golfo de Guayaquil en el periodo lectivo 2016 – 2017.	Macías Pinargote, MJ	Universidad de Guayaquil, Facultad de Comunicación Social

30	2018	ESTRUCTURA Y ZONACIÓN DE LA VEGETACIÓN ARBÓREA DEL MANGLAR DE LA COMUNIDAD MASA 1	Molina, N; Moreno Pavon, KA	Universidad de Especialidades Espíritu Santo, Grado Gestión Ambiental
32	2018	Progress on coastal management in Ecuador (2007-2017)	Manrique, PP ; Barragan, JM; Sanabria, JG	ENVIRONMENTAL SCIENCE & POLICY, 90: 135-147
33	2017	COMMUNITY TOURISM AND RURAL DEVELOPMENT. AN ANALYSIS OF TOURISM DEMAND IN THE SANTAY ISLAND (ECUADOR)	Munoz-Fernandez, GA; Correa, MO; Diaz-Christiansen, S; Lopez-Guzman, T	PODIUM-SPORT LEISURE AND TOURISM REVIEW, 6(4): 409-426
35	2017	FIRST RECORD OF MALFORMATIONS IN MALES OF UCIDES OCCIDENTALIS (BRACHYURA, OCYPODIDAE) IN THE GULF OF GUAYAQUIL, ECUADOR	Zambrano, R	CRUSTACEANA, 90(5):631-638
36	2017	Mangleticornia (Amaranthaceae: Salicornioideae) - a new sister for Salicornia from the Pacific coast of South America	Ball, PW; Cornejo, X; Kadereit, G	WILLDENOWIA, 47(2):145-153
37	2017	Prevalence of scars of anthropogenic origin in coastal bottlenose dolphin in Ecuador	Felix, F., Centeno, R., Romero, J., Zavala, M., Vasconez, O.	Journal of the Marine Biological Association of the United Kingdom, 2018, 98(5), 1177–1186.
38	2017	Distribución espacial del azufre en la atmósfera del estuario interior del Golfo de Guayaquil, a partir de muestreadores pasivos (Fenn y Poth, 2004) Guayaquil, Ecuador	Quevedo, O; Calderón F	RevActaNova. vol.8 no.3
39	2017	Microsatellite Analysis on Genetic Variation in Two Populations of Red Mangrove Rhizophora Mangle L. (Rhizophoraceae) and Its Implication to Conservation	Basyuni, M. et al	IOP Conf. Series: Materials Science and Engineering 180
40	2016	Decentralized mangrove conservation and territorial use rights in Ecuador's mangrove-associated fisheries	Beitl, CM	BULLETIN OF MARINE SCIENCE, 93(1): 117-136
42	2016	Recognition of Mangrove Ecosystem Services by the Community and Policy Makers in the Gulf of Guayaquil, Ecuador	Darquea, J	MSc Thesis University of California San Diego
43	2016	“Estudio Socioambiental En la Comunidad de Usuarios del Manglar Cerrito de los Morreños y Alternativas de Desarrollo Comunitario”	Sánchez Toro, ML	Universidad de Guayaquil, Dirección de Posgrado, Maestría en Administración Ambiental

44	2016	Historia clínica comunitaria informatizada para uso en atención primaria de salud y ambiente (Aps-Apa), aplicada en comunidades del Manglar del Golfo de Guayaquil "Cerrito de los Morreños".	Yanza Montalván, AO; Tomalá Espín, JE	NOVUSCIENCIA 6.0, 3(1): 82-103
45	2016	Wetland tourism in natural protected areas: Santay Island (Ecuador)	Diaz-Christiansen, S; Lopez-Guzman, T; Galvez, JCP; Fernandez, GAM	TOURISM MANAGEMENT PERSPECTIVES, 20:47-54
46	2016	ECUADORIAN SHRIMP FARMS: AN ENVIRONMENTAL CONTROVERSY	Crespo, CGDR; Calderon, FGC; Feijoo, ACL	REVISTA UNIVERSIDAD Y SOCIDAD 8(3):151-156
47	2016	PERSPECTIVE ON THE LONG TERM SUSTAINABILITY OF NATURAL RESOURCES IN THE: CASE OF ECUADORIAN SHRIMP INDUSTRY	Uzcategui, C; Solano, J; Figueroa, P	REVISTA UNIVERSIDAD Y SOCIDAD 8(3):163-168
48	2016	INDIVIDUAL GROWTH ESTIMATION OF UCIDES OCCIDENTALIS (BRACHYURA, OCYPODIDAE) IN THE GULF OF GUAYAQUIL, ECUADOR BY INDIRECT METHODS AND MULTI-MODEL SELECTION	Zambrano, R; Aragon-Noriega, EA; Galindo-Cortes, G; Jimenez-Badillo, L; Peralta, M	CRUSTACEANA, 89(13):1509-1524
49	2016	SEXUAL DIMORPHISM AND MORPHOMETRIC MATURITY IN MALES OF UCIDES OCCIDENTALIS (ORTMANN, 1897) (BRACHYURA, OCYPODIDAE) IN THE GULF OF GUAYAQUIL, ECUADOR	:Zambrano, R; Aragon-Noriega, EA	CRUSTACEANA, 89(10):1115-1124
50	2016	Determinación de las proteínas solubles y clorofila en Rhizophora HarrisonII mediante Espectrofotometría de luz visible como indicadores de polución en un sector del puerto de Guayaquil	Sierra Apolinario, WX	Universidad de Guayaquil, Facultad de Ingeniería Química
51	2016	Delft3D Flexible Mesh modelling of the Guayas River and Estuary system in Ecuador	Barrera Crespo, PD	MSc Thesis Delft University of Technology
52	2016	Mangroves and people: Lessons from a history of use and abuse in four Latin American countries	López-Angarita, J. et al	Forest Ecology Management, 368, Pg 151-162
53	2016	Holocene land–sea climatic links on the equatorial Pacific coast (Bay of Guayaquil, Ecuador)	Seillès, B. et al.	The Holocene 2016, Vol. 26(4) 567–577
54	2016	Tropical ecosystems vulnerability to climate change in southern Ecuador	Eguiguren-Velepucha, PA; Chamba, JAM; Mendoza, NAA; Ojeda-Luna, TL; Samaniego-Rojas, NS; Furniss, MJ; Howe, C; Mendoza, ZHA	TROPICAL CONSERVATION SCIENCE, 9(4)

55	2016	CORPORATE ENVIRONMENTAL MANAGEMENT, ITS ROLE AGAINST GLOBAL CLIMATE CHANGE. SHRIMP, CASE: ECUADOR MANGROVES	Crespo, CGDLCR ; Leon, GAA; Calderon, FGC	REVISTA UNIVERSIDAD Y SOCIEDAD, 8(3):43-50
56	2016	Like the Chameleon Who Takes on the Colors of the Hills: Indigeneity as Patrimony and Performance in Coastal Ecuador	Smith, K	JOURNAL OF LATIN AMERICAN AND CARIBBEAN ANTHROPOLOGY, 21(1): 19-38
57	2016	Human–environment interactions during the early mid-Holocene in coastal Ecuador as revealed by mangrove coring in Santa Elena Province	Pearsall, D. et al	The Holocene 2016, Vol. 26(8) 1262–1289
58	2015	Scaling mangrove aboveground biomass from site-level to continental-scale	Rovai, AS ; Riul, P ; Twilley, RR ; Castaneda-Moya, E ; Rivera-Monroy, VH ; Williams, AA ; Simard, M ; Cifuentes-Jara, M ; Lewis, RR ; Crooks, S ; Horta, PA; Schaeffer-Novelli, Y; Cintron, G; Pozo-Cajas, M; Pagliosa, PR	GLOBAL ECOLOGY AND BIOGEOGRAPHY, 25(3):286-298
59	2015	Diseño y desarrollo del módulo de Medicina General y Referencia de acuerdo al modelo de historia clínica del Ministerio de Salud Pública en la aplicación web historia clínica para uso en Atención Primaria de Salud y Ambiente (APS-APA) aplicada en la comunidad del manglar del golfo de Guayaquil "Cerrito de los Morreños	Avelino, M; Luis, J	Universidad de Guayaquil Facultad de Ciencias Matemáticas y Física Carrera de Ingeniería en Sistemas Computacionales
60	2015	DISEÑO Y DESARROLLO DEL MÓDULO DE CARDIOLOGÍA E INTERCONSULTA DE ACUERDO AL MODELO DE HISTORIA CLÍNICA DEL MINISTERIO DE SALUD PÚBLICA EN LA APLICACIÓN WEB HISTORIA CLÍNICA PARA USO EN ATENCIÓN PRIMARIA DE SALUD Y AMBIENTE(APS-APA) APLICADA EN LA COMUNIDAD DEL MANGLAR DEL GOLFO DE GUAYAQUIL "CERRITO DE LOS MORREÑOS	Mora, B; Lourdes, J	Universidad de Guayaquil Facultad de Ciencias Matemáticas y Física Carrera de Ingeniería en Sistemas Computacionales
61	2015	An approach to monitoring mangrove extents through time-series comparison of JERS-1 SAR and ALOS PALSAR data	Thomas, N; Lucas, R; Itoh, T; Fatoyinbo, L; Bunting, P; Rosenqvist, A	Wetlands ecology and management 23.1 (2015): 3-17.

62	2015	Mobility in the mangroves: Catch rates, daily decisions, and dynamics of artisanal fishing in a coastal commons	Beitl, CM	APPLIED GEOGRAPHY, 59(98-106)
63	2015	Analysis of the economic impact of the application of Decree No. 1391 on the regularization of Ecuador Shrimp Aquaculture Industry	Mario, AS; Jose, MC ; Elsa, MQ; Leslie, RV; Monica, CB	CIENCIA UNEMI, 8(16): 11-20
64	2015	Evaluación de la efectividad de Manejo de la concesion de manglar Cerrito de los Morenos, canton Guayaquil, provincia Guayas	Patino Chiriboga, M.	Tesis. Universidad Particular de Loja.
65	2015	Ecuador's Mangrove Forest Carbon Stocks: A Spatiotemporal Analysis of Living Carbon Holdings and Their Depletion since the Advent of Commercial Aquaculture	Hamilton, S.; Lovette, J.	PLoS ONE 10(3): e0118880
66	2014	Intra-specific variability in life-history traits of <i>Anadara tuberculosa</i> (Mollusca: Bivalvia) in the mangrove ecosystem of the Southern coast of Ecuador	Flores, L ; Licandeo, R; Cubillos, LA; Mora, E	REVISTA DE BIOLOGIA TROPICAL, 62(2): 473-482
67	2014	Adding Environment to the Collective Action Problem: Individuals, Civil Society, and the Mangrove-Fishery Commons in Ecuador	Beitl, CM	WORLD DEVELOPMENT, 56:93-107
68	2014	Resisting Environmental Dispossession in Ecuador: Whom Does the Political Category of 'Ancestral Peoples of the Mangrove Ecosystem' Include and Aim to Empower?	Latorre, S. et.al.	Journal of Agrarian Change, Vol. 14 No. 4, October 2014, pp. 541–563.
69	2014	Resilience-based Restoration of Mangrove Social-Ecological Systems A CASE STUDY FROM THE GULF OF GUAYAQUIL, ECUADOR.	Schönig, D.	Master thesis. Albert-Ludwig-Universität Freiburg.
70	2014	Navigating Over Space and Time: Fishing Effort Allocation and the Development of Customary Norms in an Open-Access Mangrove Estuary in Ecuador	Beitl, C.	Hum Ecol (2014) 42:395–411
71	2014	Electronic Family Health Record for Use in Primary Health Care Applied in Mangrove Community: "Cerrito de los Morreños"	Silva, R.; Plaza, L.	Conference Paper in IFMBE proceedings · October 2014
72	2014	Heavy metal concentration in mangrove surface sediments from the north-west coast of South America	Fernández-Cadena, JC. Et al	Marine Pollution Bulletin 82 (2014) 221–226
73	2014	Plants of the South American Pacific Mangrove Swamps: Colombia, Ecuador, Peru	Cornejo, X.	Universidad de Guayaquil, Facultad de Ciencias Naturales
74	2013	Ressourcennutzung im Golf von Guayaquil: Auswirkungen der Garnelenzucht auf die lokale Bevölkerung von Cerrito de los Morenos	Müller, N.	Masterarbeit, FU Berlin Lateinamerikainstitut, Berlin
75	2013	Evaluación del estado actual de las consecciones de áreas de manglar entregadas a comunidades ancestrales en la Provincia del Guayas	Leonidas, E; Arcentales, M	
76	2013	City Profile: Guayaquil	Delgado, A.	Cities 31: 515-532

