

# Water conflicts in Costa Rica?

*Sardinal: a case study on the emergence of a water conflict in the context of high speed growth in (residential) tourism*



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***A special thanks to the inhabitants of Sardinal, the IPS, the municipality of Carrillo, the ASADA's, the AyA, my research assistants and my supervisors.***

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## **1.1 Introduction and objectives**

In a world characterized by a growing population, unprecedented economic growth and a widening gap between the rich and poor it has become ever more so important to invest in natural resource management in order to find the appropriate policies and mechanisms in which these natural resources can be allocated, extracted and used without excluding groups with relatively narrow bargaining power, and without damaging fragile ecosystems. This requires the further pursuit of sustainable development, not only in terms of environmental sustainability, but also socio-economic sustainability. One way of approaching this challenge is by investigating situations in which tensions are heightened concerning the allocation and extraction of natural resources. As doctors study disease in order to achieve health, development geographers can study conflicts in order to facilitate sustainable development. Margerum (1999) argues that the main shortcomings in dealing with water related conflicts have been failures in identifying the differences between the stakeholder groups. This thesis sets out to identify the causes, stakeholders, their interests and differences, in a specific case in Costa Rica where approximately six years ago water related tensions emerged, with the hope that one can come closer to finding ways to preemptively act and find the necessary cooperation and consolidation points prior to an outbreak of conflict and/or permanently damaging ecosystems.

Fresh water is a highly contested limited natural resource as it forms the base and prerequisite of almost all human activities including agriculture, industry, power generation and transport (Organisation for Economic Co-operation and Development, 2005). Questions inevitably arise concerning the ownership of this resource and there is an alarming trend towards the commodification/privatization of fresh water (Barlow, M. 2002) which implies that those with relatively little bargaining power will be experiencing a decreasing access to, and availability of this vital resource.

As mentioned before, this thesis explores a case in Costa Rica in which privatization tendencies concerning water had unfolded into a conflict between several stakeholder groups. At the dawn of 2007, 32 private developers hired a corporate law firm to find a way to speed up water provision for tourism development in Playas del Coco in the north-western province Guanacaste. The project (now known as the Proyecto de Ampliación del Acueducto Sardinal-El Coco-Ocotol) entailed constructing an

aqueduct which would bring water from the aquifer under Sardinal to the coastal areas for (real estate) tourism development purposes. It would be privately funded and after completion, the aqueduct would be handed over to the relevant government body. This would be the first private-public partnership for water infrastructure development in Costa Rica. However, tensions surfaced in and around Sardinal when the inhabitants discovered the construction of the aqueduct and this setting is the starting point of this research. An important element within this research is also to investigate the benefits that (residential) tourism brings with it. If (residential) tourism was perceived to be bringing an overall net benefit, then would this conflict have emerged considering that it could jeopardize the tourism industry by scarring the tourists away with violent protests?

An important aspect in the formulation of this research was to make sure that the objectives are aligned with the objectives of the host organization: Instituto de Políticas para la Sostenibilidad. The IPS is a local independent institution and its general mission is to consult the relevant decision makers in the search of guidelines for sustainable development. One of the objectives is to generate multidisciplinary knowledge concerning sustainable development. Furthermore, they aim at establishing national and international alliances with institutions to foster policies for sustainability and they aim at contributing to the well being of Costa Ricans through the formulation of policies which integrate social, economic and environmental aspects. The main activities are research, investing in human capital and the expansion of knowledge about sustainability. Finding out what the causes of this water conflict are provides information about which aspects need to be addressed in order to potentially avoid further conflicts which is an integral element of sustainable development.

## **1.2 Research questions**

Although this research includes various stakeholders, the local community will receive most attention. As mentioned in the previous section there is a focus within this research on the causes of the conflict which then does not surprisingly lead to the following central question:

*What are the causes of the emerging water conflict according to the different stakeholders?*

There are various sub-questions which enable the answering of the main question. The first three sub-questions are divided according to the following stakeholder groups: the inhabitants of Sardinal, the real estate agents and governmental actors.

- A: What are the causes of the emerging water conflict according to the inhabitants of Sardinal?

A1: How do inhabitants of the local community describe the water conflict?

A2: Do the local inhabitants perceive a decreasing availability of, and access to water which has contributed to the water conflict?

A3: Has the growth of (residential) tourism contributed to the emerging water conflict according to the inhabitants of the local community, and if so, how?

A4: Are the perceived benefits of (residential) tourism greater than the perceived negative effects resulting from (residential) tourism according to the inhabitants of the local community?

A5: To what extent does the government play a role in this conflict according to the inhabitants of the local community?

A6: How have the local inhabitants reacted to the water project?

A7: Is the local community united in opposition concerning the water project?

A8: What are the potential solutions for the water conflict according to the inhabitants of the local community?

- B: What are the causes of the emerging water conflict according to the real estate agents?

B1: How do the real estate agents describe the water conflict?

B2: What are the main causes of the water conflict according to the real estate agents?

B3: What are the potential solutions for the water conflict according to the real estate agents?

- C: What are the causes of the emerging water conflict according to various governmental actors?

C1: How do the various governmental actors describe the water conflict?

C2: What are the main causes of the water conflict according to the various governmental actors?

C3: What are the potential solutions for the water conflict according to the various governmental actors?

Now we will turn to a description of the regional background and a contextualized thematic outline.

### **1.3 Regional background and contextualized thematic outline**

Guanacaste, where the research was conducted, is located in the north western region of the country and it borders with Nicaragua and the Pacific Coast. The surface area amounts to 10,141 km<sup>2</sup> and the total population is around 260,000 people. From November to April this semi-arid province experiences little rain and a consistent heat which necessitates irrigation of the agricultural land during the dry season. In several parts of Guanacaste the land is heavily forested and in the east one can find a group of volcanoes with highly fertile soils. Historically, cattle ranching and the export of beef has been the main source of income, however, due to various reasons such as the drop in international demand for beef, tourism has been on the run. Developing the tourism industry in this region has been explicitly formulated as an integral part of the government's development plan for Guanacaste which seeks to decrease poverty levels which have been relatively high in this province (Morales & Pratt, year of publication unknown). The construction of the airport in Liberia (the capital of Guanacaste) has stimulated and enhanced the gateway for tourists to this province indicating the increasing focus on tourism as an important economic activity. This region, and especially locals in several villages surrounding the tourist areas, has experienced rising tensions (not typical for this region) concerning the availability of, and access to fresh water resources and these tensions are considered as one of the distressing outcomes of the rapid, disordered and disorganized growth of the (residential) tourist sector (United Nations, 2009).

There has been a tremendous increase in tourism and real estate: 'Whereas tourism and real estate respectively made up 15% and 5% of total FDI in 2003, by 2007 these percentages had increased to 17% for tourism and 34% for real estate' (Noorloos, F. & Zoomers A., 2009). Real estate has been spreading down Costa Rica's Pacific coast since the 1990's.

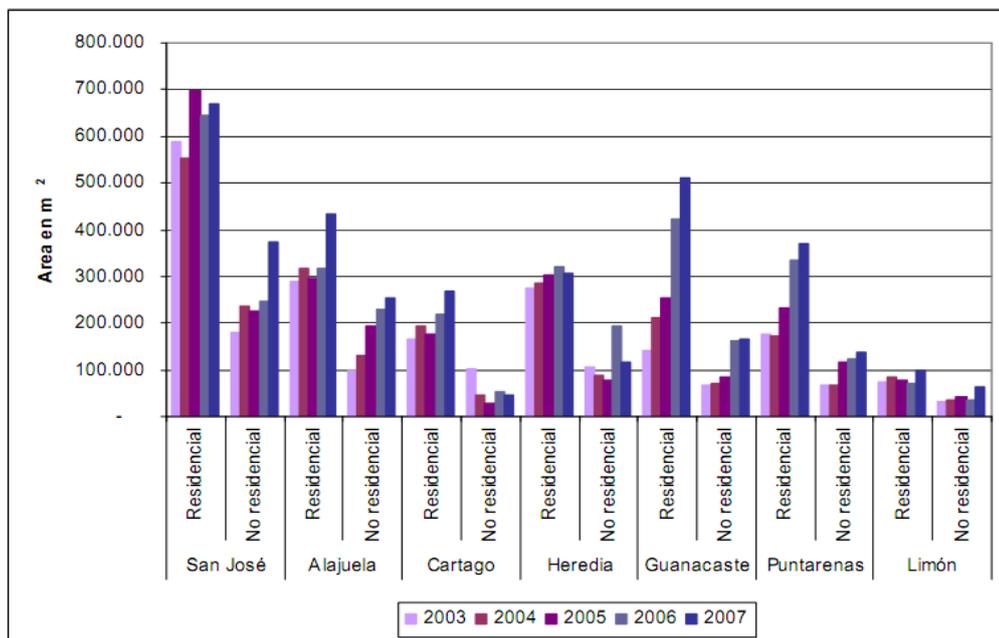


Costa Rica: Real estate development

(Vargas, E., 2007)

According to Morales & Pratt (year of publication unknown) there are currently 40,000 US and 15,000 Canadian retirees in Costa Rica with especially high levels of real estate constructions for residential tourists in Guanacaste as can be seen in the following graph.

**Gráfico 2. Evolución del área total en nuevas construcciones por provincia, según destino. 2003-2007**



(INEC, 2011)

'Massive tourist and real estate developments have created serious problems, such as water scarcity, and generated social conflicts between demand by local communities for water for human consumption and the economic interests of investors

and real estate developers, especially in the northern coastal areas of the country' (United Nations, 2009). Despite the fact that the principle 'water for domestic consumption in situations of water scarcity has the highest priority' is embedded within the main legal framework (Water Law, No. 276 of 1946) of water management and use, evidence suggests that this principle is not adhered to in practice. The following example illustrates the aforementioned emerging tensions between the (residential) tourist sector and the locals. 'Residents of Hermosa dealt with a sporadic supply, sometimes going two and three days without water, while tourist developments in the Peninsula Papagayo concession land known as Polo Turístico can have a steady supply' (Nicholson, 2007). Economic development in the form of tourism is without a doubt an important livelihood strategy and it can improve the quality of the lives of people in local communities, however, if the tourism industry is creating more challenges as opposed to benefits, then frustration among the local inhabitants does not come as a shock. 'Hotels and real estate developments are currently perceived by the local population as competing for the use of prime resources like energy and water, which are already in short supply in the North Pacific coast' (Morales & Pratt, year of publication unknown).

The growth in residential tourism is known to drastically transform areas and this growth is often steered by demand. The logic of the market is not devised in such a manner that the targeted land is planned appropriately and as this logic is ad hoc driven, future consequences are often not taken into consideration (Huete, R. & Mantecón, A. & Mazón, T., 2008). One of the detrimental potential consequences of a lack of planning, which has been signaled in the research area, is the temporary, or in worst case scenario permanent salinization of the aquifers (Furst E & Hein W., 2002).

Furthermore, this type of 'invisible hand logic' often implies that groups with relatively high economic power are more able to pursue their interests often against the legal and environmental norms, especially when the relevant institutions lack the necessary capacity for such change (Universidad de Costa Rica, 2009). Besides this, the displacement of communities is another common phenomenon related to the influx of wealthy foreigners. 'The process of transformation in this style of development has implied the displacement of many of the communities that before resided near the beaches, which is reflected in an important concentration of possession of the land. In turn this has generated growing polarization, social exclusion, and the sensation of being

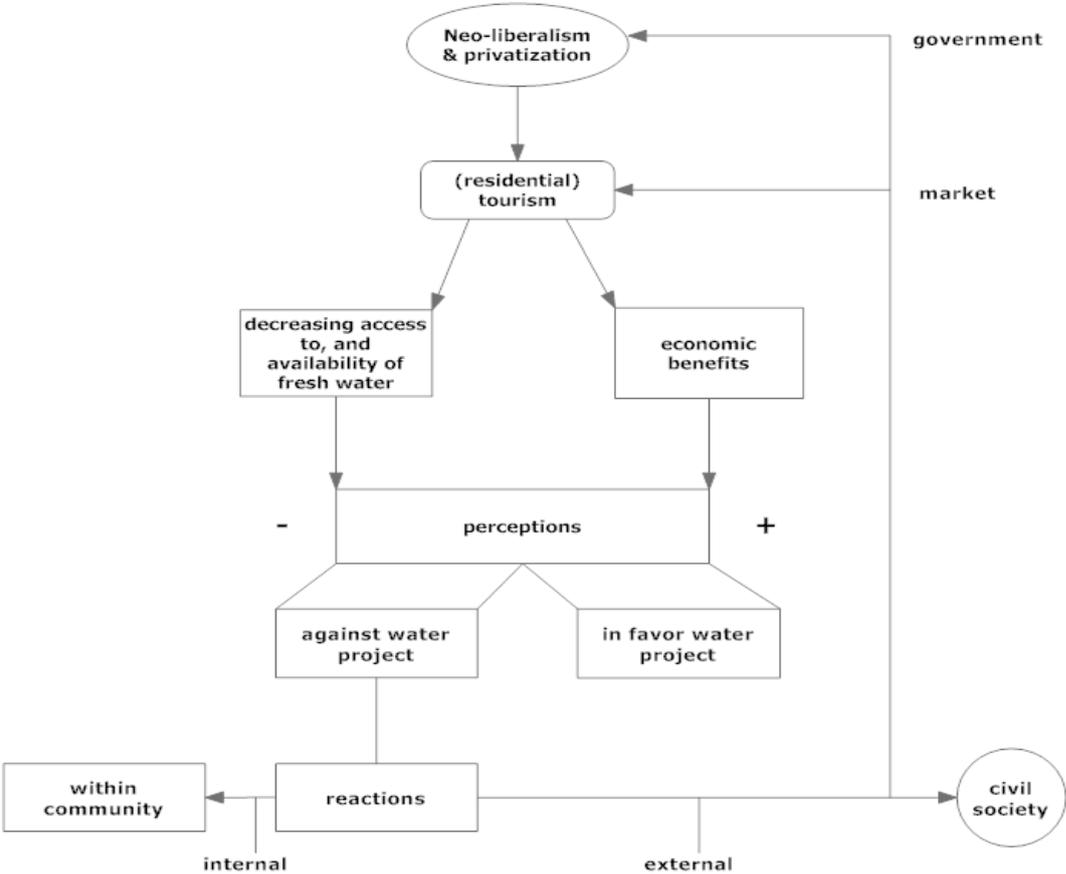
separated in many of the communities of the region' (Universidad de Costa Rica, 2009).<sup>1</sup> The next section will explain the conceptual framework used within this research, where after the hypotheses and methodology will be run through.

