

**Environmental Justice in India:**  
**A study on the use of environmental impact assessment in environmental**  
**courts**

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## **Abstract**

The purpose of this thesis is to examine the relationship between the environmental impact assessment (EIA) process and environmental courts in India. The objectives are to describe the aspects of EIA that trigger the involvement of the court system, understand the extent to which EIA and related environmental clearance (EC) processes address the concerns of affected communities, and assess the effectiveness of judicial institutions in resolving disputes arising from the EIA process. The study examines two legal cases in the state of Gujarat: the proposal of a cement plant by Nirma Ltd. and the proposal of a limestone mining site by UltraTech Cement Ltd. The qualitative research design included an extensive review of literature and policy documents on EIA and environmental justice in India and worldwide, semi-structured interviews with community members, local politicians, NGOs and legal actors involved in the two cases, participant observations and transect walks. Inadequate opportunities for public participation have resulted in a lack of public trust in project proponents in India. This limitation combined with low quality EIA reports and a perception of political interference within the EIA and EC processes have resulted in a fundamental failure of the EIA system in the two selected case studies. The EIA reports for the cases failed to address the primary concerns of locally affected communities, such as land deterioration due to salinity ingress, loss of livelihood, and migration for work. Justice in India remains inaccessible to poor citizens who inequitably receive the environmental risks of industrial development and none of the benefits. Change in India is required to improve access to justice and instil greater confidence in the justice system.

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## **List of Definitions**

*Gaucher*: local term defining a common property resource used for grazing animals and collecting firewood.

*Gujurati*: Gujarati is the official language spoken in the state of Gujarat.

*Nilgai*: the largest Asian antelope endemic to India (Sankar et al. 2004).

*Panchayat*: grassroots-level village council of the local self-governance system, the Panchayati raj, in India.

*Sarpanch*: elected head of the Panchayat.

*Taluka*: refers to an area of land encompassing a city or town as its administrative centre with additional towns and/or villages – also known as “block”.



## **List of Appendices**

Appendix A: Interview Questions

# 1. INTRODUCTION

## 1.1. Background

In a time of rapid economic growth and increasing industrialization and urbanization, socio-economic inequalities and environmental degradation can become of secondary concern. In India, legal measures have been developed by the judiciary in an effort to address environmental concerns; these include special green benches in several state high courts, the National Green Tribunal (NGT), and public interest litigation (PIL) (Government of India 2010). In addition, environmental impact assessment (EIA), a process of predicting and preventing adverse environmental impacts of a proposed development before it is carried out, has been utilized in the country since 1980 (Paliwal 2006). Social scientists and legal scholars have studied the evolution of EIA in India, focusing on the legislative, administrative, and procedural frameworks of the system. Past studies have not explored in depth how judicial institutions, such as green benches and the NGT, resolve disputes that arise from the EIA process. Furthermore, existing literature does not adequately describe how EIA results and green bench/ NGT decisions affect the livelihood and wellbeing of marginalized communities.

## 1.2. Purpose and Objectives

The purpose of this research is to bridge this gap in knowledge regarding the relationship between the EIA process and environmental courts, with a focus on the NGT. This study examines legal cases in the state of Gujarat, India that are related to the use and protection of water resources. While impacts to water resources affect the population as a whole, they can be particularly devastating for

the poor, who rely directly on natural resources for basic livelihoods, including income, employment and wellbeing (Cullet et al. 2012). The study provides a basis for refined exchange and learning between Canada and India in the sphere of environmental protection. Canada has also made substantial progress in this sector and there is an important opportunity for both countries to learn from each other in the implementation of EIA and related public participation in the environmental regulatory system.

The specific objectives of my research are to: (i) describe those aspects of EIA process and practice that trigger green bench or NGT involvement; (ii) understand the extent to which EIA and related environmental clearance (EC) processes have addressed the concerns of marginalized communities; and (iii) assess the effectiveness of the NGT and other judicial institutions in resolving disputes arising from the EIA process.

## **2. LITERATURE REVIEW**

### **2.1. Study area**

Gujarat, a state on the western coast of India at the border of Pakistan, was selected as the location for this research. The two case studies chosen for this study are located in Mahuva taluka (block) of the Bahavnagar district, in southern Gujarat, bordering the Arabian Sea near the Gulf of Kambhat. The taluka of Mahuva has a population of approximately 452,011 in 131 villages and three towns (Census 2011).

For several decades, Gujarat has seen an increase in environmental degradation as a result of the pursuit of rapid economic growth, which has had severe implications for marginalized communities who depend directly on natural resources for survival (Mahadevia 1999). Gujarat is a water-scarce region that experiences heavy rainfalls for very short periods of time (Mahadevia 1999). According to the Bureau of Economics and Statistics (1995), 82% of villages in the arid state were declared as having no source drinking water during the period of 1992-1995, meaning that there were no public wells or that villagers had to walk for more than one kilometre to access water. To this day, the population depends heavily on groundwater for drinking and irrigation. Additionally, the intensive industrial development that has occurred in Gujarat during the last several decades has established a multitude of polluting, resource-extracting and water-intensive industries, which are exploiting the unequally distributed water resources (Mahadevia 1999).

Gujarat is rich in limestone, wildlife, marine life, mangrove forests, and wetlands that are important habitat for migratory birds (Jadhav and Parasharya 2004). As well, hundreds of species of algae, fish, and molluscs have been identified along the state coast (Mahadevia 1999). Since Gujarat is an important exporter of cement, limestone is often extracted from its coastlines, causing the land to lose its natural barrier against seawater infiltration. This can result in a rapid increase in soil and groundwater salinity, which can have detrimental impacts on the already water scarce region. This unsustainable practice can leave local people suffering from severe water shortages. Since the 1990's, tidal regulators have been constructed on the coast of the Mahuva taluka to prevent salinity ingress, namely the Nikol Bandhara, Malan Bandhara and the Samadhiyala Bandhara (Jadhav and Parasharya 2004). These large and shallow bodies of freshwater benefit the agriculture-dependent coastal population, provide habitat for wildlife and are especially important for migratory birds. Jadhav and Parasharya's (2004) research shows that the highest concentration of flamingos in Gujarat was recorded on the Gulf of Kambhat with a very high concentration in the Nikol Bandhara and other tidal regulators of the area. Despite this, large-scale industries in India – politically and economically very important – often operate even in biodiversity rich areas. The Sanghi cement plant in the Kachchh district is a well known case that demonstrates how industries that violate environmental laws, with the knowledge and supervision of the government, have become common in the state of Gujarat (Mahadevia 1999).

Though water and land degradation have been experienced in all of India, the effects of pollution, salinity ingress, and drinking water shortages are

exceptionally detrimental for an arid state, such as Gujarat (Mahadevia 1999), and proposals for further industrial development on its coastal belt are likely to have major implications for the people and biodiversity in the area.

## **2.2. India's EIA system**

Though EIA in India was first established in law in 1994, it had been an administrative requirement for hydropower and river valley development since 1977 (Paliwal 2006; Agrawal et al. 2010; Choudhury 2013; Diduck et al. 2013). Once introduced into the legal system under the Environmental Protection Act (EPA), EIA became mandatory for 29 intensively polluting practices (Agrawal et al. 2010). Amendments to the first EIA notification occurred over several years. In 1997, public hearings were introduced (Diduck et al. 2007; Choudhury 2013), and in 2006 a new notification made EIA mandatory for a total of 32 categories of polluting activities (Agrawal et al. 2010). The objective of the new notification was to make EIA more efficient, transparent and less political, by introducing three substantial changes: 1) a transfer of authority from central to local agencies by having the Ministry of Environment and Forests (MoEF) responsible only for larger projects and giving authority to the State Level EIA Agencies (SEIAA) for regulation of smaller projects; 2) the State Expert Appraisal Committee (SEAC) and Expert Appraisal Committee (EAC) were authorized to provide SEIAA and MoEF with advice to facilitate decision-making; and 3) the State Pollution Control Board (SPCB) or Union Territory Pollution Control Committee (UTPCC) were put in charge of coordinating public hearings rather than the proponent (Chowdhury 2014). Additionally, the 2006 notification prescribed how public

hearings should be conducted, but at the same time it reduced the opportunity for broad public involvement in hearings by limiting them to directly affected local peoples rather than keeping them open to all interested parties (Choudhury 2013).

The various stages of EIA in India can be summarized in seven steps: 1) screening to determine if EIA is required; 2) scoping, in which the proponent is provided with terms of reference; 3) conducting the EIA study, done by the proponent and its consultants; 4) finalizing the EIA report; 5) holding a public hearing where the proponent must address issues raised by the public; 6) reviewing the EIA report and deciding on the EC done by the regulatory body; and 7) monitoring the conditions set in the EC (Rajaram and Das 2006; Diduck et al. 2013; Rathi 2017).

