

Towards Communal Property Rights to solve Nimby Problems: The Case Study of the Regional Landfill of San Pedro (Colombia)

Alexander Perez Carmona¹

Abstract

This study analyzes the dynamics of a social conflict in the Colombian municipality of San Pedro due an operating regional Landfill. It also lays out a proposal for an institutional change in the regulative strategy for the siting of landfills based on the granting of communal property rights. It is argued that to improve the bargaining power of potential host communities vis-à-vis the project developer, a radical change in the participative possibilities of both, potential host communities and the environmental bureaucracies are needed. The case study's analytical strategy was used, thus providing rival explanations on relevant issues such as the performance of the company and the environmental bureaucracies. Semi-structure interviews and documentary data were the techniques employed to gather empirical information.

Keywords: *Communal property rights, Nimby, participation, landfill siting regulations, environmental bureaucracies, San Pedro, Colombia.*

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¹ The author is PhD candidate of the Humboldt University of Berlin, faculty of agriculture and horticulture, department of agricultural economics and social sciences, division of resource economics.

1. Introduction

In the year 2006, I was making some inquiries in order to find out why for the city of Cali, the capital of the Colombian department El Valle del Cauca could not be found out promptly a new landfill for its waste during the period of 1998-2007 despite of several waste crisis stemming from an old and polluting landfill. Through some kind of snowballing, I knew a community leader of a small township located roughly at 70 kms from Cali, who was occupied with a conflict concerning an operating landfill located in her neighbourhood. As she knew my research purposes, she invited me to participate in meeting on March of 2006. The meeting was assisted by the mayor, municipal councilmen, community leaders and members of the environmental agency. The topic of discussion was about a new piece of land bought by the chief executive officer (CEO) of the company Proactiva Medio Ambiente running the landfill. Apparently, nobody knew the purpose of the new acquisition; nevertheless two possibilities had been conjectured: (1) the company attempts to extent the operation of the facility by bringing the waste of Cali to its landfill and (2) a security cell was in the first building stages aiming to offer in the close future the services of industrial waste disposition. The CEO was also invited but he never appeared. After the meeting I started to ask myself: why did these people not know exactly anything about that? Or did some of them? Why the CEO did not participated in an important meeting for the community and his business? And finally, what is the history behind the regional landfill of San Pedro? These are the questions that are addressed in this study.

In the second chapter a narrative of the regional landfill of San Pedro in the period 1997-2008 and a characterization of the Colombian regulative strategy for the landfill siting process is provided. The third chapter is concerned with the Not-in-my-Backyard (Nimby) phenomenon and with some explanations relevant to some issues raised in the narrative such as communal participation, the performance of the bureaucracy and the bargaining power of company. Finally, a proposal for institutional change concerning the landfill siting in Colombia is presented in the chapter four.

2. An Operating Landfill and the Colombian Regulative Strategy for Landfill Sitings

2.1 The Siting of the Regional Landfill of San Pedro

In the year 1994 the majors of the municipalities San Pedro and Buga (Department El Valle del Cauca) bought a property in the Vereda² Arenales, neighbour of the vereda el Hormiguero. Two years later both municipalities formed a public limited corporation called Empresa de Servicios Públicos de Aseo Urbano and used the abbreviation Urbaseo thereafter (1999a: 2). In January of 1997, the regional environmental bureaucracy, the Corporación Autónoma del Valle del Cauca (CVC) granted an environmental license (EL) to the municipality of Buga to build a sanitary landfill³ in a piece of land owned by this municipality located in the corregimiento of Presidente, which belongs to the municipality of San Pedro. The 5th June of the same year, the San Pedro's administration asked the CVC to transfer the EL to the firm Urbaseo Buga, S.A.-E.S.P, petition that was accepted in August of 1997 (CVC 1998a). In the following month, the company asked for official authorization to build a landfill of regional nature in its property, in order to collect and process the solid waste of five neighbouring municipalities⁴ after presenting the required environmental studies to the CVC. According to Mrs. Luz Marina Arias (1999a) before the CVC granted a resolution approving the proposal in January 15th of 1998, the company had already started to dump the waste of the municipalities without the technical requirements it promised to abide by, and without informing properly the host communities.

For that reason, the CVC declared the waste dumping illegal and months later, in April 1st of 1998, the EL was revoked (CVC 1998a). However, and because the region was confronting a waste crisis, an extraordinary meeting was called up that had to be held on April 16th. It was assisted by public servants of the CVC, the majors of the five municipalities and the representatives of the company. The official meeting yielded a compromise and the EL was yet again granted. The compromise addressed the assurance made by the company of starting rapidly with the construction of the landfill according to standard technical requirements (CVC 1998a). The technical improvements would be made, after the alleged financial problems of the company had been solved by getting capital from the Spanish firm FCC Dragados (Tabloide 1998a:17). A deadline to monitor the compliance was set on August of 1998 (CVC 1998b).

² Colombia is divided administratively in 32 departments. Each department has a capital and several municipalities. In the same token, the municipalities are composed of "corregimientos" and "veredas", which are legal divisions of space as well, being the veredas smaller than the corregimientos. The veredas are normally located in rural areas. Probably, the closest equivalent to the corregimientos is the township and to veredas the village. Throughout this document the Spanish names will be used.

³ The term sanitary landfill refers to a technique for the management, treatment and final disposition of (municipal) solid waste. From here on, I will use just the term landfill.

⁴ They were Buga, San Pedro, Tuluá, Andalucía and Bugalagrande.

After the monitoring visit, the CVC imposed a fine to the company Bugaseo E.S.P., the former Urbaseo Buga, S.A. E.S.P., in September of 1998 for violating the agreed issues. An instruction to stop waste dumping activities was again released until the full construction of the landfill was concluded (CVC 1998c). This penalty was partially a result of the denouncing efforts of the inhabitants of the veredas of El Hormiguero, Arenales and the corregimiento of Presidente guided specially by the community leader Mrs. Luz Marina Arias. They denounced the contamination of ground water because of lixiviates leakage, affecting inhabitants who used underground water cisterns for domestic use, as well as the spreading of diseases because of the appearance of vectors such as rats, flies and black vultures.

All of those problems were addressed in an open town meeting in June of 1998 (Tabloide 1998b). The company managed to avoid the revoking of the EL by promising to handle with the environmental damage. Until the year 1999, the company made some technical improvements in the dump site, however, and according to a report made by the Engineer Jairo Guzman Angel in April of 1999, still serious deficiencies were attested, such as a lack of a fancy to delimitate exactly the size of the "landfill", the lack of stationary scales at the disposal facility for weighing incoming waste, the lack of appropriate systems the collection and treatment of lixiviates, the lack of enough machinery, the presence or trash recyclers in the site, the lack of an operation program and a conclusive final landfill project. In total, 19 deficiencies were noticed by the engineer (Angel 1999: 1-2). Surprisingly, the CVC authorized the company to extent operations in four additional municipalities⁵; being yet in total nine (Tabloide 1999a).