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<sup>1</sup> Translation, original text: 'Este proceso de transformación del estilo de desarrollo ha implicado el desplazamiento de muchas de las comunidades que antes residían cerca de las playas, lo que se ha reflejado en una importante concentración de la tenencia de la tierra, lo que, a su vez, ha generado una creciente polarización y exclusión social, al igual que una creciente sensación de desarraigo en muchas de las comunidades de la región' (Universidad de Costa Rica, 2009).

**2.1 Conceptual framework and definitions**

The conceptual model aims at explaining the 'setting' of the water conflicts from the perspective of the local inhabitants (so this deals only with sub-question A). It starts with certain choices which were made by the Costa Rican government concerning the (residential) tourist sector: neo-liberalism and privatization. These choices are thought to have stimulated and enabled the growth of the (residential) tourist sector. The growth in (residential) tourism brings economic benefits to surrounding communities, such as jobs, but it also might lead to perceptions of a decreasing access to, and availability of fresh water resources. The next part 'perceptions' shows how the perceptions of people living in the affected villages can range between positive and negative. If the perceptions are leaning on the negative side, this model implies the expectation that the given person will be against the water project. This in turn is expected to lead to reactions, internal and/or external, in order to express the problem so that appropriate measures can be taken to improve the situation of the affected village.



### **Definitions of the main concepts:**

**Privatization:** A (partial) transfer of ownership, usually by way of sale or gift, from government to a private entity.

**Neo-liberalism:** New forms of liberal free-market policy.

**Residential tourism:** Economic activity that focuses on the construction and sale of properties, not related to the hotel sector, whose buyers usually reside elsewhere; their owners may use these homes for their accommodation during their holidays, or may live in them on a permanent or semi-permanent basis, as a consequence of the new mobility and residentiality patterns of advanced societies.

**Tourism:** The business or industry of providing information, accommodations, transportation, and other services to tourists.<sup>2</sup>

**Decreasing availability of and access to water resources:** This concept applies when the respondent perceives a decreasing availability of, and access to fresh water resources (partially) as a result of (residential) tourism. The form in which the decreasing availability of, and/or access to fresh water resources takes shape can be rising water prices and/or the drying up of water in wells and/or a decreasing amount of hours of water received by the state provider.

**Economic benefits:** Any economic benefits, direct and indirect, as defined by the locals in the affected villages resulting from (residential) tourism.

**Perceptions:** This concept is a scale ranging from positive to negative where positive will be considered as the economic benefits outweighing the negative aspects of the perceived decreasing access to, and availability of water resources, whereas negative will be considered as the negative aspects of the perceived decreasing access to, and availability of water resources outweighing the economic benefits.

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<sup>2</sup> Both tourism and residential tourism are included due to the difficulties of separating them within this research as they were often used interchangeably by the respondents even when explicitly asked to view them separately. To get an idea of the relative size of these two forms of tourism, one of my respondents (a real estate agent) claimed that the net worth of all the condominiums and homes in this area is 'worth far more than the hotels, golf courses, their bars, and grounds combined'.

**Against water project:** This is the outcome of a negative perception leading to the given respondent being against the water project.

**In favor water project:** This is the outcome of a positive perception leading to the given respondent being in favor of the water project.

**Reactions:** The ways in which the person/people react to the perceived water conflict which can be internal and/or external as indicated in the conceptual framework.

## **2.2 Hypotheses**

There are several hypotheses which are linked to several sub-questions 'A'. As other sub-questions are more exploratory by nature, such as: 'To what extent does the government play a role in this conflict according to the inhabitants of Sardinal?', no hypotheses are linked to them. Since the variables were not known, no hypotheses could be generated (form of induction). Furthermore, the sub-questions related to the perceptions of the real estate agents (B) and governmental actors (C), do not have any hypotheses linked to them due to the same exploratory nature. The conceptual model does imply several hypotheses and here follows a list of the research questions which can be linked to hypotheses:

A2: Do the local inhabitants perceive a decreasing availability of, and access to water which has contributed to the water conflict?

H1: The local inhabitants perceive a decreasing availability of, and access to water which has contributed to the water conflict.

The expectation that there is a decreasing availability is based on the anticipation that ground water levels have decreased due to various reasons such as an increased amount of users, new resource intense forms of consumption and deforestation. The decreased access to water derives from the idea that together with increasing land prices, water prices have gone up (while the incomes have not risen proportionately) as well due to changes in demand and supply caused by the influx of tourists.

A4: Are the perceived benefits of (residential) tourism greater than the perceived negative effects resulting from (residential) tourism according to the inhabitants of Sardinal?

H2: The perceived negative effects resulting from (residential) tourism are greater than the perceived benefits of (residential) tourism.

This hypothesis is expected simply due to the existence of the water conflict. If tourism would have satisfied the majority of the local inhabitants, then they would have probably not protested with violence which could threaten the tourist industry. This implies that the local community as a whole is leaning on the negative side of the 'perception scale' in the conceptual framework.

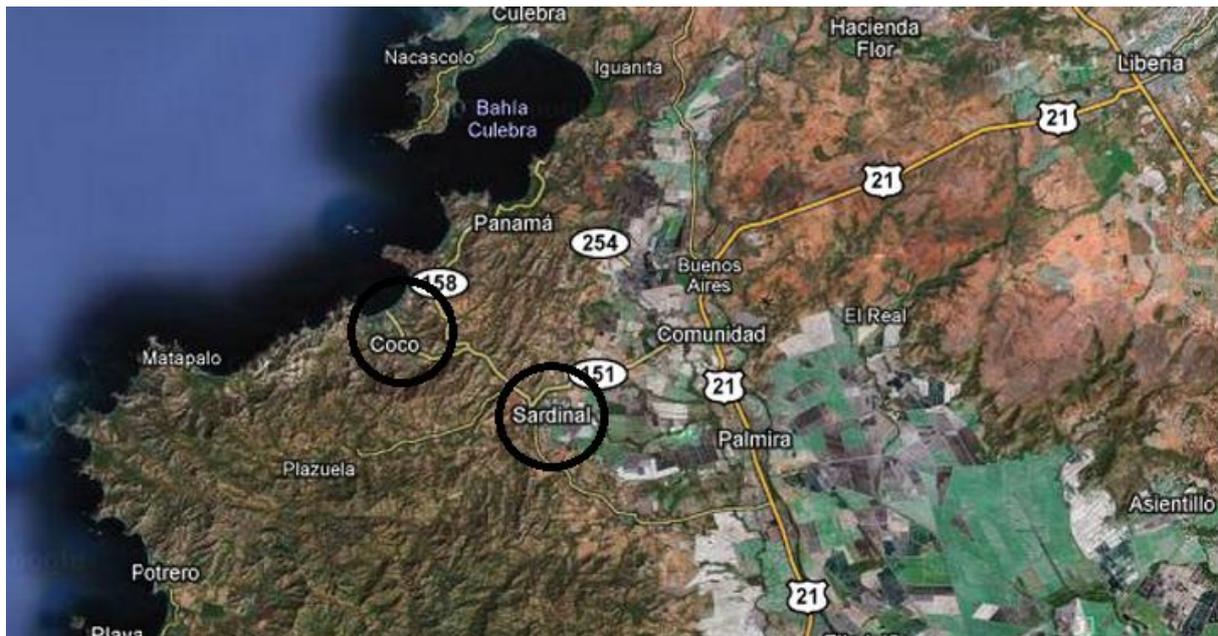
A7: Is the local community united in opposition concerning the water project?

H3: The local community is not united in opposition concerning the water project because there is a group within the community significantly benefitting from the tourist industry.

Here the expectation, as indicated in the conceptual model, is that people benefiting from tourism will be in favor of the water project and which creates a divide within the community.

### **2.3 Methodology**

In the beginning not a lot was known about this water conflict and as I was trying to find out what the causes of the conflict were, starting off with qualitative research methods deemed most appropriate. The literature had provided me with basic knowledge about the location (Sardinal and Playas del Coco) and the various groups involved: the local community, real estate agents and different governmental actors. I chose this area for research due to a general interest in the impacts of (residential) tourism on local communities and as the literature suggested, (residential) tourism had boomed in this area. Furthermore, tensions concerning water in and surrounding Sardinal had also been mentioned in the literature.



(maps.google.com, 2011)

This conflict is mainly between Sardinal and Playas del Coco, however, other affected villages besides Sardinal were mentioned as well by several local respondents: Crucitas, Jarder, Talamanca, la Caballo, Matapalo, Lorena, Tamarindo, Santa Cruz (Matapalo is the only visible village on this map).

### **2.3.1 Methodology local community**

The manner in which I approached the local community was simply by going to the centre of Sardinal and randomly asking various people on the streets whether they knew where in Sardinal people were affected by, and active in the conflict. El Carpintero, a tiny community of about 70 people (it could be considered as the periphery of Sardinal) was mentioned various times and so I went to have a look and inquire. All I had to do was drop the words 'water conflict' and people responded passionately. I encountered another small community (with a similar population size) close to El Carpintero in which many Nicaraguan labor immigrants were living and decided to include this community as well to see if any differences would be revealed. I conducted a total of 24 semi-structured interviews in different households equally spread between the two communities. The questions ranged from very open questions, such as: 'Are there any solutions for the water conflict you foresee?', to closed questions, for example: 'When did the water conflict begin?'. The questions were grouped into various categories:

A: Introduction, description of water conflict

B: Causes, impacts and links

C: Economic benefits (residential) tourism

D: Government, communication

E: (Residential) tourist sector, communication

F: Community, improvements, solutions

*(For entire interview community see annex: I)*

Several differences were revealed and it seemed that as expected those perceiving significant benefits from the tourist industry were either neutral or in favor of the water project. This compelled me to set up a questionnaire in order to further investigate the possible relationships and to gather some household information of the inhabitants of Sardinal. A certain level of saturation had been reached as well as answers were being repeated in similar fashions. These interviews have been transcribed and analyzed with Maxqda and the results are presented in section 3.2.

I used the answers given, and language used during the semi-structured interviews to guide me in the construction of the questionnaire. For instance when I asked what they consider as the main cause of the water conflict, the following answers were given: poor water management, expensive water prices, drought, corruption, fear that there will not be enough water in the future, the tourist sector grew too fast, lack of communication, overpopulation, the amount of water used for tourism is too much, lack of studies concerning the amount of water available and deforestation. These answers were then used in the questionnaire in a multiple choice method (also including the option: 'other, please specify'). Concerning language, as an example, when I would ask them to describe the availability of water resources at the moment, one of the common answers given was: 'more or less' (más o menos) and so I used this specific way of responding in several questions (for entire questionnaire, see annex: II). This was done with the idea that the respondents would more easily understand the questionnaire.

The only data available about the population was provided in a census conducted by INEC in 2000 which provided me with the total amount of adults in Sardinal: 2962. Considering that ten years had passed and an influx of inhabitants looking for work had

been mentioned various times, I started to ask around (in the municipality, the ASADA of Sardinal and local inhabitants) looking for an estimate of the amount of adults (18+ years) currently living in Sardinal. To my surprise around 3000 was mentioned so I decided to stick with this population size. With this population size, the sample size is 97 with a precision of  $\pm 10\%$  and this sample size was rounded up to 100. Due to time constraints a higher precision level was unobtainable.

There was one specific characteristic leading to a stratified sampling technique that I wanted to include which was: people living in Sardinal who are receiving water from the AyA (more details about this state provider are discussed in section 3.1) and people living in the periphery of Sardinal predominantly relying of water from their wells. As no information was available concerning the proportion of people living in the periphery, I also used estimates given and the proportion mentioned was 60% living in the 'centre' and 40% in the periphery. Besides this, I tried to aim for an equal representation of males and females. As I was dealing with time constraints, I decided to distribute 40% of the questionnaires in the peripheries: 20 in El Carpintero and 20 in Nicomedes ( $n_h = ( N_h / N ) * n$ , where  $n_h$  is the sample size for stratum  $h$ ,  $N_h$  is the population size for stratum  $h$ ,  $N$  is total population size, and  $n$  is total sample size). At this point I also decided to involve research assistants to help in the distribution process, one from El Carpintero and one from Nicomedes, so that I could focus on the centre of Sardinal. I asked the assistants to give one questionnaire to each household and try to get an equal amount of males and females. Unfortunately gender needs to be excluded from analysis because the attempt to reach a quota of 50% males and 50% females failed (not only in the periphery but also in the centre of Sardinal).

The remaining 60 questionnaires were distributed in the centre of Sardinal with an interval of 15 based on the assumption that each household has two adults (this assumption was also based on estimates given by the ASADA of Sardinal).

60% of 3000 = 1800                      population size = 1800/2 = 900                      sample size = 60  
Sampling fraction = 60/900                      Sampling interval = 15

With this systematic sampling I used a simple map of Sardinal and planned a route through the village and approached each 15<sup>th</sup> house. In the case where no adult

was at home, I would return a maximum of two times and then call it quits and report the household/case as missing data. Once all the data was in, and the filtering process of rejecting variables was done, the total response rate could be determined (cases with a lower response rate than 80% were rejected implying that variables/questions 4, 11, 13, 17, 23, 36, 39 and 43 were excluded):

El Carpintero = 15/20

Nicomedes = 15/20

Sardinal = 48/60

**Total response rate = 78/100**

It was very challenging to set this quantitative process up with no concrete basic information about the targeted population and the results therefore need to be viewed with a critical eye because as mentioned above, assumptions were made and 'weak' estimates were used. Besides this, by including El Carpintero and Nicomedes and therefore not being consistent with the systematic sampling technique, the results can be questioned as well. Now we will turn to the methodology used with the other stakeholders.

### **2.3.2 Methodology real estate agents and government actors**

A purposive sampling technique was used with these stakeholder groups considering that I wanted to obtain information from individuals who were somehow involved in the water conflict and were likely to have in depth information. As the water project was a deal between a pool of developers and the government, these groups deemed most appropriate. I decided to interview five real estate agents and four government actors (someone in the AyA, the municipality and two actors from the ASADA's – details will follow about these organizations in the following chapter). As the real estate agents as a group are more 'unified' than the government actors, a text analysis using Maxqda was used in the case of this stakeholder, whereas the interviews with the government actors have simply been summarized in a structured manner (see section 3.4). Semi-structured interviews were used with both groups and can be found in annexes: III and IV.

