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Article

Procedural (in)justice in the implementation of solar energy: the case of Charanaka solar park, Gujarat, India

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Abstract

Solar PV is being rolled out on a large scale in India and other emerging economies, but in the enthusiasm for solar's promise of plentiful, low carbon energy, the social and environmental justice concerns accompanying such infrastructure development are in danger of being overlooked. In this context, this paper, using the case study of 'Charanaka Solar Park' in Gujarat state, qualitatively analyses the degree of provision for procedural justice in solar energy implementation in India using a framework drawn from social environmental and energy justice literatures. The case study illustrates how the failure of various aspects of procedural justice can result in unnecessarily large impacts on the livelihoods of rural communities and the further marginalisation of those of lowest status. We conclude with discussion of the aspects of procedural justice that need attention in low carbon energy developments in developing countries alongside some policy and governance suggestions for the achievement of this in India and elsewhere.

Key words: Charanaka solar park; India; Procedural justice; Social justice; energy justice; marginalisation; recognition

1. INTRODUCTION

Echoing the international recognition of solar PV as a low carbon and relatively low cost energy technology with great global potential, transition to solar energy is strongly promoted by policy-makers, government and NGOs in India. Accordingly, over the last decade, Indian policy-makers have been initiating and implementing an array of solar energy policy mechanisms and programmes, often underpinned by a range of economic incentives for private developers. In 2010, India's '*Jawaharlal Nehru National Solar Mission'* (hereafter referred as the NSM) was initiated under the '*National Action Plan on Climate Change'* (NAPCC). The NSM has ambitious plans to generate 20GW of grid-connected solar photo-voltaic (PV) energy, 2GW of off-grid solar PV energy, and install 20 million sq. meters of solar thermal collectors by 2022. The NSM is a major policy experiment by the Government of India to address both energy and climate change challenges (Yenneti, 2013). Its 20GW grid-connected solar PV target is planned to be implemented in 3 phases: Phase-I (1000MW): 2010-12, Phase-II (7000MW): 2013-17, and Phase-III (20,000MW): 2018- 2022 (MNRE, 2010). With the help of strong planning and tariff mechanisms both under the NSM and individual State policies (such as the 2009 policy of Gujarat state), the capacity of grid-connected solar energy in India grew from less than 150MW in 2010 to about 3GW by the end of 2014 (MNRE, 2011, 2014).

However, such large scale infrastructure development is not without negative impacts and problems. Necessarily implemented in relatively undeveloped rural areas, large scale solar PV developments known as 'solar parks' have the potential for major effects on rural environments and remote communities, concerns which are often overlooked by the perception of solar energy as a clean, climate - friendly technology, deployed in unused, 'desert' areas – to the extent that despite their massive scale, solar parks in India are exempt from any requirement for an environmental or social impact assessment. Social and environmental justice concerns over

large development projects in India have of course been raised before, with regard to large dam projects and more recently economic development projects (e.g., Special Economic Zones) (Mukherji, 2012; Shiva, 1997; Vasudevan, 2008); but with the advent of solar mega-developments, in India and elsewhere in the developing world, it is essential that justice issues are again raised and examined in this new arena, where with so much focus on the promise of solar energy, they have to date been little addressed.

While there is no direct provision for social justice in the NSM, in the course of implementing large-scale solar energy projects, the government of India recently recognised that procedural justice problems, such as lack of community participation, have been resulting in unpredicted delays to projects (Ghosh et al., 2012). Addressing such justice issues along with technological, policy and financial issues therefore should be in the interests of securing the sustainability of India's solar energy development and its ambitious '20GW by 2022' NSM target. Affirming this, the policy report titled 'Laying the Foundation for a Bright Future: Assessing Progress under Phase-I of India's National Solar Mission' released in April 2012 by the Ministry of New and Renewable Energy (MNRE) (Ghosh et al., 2012), emphasises that procedural justice considerations are important for the success of the National Solar Mission:

> Local communities, largely village-based, are critical to the success of solar projects. Developers and local officials must involve village members in all stages, from planning to operation. Villagers' concerns and preferences need to be considered to maximise the benefits of solar power and to avoid adversely affecting communities in the scale-up of operations. Ineffective community involvement can create contentious conditions for permitting and for solar operations (Ghosh et al., 2012, p.26).