Facing the environmental problems and disappointed by the enforcers' performance, Mrs. Arias representing the veredas Arenales, Hormiguero and the corregimiento of Presidente, sued the CVC, the CEOs of Bugaseo, Tuluaseo, Palmaseo⁶, the mayors' offices of San Pedro and Buga, the Departmental Secretary of Health, the attorney general's office and the National Superintendence of Public Services. The argument presented was the violation of fundamental rights granted by the national constitution such as the right of a clean environment, private property, and the like (Acción de Tutela, 1999a: 1). Apart of the problems of air and water pollution already mentioned, the communal leader mentioned the increasing level of diseases in the communities such as breathing problems, conjunctivitis and a hepatitis epidemic that almost led the corregimiento of Presidente to be declared in quarantine (Acción de Tutela, 1999a: 2). At this time, some inhabitants manifested the intention of selling their property due serious illnesses and contamination⁷. Other allegation was the presence of "strangers" (waste recyclers) causing concern to the parents, whose children had to walk until the corregimiento of Presidente as in some veredas high schools are inexistent (Acción de Tutela, 1999a: 2). Summarizing, she demanded to

⁵ They are Palmira, Cerrito, Candelaria and Pradera

⁶ Bugaseo E.S.P was subcontractor of Tuluaseo E.S.P and Palmaseo E.S.P. The service is about the treatment of the waste that the mentioned companies collect in the cities of Palmira and Tuluá.

⁷ According to Mrs. Luz Marina Palacios, at the present day almost all of the inhabitants, mainly peasants who lived at that time near to the open sky dump site moved out (Palacios 2008. Personal Communication. April 14th, 2008)

stop the waste disposal in her vereda and insisted upon the solution of the waste's problem of the other communities by looking for dump sites in their own perimeters.

The court responded the 1st of July:

“There is no doubt about the non execution of the legal requisitions on the part of Urbaseo S.A., that necessarily leads to the deterioration of the environment, thus increasing the possibility of causing health damage to the inhabitants of Arenales and its surroundings as already happened.

In spite of the noted problems, the tribunal will not order the closing of Presidente's sanitary landfill, because such a measure would lead to a regional sanitary emergency, since several municipalities would not have a place to deposit their waste”⁸ (1999b: 10)

A deadline of four months was set again to make the required technical improvements. Additionally, the charge against the environmental bureaucracy, the CEOs, etc., were dismissed. The judge's choice of the less evil caused hard feelings and uneasiness in the community and was later appealed by Mrs. Arias, but this move did not yield any results (1999b). Mrs. Arias then began asking for documents of the case directly to the CVC and other public offices, both regional and national invoking “petition right of information” granted by the Colombian constitution in its article 23 (Constituyente 1991). At this time, already 400 daily tons of waste had been disposed in the open sky dump site and roughly 140 persons working as recyclers were present (Tabloide 1999b).

The tension among the host communities, the environmental enforcing institutions and the company continued. On March 24th of 2000, the CVC ordered again the temporary suspension of waste disposition in the “landfill”. In a report authored by a public servant in April of 2000 was highlighted that of the 44 items to be evaluated concerning the environmental management plan that a sanitary landfill must fulfil to be called as such, 32% were finished, 34 % were in process and 34% were not fulfilled (Calero and Rodríguez 2000: 10-15). It was further stated that the 34% of the absentee requirements could be finished in a short time (Calero and Rodríguez 2000: 15). Another issue yet mentioned in another arenas was “the lack of agreement and communication among the company Bugaseo and the affected community (...)”⁹ (Calero and Rodríguez 2000: 17). A month later, on May 5th of 2000, the waste dump suspension measure was raised by the CVC making the similar argument of the court almost a year before: to avoid a regional waste crisis. The CVC set a deadline for May 21st, since at this date the EL would expire. Within this period, the company must have made technical improvements regarding the lixiviates' management, the building of channels to drain rain water, a social management plan for the already settled recyclers and to design campaigns of environmental education in the municipality. In this way, the environmental crisis of the yet 16 municipalities¹⁰ was avoided (see figure 1). The claims of water contamination by some dwellers continued after all, while at the same time the company asked to extent the EL. The latter petition was granted by the CVC, albeit the expected local opposition that at this time was partially disbanded. The

⁸ Translated by the author.

⁹ *ibid.*

¹⁰ Andalucía, Buga, Bugalagrande, El Cerrito, Ginebra, Guacarí, La Union, Palmira, Candelaria, Pradera, Riofrío, San Pedro, Tulúa, Vijes, Yotoco y Zarzal.

commitment and angry opposition of Mrs. Arias was some day discouraged as a result of being followed and photographed by two motorcycle drivers.

On August 22nd of 2001, the CVC issued a resolution giving again a fixed term (May 25th, 2002) to the company to fully finish technical requirements for the landfill concerning old issues (treatment of lixivates). A new requirement was imposed on the company, namely the construction of a substitute road for waste collector trucks to access the “landfill” as the unpaved road used up to this date was in front of several houses. Dust and noise at the night were the claims made by the inhabitants of Pueblo Nuevo and Presidente that were testified by CVCs’ servants. The public office made of the road construction the condition that the company had to fulfil to keep on its operations as a regional “landfill”. If by the day of the monitoring visit on May, 2002, the old requirements had not been met, then a partially revocation of the EL for the company to operate as a regional “landfill” would be issued and just the waste of Buga, San Pedro, Tuluá, Andalucía y Bugalagrande would be allowed to be brought to the “landfill” (CVC 2001a: 12). For the construction of the alternative road a short term of three months was granted (CVC 2001a: 15). As the company had not built the road within the period conceded, the CVC delayed the deadline and yet again, the reason of a benevolent enforcing authority was to avoid a “..serious problem of sanitary emergency in those municipalities, as up to now, they do not have an authorized site to dispose their generated waste..”¹¹ (CVC 2001a: 13).