### **3 Results**

This chapter begins by explaining the institutional framework which will aid the reader to contextualize the conflict and understand some of the challenges. Hereafter the results of the various stakeholders will be presented.

#### **3.1 Institutional framework**

More than 20 ministries play some sort of role in the water sector. The ministry of health (MINSALUD) oversees the water sector, however the MINAET (Ministry of the Environment, Energy and Telecommunications) can be considered as the central ministry when it comes to water management. Concerning the administration and operation of aqueducts, the AyA (the Institute of Aqueducts and Sewers) is responsible and reports to the MINSALUD. So, in this case the AyA plays a big role concerning the water project because no permits for building real estate property can be granted without getting the green light from the AyA. In other words, if the municipality wants to grant permissions for construction to foreign investors, they need to go through the AyA. The AyA also works together with SENARA (National Service for Groundwater, Irrigation and Drainage) which is a technical service agency and among other tasks it protects and monitors groundwater resources. It plays an important role in conducting scientific hydrological studies which provide maximum annual extraction data of aquifers on which the AyA heavily relies in the process of conceding permissions for the building of new aqueducts. SETENA (Secretaría Técnica Nacional Ambiental) also plays a role in this case as it holds responsibility in the supervision of any potential environmental impacts of tourism proposals. There are community organizations: ASADA's (Administrative Associations of Rural Water and Sanitation Systems), which play an administrative role in water provision and the directors of the ASADA of Playa del Coco and of Sardinal have been interviewed as well. There are two entities which provide oversight and play a role in investigating any human rights violations: the Office of the Controller-General and the Ombudsman's Office, both of these entities have played a part within this conflict.

The institutional setting is quite complicated and it is not always clear where the responsibility lies, leading to shifting responsibilities in cases of conflict and mistakes

made. One of my respondents, the director of the local AyA, commented on the inter-institutional lack of integration: ‘There is a lack of integration between, and articulation of the user groups in the municipality, the AyA, SENARA and MINAET...with everyone involved in development. It should be articulated more properly’.<sup>3</sup>

### **3.2 Results: stakeholder I – the local inhabitants of Sardinal**

The results are a mixture of qualitative and quantitative data and have been structured according to the research questions. Through the qualitative text analysis codes emerged which fit with specific research questions, at the beginning of each section the relevant research questions and codes generated through the qualitative text analysis will be mentioned.

#### **3.2.1 Descriptions of the water conflict**

*Codes: description water conflict, consensus, work incentive*

*Research question: How do inhabitants of the local community describe the water conflict?*

During the semi-structured interviews the respondents were asked to describe the water conflicts and the answers varied to some degree pivoting between two general lines of thought. In el Carpintero, most (11/12) of the respondents expressed a clear opposition to the idea that foreign investors in Playas del Coco (with aid from the local government) intended to extract a huge amount of water from the aquifer in Sardinal for touristic purposes because this would seriously threaten their access to water in the future.

*‘They want to bring water to Playas del Coco for tourism and all this, and the people of Sardinal do not want this because if they bring the water for tourism, then the people of Sardinal will be left without water’.<sup>4</sup>*

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<sup>3</sup> Translation, original text: ‘Hace falta integración, hace falta articulación, el usuario de cada institución, de la municipalidad, o del AyA, con el SENARA y MINAET...con todos lo que tienen que ver al desarrollo. Debe ser mejor articulado’.

<sup>4</sup> Translation, original text: ‘Se quieren llevar agua para Playas del Coco por el turismo y todo esto, y la gente de Sardinal no lo quieren por el motivo que si quieren llevar el agua por el turismo, la gente de Sardinal se van a quedar sin agua’.

*'The village does not want to offer our water to private companies because water is our oil. It is the only valuable thing we have. If we offer the water, we are offering our agriculture, cattle, the lives of our children and future generations, we would be offering everything.'*<sup>5</sup>

Most of the respondents (21/24) explained that the community is divided and that there are tensions between those supporting the project, and those opposing it. During the interviews in Nicomedes, another stream of thought was revealed. Some of the respondents (3/5), all of which were originally from Nicaragua and had moved here for tourism related work, wished that the water would be granted because this would create (more) work. According to the interviewed real estate agents and local government officials a lot of the tourist related constructions and projects had been put on hold due to the water conflict.

*'A lot of people from this place do not agree with the idea that they will bring water to Coco and in a certain way they are right. But I also think that this is an obstacle for the development of work and this benefits us as well. I think they should let it be and allow them to take the water.'*<sup>6</sup>

Although most respondents leaned towards one of the two lines of thought, there were several (4/24) who preferred to remain neutral. These people understood both points of view but refused to side with one or the other.

### ***Results questionnaire***

The position of the respondents concerning the water project was asked and 68,9% are against, 21,6% are neutral and 9,5% are in favor of the project. Here follows a cross tabulation including the variables 'country of origin' and 'position concerning project' which contradicts the idea that Nicaraguans are generally in favor of the project.

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<sup>5</sup> Translation, original text: 'El pueblo no quiere entregar nuestra agua a empresas privadas, porque el agua es el petróleo nuestro. Es lo único que tenemos de valor. Y si lo entregamos, estamos entregando la agricultura, ganadería, las vidas de nuestros hijos y las futuras generaciones, estaríamos entregando todo'.

<sup>6</sup> Translation, original text: 'Mucha gente de este lugar no están de acuerdo que se lleven el agua al Coco y hasta cierta parte hay razón. Pero pienso también que es un obstáculo para el desarrollo de trabajo que esto a nos beneficia también, que haiga trabajo. Yo pienso que deberían dejar, que se lleven el agua'.

VAR00003 \* VAR00035 Crosstabulation

		VAR00035			
		against	neutral	for	Total
VAR00003	Costa Rica	42	12	4	58
	Nicaragua	8	2	3	13
	El Salvador	1	0	0	1
	Total	51	14	7	72

In the next section we will have a look at the perceived current availability of, and access to water resources and whether there have been any changes in the recent years. Future perceptions will also be considered.

### **3.2.2 The current availability of, and access to fresh water**

***Codes: quantity of water, water well, quality of water, water service, price of water, future***

***Research question: How do the inhabitants of the local community describe their current availability of, and access to water resources?***

In el Carpintero and Nicomedes most people (9/12 and 8/12 respectively) obtain their water from wells for various reasons. Some were receiving water from the AyA but were not able to pay their water bills which resulted in the AyA cutting off their water. In the centre of Sardinal people are unable to build wells and receive water from the AyA.

*'Three, four houses were receiving water from the AyA, but the receipt was 100 thousand (approximately 145 euro's) so they didn't pay. Then they cut off the water and so they had to buy a water pump and make a well'*<sup>7</sup>

One of the households did not have the necessary 'paper work' done in order to receive water from the AyA which led them to dig their own well, whereas a few

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<sup>7</sup> Translation, original text: 'Tres, cuatro casas aquí tuvieron agua del AyA, pero el recibo era 100 mil, entonces no pagaron. Entonces cortaran el agua, y tienen que comprar una bomba u hacer un pozo'.

mentioned a preference for water from the well because they find that the water from the AyA contains too much chlorine. Half of the respondents complained about high water prices (12/24) and a few explained to me that this high price has been on the rise since the emergence of the conflict. Other complaints mentioned included the rationing of the water supply causing interruptions of several hours per day and occasionally several consecutive days of interruption.

When asking the respondents about the current availability of water in their wells, some (11/24) claimed that the wells were drying up to the extent of abnormality (during the summer they are used to a certain amount of reduction of the water level in their wells) and others (6/24) explained that their wells are fine and that they have enough water.

*I: And does your well have enough water?*

*R: Not a lot. It is quite dirty.*

*I: And is it drying up?*

*R: Yes, quite a lot.<sup>8</sup>*

*I: So during the summer there are no problems, there is enough water?*

*R: Yes, the whole day. It is good water.*

*I: And is your well drying up or...?*

*R: It is normal.<sup>9</sup>*

In one case in Nicomedes, the respondent explained that she is against the idea of permitting water from being extracted from the aquifer because she is already experiencing a very dry well with contaminated water (her children often experience vomiting and diarrhoea) and expects the water level in her well to decrease if the project were to proceed. In other cases the respondents were not directly experiencing a lack of water but were very concerned about the future availability of fresh water resources.

*I: So it is more of a future worry?*

*R: Yes of course, it is a future worry.*

*I: And are you suffering from the water conflicts in any way?*

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<sup>8</sup> Translation, original text: 'I: Y su pozo tiene bastante agua? R: No mucho. Sale bastante sucia. I: Y está secando? R: Si, bastante.'

<sup>9</sup> Translation, original text: 'I: Entonces en verano no hay problemas, hay bastante agua? R: Si, todo el día. Buena agua, fuerte. I: Ok, y su pozo está secando o...? R: Normal, normal.'

*R: Well, suffering? No, not directly but one thinks about his/her kids'.<sup>10</sup>*

Future views included visions of deserts, having to buy bottled water and wars over water; one gentleman who works as a water well constructor predicts that the manner in which people are fighting for oil in Iraq is the way people will be fighting over water in this region.

*'The way they fight for oil in Iraq, it will be the same here with water'.<sup>11</sup>*

### **Results questionnaire**

Various questions were asked concerning the current availability of water for various activities including drinking, cooking, cleaning and agriculture. Here follows a frequency table with the highest percentages in bold:

	<b>drinking</b>	<b>cooking</b>	<b>cleaning</b>	<b>agriculture</b>
<b>more than enough</b>	2.6%	5.2%	5.3%	1.3%
<b>enough</b>	39.7%	36.4%	<b>43.4%</b>	14.3%
<b>more or less enough</b>	<b>48.7%</b>	<b>41.6%</b>	38.2%	29.9%
<b>not enough</b>	3.8%	9.1%	6.6%	13.0%
<b>very little</b>	5.1%	7.8%	6.6%	<b>33.8%</b>
<b>I don't know</b>	n.a.	n.a.	n.a.	7.8%

From the respondents with water wells 16.7% claimed that their well is 'very dry', 66.7% said their well is 'quite dry', 8.3% answered 'full enough' and 8.3% answered 'full'. Here follows a frequency table which shows percentages concerning where the respondents get their water from.

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<sup>10</sup> Translation, original text: I: Entonces, es más una preocupación del futuro? R: Para el futuro, claro, si, si. I: Y ahora usted está sufriendo de los conflictos de agua en alguna manera? R: Pues, sufriendo, sufriendo? No así directamente. Pero uno piensa en su retoño, en los nietos.

<sup>11</sup> Translation, original text: Como en el país Iraq, pelean por el petróleo, aquí va a estar lo mismo con el agua.

**VAR00016**

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid AyA	56	71,8	71,8	71,8
well	11	14,1	14,1	85,9
AyA main, well as other source	10	12,8	12,8	98,7
water well main, AyA as other source	1	1,3	1,3	100,0
Total	78	100,0	100,0	

From the respondents receiving water from the AyA, approximately 80% claim that there is a constant flow of water, and the remaining 20% report less than 24 hours of running water from the AyA per day with a minimum of 15 hours a day. The minimum, maximum and the mean of water prices per month are indicated in the following table (the prices are in the local currency and 1 euro is approximately 718 colones).

**Descriptive Statistics**

	N	Minimum	Maximum	Mean	Std. Deviation
VAR00029	63	3000,00	360000,00	20665,0794	49468,04820
Valid N (listwise)	63				

The data concerning the proportions of income spent on water was unfortunately not possible to obtain due to the amount of missing responses in the question about income (q. 13). Two of the questions were aimed at finding out if there is any solidarity among the inhabitants in cases of a lack of water. Here follow two frequency tables (with the questions stated above) which indicate that there is a certain amount of solidarity. In this case solidarity refers only neighbors granting or receiving water from each other in cases of scarcity.

**27. Do you help your neighbors when they do not have enough water?**

VAR00027

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid yes	39	50,0	50,0	50,0
no	20	25,6	25,6	75,6
they always have enough water	17	21,8	21,8	97,4
88,00	2	2,6	2,6	100,0
Total	78	100,0	100,0	

**28. Do you receive help from your neighbors when you do not have enough water?**

VAR00028

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid yes	37	47,4	49,3	49,3
no	23	29,5	30,7	80,0
I always have enough water	15	19,2	20,0	100,0
Total	75	96,2	100,0	
Missing 88,00	3	3,8		
Total	78	100,0		

The following section deals with the various causes of, and solutions for the water conflict according to the local inhabitants.

**3.2.3 The causes of the water conflict**

*Codes: drought, deforestation, displacement, changes in population, privatization, (un)employment, benefits of tourism, corruption, lack of organization, no/lack of research, communication, community reactions, potential solutions*

***Research question: What are the causes of the water conflict according to the inhabitants of Sardinia?***

The causes of the water conflict can be divided into three main categories:

changing environment, lack of overall benefits from tourism and a lack of trust in the government. After going through these categories, we will look at what the community reactions have been so far and what potential solutions are foreseen by the respondents.

### ***Changing environment?***

In order to understand why a conflict emerged in this area, it is important to look at the area in a holistic manner because there are a multitude of factors which shape the perceptions of the locals inhabitants and contribute to their frustration. This area has hosted tremendous changes over the past 15-20 years in which quiet fishing/agricultural villages have transformed into tourism hot spots. These changes are demographic, environmental, cultural and socio-economic/political and in this section we will briefly have a look them.

Guanacaste has a semi-arid tropical climate with a raining and a dry season, and approximately once every ten years there is an exceptionally dry year due to the el-Niño effect. A certain amount of drought is normal according to the respondents however there are reports of abnormalities (10/24) in the amount of drought which causes concern and forms a part of the base of the conflicts (note: one respondent claimed that the 'amount' of drought is normal).

*I: And how do you see the future availability of water in this community?*

*R: Badly, because the aquifers are not responding they way they should respond. In total there was no raining season this year, there were a few rains but no raining season. The rivers did not fill up. There is a water fall in las Pilas, which is a part of a biological reserve where there were a lot of trees, but they destroyed them. The water fall is already dry; there is very little water. And this is what we are defending. This is the cause that the future generations will...perhaps die due to a lack of water'.<sup>12</sup>*

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<sup>12</sup> Translation, original text: I: Y cómo ve usted el futuro de la disponibilidad del agua en esta comunidad? R: Mal. Porque los mantos acuíferos no están respondiendo como tienen que responder. Este año, en totalidad no hubo invierno, cayeron ciertos aguaceros pero no invierno. Los ríos no llenaron. Hay un ojo de agua en las Pilas, que es una parte de una reserva biológica en donde había muchos árboles, pero los han destruido. Y esta seco el ojo de agua, hay muy, muy poca agua. Esto es lo que estamos defendiendo, esto sería la causa que las futuras generaciones estarían...no sabemos si muriendo por causa de falta agua potable o pereciendo...