The methodology used for EIA in India, similar to the practice found in many countries, is the self-assessment approach (Chowdhury 2014). This means that the proponent hires consultants of their choice to conduct the assessment, which is then reviewed by the regulatory body. Additional legislation that is often considered in the EC process in India includes: Wildlife (Protection) Act 1972, Forest (Conservation) Act 1980, the Water (Prevention and Control of Pollution) Act 1974, Water (Cess) Act 1977, National Environment Appellate Authority Act 1977, Air (Prevention and Control of Pollution) Act 1982, Environment (Protection) Act 1986, the Public Liability Insurance Act 1991 and the National Environment Tribunal Act 1995 (Agrawal et al. 2010)

### **2.3. Critiques of India's EIA system**

Many scholars have scrutinized EIA legislation and practice in India, including SWOT (strengths, weaknesses, opportunities and threats) analyses conducted by Paliwal (2006) and Rathi (2017). These authors and others have noted that EIA has not been entirely effective at preventing and mitigating impacts of intensive industrial development in the country due to restrictions, flaws and loopholes in the system (Agrawal et al. 2010). The most recurrent limitations found in the literature include inadequate screening and scoping practices, low quality EIA reports, lack of consideration of project alternatives, poor public engagement processes, and deficient monitoring mechanisms (Paliwal 2006; Diduck et al. 2007; Agrawal 2013; Choudhury 2013; Erlewein 2013; Rathi 2017).

Public participation in India occurs after completion of the screening and scoping stages, which is a major flaw because fundamental questions about the breadth of any given EIA study will be answered without input from directly affected peoples. Further, since public hearings are conducted after EIA studies have been completed, the incentive to incorporate public concerns is minimal (Rajaram and Das 2006). This approach commonly generates a lack of public trust towards the proponent (Rajaram and Das 2006; Diduck et al. 2013) and has resulted in a series of violent disputes between proponents and affected publics across the country (Rajaram and Das 2006). Additionally, it has been noted that the public is not often able to provide valuable input because they have insufficient information on project details, they lack awareness of environmental



processes, or they lack the technical and financial aid needed to participate in a meaningful way (Paliwal 2006; Diduck et al. 2007; Diduck et al. 2013).

These public participation flaws likely contribute to the low quality of EIA reports (a common criticism of India's EIA system) as do lack of baseline data and lack of understanding of the significance of impacts (Rajaram and Das 2006). The self-assessment approach could also be contributing to this problem. The self-assessment model can cause EIA consultants to downplay the seriousness of predicted impacts due to pressure received from their client, the project proponent (Rathi 2017). As experienced in many countries, the self-assessment approach can be problematic as there is little incentive for the proponent to conduct an extensive EIA study, but rather to create a document that simply satisfies basic EIA requirements and expedites the process.

#### **2.4. Lessons from the international EIA literature**

The limitations of the Indian EIA system noted above are similar to criticisms made about EIA generally and in countries around the world. For example, poor quality or limited availability of baseline data is recognized as an international limitation (Morgan 2012; Pope et al. 2013), as are poorly conducted cumulative effects assessments, inadequate public participation processes, and weak consideration of project alternatives (Pope et al. 2013). As well, although EIA often leads to improvements in project planning worldwide, Cashmore et al. (2004) discovered that such improvements are usually very minor and that overall EIA does not contribute significantly to sustainable development. Further, Gibson (2012) identified the inability of EIA to effectively influence decision-making.

Inadequate public participation opportunities are an international problem, with public consultation often viewed as a mere procedural tool rather than an empowering and meaningful process (O’Faircheallaigh 2010; Adelle and Weiland 2012; Esteves et al. 2012; Pope et al. 2013). O’Faircheallaigh (2010) argues that meaningful participation is understood and valued in diverse and inconsistent ways, and this makes it difficult to implement effectively. Important aspects of meaningful participation include sharing information, involving communities at early stages of decision-making, taking community aspirations into consideration and giving the public the ability to influence decision-making (Momtaz and Gladstone 2008). Further, the wide array of benefits of participation is rarely realized, including access to local knowledge, broadening the range of solutions considered, avoiding litigation, strengthening democratic practice, individual and community empowerment, and broad-based individual and social learning (Stewart and Sinclair 2007).

In a more optimistic view, Pope et al. (2013) recognize the strengths of EIA as having an overall good procedural framework, supported by an important international group of practitioners, and as having some positive impacts though not always immediate or obvious. Furthermore, it is recognized that the institutionalization of EIA has advanced over the last two decades to incorporate critical and imminent issues such as climate change, threats to aquatic ecosystem, and loss of biodiversity (Morgan 2012). However, deterioration of EIA systems has also recently been seen in some countries, including the significant changes to federal Canadian impact assessment in 2012, which Gibson (2012) criticized as reversing decades of progress. Other governments threaten EIA as well, some

viewing it as too lengthy and costly and hindering development and economic growth (Pope et al. 2013). Finally, Morgan (2012) raised two critical points to consider when studying the effectiveness of EIA. First, any evaluation is only meaningful when it takes into account the socio-economic, political and cultural context of the country or countries concerned. Second, views of effectiveness depend on one's understanding of EIA's basic nature and purpose (Wood 2003; Elling 2009; Morgan 2012). Therefore, it is important to keep these in mind when examining EIA in various countries.

## **2.5. Environmental justice in India**

Conventional meanings of environmental justice, including principles of fair treatment and equal distribution of environmental risks (Trubek 1980; Williams and Mawdsley 2006), have been analysed and further defined into three important components: equity in the distribution of environmental risk, recognition of the diversity of participants and experiences in affected communities, and opportunities for participation in the political processes that create and manage environmental policy (Schlosberg 2004). Additionally, environmental justice should be understood in relation to the neoliberal state's ability to empower or suppress civil society, often forcing marginalized sectors of society to either tolerate or escape environmental degradation (Thompson 2008). Finally, the three pillars of environmental democracy: access to information, access to participation in decision-making, and access to justice, must be considered in analysis of environmental justice.

A new era of environmental activism began in 1982 when India's Supreme Court introduced public interest litigation (PIL), a tool for individual activists and organizations to address the judiciary and request legal redress for vulnerable sectors of society (Curmally 2002; Bhushan 2004). PIL empowers non-governmental organizations (NGO), civil society organizations and farmers' associations to fight for the rights of marginalized groups (Curmally 2002; Bhushan 2004) and represents the judiciary's commitment and effort to address poverty and overcome power and income inequalities in India (Patel and Dey 2013). The introduction of PIL was followed by the Supreme Court's implementation of an informal bench of judges with technical expertise to better deal with cases involving environmental concerns. Similarly, green benches in nine state-level high courts were soon established. In 2010, the establishment of the 'quasi-judicial' National Green Tribunal (NGT) gave rise to a new era of environmental jurisprudence in India, coming at a much-needed time of rapid economic growth coupled with severe environmental deterioration and rising poverty levels across the country (Government of India 2010). Those experiencing poverty and food insecurity comprise approximately one third of the country's population (Government of India 2010) and are particularly vulnerable to environmental changes. The establishment of specialized environmental tribunals and benches provides an important opportunity for the mitigation of disputes arising from environment-versus-development debates in India.

As the NGT is still relatively new, its effectiveness at resolving environmental disputes has yet to be assessed. However, academic critiques have noted the NGT's limited scope of authority (seven federal statutes and no

provincial environmental ones) and some have contextualized it within a historical trend of inadequacy of quasi-judicial tribunals in India due to political interference (Sharma 2008; Rosencrantz et al 2009; Rosencrantz and Sahu 2009; Kohli 2011; Nambiar 2012).

Environmental cases in India's Supreme Court and state high courts are primarily filed against state governments rather than project proponents, due to the states holding property rights over the majority of natural resources (Singh 1994). Consequently, state governments often face complex and conflicting interests arising from their multiple roles as proprietor, petitioner, regulator, arbitrator, and polluter (Singh 1994). Thus, it is important to evaluate how state-level green benches handle these conflicting roles, especially in a state like Gujarat where the government is so deeply committed to economic growth. Finally, EIA exists as a tool for preventing and mitigating environmental damage, and examining the relationship between EIA and specialized environmental courts is critical in understanding and improving systems of environmental approvals and enhancing environmental justice in India.

### **3. METHODS**

#### **3.1. Research Design**

This case study research followed an interactive and adaptive approach (Nelson 1991), meaning that its design and implementation remained responsive to challenges and opportunities identified in the field in collaboration with my research partners (Gujarat National Law University and the Foundation for Ecological Security). Additionally, the study took a grounded theory approach, a common practice in qualitative research where researchers follow a process of simultaneous data collection and analysis in order to induce an explanatory theory (Charmaz and Belgrave 2015).

#### **3.2. Case Selection**

The first stage of the study involved the selection of two environmental legal cases. The selection criteria for the cases included: must have (i) been related to water resources in the state of Gujarat; (ii) included green bench/NGT involvement; and (iii) involved recent legal activity (within the last five years). The cases were selected after conducting an extensive review of legal cases during the months leading to the trip to India followed by a more in-depth search using the Gujarat National Law University's legal database. After discussing potential cases with several NGOs, including Paryavaran Mitra – a local NGO involved in the cases – we selected a proposal to construct a cement plant by Nirma Ltd. due to the proposal's lengthy and complex court proceedings as well as a large people's movement in opposition of the project. This case was located on the coast of the Mahuva taluka in the Bhavnagar district of Gujarat. The second case

was selected once in the field due to its proximity to the Nirma Ltd. site and the involvement of some of the same people who were in opposition to Nirma. This second case dealt with a proposal for a limestone mine by UltraTech Cement Ltd.

### **3.3. Data Collection**

#### **3.3.1. Literature and Document Review**

The study required an extensive review of literature published on the environmentalism of the Indian judiciary, policy documents of selected state governments, reports of court appointed expert committees, investigative media reports, and interactions with scholars in India and Canada. The study also benefitted from the vast literature on environmental jurisprudence in Canada and other commonwealth countries, such as New Zealand and Australia. Through this material, I gained a thorough understanding of: (i) impacts of industry on the environment, marginalized groups, third-party petitioners and NGOs in India; (ii) environmental PIL jurisprudence; (iii) Gujarat's executive and legislative branches of government, and (iv) roles played by the private sector, civil society, organizations, and public policies. In addition, I reviewed Gujarat High Court, India Supreme Court and NGT judgments for selected cases, and analyzed EIA reports for both the selected projects.