Similar to the policy rhetoric, most of the academic literature on India's energy development also focuses on solar's promise to address India's energy needs in clean, affordable and reliable way (Bambawale and Sovacool, 2011; Bhattacharya, 2010) and whilst the major advantages are clearly identified, there is a general lack of critical analysis of the potential social and environmental impacts. This paper therefore aims to contribute to the understanding of the relationship between renewable energy development and its social context by raising and exploring justice issues in large scale solar energy implementation in India through an empirical study. While 'justice' is a multi-faceted concept with diverse meanings, theories, and principles (Yenneti, 2014; Walker & Day, 2012; Walter and Gutscher, 2011), this paper focuses on understanding the procedural justice issues, in the context of the Asia's largest solar park project implemented in 'Charanaka' village in Gujarat, India, between 2011 and 2012.

The remainder of the paper is organised as follows: first, it begins with the theoretical underpinnings of procedural justice, reviewing the key concepts and arguments in social, environmental, and energy justice literatures and drawing on linked literature on participatory decision making. Next, the geographical context of Charanaka Solar Park and the research methods adopted in this research are discussed. Following this, the paper discusses insights from discussions with community members in Charanaka village, supplemented with material from interviews with solar park business developers and policy actors. Finally, the paper ends with discussion of emergent procedural justice concerns and policy implications for India and further afield.

2. PROCEDURAL JUSTICE AND PARTICIPATORY DECISION-MAKING

Procedural justice is concerned with fairness in the procedures of institutions and the implementation processes of projects or policies. Unfair procedures are both unjust in themselves, and more likely to produce unjust outcomes. Prominent social justice theorists such

as Rawls (1971) and Barry (1989) emphasise that the functioning of social and political institutions, upon which the structure of a society is built, shape the distribution of primary goods and advantages and disadvantages among members of that society. However, focusing mostly on distributional justice, they lack explicit guidance on what constitutes just procedures and how procedural justice is arrived at. Young (1990), in her critique of overly distribution - focused models of justice, pays more attention to procedures and their potential failings. She argues that democratic decision-making is fundamental to justice and the production of just outcomes. Referencing Habermas' communicative ethics, she points to deliberative and participatory decision making processes as ideal. Young's work however, and similarly that of Fraser (1998) and Fraser and Honneth (2003), emphasises the need for the recognition and accommodation of group differences in order to overcome entrenched patterns of domination and oppression. Such a condition can realise greater equality of participation in both decision-making and in wider social life.

The development of a large body of work on environmental justice has been informed by both grass roots movements mobilised around specific concerns of unfairness in environment-related matters, and academic work drawing on theories of social justice and democratic theory. Procedural justice demands in the environmental justice movement were voiced notably in the 17 principles of environmental justice[1] adopted at the 1991 'First National People of Colour Environmental Leadership Summit'. Some of the important principles include *inter alia* the right to participate in relevant decision-making as equal partners, and the call for enforcement of principles of informed consent. Since then, a large amount of academic scholarship concerning environmental justice has developed (Bullard, 1990, 1994; Schlosberg, 2004, 2007; Shrader-Frechette, 2002), which makes frequent reference to environmental justice having both distributional and procedural dimensions. According to Bullard and Johnson (2000), procedural

[1]See http://www.ejnet.org/ej/principles.html for 17 principles of environmental justice.

environmental justice is concerned with 'meaningful involvement of all people regardless of race, colour, national origin or income with respect to the development, implementation and enforcement of environmental laws, regulations and policies' (p.7). In a similar vein, Shrader-Frechette (2002), through the 'principle of prima facie political equality' which includes the components of both distributive justice and procedural justice, argues that the component of procedural justice requires 'institutional and procedural norms that guarantee all people equal opportunity for consideration in decision-making' (p.28). Procedural environmental justice has been examined with respect to a variety of concerns including waste management (Renn et al 1996), water allocation (Syme et al., 1999) and notably matters relating to climate change mitigation and adaptation (Suiseeya and Caplow, 2013; Paavola and Adger, 2006; Few et al., 2007).

In international environmental policy, procedural justice was given due attention in the United Nations' Economic Commission for Europe (UNECE)'s 1998 'Aarhus Convention'. The convention, signed by 47 states across Europe and central Asia, secures opportunities for access to environmental information and transparent procedures for all citizens of the party countries (Gupta, 2008). It defines three 'pillars' of procedural justice : access to information; access to meaningful participation during decision making and legislative process of all relevant projects; and access to justice in the case of claims for redress with regard to the first two pillars (UNECE, 1998, 2006).