Instead of the building of an alternative road, the company proposed the CVC to pave the existing road (la Marsellesa), alleging the high cost of a new road in relation with the expected useful life of the “landfill” and the non-liquidity situation of the company. This petition was denied by the CVC on December, 2001 (CVC 2001b: 4). Nonetheless, the company tried to make viable its proposal by manoeuvring to gain the will of the people through the individual selecting of inhabitants and informing them of its aim, hence ignoring collective organizations that legally represent the community as was expressed in a letter dated on February 20th, 2002 written and sent by the chairman of the communal assembly of the municipality of Presidente to the major, the council and planning office of San Pedro and other communal organizations (Correa and Soto 2002). In fact, in another letter sent from the CVC to the CEO of the company and after he mailed out evidence of public participation and agreement to the CVC, the CVC rejected it, arguing that such an agreement is just legitimated in meetings summoned by the Assemblies of Communal Action of the vereda Pueblo Nuevo and the corregimiento Presidente, recognized communal leaders and in general, all the inhabitants interested in the process (CVC 2002). Finally, an information meeting was summoned by the company that was held on April 26th, 2002. According to the minutes of the meeting, no consensus was reached (Presidente 2002). Nevertheless, a committee of five persons nominated by the CEO of the company and the chairman of the Assembly of Communal Action was created, whose aim was to conciliate the interests of the company and the communities. Time passed and the conciliation efforts ceased to be mentioned.

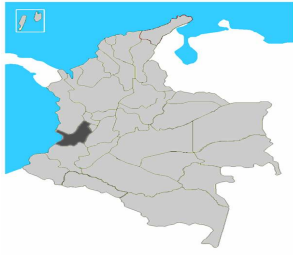
¹¹ Translated by the author.

Among 2003 and 2005 some technical requirements were finally fulfilled, others were not, and other problems arose. It can be fairly said that in this period the term landfill finally became appropriated¹².

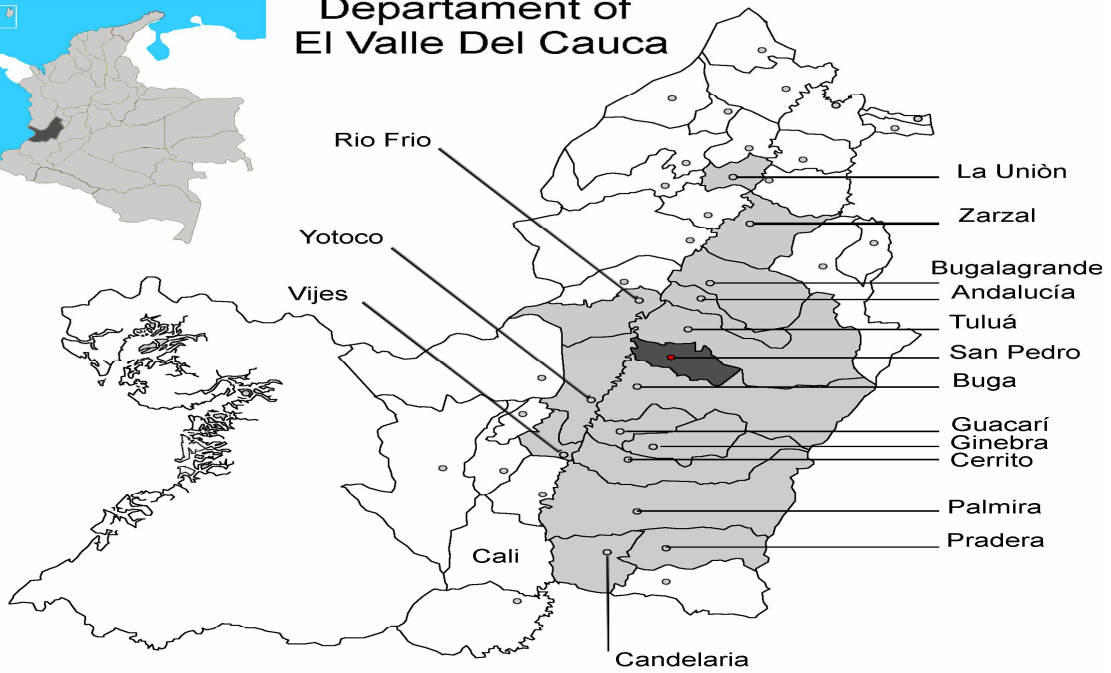
On November 29th of 2005 a meeting among the CEO of the company, 15 members of the municipal council and communal leaders took place. The goal of the meeting was to discuss inhabitants' health problems related to the landfill, environmental issues, the problem with the damaged houses located along La Marsellesa road, whose owners had been demanding compensation, and the delay of the alternative road construction. Several councilmen were outraged with the possibility that the municipality has become increasingly the dump site of the entire department of El Valle del Cauca (see figure 1), and with the idea of the company trying to obtain another EL to build a security cell for hazardous industrial waste in the 54 Hectares that was company bought contiguous to the landfill (Pedro 2005: 3). The councilmen and Mrs. Luz Marina Palacios complained about the tolerance of the CVC regardless of the past performance of the company.

Figure 1: Study Location Map

¹² It is striking that a polluting open sky dump site had been since its appearance referred to in all the documents as a "sanitary landfill". In a resolution of 2001 the CVC recognizing this stated "... this does not mean that a certification as a truly sanitary landfill was granted. The term is used in reference to the type of project whose the environmental license was granted." (CVC 2001b: 13).



Departament of El Valle Del Cauca



- Landfill site
- Municipalities using the Landfill

Municipality of San Pedro (Landfill site)



Impacted Veredas

- Arenales
- Hormiguero
- Presidente (corregimiento)
- Pueblo Nuevo

At the same time and in the first months of 2006, the building of the alternative road started. During the construction of the road, the material dug out was piled up along the road without being promptly evacuated. Sometimes when it rained, the mud was dragged into several houses in the vereda El Pantanillo. Additionally, another problem concerning a waste problem resonated at that time in the entire department of El Valle del Cauca. The transitory landfill of Navarro located in Cali (the capital of the department) that should have been sealed in 1998, was finally close to be shut down due social pressure and environmental problems. It was rumoured that the dump site to replace Navarro could be the landfill of Presidente, a suspicion that was backed with statements made by the regional chairman of the CVC. For the inhabitants of San Pedro, this was an additional affront added to the problems that they were bearing since 1997. This time, the community called up a protest that took place the 7th and 8th of April of 2006 and that blocked the superhighway that connects the important medium cities Tuluá and Buga, as well as the entrance of waste collection vehicles to the landfill. New agreements were concluded and old obligations were remembered.