#### **3.3.2. Interviews**

Upon obtaining University of Winnipeg ethics approval, I conducted interviews with major stakeholders involved in the selected cases, including community members, NGOs, political leaders, and legal actors (lawyers, activists

and petitioners). The following table provides further details about the study participants.

Table 1. Description of study participants interviewed for selected cases

Category of participants	Nirma Ltd. project	UltraTech Cement Ltd. project
Community members	Men and women involved in the protests, including: <ul style="list-style-type: none"> <li>- Farmers</li> <li>- Agricultural labourers</li> <li>- Diamond factory workers</li> <li>- Shop owners</li> <li>- Small-scale factory owners</li> <li>- Doctors</li> <li>- Tailors</li> </ul>	Men and women involved in the protests, including: <ul style="list-style-type: none"> <li>- Farmers</li> <li>- Agricultural labourers</li> <li>- Diamond factory workers</li> <li>- Shop owners</li> <li>- Small-scale factory owners</li> <li>- Doctors</li> <li>- Tailors</li> <li>- Students</li> </ul>
Local politicians	<ul style="list-style-type: none"> <li>- Three provincial politicians, two village political leaders, numerous village council members</li> </ul>	<ul style="list-style-type: none"> <li>- Two provincial politicians, two village political leaders, numerous village council members</li> </ul>
Legal Actors	<ul style="list-style-type: none"> <li>- One litigant, one lawyer and one activist</li> </ul>	<ul style="list-style-type: none"> <li>- One litigant and one activist</li> </ul>
NGO	<ul style="list-style-type: none"> <li>- One national and two local organizations</li> </ul>	<ul style="list-style-type: none"> <li>- One national and two local organizations</li> </ul>

Nineteen interviews were conducted for the case involving Nirma Ltd. and 22 for the UltraTech Cement Ltd. case. The main inclusion criteria in selecting the participants were direct involvement, direct impact of the proposed projects, or expertise in the cases. The interviews took a semi-structured approach where I asked participants a series of pre-determined questions but allotted time for discussion and elaboration in between questions. Each interview lasted from 20-60 minutes in length and each interview was conducted at the participant's place



of residence or in a public space in the participant's village or town. Many interviews, though originally set as individual interviews, became group interviews, as many people in the villages were interested in taking part. In order to preserve participant confidentiality, I asked all participants to please not reveal to others what was said during the interviews. A translator who spoke the local language was present at every interview and was also made aware of and agreed to the translator confidentiality oath.

All three of my research objectives were addressed in my interview questions using an interview script that varied slightly depending on the type of participant but that included questions that addressed: 1) the participant's involvement in the EIA process and their thoughts on the process; 2) the participant's perception of the main impacts of the proposed development project; and 3) the participants' experience and views on the effectiveness of the NGT and other judicial institutions at resolving disputes regarding the selected cases. I took detailed hand written notes of interview responses and interviews were audio recorded when consent was given by participants. The hand written notes were then typed out and any gaps in the record were later filled by transcription of the audio recordings. The completed transcripts became the basis for a thematic analysis.

### **3.3.3. Participant Observations**

Participant observations were conducted and recorded throughout my three months in India, by photographs, audio recordings and hand written notes. No identifying factors are used in this thesis in order to maintain participant

confidentiality. Major events that were observed include two village meetings and a foot march to raise awareness about the impacts of the UltraTech Cement Ltd.'s proposed mine. Observing and documenting these events allowed for a better understanding of group dynamics and social interactions among participants (Vanderstoep and Johnston 2009). Maintaining a neutral stance during participant observation became challenging at times as I often had direct contact with participants during these events and I often felt deeply immersed in the research setting, particularly during the foot march (Vanderstoep and Johnston 2009). However, I tried to consistently keep this challenge in mind and in doing so I am confident in the neutrality of my observations and descriptions of behaviours, events and experiences.

#### **3.3.4. Transect Walks**

Transect walks became an important research method in the field. Before or after an interview with a local community member, the participants would often invite us to follow them onto their farmland. During these walks, the participants showed us the fertility of their soils, the various types of crops growing on their fields, the types and amount of livestock they owned, the proximity of their land to a freshwater source, and/or the proximity of the proposed industrial projects to their fields. These experiences were documented through photographs and written notes and helped verify the interview data.

#### **3.3.5. Data Analysis**

A mixed methods research approach was used, which allowed for the interpretation and integration of both quantitative and qualitative data in order to

exploit the strengths of the two types of data (Creswell 2014). A conventional qualitative content analysis was used to analyze the existing literature to reveal common themes surrounding environmental justice, EIA and judicial environmental institutions in India. As well, data analysis software, NVivo 11, was used to perform an inductive thematic analysis of interview responses (Braun and Clarke 2006). Interview data were first organized, prepared and arranged to ensure uniformity (Creswell 2014), then imported into the software where the data were systematically analyzed (Strauss and Corbin 1994). Coding was performed inductively and revealed major themes and subthemes grounded in the data, rather than being based on theoretical or pre-existing categories. The results are organized according to research question, with each question addressed in its own subsection. I generated three tables (found in section 4) that demonstrate themes and subthemes pertinent to each research question. The tables helped to quantify the interview data by showing the number and percentage of interviews (sources) where a certain theme was mentioned. Additionally, the tables show the number and percentage of total references clustered at each theme, as a supplementary proof of thematic importance. Minority viewpoints were also included in the table, and although not often mentioned, these viewpoints provide valuable insights. Below each table, I provide an explanation of the themes and subthemes and supported the information with direct quotes from my study participants. Following the grounded theory approach, the discussion section provides an interpretation of my results, which I linked to existing literature in order to support, contradict or develop theory (Charmaz and Belgrave 2015).

### **3.4. Trustworthiness**

Common threats to trustworthiness and validity of qualitative content analysis include issues of: (i) credibility; (ii) transferability; (iii) dependability; and (iv) confirmability (Elo et al. 2014; Shenton 2004). To ensure credibility, I included purposeful sampling of participants and continuous examination of previous research findings to ensure an adequate level of consistency (Shenton 2004). Additionally, I obtained frequent feedback from colleagues, peers and academics, as peer scrutiny can provide a fresh perspective on the study. Transferability is difficult to achieve using qualitative analysis due to the uniqueness of the particular environment and individuals being studied. However, since I provided a significant amount of contextual information about the study, I believe my results could be transferable to other situations (Shenton 2004). To address dependability, I thoroughly described the research design and implementation and performed frequent reflective appraisals of the project, meaning that I often assessed the effectiveness of my processes (Shenton 2004). To achieve confirmability, I acknowledged my predispositions as a researcher and often reflected on my beliefs and biases (Creswell 2014; Shenton 2004). Additionally, I included direct quotes from interviews to demonstrate that the findings emerged from the data themselves rather than my own predispositions (Shenton 2004). A final threat to validity included the language restrictions and cultural barriers present during my study. The primary translator involved in this research was also a well-known environmental activist in the communities we visited. This may have resulted in some hesitation in research participants fully and truthfully answering our interview questions. Asking the translator to remain neutral and to

remind the study participants that all answers would remain confidential helped minimize this limitation. To further respond to this constraint, a second translator was used for some interviews.

## 4. RESULTS

### 4.1. Features of the proposed projects

#### 4.1.1. Nirma Ltd.

Nirma Ltd. is part of the multi-million dollar Nirma group, which manufactures an array of products, including soaps and detergents, soda ash, salts and cement (Min Mec Consultancy Pvt. Ltd. 2008; Sheth and Raval 2016). The case began in 2008 when Nirma Ltd. developed a proposal for a cement plant, coke oven, and captive power plant to be constructed across 280 hectares of land in village Padhiarka of the Mahuva taluka in the Bhavnagar district of Gujarat (Min Mec Consultancy Pvt. Ltd. 2008; Banerjee 2015; Sheth and Raval 2016). The land required for the project is a common property resource, meaning that the land is collectively used for grazing, collecting firewood, and irrigation and drinking water for surrounding villages. Common property resources in India are an important source of livelihood for rural communities but their ownership is currently unclear (Gaur et al. 2018).

A public hearing was held on September 9<sup>th</sup> 2008 where residents of Mahuva declared their opposition to the project claiming the project site to be in the waterbody of the Samadhiyala Bandhara, a human-made reservoir preventing seawater intrusion into soils and groundwater and an important source of irrigation water (Banerjee 2015). Despite the local opposition, the project received EC by the Ministry of Environment and Forest (MoEF) on December 11<sup>th</sup>, 2008 after review of the EIA – conducted by Min Mec Consultancy Pvt. Limited – that described the project site as a wasteland (EC 2008; Sheth and Raval 2016).

Additionally, the company was granted 3,460 hectares of land in Padhiarka to mine limestone as raw material for the cement plant (EC 2008; Sheth and Raval 2016).

The EC was challenged in the Gujarat High Court in March 2009 by local villagers who filed public interest litigation (PIL) raising concerns about the impacts of the project on the freshwater reservoir of the Samadhiyala Bandhara (HC 2010; Banerjee 2015; Sheth and Raval 2016). In August 2009, an expert committee appointed by the Gujarat High Court recommended that Nirma Ltd. surrender 54 hectares of land to reduce the impacts on the waterbody and this recommendation was accepted and enforced by the High Court (HC 2010). Following this decision, the local people's protest group – Shri Mahuva Bandhara Khetiwadi Priyavaran Bachav Samiti (SMBKPBS) – continued to fight and provided the High Court with satellite images of the project site, which showed the area to be a wetland (Banerjee 2015). The High Court demanded that the company return an additional 46 hectares of land, but allowed the project to continue (HC 2010; Sheth and Raval 2016).