Emerging largely from the environmental justice field, and with strong links to climate justice interests, 'energy justice' is a relatively recent area of enquiry and research activity, but one which is becoming established as a specific field. Applying constructs and principles drawn from environmental and social justice literatures, work in energy justice covers *inter alia* fuel poverty (Walker and Day, 2012); energy access (Sovacool and Dworkin, 2014); ethical energy

consumption (Hall, 2013); and renewable energy development (Gross, 2007; Cowell et al., 2011; Yenneti, 2014) and spans the global North and South. Work on renewable energy schemes has emphasised the importance of fair procedures in ascertaining the acceptance of host communities (Swofford and Slattery, 201; Cowell et al., 2011; Toke et al., 2008). Gross (2007) is a notable study in this area, which draws both on social and environmental justice theories. Through the case of a wind energy project in Australia, Gross concludes that provision for procedural justice, linked to adequate information provision, the ability to participate and to be heard, and unbiased decision-making process, has a strong positive effect on trust in public institutions, on the empowerment of communities, and on social acceptance of renewable energy projects.

Developing rather separately from environmental and energy justice literatures, but with clear overlaps, is a large literature on participatory decision making. In the 1990s, environmental decision making and risk governance in Europe and the US took a pronounced participatory turn. With reference to theories of deliberative democracy - but less to justice *per se* - numerous styles of participatory and deliberative processes were developed, and to some extent, critiqued (see e.g. Munton, 2003; Burgess and Chilvers, 2006; Renn, 2006). Starting rather earlier and with some crossovers, participation has become a major paradigm in development studies and development practice with techniques such as Participatory Rural Appraisal (PRA) becoming standard (Chambers, 1994; Craig and Mayo, 1995; Oakley, 1991). In the implementation of development projects, participation is considered a good thing because it can mobilise and engage local people who can be better placed than outsider experts to identify and address local needs (Ockwell et al., 2009). It is also argued that participation can contribute to strengthening collective thinking, building social capital, and enhancing the capability of communities to solve local problems (Capek, 1993; Hunold and Young, 1998; Reason and Bradbury, 2008; Santos et al., 2006). However, important critiques of the

orthodoxy of participation have also arisen, centred largely on its naivety regarding power relations (see e.g. Cooke and Kothari, 2001). Echoing the concerns of Young (1990), participatory practice has been criticised for privileging powerful individuals in communities, and often sidelining the voices of powerless and socio-economically marginalised groups, such as tribes, nomads, pastoralists, and poor farmers (Cleaver, 2001; Hickey and Mohan, 2004). It is also emphasised that inclusive and meaningful participatory processes should provide opportunities for representation of lower status groups. To get fair representation of all community members, it is important to understand the existing inequalities, power relations and socio-cultural diversities of a community (Cornwall, 2004; Gujit and Shah, 1998).

Drawing on these connecting literatures, this paper will focus on open information exchange, community participation in decision making, and representation of all sectors of the community in relevant processes, as the main aspects of procedural justice to evaluate the case study. In doing so it takes forward the energy justice literature by operationalising this framework in an important new arena that of large scale solar development in a rapidly but unevenly developing economy.

3. METHODS

3.1 The Case Study

Charanaka solar park is a major development, implemented under the 'Gujarat Solar Power Policy 2009', a state level policy that aims to lead the country in solar power generation through privately developed small and medium solar power projects as well as a series of large solar parks developed through a public-private partnership arrangement where the state acquires and designates land for the parks and expedites planning procedures for private developers to develop plots within them; in all the cases, developers sell the power produced to the state at an agreed tariff, which is generally favourable to the developer. With an installed

capacity of 216MW (by April 2012), Charanaka Solar Park became the Asia's largest solar park, overtaking Goldmud Solar Park (200MW) in China. It is located towards the north of the state of Gujarat, not far from the border with Pakistan, and at the edge of the unique arid and saltmarsh ecosystem of the Great Rann of Kutch and the Little Rann of Kutch (see figure 1).

Charanaka village, next to which the solar park was developed, is a small, remote settlement. It has a population of about 1500, roughly 50% of which belong to one of the country's pastoral nomadic communities known as '*Rabaris*'. The *Rabaris* of Charanaka, who belong to the group of *Rabaris* of north Gujarat[2], travel for about eight months in a year, across two districts covering more than 200kms, in search of fertile land and food for their sheep and goats.