77	2013	Bio + Fair = Nachhaltig? Garnelenzucht und Bananenproduktion in Ecuador.	Dietrich, S.	Diss thesis. Geography. HU Berlin.
78	2013	ASSESSING THE ROLE OF COMMERCIAL AQUACULTURE IN DISPLACING MANGROVE FOREST	Hamilton, S	BULLETIN OF MARINE SCIENCE, 89(2): 585-601
79	2012	Ecoaldeas or Self-Sustainable Communities and renewable energy solutions (SSC). First approach Ecuador and Mexico	López Agüera, A; Domingues Azevedo, J; Rodríguez Cabo, I; Rey Rey, D; Gándara Villadoniga, V; Vieites Montes, E; Peralta, J; Sosa, I; Guerra, J; Alguacil, M	
80	2012	EMERGENT IDENTITY, CULTURAL HERITAGE, AND EL MESTIZAJE: NOTES FROM THE ECUADORIAN COAST	Bauer, DE	JOURNAL OF LATIN AMERICAN CULTURAL STUDIES, 21(1): 103-121
81	2011	Long-range effect of cyanide on mercury methylation in a gold mining area in southern Ecuador	Guimaraes, JRD; Betancourt, O; Miranda, MR; Barriga, R; Cueva, E; Betancourt, S	SCIENCE OF THE TOTAL ENVIRONMENT, 409(23):5026-5033
82	2011	Cockles in custody: the role of common property arrangements in the ecological sustainability of mangrove fisheries on the Ecuadorian coast	Beitl, CM	INTERNATIONAL JOURNAL OF THE COMMONS, 5(2): 485-512
83	2011	Distributional records and potential threats to the Common (Mangrove) Black Hawk (<i>Buteogallus anthracinus subtilis</i>) in southwestern Ecuador	Álava, JJ; Saavedra, M; Arosemena, X; Calle, M; Vinueza, C; Jiménez, PJ; Carvajal, R, Vargas, FH	Boletín SAO Vol. 20(2)
84	2010	EVALUACIÓN DEL NIVEL DE CONTAMINACIÓN BACTERIOLÓGICA EN AGUA Y SEDIMENTO DEL ESTUARIO, Y SU RELACIÓN CON LACALIDAD DEL AGUA SUBTERRÁNEA DE LA COMUNA CERRITO DE LOS MORREÑOS, GOLFO DE GUAYAQUIL-ECUADOR	Arcos, V; Mero, M; Machuca, M; Vera, L; Fuentes, A; Flores, E; Egas, F; Feys Espinoza, J; Velasteguí, V	CONSEJO EDITORIAL UNIVERSIDAD DE GUAYAQUIL: 35.
	81			
	2001-2010			

1	2000	Chemical and physical properties of shrimp pond bottom soils in Ecuador	Sonnenholzner, S; Boyd, CE	JOURNAL OF THE WORLD AQUACULTURE SOCIETY, 31(3):358-375
2	2000	Estero Salado/Guayaquil ship channel contaminant assessment	Greenberg, BM; Hull, RN; Roberts, MH; Gensemer, RW	AMERICAN SOCIETY FOR TESTING AND MATERIALS SPECIAL TECHNICAL PUBLICATION; ENVIRONMENTAL TOXICOLOGY AND RISK ASSESSMENT: SCIENCE, POLICY, AND STANDARDIZATION-IMPLICATIONS FOR ENVIRONMENTAL DECISIONS, TENTH VOLUME; 1403: 40-55
3	2000	Periodic occurrence of epithelial viral necrosis outbreaks in <i>Penaeus vannamei</i> in Ecuador	Jimenez, R; Barniol, R; de Barniol, L; Machuca, M	DISEASES OF AQUATIC ORGANISMS, 42(2): 91-99
4	2001	Ecological Conflicts and Valuation: Mangroves versus Shrimps in the Late 1990s	Martinez-Alier, J	Environment and Planning C: Government and Policy 19.5: 713-728
5	2001	The Gulf of Guayaquil and the Guayas River Estuary, Ecuador	Twilley, R. et al	Seeliger, U.; Kjerfve, B. (eds.) Ecological Studies 144, Springer Verlag Berlin/Heidelberg
6	2001	The Fisheries for Mangrove Cocks, <i>Anadara</i> spp., from Mexico to Peru, With Descriptions of Their Habitats and Biology, the Fishermen's Lives, and the Effects of Shrimp Farming	MacKenzie, C.	Marine Fisheries Review 63/1
7	2001	A dual infection by infectious cuticular epithelial necrosis virus and a Chlamydia-like organism in cultured <i>Litopenaeus vannamei</i> (Boone) in Ecuador	Jimenez, R; Barniol, R; de Barniol, L; Machuca, M	AQUACULTURE RESEARCH, 32(11): 875-883
8	2003	White spot syndrome virus infection in cultured <i>Penaeus vannamei</i> (Boone) in Ecuador with emphasis on histopathology and ultrastructure	Rodriguez, J; Bayot, B; Amano, Y; Panchana, F; de Blas, I; Alday, V; Calderon, J	JOURNAL OF FISH DISEASES, 26(8): 439-450

9	2003	Prevention of IHNV vertical transmission in the white shrimp <i>Litopenaeus vannamei</i>	Motte, E; Yugcha, E; Luzardo, J; Castro, F; Leclercq, G; Rodriguez, J; Miranda, P; Borja, O; Serrano, J; Terreros, M; Montalvo, K; Narvaez, A; Tenorio, N; Cedeno, V; Mialhe, E; Boulo, V	AQUACULTURE, 219(1-4): 57-70
10	2005	First records of elephant seals on the Guayaquil Gulf, Ecuador: on the occurrence of either a <i>Mirounga leonina</i> or <i>M. angustirostris</i>	Alava, JJ; Carvajal, R	Latin American Journal of Aquatic Mammals 4.2 (2005): 195-198.
11	2005	Census, distribution and conservation status of Roseate Spoonbill (<i>Platalea ajaja</i>) in the Guayaquil Gulf Estuary, Ecuador	Alava, JJ.	Ornitologia neotropical 16/2:175-185
12	2005	Ecología poblacional, distribución y estudio de hábitat de <i>Crocodylus acutus</i> (Cuvier, 1807) en la "Reserva de producción de fauna manglares El Salado" del estuario del Golfo de Guayaquil, Ecuador	Raúl I. Carvajal, Miguel Saavedra y Juan José Alava	Revista de Biología Marina y Oceanografía 40(2): 141 – 150, diciembre de 2005
13	2005	Census, distribution and conservation status of Roseate spoonbill (<i>Platalea ajaja</i>) in the Guayaquil Gulf Estuary, Ecuador.	Alva, JJ	ORNITOLOGIA NEOTROPICAL, 16(2):175-185
14	2006	Nitrogen and phosphorus budgets for a tropical watershed impacted by agricultural land use: Guayas, Ecuador	BORBOR-CORDOVA, M. et al	Biogeochemistry (2006) 79: 135–161
15	2006	Occurrence of <i>Sphoeroides rosenblatti</i> Bussing, 1996 (Teleostei: Tetraodontidae) along the coast of Guayas Province, Ecuador, and a comparison with sympatric <i>Sphoeroides annulatus</i> (Jenyns, 1842)	Aguirre, W.E; Shervette, V.R; Cevallos, R; Gonzalez, M; Pozo, F	Revista de Biología Marina y Oceanografía 41(2): 231 – 238
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EXAMPLE FOR AN ANONYMIZED INTERVIEW

LL: ..yoria, toda la mayoria que estaba en [[Pueblo A]], trabajaba en el manglar. Y del manglar era el sustento al diario para la...los habitantes que viviamos, eso era el diario de..eso era el trabajo. Verdaderamente se trabajaba en antes. Este...cual más tenia su canoa grande y ...habia canoa y habia balandra. Balandra se llamaba una canoa, una balandra que tenia un -le llamabamos a ese balandra le salia de la proba de la canoa, le salia un botalon, que le llama. Como la-...si ves las barcos, la barca, asi tienen un palo pa` adelante. Y ahi comienza trentetilla, focke, que le llamamos todo eso. Si tiene conocimiento de eso? Entonces asi.. #00:00:58-0#

A: Eso es la balandra? #00:00:58-0#

LL: Ese es la balandra. #00:00:59-7#

A: Y la canoa no tenia vela? #00:00:59-7#

LL: La canoa tenia vela, pero no tenia #00:01:06-2#

A: Tantos velas, eso de la frente? #00:01:03-2#

LL: Eso de la frente, no tenia focke, tri-focke y trinquetilla, que le llamaba. Tenia...solo tenia..la canoa solo tenia la vela y la trinquetilla, que le llama. Y en cambio la balandra tenia focke , anti-focke y trinquetilla.Y vela, #00:01:32-1#

A: Cuatro entonces #00:01:32-1#

LL. Cuatro. #00:01:32-8#

A: Chiquetitas entonces tambien. Ah. #00:01:30-7#

LL: Eso era balandra, y la canoa era eso de ahi, esa grande. Eso es de un cunado mio, se llama [[Julio Rivas]], es la unica canoa que ha quedado de toda la historia, cuando habia las canoas, es la unica que existe. El no lo checho, no lo ha dejado danar, porque en ese canoa hace flete el. Y, es como tener una Gabarra, porque ahi lleva balanceado, cemento, piedra, arena, hierro, de lo que a el las camaroneras le dicen que lleva. Hace flete con eso... #00:02:15-3#

A: Y vive aqui... #00:02:21-2#

LL: El vivia alla en [[Pueblo A]], esta igual que mi, que ya se vino y vivio aqui. Ya se enseñó y aqui esta viviendo. Tiene sus dos casas, el aqui... #00:02:32-7#

A: Porque dos? Porque dos casas? #00:02:32-7#

LL: O sea, no tiene dos mujeres, sino que tiene ya sus hijos ya una parte de los hijos, que tienen ya sus casa. #00:02:39-4#

A: Hay algunos que tienen dos mujeres aqui? #00:02:41-2#

LL: No, no. Yo tenia, pero ya no tengo...[laughs - joke] No, es broma no mas, es broma. #00:02:45-4# Es una broma. #00:02:53-3#

A: Entonces eso esta para ti, todos los tres, y yo necesito este. #00:02:57-0#

LL: A tambien yo firmo aqui? #00:03:02-7#

A: No, es copia. Para que tu sepas, lo que has firmado. Para que sepas que tienes que renunciar, por sea a caso que no quieres... #00:03:30-0#

[Explanation Formulario de Consentimiento Informado] #00:03:30-8#

LL: Entonces así fueron, sabes cuántos mangles se puede una canoa de estas? 600 - 500. #00:04:02-5#