In May 2010, the petitioners brought the case to the Supreme Court in a further effort to block the project. Another expert committee was arranged by the Ministry of Environment Forests (MoEF) under C.K. Varshney to conduct site inspections, which resulted in the MoEF requiring that Nirma Ltd. stop the construction of the cement plant (MoEF 2011; Sheth and Raval 2016). Nirma Ltd. filed an appeal of the MoEF decision in the High Court, which was rejected. Another expert committee was then ordered by the Supreme Court under C.R. Babu, which suggested relocation of the plant due to its location on a wetland.

The committee found that the plant would induce ecological changes to the water body and would impact forest that harbours two critically endangered vulture species, other threatened bird species and Asiatic lions, located within a 10 kilometre radius of the project site (MoEF 2011; Banerjee 2015; Sheth and Raval 2016).

In September 2011, the Supreme Court of India gave Nirma Ltd. three months to prove that the project site was in fact a wasteland rather than a wetland. Two months later, the success of the people's movement was recognized when MoEF cancelled the EC granted to Nirma Ltd. (MoEF 2011; Sheth and Raval 2016). However, Nirma Ltd., having already invested nearly 1.5 billion rupees into the project, filed an appeal of the MoEF decision with the NGT, which decided to reevaluate the project site in February 2013. To the shock and frustration of the people's movement, the NGT gave the order on January 14, 2015 to cancel the MoEF's revocation of the EC and to allow Nirma Ltd. to carry on with the construction of the cement plant (Banerjee 2015; NGT 2015). Their decision was made on the basis that Nirma Ltd. did not deliberately conceal information in the EIA report when identifying the project site as a wasteland rather than a wetland (Banerjee 2015; NGT 2015). Anand Yagnik, a lawyer who has been fighting the case on behalf of the local villagers for years, claimed that "The NGT's order makes it okay for a project to come up in a water body as long as it has not been notified as a wetland", setting a precedent for the misappropriation of wetlands to further industrial development (Banerjee 2015). The case is now back in the Supreme Court as the people's movement awaits the verdict in hopes of gaining environmental justice.



#### **4.1.2. UltraTech Cement Ltd.**

UltraTech Cement Ltd., part of the Aditya Birla Group, is India's largest exporter of cement. The selected case involves a 2016 proposal for a limestone-mining site extending over 1,700 hectares of land in the Talaja and Mahuva talukas of the Bhavnagar district of Gujarat (J.M. EnviroNet Pvt. Ltd. 2016). The company is proposing to hire 43 people from the affected villages, which hold a combined population of nearly 800,000 people (Census 2011; Express News Service 2016; J.M. EnviroNet Pvt. Ltd. 2016). Three separate public hearings were conducted, one pertaining to each phase of the proposed project, in June 2016 at the location of the project site. Between 10,000 and 20,000 villagers (exact number is unknown due to the fact that many people did not sign the attendance sheet) from the affected area attended the public hearings held by the state pollution control board. The primary worry expressed by the affected parties was the ingress of salinity into their land and water resources if limestone were to be removed and thus can no longer act as a natural barrier (Express News Service 2016; J.M. EnviroNet Pvt. Ltd. 2016; Public Hearing Proceedings 2016). Following the public hearings, a local activist, Bharat Jerambhai Bhil, filed a petition in the NGT against the mining project on behalf of the affected communities. His primary arguments were that the proposed project site is home to critically endangered vultures and 70 species of migratory birds, there is a forest reserve and mangrove forest in the vicinity of the project, and the EIA describes the project as unfertile barren land when in reality it is fertile (Public Hearing Proceedings 2016). At the time of writing, the NGT had yet to release its decision.

## **4.2. EIA, local concerns and environmental justice**

### **4.2.1. Aspects of EIA process that triggered the involvement of the court system**

Study participants raised several concerns regarding the EIA process that triggered the involvement of the court system. These were classified into three primary themes (inadequate public participation, political influence, and poor quality of the EIA report) and several secondary themes.

Table 2. Summary of aspects of EIA process that triggered the involvement of the court system as identified by study participants

Primary Theme	Secondary Theme	# and % of interviews (N=41)	# and % of references (interview data segments) clustered at each theme (N=149)
Inadequate Public Participation	Lack of information about the project	22, 54%	44, 30%
	Lack of participation opportunities during the public hearing	6, 15%	7, 5%
	Not being heard during public hearing	16, 39%	25, 17%
Political Influence	Political influence during EIA and EC process	27, 66%	57, 38%
Poor Quality of the EIA Report	Lack of site visits	10, 24%	15, 10%
	Corrupt EIA practice	1, 2%	1, 1%

#### 4.2.1.1. Inadequate public participation

##### 4.2.1.1.1. Lack of information about the project

In 54% of the interviews, participants discussed problematic issues regarding the provision of information about the project. For the Nirma case, most of these participants expressed that they were unaware that a public hearing was taking place and suggested that the proponent misinformed the community. One respondent noted that when Nirma Ltd. began fencing around the proposed site: “they misguided the people and said it was to protect from nilgais and said it was a government project.” When asked if the community had access to the EIA report prior to the hearing, one respondent explained: “No EIA report was given to the people, there was a notice posted about Nirma in the newspaper but in English.” This represents a significant concern due to the high rates of illiteracy in

the communities and the very low rates of English speaking residents, as explained by the villagers. According to the Nirma EIA report, 47% of the population of the affected villages are illiterate (Min Mec Consultancy Pvt. Ltd. 2008; Census 2011) and, therefore, a written notice of the public hearing is not an effective communication method. For the UltraTech case, most interviewees were aware and attended the public hearing. However, information regarding the project details came from a community leader who visited the surrounding villages to raise awareness of the project rather than being provided by the proponent. It was mentioned in numerous interviews that participants learnt about the projects from fellow villagers. Additionally, I was able to observe a foot march organized by villagers in order to raise awareness of the potential impacts of the proposed UltraTech Cement Ltd. mining site. The march was led by a local teacher and activist and reached thousands of villagers throughout five villages surrounding the project site (Fig. 1).



Figure 1: Foot march on July 11, 2017 led by a local leader from the Village Kalsar to raise awareness of the impacts of UltraTech Cement Ltd.’s proposed limestone mining site

#### **4.2.1.1.2. Lack of participation opportunities during public hearing**

In 15% of interviews, participants indicated that they were made aware of the public hearing and attended the hearing but that they were prevented from speaking and/or felt discouraged from expressing their concerns. One respondent claimed that during the public hearing for Nirma: “the Chairman invited women to speak, said they all have a right to speak but when they all stood up to speak, the jury members and pro-industrialists all walked out.” Additionally, one participant mentioned: “Men were able to speak at the public hearing but once the Jury and MLA realized that everyone was against the project, they walked out.”

#### **4.2.1.1.3. Not being heard during public hearing**

In 39% of interviews, participants expressed that even when they attended a public hearing and were able to voice their opinions and concerns they felt they

were not taken seriously and/or that their opinions were not considered during the decision-making process. For many people, this concern was evident from the fact that of the high number of people who attended the public hearings for the UltraTech case very few were supporters and yet following the public hearing, the EC was granted.

#### **4.2.1.2. Political influence**

##### **4.2.1.2.1. Political influence during EIA and EC processes**

In 66% of interviews, participants expressed some concern regarding the ruling political party favouring industry and therefore influencing decisions made during the EIA and EC processes. Regarding the Nirma case, one participant explained: “the High Court’s decision was interfered with by the government at that time, then the Supreme Court’s decision was influenced by another ruling party. The NGT decision was made after another government change. Now that it is back in the Supreme Court, I believe that the government will put pressure on the judge, using bribes such as appointing the judge to a higher position”. This concern was further explained with examples of corruption, bribes, and attacks by police on villagers. One participant explained: “Nirma supporters and politicians are the ones imposing the threats. I am ready to die to save my land. I have been attacked by police and I have gone to jail, once for three hours and once for a day.”

#### **4.2.1.3. Poor quality of the EIA report**

##### **4.2.1.3.1. Lack of site visits by proponent/EIA consultant**

Though very few participants had any knowledge of the EIA process, many confirmed that they had not seen anyone from the Nirma Ltd. or UltraTech Cement Ltd. companies visiting the proposed project sites (24% of interviews). This demonstrates that the EIA might have been created without field visits to the actual sites. This is further evident when comparing the land description of the EIA reports and the description of the land by the villagers themselves: “In the EIA report, the company said that this whole area is a wasteland, but we can see different kinds of trees, plants and crops. How can they say this is a wasteland?” In the EIA report, the 280 hectares of land required for the Nirma project are described as barren land (Min Mec Consultancy Pvt. Ltd. 2008). However, in subsequently conducted expert committee reports, it was proven that 268 hectares of land allotted to Nirma are in fact part of the Samadhiyala Bandhara catchment which possesses all of the salient features of a wetland ecosystem (MoEF 2011). The expert committees confirmed that the revenue records still classified the land as wasteland but that the records were very old and should be revised (MoEF 2011). Additionally, one study participant noted: “EIA experts never came to look at the land. They made this report sitting in air-conditioned rooms. Officers must visit sites but in India most EIA report makers don’t do this.” Several transect walks were conducted where villagers took us onto their lands to show us the variety of crops they were able to grow, demonstrating the fertility of their land (Figure 2). Furthermore, the EIA report for UltraTech Cement Ltd. explained that

a socio-economic survey was conducted with families from the affected villages (J.M. EnviroNet Pvt. Ltd. 2016), however, the majority of study participants had never been contacted by the proponent.