The problem with mud-flooded houses due the construction of the alternative road continued. Officers of the CVC verified those claims and consequently made charges against the company on May 23rd, 2006 for not building structures of contention causing damages in the infrastructure of the vereda of Pantanillo (CVC 2006: 2). On the other hand, the intention of the company to dump industrial waste led the community to deal more seriously with the topic between 2006 and 2007¹³. In June of 2006, the community leader Mrs. Palacios organized an informative meeting. Mrs. Palacios is member of the NGO *ECATE – Association for the Integral Social Development* and since 2002 has been organizing and taking part of the social action against the company when Mrs. Arias gave up her efforts. In that meeting that took place on July 05th, 2006 in the corregimiento of Presidente, a representative of the company explained how the security cell would be constructed as to operate safely. Meetings and discussion addressing the old unfulfilled promises of the company and the security cell took place during 2007, until the community achieved to block this project. The episodes that led to the blocking of the industrial waste facility project was related by Luz Marina Palacios on April 14th, 2008 as follow. In March 2006, she and other neighbours realized that the company was trying to change the name of the facility from “basurero” (trash place) to “landfill”. They became suspicious of this move, since they recognized that the “basurero” became, in the course of time, a genuine landfill. It seemed to them superfluous just to change officially the facility’s name. They started to investigate and discovered that if the company’s aim was to make business with industrial waste, it should overcome first two obstacles: changing legally the name of the facility and lobbying for a change of the Scheme of Spatial Ordering (SSO) of the Municipality as to make legal the building security cell that was not foreseen in the currently SSO. Employees of the company attempted to persuade the Spatial Council of the municipality, which was actually composed of “common honest people”, whose background, however, did not qualify them to understand and evaluate what the company’s representatives were talking about. As a result of those verbal exchanges, between August and September of 2007, the company presented an “agreed project” to the CVC,

¹³ Luz Marina Arias. Personal Communication. April 14th, 2008

claiming to have informed the community on the cell security building purposes. The project was then approved by the municipal council in November of 2007, after a councilman, who was opposing the facility building, curiously changed his mind at the day of voting. Because of his unique vote, the project was approved. ECATE started to write letters of protest to the governor of the department and to the CVC, alleging that the so called “agreed project” did not follow the legal steps of public information. On January of 2008, the CVC issued a resolution favouring the claims of ECATE and rejecting the EL for the security cell.

2.2. The Environmental Law: Property Rights, Participation and Regionalization

The Colombian regulative strategy concerning the landfills siting process is basically a command-and-control approach. The Colombian law asserts public ownership on the components of the natural environment through e.g., the regulations concerning the siting of landfills. A landfill, just like other projects that have considerable environmental impact require an EL. The EL comprises the so called environmental studies¹⁴ required by environmental public offices. The licensing guidelines are described at a general level by the environmental law 99 (1993) in its entire Title VIII, where definitions and bureaucratic competencies are defined. The clarity of the core competencies and licensing processes were additionally complemented through the decree 1220 (2005). The siting of landfills is co-governed by other legal institutions. One of the requirements in addition to the EL is that the region, where the landfill will be located, must have specifically conceived a site for this purpose in its Spatial Ordering Framework (SOF) according to the law 388 (1997)¹⁵. The SOF is the basic tool for land use in Colombia and is based on the principles of ecological and social function of the private property. The decree 838 (2005) modifies and complements other rules with regard to the public service of waste collection and waste disposition. This decree recommends almost exclusively final solid waste disposition by using the technique of sanitary landfills. It addresses technical requirements as well, which are supported by the Technical Directives for Potable Water and Basic Sanitation – RAS, resolution 1096 (Económico 2000) published by the Ministry of Economic Development in the year 2000.

Several mechanisms of public participation are foreseen in the legal institutions above mentioned, which are derived from the article 79 of the national constitution that states “every person has the right to enjoy a healthy environment. The law will guarantee the participation of the community in the action that may affect it”¹⁶. However, the granting or rejecting of an EL for a landfill rests solely in the environmental bureaucracy. Compensation packages to the host communities are

¹⁴ The environmental studies mentioned here are basically two: the Environmental Impact Statement and the Analysis of Environmental Alternatives. Each of these studies need the Reference Terms, which differ according to the project’s type, such as mining projects, roads construction, sanitary landfills, etc. The current Reference Terms for the Environmental Impact Statement of landfills was issued by the Ministry of Environment, Housing and Spatial Development in 2002 and it refers to the general content that the EIS must contain.

¹⁵ The SOF can be classified into three types according to the number of inhabitants of the municipality: Spatial Ordering Plan when the number of inhabitants is more than 100 000, Spatial Basic Ordering Plan when the number of inhabitants is between 30 000 and 100 000 and Spatial Ordering Scheme when the number of inhabitants is less than 30 000.

¹⁶ Translated by the author.

left to the free will of the project developer, which is not compulsory and, therefore, it is not formalized in the regulations. The compensation such as mitigating measures is oriented rather to the protection of the natural environment.

On the other hand, the national policy and associated environmental laws encourage the regionalization of sanitary landfills. Hence, the decrees 1713 (2002) and 838 (2005) suggest that solid waste disposition projects should be of regional nature, that is, they should serve two or more municipalities. The arguments behind it are of the sort of economic benefits, such as the advantages of economies of scale. It is argued that companies with large experience in the business can eventually operate a landfill in a more environmental friendly manner and the tariff for the service should be in theory lower.

3. Methodology

This study follows the single case study strategy proposed by Robert Yin (Yin 2003a; Yin 2003b) and is based on semi structure face-to-face interviews (Fontana and Frey 2000) with three subject matter experts, a communal leader and the analysis of documentary data. The used of qualitative techniques is because of the in-depth characteristic of the study. I conducted three hour-long face-to-face interviews with each expert that works for the CVC in the cities of Tuluá and Cali; and four interviews with the communal leader and NGO member Mrs. Luz Marina Palacios¹⁷. In the semi structure interviews, the experts talked about the Colombian environmental institutions that govern the siting of landfills in general and in particular about the cases of San Pedro and Cali. They also guided me, to some extent, into the exploration of relevant documents. In the interviews with Mrs. Palacios she talked about the siting process of the landfill in San Pedro and provided me with relevant documentation such as letters, CVC resolutions, press cuttings, meetings' minutes and the like. For the interviews with the experts, field notes were taken and for the interviews with Mrs. Palacios electronic recording was permitted.

The analytical strategy that resembles the Analytic Narratives Approach of Bates, Greif et al. (1998), was the following: i. coding and memoing as suggested by Miles and Huberman (1994). ii. After this first step, four issues were selected for further analysis according to its frequency of mention. They were (1) the strong bargaining position of the company, (2) the performance of the environmental bureaucracy; and according to its relevance such as (3) the Nimby Phenomenon and (4) the lack of participation. Rival explanations of the selected issues were offered. iii. A proposal of a possible institutional change in the Colombian landfill siting process is described from the perspective of the communal property rights.