A: Pero de qué tamaño... #00:04:02-5#

LL: Como esto [shows part of the bamboo hut]? #00:04:05-5#

A: Cuánto es? 15 cm? #00:04:05-5#

LL: Sí. Esto, es, sí, unos 15. Escucha me, de esto, cada palo de estos tenía un nombre. Cada palo tenía... como llamamos nosotros, bueno así, nuestro padre, nuestro abuelo pusieron el nombre de estos palo. #00:04:33-1#

Digamos, este aquí de 5 metros, le llamábamos, toleta. #00:04:38-9#

A: Entonces de longitud... Pero de 15, más o menos? #00:04:38-9#

LL: De este, este, este gruesol [thickness?] #00:04:38-3#

A: De 15, más o menos de promedio. #00:04:40-2#

LL: De este gruesol también eran de 8 metro, y le llamábamos varingón. Uno se llamaba tolete, otro se llamaba varingón. Otro de esto, más largo, era varingón de 10 barros. Más delgado que esto, más delgado de uno 5 cm de grueso, se llamábamos barra de 6 y barra de 7. Eso es el nombre de cada palo, tolete, baringón, barra de 6, barra de 7, y ahí venía el "puntal", que le llaman. Ya, este puntal, a veces tenían 10 barras, 10 metros, eso era otro, pieza, pieza, pieza, pieza de 10 barros, de 10 metros, era largo. Porque traer uno de esto? Porque este pagaban más, el baringón pagaban más. El tolete pagaban menos, la barra de 6, la barra de 7 pagaban más menos. Entonces cada palo tenía su precio. Cada pieza de... el puntal de 10 metros, y había también lo que llamábamos puntal de 7, 7 metros, por... habían piezas que tenía 7-8 pulgadas. Entonces, cada esas piezas tenía su precio... #00:06:56-4#

A: Y era muy bien definido... #00:06:56-4#

LL: Era el la pieza que te digo, la pieza que te digo era ahí, ahí de grueso, cuadrado... este palo era más grueso, y se [labraba] de aquí de este lado, ladraba de este lado, ahí, para cuadrado, correcto, ese le llamábamos pieza, puntal, ya quedaba ladrado de las cuatro caras. #00:07:30-5#

A: Entonces... la pieza y el puntal era lo mismo? #00:07:37-5#

LL: Era lo mismo, pero digamos la pieza era más larga, llamábamos de 10 metro, de 8 metros, y el puntal era de 7, de 5 metros, ladrado con las cuatro caras, con la hacha que nosotros cargábamos lo ladraba. Ese palo que es ahí... #00:07:58-6#

A: Con la hacha lo hicieron? #00:07:58-6#

LL: Sí. Ese poste que está ahí, hicieron de grueso que nosotros tumbábamos, lo cortábamos así. Cuando ya hechaba que estaba la mitad, de labamos de este lado, a [chase?]. Cuando hechábamos que ya se iba ahí el mangle, nosotros aquí vulgarmente le llama, lung, el palo caía. Y uno tenía que salir corriendo de aquí con las raíces para que de pronto no se pase nada. Entonces eso sí hacía. Y el baringon, cuando era este gruesol, nosotros no lo ladrábamos, sino que le traímos así redondo. Eso lo vendía, llegábamos aquí a la ciudad de [[Ciudad A, capital provincial]], TANTAS Invasiones que había en ese tiempo. En el gobierno que era de Guillermo Rodríguez Lara, de este, de... Velasco Ibarra, y todos los anteriores gobiernos los que fueron, dejaron cortar que ahí eran la orden que dejaban cortar el manglar. Pero, vino después la orden, cuando esto es un gobierno como es ahora, ya actual, ya decretaron que no más tala de mangle. Ni a las camaronerías. #00:09:26-8#

A: Quién era? Quién... durante qué época de gobierno? #00:09:32-2#

LL: De "no talar"? #00:09:39-9#

A: De no talar. #00:09:46-7#

LL: Creo que ya fue en el gobierno, cuando despues que mataron al Roldos, a Jaime Roldos, desde ahi ya el que entró ya este ahora que estuvo.. #00:10:11-4#

A: No es Nebot? De Bucaram? #00:10:11-4#

LL: Es este...Alcat Bucaram, ya desde ahi, entro Gustavo Novoa, que lo Hugo Guitterez, despues de Hugo Guiterrez[?] entró Andalan, tambien lo botaron, despues entró Correa, ya definitivamente dijeron que no mas tala. A las camaroneras en antes lo dejaban que talaran 100, 130 hectares de manglar. No decian nada. Pero ahora ya la ley dec...ya decretado que verdaderamente son del gobierno actual, que esta Lenin Moreno, que decrataron que no más tala de manglar a las camaroneras. Una camaronera que esta en la mangle, sera sancionada. Y ya no le dejarán ser camaronera, porque estan en el manglar. Porque el manglar esta el pulmon de nuestras..nuestro continente, que verdaderamenta vivimos aqui. Porque sin el manglar, nosotros no podemos coger cangrejo. No puedo coger uno ostion. No puede coger el pescado. No puede coger la concha. No puede coger el mejillon totalmente pues sin manglar. No hay nada de especies. Porque el manglar se secará, se destruirá, y no criará mas. Entonces de eso ya, nos pusieron una ley, que no pudriamos cortar el mangle. No mas, no cortamos mangle #00:11:47-5#

Y como era cuando los camaroneras cortaron el mangle, que han hecho con el mangle? Habia personas que cortaron para ellos? O eran los camaroneros mismos? #00:11:51-8#

Eran los camaroneros mismo que lo destruyeron, ellos metían maquinas, retrocavadora y y tumbaban el manglar. A [diez trayan si exca..?] hicieron lo que ellos querían. No habia ley para eso En cambio ahora ya, claro, tampoco no hablo de, de que, ahorita, ahorita, si estan talando el manglares, a lo escondido. O de pronto el mismo ministerio, que se yo, de pronto dan la autorización. No. Desconozco eso, pero...porque talan a veces los manglares. E...no solamente por este lado, sino por el lado de [[Reserva ecologica A]], lado de..de [[Ciudad M]], lado de [[Ciudad E]], lado de [[Ciudad N]]. Todo eso, todo eso talan, pero yo, nosotros no ponemos a conversar, a dialogar, que...esto viene de arriba también. Es como... #00:12:53-8#

Eso me cuenta...un pocito... #00:12:53-6#

Es como que, tu, que sea, e..directora, pues, de la provincia del [[Provincia A]], pues, te pasan los camaroneras, "toma, por aca, aca, que se yo, cinco mil, diez mil o veinte mil dolares, toma, eso es para tu..pero das no la autorización para poder estar..." Hay bastante de eso. #00:13:14-9#

Y como lo sabes que hay eso? Y no solamente es ineficiencia de la institución.#00:13:14-9#

Porque, mira, mira Anne. Porque no creo que si el gobierno decreta la autorización y dar la autorización de no talar mangle, pero si...Usted como directora o siendo que es capaz de Usted cuide el manglar tambien, Usted no da autorización. Pero decimos asi, que esto viene de arriba, es porque, el de menos el camaronero ya tiene sus documentos. Ese sitio ya esta autorisado para que anda camaronero. Es el de luego que estan cogiendo plata, el el de luego que son corruptos. O no es así? Porque si, yo como directora, digo no, no. No doy ni un documento a un camaronero, para que verdaderamente continue eso. #00:14:18-4#

Habia en 2004 me dijeron, una regularización lo llamaba el Correa de los camaroneras. Y en este proceso en la [[Provincia C]] por lo menos y un pocito aqui tambien, han dado documentos a las empresas de camaron. No a todos, yo creo que todavia faltan algunos aqui, como entiendo. #00:14:41-2#

Claro #00:14:41-2#

Pero yo creo que eso era un golpe para la ...el movimiento social de los camaroneras. Te acuerdas de eso? #00:14:48-9#

Claro, si. Llamaron a los camaroneros que "No más - hasta aqui no más". Es como ahorita. Que los acuerdos

ministerial. Usted teniendo acuerdo ministerial y uso sustentable del manglar. Pues ya pues, tiene autorización a cortar el manglar, pues, o sea si no tienes este documento, yo puedo ir en una parte, si no tengo el documento. La ley tiene que hacer justicia porque verdaderamente, me santan de donde yo quiero hacer esta camaronera porque no tengo mi documento. Pero estando en regla los documentos que un camaronero va a hacer, que podemos hacer. Nosotros como no podemos ya. Si denunciamos, ya no nos atienden porque ya esta regularizado eso. Pero si no hay regularización, no tienen documento, tenemos el derecho de nosotros andar y presionar al ministerio del ambiente, Aguacultura, Subsecretaria, su...subsecretaria gestión marina y costera. Pero si nosotros, ya todo eso tienen autorización, ya nosotros no podemos hacer nada. Es como nosotros, que hacemos por denunciar, pues ya, pero si ellos ya tienen los documentos, acuerdo ministerial de uso sustentable, este...autorización de hacer esa camaronera. Ya no hacemos nada, malo que nos vamos a llenar del enemigo y nos vamos a poner a juicio. Mejor pues. Yo siempre le digo al [[David]] es, [[David]], si ya nosotros no podemos, que podemos hacer. Dejar, pues. Dejar, como quien dice, un camaronero que es multi-millonario, cuanto millones, o cuanto miles de dolares, no les ofrecio al subsecretario, o de pronto le ofrecio a..a cualquier trabajador, de donde trabaja. Pero yo, y que tenemos que hacer, usarnos de brazo. Porque estos ya vienen de arriba. Mucha, muchas personas, muchos presidentes, no solamente de [[Pueblo A]], de otras partes, ellos tambien reclaman lo que yo, nosotros reclamamos. Que no solamente es aqui en [[Pueblo A]], por el lado de [[Pueblo A]], eso viene de todo lo que es concesión de manglar. El camaronero no hace caso. Y no hace caso, porque vuelvo y repito, ya esta, que se yo, autorizado o tiene algun documento que le vale, que le autoriza, que si puedo...porque? Porque el camaronero es multimillonario. Para uno que no tienen nada, yo hago una denuncia, el camaronero puede decir: Bueno. Aqui hay, si, yo tengo mil dolares, camaronero: Aqui toma. Diez mil dolares. Y hecha lo altacho a su..a esa denuncia. Quedo callado, porque sinceramente, no puedo. #00:18:18-2#

Y puede tambien...como es el proceso normal aqui, que, cuando hay una denuncia. Hay personas que te informan sobre lo que esta pasando. Que hay camaroneras que cortan. Y como desarrollan una carta, y a que ministerio tienen que ir, como funciona todo es. #00:18:44-0#

Mira, cuando estan estan estan talando mangle, y por el lado de uno de nosotros, lo que hacemos es denunciar. Cuando hacen un escrito. Un documento como esto, ya, Señor...este, un director, Señor este ahorita el director es nuevo, quien esta, el Señor [[Santiago]], pero primero era el director [[Tavares]]. Despues, pusieron a, a [[Cesár Corrales]], no tuvo pero ni unos seis meses cuando ya lo sacaron. Ahora esta [[Santiago Tavares]], algo así, es nuevo. vamos a ver hasta cual lo dura. #00:19:38-8#

Y el esta en el ministerio. #00:19:42-9#

Claro, el esta, es el director de gestión marina y costero. Si. En la subsecretaria gestion marina y costero, el es el director. A el llegan todos los oficios, o las denuncias que nosotros hacemos #00:19:58-8#

Marino y? Costero. Marino y costero. #00:20:00-4#

Si. Subsecre...gestion marino y costero. Ya. A el le llegan los informes. Yo lo que hago es llevar. Al entrar este, el ministerio de ambiente, es un de gestión de marina y costero, hay un asistente de el. De el. Todos los oficios entregó a ella. Me da el recibido y sello. Sello, me lo que lo entregado tal fecha, tenga el original y de me una copia de lo que me ha recibido. Me dan. Pero que pasa, de que, ella lo recibe. Como cualquier empleada que trabaja en una ofician o en cualquier parte de oficina. Lo recibe. A la, a las dos tres o cuatro, o un mes, viene la respuesta. #00:21:05-5#