Figure 2: Farm in village Padhiarka visited during transect walk demonstrating fertility of land and proximity of Nirma Ltd. cement plant, which can be seen in the background

#### **4.2.1.3.2. Corrupt EIA practice**

Though this concern was only expressed in one interview, this minority viewpoint is still of great importance. The respondent who viewed corruption as a problem noted: “EIA companies are corrupt. The proponent hires them and tells them what to put in EIA report to satisfy the requirements of EC.” This is a theme expressed in literature regarding environmental justice in India, as noted in the discussion.



#### 4.2.2. EIA report addressing concerns of affected communities

The study participants raised numerous concerns regarding the potential impacts of the Nirma Ltd. and UltraTech Cement Ltd. projects. These were classified into two primary themes (environmental impacts and socio-economic impacts) with various subthemes. The participants also noted preferred types of industrial development as these ideas came up in discussions about potential impacts.

Table 3. Summary of impacts of industrial development as identified by study participants

Theme	Description of impact	# and % of interviews (N=41)	# and % of references (interview data segments) clustered at each theme (N=314)
Environmental Impacts	Negative impacts to air and land	23, 56%	36, 11%
	Water pollution and increase in salinity	26, 63%	49, 16%
	Negative impacts on wildlife	12, 29%	15, 5%
Socio-economic Impacts	Loss of employment	20, 49%	39, 12%
	Increase in seasonal migration	23, 56%	33, 11%
	Loss of land	29, 71%	57, 18%
	Safety concerns	17, 41%	29, 9%
	Health concerns	12, 29%	13, 4%
Preferred Types of Industrial Development	Agriculture-based industry	18, 44%	25, 8%
	Any industry that does not destroy the environment	3, 7%	4, 1%
	Any industry	5, 12%	14, 4%

#### **4.2.2.1. Environmental impacts**

##### **4.2.2.1.1. Negative impacts to air and land**

In over half of the interviews (56%), respondents expressed concerns about negative impacts to the quality of air and land surrounding the proposed project. Most of these concerns revolved around the increase of salinity in the soil from the removal of limestone in the area. Speaking of the proposed UltraTech mine, one person said: “The layer of stone will be destroyed, leading to salinity increase, which will spoil the land over time. In this area, the sea level is higher so salinity will increase rapidly if the limestone is taken out.” The increase in soil and groundwater salinity was not mentioned in either EIA reports (Min Mec Consultancy Pvt. Ltd. 2008; J.M. EnviroNet Pvt. Ltd. 2016). Air and land pollution from the projects was another negative impact commonly mentioned in interviews: “If the mine starts, there will be lots of dust, the whole land will become a wasteland. Right now it is fertile because of the limestone, it is a natural layer, it protects the infiltration of sea water into the land.” This represents a major discrepancy between public concerns and predicted impacts in the EIA reports as both reports describe the land as barren, unfertile land rather than productive agricultural land (Min Mec Consultancy Pvt. Ltd. 2008; J.M. EnviroNet Pvt. Ltd. 2016).

##### **4.2.2.1.2. Water pollution and increase in salinity**

A major impact expressed in the majority of interviews (63%) involved the spoilage of water resources in the region either by pollution or by the ingress of seawater, which would then have impacts on land, agriculture, wildlife,

livelihood, etc. As one person said with respect to the Nirma project: “The water will become spoiled from pollution from the factory. The whole environment will be destroyed and ecosystem affected. To produce cement they have to first mine; this will increase salinity very rapidly.” As the projects are located in an arid environment, the environmental and socio-economic impacts related to an increase in salinity in water resources are significant and potentially irreversible. Since the EIA report for the Nirma project does not recognize the project site as a wetland but rather a wasteland, it does not predict significant impacts to water resources. However, the project site has been proven by expert committees to be located in the watershed of the Samadhiyala bandhara and according to The National Water Policy (2012), bandharas are a source of both drinking and irrigation water that should not be modified. The expert committees studied the Nirma site and concluded that an alternative project site, which is not in the vicinity of a wetland, should be considered (MoEF 2011). As for the Ultratech case, the EIA report claims that there will be negligible impacts to surface water and groundwater regimes and fails to discuss seawater intrusion (J.M. EnviroNet Pvt. Ltd. 2016).

#### **4.2.2.1.3. Negative impacts on wildlife**

In 29% of interviews, respondents expressed concerns over the impacts of industrial development on the wildlife in the area. One participant noted: “I am worried about living creatures: peacocks, migratory birds, lions, nilgais, leopards, and all kinds of trees.” As mentioned in the literature, the coastal region of Gujarat is home to an important amount of biodiversity, however, the Nirma EIA

report mentions only peacocks as an animal of concern in the study area (Min Mec Consultancy Pvt. Ltd. 2008). As for the UltraTech EIA report, a list of flora and fauna in the study area is provided but it is noted that no significant impacts to biodiversity are anticipated (J.M. EnviroNet Pvt. Ltd. 2016). Additionally, the UltraTech EIA report recognizes that there is a protected forest 0.78 km east of the proposed mining site but claims that no forest land will be involved in the mining and therefore, does not discuss potential impacts of the project on the forest ecosystem (J.M. EnviroNet Pvt. Ltd. 2016).

#### **4.2.2.2. Socio-economic impacts**

##### **4.2.2.2.1. Loss of employment**

During almost half of interviews (49%), respondents expressed their concerns regarding loss of employment that would result from the approval of the projects. One participant said: “In the agricultural industry there are currently 70,000 people involved. If Nirma is running, there will only be 400 workers – therefore, most people will not benefit.” When asked if they would work for Nirma if the opportunity arose, the majority of participants explained that they did not possess enough education to be hired by the company and expressed no interest in working in the mining and cement industries. This lack of employment opportunities is indirectly confirmed in the project’s EIA report, which explains that out of the 452,011 people living in the Mahuva taluka (census 2011), some would be hired for the 418 positions that Nirma is looking to fill while others would be recruited from the outside (Min Mec Consultancy Pvt. Ltd. 2008). For

the UltraTech case, a mere 43 people may be hired as manpower for the mining site (Public Hearing Proceedings 2016).

#### **4.2.2.2.2. Increase in seasonal migration**

As a result of a loss of employment, multiple participants (56% of interviews) expressed concerns with forced seasonal or permanent migration to find work. One participant said: “If the mining happens, we might have to migrate for work. Under any conditions we don’t want any mining here. No one is happy to migrate.” Many participants affirmed that they would migrate with their entire families and that children would miss out on several months of education every year. When asked where they would go and what type of work they would do if forced to migrate, one respondent answered: “If we have to migrate, we won’t know how to survive.” There is a disconnect between these concerns and the Nirma project’s EIA in which it was stated that project would cause no displacement of people (Min Mec Consultancy Pvt. Ltd. 2008).

#### **4.2.2.2.3. Loss of land**

Loss of land is an impact that was expressed in 71% of interviews and is a direct cause of concerns over loss of employment and increased seasonal migration. Participants explained that with the increase in salinity and pollution to their lands, these would become unfertile. With a loss of fertile land in this agricultural-dependent region, the rates of unemployment and forced migration would inevitably increase. One participant explained his concerns: “I am concerned about migration. The whole land will become destroyed due to mines. Canals and water bodies will be destroyed, salinity of groundwater will increase,

safety of women and children, there won't be any gaucher land left for animals to graze.” When a community is closely dependant on their agricultural lands, any decrease in its productivity can have serious impacts on the livelihood of that community. Once again, this represents a discrepancy between local concerns and impacts predicted in the EIA reports as people view the land as agriculturally productive rather than an unfertile wasteland (Min Mec Consultancy Pvt. Ltd. 2008; J.M. EnviroNet Pvt. Ltd. 2016). In the UltraTech Cement Ltd. EIA report, it is specified that 90% of the affected population is dependent on and involved in agricultural practices but the report simply affirms that the project will not have any adverse impact on agriculture (J.M. EnviroNet Pvt. Ltd. 2016).

#### **4.2.2.2.4. Safety concerns**

In 41% of interviews, participants expressed their worry regarding the safety of women and children. The main concern involved the introduction of outside workers into the villages. This was a legitimate concern that arose from previous incidents experienced in surrounding villages: “We have relatives in Doliya who got attacked. Therefore, if Nirma workers are here, we are worried about our safety.” Nirma’s EIA report does explain that there will be an influx of outside workers during the construction phase, which will increase the population around the site area but does not address issues of women and children’s safety (Min Mec Consultancy Pvt. Ltd. 2008). Since the UltraTech site is only planning on hiring 43 workers, and some from the affected villages, safety issues regarding the influx of outside workers is less of a concern.

#### **4.2.2.2.5. Health concerns**

Finally, health concerns were mentioned in 29% of interviews. The majority of these concerns involved pollution and dust from the projects in the air, water and soil. One participant noted: “Health concerns of the soda ash plant: chemicals will affect pregnant women through water and food contamination”, and another expressed concern that: “cancer rates will increase and children’s health will be impacted because of the cement dust.” Both EIA reports specified that there would be no significant impacts to human health (Min Mec Consultancy Pvt. Ltd. 2008; J.M. EnviroNet Pvt. Ltd. 2016).