When asking what the causes of the drought are, deforestation, a growing population and the manner in which the water is used in the tourist sector were mentioned.

*'In a certain manner, with this change, many people have cut down trees and on the other hand there are more people living here, and the touristic infrastructure. Each aspect has contributed in its own way'.<sup>13</sup>*

*'The manner in which it is used is bad; it should be more moderated and conscious. Finishing the water will bring an end to us as well'.<sup>14</sup>*

There has been an influx of foreigners. While asking about general changes two respondents explained to me that Playas del Coco consists now mainly of western foreigners and the original inhabitants have moved more inland to places such as Sardinal.

*'There is a lot of tourism; you can only find Germans, French and Americans at the beaches. The locals from Guanacaste who used to live here, none can be found'.<sup>15</sup>*

Tourism in this area has attracted foreign labor immigrants, especially from Nicaragua, and this has put downward pressure on the wage levels. This has caused irritation among some (three respondents explicitly expressed irritation) of the local inhabitants.

*'I think there shouldn't be discrimination and there shouldn't be any Nicaraguan labor immigrants here, they are paid very poorly. They say: 'we came to give our work to Costa*

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<sup>13</sup> Translation, original text: Por cierto lado, con esto cambio, mucha gente han sembrado arboles y por otro lado porque hay mas población y la infraestructura turística. En cierto modo cada con un aspecto.

<sup>14</sup> Translation, original text: La manera de mal utilizar, debería ser más moderado, más conscientes, terminar el agua va a terminar nosotros también.

<sup>15</sup> Translation, original text: Mucho turismo, en todas las playas, solo alemán, franceses, gringos, norteamericanos, todos, todos. El guanacasteco que vivía allí...no hay ni uno.

*Rica', no. They came to give their work to American companies because they are the ones constructing hotels...we do not construct big hotels, only the Americans...the foreigners...'*<sup>16</sup>

One of the Nicaraguan labor immigrants explained to me that 'they' get criticized due to their support for the project.

*'And so the problems concerning water began, including us, because we support the idea of granting the water'.<sup>17</sup>*

One of the respondents explained to me that matters have changed socially because of the behavior concerning property of the new western foreign immigrants. Most of the foreign properties are surrounded with gates and a bunch of dogs 'protecting' the property.

*'Well, we say that the foreigner is very delicate. Here you can pass through my property without any problems. And the foreigner, I cannot pass through his property, this is the problem of the foreigners'.<sup>18</sup>*

Prostitution and drug addiction were also mentioned various times as socio-cultural changes which were viewed negatively by the locals. During my stay there was a protest against attempts to privatize a beach in front of the hotel Riu and this perceived tendency of the privatization of land is a source of frustration because it implies that the typically rich, new inhabitants gain 'the upper hand' due to their stronger financial bargaining position. One of the respondents told me that capitalism has affected their lives socially.

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<sup>16</sup> Translation, original text: Yo pienso que no debería ser esta discriminación y a lo menos la mano de obra nicaragüense aquí, hablo de Sardinal, es muy mal pagada. Ellos dicen: venimos a regalar nuestro trabajo a Costa Rica, no. Vienen a regalarles trabajo a empresarios norte americanos, porque ellos construyen hoteles y nosotros no construimos estos grandes hoteles, solo norte americanos...lo extranjero...

<sup>17</sup> Translation, original text: Entonces empezaron los problemas con el agua. Incluso aquí a nosotros, a nos critican porque apoyamos que se lleven el agua.

<sup>18</sup> Translation, original text: Bueno, digamos el extranjero es muy delicado, aquí se puede pasar por mi propiedad y no hay problemas. Y el extranjero, no puedo pasar por su propiedad. Eso es el problema de extranjeros.

*R: Yes, it has affected social matters as well.*

*I: Could you explain to me how they have been affected?*

*R: It affects social matters because there is capitalism. The ones who have money, it affects us because if you don't sell your property to the government, they will take it away and sell it to those who have money. And you will be left with nothing'.<sup>19</sup>*

One lady, an activist, mentioned rising land and water prices and a devaluation of the colon.

*I: So the prices of water and land have risen too much?*

*R: Yes, as tourism entered the ones with the dollars are the tourists, not the locals, and so the dollar rises and the colon devaluates. It has affected us a lot'.<sup>20</sup>*

### **Results questionnaire**

One of the questions asked in the questionnaire was: 'Has the price of water risen for you in the past five years?'. The following frequency table shows the results:

VAR00030

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes, a lot	29	37,2	38,2	38,2
	Yes, quite a bit	18	23,1	23,7	61,8
	Yes, a little	21	26,9	27,6	89,5
	No, the price remained the same	4	5,1	5,3	94,7
	I don't know	4	5,1	5,3	100,0
	Total		76	97,4	100,0
Missing	88,00	2	2,6		
Total		78	100,0		

<sup>19</sup> Translation, original text: R: Si, las cosas sociales también. Afecta mucho. I: Me puede explicar cómo afecta? R: Si las cosas sociales afecta, porque hay, el capitalismo. Lo que tiene plata, lo afecta a uno porque si tiene su propiedad y si no la vende al gobierno se la quitan de usted para venderla a uno que tiene plata. Y usted queda sin nada.

<sup>20</sup> Translation, original text: I: Entonces los precios del agua, y la tierra han subido demasiado? R: Si, porque digamos como entre el turismo y los que traen los dólares son los turistas, los ticos no, el dólar sube, y el colon devalúa. Nos ha afectado mucho.

### ***The benefits of tourism?***

There is a surprising variation in the answers given concerning the benefits of tourism in Sardinal. Some (9/24) perceive that tourism is providing the majority of people in Sardinal with work, while others (8/24) claim that not many benefit from tourism. There is also a group (5/24) that explains that tourism used to bring a lot of benefits, especially in the beginning of the boom, but that now due to the water conflict and the economic crisis, very few jobs are available.

*I: How many inhabitants of this community work in the tourist sector?*

*R: Almost all.*

*I: And in Nicomedes?*

*R: Well the majority, and whoever does not work in a hotel, works in the construction of a hotel. There are quite a few who do this type of work.*

*I: And in Sardinal?*

*R: Yes, sure, they live off tourism'.<sup>21</sup>*

*I: And is there any progress?*

*R: Well, not for the people of Sardinal, all the progress is for the people of Coco. The people here do not benefit from tourism; everything is for Playa del Coco. It is true that there is work, but not for most of the people here.*

*I: So could you say that the majority is not benefiting?*

*R: Yes, because the majority of people who are working are in Coco. They do not provide work to people from Sardinal and so there is a conflict.<sup>22</sup>*

Another aspect concerning tourist related jobs is that they are often short term jobs with little security.

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<sup>21</sup> Translation, original text: I: Y cuantos habitantes de esta comunidad trabaja en el sector turístico? R: Aquí casi todos. I: En Nicomedes casi todos? R: Pues la mayoría, quien no trabaja en un hotel, trabaja en la construcción de un hotel. Hay bastante gente que trabaja en esto. I: Y en Sardinal también? R: Si, claro, viven del turismo.

<sup>22</sup> Translation, original text: I: Y hay progreso? R: Bueno, para la gente de Sardinal no, todo el progreso es para la gente de Coco. La gente aquí no beneficia del turismo, todo es por Playa del Coco. Es cierto, hay trabajo, pero no para tanta gente de aquí. I: Entonces, se puede decir que la mayoría no están aprovechando? R: No, porque casi la mayoría de la gente que están trabajando son de Coco. No abastecen trabajo a la gente de Sardinal. Entonces es un conflicto.

*I: And do you think that the growth in tourism has affected the lives of the local inhabitants in other ways?*

*R: In other ways, no, because thanks to tourism a lot of people are able to sustain themselves, and there is money for everyone however, sometimes, you might be working for a hotel for two months and after that they fire you. They put you on trial for a maximum of two months and then they say: no more. This shouldn't be like this. And so this is a worry shared by many people here'.<sup>23</sup>*

If the majority of local inhabitants are not benefitting from tourism and at the same time witnessing increasing pressure, disappearance and capitalization of their natural resources, then opposition does not come as a surprise.

*I: What do you think are the main causes of the conflicts?*

*R: The projects (-at the time understood as hotel projects-) more than anything are the main causes of the conflicts.*

*I: And what about real estate?*

*R: Yes, as well, but also the hotels, the buildings.*

*I: So tourism in general?*

*R: Yes, tourism in general'.<sup>24</sup>*

*I: And how many people work in the tourist sector more or less? 50% or...?*

*R: We cannot speak of 50%. The minimum, minimum. They take the village into account the least so it is not a sustainable development. With the entry of tourism to Costa Rica, a lot corruption has come'.<sup>25</sup>*

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<sup>23</sup> Translation, original text: I: Y usted piensa que el crecimiento de turismo afecta las vidas de los habitantes en otras maneras? R: En otras maneras tal vez no, porque, gracias al turismo digamos nos sostenemos mucha gente, y dinero por todo pero, a veces tal vez, digamos, usted tal vez trabaja en un hotel por dos meses y después lo echan. Ponen a prueba a uno que trabajen, dos meses más que todo y ya, dicen: 'no más'. No debería ser así. Entonces, eso es la preocupación que mucha gente tiene.

<sup>24</sup> Translation, original text: I: Y cuáles cree usted que son las causas centrales de los conflictos? R: Los proyectos más que todo son las causas principales de los conflictos. Los proyectos que hacen. I: Y bienes y raíces? R: Si también, pero también los hoteles, edificios. I: Entonces turismo en general? R: Si, turismo en general.

<sup>25</sup> Translation, original text: I: Y cuantos trabajan en el sector turístico, más o menos? Un 50% o...? R: No podemos hablar de un 50%. Mínimo, mínimo. El pueblo se da en cuenta, mínimo. Entonces no es un

Half of the respondents claim that tourism is a cause of the conflicts, while others clearly rejected this idea (7/24). In both cases however, the respondents would blame the government for allowing tourism to grow the way it did.

**Results questionnaire**

The following frequency table displays the respondent’s main sources of income. Unemployment was 28,2% (note: the questionnaire was conducted in May which is the beginning of the low season) and bearing in mind that about 15 years ago most people (according to historical accounts) worked in agriculture, the amount of people working in agriculture now is very low: 3.8%.

**VAR00010**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	tourism	24	30,8	31,6	31,6
	agriculture	3	3,8	3,9	35,5
	unemployed	22	28,2	28,9	64,5
	other	13	16,7	17,1	81,6
	pension/student	14	17,9	18,4	100,0
	Total	76	97,4	100,0	
Missing	88,00	2	2,6		
Total		78	100,0		

Recently there has been an increase in unemployment and a decrease in economic activities (which could be due to the timing of the questionnaire): 37.2% of the respondents answered ‘yes’ to the question: ‘Has someone in your household lost his/her job recently?’, and 41% answered ‘yes’ to the question: ‘Has someone in your household experienced a decrease in economic activities recently?’.

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desarrollo sostenible. Porque también con la entrada de turismo a Costa Rica, ha venido mucha corrupción.

## ***Perceptions of the government***

There was a general understanding that the government has the power to welcome and stimulate tourism and that corruption and a lack of planning underlie the water conflicts (17/24), which explains why the opposition has been directed to the various relevant governmental institutions and not directly to the tourist sector.

*'There is no development plan, no planning. They have constructed everything according to the demand for real estate property, but not developing with sustainable planning'.<sup>26</sup>*

*'The main cause...is money. The big company corrupts a lot of minds; this is the main existing cause. There is a lot of corruption. A lot of executives of the AyA...it has affected us poor the most: the proletariat. This is the main cause; money buys all kinds of things'.<sup>27</sup>*

This corruption manifested itself in the form of authorizing the water project without conducting a proper hydrologic study prior to giving the go-ahead.

*'The development has been large, the investors who have come, it is not a bad thing but there should have been a study about the amount of water they want'.<sup>28</sup>*

*'The people discovered anomalies which have been caused by the AyA, there was no research about the resources, the aquifers and all of this. They simply want to take the water; they don't see what problem could be generated in the future for this community'.<sup>29</sup>*

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<sup>26</sup> Translation, original text: No hay un plan de desarrollo, no hay digamos una planificación. Todo lo han hecho construyendo inmobiliariamente, pero no desarrollando con una planificación sostenible.

<sup>27</sup> Translation, original text: La causa principal...es la plata. Es una causa muy grande. El grande empresario compra muchas cabezas, esto es la causa principal que esto exista. Corrupción, hay mucha corrupción. Muchos ejecutivos de AyA...a quien ha afectado mucho es a nosotros pobres. La proletaria. Esto es la principal causa que hay. La plata compra de todo.

<sup>28</sup> Translation, original text: Es grande el desarrollo de que hay, inversionistas que han venido, no es malo, pero sino que hubiera habido un estudio para la cantidad del agua que ellos quieren.

<sup>29</sup> Translation, original text: La gente descubrió anomalías, que han realizado AyA sin ningún investigación de los recursos, de los mantos de acuíferos y todo eso, si no simplemente se llevan el agua, no ven el problema que puede generar en el futuro para la comunidad aquí.

One of the questions in the semi-structured interviews was: 'do you think that the community feels like they are the priority of the government concerning water?', and each interviewee responded with a 'no'.

*I: Do you think that the local inhabitants feel like they are the priority of the government concerning the availability of water?*

*R: No. The investor has the priority. They don't care about me, they cut off the water. They don't care about national residents who live here. If I don't have money, I don't have water'.<sup>30</sup>*

The antagonistic view of the government also became apparent when asking about the communication between the community and the government.

*I: Are there ways to communicate with the government about the water conflicts?*

*R: They don't listen.*

*I: There has been communication but without\**

*R: They talk, and talk and talk and it goes in one ear and leaves the other. It is the same when they are in politics, they promise here and there...and then they forget about everything'.<sup>31</sup>*

*I: So...could you say that there is not a lot of communication between the community and the government?*

*R: There is very little communication with the government, because the government only wants to negotiate with money'.<sup>32</sup>*

*'They offended us, called us communists; they called us a lot of things. But it is not true because we are in favor of development, but with sustainable planning'.<sup>33</sup>*

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<sup>30</sup> Translation, original text: I: Usted piensa que los habitantes se sienten que son la prioridad del gobierno acerca de disponibilidad de agua? R: No. La prioridad es el inversionista. No le interesan a mí, le cortan el agua. No le interesa al residente nacional que vive aquí. Si no tengo dinero, no tengo agua.