4. Explaining the Case

4.1. The Nimby Phenomenon

The waste facility described in the last chapter falls fairly into the category “turkey” as called by O'Hare and Sanderson when discussing the Nimby phenomenon. “Turkey” projects are those that are more deleterious to host communities than beneficial to a

¹⁷ She agreed to reveal her name.

larger population. “Turkeys” and “nonstarters” should not pass a good siting process (O'Hare and Sanderson 1993:365), what it is to say that the Colombian siting process as framed in the environmental regulative strategy needs improvement¹⁸. The following sections draw on the Nimby literature and the case narrative. Incidentally, this case study epitomizes the landfill siting problem of El Valle del Cauca, and presumably of the entire country¹⁹.

The Nimby phenomenon can be briefly defined as a “socially desirable land use that broadly distributes benefits yet is difficult or impossible to implement because of local opposition” (Richman and Boerner 2006: 37), that is, “classical Nimby” projects and “free lunch” projects. This definition includes the siting of noxious facilities such as landfills but can be extended to other projects such as prisons, airports (Kunreuther and Kleindorfer 1986; Richman and Boerner 2006), cellular telephone towers (Wikle 2002) and the like. The benefits of landfills are mostly dispersed among a large population, while the generated external costs are geographically concentrated and borne by a small group of residents in the host community, being for them the costs greater than their benefits²⁰. Affected residents are therefore habitually better off if the project is either located elsewhere or not completed at all. This social dilemma represented as a mixture of public good and private bad contains a strong incentive for potential host communities to oppose vehemently the facility building in their vicinity. This definition and specially the last inference of opposition's causes are rather straightforward and negligible. The conventional Nimby view is related with the following elements: distrust of governmental agencies and projects proponents, limited information about the projects' risks, parochial and localized view of the problem, emotional assessment of the siting proposal and risk aversion. Some of these assumptions were, however, challenged in a study authored by Kraft and Clary (1991) regarding the siting of a high-level nuclear waste repository. They found out a non-highly emotive and technical informed public with a rather low parochial outlook. The lack of trust and confidence was validated in the same study. These findings are consistent with the narrative provided in chapter two.

The Nimby phenomenon is addressed through different theoretical lens such as positive political-economic approaches (Feinerman, Finkelshtain et al. 2004), transaction cost economic approaches (Richman and Boerner 2006), sociological/ anthropological approaches (Baxter, Eyles et al. 1999) and normative approaches such as the property rights theory that includes participative measures and compensation procedures (see for example Mitchell and Carson 1986; O'Hare and Sanderson 1993). Although a proposal for institutional change will be provided in chapter five, it is worthwhile to mention at this point that some property rights allocation to environmental goods and services is a sine qua non condition to

¹⁸ O'Hare and Sanderson (1993) describe five types of projects, (1) “nonstarters” that are bad for almost everyone, (2) “turkeys” are projects that do more harm to neighbours than good for everyone else, (3) “unfair” are projects that hurt the neighbours less than they help everyone, but is seen as unfair in the way they do it, (4) classic Nimby are those projects that impose reasonable costs on others, who would be willing to bear for the collective good, (5) “free lunch” are projects that are good for both the neighbours and the society. They authors suggest that only the third and fourth category can be moved down the scale through compensation.

¹⁹ Environmental Lawyer working by the CVC in Cali. Personal Communication. January 23rd, 2007

²⁰ In the context of the history presented here, the large population is that of El Valle del Cauca, who benefits for having a site to dispose their solid waste. The host community is San Pedro with their corregimientos and veredas.

develop other proposals that deals with more citizen participation including compensation (O'Hare, S. et al. 1983; Kraft and Clary 1991; King, Feltey et al. 1998) and sealed-bid mechanisms (Kunreuther and Kleindorfer 1986). Property rights such like common property regimes seeking for welfare-maximizing siting through decentralized community-based mechanisms have been however criticized because they have been seldom practiced (Feinerman, Finkelshtain et al. 2004: 369) being the emergence of alternative regulatory solutions an evidence itself that just focusing on property rights is an inadequate solution to site noxious facilities (Richman and Boerner 2006: 43). In the following three sections three issues concerning the narrative of chapter two will be discussed: the lack of participation, the performance of the environmental bureaucrats and the performance of the company.

4.2. The Lack of Participation

The problem with the affected veredas of San Pedro and the project developer started basically by not informing host communities, albeit it is commanded by environmental regulations. The following rival explanations for this behaviour can be offered:

- i. The project developer expecting social resistance and acting strategically attempts to keep hidden the landfill siting process until it is difficult to revoke, hoping to reach a powerful bargaining position.
- ii. The project developer simply ignores potential host communities by assuming that inhabitants of the veredas do not have the resources (material, knowledge, etc.) to oppose the facility.

The first explanation relies on the episodes by which the court dismissed the sue of Mrs. Arias, and the CVC extended the EL several times to the company in spite of the proved environmental damage and the defector behaviour of the company. The second conjecture is related to the first one in the sense that once the company extended its services up to 16 municipalities of the 42 available, its bargaining power was increased with reference to the host community (see section 4.4 for further discussion). I believe that this defector behaviour is encouraged through the legal institutions governing the landfill siting with regard to the participation possibilities of potential host communities, for it relies merely on devices to informing them²¹.

²¹ The community is informed about the licensing process when the public agency announces it, mainly through their communiqués sent to majors' offices of the potential host communities and posted in the pin board of the offices. The spokespersons of the community, NGOs and the like can call up a public hearing (article 72 of the environmental law – 99 of 1993) and demand further information through the “petition right of information” (article 72 of the environmental law – 99 of 1993). The community may also agree on compensation packages; however, it does not have juristic support. In the only case that communities have veto power are in those regions traditionally inhabited by indigenous people and afro Colombians (Law 70 of 1993 and decree 1320 of 1998). In the licensing process described partially in the decree 1320 of 2005 the project developer must “name the mechanisms to inform communities” mainly through meeting with the Assemblies of Communal Action and presenting evidence that community leaders were informed. Finally, there is not regulation that imposes the participation of host communities during monitoring activities to an operating facility (Ramirez, E. 2006. Participation in the Siting Process. Personal Communication. September 19th, 2006)

On the other hand, the Colombian siting process hardly acknowledges ideas of environmental equity by emphasizing the regionalization aim because of economic reasons, without recognizing the burdens imposed on potential host communities such as noise, perceived physical danger, health risks and the like. In the case of regionalization, citizens may ask: why should do we accept the trash of others? as Mrs. Arias did in the sue (1999a). Furthermore, under the current siting regulations, communities do not have the legal right to ask for compensation in exchange for granting an EL to the project developer. I believe that any regulative strategy should attempt to improve the conditions of those who are either politically weak or economically underprivileged by acknowledging the concept of *long-term reciprocity of advantage*²². A first step to do that might be increasing the community power vis-à-vis the project developer by changing the ways by which community members participate in the siting process.