#### **4.2.2.3. Preferred types of industrial development**

##### **4.2.2.3.1. Agriculture-based industry**

While questioning participants about the impacts of the proposed projects, several people shared their insight on the type of development they would prefer to see in their communities. In 44% of interviews, participants mentioned that an industry which supports agriculture, such as onion and garlic dehydration plants, cotton ginning factories, and oil mills, would be much more beneficial to the community than cement and mining industries. One participant mentioned: “Industries are important in this area for development, but agricultural industries, such as onion, cotton, groundnut, garlic, and coconut, are important. Government should promote industries that support agriculture as the land is so fertile here.”

#### **4.2.2.3.2. Any industry that is not harmful for the environment**

Some participants (7%) did not specify which type of industry they would support in their community but indicated that they would prefer any type of industry that does not damage or destroy the environment. For example, one respondent answered: “I welcome all kinds of industries that are not harmful for the environment.”

#### **4.2.2.3.3. Any type of industry**

In 12% of interviews, respondents were in favour of industrial development of any type. Most of these opinions came from urban residents who would not be directly impacted by the projects in question and from local politicians who would likely benefit economically from industrialization of the region. One pro-industry participant claimed: “This country’s economy is entirely based on agriculture. We cannot continue to develop solely on agriculture. We need industrialization too.”

### **4.3. Effectiveness of the NGT and other judicial institutions at resolving disputes arising from the EIA process**

When asked about the NGT and other judicial institutions, the answers that the study participants shared can be classified into four major themes: accessibility, inconsistent court decisions, limited scope of authority, and political influence on the courts.



Table 3. Summary of views on the NGT and other judicial institutions as identified by study participants

Theme	Description of theme	# and % of interviews (N=41)	# and % of references (interview data segments) clustered at each theme (N=72)
Accessibility	High cost of court procedures	10, 24%	14, 19%
	Education required to attend and participate in court procedures	10, 24%	13, 18%
Inconsistent court decisions		5, 12%	7, 10%
Limited scope of authority	NGT operating under limited legislation	2, 5%	2, 3%
Political influence	Political influence in the courts	19, 46%	36, 50%

#### **4.3.1.1. Accessibility**

##### **4.3.1.1.1. High cost of accessing the courts**

Participants in 24% of interviews expressed concerns over the high cost of attending and participating in court and viewed this as a major obstacle to obtaining justice in India. The costs included travel time and expenses, time and wages lost attending multiple court dates, and the legal fees. One respondent claimed: “Only rich people can get justice in India.” Another respondent said that he did not earn money for five years in order to fight against Nirma and added: “We don’t have money but we’ll fight with passion.”

#### **4.3.1.1.2. Education required to attend and participate in court procedures**

In another 24% of interviews, participants explained that they did not possess a level of education high enough to attend and participate meaningfully in court procedures. According to the census of 2011, approximately 30% of the rural population above 7 years of age in Gujarat are illiterate. Additionally, English is the language spoken in High Courts and the Supreme Court in India but there is very little English spoken in rural villages. Furthermore, a lack of education about court processes and how to access the courts was a major issue raised by the participants. One participant explained: “Court is expensive and in English. Farmers here cannot understand what is being said. English in High Courts makes it very easy to misguide people who don’t speak the language. High Court proceedings in Gujarat should be in Gujarati.” Lastly, a lack of awareness and education about the impacts of industrial projects is another concern that was raised: “People need to become more aware and educated, and then they need to protest. They need to do revolutionary work, people need to unite and use their power in numbers – but first they need to be educated and understand the positive and negative impacts of a project. This is what has brought near success in the Nirma case, the awareness of the people and then uniting.”

#### **4.3.1.2. Inconsistent court decisions**

##### **4.3.1.2.1. Decisions made by the different legal institutions differ from one another**

Study participants in various interviews (12%) expressed some confusion caused by seemingly inconsistent court decisions. This mostly related to the Nirma case, which involved contradicting results between the decisions made by the High Court, Supreme Court, and NGT. One respondent showed their perplexity when explaining that: “Supreme Court denied Nirma, ordered Nirma to stop work until the farmers are done protesting, but the High Court said go ahead to Nirma.”

#### **4.3.1.3. Limited scope of authority**

##### **4.3.1.3.1. NGT operating under limited legislation**

Though only mentioned in 5% of interviews, some participants viewed as problematic the limited scope of authority of the NGT. These participants did not view the NGT as having enough authority to really advance environmental justice, due to the limited number of statutes under its jurisdiction. Though a minority viewpoint, this issue has been frequently mentioned in existing academic literature.

#### **4.3.1.4. Political influence**

##### **4.3.1.4.1. Political influence in the courts**

Once again, multiple participants raised concerns regarding political influence (46% of interviews). These concerns involved perceived influence

and/or pressure exerted by the ruling political party onto the court system's decision-making processes. One respondent noted: "There was no faith in the High Court because of the ruling party (BJP) but we ended up getting justice from the Supreme Court (when the Congress party was in power). We don't believe in the NGT because of the current ruling party." When asked what could be improved in court processes to increase environmental justice, this same respondent answered: "We need more honest people in the court." Another participant explained: "All courts are under the pressure from the government. If the court system was fair, then the people would have won by now" and another added: "Courts give judgment according to the law. However, the government in power has the power to change the law. This is why decisions can change."

## 5. DISCUSSION

### 5.1. Aspects of EIA process that trigger the involvement of the court system

Inadequate opportunities for public participation have been a recurrent theme in academic critiques of EIA in India, and this has been confirmed by this study. Research participants frequently expressed a lack of awareness of project details and environmental approval processes when attending public hearings. These complaints suggest inadequate provision of information from the proponent and the government to locally affected communities, which has been a major flaw in EIA processes previously found in studies by Paliwal (2006), Diduck et al. (2007), Diduck et al. (2013) and Rathi (2017). This finding, combined with the fact that public hearings are held after the EIA study has been completed, suggests that public hearings are treated as a mere procedural requirement rather than as an opportunity for the project proponent to incorporate local knowledge into their project planning. Furthermore, it was mentioned in the literature that flawed public participation approaches have resulted in violent disputes between proponents and affected publics across India. Such disputes were also found in this research. Several participants expressed their lack of trust in the project proponents and discussed being involved in violent incidents relating to the Nirma Ltd. project.

Political interference within the EIA and EC processes has been implied in academic literature as “loopholes” in the EIA system (Agrawal et al. 2010) but has yet to be thoroughly analyzed. The participants involved in this study shed light on this issue by frequently mentioning political influence and pressures

exerted by the government during EIA and EC processes. Though corruption was only explicitly mentioned in one interview, political influence and governmental pressure are both directly connected to corruption. This perception of corruption by local people could be explained by the neoliberal push by the Indian government to further industrial development at all costs (Thompson 2008). As expressed by Mahadevia (1999), the Gujarat government has chosen to pursue economic growth over equity and sustainability, which is demonstrated by the unequal distribution of benefits of the proposed development projects in the selected case studies. The proponent and government will surely experience the benefits, while as cautioned by Williams and Mawdsley (2006) the affected communities will be left with the burden of environmental degradation resulting in a loss of land and livelihood.

Poor quality of EIA reports is a common criticism of India's EIA system, and this has been confirmed through this study (Paliwal 2006; Rathi 2017). Many study participants were concerned that EIA reports were created in offices without proper field visits and this was made evident when analysing the two cases. The Nirma Ltd. EIA report described the project site as a wasteland, as per its classification in the outdated revenue records, when a field visit during the rainy season would have revealed that the area is in fact a wetland of extreme environmental and socio-economic importance. The project site selected for the UltraTech Cement Ltd. mining project was also described as barren land, when field visits would have proven otherwise. Inadequate EIA studies may be facilitated by the self-assessment approach employed in India. When proponents are responsible for conducting their own EIAs, there is often little incentive for

conducting a thorough environmental and socio-economic analysis of impacts. Rather, self-assessment can too easily lend itself to producing EIA studies aimed merely at satisfying procedural requirements and expediting the EC process. That being said, the self-assessment model has been successful in many countries where rigorous, well resourced and transparent reviews by regulators and the public are in place (Muldoon et al. 2015). This suggests that such checks and balances are lacking in the Indian system, and as called for by Diduck and Sinclair (2016) new ways of involving the public into the decision-making process must be developed in order to ensure decisions truly reflect local knowledge, values and aspirations.

## **5.2. EIA report addressing concerns of affected communities**

In both case studies, one major discrepancy between the EIA report and the perceptions of impacts by local people pertains to land classification and land use. The Nirma Ltd. EIA report describes the project site as barren land (Min Mec Consultancy Pvt. Ltd. 2008), while surrounding rural communities use this land as a gaucher land and recognize it as being part of the Samadhiyala bandhara, which becomes an important wetland during the annual period of rain. Similarly, the UltraTech Cement Ltd. EIA report describes the mining site as unfertile wasteland (J.M. EnviroNet Pvt. Ltd. 2016), while local people perceive it as fertile land critical to their livelihood. These major discrepancies could also be the by-products of the self-assessment approach, the neoliberal government's empowering of industry, and the inadequate public consultation process.

Another shortcoming of the EIA reports in the selected case studies relates to the study of wildlife. Both reports list the flora and fauna found in the study area but fail to adequately describe potential impacts on species and the significance of these impacts, and fail to provide preventative and mitigation strategies to limit such impacts. This supplements Rathi's (2017) study that explains how the assessment of the physical environment is often limited to a simple listing of species based on secondary data.