<sup>31</sup> Translation, original text: I: Y hay maneras de comunicarse con el gobierno sobre los conflictos de agua? R: Ellos no escuchan. I: Ha habido comunicación pero sin\* R: Hablan, hablan, hablan y entra por aquí y sale por aquí. Es igual, cuando están en la politiquería ellos prometen aquí y allá...y se olvidan todo.

<sup>32</sup> Translation, original text: I: Entonces...puede decir que no hay mucha comunicación entre la comunidad y el gobierno? R: Con el gobierno, muy poco. Porque el gobierno solo quiere negociar con plata.

*'They haven't taken the village into consideration; they are not interested in knowing the opinion of the village. Once people of the interstate committee came and we told them that we need to know what studies they have done about the aquifers. They said that they are not interested; they do not care about the position of the village. They also said that if we try to paralyze the project on the streets again, that we will see a lot of deaths. If we speak of a democracy, then this should not happen'.<sup>34</sup>*

Within this setting of perceived high speed geographic changes and a negative view of the government, it is understandable that frustration rose when discovering that the AyA had granted permission to build the aqueduct without involving the community, and without conducting a thorough/proper hydrologic study prior to giving the green light. Now that the environmental assessment is done and shows that there is enough capacity for 1400 new connections, the completion of the project is on its way once again. This does not necessarily imply the end of the conflict due to a lack of trust:

*'Right now we will not accept a study about the aquifers because they lied to us the first time. And when it starts off badly, we do not believe in the transparency of the government any more. If they would have been transparent from the beginning and would have reached out to the community, perhaps we could have come, not to negotiate, but to an understanding'.<sup>35</sup>*

It still remains to be seen how the community will react to this news. Here follows an initial reaction:

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<sup>33</sup> Translation, original text: Nos ofendieron, nos llamaron comunistas, bueno un montón de cosas, pero nada que ver porque nosotros somos por un desarrollo pero con una planificación sostenible.

<sup>34</sup> Translation, original text: El pueblo no ha tomado en cuenta, no le interesa saber la opinión del pueblo porque una vez vino gente del comité interestatal, y nosotros le dijimos que nosotros necesitamos saber que estudios tienen de los mantos acuíferos. Y ellos dijeron que no les interesaban. No les interesaba conocer la posición de la comunidad. Y que si nosotros intentamos nuevamente paralizar las obras en las calles, vamos a ver muchos muertos. Si hablamos de una democracia, no debería pasar.

<sup>35</sup> Translation, original text: Ahorita no aceptamos un estudio de los mantos acuíferos porque ya, la primera vez que lo hicieron, mintieron. Y cuando al principio se empieza mal, ya no creemos en la transparencia del gobierno. Si ellos hubieran sido transparente desde el principio, lo hubieran hecho con transparencia, hubieron llamado a la comunidad tal vez hubiéramos llegado, no a una mesa de negociación pero tal vez de entendimiento.

*'This will end on the streets. They think it will end here and that they will crush us but Sardinal has the spirit to fight until the limit. They will see. They should not play with the rights, water and dignity of Sardinal'.<sup>36</sup>*

Now we will turn to the solutions proposed by the community.

### ***Potential solutions***

Firstly we will start this section by looking at how 'the community' has reacted up till now and then we will turn to the proposed solutions.

In 2008 the water project was already well underway which is when the AyA informed the community about the project. A group of inhabitants were highly displeased with this announcement and demanded an unbiased and thorough assessment of the aquifer's capacity. This request was denied. Hereafter the individuals opposing the project began to organize themselves in various manners.

The 'comité de pro-defensa del agua de Sardinal' was established which is a community based committee. They gathered once a week to investigate, discuss and strategically plan their resistance to the Sardinal-El Coco-Ocotal water project. Pro-defensa del agua managed to put enough pressure on the ASADA for them to review the permits that were granted and to have a thorough look at the procedures that took place. They also managed to get the National Office of the Ombudsman, the University of Costa Rica and other experts involved to help them to appeal to the Supreme Court and the Government Accountability Office with a twofold criticism concerning the project: a lack of community participation and the questionable legal procedures that took place.

Furthermore the committee organized two demonstrations at the construction site in the course of these years, and after the second demonstration all construction was frozen. Here follow several quotes which describe the protests at the construction site.

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<sup>36</sup> Translation, original text: Este asunto va a terminar en las calles. Ellos quieren que ahí termine, creen que nos van a doblegar, pero la comunidad de Sardinal tiene el espíritu de lucha al tope. Ya lo verán. Que no jueguen con los derechos, con el agua y con la dignidad de Sardinal (Informa-Tico, 2011).

*I: But this village has paralyzed the project right?*

*R: Yes of course, we were looking over the tubes and burned them'.<sup>37</sup>*

*'When we confronted the government, there was shooting, tears, gas, a lot of upset people; the community has never experienced this'.<sup>38</sup>*

*'Here the solution is on the streets. We organize passive marches and meetings and when we urge the community to join, we get together and head to the streets'.<sup>39</sup>*



(Salazar, 2010)

A group also went to San Jose to protest against government institutions. These actions ignited a hydrological study and once the study was completed the committee defending the water of Sardinal took the hydrologic study to two public universities and after reviewing it, they both publicly questioned the results.

*'The study was very clearly 'camouflaged' for the benefit of private companies. Because who paid for it? The private companies'.<sup>40</sup>*

<sup>37</sup> Translation, original text: I: Pero este pueblo ha paralizado el proyecto, no? R: Si claro, estos tubos, poníamos cuidarlo allí, los hemos quemado.

<sup>38</sup> Translation, original text: Cuando nosotros enfrentamos al gobierno, hubieron balazos, hubieron llantos, lágrima, gases, hubo gente descompuesto, la comunidad nunca había vivido esto.

<sup>39</sup> Translation, original text: Bueno aquí la resolución está en la calle. Nosotros hacemos marchas pacificas, hacemos reuniones y cuando instamos a la comunidad para salir, nos reunimos y salimos a marchar por las calles.

The Supreme Court pulled its approval back and ordered a full scale environmental assessment of the project as well as further investigations into the permit procedure that took place. This information came a few days prior to my return and it was received positively and perceived as a victory by several contacts I spoke to when saying goodbye. So besides reacting internally, the community reached out to civil society and indirectly to the central government. A few respondents also explained to me that there have been attempts to unite with other surrounding villages experiencing similar problems.

*'I don't know if you have seen the camping at the hotel Riu in Matapalo on the internet; it has been organized by Sardinal, a lot of environmentalists, the University of Costa Rica and all villages which are experiencing these problems and fighting. Our fight is at a national level. The day that the government gives the green light for the project, the people of Sardinal will not be alone because we have all national organizations supporting us. Wherever there are problems, the people will be here because it is understood that if we lose the fight of Sardinal, we will lose all fights because this fight is the strongest at national level'.<sup>41</sup>*

In order to gain insight into what the respondents foresee as solutions for the water conflicts questions such as 'What are the necessities to resolve the conflicts?', and 'Do you foresee any solutions for the water conflicts?' were asked. The most frequently given answer (7/24) was 'haciendo huelga' which means 'to protest'. Other answers were given as well which included improving the communication between the community and the government, less corruption, increased political power for communities, less use of water for luxurious purposes such as golf courses and hotels and a thorough study of the aquifer's capacity.

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<sup>40</sup> Translation, original text: No, el estudio es muy claro, fue un estudio digamos...maquillado. Al beneficio de empresas privadas. Porque quien lo pago? Fueron las empresas privadas.

<sup>41</sup> Translation, original text: No sé si ha visto por internet hay un campamento en el Riu Matapalo, es organizado por Sardinal, y muchos ambientalistas, la universidad de Costa Rica y todos pueblos que tienen esta problemática en donde hay lucha. Nosotros tenemos esta lucha en el nivel nacional. El día que el gobierno da la reapertura del proyecto, no va a estar solamente Sardinal. Porque tenemos todas organizaciones en el nivel nacional. Donde están todos los problemas, la gente va a estar aquí. Porque es entendido que si se pierde la lucha de Sardinal, perdemos todas las luchas. Porque en Sardinal hay la lucha más fuerte en el nivel nacional.

### **3.3 Results: stakeholder II – real estate sector**

This chapter is aimed at trying to capture and convey the perceptions of the real estate sector in this area concerning the water conflicts. As in the previous chapter we will begin with the general descriptions given by this specific stakeholder, where after we will take a look at the perceived causes of the conflicts (see annex III for entire interview). The solutions proposed by the interviewees will round this section up.

#### **3.3.1 Descriptions of the water conflict**

*Codes: water conflict, benefits of tourism, violence*

***Research question: How do the real estate developers describe the water conflicts?***

This section serves as an introduction to the perceptions of the real estate developers where after we will get into details of the perceived causes of, and solutions for the water conflicts. The water project initiated by a pool of developers is considered as a positive development in the area according to some (3/5) of the interviewed real estate developers. One of the sub-projects within the project is to improve the water infrastructure of the inhabitants of Sardinal.

*'One thing that I can say without question is that the project would have helped the people of Sardinal, hugely. And here in Coco and Hermosa, so it was a very good thing for them yet they went on the streets to riot and there was no way that it was going to hurt them. It would make their land value increase; it would have made it much easier to develop. It would have been good for everybody'.*

*'I think everyone knows that it would have been a good thing, but the government has to take into consideration, or appear to take into consideration, these complaints, whether they seem silly or not'.*

Even though there was an attempt to consolidate the local inhabitants of Sardinal, the conflicts persisted.

*'The people of Sardinal said we want new infrastructure and water distribution in our town. The developers showed a million bucks or more, and said ok, we are going to run new pipes to all your homes, they did all that, but the people of Sardinal said: we are still not going to support your water project.'*

All of the interviewed real estate developers, while describing the water conflicts, mentioned that the industry has suffered from these conflicts. One of the interviewees explained that the local community has considerable power within this situation considering that the project was put on hold due to their actions.

*'It has caused a lot of loss in tourism. There's around a 1000 condominiums around here that have been affected and would have probably moved forward and billions of dollars probably would have been spent in this area if they could have been assured that they could have had water.'*

*'It is affected the growth here. A lot of people want to purchase land here and build homes, and as a real estate agent I have to explain to them that it is not an easy process. So my income is affected due to this, and pretty much everyone else's is.'*

*'They shut the water project down. They shut down hundreds of millions of dollars worth of development so they have quite a bit of say.'*

One of the interviewees elaborates on the demonstrations that took place.

*'Last year there was a pretty good size demonstration, when they stopped the cars on the streets, this is when they had a confrontation with the police, contaminated the wells and threatened to burn up the pipes. They have security guards in front of the tank station protecting the tubes; they were going to be the infrastructure for Sardinal's water supply.'*

Two of the real estate agents expressed an understanding towards the opposition from Sardinal.

*'Sardinal feels cheated, ran rough shot over, and nobody likes to be taken advantage of.'*

*'Well, like I said you were not supposed to move forward like things did without doing the necessary studies on the amount of water you can exploit. It has never been done before. So I think it is a good precedent that there is a conflict, so not only the government but also the developers who are doing a master plan or designing what kind of project they are going to build know...to have the facts about how much water can be used, because it is not only about land coverage...it has to go hand by hand'.*

There is a considerable amount of confusion going on concerning the conflicts and the interviewees expressed the necessity for a solution.

*'Well, in this area it has been difficult because of the problems and people being aware and getting influenced, so nobody really knows what's going on. And people are afraid that the developers are getting sick and tired of the water situation and want out. At the same time they have fallen in love with the country so they have mixed feelings about it and this is not good. It needs to be cleared up, for the best or worst; it needs to be cleared up'.*

Now we will turn to the causes of the water conflicts perceived by the real estate developers.

### **3.3.2 Causes of the water conflict**

***Codes: left wing activists, uncontrolled boom, the benefits of tourism, communication, potential solutions, future view***

***Research question: What are the causes of the water conflict?***

#### ***Rebel rousers***

The main cause of the water conflicts perceived by the real estate agents is that an external group or person managed to create opposition within Sardinia to the water project. Here follow four quotes which explain the workings, motives and actions of the external group.

*'There's a concept, rebel rouser, it is somebody who creates a problem so that they can get something they want. I believe, in this situation we have people who have been black mailing, they wanted something and they are getting it, they got the people afraid that*

*their water was going to be stolen and that they were not going to get the benefits, and as soon as people started hearing this they got afraid'.*

*'Some farms in Sardinal that have wells on them, since then they had a group. There was a, I don't know...rumor had it that there was this group from San Jose to blackmail the developers out of a million dollars and they would leave, so they came here to insight the people, get them to riot and get them riled up, little more organized than they were...they got them to turn over police cars, burn the police cars and tank the wells with oil which could have ruined the whole water supply of the whole area if the pumps would have been running'.*

*'The opposition is smart, they go there and tell these uneducated people that you're going to have sand coming out of your fossets and your babies are going to die and these people buy it up, they ship busloads of Nicaraguans in from San Jose to protest, 'cause tico's aren't good at throwing fire bombs, Nicaraguans have been doing that for years, they are good at it'.*

*'They are against the developers and just make a big fuss out of everything. And try to slow them down. So there are two parties that can maybe bring some balance, I don't necessarily think it is bad but it is definitely not ethical the way they do it'.*

### **Uncontrolled boom**

Although the interviewees mentioned the rebel rousers as the main cause of the conflicts, there was a wider context painted which helps to explain why these rebel rousers booked significant success.

*'I think this country is moving so fast, they haven't really figured out how to get things to work. It's work in progress, I think that's where the problem comes from'.*

A lack of control and corruption were also mentioned.

*'In my opinion they need to change the way they control it, because they are standing short, there is not enough control over what is going on and there is a lot of corruption as well'.*

*'Some get away with it, some have started construction and building without any permits. Which is outrageous but it happens'.*

All of the interviewed real estate developers explained that this area has been through a boom and question whether this type of growth is sustainable. Property values skyrocketed and there was an influx of foreigners.