Participation can be categorized into conventional participation and authentic participation (King, Feltey et al. 1998). Conventional participation such as the Colombian regulative strategy for landfill siting resembles the Decide-Announce-and-Defend paradigm (DAD) (Richman and Boerner 2006). Authentic participation is regarded as “participation that works for all parties and stimulates interests and investment in both administrators and citizens, requires rethinking the underlying roles of, and relationships between, administrators and citizens” (King, Feltey et al. 1998 :317). One could imagine a third category called *radical participation* that is achieved when potential host communities are granted the property rights on environmental goods and services under public property regimes for the aim of negotiation. A potential twofold benefit of a radical participation approach is the following: as that landfill siting occurs mainly in the rural communities (veredas), where a vast sector of the marginalized Colombian people live, it could represent a real opportunity to improve their material conditions through compensation. Furthermore, compensation schemes linked to the idea of radical participation should help to solve the waste problem in the region.

Certainly, more participative opportunities vested on host communities are a captivating idea; nonetheless, its implementation could be a burdensome task. Participation may be highly resource consuming (time, money and nerves), create delays and increases red tape. Another scepticism against the increase in public participation relies in the concern over the public’s lack of expertise bringing additional burdens to the decision making process (Kraft and Clary 1991: 299). Besides, more participative approaches assume commitment. However, and in spite of its resource intensiveness trait, participative approaches are worthwhile to aim at as the outcomes of decision making processes are more legitimated and apparently more effective. Concerning the possible lack of education on siting issues, the case of San Pedro has shown that community leaders may be not only highly committed, but also rapid learners. In other studies, it has been shown that public involvement can be foster and the knowledge on technical issues can be improved (Kraft and Clary 1991: 300)

4.3. The Performance of the Environmental Bureaucrats

²² „A public action imposing a disproportionate burden is not a taking as long as the immediate burden on the claimant is not extreme, and the claimant stands to enjoy benefits of similar magnitude from other public actions, even if those benefits are not contemporaneous” (Dagan 2000: 136)

As seen in the San Pedro narrative, public administrators were rather lax in their enforcing tasks. Two rival explanations may possibly elucidate this:

- i. The company was treated with considerable tolerance by environmental enforcers as it was making a pioneer work by building a sanitary landfill in the region.
- ii. Environmental bureaucrats as other rational actors act according to the assumption of the self-interest and utility maximization rather than seeking the general well-being.

The first explanation is self-explanatory and was made by Mrs. Palacios²³. The second one, which is rather an economic assumption, may explain several facts and offer support to other conjectures. This assumption was brought into discussion by William Niskanen who stated that bureaucrats attempt primarily to maximize the budget they can get from their sponsors, that is, the politicians running the governmental apparatus (Niskanen 1971: 38). Jens Horbach (1996) in a more differentiated manner, theorize the relationship between the emitter and the environmental bureaucrat. An environmental bureau must control the compliance of environmental rules like restricted emission values that an emitting firm has to keep. The emitting firm aims the profit-maximization, whereby the costs to keep the emissions according to the permitted values decreases its profit. The emitting firm has two possibilities: (1) the observance of the environmental institutions and (2) following a rent-seeking behaviour in an attempt to influence the environmental bureau. The latter option entails costs as well, such as sending workers, influencing politics, etc. The environmental bureaucrat may cooperate, concede subventions, receive payments (bribe money), penalize the emitting firm or use the court. Within this palette of possibilities available to the environmental bureaucrat, Jens Horbach suggests that in Germany, the use of penalties is improbable and bargaining is more preferred (Horbach 1996: 122). The reasons are the good contacts that the bureaucrat has with the emitter and the fear to give power away to the court.

Another conjecture may be the selectivity by which environmental bureaucrats enforce the rules. It can be presumed that they perceive the municipality of San Pedro as being of “fifth category”²⁴ and they just started to enforce as they should, due the steady pressure of the communities²⁵. An allegory concerning pastoralists’ common property rights and the state is made by Daniel Bromley. He explains that the willingness of the state and its branches to legitimise and protect different rules contained in property regimes is to some extent explicated by the state’s perception of the importance of those holding different types of property rights. If, for example, pastoralists are considered politically marginal, then the property regimes important to pastoralists will be only indifferently protected against the threat from others, as those threatening pastoralist’s property rights regimes seem to have more consideration from the state. The reason is that the resources important to pastoralists have a relatively low value in exchange and therefore, it is easy for national governments to discount the economic and political importance of pastoral peoples (Bromley 1992: 12).

²³ Luz Marina Palacios. Personal Communication. April 14th, 2008.

²⁴ Ibid.

²⁵ Ibid.

Regardless of the manner in which the environmental bureaucrats look for to maximize their utility, they have a key impact on the definition and allocation of property rights (Libecap 1989: 219), and their utility functions, entering the siting process, represent another source of conflict. So that in the context of this study, if the environmental bureaucrats dismiss the private costs imposed to host communities through the siting of landfills, then compensation may be a good mechanism to counterbalance this state of affairs (Dagan 2000:138). On the other hand, a deleterious effect of the bureaucrats' performance in San Pedro was observed, namely the undermining of their credibility in the community. Losing credibility is losing the trust that the people may put on bureaucratic decisions, which is especially important when participants are facing the possibility of a long-term contract. Trust arguments relating relevant actors in Nimby settings is widely discussed in several studies (Kraft and Clary 1991; Baxter, Eyles et al. 1999; Gusterson 2000; Kahan 2003; Bedsworth, Lowenthal et al. 2004) and will be tackled again in the next section.

4.4. The Performance of the Company

Concerning the performance of the company, two rival explanations can be offered complementing those provided in section 4.2:

- i. The company does not hold the financial resources to adhere to the rules governing the landfill operation.
- ii. The company holds a powerful bargaining position that permits it the non-compliance decision.