The loss of land and subsequent loss of employment resulting in forced seasonal or permanent migration for work, were concerns that were expressed in nearly all interviews by members of affected rural communities. Both industries recognized that the majority of the population in the study area is dependent and involved in agriculture, yet failed to provide solutions for the loss of livelihood and even mentioned that forced displacement would not occur (Min Mec Consultancy Pvt. Ltd. 2008; J.M. EnviroNet Pvt. Ltd. 2016). However, since the two projects were recruiting just a very limited number of workers, unemployment rates would inevitably skyrocket in the rural region if these resource intensive industries were able to operate. This directly relates to Thompson's (2008) understanding of how poor citizens, in a neoliberal government, are the shock absorbers of society and are forced to either tolerate or flee from environmental degradation.

Industrialization in the form of agriculture-based industries was expressed as a preferred type of development by study participants, due to its benefits going to the farmers and agricultural labourers while also economically enhancing the region. However, analysis of project alternatives are rarely specified in terms of



reference for EIAs in India, which results in inadequate consideration of big-picture impacts or site location alternatives (Rathi 2017). Consideration of project alternatives is a key feature of “advanced” EIA processes worldwide and could greatly enhance the quality of EIA reports in India (Muldoon et al. 2015).

### **5.3. Effectiveness of NGT and other judicial institutions at resolving disputes arising from the EIA process**

Justice in India has been consistently inaccessible to poor citizens who inequitably receive the environmental risks of industrial development and none of the benefits. Though PIL demonstrates an important advancement in accessing justice in India by empowering civil society, there remains a lack of technical and financial aid to support community involvement in court proceedings. In the two case studies, the community members who chose to participate in the PIL process and court proceedings did so at a huge personal cost. The three pillars of environmental democracy (Pring and Pring 2009) were not met in these cases. Access to information was a major concern expressed by study participants, who lacked even basic information regarding project details and court proceedings. Access to participation in decision-making was also not achieved; while participants were invited to express their concerns at public hearings, public input was seemingly ignored in the EC processes. Finally, access to justice was flawed because of lack of information and knowledge, lack of legal standing, and lack of legal and technical support throughout the litigation process (Pring and Pring 2009).

Though the majority of study participants did not have an understanding of the NGT, those who did viewed it as a mechanism for achieving environmental justice but as being flawed for having an inadequate scope of authority and as being inaccessible. Finally, political interference within the courts was a major concern expressed by the majority of study participants. This perception of corruption strongly reinforces the idea that the neoliberal government in India has the power to silence civil society and represents a major obstacle in achieving environmental justice in the country.

The answers provided in these interviews portray local perceptions of the EIA process and access to environmental justice in India. Conducting interviews with the project proponents and the regulatory bodies involved in the cases, including the Gujarat Pollution Control Board and MoEF, would help to fill a gap in data and provide a wider range of perceptions on the issues. Future research on these two cases would greatly benefit from obtaining such additional viewpoints.

## 6. CONCLUSION

Though the Indian judiciary has made sizeable contributions toward the improvement of environmental justice over the last several decades, such as the introduction of PIL, green benches and the NGT, the push for industrial development in the country remains a top priority. Environmental loss and degradation are happening at rapid rates, especially in states such as Gujarat where the pursuit of economic growth has been prioritized for several decades.

In the two case studies selected for this research, a fundamental breakdown of the EIA system occurred. Moreover, it is apparent in the literature that this type of failure of EIA is common in India. Though EIA in India has a strong and advanced legislation, implementation of the legislation falls short in several respects, mainly public participation, consideration of project alternatives, and quality of impact assessment studies, which was made evident in the Nirma Ltd. and UltraTech Cement Ltd. cases. Though these are problematic aspects of EIA worldwide, lessons can be learned from the extensive literature published on international EIA systems. Meaningful public participation, which includes sharing information, involving communities at early stages of decision-making and taking community aspirations into consideration (Momtaz and Gladstone 2008) would be an important first step in restoring public trust in environmental decision-making in India. Improved public participation would also empower civil society and contribute to a more equitable distribution of benefits and environmental risks related to industry. Proper consideration of project alternatives would help to find better locations for certain projects while enhancing existing industries in certain areas, such as agri-food industries in rural

parts of the country. Finally, better quality EIA reports are necessary to truly understand the significance of potential impacts on the environment and socio-economic systems in order to adequately prevent and mitigate adverse effects and optimize positive impacts.

Policy reform is required to improve the EIA system in India, which should include changes within the current process, changes outside the process, as well as adoption of new approaches. Changes to the process should include early and ongoing community engagement that begins in the screening and scoping stages, as well as provision of financial and technical resources to enhance community capacity to engage in decision making. Changes outside the process should include the establishment of an independent regulatory body to check on compliance with the EIA law. These types of changes would help improve the checks and balances needed to counter potential abuses of the self-assessment model. Finally, new approaches to EIA could include implementing requirements for strategic impact assessment and/or broad area regional planning to avoid establishing industries in unfit locations and to encourage consideration of project alternatives.

Accessing the court system in India remains incredibly difficult for poor and marginalized sectors of society that are often burdened by a lack of education and financial means. Additionally, due to the seemingly close ties between the court system and the government, it is commonly perceived that court decisions favour industry over poor citizens hoping for justice. If such favour exists, institutional change is urgently required to better shield court decisions from political interference, and if it does not exist, change is required to improve access

to justice, which might have the effect of instilling greater confidence in the justice system. EIA policy reform could help offset the apparent systemic imperative for development of a certain type, namely pro-growth industrial development rather than more locally grounded social development.

## 7. REFERENCES

- Adelle, C. and Weiland, S. 2012 Policy assessment: the state of the art. *Impact Assessment and Project Appraisal*, 30(1): 25-33.
- Agrawal, D.K., Lodhi, M.S. and Panwar, S. 2010. Are EIA studies sufficient for projected hydropower development in the India Himalayan region? *Current Science*, 98(2): 154- 161.
- Agrawal, R. 2013. Hydropower projects in Uttarakhand: Displacing people and destroying lives. *Economic and Political Weekly*, 11.8(29): 14-16.
- Banerjee, S. 2015. NGT order clears way for Nirma cement plant at cost of wetland. *Down to Earth, News*, Published on January 20, 2015.
- Bhushan, P. 2004. Supreme Court and PIL: Changing Perspectives under Liberalization. *Economic and Political Weekly* 39(18): 1770–74.
- Braun, V. and Clarke, V. 2006. Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2): 77-101.
- Bureau of Economics and Statistics. 1995. Gujarat: Socio-economic Development Through Maps, Bureau of Economics and Statistics, Gandhinagar, statement 19.
- Cashmore, M., Gwilliam, R., Morgan, R., Cobb, D. and Bond, A. 2004. The interminable issue of effectiveness: substantive purposes, outcomes and research challenges in the advancement of environmental impact assessment theory. *Impact Assessment and Project Appraisal*, 22(4): 295-310.
- Census. 2011. Government of India. Retrieved from:  
<https://www.census2011.co.in/census/state/districtlist/gujarat.html>
- Charmaz, K. and Belgrave, L.L. 2015. *Grounded Theory*. Major Reference Works. Ed. George Ritzer.
- Choudhury, N. 2013. Legality and legitimacy of public involvement in infrastructure planning: observations from hydropower projects in India. *Journal of Environmental Planning and Management*.
- Chowdhury, N. 2014. Environment impact assessment in India: Reviewing two decades of jurisprudence. *Environmental Impact Assessment in India*: 28-32.

- Creswell, J.W. 2014 *Research design: qualitative, quantitative, and mixed methods approaches*. Sage Publications, Inc. University of Nebraska-Lincoln.
- Cullet, P., Suhas P., Himanshu T. and Vani, M.S. 2012. *Water Conflicts in India – Towards a New Legal and Institutional Framework*. Pune: Forum for Policy Dialogue on Water Conflicts in India.
- Curmally, A. 2002. *Environment and Rehabilitation*. Indian Infrastructure Report 2002: Governance Issues for Commercialization, eds. S Morris and R Shekar. New Delhi, Oxford University Press.
- Diduck, A. P., Pratap, D., Sinclair, A. J., & Deane, S. 2013. Perceptions of impacts, public participation, and learning in the planning, assessment and mitigation of two hydroelectric projects in Uttarakhand, India. *Land Use Policy*, 33, 170–182.
- Diduck, A., Sinclair, J., Pratap, D. and Hostetler, G. 2007. Achieving meaningful public participation in the environmental assessment of hydro development: case studies from the Chamoli District, Uttarakhand, India. *Impact Assessment and Project Appraisal*, 25 (3): 219-231.
- Diduck, A.P. and Sinclair, A.J. 2016. Small hydro development in the India Himalaya: Implications for environmental assessment reform. *Journal of Environmental Assessment Policy and Management*, 18(2).
- Elling, B. 2009. Rationality and effectiveness: does EIA/SEA treat them as synonyms? *Impact Assessment and Project Appraisal*, 27(2): 121-131.
- Elo, S., Kaariainen, M., Kanste, O., Polkki, T., Utriainen, K. and Kyngas, H. 2014. *Qualitative content analysis: A focus on trustworthiness*. Sage Open.
- Environmental Clearance. 2008. Government of India: Ministry of Environment and Forests. *Environmental Clearance for cement plant, coke oven plant and captive power plant near Village Padhiarka, Taluka Mahuva, District Bhavnagar, Gujarat by M/s Nirma Ltd.*
- Erlewein, A. 2013. Disappearing rivers – The limits of environmental assessment for hydropower in India. *Environmental Impact Assessment Review*, 43: 135-143.
- Esteves, A.M., Franks, D. and Vanclay, F. 2012. Social impact assessment: the state of the art. *Impact Assessment and Project Appraisal*, 30(1): 34-42.
- Express News Service. 2016. Rajkot farmers protest UltraTech limestone mining projects. *The India, Express*. June 16, 2016.