*'Before they were growing freakishly fast, some people may say too fast. But you know the property value increased by 25/35% per year, which is quite substantial and who knows how long that could have been sustained anyway'.*

*I: Ok, so now it is on hold but prior to that was is very aggressive?*

*R: Yeah, the growth was very aggressive.*

*I: And would you consider it sustainable?*

*R: No. Absolutely not.*

*I: Could you elaborate a little bit?*

*R: Well, I mean you can only build so many condos'.*

*'We had a very slow start maybe ten years ago, when I really wasn't working it was very slow, but in the last, I don't know, four... around four or five years we had a real estate boom. It slowed down since then but it boomed: I mean the property values went up, houses were being constructed and it was a...it was quite an influx of all different nationalities'.*

The high property values are mentioned as a part of the frustration among the locals.

*'R: Maybe some people are upset with the real estate because they can't afford to buy which would be a fair statement.*

*I: Quite a few people sold their property...*

*R: They maybe sold it too early which might cause...that could probably be a part of it as well'.*

There have been several triggers for the interest in Costa Rica.

*'There's an international airport and they have very good medicine in Costa Rica, it's a very comfortable place to live, it offers so many things. People in Canada and the States, especially now that they are getting older and people lost 30/40/50% and now they maybe cannot afford to live in the US anymore. So Costa Rica, Coco and other beach towns provide a way to live less expensively and still live very, very well'.*

The economic crisis is felt in this area as the prices and sales dropped. A lot of the real estate companies shut down or relocated and investments froze.

*'But I think it's possible and necessary, it can help the country. We definitely want to attract investment to our country, foreign investment and we'll see what happens. These days there is no investment, if it stays like this it will stay green'.*

*'R: I would say around 50% of the real estate agents are gone. They've gone somewhere else.*

*I: That's quite substantial. Within a matter of a year?*

*R: About 2 years, one of the developers, one of the owners of Ladera he was going to print out a t-shirt for me saying: 'real estate agent: a rare species'.*

One of the real estate agents places the dropping property values in a wider context.

*'It could be that in some cases the property values dropped by about 20/25% last year. Which seems very scary if they wouldn't have been growing by 25/35% a year, so if you look at it in the context of that, then they only really took it a step backwards'.*

### ***The benefits of tourism?***

Considering that a lack of benefits from the tourist industry was often mentioned by the interviewed local inhabitants, I was very curious to hear what the real estate agents had to say about it. It was impossible to get concrete information about the actual amount of jobs created by the tourist sector, however there was a general

understanding that tourism is good for the locals because it has created employment, provided schools and brought donations. Also, as mentioned before, the water project itself is considered as beneficial for the local inhabitants.

*'It benefits the people to have work done, and to have construction and to have things built and have maintenance to go on for the rest of their lives. It creates jobs for these people and they need jobs.'*

*'I: Ok. And do you think there are any other economic benefits that the locals might enjoy due to the growth of residential tourism?'*

*R: Education probably, the developers built some schools, they have donated some computers, the gringos go snip and clip all the dogs, there's a group of dog castrators running around here, I don't know if that helps the communities but it keeps the streets cleaner...and English classes and things like that.*

*I: Alright. And how many locals do you think are employed in the tourist industry, or the real estate industry?'*

*R: I have no idea.'*

*'But I think development is good for the country and it should happen, it provides jobs and it permits people to grow in their lives and move forward.'*

### **Communication**

During the interviews it became clear that there are communication barriers. There is a lack of English among the locals, and a lack of Spanish among the foreigners. The consequences of the mentioned communication barriers are twofold; one the one hand it is difficult for the locals to get a job due to a lack of English, and the potential communication between the developers and the locals, which could provide understanding and negotiation possibilities, is hindered due to a lack of Spanish and English.

*'R: I think that is the one aspect that is lacking, and I think there should be local people here in the real estate. But unfortunately there are not enough local people in a pool that*

*speak English and Spanish.*

*I: So you think that is the gap?*

*R: That is the gap, right there.*

*I: And in the tourist industry more generally speaking?*

*R: The tourist industry, once again they need to speak English. If there are people who speak English then they are working in the real estate. There are Costa Ricans working in the real estate and tourist industry, but for some reason this region is lacking in their bilingual society.*

*I: Do you think the lack of English is due to a lack of motivation, or lack of finance to get some English classes?*

*R: I think it is a lack of money, and English is not an easy language’.*

*‘They have meetings and sometimes the developers are not allowed into the meetings, they have the police keep them out, which I find kind of strange. But I haven’t been to any meetings, my Spanish isn’t good enough to keep up with all the screaming that carries on in these meetings. I would find it odd if they would have a meeting and keep the developers out’.*

The following section will outline the proposed solutions and will end with an idea of what the future of this region will look like according to the interviewees.

### **3.3.3 Potential solutions**

***Research question: What are the potential solutions for the water conflict according to the real estate agents?***

Several solutions were proposed by the real estate agents and they can be categorized as follows: technology, communication, job provision and education.

#### ***Technology***

Several different technological solutions were proposed including desalination, capturing water during the raining season and redirecting the water that gets dumped into the ocean.

*'You can produce drinkable water from the ocean'.*

*'They have so much water here in October, if they would find a way to tap it, they would never ever fight over water again'.*

*'It's the distribution, if you drive over the highway to San Jose, you will drive over canals, irrigation canals from a couple of mountains and I read an article, I don't know if the numbers are accurate but it said that 75% of the water gets dumped into the Tempisque river which in turn goes into the ocean. Well you could take that water and bring it to the beaches as opposed to the other options'.*

### ***Communication & job provision***

Another proposed solution was for the developers to reach out to local communities and get more involved. There is an awareness that creating (more) jobs might ease the situation.

*'Yeah, and one thing, like I said, the developers need to reach out and you know what, if there is no water then we don't make any money. A 300 million dollar building is worthless without water'.*

*'But there is obviously a huge communication problem between the developers and the people. We need to tell them that we will create good jobs, or better jobs'.*

*'Well right now it is a difficult situation for everybody for locals and developers, but if things improve then the developers have the potential capacity to improve things. So I think all developers should get involved with the communities and help the community to improve itself'.*

*'I think they should get the three cities together, where the Coco and Ocotol people hire the workers from Sardinal'.*

## **Education**

Educating the locals about sustainable living and the consequences of the water project were also mentioned as a potential solution.

*T: And do you think that education should be provided by the government?*

*R: I think education should be taken from anywhere. The developers, tourism whatever has funds to educate people, to make people aware of the ecological matters, the consequences of not being green, then maybe that will switch people's minds into a more sustainable living'.*

*'The locals need to be educated, you got to give them an education and tell them that sand will not come out of their fossets. That is physically impossible'.*

All of the interviewed real estate agents were positive about the future in this region concerning tourism development and see a lot of potential growth, but express the need and possibility for growth in a more controlled manner.

*T: Ok, how do you see the future of the tourist industry in these coastal areas in Guanacaste?*

*R: Positive, I think it's great, I think things will change and proper development should happen, the rules and regulations will be improved in the future. I don't know how long it's going to take. But I think that, and you are going to hear this from a lot of people, but I think the crisis has slowed things down and made people aware of a lot of things so it hopefully has brought a lot of thinking, in developers and Costa Ricans and foreigners. It is time to be conscious and make a change, so I am positive, I hope things turn in the best way'.*

### **3.4 Results stakeholder III – the government**

This chapter is different from the others due to the fact that the government is seen as a stakeholder, however should be subdivided due to the various institutions and roles. Unfortunately I did not manage to get a hold of the ICT (Instituto Costarricense de Turismo) and if I would have then they would have also been represented within this

chapter. Other sub-stakeholders could have been included such as the MINAET, SENARA and SETENA but due to time limitations they are absent.

### **3.4.1 Acueductos y Alcantarrillados**

The director of the AyA in Sardinal describes the water conflicts in terms of two clashing streams of thought. One stream of thought being that water is a factor for development, and the other that the water should stay in the hands of the local population. These conflicts have existed for approximately two and a half years and are not typical for this region. Reconciliation between the two groups is necessary and has already started in the form of correcting the situation by conducting the necessary technical studies (done by the AyA, MINAET and SENARA) and forming a monitoring group including all actors. The AyA has played an active role in trying to inform the public by sending information, organizing a public activity in which they explained the results of the study (a part of the study still needs to be completed) and tried to gather the leaders within the community. Their doors have been open and will remain open permanently. Now if someone is for or against the water project, then this can be seen as a subjective opinion.

Nobody in Sardinal has been affected by these water conflicts, what has been affected are interests. The main causes of the water conflicts reside in antagonistic ideas concerning development. Even though the antagonists realize that it would generate jobs and development, they will still oppose the project due to their way of thinking. He doesn't see a link between the growth in tourism and the water conflicts. Even with a 'plan regulador' which they are working on right now, a certain group will still resist development.

*'The problem with the water is not about the relative quantity available. Why? Because the study indicates that there is water. The problem is different; it is a matter of concepts. This affair is a problem concerning the criteria of development. Development, not water. So the problem is criteria concerning development; in which form the area should develop. They*

*think that the way in which they can stop development is by saying that there isn't enough water. Or that they will not permit the use of water'.<sup>42</sup>*

One of the problems faced by the institutions related to development is that there is a lack of integration, communication and articulation within and among the institutions due to a lack of capacity.

*'Without cacao, there is no chocolate'.<sup>43</sup>*

The attitude towards development needs to change; it needs to become more flexible and less invasive for the local population to feel more comfortable with development.

*'So their opinions are a little centralized concerning development and these need to change gradually. And they need to be more flexible. The way the state is, with a different attitude concerning development, is the way in which the communities will feel more comfortable with this development. That the development will not be invasive which is, I believe, one of the concerns here. Invasion is a theme here, but the invasion is not the tourists, nor the water consumption, it is not a result of human activities. That which is invasive is the type of development. This is what needs to be zoomed in to'.<sup>44</sup>*

This type of 'invasion', which could also be considered as a form of neo-colonization, is an important point as it shows how the original inhabitants have become increasingly dependent on countries such as the United States of America which is also a source of their frustration. He does not think that the conflicts have affected tourism, but that they have limited the capacity to absorb tourism. He claims that there has been a wave of urbanization, however, he does not consider that he is in the position to claim

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<sup>42</sup> Translation, original text: El problema con el agua no es con la cantidad relativo. Porque? Porque el estudio dice que sí, hay agua. El problema es otra cosa. Es un asunto de conceptos. El asunto es un problema de criterios con respecto al desarrollo. Al desarrollo, no al agua. Entonces el problema es un criterio con respecto al desarrollo, a la forma que debe desarrollarse la zona. Entonces, ellos creen que la forma de parar el desarrollo es decir que no hay agua. O no permitimos el uso de agua...

<sup>43</sup> Translation, original text: Sin cacao, no hay chocolate.

<sup>44</sup> Translation, original text: Entonces, ya aquellos opiniones son un poco centralizadas, un poco encocados en el desarrollo y gradualmente tienen que cambiar. Y se tienen que flexibilizar. El estado como tal, con una actitud diferente en función del desarrollo, va a ser también que las localidades se sientan más cómodas con este desarrollo. Que no sea un desarrollo invasivo, que creo que es parte del argumento de aquí. Aquí el invasivo es una tema, el invasivo no son las turistas, aquí el invasivo no es el consumo del agua, aquí lo invasivo no es un resultado de los actividades humanos. Aquí lo invasivo en la forma que se está planteando el desarrollo. Es esto es lo que tiene que ver con lupa.

that there is overpopulation because this has not been defined yet. He foresees two solutions for the conflicts:

*'Solutions for the water conflicts...the solution is that they conduct technical studies which support the decisions, and that they construct regulations for development'.<sup>45</sup>*

### **3.4.2 The municipality of Carrillo**

Mr. Abarca (a tropical biologist in charge of all environmental aspects of this district) starts to explain the reasons of the water conflicts by describing the limited supply of water of this province which is caused by the type of ground and the meager amount of precipitation: the water reserve is very limited. Hereafter he explains that this province is one of the most beautiful which is why foreign investors are interested in building condos and hotels; they are keen on investing in the province. However, the limited planning of development in this province has had a negative effect on the hydrological resources.

*'There has been a conflict between the village and the investors because they have not taken the actual hydrological part into consideration'.<sup>46</sup>*

*'Like I told you in the beginning, the control, the supervision has not been good'.<sup>47</sup>*

The investors put forth developments that made the village to think that they will be left without water. Besides this there was a lack of scientific information and they should have informed the village to let them know what was really going on.

*I: What is the main cause of the water conflict in your opinion?*

*R: A lack of information. First of all, the studies are not complete, studies still need to be done on the country side; a geological and hydrological study needs to be conducted in order to scientifically determine what the real state of the aquifer is...this is number one. And another thing is that the people have not been willing to read about it'.<sup>48</sup>*

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<sup>45</sup> Translation, original text: Soluciones para los conflictos del agua...la solución es en que se hagan estudios técnicos que soporten las decisiones. Que se hagan regulaciones para el desarrollo.

<sup>46</sup> Translation, original text: Ha habido un conflicto entre el pueblo y los inversionistas porque no se han tomado en cuenta el concepto de la parte hídrica actualmente.

<sup>47</sup> Translation, original text: Como le dije en principio, el control, la supervisión no ha sido bueno.

<sup>48</sup> Translation, original text: I: Cual es en su opinión la causa central del conflicto del agua? R: Falta información. Al primero, los estudios no están completos, falta hacer más estudios de campo, falta un estudio geológico, hidrogeológico para determinar científicamente cual es el estado real del acuífero...esto primero. Y también muchas personas no han querido leer.

A repeated point of concern is that the local inhabitants do not like information which makes it easier to manipulate them. The municipality has tried to communicate with the village and their doors have been open, and are open to provide information.

He sees differences in the impacts of tourism as some hotels and companies try their best to be sustainable, while others do not seem to care. Some of the negative effects of tourism are the destruction of forests and several employers place a downward pressure on wages by hiring Nicaraguan immigrants who lack social security and are willing to work for a meager compensation. Momentarily it is impossible to say which type of tourism is least sustainable due to a lack of information. He expresses the need for research concerning the amount of tourists visiting the area, how long they are staying for and how much water they need in order to avoid problems which have occurred and could occur in the future.

Although at national level there is a proper sustainable development plan (lots of projects and programs concerning water, biodiversity, solid waste and recycling have been initiated), he is faced with a lot of challenges in which he stands alone. The institutional setting concerning water is quite complicated and this has also created problems.