The village society, being majority Hindu, is subject to India's social stratification (caste) system. The dominant caste of the village both in terms of education and position are the farming *Gadhvi* community. Some of the younger members of this community also work as skilled and semi-skilled employees in private and public organisations in different urban areas of the state. The other caste communities such as *Koli* and *Thakore* are generally occupied in farming and agricultural labour. *Ahirs* are largely a cow-herding community and *Harijans* are agricultural labourers. There is also a Muslim population whose livelihood activities include farming, and other non-traditional occupations such as owning small shops. While *Rabaris* enjoy a reasonable position in terms of caste, due to a lack of land ownership and low literacy, their life is more precarious than others. The *Rabaris* rely on access to government owned and 'waste' land for grazing and collection of fuel. (see table 1).

[2] The Rabaris of India belong into four groups: i) of Kutch, ii) of Saurashtra (central Gujarat, also known as Kathiawar region), iii) of north Gujarat (the zone from Mehsana to Palanpur), and iv) of Rajasthan (Flavoni, 1990).

Table 1 Details of households in Charanaka village *(Source: Anganwadi office, Charanaka, October, 2011)*

Caste	No. of households	No. Households		No. of people	
		APL	BPL	Male	Female
Gadhvi	25	21	4	58	44
Sadhu	1	1	-	3	1
Rabari	103	52	50	281	272
Ahir	11	5	6	44	28
Harijan	9	4	5	37	22
Darbar or Thakore	18	2	16	66	55
Muslim	11	2	9	46	32
Koli	53	17	36	167	136
TOTAL	232	105	127	698	595

* While untouchability was constitutionally outlawed during the time of Independence, socially it still exists in villages in several parts of India.

(Note: APL – Above poverty line, BPL – Below poverty line[3])

Although with its population of about 1500 (counted while *Rabaris* are present in the village) Charanaka is relatively small, it is emblematic for social justice implications in implementation of large scale energy infrastructure in rural areas of developing countries in general, and specifically India, where new institutions and arrangements of development are overlaid on post-colonial organisations of government and even older traditions of social organisation.

[3] According to the Government of India, BPL is applicable to people with income less than US$1.25 per day per head of purchasing power parity. APL populations are those above the standard of US$1.25 income.