Uno dos tres o cuatro meses? #00:21:05-5#

Cuatro meses o de pronto, seis o un mes y medio, dos meses, imaginate. Ahi me llaman, a ver, [[Nicolas]]. #00:21:15-4#

Y no te acuerdas casi, que parte..caso era. #00:21:18-9#

[[Nicolas]], tienes que venir al ministerio del ambiente. Tienes que venir a tirar la respuesta, que le envia el subsecretario. Puedes imaginar eso, que si yo, una emergencia tengo de ir inmediatamente y en persona. Eso, eso dura un mes, dos meses, y uno andando ahi, que fue: Todavia no llega la respuesta de subsecretario? Tiene

que esperar. La otra es, si no hacen nada ahí en el ministerio, en el ministerio de ambiente, hay que ir a la provincia del [[Provincia A]]. Ah, allá está la directora provincial del [[Provincia A]]. Porque primero la directora era, era [[Cordobes]]. A ella lo botaron. Ahora está otra directora, y esa directora, disculpame, no la conozco. Pero ella está en los [[Reserva Ecológica B]]. Allá en la en la dirección Provincia de [[Provincia A]]. No la conozco, y no se como se llama. Imagínese. Allá es otro trámite, que hay que hacer. Esperar... #00:22:56-1#

Tu tienes que denunciar, que ellas no hacen su trabajo aquí en...o que haces allá? #00:23:01-0#

O sea, eso ya se le ha dicho. Que nosotros ponemos denuncia, pero la denuncia no tomen, como si ya nosotros no nos da un importismo, le da un semi-importismo. La denuncia viene y nosotros denunciarnos, ponemos una, dos, tres denuncias ahí. No, la respuesta, te digo que nos llega a los dos meses, a las dos semanas o a los dos meses y de pronto ya estoy andar: Bueno y que fue con la denuncia que yo puse? Quiero la respuesta para ver que que opinan de eso. Pidiendo por favor, que necesito ir en pensionar a la camaronera cachogran una idea. E...necesito con biólogo y una delegada de la provincia de [[Provincia A]]. O uno del ministerio del ambiente. Y con policía. Pero ellos, se hacen, los hicieron... #00:24:02-8#

lo han hecho, o nunca lo han hecho... #00:24:04-2#

La culpa no lo tienen los biólogos. La culpa lo tienen el lo que están arriba hasta que ellos le llegue la respuesta, hasta que le, lo, le lean y digan. Bueno, Señor Biólogo [[Francisco Ortega]] o señor...o cualquier biólogo de ahí del ministerio. Usted se va tal día. Córdate con el [[Sr. Villar]] o con cualquier quien haga la, la denuncia. Así es eso. #00:24:28-3#

Y lo, pero había inspecciones? En tu época como presidente? #00:24:30-9#

Claro? Ahora en el otro mes, yo fui a inspeccionar. #00:24:40-6#

Octubre? #00:24:42-9#

Si en Octubre fui a inspeccionar. Con uno...pero esa, esa inspección, hu, ya lo tenía hace rato, que ya via puesto ese informe para que me dieron un biólogo para ir a inspeccionar. #00:24:54-9#

Cuanto tiempo demoro? Por más o menos? #00:24:57-0#

Por lo menos un mes, un mes y medio, me duro, dos meses, para ir imaginase. Ahora hay otra para ir a inspeccionar, para otra camaronera, pero estoy a quedando la respuesta hasta que ellos digan: Bueno, [[Nicolas]], este, te llamo para ponernos de acuerdo el miércoles, jueves, que se yo. Que se elige. Para ir a la camaronera para ir inspeccionar. Pero todavía no hay respuesta. Después de esa inspección, los señores, que van conmigo, dicen, allá, [[Nicolas]], ya está bien, todo bien, anotan, anotan en su agenda. Yo también anota. El le digo, biólogo, cuando. Este de aquí tengo que ir a la provincia de [[Provincia A]] o al subsecretaría marina y costera. Ahí viene el director de subsecretaría de marina y costera a dar el informe, pero cuando. Yo tengo ahí unos informes que, creo que fueron hace como unos 6-8 meses. Recién me enviaron hace la otra semana me llamaron para poder a ver los informes. Ya se lo di a [[David]] #00:26:39-0#

Los informes de la inspección? #00:26:41-1#

Claro #00:26:41-1#

Demoran hasta 8 meses para escribir. #00:26:45-7#

A veces seis meses, a veces cuatro meses, a veces tres meses, depende de lo que ellos, ahí vienen los informes. El informe semestral, también ya la tengo la respuesta, que hay que hacer. Que tenemos que cambiar, cual es el motivo, por que razón si es que le falta un...ahora estamos haciendo el informe de...l acuerdo, del acuerdo para el convenio para los diez años más. Para que la concesión #00:27:29-8#

La evaluación? #00:27:29-8#

Para que la concesión permanezca en manos de nosotros. Eso están haciendo, esta, una señorita del ministerio del ambiente, de conservación internacional, se llama [[Cecilia [Rojas?]]. Ella dijo que nos va a ayudar, y ya lo está, lo está elaborando. #00:27:51-6#

[[Cecilia Roja]]... #00:27:52-3#

[[Cecilia Roja]] ...está bien, e ahí., [[Roj, Roja, Roja]]...Ella, ella está elaborando el informe de la evaluación de...la...custodia y uso sustentable del manglar de la concesión. Para que? Para que firmar de nuevo el convenio para diez años más. pero, eso es una buena idea, y una buena ayuda, de que ella se nos presta para ayudarnos hacer el, el informe, de acuerdo de nuevamente, el convenio para hacer nuevamente y firmar, diez años más. Gracias por esa parte, por esa señorita, pero yo lleve a [[Pueblo A]], yo lo llevé y...estuvimos en reunión y nos dijo todo eso, que le parece. Muchas gracias, en vez de nosotros hacer lo ese informe. Y ella ya lo está elaborando. Ahora ella, hay que esperar otro día, para que ella debe decir, bueno, [[Nicolas]], necesito ir al pueblo. A presentarle el informe....para que usted lo lean, lo lean todo, el quien quiera leer para ver si lo que en el convenio va, si que está bien o que está mal, si ustedes si algo está mal, no hay problemas, si le cambia...así nos digo. Pero si sabe ya que este informe cuesta plata. #00:29:43-6#

Creo que conozco a ella #00:29:44-6#

Tu la conoces #00:29:46-4#

Ha llegado a uno de estas charlas sobre el proyecto que hemos dado. Por [[Antonio Barreiro]] de [[ONG B]], de [[ONG C]]. #00:29:54-3#

Claro, [[Antonio Barreiro]]. Ella es #00:29:57-8#

Trabaja con él? #00:29:57-8#

Si. #00:30:10-0#

Listo. Bien. Cuando era eso, recién? #00:30:10-0#

El [[al fin de]]... #00:30:07-3#

A eso del ministerio del ambiente, esa reunión? #00:30:07-7#

[[al fin de octubre]]. #00:30:14-8#

[[al fin de octubre]] lo llevé a ella. #00:30:15-9#

Aha. #00:30:17-1#

[[Cecilia Rojas]]. En el [[Pueblo A]]. #00:30:20-8#

No había esta gran reunión en [[Pueblo A]] este día #00:30:25-1#

No te entiendo. #00:30:27-8#

No había una reunión del Ministerio de Ambiente este día? #00:30:29-1#

Claro. Eh...ahí fue ella con otro delegado del ministerio del ambiente. Estuvimos en reunión, y había un taller y habló del plan de manejo de la concesión. Pero es una idea, y la gente se quedó sorprendido de que verdaderamente esa señorita, está elaborando ya el plan de manejo, para que verdaderamente pues la concesión y los socios no se sientan como quien dice: No pues. [[Nicolas]] no está haciendo nada. No hace nada. Pero ahí le llegue, ella le explicará que verdaderamente lo que se está haciendo. Yo, de pronto, que yo ya no soy en este momento presidente, pero queda todo legalizado, ya queda todo el paso al otro presidente que va a ser a dos años, para que el también continúe de ahí para adelante. #00:31:28-0#

Solamente eligen para dos años el presidente de la... #00:31:31-0#

Cuatro. #00:31:31-3#

Ya ok. #00:31:33-8#

Yo estoy hasta el 22. #00:31:35-0#

Ya entonces falta. #00:31:36-5#

Faltan dos años. Dos años. #00:31:40-8#

Y como era para ti, estos primeros dos años. Como lo has experimentado? #00:31:49-1#

Bueno, o sea, yo esto ya también...ya me la sabía un poco. Por eso para mí no es tan fácil y no es tan difícil. Pero porque la persona que te está hablando, ya tengo conocimiento de eso. Porque conozco. Conozco muchas cosas. Y donde ando, ya he andado. Por eso que yo a mí no se me hace...y la facilidad y la oportunidad que me dieron, [[David]] y [[Guillermo]], que han estado muchos años, y todavía estamos trabajando con él. Yo trabajo con [[Guillermo]] y [[David]], [[David]] trabaja conmigo y [[Guillermo]], nos ayudamos mutuamente. De lo que de pronto, yo no he sabido, no he conocido, ellos me han llevado: Sabe que...mira...esto es...hemos ayudado mutuamente. Y todo agradecido de la persona que me enseña...de que lo no sabido, he conocido y aprendido...mas que...y sigo aprendiendo. He dialogado, he conversado, estaba en reuniones con personas muy importantes, que nunca he conocido en mi vida. Claro, que he tenido amigos, tengo compañeros que son profesionales. Pero ahora que estoy en esta asociación, ciento de personas que nunca he conocido, he tenido la facilidad y la oportunidad de dialogar, conversar, de servirnos un plato de lo que ellos han brindado. Bueno, y me siento agradecido de que verdaderamente para quien está en esta asociación de ser presidente no es tan fácil, ni tan difícil. Y la otra es que la persona que está aquí en este puesto, no es por estar. Tiene que saber, tiene que conocer, tiene que tener un poco de conocimiento para de ahí arrancar y poder seguir adelante. Y conocer y saber muchas cosas, de lo que uno no sabe. Lo bueno, lo bueno es que verdaderamente el que quiere, el que quiere ser alguien en la vida y quiere aprender pues, es en la persona, pero el que no tiene esta iniciativa, este - como se llama - de no querer aprender, mejor que no entre a ser presidente, porque verdaderamente pues, va tener inconveniente. Porque esto se necesita tiempo, paciencia, y que de pronto si su mujer es celosa va, lo va ser porque cree que tiene a otra mujer, porque verdaderamente esto, uno anda en las reuniones, a veces a las ocho de la mañana hasta las cuatro, cinco, seis de la tarde. Y cree que, la mujer de uno cree que uno está con otra mujer. No. Lo que pasa es, entonces pues, todo eso. Y para ser presidente lo que le digo, hay que conocer, y si no conoce va a conocer, va conversar, va dialogar con personas que nunca en su vida ha conocido. Imagínese que te pronto va hasta viaje hay hasta [[País europeo A]], a [[País europeo B]]. #00:35:32-3#