*I: There are quite a few institutions governing water, do you think that the system is quite complicated?*

*R: Of course, because, let's say, the AyA has one bit of information, and the water department, SENARA and SETENA all have different information which makes it difficult to have an oversight of all the information. There should be only one institution, nevertheless, there are four or more.*

*I: Yes, because it is not very clear who holds the responsibility and power.*

*R: This is the difficulty, because when a problem rises, everyone blames another institution. And who is to blame? Everyone, but who is responsible? None, no one knows anything'.<sup>49</sup>*

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<sup>49</sup> Translation, original text: I: Hay bastante instituciones del agua, usted piensa que hay bastante complicación en la sistema? R: Claro, porque digamos, por ejemplo, AyA tiene una información, departamento de aguas tiene otra información, SENARA tiene otra información, SETENA tiene otra información, entonces es muy difícil ver a toda información, debería ser solo una institución, sin embargo hay cuatro o más. I: Sí, porque ahora no es muy claro quién tiene la responsabilidad, y quien tiene el poder. R: Esto es el problema, cuando hay un problema, todos dicen 'yo no fui', 'fue de Aguas', y ellos dicen 'yo no

Momentarily they are waiting for the results of the final study which is conducted by all the relevant institutions (AyA, MINAET, SETENA, SENARA and the municipality) in order to determine how much water could be channeled to the coast without posing any threat to the aquifer and the local inhabitants.

### **3.4.3 ASADA Playas del Coco**

The director of the ASADA of Playa del Coco starts off by explaining that they try to remain as neutral as possible; they are not in favor or against anyone. The root of the conflict is that the necessary studies concerning the state of the aquifer were not done prior to starting the project. There were also permissions missing from SENARA, MINAET and the municipality and when these deficiencies were revealed to the public, the problems began. Hereafter a trusteeship was formed in order to try to regain face however these attempts came too late and the situation exploded. There were many questions coming from the community, however, there were no answers. The municipality did not have the necessary capacity to deal with this theme. A monitoring study was initiated a year ago to try to find out what the state of the aquifer was and whether the intended amount of water to be extracted would not threaten the local population. Although they found out what the capacity of the aquifer is indicating no future threat, an external group managed to agitate the situation. These radicals unfortunately gained more support from universities and the media than the ones who were willing to peacefully negotiate an agreement. He thinks that the support was strong due to the sensational news it creates and claims that the agitators are actually not interested in the water theme because then they would also be just as concerned about deforestation.

*'A small group of hot heads who are more radical than this small group from Sardinal, but are not from Sardinal and do not live in Sardinal, came to infect them and put them against development without giving them another option'.<sup>50</sup>*

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fui', 'fue SENARA', y SENARA dice 'fue SETENA' y se dan una vuelta y quien tiene la culpa? Todos tienen la culpa, pero quien es responsable? Ninguna, nadie sabe nada.

<sup>50</sup> Translation, original text: Un pequeño grupo de cabezas calientes, que no son de Sardinal y no viven en Sardinal y que son más radicales que este pequeño grupo. Han venido a enfermarlos y ponerlos en contra el desarrollo sin darlos otra opción.

Concerning the benefits that (residential) tourism brings with it (he was the first to give me concrete indications in terms of employment and income generation): 2500 people are working at the coastal areas, more than 45% of the inhabitants of Sardinal work in tourism and it generates 63% of the income for the municipality.

#### **3.4.4 ASADA Sardinal**

The interviewee (the director of the ASADA of Sardinal) begins to explain the reasons behind the conflict by mentioning a group of about fifteen agitators. The ones opposing the project did not want to believe the government nor its studies and so they brought in left-wing syndicates from San Jose and San Ramon, and the university (which he also claims to be left-wing). However he continues with his perceived reasons by explaining to me that Guanacaste is very dry even though they say that the aquifer is very rich. Other reasons fuelling the conflict according to him were a lack of community participation, a lack of information and the construction of illegal wells, with AyA's machinery, on private property without the proper permissions.

He is not against the project but against the amount of water that they intended to extract; it needs to be rationed and not used for gardens and activities alike. Tourism can be considered as one of the causes as well and mentions that due to the conflict, companies in Playa del Coco refuse to provide jobs to the inhabitants of Sardinal. However, later on in the interview he claims that tourism provides most of the inhabitants with work. As a solution he proposes bringing water from elsewhere or investing in a desalination project.

## **4 Conclusions**

One of the most surprising discoveries during this research was that the water conflict was not necessarily ignited by a current scarcity of fresh water resources. Although one could not speak of an abundance of this vital resource in the area, my expectations associated with water conflicts of encountering water related diseases and people waiting for hours in line to get a bit of water were tossed away very soon after making contact with the research area. The following statement therefore makes a lot of sense in this case: 'Water-related tensions can occur when water is scarce, but even when the resource is not severely limited, its allocation and use can still be hotly contested' (OECD, 2005). If not current scarcity, then why was the allocation and use of the water underneath Sardinal such an explosive issue?

Most respondents during the questionnaire claimed that there is very little water available for agriculture and I consider this, in combination with the perceived lack of secure jobs being created through tourism, as one of the main causes of the conflicts. Many have had to reintegrate into society, learn a new language and try to understand the culture in order to get a relatively permanent/secure job. If they do not succeed in finding a job in the tourist sector, then what are the alternatives? It seems to have become more difficult to tap into the most 'natural' alternative in this region: agriculture, due to the tendencies towards privatization and the incursion of (residential) tourism in this area. As agriculture depends heavily on land and water, and many claimed the price of these capitals has increased, then it is questionable whether this alternative is realistic. Due to these changes some groups have become more vulnerable as it has become more difficult to pay for their monthly water bill and other essentials of their livelihoods. People living in the peripheries still have the option to refuse water from the state provider and rely on water from a well instead, however, evidence suggests that the wells are drying up. There was a strong fear that the proposed project would deteriorate the availability of water, and this fear turned into outright frustration due to a lack of possibilities to participate and a lack of certainty which could have been derived from adequate studies about the aquifer's capacity prior to giving the go-ahead.

This leads us to the antagonism felt towards the government which had proliferated over the years and resulted in a violent protest and even the attempt to contaminate several wells which could have jeopardized the entire water system. 'Management decisions formulated without sufficient stakeholder participation often fail to take locally recognized rights and practices into account and, as a result, may lead to instability. This risk is particularly acute where water allocations are suspected to result in a diversion of public resources for private gain, or when water use rights are assigned in an untransparent and possibly corrupt manner' (OECD, 2005). The interests of the local inhabitants were not adequately taken into account, and especially when it comes to water security as an interest, it is clear that this stakeholder should not be forgotten. Their influence is powerful as the organized community reactions paralyzed the project and forced the government to conduct the necessary studies.

Besides this there is a general frustration among the local residents as they have witnessed drastic changes on many fronts without being consulted or openly involved in the transformation. 'Ownership and the cultural landscape in Costa Rica have changed dramatically along the coasts since the 1980s. Most of the best hotels are owned by foreigners, especially Americans and Canadians. US dollars are the main currency, prices are too expensive for Costa Ricans, English is becoming the main language and the predominant culture is alien' (Vargas, E., 2007). This type of development that has occurred smells very much like neo-colonization often associated with 'Third-World' tourism (Mowforth, M. & Munt I., 2003) and this has brought about changes which are challenging, especially for the older generations and for people without enough capital to (re)educate themselves. And even if they would have enough capital to 'reeducate' themselves, the question is whether they actually *want* these changes despite the economic benefits they could gain.

I do not agree with the idea that the rebel rousers were the main cause of the conflict. Their 'success' in aggravating the situation would have never existed unless the local inhabitants were already experiencing discomfort and frustration concerning the developments that had occurred over the past 10-15 years. Therefore we can also reject the proposed conceptual model (page 7) which focuses on jobs created through tourism and a decreasing access to, and availability of fresh water resources as a result of the growth of tourism as the main determinants of the respondent's position towards the

water project. It is far too deterministic and in these cases, a holistic approach needs to be adopted. Complexity theory offers interesting insights into the study of socio-environmental conflicts as it recognizes the vast number of factors and rejects linear thinking. 'At the methodological level, we need to explore how causation works at the interface between the physical/ecological and social worlds. Environment-conflict research brings us face to face with some of the most intractable issues in philosophy of science, specifically whether causal generalizations describing the social world have the same status as those describing the natural world. Because systems in both these domains are fundamentally complex—characterized by huge numbers of components, causal interactions, feedback loops, and nonlinearity—environment-conflict researchers can gain insights from complexity theory' (Homer-Dixon, T., 2000) . In order to find cooperation and consolidation points it is important to look beyond this conflict in terms of water. 'Hauge and Ellingsen (1998), in perhaps the most ambitious test of the effects of environmental variables on conflict, find moderate support for the position that the acute degradation of forest resources, soil, and the per capita availability of fresh water predict the incidence of internal armed conflict. They conclude, however, that economic and social variables tend to have a much larger effect on conflict and overshadow the effects of the environmental variables (de Soysa, 2000)' (Tamas, P., 2001-2003). Besides abnormal drought, there were many other perceived changes including an influx of labor immigrants and (residential) tourists, increasing levels of corruption, a transformation of economic activities and the displacement of local inhabitants. On top of this, the speed in which these changes occurred was fast and as one of the real estate developers claimed, it is perhaps a good precedent that this conflict occurred as it forced the tourist industry and the government to take a moment to reflect on the nature of development that had occurred in this area. He is not alone in his thinking as others have suggested 'that conflict, if properly managed, can lead to new social and institutional arrangements and a more enduring relationship between the parties that leads to consensus, helps reduce isolation, unites individuals and creates mechanisms for the maintenance and/or readjustment of the balance of power' (Coser, 1956, Bingham, 1986).

It is too simplistic to simply claim that (residential) tourism will create jobs and that therefore this strategy should be adopted in order to alleviate poverty. Much more research needs to be carried out concerning the economic effects, the impacts on the

natural resource base, socio-cultural effects and political (in)stabilities which result from the growth in (residential) tourism. Although challenging, the different forms of tourism and their impacts need to be disaggregated and studied separately with a special focus on residential tourism considering that the baby boomers are coming. The growth in residential tourism seems to place heavy demands on land, and therefore on a vast array of elements within people's livelihoods which is why this field should receive more attention within the field of international development studies.

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## **Annex I**

### **Semi-estructuradas entrevistas por las dos comunidades – la primera fase**

#### **Diferentes tipos de preguntas:**

A: Introduction, description of water conflict  
Introducción, la descripción del conflicto acerca de agua

B: Causes, impacts and links  
Causas, impactos y conexiones

C: Economic benefits (residential) tourism  
Beneficios economicos del turismo (residential)

D: Government, communication  
Gobierno, comunicacion

E: (Residential) tourist sector, communication  
El sector turismo (residential), comunicacion

F: Community, improvements, solutions  
Comunidad, mejoras, soluciones

A: How would you describe the water situation in this community?  
Cómo describe la situación acerca del agua (recursos hidricos) en esta comunidad?

A: How would you describe the availability of water in this community?  
Cómo describe la disponibilidad del agua (recursos hidricos) en esta comunidad?

A: How would you describe the water service in this community?  
Cómo describe el sevicio del agua en esta comunidad?

A: I have heard that there are some water conflicts in this area, are you experiencing these in any way? (If yes,) how?  
He oido que hay algunos conflictos acerca del agua en esta region, usted esta sufriendo de estas conflictos en alguna manera? (Si sí,) como?

A: When did the water conflicts begin?  
Los conflictos acerca del agua, cuando empezaron?

A: What does the future look like concerning the service and availability of water in this community?  
Como ve usted el futuro acerca del servicio y disponibilidad del agua en esta comunidad?

B: What do you think are the main causes of the water conflicts?  
Cuales cree usted que son las causas centrales de los conflictos acerca del agua?

B: Have the water conflicts affected the community life? (If yes,) how?  
Piensa usted que los conflictos del agua han afectado la vida de los habitantes en su comunidad? (Si sí,) como?

B: What are your main concerns about the service and availability of water in your community?

Que son las preocupaciones principales de usted acerca del servicio y disponibilidad del agua en su comunidad?

B: Do you think the growth in (residential) tourism plays a role in the water conflicts? (If yes,) how?

Piensa usted que el crecimiento del turismo (residencial) es una causa de los conflictos acerca del agua? (Si sí,) como?

B: Do you see a difference in the impact between residential tourism and tourism?

Usted ve una diferencia de los impactos entre turismo residencial y turismo?

B: Does the growth in (residential) tourism affect the community in any other kind of ways?

Usted piensa que el crecimiento del turismo (residencial) afecta a la comunidad en otras maneras?

C: How many people are working in the (residential) tourist sector who live in this community?

Cuántos habitantes de esta comunidad trabajan en el sector turismo (residencial)?

C: Do you enjoy any economic benefits from the (residential) tourist sector? (If yes,) how?

Usted aprovecha del sector turismo (residencial) en cualquier manera económica? (Si sí,) como?

D: Do the people in the community feel like they are the priority of the government concerning the availability of water?

Los habitantes en su comunidad se sienten que son la prioridad acerca de la disponibilidad del agua para el gobierno?

D: Are there any ways the community can communicate their concerns about the water conflicts to the government?

Hay maneras de comunicarse con el gobierno sobre los conflictos acerca de agua?

D: Has the community ever tried to communicate their concerns about the water conflicts to the government? (If yes,) did it help?

Ha habido comunicación entre la comunidad y el gobierno sobre los conflictos acerca de agua? (Si sí,) en que ayudo?

E: Are there any ways the community can communicate their concerns about the water conflicts to the tourist sector?

Hay maneras de comunicarse con el sector turístico sobre los conflictos acerca de agua?

E: Has the community ever tried to communicate their concerns about the water conflicts to the tourist sector? (If yes,) did it help?

Ha habido comunicación entre la comunidad y el sector turístico sobre los conflictos acerca de agua? (Si sí,) en que ayudo?

F: Has the community tried to solve the issues? If yes, how?

La comunidad ha intentado resolver las problemas/conflictos acerca de agua? Si sí, como?

F: Is there any kind of organization within the community with the intention to solve the water conflicts?

Hay organizaciones con intenciones de resolver las problemas/conflictos acerca de agua dentro de la comunidad ?

F: What are the main obstacles which make it difficult to solve the water conflicts?

Quales son los obstáculos principales que hay para resolver los conflictos acerca de agua?

F: Have there been any improvements concerning the water conflicts in the past few years?

Han habido mejoras en años pasados acerca de los conflictos del agua?

F: Are there any solutions you foresee?

Usted preve algunas soluciones?

F: What would be the main necessities in order to resolve the water conflicts?

Quales son las necesidades (principales) para resolver los conflictos acerca de agua?