The first explanation could only mean a mediocre project planning and implementation supported by the environmental bureaucracy. Nonetheless, it is not a credible account having in mind the business dimension of the French Veolia Environnement through its subsidiary Proactiva Medio Ambiente. According to its web site, in Latin America "Veolia Environnement supplies water and wastewater services to more than 16 million people and waste management services to 88 municipalities totalling a population of more than 26 million"²⁶

Once the first explanation is ruled out, I would like to discuss the second one. The fact that the company is serving with its regional landfill roughly one third of municipalities of the department (see figure 1), is enough to ascertain its powerful bargaining position²⁷ in the region vis-à-vis the bureaucracies and the host community. As the time passed, and effective pressure is put on the company by the environmental bureaucracy echoing the claims the community, it is difficult to ponder who holds more power among communities and the duo company/bureaucracy. On the one hand, the company was able to harm enough the municipality of San Pedro

²⁶ Veolia Environnement (2008). <http://www.sustainable-development.veolia.com/en/strategy-sustainable-developpement/developing-countries/local-developpement.aspx>. Accessed on April 20th, 2008

²⁷ Jack Knight (1992: 132) addresses the fact that several factors can determine relative bargaining power: on the one hand, intangible resources available to the actors, like skills, intelligence, and experience, which are called bargaining savvy, and on the other hand, the possession of material relevant assets that he calls supported on other researchers resource-holding power.

for several years through its “turkey” project by presumably using its bargaining savvy and resource-holding power. On the other hand, the host community has managed to increase the degree of adherence behaviour of the company to the rules in the last years by using other higher governmental agencies and even to block a sub-project of the company. The variable degree of rule compliance behaviour can be explained in game-theoretical terms: when the benefits of non-compliance are larger than the costs, and the probability of a penalty is small, a violation of the rule is a rational strategy. As the probability of being penalized increases, maintaining the costs of punishment high as in the case of an EL revocation, and where non-trivial investments have been made, the non-compliance choice becomes the less attractive strategy forcing the company to revise its overall strategy. The final outcome is the same mentioned in the last section, namely a provoked distrust to the company as can be seen in the following interview’s excerpt²⁸ with Mrs. Luz Marina Palacios (LMP) that links trust and risk taking behaviour.

Close to the house of Mrs. Palacios, up in the mountain, an odour stemming from a poultry house accompanied us in the interview. The poultry house was located apparently without informing the community. I noticed the odour but I did not mention it. Minutes later during the interview, she asked me “do you smell it”? After I nodded, I took the chance and asked the following questions:

Int.: If you were in charge of making negotiations with the poultry keeper, would you admit the odours in exchange for something for the community?
LMP: No, because we don’t know what effects it can pose on the health.

Int.: Let us make the following assumptions: you are in charge of conducting negotiations with the poultry keeper for the community and technical studies have shown that the only possible problems are the odours at a certain time and without harming effects on the health.

LMP: Oh yes, that is what Proactiva used to do. It gives the community “little mirrors”²⁹ to give the impression that it is concerned with our problems. Let me give an example, ECATE³⁰ called up for an information meeting. A representative of the company came to the corregimiento to explain us what a security cell for industrial and dangerous waste is. I ask her how secure the security cell would be (...) if 100% safety can be granted, if not accidents could happen. The representative remained in silence for a few seconds and finally stated: ‘of course totally safety cannot be offered’

Int.:But Luzma, it is almost impossible to offer total safety against accidents in such projects. Let me change a bit the question, let us assume that the security cell cannot be constructed and operated in a manner that accidents can be fully excluded. Let us further assume that in the last few years none of the conflictive episodes that you already narrated occurred, would you negotiate?

LMP: That is trust! If the company had told us the social problem with the recyclers at the very beginning, if it had made the process with the road construction transparent and not proposing to use cheap materials (...), if it had built the road with the technical specifications (...), if it had compensated the inhabitants whose houses were partially destroyed by passing waste collector trucks without problems, etc,etc,etc., the history today would be a quite different one.

²⁸ Translated by the author.

²⁹ It is a popular saying referring Spaniard conquerors at the time of the discovery of America exchanging with the Native Americans little mirrors against gold.

³⁰ Mrs. Palacios is the general secretary of this NGO.

Because of similar cases described by Kahan (2003), the author suggests the replacing of the logic of collective action (Olson 1965) through the logic of reciprocity. According to this logic, when actors perceive that others are behaving cooperatively, “individuals are moved by honour, altruism, and like dispositions to contribute to public goods even without the inducement of material incentives” (Kahan 2003: 71), otherwise they will apply the strategy tit-for-tat that was shown in the already classic experimental “tournaments” of Robert Axelrod (Axelrod 1980a; Axelrod 1980b). Concerning the Nimby phenomenon Dan Kahan correctly observes: “the key to solving NIMBY, in short, is trust” (Kahan 2003: 89)

5. Towards an Environmental Institutional Change for the Landfill Siting Process: The Recognition of Communal Property Rights

This section tackles the question on how to improve the Colombian regulative strategy of landfill siting. It is figured out to engender an effective and satisfying participation process based on the recognition of communal property rights to potential host communities. It is based on the thoughts of Mitchell and Carson (1986) that proposes a political market and a referendum mechanism for allocating hazardous waste facilities, thus creating an incentive to the project developer to offer compensation for a yes vote. The elements of this proposal bear the following advantages: (1) communal property rights improves the communities’ power vis-à-vis the project developer, (2) it reduces to some extent the mediation of environmental bureaucrats and (3) it vindicates the principle of the social function of the property, for ownership “is not merely a bundle of rights, but also a social institution that creates bonds of commitment and responsibility among owners and others affected by the owners’ properties” (Dagan 2000: 135).

The recognition of communal property rights³¹ should permit potential host communities to approve or reject the siting of landfill facilities³², hence creating bargaining possibilities through compensation schemas envisaged by the project developer and the host communities (see figure 1b). In the currently siting process that can be conceptualized by means of the figure 1a, the host community is located at the greatest distance from the landfill siting process while the environmental bureaucracy and the project developer are at closest position to the issue. A plausible reason of the closest distance of environmental public administrators to the siting issue, is that the official agent based in her or his expertise are more capable to evaluate a given siting proposal by the project developer. Conversely, the potential host community, ill-equipped with the necessary technical knowledge is maintained out of the siting issue. In this fashion, however, the environmental

³¹ The idea behind the property rights approach is that it indicates how persons may be benefited or harmed. In this sense, it can be known who must pay whom to modify the actions taken by affected parties. An example are measures taken to prevent harmful effects arising from the operation of a landfill, or in more economic terms, the internalising of costs that commonly addresses a change in property rights (Demsetz 1957: 348).

³² According to presently standards, the sanitary landfill, when appropriately operated, is a low-risk technique that makes possible the adequate final disposition of municipal waste in Colombia (Riascos and Vidal 1996).

bureaucrat is separated by the necessities, beliefs and requirements of the potential host community (King, Feltey et al. 1998: 320).