Cuando vas? #00:35:34-2#

Creo que en este año que viene ya si Dios lo permite ya estoy preparado más para irme a [[país europeo A]]. Porque ya dos veces he rechazado. Cuando me eligieron de presidente como a los dos veces, vino la autorización que tenía que viajar yo a [[país europeo A]]. Ahora este año que está pasando nuevamente mandaron un escrito que tengo que, tenía que ir a [[país europeo a]]. Yo le dije, yo no estoy preparado todavía, pero yo sé que este año, si Dios lo permite, bueno quería me de la fuerza que me está dando y nunca voy a dejar... #00:36:19-1#

y nos van a visitar, por favor... #00:36:19-5#

Vamos a tomar cafecito, pasteles [[del país europeo A]] en mi casa, por favor... #00:36:28-4#

y sa, Dios, padre lindo, Dios, el sabido y poderoso, yo es el único que, no tiene que, tenemos que estar con él para que verdaderamente donde vayamos, con quien vayamos, para que él nos lleve con felicidad. El único sabido, saber las cosas que nosotros que nosotros hacemos. Dios sabe la ida y Dios sabe el regreso de nosotros. Bueno, entonces, creo que, este año, creo que ya estoy decidido a irme a [[país europeo A]], #00:37:03-6#

A ya, entonces, nos vemos allá. En [[mes de verano]] no? #00:37:08-2#

En [[mes de verano]], en [[mes de verano]]. Entonces, ahora este año de nuevo, me tenían que ir a [[país europeo A]]. Y le dijo a [[Guillermo]]. [[Guillermo]], andate tu! #00:37:39-5#

Yo quiero preguntar algunas preguntas que yo he preparado. Ehm, primero, el tema de seguridad en el golfo. Me puedes explicar un pocito, lo que está pasando? Tu manera de ver la situación? Ya he escuchado mucho, obviamente, para también el rol del estado, que responsabilidades tiene, que hace, pero también, la situación en general. Que problemas hay? #00:38:08-0#

O sea, mire, me parece, que ahorita, ahorita ya, la, la seguridad, me creo que ya está, está mejorando. Porque en, hace unos dos, tres o cinco meses había más robo, había robo. A diez traiga sinestra de que digamos...pero ahorita he visto que... #00:38:35-6#

robo de que? #00:38:32-6#

Robo de camarero, que le roban a esta gabarra, se le llevan el camarón. Pero hasta aquí ahorita, gracias a dios, no se ha oído ya de, ya decir...no digo que no, no no anda la delincuencia. Pero lo que pasa es que ya, creo que ya están un poco mejorando. Para que verdaderamente el camarero, el camarero...el camarero ya tiene...el camarero ya tiene...ha comprado su lancha...mire, ese de allá traiga camarón y mire como viene la custodia. El viene ya preparado con guardias privados. En lanchas. Para que el pillo que quiere a robar, no le roba sino que primero re...porque [pillo] si no hay nada, no roba. Y ahora ya vienen custodiados y robado...[interruption, part 2]

PART II

Entonces. Ya se ha mejorado dices, que ya hay ... #00:00:08-5#

O sea, ha mejorado porque ya te dijo que cada gabarra, de esta, ya, ahora ya no va sola. Ya no lo mandan como quien dice con mil, dos mil o cinco mil sacos de balanceado y muchas cosas más. Ya, ya ahora la gabarra que va llena, ya va custodia de de guardias que verdaderamente...privados. Entonces pues, y así mismo vienen custodiado cuando traen el camarón en cambio del primero a las gabarras lo mandaban solas, sin guardia, y a la regresada de ir sola, sin guardia sin custodia, en cuando ahí pues, el delincuente usaba [granaba y así a lo de la silla]. Porque? Porque no había nada de de de de...respaldo, entonces ahora pues ya van custodiados y así mismo a veces la marina mismo ya va y las resguarda también. Eh, por eso que digo yo que ha mejorado, porque verdaderamente es tan fácil que te roben así no más, para robarle tienen que de pronto darse de bala, fuego, pero que que van a resistir, proque a veces, quiere irse de bale porque quiere morir, porque no está tan fácil ahorita ya robarle a la gabarra digamos, porque ya pues andan con custodia. Andan con lancha. Allá esa camarero [[Empresa de camarones B]] que le llaman, está cerca de [[Pueblo A]], esa pone dos, dos lanchas, la gabarra y dos custodia, dos botes, para venir custodiado. Quien va a robar a ellos? Andan bien armado, entonces, por eso hablo, para mí ha mejorado, y va a seguir a mejorar, para que verdaderamente...en cuando...en cuando a la, a la canoa, al bote de allá, cuando van a [[Pueblo A]], [[Pueblo F]], [[Pueblo B]], hay sí, creo que de repente por ahí cruzan la Guardacosta y por ahí, pega su tirada, eso sí, me creo que, todavía falta. Como quien dice, para que diariamente, un, una un día o una pasada, cruce el Guardacosta. Queremos que vaya y venga y, o permanezca en la zona donde más o menos el pillo se esconde. Entonces, eso, para mí todavía sigue igual. Pero hablo verdaderamente de repente venga la marina que va para allá, para [[Pueblo A]], cruza, pero no es, como quien dice, que permanece. O no es así? Tiene que permanecer en las áreas, que más o menos el pillo está escondido? #00:03:39-3#

Tu sabes donde el pillo está escondido? #00:03:39-3#

Claro. Si sabe, porque verdaderamente, cuando a uno le han robado, supuestamente ya ahí sale. #00:03:47-8#

Y que han robado a ti? #00:03:50-1#

A mí, sí a mí han robado. #00:03:55-4#

Varias veces? #00:03:55-4#

Claro. Pero a mi me robaron ya hace años. Años. En antes el pillito jugaba demasiado aquí. Había más pillitos. O sea, no podíamos solucionar eso. Y no se soluciona todavía, dije. Y la otra es que, el pillito debe de robar a quien sea, digamos, que si te roban, te roban. Pero... que le roben... Pero no le peguen, ni lo maltraten, ni lo maten algunos. Para poder seguir [mediendo]. Pero en antes, si el pillito mataba, hasta ahora, pero, no se, pues, no... Yo, me roban, yo no pongo resistencia. Lleve se todo, mi vida vale más. Eso que te, eso conversamos, nosotros, y dialogamos, pero para eso, se necesita tener conocimiento para hacer eso. Para mi: Lleve. Porque, de que vale que, yo me pongo reverso, me pegan, me matan, y igual, se me llevan, para esa no más me cruzo [delas?]. Llevese, con mi vida hago mejor cosas. #00:05:20-2#

Y yo he...perdon...yo escuché que hay un sistema que tiene que pagar aquí un pocito, pagar allá un pocito y así te dejan en paz. Así es? #00:05:33-2#

Perdon? #00:05:35-2#

Hay como un sistema, que también tienes que pagar algunos personas un valor chicitito para que te dejan en paz, no solamente a ti, a todos, no, que hay un sistema de custodia pagado, casi... #00:05:52-4#

Bueno también, aquí hay eso. Pero ahí también se necesita, como quien dice, hay que pagar. Porque el camarero, para venir así, como viene esa gabarra con custodia, ellos les pagan a los que andan costudiando #00:06:21-3#

Pero no es otro sistema. Porque yo he escuchado, que hay piratas, y adentro de los comunidades también, criminales, y como ese juego, uno tiene que cuidar que te dejan en paz, y así uno tiene que pagar #00:06:45-1#

o sea pagar de alquiler? Bueno no se, no que uno...eh, o sea, unos hacen así, que uno conoce a ti, ya uno pongamos..toma aquí hay estos 15, 10, 20 dólares. Chevere, Te cuidan, en vez de robarlo, cuidan. Pero aquí o cuando se le [pegan los cables], no están viendo que si tu eres amiga, tu eres amigo, el pillito, si le pegan los cables, te roban a si sea que le este a cuidando ahí. O sea, bueno, yo no he hecho eso. No se otras personas. Eh. Quienes en [[Pueblo B]], mira hay ese, ese campamento de marinos, pero ahí, si yo no se, como maneja [[Pueblo B]] en eso. Porque y tampoco no se la gente de [[Pueblo B]], se que será de los mismos o no será de los mismo, porque dico el dicho: nadie sabe para quien trabaja. Y nadie sabe las cosas que en otro pueblo haen o no lo hacen...pero #00:08:11-7#

Yo no lo he escuchado de [[Pueblo B]]. #00:08:15-0#

No? #00:08:16-3#

No. Y en [[Pueblo A]] tu? Has escuchado que hay piratas? Que hay pillitos? #00:08:26-3#

Pero en [[Pueblo A]] no hay, la gente conversa así, en [[Pueblo A]] no hay. #00:08:33-3#

Eso es lo interesante.. #00:08:35-2#

La gente en [[Pueblo A]], no. Yo soy uno de los, yo verdaderamente soy un dirigente y me gusta conversar, dialogar, y me gusta acercar a discutir el tema de verdaderamente, hui no, hay muchas personas que a [[Pueblo A]] lo quieren ver mal. #00:08:57-6#

Porque es eso? Eso me interesa? #00:08:56-1#

No se. Porque dice el viejo [regional] que cuando, cuando la gente envidia, o es como aquí, estamos los dos dialogando, conversando, de pronto viene alguien y nos escucha. Y se mande: Lindao conversa con ella, que conversará. Ya no están viendo, ya no están mirando, ya no están...como quien dice, este mán es así...informa...No sabe de lo que estamos hablando, y comentan otra cosas, no que, ellos son así, sto es...así es en toda la comunidad. En [[Pueblo A]] si, le digo la verdad, que hay muchas cosas, y muchas personas que verdaderamente pues, este, este, somos como quien dice, que no no sabemos, llevar. Mas ante, queremos el mal, que el bien. #00:10:00-4#

Claro #00:10:00-4#

[interruption]

Un comentario de que, es, si no. En [[Pueblo A]] Fulano es así. En [[Pueblo A]] este señora es eso eso eso, entonces, son muchas cosas que pasan así en las comunidades, son muchas cosas que pasan en una parte que verdaderamente peor, si usted no lo conozco, ya están por ahí. Quien es esta persona, quien es este, que viene a hacer. Entonces, o sea, la civilización de allá de las comunidades es distinta a la civilización de aquí. En vez de, están dialogando, conversando malo que grita, no se le escucha. No se da cuenta, no te has dado cuenta, tu Anne, no se has estado o si has estado en reuniones, no me acuerdo, no me recuerdo, en [[Pueblo A]]? #00:12:09-6#

En [[Pueblo A]]. Si. En Talleres solamente. #00:12:09-7#

Bueno [[Verónica]], si ti, pero [[Verónica]] se llevó una buena impresión, y se llevó también una mala impresión, porque pongamos, yo como representante, me presento, bueno, si a señores, este que otro, eh, tengan muy buenas saludos a todos ustedes y a la ven, ahora diciéndoles de su parte, quien están aquí en la reunión, para conversar, dialogar y decidir muchas cosas..que verdaderamente, pero que pasa que en las reuniones, ya vuelvo y repito, que en las comunidades son así: el uno habla, en vez de...estoy hablando, habla uno. Ya no hablo, lo dejo y escucho. En vez esta otra persona, que habla, tu llega el otro y habla a ver a ver a ver, las cosas no son así. Las cosas son en esta reunión no vamos a gritar, no vamos a estar esto esto esto. Usted tiene cinco minutos para Usted [presencia] y hablar..opinar. Completa los cinco minutos, a ver, Usted ya tiene más cosas que hablar, por favor, pues, lo siento. #00:13:27-6#

Que significa eso, acabó el tiempo? #00:13:24-7#

Si pues, cinco minutos le damos para que ya no están haciendo bulla, y que den cancha a otra persona que verdaderamente quiere hablar, quiere opinar. Pero no pues, allá, no te respetan, son cinco minutos, nada, sino que...habla el uno, hablo el otro, y no se entienden. Bueno, eso es mala. Entonces le hice saber y conocer. Ahora ya la gente, ya esta creo que, poco civilizándose, para que verdaderamente, aprendan y conozcan las cosas para que verdaderamente sepan lo que están haciendo. Entonces, que se yo, yo le dije a ... #00:14:20-9#