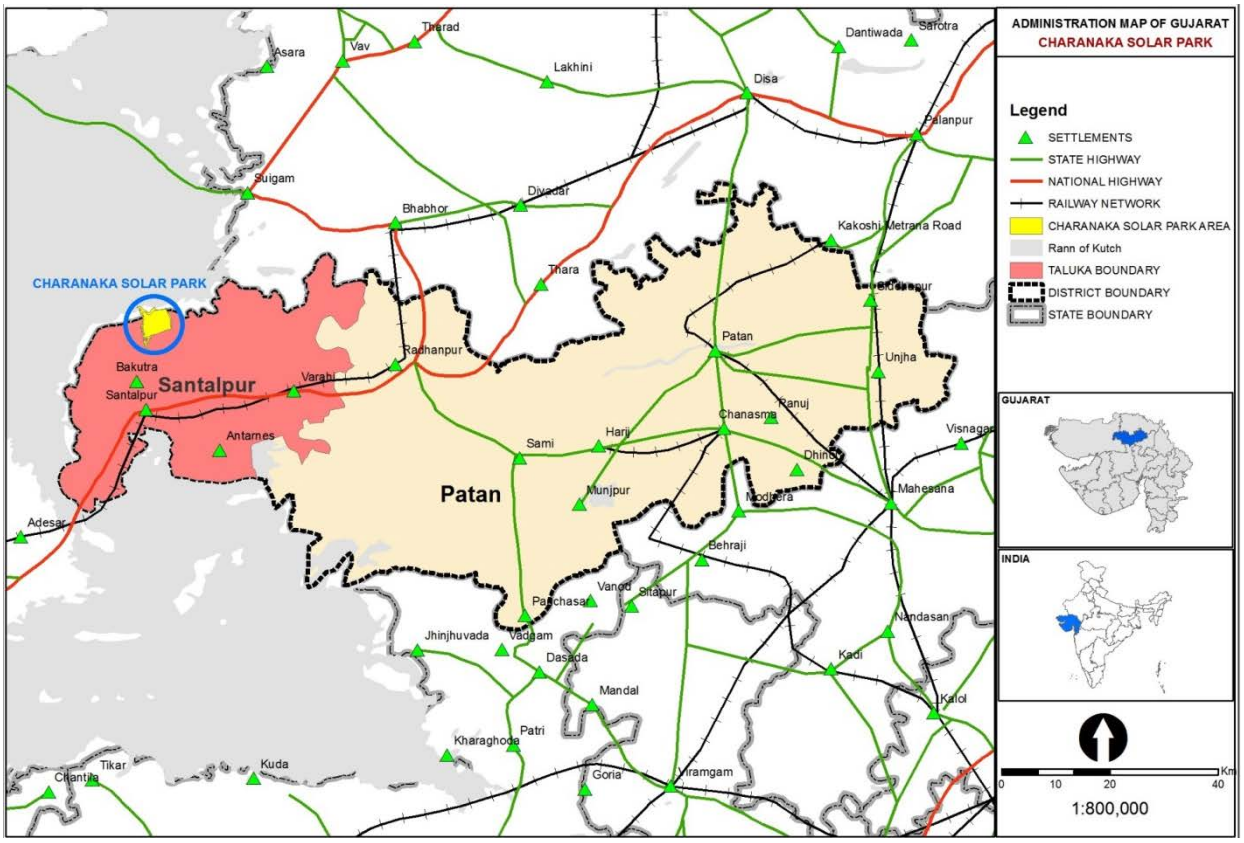

Plate 1: Location map of Charanaka solar park *(source: Yenneti, 2014)*

Note: the roads and railways are marked to provide details about connectivity to the region from major towns and cities

3.2 Methods and analysis

While a range of research instruments is available for conducting case study based geographical research, due to the need for intensive conversation and data gathering within a relatively short period of fieldwork, in depth interviews were mainly used for the research reported in this paper. A combination of stratified purposive sampling and snowballing methods were used to select and recruit interviewees. A 'village elite' (a *Gadhvi* farmer owning substantial lands), who was an early contact in the village and who helped the first author (who was also the field researcher) to find a place to live in a Hindu temple[4], assisted in locating initial interviewees. This helped to identify key participants of different castes who in turn facilitated access to other interviewees of their respective castes. Based on the household social structure information collected from the village *Anganwandi* office (see table 1), purposive samples - relevant to factors such as caste and occupation - were selected. In total, interviews with about 40 members of the village, mostly men, were conducted between October 2011 and January 2012. The gender imbalance was due to the patriarchal system in the village, which means that any matters related to work and livelihood are dealt with by men. Even when discussions with women were attempted, the conversation was often taken over by men. Women also tended to claim ignorance about the solar park, often answering 'we don't know anything'.

Community interviews were conducted in either Hindi or Gujarati. While in most cases the interviews were one-to-one, they were not always completely private: sometimes nearby people would also be eager to join in and contribute their perspectives. Interviews were conducted at places where the interviewees felt comfortable: these included their 'home grounds', the temple area, and village public areas. In all cases every effort was made to

[4] No other suitable accommodation facilities were available within 70kms of the village.

ensure the participants' comfort, safety, confidentiality, and privacy. For the entire period of fieldwork, the first author lived in the village. Through participating in the community's everyday life, rituals and festivals, and learning about their livelihoods and culture, trust was built.

To gain an alternative perspective on the development, about 20 'expert' interviews with business developers and government officials were also conducted. These took place at different places such as construction site offices, head offices, government offices, and hotels. Most of these interviews, other than some with district level officials, were conducted in English, as a shared professional language.

For accurate rendition, with prior permission of the interviewees, most of the interviews were audio recorded. The collected interview data was translated, transcribed, and analysed using thematic analysis method and with the help of NViVo software. While the community interview quotes used in this paper were translated, the expert interview quotes are verbatim. All measures were taken to ensure the anonymity of interviewees in presentation of the data. Before the commencement of field work, the research obtained University of Birmingham's (UoB) Ethics committee approval. The fieldwork was carried out during the implementation of the project, so the final outcome and impacts of the project were not completely known to the interviewees. This is an important consideration for this research because the perceptions of the interviewees were analysed before the final outcome of the project.