F: Tiene interes de formar parte de alguna organizacion acerca de agua en su comunidad? (pregunta de Kattia)

F: Do you think most people in this community would agree with you?

Piensa usted que la mayoría de los habitantes en su comunidad estan de acuerdo con su ideas acerca de los conflictos acerca de agua?

X: Usted tiene preguntas (o sugerencias)?

## **Annex II**

### **Questionnaire**

**1. Edad:** \_\_\_\_\_

**2. Género:**     1 mujer            2 hombre

**3. ¿Cual es su país de origen?**

1 Costa Rica            2 Nicaragua            3 otro país: \_\_\_\_\_

**4. ¿Si su país de origen no es Costa Rica, cuanto tiempo tiene viviendo en Costa Rica? \_\_\_\_\_**

**5. ¿En donde vive usted?**

1 Sardinal            2 el Carpintero    3 Nicomedes

**6. ¿Cuanto tiempo tiene de vivir en esta zona? \_\_\_\_\_**

**7. ¿Cuanto tiempo más pretende quedarse en esta zona? \_\_\_\_\_**

**8. ¿Cuantos hijos/hijas tiene usted? \_\_\_\_\_**

**9. ¿Cuantos personas viven en su casa? \_\_\_\_\_**

**10. ¿Cual es su fuente principal de ingresos (turismo incluye construcción con fines turísticos)?**

1 turismo            2 agricultura            3 desempleado    4 otro, especifique: \_\_\_\_\_

**11. ¿Cuanto tiempo tiene trabajando en esa area (si usted ha escojido la opción 'desempleado' en la pregunta 9, sigue a pregunta 14)? \_\_\_\_\_**

**12. ¿Usted tiene una fuente de ingresos estable?**

1 muy estable    2 estable    3 más o menos    4 no estable    5 muy poco estable

**13. ¿Cuanto dinero gana usted por mes? \_\_\_\_\_**

**14. ¿Alguien en su casa ha perdido su trabajo recientemente?**

1 no                    2 sí

**15. ¿Alguien en su casa ha experimentado un decrecimiento en actividades económicas recientemente?**

1 no                    2 sí

**16. ¿Cual es su fuente principal del agua?**

1 AyA    2 pozo artesanal    3 agua embotellada    4 otro, especifique: \_\_\_\_\_

**17. ¿Usted tiene otras fuentes del agua? Si dice que sí, escoja (usted puede escoger más que uno).**

1 AyA    2 pozo artesanal    3 agua embotellada    4 otro, especifique: \_\_\_\_\_

**18. ¿En los ultimos 5 años la disponibilidad del agua ha disminuido en alguno de los siguientes usos del agua (usted puede escoger más que uno)?**

1 beber    2 limpiar    3 cocinar    4 agricultura    5 no lo sé    6 otro, especifique: \_\_\_\_\_

**19. ¿Como esta la disponibilidad del agua para beber ahora?**

1 más que bastante    2 bastante    3 más o menos    4 no bastante    5 muy poco

**20. ¿Como esta la disponibilidad del agua para limpiar ahora?**

1 más que bastante    2 bastante    3 más o menos    4 no bastante    5 muy poco

**21. ¿Como esta la disponibilidad del agua para cocinar ahora?**

1 más que bastante    2 bastante    3 más o menos    4 no bastante    5 muy poco

**22. ¿Como esta la disponibilidad del agua para agricultura ahora?**

1 más que bastante    2 bastante    3 más o menos    4 no bastante    5 muy poco    6 no lo sé

**23. ¿Si usted ha escogido la opción 'otro' en la pregunta 18, como esta la disponibilidad de esto tipo uso del agua ahora (si usted no ha escogido la opción 'otro' en la pregunta 18, no tiene que responder a esta pregunta)?**

1 más que bastante    2 bastante    3 más o menos    4 no bastante    5 muy poco

**24. ¿Cuantas horas usted recibe agua del AyA por día? \_\_\_\_\_**

**25. ¿Usted piensa que la disponibilidad de alguno de los siguientes usos del agua va a disminuir en los 10 años que vienen (usted puede escojer más que uno)?**

1 beber    2 limpiar    3 cocinar    4 agricultura    5 no lo sé    6 otro, especifique: \_\_\_\_\_

**26. ¿Como es la situación de su pozo?**

1 muy seco    2 seco    3 más o menos    4 bastante lleno    5 lleno    6 no tengo pozo

**27. ¿Usted ayuda sus vecinos cuando ellos no tienen bastante agua?**

1 sí    2 no    3 siempre tienen bastante agua

**28. ¿Usted recibe ayuda de sus vecinos cuando no tiene bastante agua?**

1 sí    2 no    3 siempre tengo bastante agua

**29. ¿Cuanto paga usted por agua al mes? \_\_\_\_\_**

**30. ¿Para usted el precio del agua ha subido durante de los ultimos 5 años?**

1 sí, mucho    2 sí, bastante    3 sí, un poco    4 no, el precio se queda igual

5 no, el precio ha disminuido    6 no lo sé

**31. Hay suficiente agua, pero es difícil obtenerla. ¿Usted esta de acuerdo con lo que acaba de leer?**

1 totalmente de acuerdo      2 de acuerdo      3 indeciso      4 desacuerdo      5 totalmente desacuerdo

**32. La calidad del agua que tengo es buena. ¿Usted esta de acuerdo con lo que acaba de leer?**

1 totalmente de acuerdo      2 de acuerdo      3 indeciso      4 desacuerdo      5 totalmente desacuerdo

**33. El servicio que el gobierno brinda con respecto al servicio del agua es bueno. ¿Usted esta de acuerdo con lo que acaba de leer?**

1 totalmente de acuerdo      2 de acuerdo      3 indeciso      4 desacuerdo      5 totalmente desacuerdo

**34. ¿Como describiria usted el conflicto del agua?**

1 muy mal      2 mal      3 más o menos      4 no esta mal      5 no existe

**35. ¿Cual es su posición acerca de que el gobierno quiere llevar mas agua a Playas del Coco?**

1 contra      2 neutral      3 pro      4 otro, especifique: \_\_\_\_\_

**36. ¿En su opinión, cual es la causa principal de conflicto del agua (si usted piensa que no hay un conflicto del agua, no tiene que responder a esta pregunta y puede seguir a la pregunta 40)?**

1 mal manejo del agua	2 el agua es demasiado cara
3 sequía	4 corrupción en el gobierno
5 miedo a que no haya suficiente agua en el futuro	6 el sector turismo crece demasiado rápido
7 falta comunicación	8 sobrepoblación
9 a cantidad del agua usada por turismo es demasiado	10 falta investigación acerca de la cantidad agua disponible
11 deforestación	12 otro, especifique _____



**43. ¿Usted se comunica con unas de las siguientes personas acerca de conflicto del agua? Si usted piensa que no hay un conflicto del agua, no tiene que responder a esta pregunta y puede seguir a la pregunta 45. Usted puede escoger más de un grupo. Por favor, señale la calidad de la comunicación con el grupo que usted ha escogido. Si usted no tiene comunicación con un grupo, dejelo vacío.**

1 habitantes de mi pueblo	1 muy buena	2 buena	3 más o menos	4 mala	5 muy mala
2 personas de la Municipalidad de Carrillo	1 muy buena	2 buena	3 más o menos	4 mala	5 muy mala
3 personas en el sector turístico	1 muy buena	2 buena	3 más o menos	4 mala	5 muy mala
4 personas del AyA	1 muy buena	2 buena	3 más o menos	4 mala	5 muy mala
5 personas del MINAET	1 muy buena	2 buena	3 más o menos	4 mala	5 muy mala
6 personas del SENARA	1 muy buena	2 buena	3 más o menos	4 mala	5 muy mala
7 personas del SETENA	1 muy buena	2 buena	3 más o menos	4 mala	5 muy mala
8 personas de la Universidad de Costa Rica	1 muy buena	2 buena	3 más o menos	4 mala	5 muy mala
9 personas de la prensa	1 muy buena	2 buena	3 más o menos	4 mala	5 muy mala
10 personas de la Asociación de Desarrollo	1 muy buena	2 buena	3 más o menos	4 mala	5 muy mala
11 turistas	1 muy buena	2 buena	3 más o menos	4 mala	5 muy mala
12 otro, especifique: _____	1 muy buena	2 buena	3 más o menos	4 mala	5 muy mala

**44. ¿Usted piensa que la comunicación ha mejorado la situación acerca de conflicto del agua?**

1 totalmente de acuerdo      2 de acuerdo      3 indeciso      4 desacuerdo      5 totalmente desacuerdo

**45. ¿La comunidad esta bien organizada. ¿Usted esta de acuerdo con lo que acaba de leer?**

1 totalmente de acuerdo      2 de acuerdo      3 indeciso      4 desacuerdo      5 totalmente desacuerdo

## **Annex III**

### **Semi-structured interview real estate sector**

A: Introduction, trends, sustainability

B: water conflicts/communities

C: economic benefits/ownership

D: government

F: economic crisis

A: How long have you been in the business?

(A: Are you into real estate or the tourist industry more generally?)

A: How would you describe the development of the tourist industry in this area?

A: Do you think the current growth in (residential) tourism, and the manner in which it's growing, is sustainable?

B: Are you aware of any water conflicts in surrounding villages?

B: Do you perceive any link with the growth of (residential) tourism and the water conflicts?

B: Do you perceive any difference between residential tourism and tourism in general in terms of negative impact on the communities?

B: Have there been any protests coming from the affected communities due to the growth in the tourist industry?

B: Is there any connection with the surrounding communities?

B: Have there been/are there any attempts to improve the situation of the surrounding communities in terms of availability of water resources?

B: Do the tourists have any sort of awareness concerning the water conflicts?

B: How much water do the tourists consume compared to the locals?

B: Is there any way the (residential) tourist sector could improve the situation of the local communities in terms of availability of water resources?

B: Is there any way the tourists could make it easier for the tourist sector to take more consideration in the needs of the local communities in terms of availability of water resources?

B: Do you think that the surrounding communities have enough say in what goes on in the tourist industry?

B: Do you think they should have a say in what goes on in the tourist sector?

C: How much money does the (residential) tourist sector generate in the local communities?

C: What kind of economic benefits does the (residential) tourist sector generate in the surrounding local communities?

C: How many local people are employed in the tourist industry?

C: How many foreign people are employed in the tourist industry?

C: The ownership of the tourist industry, if you would have to give a percentage in terms of foreign ownership and local ownership, then how much would this be?

D: Is there any way the government puts pressure on the tourist sector to take local communities into consideration?

D: Does the government make it difficult to get into the tourist business in this area?

D: How hard is it to get the appropriate licenses and concessions?

D: How do you think, in general, that the natural resource management works in Costa Rica?

D: Is there anything you would change in the manner that the government manages the natural resources?

D: Are there any measures concerning sustainability that the Costa Rican government forces upon you as an entrepreneur?

F: What impact has the economic crisis had on the tourist industry?

F: Are there significantly less tourists since two/three years?

F: Have building projects stopped due to a lack of funding resulting from the economic crisis?

Do you have any questions?

## **Annex IV**

### **Semi-structured interview government**

I have heard that there are some tensions concerning water resources in this area, is this true?

He oído que hay algunas tensiones acerca del agua en esta región, ¿verdad que sí?

Would you call these tensions water conflicts? (If yes, why, if not, why not.)

Usted considera que las tensiones se pueden llamar conflictos acerca del agua?

How would you describe the water conflicts?

¿Cómo describe usted los conflictos acerca del agua en Guanacaste?

Los conflictos acerca del agua son similares/parecidos en Guanacaste?/Los conflictos acerca del agua en Sardinal son típicos en esta región?

Were there any riots which emerged from the tension surrounding the decreasing availability of water resources?

¿Han sido protestas acerca de los conflictos del agua?

Could you describe these riots to me?

Usted puede describir cómo las protestas fueron?

Do you expect any other riots in the near future?

Usted cree que vaya a haber más protestas?

Has the situation gotten any better since the past years?

¿Han habido mejoras en años pasados acerca de los conflictos del agua?

How many local people would you say are negatively affected by the water conflicts?

¿Cuántas personas locales usted cree que son afectadas por causa de los conflictos del agua?

What are the main causes of the water conflicts?

¿Cuáles cree usted que son las causas centrales de los conflictos acerca del agua?

Do you think that the growth of tourism plays a role in the water conflicts?

¿Piensa usted que el crecimiento del turismo (residencial) es una causa de los conflictos acerca del agua? (Si sí,) ¿cómo?

Do you think that the growth of tourism has affected local people in any other ways?

¿Piensa usted que el crecimiento del turismo (residencial) ha afectado a las personas locales en otras maneras?

Do you perceive any difference between the growth of tourism and residential tourism in terms of impact on local people?

Usted ve una diferencia entre el crecimiento del turismo residencial y del turismo en cuanto al impacto de las personas locales?

Do the water conflicts affect the tourist industry?  
Los conflictos acerca del agua han afectado el sector turístico?

I have heard that no more water permits are being granted due to the water conflicts, is this true?

He oído que el gobierno no concede más los permisos para el agua al sector turístico en cuanto a los conflictos del agua, verdad que sí?

Do you have any idea when the water permits will be available again?  
Usted sabe cuando los permisos para el agua van a ser disponibles otra vez?

Do you think that Guanacaste has experienced a wave of urbanization over the past 15 years? (Do you have any concrete information/data about immigration?)  
Usted piensa que en Guanacaste ha sido una 'ola' de urbanización entre los 15 años pasados?

Do you foresee any solutions for the water conflicts?  
Usted prevé algunas soluciones para los conflictos del agua?

Do you think that the government could play a role in the solution? (If yes, why, if not, why not?)  
Usted piensa que el gobierno puede ser una parte de la solución?

Has there been any communication with the affected villages/towns such as Sardinal?  
Ha habido comunicación entre las comunidades afectadas y el gobierno sobre los conflictos acerca de agua? (Si sí,) en que ayuda?

Has there been any communication with the tourist industry concerning the water conflicts?  
Ha habido comunicación entre el gobierno y el sector turístico sobre los conflictos acerca de agua?

Have there been any studies about the availability of water resources in this area?  
Han sido algunos estudios acerca de la disponibilidad de los recursos hídricos en esta región?

How (if they do) do you calculate the availability of water resources?  
Como se puede calcular la disponibilidad de los recursos hídricos?

Cómo ve usted el futuro acerca del servicio y disponibilidad del agua en esta región?

Usted tiene preguntas o sugerencias?