[phone call] #00:15:31-1#

Así. Y de esa hay muchas cosas que, que uno enseñarle a la gente que verdaderamente, y ahora de las cosas que a [[Pueblo A]], imagínese que era el primero, un robo que hicieron cerca de [[Pueblo A]], decían la gente que era de ...era la gente de [[Pueblo A]]. Tu puedes creer eso, que eso es una gran mentira. Eso es una gran [tallumne] que le hacen al pueblo. Ahora, hace como unos cuatro, cinco, robaron, así mismo. Que decían, que no, que eran gente de [[Pueblo A]]. En cuando la gente de [[Pueblo A]] cangrejea, pesca, y mire como ves: Yo he discutido ese tema con gente que verdaderamente está comentando, están hablando. Entonces, pues, las cosas no son así, por eso que en esta vida no debemos eh, de enseñarla a personas que verdaderamente no tienen nada que ver. Debemos de ver, ser sincero. Si alguien me robó a mí, yo no tengo le porque [mentarlo a esas ro...] Yo lo conozco. Pero como lo hago, [si] conozco. Tiene que estar seguro, para decir: fulano pues, me robó. Si yo se que este persona me robó, bueno, allá voy. Allá voy, y lo denuncio. O no pues, hablo con el pillo, que yo conozco. Sabes que nano, que me roba, devuelve mi motor. Porque? Porque yo te conocí. Pero si no te conocí, aparentemente dicen que es esa, como yo acusarlo. Como voy yo a decirle, no pues. Debe salir bien. O ya salir en mal. Entonces una para ser estas cosas tiene que pensar. Tiene que conocer. Tiene que saber. Es que, es verdad, lo que, de lo que dice. Pero si otra persona me dice: Oiga [[Villar]], ese mán es bueno, no creo que te va robar. Yo no le creo a nadie. Yo tengo que ver, con ojo mire, para que vea, y decir: Si el mán es [tu dices], no quiero problemas. Mas antes quiero tener una socialización para, a ver, que se puede hacer. Pero no, pa, muchas personas que se han barrado. Y que pasa. Que ya no es, tiene reclama con educación, sino que, ya se van a la pelea. Que hace este [picho]. Ese pillo ya se coge represalia tuya cuando, cuanto que te deja, ya, el ya no ha querido robar. Pero de bueno, adelante, pero ha robado. O te va a hacer algo. #00:18:20-3#

Claro #00:18:22-7#

Porque así es la delincuencia. Entonces ya [bringo] le comento a la gente: Muchacho cuando le roben a alguien a cualquiera, por favor, le digan nada. Si lo conociste, está bien, llámalo acá tranquilo, pero si es lo conozco. Pero

si algun te dice, que fue ese, como le va a creer en ti. No te metas en [camiso, hay once barra] que no va a poder salir. Asi son las cosas. #00:18:53-2#

Te quiero comentar una cosa: Yo he notado, obviamente, porque hay muchas cosas, no, que hay una distinta relación entre [[Pueblo B]] y [[Pueblo A]]. Esos dos pueblos son - no se porque - pero hay como casi concurrencia entre los dos. Son muy distintas. Hay tambien relaciones amigables, pero tambien hay, no se porque...eso me interesa, que...o que piensas tu..eso es lo que yo veo. Que piensas tu? #00:19:18-4#

O sea, mira... #00:19:24-2#

No quiero decir que es asi, pero eso...hay algunos...de ambas lados... #00:19:34-6#

O sea, de mi parte? #00:19:37-4#

Eso es , me interesa tu opinion. #00:19:34-9#

Ya, mira, de mi parte. Yo no tengo ningun inconveniente con [[Pueblo B]]. Mas antes, yo quiesiera que [[Pueblo B]] se una con nosotros. Y...en [[Pueblo B]]...eso viene de hace muchos anos. #00:19:59-7#

Si. Si. Entiendo. #00:20:03-8#

Que [[Pueblo B]], [[Pueblo B]], o sea. Es una gran realidad: [[Pueblo B]] no, para mas bien decir, no es unido con [[Pueblo A]]. Asi le paso. No lo digo por decir, no lo hablo por hablar, sino que tengo experiencia en eso. Yo nací en [[Pueblo A]], Yo me [crié] con todo respecto que tiene herencia mi madre a mi me pario. Me creie, ahi si me ensene la civilización de [[Pueblo a]]. Pero, fue un hombre, que me de cuenta de la vida. [y o no] una persona que verdaderamente conocí. Conocí. Conocí. #00:21:02-3#

[Pero quieren la plato hoy...ven [interruption] #00:21:05-8#

Conocí a la gente de mi pueblo. Conocí a muchas personas que verdaderamente vivieron anteriormente, conocí a personas que me, que me apoyaron. Sabes como me apoyaron? Me apoyaron, asi, mira, me apoyaron diciendome...yo en ese tiempo tenia, que se yo, 14, 15, 16 anos. Gente, gente que vivió. Que estaba viviendo...podemos decir que...del pueblo los antiguas fueron ellos. Los representantes, los fundadores de [[Pueblo A]]. Me llamaban a mi, a mi me cogían como un hombre de experiencia. Ellos, ellos eran preparado a la civilización de [[Pueblo A]]. Pero ya son muertos ahorita. Yo siempre le digo a mis hijos, a mi hija, a mi mujer, yo conversaba con ellos. Sabes lo que hacían, Anne, me decian a mi: [[Villar]], hijo, me decian, queremos hablar contigo. A mi me iban a ver a mi casa, trabajaba, yo estaba debajo de mi casa con una silla con ellos, me decían: Queremos conversar contigo. Eran como 4-5 personas. Mayores. Que se yo, de 60, 70 anos. Yo les escuchaba. A mi me aconsejaban. A mi me decían, [[Villar]], algun dia que fue a tuya, un varon [xx], escucha estas palabras. Ya descansan, me decían, asi. Ya descansa con tu mujer, dicho y hecho, Me descansé. Mi preparé, ese dia prepararse. Ahi venian a mi casa, me decían: [[Villar]], estas haciendo tu casa, si? Pero me decian de cuanto metros es tu casa. Le digo, yo he hecho de ciento metros, por seis, una pequena. Entonces me dicen, me dicen los veteranos me decían. Pero me hijo, eso es tan pequeno esa casa. Yo le dije, somos dos no mas, pues, le decia yo. Yo y mi senora, que se descansaban. Pero me dice... #00:24:01-4#

[loud noise from little trucks transporting shrimp and trying to get from barge to road] #00:24:13-5#

Y el otro me decía, el veterano, me dice: acuerda te y recuerda. Esa palabra que te digo, no te digo por decir. Ahorita son dos, esta bien, me dice, pero manana, te va a cordar, cinco personas me dice, te vas a acordar de nosotros. Que lo que te estoy diciendo que to casa es chico. Cuando tengas tus hijos, no vas a entrar. Creia me yo. Y eso fue una gran realidad, y una gran verdad. Lo que me decian ellos, cuando yo me uní. Que estando [estuve a mis hijos], yo tuve siete, siete hijos, y me di cuenta de la vida y la experiencia que ellos tenian. Mi casa ya entrabamos. Sabes lo que haciamos nosotros, dormir en el piso, botado. Para poder entrar. Estuve mis cosas, estuve mis hijos, una sola dormiamos botado. [xxx noise from trucks again, laughing]. #00:25:29-4#

Aqui es una lucha cada dia. #00:25:30-4#

Es que así, como suben ahí ahorita, se vira, se viran eso de ahí, y la gente coge camarón. #00:25:38-5#

ah. sale. #00:25:41-1#

sale se vira todo eso. Así ha pasado algunas veces. Entonces Anne, así fue. #00:25:53-5#

Pero entonces, como es la relación a [[Pueblo B]]. #00:25:58-9#

Bueno [[Pueblo B]], mira, lo, yo conozco de [[Pueblo B]] cuando era pequeño. #00:26:01-5#

Es la misma gente..es la gente que ha vivido en [[Pueblo A]] ahí? Porque hay, específicamente entre dos comunidades. No es violento, pero es como una concurrencia, ... #00:26:18-8#

La gente que vive en [[Pueblo B]], los padres que han sido en antes, como te estoy hablando, la gente veterana, la gente que fue, fue, que vivió en las comunidades, ese gente vivió en [[Pueblo A]]. Los viejos de [[Pueblo B]], los que ya son muertos, ellos vivieron en [[Pueblo A]]. Que pasa que ahí acá se vivieron, hicieron ese pueblito, ahora como ya la generación, esta criando, [[Pueblo B]] se esta regenerando mucho más. Entonces pues, ahora la gente también es, e diferente. #00:26:53-1#

Porque? eso es... #00:26:54-6#

Mira, es diferente, tu me dices porque. Porque ya no hay los veteranos que vivieron antes, ya son, como quien dice, ahorita hay nuevas tecnologías, cada cada cada persona en [[Pueblo B]], escuchame, ya no tiene ese [pensamiento] que tiene, que tenían esos veteranos, ya no tienen esa mentalidad de conversar, de dialogar con ese que verdaderamente ha bueno sido ahí. Ya lo tomen como quien dice, que saludan, bueno ya, porque, se tratan de que son el caro, pero hay muchas personas que no te saludan. #00:27:36-2#

No? #00:27:37-5#

Claro. Yo he ido a [[Pueblo B]], y yo no digo que no me saludan. A mí me saludan Pero los que me conocen. Ahora la juventud que hay, te toman un semi-importismo. No te toman ese importismo como en antes era. En antes, de cuento algo, [[Pueblo A]] era distinto. Te cuento algo y te digo la verdad. Hace 15 o 20 años, [[Pueblo A]] era el mejor pueblo de todas las comunidades que vivíamos...a que se vive alrededor. Era el mejor, la mejor comunidad, en aseo, en festividades, en lo que era ambiental, que más, cree me lo Anne, que se he lo dicho a mi pueblo, no es que hablo de mi pueblo, ese es mi tierra, ahí nací, ahí me crié, ahí me civilisé, pero hablo la verdad, [[Pueblo A]] ahorita - no es que lo apoco, ni tampoco hablo mal de mi pueblo, porque eso es mi tierra que mi vio nacer - pero ahora [[Pueblo A]] puede decir que es el peor. #00:28:56-8#

Que pasó? #00:28:59-1#

Ya no hay la, las buenas intenciones, la buena voluntad como era en antes. Yo fui dirigente hace 15-20 años, fue dirigente del pueblo y por eso que te comento, y te hablo y te digo eso: Conocí a mi pueblo, y mi pueblo no era así. En antes era mejor, en antes toda persona que llegaba a la comunidad, le [xxx] a recibir. Ahora uno, tres más lleva gente para que verdaderamente se acomoda en el pueblo. Ellos no les interesa, no les importa. Hace el [vuelve] de la otra semana, me llamaron de [[Empresa de Camarones B]]. Que iban a ir a [[Pueblo A]], [?]. En una gabarra llevando uno escritorio, llevando uno computadora, llevando unos ventiladores. Muchas cosas. #00:30:06-2#

Para el hospital? #00:30:10-0#

Para los profesores. Para la escuela. Bueno. Yo le dije, muchachos, [[Empresa de Camarones B]] va a venir a dejar muchas cosas a la comunidad. Ah ya, chevere. Llegaron unos [?] una gabarra, yo le dije: A ver, a la presidenta de la, de la escuela: Señora, por favor pues. Prepare a la gente, a los padres de la familia, para que ayuden a saltar y los lleven a ...entonces, no hay nadie. Puedes creer eso? Que verdaderamente, por eso te digo, que ya esa gente, ya no hay. #00:30:44-9#