4. RESULTS

4.1 Information exchange

Two-way information exchange is often referred to as one of the 'three pillars' of procedural justice (Portman, 2009, UNECE 1998). The provision of information (about the project) by

the authorities to the Charanaka community and interest (or lack of it) in incorporating their 'local knowledge' was one of the most discussed issues among the community respondents. In the first instance, many respondents said that no information about the solar park was provided either by the implementing government authorities or the business developers at any stage of the project. They became aware of the project only when several excavators entered their village to clear land:

> *About 10 JCBs were brought through Fangli road into the village. What would we do when suddenly 10 JCBs entered into our village? ...Then some of us asked 'for what purpose are these JCBs brought'? It was told 'to cut the baval'.* (Respondent #1, Male, *Rabari*)

> *We knew when JCBs started levelling land, removing baval trees etc. we thought they were doing something...we thought as this land has minerals - if you dig 3 feet you get minerals - it was being sold for that purpose.* (Respondent #10, Male, *Rabari*)

An important commonality of the above respondents was that both of them were elderly people from the *Rabari* community. Due to their migratory movement and lack of land ownership, large land-owning farmers and public authorities often ignore the *Rabaris*, leaving them marginalised (Choksi and Dyer, 1996). Mitra (1992) further emphasises that illiterate older people generally have less access to information than the young and educated. While the above elderly *Rabari* respondents claimed that officially no information about the project was provided, other young and comparatively literate respondents reported that they knew about the project through a land acquisition 'public notice' sent from the state government's local revenue department, for example:

> *We were aware through a land acquisition public notice. As our village Charanaka is under 'Group Panchayat', the public notice was sent to our main Panchayat office which is in Bhabra village. (*Respondent #9, Male, *Rabari*)

In India, according to the *Panchayat Raj* system, which was adopted in 1957 to decentralise administrative functions, every village with a population of 5000 or more was supposed to have its own *Panchayat* (elected local self-government). However, as Charanaka and its neighbouring villages of Bhabra, Bhaveda and Patanaka were much smaller, all four villages were merged under a *Group Panchayat* with the main *Panchayat* office and the *Sarpanch* (head of the *Panchayat*) located in Bhabra and the *Upsarpanch* (deputy head) in Charanaka. Bhabra village lies to the east of Charanaka at a distance of 14kms. The public notice, which the above respondents referred to, was a notification for 'land acquisition' of specific survey numbers[5] for the project, but not details about the project itself. The above respondents' quotation also indicates that the public notice was not received directly either by the village *Upsarpanch* or any other *gaon ka neta* (village elite), but by the *Panchayat* office in Bhabra village. The distance to Bhabra, and the technical information provided in the land acquisition 'public notice' document were also evident reasons for the illiterate elderly *Rabari* respondents not being aware of the information.

Several other young, educated (i.e. high school graduate) or working outside the village respondents who were aware of the public notice, also reported that knowledge about the project came about through land acquisition procedures. As part of the land acquisition procedures, section 4(1) of the Government of India's Land Acquisition (LA) act, 1894

[5] Survey numbers or a sub-survey numbers refer to numbered tracts of land. Official records of these contain details of the extent of land, the names of the present and previous owners, names of the tenants, the kind of soil/crop, any mortgages, and other details.

mandates that a notice about land acquisition and a call for objections for any infrastructure development must be provided in all major English and vernacular language newspapers. However, according to these young respondents, no information about the specific development was given in the land acquisition notices:

> *No one told us about the project. We read in the newspaper that they are going to acquire all land. (*Respondent #19, Male, *Ahir*)

> *There was Jahernamu- government gazette in the newspaper which states about the land acquisition of 1 to 230 survey numbers of Charanaka. (*Respondent #20, Male, *Gadhvi*)

The above respondent #20, an undergraduate student belonging to an upper caste farming community, went on to say that searching for and gathering information had enabled him to track the project and the land pricing. He knew the existing market land value. While his higher education enabled him to find information, this was not the case for many others. Similar to previous literature, these findings illustrate how the ability to acquire information about land acquisition and land values often conveys the advantage of bargaining power to upper caste communities (Choksi and Dyer, 1996; Mitra, 1992).

While information about a proposed development from the authorities to communities forms the first half of two way information flow, soliciting and valuing 'local' knowledge completes the second half of the process (Portman, 2009). It means that communities should have the right not only to full information provided by the authorities but also to have their feedback valued in decision-making processes. According to the 'Detailed Project Report' of the solar park, the location of Charanaka was selected due to factors such as high solar radiation, availability of a large chunk of government land (at a single location) and

acquirable private farm land (with single cropping patterns), and the relatively small population of the village. However, according to the local perspective, this decision was neither sound nor necessary. The acquisition of a large plot of in-use land (both government land[6] and privately owned plots) from one single village was lamented by several interviewees. They said that using different pieces of land from different villages could have had less severe livelihood impacts on the pastoralists and farmers:

> *The government is taking 900ha private land and 1200 ha government land for the project. Instead of taking this much land from a single village, acquiring bits of land from surrounding villages would have reduced the impact for Rabaris and small farmers. (*Respondent #21, Male, *Gadhvi*)

> *About 10,000 ha of waste land, located on the other side on the hill, is neither being used for agriculture nor for grazing. If the government used that, there would not have been any problem for farmers or Rabaris (*Respondent #1, Male, *Rabari*)

Another important aspect that can be drawn from the interviews is the local communities' knowledge of potential socio-cultural and environmental impacts of the project. For example, one of the respondents discussed some of the probable environmental impacts of the project:

> *It will create impact on various animals living in this place such as Haran [deer], lombdi [fox] etc. Nilgai [blue horse, a kind of antelope] sometimes lives here. The Ghudkhar [wild ass] travels all the way from the nearby wild ass sanctuary until here. You must have seen hundreds of mor [peacocks]*

[6] Undeveloped government owned land can legitimately be used for farming and grazing. Traditionally the rights could be acquired through use; this changed after the enactment of the Gujarat Agricultural Land Ceilings Act, 1961, a legal provision which provides power for the state government to acquire any surplus land holdings and use it for development in the state or other 'common good'.

> *living here. If the trees are gone, there wouldn't be any place for the several varieties of birds living on them (*Respondent #15, Male, *Rabari*, animal translations added).

The *Rabaris*' traditional occupation of dry land pastoralism endows them with intimate knowledge about geographical and environmental conditions. Consideration of the communities' indigenous knowledge about the location of the park at the initial stages of decision making could have been helpful in finding a location which took landscape and environmental impacts into account. Valuing this local and indigenous knowledge by the experts in identifying a location for the solar park could also have been important for redefining the relationship between the local community and the government. Furthermore, though Environmental Impact Assessments (EIA) and Social Impact Assessments (SIA) of large scale infrastructure projects require some consultation of affected communities, as noted earlier solar energy projects are exempted from the requirement for such assessments and hence solar energy implementation in India has to date largely ignored the socio-environmental impacts. Provision for community participation could have brought some of these considerations into the process, as well as protecting community interests.

4.2 Inclusion and enfranchisement

While two-way information exchange is the first element of procedural justice, inclusion, through influential and democratic participation, and giving 'voice' (enfranchisement) to the local communities are the next elements (Burns et al, 1994; Soneryd, 2004). Interviewees generally emphasised that there were no inclusive and effective participatory meetings with the village in the solar park decision making process. It was reported that during a *Gram Sabha,* an internal meeting of the village, a few officials from the government had informed attendees about the land acquisition for the project:

*No one was consulted or included; there was just one meeting during Gram Sabha to inform about land acquisition (*Respondent #15, Male, *Rabari*)

*Some officers came along with the officer. In Gram Sabha they told that you have to give your land...after that meeting there was supposed to be a meeting, but nothing happened. (*Respondent #5, Male, Muslim)

The 73rd Constitutional Reform in 1993 had led to the introduction of both *Panchayat Raj*, a local self-government system, and *Gram Sabha*, a community meeting for direct democracy in villages. The *Gram Sabha* held in any village reviews and discusses the development work undertaken by the *Panchayat* and problems of the village, in addition to providing information on various programmes/schemes of the government. Despite the reform, the central government in India has not absolutely devolved the authority and accountability of function, personnel, and finance to the local governments. Due to this, in Gujarat, the government initiated the *Gram Sabha* only in 2001.

As noted by the above respondents, some significant time after the Charanaka project construction began on government land and the public notices were sent to the Group Panchayat office, the villagers organised a *Gram Sabha* to discuss among themselves the potential livelihood impacts of land acquisition on the village. During this *Gram Sabha*, one representative from the government along with his subordinates informed the meeting about the land acquisition for the project. According to the LA Act 1894, when land is acquired, at least one meeting where the voices of the affected community are heard should be organised. In Charanaka, though there was some exchange through the village-organised *Gram Sabha* (and not an official meeting about the project as the LA Act requires), it was very rudimentary: almost one-way communication with the government representative merely informing the villagers about the land acquisition. The principles of inclusive and democratic

participation were not realised as there was no detailed information about the project nor any opportunity for two-way discussion.