Figure 1: The distance of potential host communities to the landfill siting issue since the conventional approach and the communal property rights approach

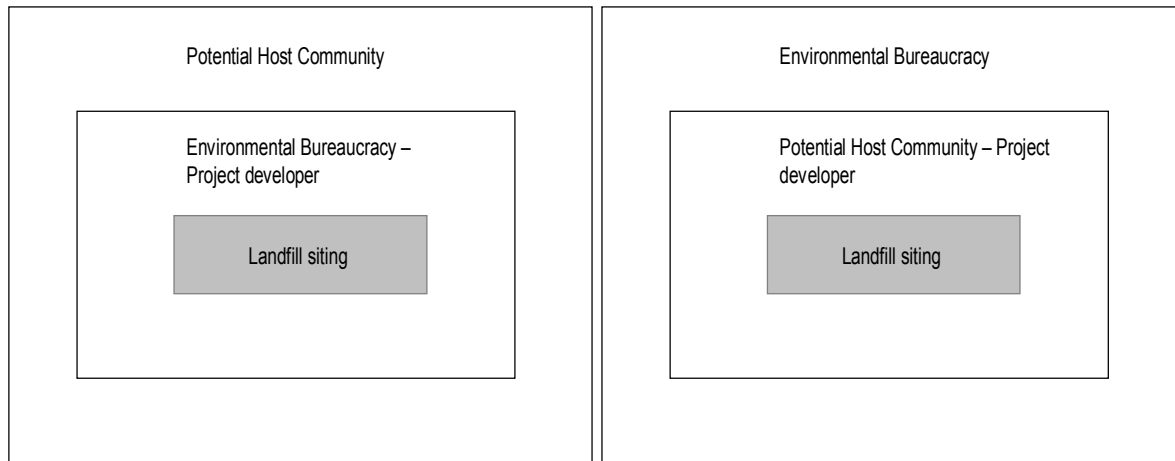


Figure 1a: Landfill Siting Scheme under the Currently Regulative Strategy Figure 1b: Landfill Siting Scheme for granting Communal Property Rights

In the first stage, the evaluation of potential landfill sites proposed by the project developer is undertaken by environmental bureaucracies. This evaluation goes normally through the design and operation safety standards imposed by the current landfill guidelines such as the RAS and according to the SOF of the regions. As the law foster regional landfills, several sites within a region should be feasible, thus maintaining the “landfill site’s market”. Surely, the project developer would try to select those potential sites where the agreement is less costly, and where less political activism is expected. Once feasible potential sites are found out, the project developer identifies communal recognized leaders, who should form a communal decision board or employing existing structures such as Assemblies of Communal Action or independent NGOs. This step is done in order to minimize bargaining costs that may be prohibitive high if local residents held individually property rights enabling them to bargain separately.

In the bargaining process compensation packages are offered by the project developer³³, whose costs should be partially borne by the regions who will benefit for having a landfill outside their perimeters. As in the case of a similar regulative strategy in Massachusetts, United States (see O'Hare, S. et al. 1983) the local government may release funds, so that the bargaining community can hire private advisors that accompanies them in the bargaining process. The environmental bureaucrat may become a working partner in order to overcome asymmetric information concerning subject-specific issues as well. Once a compensation

³³ There are monetary and non-monetary compensation possibilities. Monetary compensation packages have shown to be rather limited due moral reasons. Non-monetary forms of compensation are (1) in-kind awards, e.g., new improved health care services, free waste disposal for community residents (2) contingency funds is a form of insurance for the host community in case of accidents, (3) property value guarantees, (4) benefit assurances, e.g., guaranteeing employment for community members and (5) economic goodwill incentives or charitable contributions such as donation for land use as parks (Mitchel and Carson 1986, Kunreuther and Easterling 1996).

agreement is achieved, it is given to cast a vote for or against it via referendum with the rest of the community. If the compensation agreement passes, the monitoring of the landfill's building and operation may be undertaken by the environmental bureaucrat or by independent competent profit-seeking organizations.

In the Nimby literature there are critical views concerning some elements of this proposal. For instance, compensation schemes may fail to solve or even worsen a Nimby conflict, as they have proven to be a double-edge sword strategy in some cases. A famous case is reported by Frey, Oberholzer-Gee et al. (1996), who found out a ruinous effect by offering monetary rewards to the inhabitants of a small village of Switzerland for the siting of a low and mid-level radioactive nuclear waste repository. After an initial support by the potential host community, its degree of support went down drastically as a consequence of introducing financial incentives. People have felt to be bribed (the *bribe effect*), and their altruistic behaviour stemming from civic duty commitments that allows a positive attitude toward perceived needed facilities was crowded out (*crowding out public spirit*). On the subject of landfills' siting, Kunreuther and Easterling (1996) and Kahan (2003) mention several studies of reported successfully siting through compensation. In general terms, there is a variability of successes and failures in waste facility siting processes based on compensation schemes. About this variability two explanations are offered in the literature: (1) the failures are rather concentrated by introducing compensation in the siting of perceived high-risky facilities and the successes in the perceived low-risky facilities so that people are willing to trade small perceived risks, but not huge increases of them (Kunreuther and Easterling 1996) and (2) in a siting process, there is more than the weighing of costs and benefits when communities decide whether to resist or to trade. Examples are concerns on environmental equity as in the case of regionalization and whether or not a trustfully climate is absent (Kahan 2003).

Another compelling argument against siting through compensation is offered indirectly by Baumol and Oates (1988: 22). They affirm that the damages that victims suffer from a detrimental externality, provide precisely the correct incentives to induce them to carry out efficient levels of defensive activities and that they should neither be compensated nor be taxed, so that if the polluting firm must pay money to compensate the damages caused, no one would have any incentive to locate away from the emitting firm. Too many people would choose to live in ill conditions, since an economic incentive is given to do so. This argument is however unwarranted since landfills are low-level low risk technique.

Finally, it can be concluded that this proposal needs further work to be completed as many questions are still without answer. For example, in the case of the proposed referendum, should be chosen a simple majority? A two-thirds majority? What is the strategy when communal recognized leaders are inexistent? What to do in the case of a successfully landfill siting that shifts deleterious externalities to other neighbourhoods? Would the natural environment be jeopardized? How should be designed the communication among a communal decision board and the rest of the community? How to prevent that companies withdraw landfill siting proposals because of to lengthy processes with perceived high risks of failure? In the Colombian environmental regulation the reparation to the environment is foreseen,

should this be replaced through, or excluded in a probable compensation scheme?
How to improve trust among the relevant participants?

Additionally, this proposal for institutional change must be improved through the conducting of more empirical work to tailor a more suitable approach. For example, do potential host communities in Colombia prefer monetary or non-monetary payments? Empirical results in that matter can be achieved through in-depth case studies in order to attain analytical generalizations or using the preliminary results of this single case study as hypothesis to be tested in further quantitative work.

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