Antes era diferente? #00:30:47-6#

Antes era diferente. Antes nosotros estabamos organizados como con diez, ocho o diez dirigentes. A ver, muchacho, tu vas a hacer eso, tu vas a hacer esto este este...porque? Pero, pero haciamos las cosas. Pero ahora que dice del puesto que esta en [[Pueblo B]]: Nunca se han querido ir con nosotros, nunca hemos tenido esa relación. [[Pueblo B]] quiere hacerlo de el. Osea... #00:31:15-1#

siempre? #00:31:16-7#

Para bien decir, ahorita, [[Pueblo B]], no quiere -como quien dice- que [[Pueblo A]] le atienda la mano, pero [[Pueblo A]] le esta ateniendo el mano, ahorita, pero que ellos no lo ven asi. Sabe lo que hace, imaginate, va la [[Universidad A]]. Va, que se yo, otra institucion, como que es de...es de [[Pueblo F]]. #00:31:47-6#

Si si si, he hablado tambien con [[Alexy]], y su mama, [[Gabriela]]. #00:31:54-6#

[[Pueblo B]], no capta la idea de decirle, bueno [[Pueblo A]] respetan en viendo el mano, no lo ven eso. [[Pueblo B]], el, quieren hacerlo de el. Y por esa condicion, [[Pueblo B]] esta medio entre, con [[Pueblo A]], siempre ha estado asi, alejado. Porque mira, [[Pueblo A]], le esten teniendo la mano, y le sigue teniendo. Como? Tu saber brindarle una concesión a [[Pueblo B]], [[Pueblo B]] le tiendo la mano para que ellos tengan y obtengan y se mantengan con la, con, relacionado a la concesión de [[Pueblo A]]. Quien le va a decir a [[Pueblo B]], a ver, le vamos a dar dos mil o tres mil hectarias. Nadie. Para que tu obtengas y tienes que andar caminando y tienes que tener parlantes, para que verdaderamente te rienden una concesión. Pero no pues. Aca en [[Pueblo A]] le tendio la mano a [[Pueblo B]]. Ellos tienen su concesión, ellos tienen donde poder trabajar, los cangrejero. Si no lo tuviera, no pudieran trabajar. Porque fuera uno ahorita, como fuera el representante yo fuera custodiar, yo fuera a ver: Enseña me sus credenciales, como, quien, de irse, donde Usted trabaja. Usted no puede trabajar en la concesión de [[Pueblo A]]. pero en cambio, de eso no lo ven pues. Aqui el unico que trabaja, es [[Jonatan]] con nosotros. Pero [[Jonatan]] tambien lo veo medio, medio alejado de nosotros. Porque a [[Jonatan]] le gusta que le hagan las cosas. Pero el hacer, no. Imaginate. Todo lo que nosotros, no, informan, hacemos, trabajamos, nosotros le informamos a [[Jonatan]]. Y [[Jonatan]] no hace. Siempre hemos dicho: [[Jonatan]], mira, no que hacer eso eso eso. Tienes que ayudar a custodiar. Tienes que hacer esto esto esto, tienes que venir a...ah ya ya, dice [[Jonatan]]. Pero nunca viene. En vezes quizás. Disculpame, perdoname lo que digo, cuando [le dar] regalar la gana, ahí esta [[Jonatan]]. Pero de nostros, que le llamamos. Mira. Ayer tenia que estar [[Jonatan]] en la reunion. Tenia que estar tambien este [[Deybi]], el de [[Pueblo F]]. Tenia que estar [[André Parilla]]. Pero yo no [xxx], pero aqui quien trabaja es [[Pueblo A]]. [[Pueblo A]]. Esos documentos que llevo, o los que nos dan, a ver, en encuentros comunitarios, Senores, eso nostros hemos hecho. Y toma. A que te XXX. [[Pueblo B]] esta lejano pues, hablandote la verdad. Y tu te has dado cuenta de eso, si o no? #00:34:56-6#

He dejado cuenta de que hay una relación muy especial entre [[Pueblo A]] y [[Pueblo B]]. Eso, no quiero decir mas. #00:35:06-2#

O algo te comentó, te dijo: si. Lo que yo te estoy conversando... #00:35:07-8#

Pero de ambas lados...eso es lo interesante... #00:35:16-6#

Pero, lo que si se decir, que de [[Pueblo B]], yo no tengo ninguna ceja, yo tengo ningun inconveniente con ellos. Yo me hablo, yo hablo con ellos, pero asi como tu lo ves y lo piensas, yo tambien lo pienso. Yo tambien, yo tambien, lo he visto, que [[Pueblo B]], ellos hacen lo que tienen que hacer... #00:35:41-5#

Pero tu sabes, que estas cosas pueden ser muy positivos. Cuando hay una competencia entre los grupos, puede ser algo muy positivo, porque uno quiere ser mejor que el otro, y asi lo crece. Entonces no es generalmente algo malo, no? Yo...exacto. #00:35:57-6#

Yo lo veo bien #00:35:57-6#

yo quiero entender lo que es, como pasa, tal vez tambien me interesaria otros, como la relación con otros pueblos, con otros comunidades en la concesión? Con [[Pueblo A]]? #00:36:12-9#

Eh, [[Pueblo C]], tu has ido a [[Pueblo C]]. #00:36:14-3#

He ido. He ido durante aguaje grande. #00:36:14-1#

Pero tu no has...con botas? [[Pueblo C]] esta muy muy dificil a veces con aguaje saltando, se anuela. Todo esta como un, como un rio. Pero que has conversado tambien en [[Pueblo C]]. #00:36:39-3#

Si, he hizo una caminata tambien con [[André Parilla]], con otras personas he hablado, tambien con la presidenta de [Nombre pueblo]. Y ya he escuchado algunas cosas. Pero me interesa tu punto de vista sobre estes, estas desafios que hay. #00:36:57-5#

Tu cuando te vas, Anne, todavia no te vas. #00:37:00-9#

En Febrero. #00:37:00-9#

Ah esta lejos todavia. Todavía diciembre, enero, febrero, tres meses, porque este mes ya estamos doze, no casi. #00:37:12-8#

Entonces, tu sabes, va a ser navidad... #00:37:15-4#

Tu va a pasar aqui navidad? #00:37:15-4#

No, voy a ir a casa. #00:37:18-4#

alla #00:37:19-3#

ya. #00:37:21-1#

donde esta? #00:37:23-4#

A [[país europeo A]]. #00:37:23-4#

Tu te vas a [[país europeo A]]? #00:37:24-2#

Ya. #00:37:25-4#

Ah, ya ya. #00:37:29-8#

Si, es como la unica fiesta que me importa. #00:37:34-3#

Porque te voy a decir algo, este...fin de ano. Como lo ves tu en [[país europeo A]], aqui? Tu nunca has pasado aqui un fin de ano aqui en Ecuador. #00:37:47-1#

No #00:37:50-2#

Bueno, yo o sea, no [porcenadia] a nuestro país que es Ecuador, que es Ecuador, pero las navidades y las fin de ano, son muy buenas aqui. Son una fiesta tradicional, que bueno cada ano se celebra eso de fin de ano, porque se termine el ano, pero la gente amigable. Y se celebra a diez [traicimiento]. A principio, los baile a las nueve terminan a las ocho diez de las manana bailando, algo grande, y ahi. Todos reunimos pues. Peor en las comunidades, mucho más mejor. En las comunidades se hacen mejor que en otras partes, alla Usted alla Usted baila hasta se... #00:38:46-6#

cae. Eso me falta todavía una fiesta. #00:38:48-9#

Y en [[país europeo A]]? #00:38:56-5#

En [[país europeo A]], esta similar, creo. Depende lo que quieres hacer, no, hay gente que hace gran fiestas,

puedes hacer pequenos fiestas, pero hay muchos...Navidad es mas grande, navidad es...hay muchos costumbres, muchos canciones que cantamos, muchas cosas, que cocinamos, que preparamos, hay un arbol, pero natural, que andamos para el bosque cortandolo, y corriendo con los ninos, no, por eso tambien quiero ir. Hay muchos costumbres muy fuertes. Pero entonces, tu quieres hacer otra reunion otra vez, para hablar más? O que... #00:39:36-2#

O tu? Puede decirme que dia o quien es, me dices. #00:39:47-3#

Puede ser una vez antes que me voy, enero, febreo, algo asi? Como una vez mas charlamos un pocito? #00:39:50-3#

Esta bien. #00:39:56-0#

Por el fin, porque va a venir a las diez el taxista, que creo que esta casi, no? #00:40:05-4#

Ya son las diez. #00:40:08-4#

Diez es, ya? #00:40:12-7#

Ya esta por llegar. Espero. #00:40:17-1#

Ya, no hay problema. #00:40:16-4#

Pero me interesaria un pocito, lo que tu ves, porque hay gente que no esta de acuerdo con la concesión. #00:40:22-7#

Eso no es el carro. #00:40:23-4#

Ya, si, es. Hablando sobre..pero hay que esperar un ratito. Quería...me interesaria, porque he escuchado unos personas, que tienen dificultades con el concepto de "concesion". Porque me imagino que antes la gente tenia este vista, que cada uno tiene las mismas derechos de acceder a los recursos. Que, tu estas cangrejero, y otro persona de [[Ciudad A, capital provincial]] es cangrejero o es pescador, o persona de cualquier otro lugar, cualquier persona puede ir, si es mujer o hombre, no importa, puede ir iy pescar. Asi era antes. Eso era normal, no ve? #00:41:07-8#

Si. #00:41:09-2#

Era un territorio grande de todos los personas. #00:41:14-4#

Si, ha, territorio cuando no habia estas concesiones tu podias ir con tu companero, amigo, con ami, podias trabajar donde sea, en cualquier parte. Pero, ahora es distinto. Ahora esta concesion es que, se hicieron cada uno de representante tiene hasta donde le toca la concesion, hasta donde le pertenece. #00:41:47-7#

Si, claro entiendo. #00:41:47-7#

Entonces en el acuerdo ministerial, y en el uso sustentable de manglar, el socio, que es asociado a la asociacion de a quien pertenece, puede trabajar. El cangrejero, pescador. Pero el que no esta asociado y no sea de ahi, no puede trabajar ahora con estas leyes que hay. Cada una, cada comunidad tiene su concesion. Cada cangrejero y cada pescador, por donde vive, con quien vive y quien es el representante, representante le da: Bueno hasta aqui tu puedes trabajar. Pero si tu te entras a la concesion, vamos poner de [[Pueblo A]], la asociacion mismo te va a sancionar. Por meter tu en otra isla...que verdaderamente no puedes trabajar. Y la otra es, asi mismo, la concesion de [[Pueblo A]], no puede trabajar en otra concesion. Porque lo cogen a Usted, como cangrejero, y la otra es, que quitan el cangrejo. Porque Usted esta, se esta metiendo en territorio que no le pertenece.O sea, esas zonas [legiaora?], no lo digo yo, sino que lo dicen los estatutos. Entonces, ahora es distinto, y cambio de antes. Uhhh. Te podia irse aqui, alla, ya y...pero hay muchas personas que todavía lo hacen eso. Trabajan en las concesiones que no deben de trabajar, pero, yo he visto este ano. Yo he visto, donde ido a veces hago unos lentecitos a camaroneras, y me toco a cangrejeros y pescadores que estan por el lado de la concesion de [[Pueblo

A]]. Trabajando. Y lo he visto con su saco de cangrejo. Pero. No se si da bien o da mal. Yo nunca le llamado la atencion. Pienso. Sabe que, porque pienso. Dios me esta mirando. Y dios sabe que verdaderamente nosotros tambien tenemos necesidades. Es un ser humano que esta trabajando ahi. El es un padre de familia. Que tiene que llevar un sustento diario, a la la mesa de su hogar. El tiene familia, el tiene hijo. El tiene su mujer. Y como nosotros somos seres humanos que ven aqui, somos los mismo. Tiene que..si..Yo digo, yo lo saco de ahi de la, de la, de donde esta. Y le quito el producto, que estoy haciendo. Estoy quitando el, el sustento diario que lleva, que el tiene que llevar a su hogar. Cuanto que sea el contrario, que tambien a mi, me vean a mi, donde estoy en una concesion. Tambien...dios te toca el corazon, y dice, acuerdate, que el tambien hace lo mismo contigo. Pero si le quito, ese persona va a coger represarias conmigo, y me va andar viendo donde ando con quien ando y por donde ando. Hasta que un momento a otro, me puede hacer el, me puede hacer dano a mi. Entonces, pues, o sea, mis pensamientos son asi, yo, me da pena, quitarle el cangrejo de otra persona. Pero hay muchas personas que no lo toman asi. Muchas personas, ahi es un bote, esta con cangrejo le quita. #00:45:34-5#