- Gaur, M.K., Goyal, R.K., Kalappurakkal, S. and Pandey, C.B. 2018. Common property resources in drylands of India. *International Journal of Sustainable Development & World Ecology*.
- Gibson, R.B. 2012. In full retreat: the Canadian government's new environmental assessment law undoes decades of progress. *Impact Assessment and Project Appraisal*, 20(3): 179-188.
- Government of India. 2010. Report of the Expert Group to Review the Methodology for Measurement of Poverty. New Delhi: Planning Commission of India, Government of India.
- HC. 2010. Gujarat High Court. Shree Mahuva Bandhara Khetiwadi Pariyavaran Bachav Samittee v. Union of India. CAV Judgment. SCC Online Web Edition. Accessed on July 6, 2017.
- Jadhav, A. and Parasharya, B.M. 2004. Counts of flamingos at some sites in Gujarat state, India. *Waterbirds*, 27(2): 141-146.
- J.M. EnviroNet Pvt. Ltd. 2016. Final Environmental Impact Assessment Report & Environmental Management Plan for Proposed Limestone Mine by M/s. UltraTech Cement Limited.
- Kohli, Kanchi. 2011. A Functional Green Tribunal. Retrieved on January 15, 2016 from: [http://mylawu.net/Article/A\\_functional\\_Green\\_Tribunal/](http://mylawu.net/Article/A_functional_Green_Tribunal/)
- Mahadevia, D. 1999. Economic growth and environmental degradation: Case of Gujarat. For Research Foundation for Science, Technology and Ecology, New Delhi.
- Min Mec Consultancy Pvt. Ltd. 2008. Nirma Ltd .Rapid environmental impact assessment and environmental management plan for the proposed cement plant, captive power plant and coke oven plant at Village Padhiarka, Taluka Mahuva, District Bhavnagar, Gujarat.
- MoEF. 2011. Government of India: Ministry of Environment & Forests. Revocation of Environmental Clearance regarding cement plant, coke oven plant and captive power plant near village Padhiarka, Taluka Mahuva, District Bhavnagar, Gujarat by M/S Nirma Ltd.
- Momtaz, S. and Gladstone, W. 2008. Ban on commercial fishing in the estuarine waters of New South Wales, Australia: Community consultation and social impacts. *Environmental Impact Assessment Review*, 28(2-3): 214-225.
- Morgan, R.K. 2012. Environmental impact assessment: the state of the art. *Impact Assessment and Project Appraisal*, 30 (1): 5-14.



- Muldoon, P., Lucas, A.R., Gibson, R., Pickfield, P. and Williams, J. 2015. An introduction to environmental law and policy in Canada, 2<sup>nd</sup> edition. Emond Publishing.
- Nambiar, Sridip. 2012. Paradigm of ‘Green’ adjudication: Developing principles for Indian environmental decision-making in disputes involving scientific uncertainty. *ILI Law Review*, 1(1): 1–24.
- Nelson, J. G. 1991. Research in human ecology and planning: An interactive, adaptive approach. *The Canadian Geographer*, 35(2), 114-127
- NGT. 2015. Before the National Green Tribunal Principal Bench at New Delhi, New Delhi. Review Application No. 9 of 2015 in Appeal No. 4 of 2012.
- O’Faircheallaigh, C. 2010. Public participation and environmental impact assessment: Purposes, implications, and lessons for public policy making. *Environmental Impact Assessment Review*, 30(1): 19-27.
- Paliwal, R., 2006. EIA practice in India and its evaluation using SWOT analysis. *Environmental Impact Assessment Review*, 26(5): 492-510.
- Patel, K., and Dey, K. 2013. The Trajectory of Environmental Justice in India: Prospects and Challenges for the National Green Tribunal. In *Perspectives on Governance and Society: Essays in Honour of Professor O.P. Dwivedi.*, eds.M Tim, N Trivedi and D Vajpeyi, 160–74. New Delhi: Rawat Publications.
- Pope, J., Bond, A., Morrison-Saunders, A. and Retief, F. 2013. Advancing the theory and practice of impact assessment: Setting the research agenda. *Environmental Impact Assessment Review*, 41: 1-9.
- Pring, G. and C. Pring. 2009. *Greening Justice: Creating and Improving Environmental Courts and Tribunals*. New Delhi: The Access Initiative.
- Public Hearing Proceedings. 2016. Public hearing proceedings dated June 16, 2016 for proposed limestone mine by M/s. UltraTech Cement Limited.
- Rajaram, T. and Das, A. 2006. Need for participatory and sustainable principles in India’s EIA system: lessons from the Sethusamudram Ship Channel Project. *Impact Assessment and Project Appraisal*, 24(2): 115-126.
- Rathi, A. K. A. 2017. Evaluation of project-level environmental impact assessment and SWOT analysis of EIA process in India. *Environmental Impact Assessment Review*, 67: 31-39.
- Rosencranz, A. and Geetanjoy Sahu. 2009. National Green Tribunal Bill, 2009: Proposals for Improvement. *Economic and Political Weekly*, 44(48): 8–10.

- Rosencranz, A., Geetanjoy Sahu and Vyom Raghuvanshi. 2009. Whither the National Environment Appellate Authority? *Economic and Political Weekly*, 44(35): 10–14.
- Sankar, K., Johnsingh, A.J.T. and Acharya, B. 2004. Blue bull of nilgai (*Boselaphus tragocamelus* Palla, 1766). *Ungulates of India*, 7(1).
- Schlosberg, David. 2004. Reconceiving environmental justice: Global movements and political theories. *Environmental Politics*, 13(3): 517–40.
- Sharma, Raghav. 2008. Green courts in India: Strengthening environmental governance? *Law, Environment, and Development Journal*, 4(1): 50–71.
- Shenton, A.K. 2004. Strategies for ensuring trustworthiness in qualitative research projects. *Education for Information*, 22(2): 63-75.
- Sheth, K.N. and Raval, K.C. 2016. Relocation: Nirma cement plant at Mahuva, Dist. Bhavnagar (Gujarat) – A case study. *Journal of Information, Knowledge and Research in Humanities and Social Sciences*, 3(1): 116-119.
- Sinclair, A. J., & Diduck, A. P. 2000. Public involvement in environmental impact assessment: a case study of hydro development in Kullu District, Himachal Pradesh, India. *Impact Assessment and Project Appraisal*, 18(1), 63-75.
- Singh, Katar. 1994. *Managing Common Pool Resources: Principles and Case Studies*. Oxford: Oxford University Press.
- Stewart, J.M.P and Sinclair, A.J. 2007. Meaningful public participation in environmental assessment: perspectives from Canadian participants, proponents, and government. *Journal of Environmental Assessment Policy and Management*, 9(2): 161-183.
- Strauss, A. and Corbin, J. 1994. Grounded Theory methodology: an overview. *Handbook of qualitative research*: 273-285.
- Thompson, M. 2008. *Organizing and Disorganizing: A Dynamic and Non-Linear Theory of Institutional Emergence and Its Implications*. Devon: Triarchy Press.
- Trubek, David M. 1980. Studying courts in context. *Law and Society Review*, 15(3-4): 485-502.

- Vanderstoep, S.W. and Johnston, D.D. 2009. *Research methods for everyday life: blending qualitative and quantitative*. Jossey-Bass, Wiley Imprint, San Francisco, CA.
- Williams, G, and E. Mawdsley. 2006. Postcolonial environmental justice: Government and governance in India. *Geoforum*, 37(5): 660–70.
- Wood, C. 2003. Environmental impact assessment in developing countries: an overview. Conference on New Directions in Impact Assessment for Development: Methods and Practice. EIA Centre, University of Manchester, Manchester.

## Appendix A – Interview Questions

1. What are your main concerns with this project?

**Prompt:** What are the anticipated impacts on environment/wildlife, livelihood/employment, water/salinity, health and safety, etc?

2. Do you see any positive impacts of the project?

3. How were you made aware of the project?

**Follow-up:** How could awareness of project details be increased in India?

4. What has been your involvement with the project so far?

**Follow-up:** What has been your motivation for participating in these events?

**Follow-up:** What has been your experience at these events?

5. Did you attend the public hearing?

**Follow-up:** Did you speak at the public hearing and if so, what did you say?

**Follow-up:** What costs did you incur to attend this public hearing?

6. In your view, what did the proponent do wrong in their EIA study?

7. How has the bandhara changed your life?

8. How did you learn to file a petition?

9. What concerns were expressed in the petition and whose concerns were those?

10. What has been your experience as a petitioner?

**Follow-up:** Have you had to go to court as a petitioner?

**Follow-up:** What costs have you incurred as a petitioner?

11. What is your opinion of the NGT in India?

12. What is your opinion of the court system in general in India?

**Follow-up:** Has the court been accessible to you so far?

13. How could the EIA process be improved to avoid the involvement of the court?

14. How could the court system be improved to better protect poor people and the environment?

**Follow-up:** How could access to justice be improved in India?

15. What type of industrial development would you prefer to see in the area?