Quien? #00:45:36-1#

Pongamos, esta un bote que no le pertenece trabajar ahi en esa concesión. Y viene alguin, que sea jodido, le quitan el cangrejo ahi. [[Pueblo D]] es asi. En [[Pueblo D]]... #00:45:50-1#

Aha, [[Pueblo D]] es asi. #00:45:47-3#

Disculpame la palabra y perdona lo..no aguantan palo. Como decimos aqui los Ecuatorianos. No aguantan palo, sino que ahi, quitale. tengan quien tenga. O de quien sea, o como sea. Quitale. Eso no le aguantan palo. Pero mi persona no es asi. Mi corazon, o sea, mi corazon no piensa eso, este pensamiento no piensa. Mi corazon no decide, quitar el cangrejo a otra persona. Porque me acuerdo y me acuerdo que verdaderamente tiene familia, hijos, tiene que llevarle a la mesa del hogar. O sea, alguin me dijo asi, alguin me dicho no. No. Yo no soy asi. Me acuerdo, y recuerdo, que yo tambien puedo ser manana, hoy por el, manana es el por mi. Entonces que, eso el unico que te puedo decir. #00:46:46-8#

Entiendo. Entiendo. Ahora paramos. Pero me gustaria mucho hablar mucho mas, pero puedo hablar dos horas, tres horas, muchas cosas...

Formulario de Consentimiento Informado: Investigación de Doctorado

Información sobre el proyecto de investigación

Estimado/a participante,

En este proyecto de investigación " Construcción social del significado de los manglares – ¿una relación recíproca con el paso del tiempo?", estudiamos la forma en que la gente habla y actúa con y en los bosques de manglares y cómo esto se relaciona con la forma en que se han utilizado los manglares en los últimos 200 años. Esto puede ayudar a apoyar formas mejores y más sostenibles de utilizar los manglares y sus recursos con derechos de acceso justos. Formo parte de un proyecto de investigación más grande "El significado de los manglares" financiado por el Centro Leibniz para la Investigación Marina Tropical en Alemania y en cooperación con el Departamento de Ciencias Sociales de la Universidad de Bremen, Alemania.

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2019/2020

Para este estudio me gustaría

- entrevistar solo o en grupo y grabar la entrevista y/o
- tomar fotografías de Usted
- participar en actividades de la vida cotidiana en relación con los manglares (observación participante)

Las leyes de protección de datos europeas y alemanas estipulan que usted puede decidir qué datos personales se recopilan, almacenan y transmiten. Por "datos personales" se entiende todos los datos recopilados sobre su persona en el proyecto de investigación. A continuación, me gustaría informarle sobre el tratamiento de sus datos de acuerdo con la ley de protección de datos y pedirle su consentimiento para el tratamiento de sus datos personales de acuerdo con el Art. 6 Párr. 1 Letra a del Reglamento Básico Europeo de Protección de Datos (DSGVO). Por lo tanto, a continuación encontrará información sobre el proyecto de investigación y el procesamiento de sus datos.

Estaré encantada de responder a cualquier pregunta que pueda tener. Si usted está de acuerdo con nuestro proyecto y le gustaría participar, por favor firme la siguiente "Declaración Informada de Consentimiento".

Gracias por su cooperación y confianza en nuestro trabajo.

Atentamente,

Anne-Katrin Broocks

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Información sobre el tratamiento de sus datos personales

En el marco del proyecto de investigación, se recogerán y procesarán datos personales. Estos datos se procesan de acuerdo con la ley ecuatoriana relativa a la protección de datos y los derechos de los indígenas, la ley federal alemana de protección de datos y otras normas legales alemanas aplicables, el Reglamento Básico Europeo de Protección de Datos, la Declaración de las Naciones Unidas sobre los Derechos de los Pueblos Indígenas, la Organización Internacional del Trabajo, el Convenio sobre Pueblos Indígenas y Tribales, 1989 (núm. 169) y, en su caso, otras normas de protección de datos. Para este proyecto nos gustaría recopilar los siguientes datos:

- Nombre, dirección, datos sociodemográficos. Esto también incluye la siguiente información que está especialmente protegida por la ley: origen étnico
- Grabaciones de entrevistas con uno o más participantes
- Fotografías
- Notas de campo (Notas tomadas por un investigador durante su participación en actividades cotidianas)

Analizaré la información recopilada y anotaré las entrevistas grabadas (transcripción) como parte del proceso. Estas transcripciones serán anonimizadas, es decir, se eliminarán todos los nombres y otras referencias que permitan sacar conclusiones sobre usted como persona (por ejemplo, nombre y ubicación). Las entrevistas grabadas / datos personales / fotografías están protegidas y sólo se permite el acceso a investigadores autorizados. Quienquiera que tenga acceso debe estar de acuerdo por escrito en cumplir con la normativa de protección de datos. La publicación de los resultados de la investigación en publicaciones o en conferencias tiene lugar exclusivamente de forma anónima y en ningún momento permite sacar conclusiones sobre usted como persona. Con su consentimiento, los datos recogidos en este proyecto de investigación se almacenarán en el centro de datos de investigación científica "Qualiservice" de la Universidad de Bremen una vez finalizado el proyecto con fines de buenas prácticas científicas y se pondrán a disposición para su uso científico en la investigación y la enseñanza. Sus datos serán tratados siempre de forma confidencial y de acuerdo con las leyes de protección de datos. El acceso sólo se concede con fines científicos y previa solicitud, previa verificación y con sujeción a las condiciones establecidas en un acuerdo de usuario. Usted tiene la posibilidad en todo momento de reivindicar los siguientes derechos garantizados por el Reglamento Básico de Protección de Datos (DSGVO):

- Derecho de revocación (art. 7, párr. 3 DSGVO): Usted tiene el derecho de revocar su consentimiento en cualquier momento con efecto para el futuro.
- Derecho a la información (Art. 15 DSGVO): Usted tiene derecho a obtener información sobre los datos que conciernen a su persona.
- Derecho de rectificación (Art. 16 DSGVO): Si los datos que le conciernen no son correctos o están incompletos, puede solicitar la rectificación de datos incorrectos o la cumplimentación de datos incompletos.
- Derecho a la eliminación (art. 17 DSGVO): Usted puede solicitar la eliminación de sus datos en cualquier momento.
- Derecho a la limitación del procesamiento (art. 18 DSGVO): Usted puede solicitar la limitación del procesamiento de los datos que le conciernen.
- Derecho de oposición (art. 21 DSGVO): Usted puede oponerse en cualquier momento al tratamiento de los datos que le conciernen.
- Derecho de recurso ante una autoridad supervisora (art. 77 DSGVO): Si considera que el tratamiento de sus datos no se ajusta a la normativa de protección de datos, puede presentar una reclamación ante una autoridad de control responsable de la protección de datos.

En cualquier caso, su participación en este proyecto de investigación es voluntaria. Si usted se niega a procesar sus datos personales o revoca o restringe su consentimiento, esto no resultará en ninguna desventaja para usted. Sus declaraciones sobre el ejercicio de sus derechos deben dirigirse siempre por escrito a la persona responsable. Las siguientes personas son responsables del cumplimiento de la normativa de protección de datos: Prof. Dr. Hornidge, Anna-Katharina.Hornidge@leibniz-zmt.de. Las siguientes personas son responsables del archivo y del uso posterior de los datos una vez finalizado el proyecto: Centro de Datos de Investigación "Qualiservice", Universidad de Bremen, Mary-Somerville-Str. 7, D-28359 Bremen, correo electrónico: qualiservice@uni-bremen.de.



Declaración de consentimiento para el tratamiento de datos personales con fines científicos

He recibido y leído la hoja informativa sobre el proyecto de investigación y el tratamiento de mis datos, que pertenece a esta declaración de consentimiento. También se me dio la oportunidad de hacer preguntas y mis preguntas fueron contestadas en su totalidad.

Soy consciente de que mi participación en el proyecto de investigación es totalmente voluntaria y no sufriré ninguna desventaja si rechazo mi consentimiento. Puedo revocar mi consentimiento en cualquier momento con efecto para el futuro, sin necesidad de una razón y sin ningún tipo de desventaja. En caso de revocación, mis datos personales serán anonimizados o eliminados.

He recibido una copia de la hoja informativa y de esta declaración de consentimiento. El original permanece en poder de los responsables del tratamiento de los datos.

Estoy de acuerdo con la recogida, el procesamiento, el almacenamiento y la transmisión de mis datos personales de acuerdo con las descripciones:

Sí **No**

Nombre y apellidos (en letra de imprenta)

Lugar, fecha, firma

Las siguientes personas son responsables del cumplimiento de la normativa de protección de datos: Prof. Dr. Hornidge, Anna-Katharina.Hornidge@leibniz-zmt.de. Las siguientes personas son responsables del archivo y del uso posterior de los datos una vez finalizado el proyecto: Centro de Datos de Investigación "Qualiservice", Universidad de Bremen, Mary-Somerville-Str. 7, D-28359 Bremen, correo electrónico: qualiservice@uni-bremen.de.

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He recibido y leído la hoja informativa sobre el proyecto de investigación y el tratamiento de mis datos, que pertenece a esta declaración de consentimiento. También se me dio la oportunidad de hacer preguntas y mis preguntas fueron contestadas en su totalidad.

Soy consciente de que mi participación en el proyecto de investigación es totalmente voluntaria y no sufriré ninguna desventaja si rechazo mi consentimiento. Puedo revocar mi consentimiento en cualquier momento con efecto para el futuro, sin necesidad de una razón y sin ningún tipo de desventaja. En caso de revocación, mis datos personales serán anonimizados o eliminados.

He recibido una copia de la hoja informativa y de esta declaración de consentimiento. El original permanece en poder de los responsables del tratamiento de los datos.

Estoy de acuerdo con la recogida, el procesamiento, el almacenamiento y la transmisión de mis datos personales de acuerdo con las descripciones:

Sí No

Nombre y apellidos (en letra de imprenta)

Lugar, fecha, firma

Las siguientes personas son responsables del cumplimiento de la normativa de protección de datos: Prof. Dr. Hornidge, Anna-Katharina.Hornidge@leibniz-zmt.de. Las siguientes personas son responsables del archivo y del uso posterior de los datos una vez finalizado el proyecto: Centro de Datos de Investigación "Qualiservice", Universidad de Bremen, Mary-Somerville-Str. 7, D-28359 Bremen, correo electrónico: qualiservice@uni-bremen.de.

Eigenständigkeitserklärung

Hiermit erkläre ich, dass ich die vorliegende Arbeit eigenständig verfasst, keine anderen als die angegebenen Quellen und Hilfsmittel verwendet sowie die aus fremden Quellen direkt oder indirekt übernommenen Stellen als solche kenntlich gemacht habe.

Diese Arbeit wurde noch keiner anderen Prüfungskommission in dieser oder einer ähnlichen Form vorgelegt. Sie wurde bisher auch nicht veröffentlicht.

Hiermit stimme ich zu, dass die vorliegende Arbeit von der Prüferin / dem Prüfer in elektronischer Form mit entsprechender Software auf Plagiate überprüft wird.

Ort, Datum

Unterschrift