Other respondents also lamented that the decision-makers turned a deaf ear to the repeated requests of the interest groups during the *Gram Sabha* and at other times:

> *When we knew about the project, government sent some officials to talk to us. We told them that by taking the land our daily lives would suffer. They spoke to us and left.... (*Respondent #1, Male, *Rabari*)

> *We met him [an official] when he came the first time last winter....we are seeing him every 2nd day but he never spoke to us. They conduct surveys and go... If we ask what's going on they won't even answer. (*Respondent #28, Male, *Rabari*)

The implication of all the above respondents was that it is important to hold sufficient public participatory meetings with all the villagers, for the purpose of explaining the project to them, taking advice, and soliciting their input into the decision-making process. Further to the above appeals for participation, the respondents continued that there should be a sense of the efficacy of the meetings and their outputs, or else it would make no sense to continue them.

Respondents also felt that listening and taking feedback is important to restore or build trust, and reduce tension between the community and decision-makers. This perception was also agreed by various business developer respondents and local government officials, some of whom also emphasised the need for inclusion of community members in the decision-making process:

Communication with people is important. Good communication and proper discussions will solve the problem of misunderstanding (Respondent #12, Company #15).

*I think there should be 1-2 meetings. They [state government] must have surely done it but, I just think there should be meetings with the villagers (*Respondent #7, Government organisation #7*).*

Eventually, after the community was unsuccessful in putting forward their perspectives on the livelihood impacts of land acquisition at the *Gram Sabha*, with a lack of other opportunities for participation, the village resorted to a form of collective action:

*There is a group who are working on this issue- 'Darbars', 'Sarpanch', 'Gadhvis' all these people know well about the village, so they look into these issues and speak with the government. (*Respondent #9 Male, *Rabari*)

*The main people who speak on behalf of the village are our Sarpanch, X Gadhvi, Y Gadhvi, K Rabari...there are different people from different castes. This group is also responsible for mediating the discussions between the government and the village. (*Respondent #1, Male, *Rabari*)

After a few futile instances when the villagers were unsuccessful in getting their voices heard and were denied a meeting with the 'Chief Minister' during his visit to the solar park, some of the higher status and educated members of the *Gadhvi* community, who live in the nearby big towns and have access to the ruling political party, instigated the idea of a representative group. While these influential members of the *Gadhvi* community live in nearby towns for work and education purposes, they are a part of the village community as their parents live in the village, they own houses in the village, and very frequently travel to the village. Various

other members also agreed to this idea and nominated representatives from their respective castes. The members of the group played the role of '*aagevaani'* (voice-takers) of their respective castes and were expected to put forward these views to the government. This formation of a representative group was a form of non-violent collective action for bargaining and getting the voices of the affected heard.

4.3 Representation

As argued in the literature section, though two-way information exchange and providing opportunities for meaningful participation and enfranchisement are important elements of procedural justice, the goals of it cannot be arrived without representation of the marginalised social groups. The previous sections identified that there were no provisions for information exchange and participation in the solar park implementation, a situation which led to the formation of representative group. However, during the discussions it was observed that the leading roles in the group were occupied by the most powerful and important community members. In the process of the group formation, two major factors emerged as driving the selection of members: caste and education.

Caste and hierarchy play a major role in power and voice in Indian rural society. The members of the group such as X *Gadhvi* and Y *Gadhvi*, (where *Gadhvi* is a caste signifier) were already influential people of the village. Many community respondents felt that these upper caste *Gadhvis* were superior to others in the village as they had better access to political processes, were educated and owned large tracts of farm land. Though they do not occupy any formal political positions in the village, these *netas* (elites) - often referred to as 'fixers' - occupy an intermediary position from which they could mediate and conduct two-way communication between the government and the village.

*Only Gadhvis do everything because they are the only educated people. Gadhvis sons are in medical field, they know everything'. (*Respondent #26 Male, Muslim)

*In the village everyone does their own things normally, but sometimes Gadhvis take leadership because they have their own lands. (*Respondent #19, Male, Ahir)

The power and authority in Charanaka could be categorised into a hierarchy of - i) the *Upsarpanch* elected by the villagers, holding a certain amount of power and authority through office; ii) the *Brahmin* (priests) and the major land-owning *Gadhvis*; iii) the Darbars and *Rabaris* – both belonging to the pastoral nomadic communities; and iv) marginalised castes such as *Ahirs*, *Thakore*s and others. The *Gadhvi*s occupy a better position both economically and socially in the village than the other caste communities because they were the earliest existing caste in the village and also a sub-caste of *Charan* (which is a part of *Kshatriya* caste: see table 1), after which the Charanaka village was named. Though the *Rabaris* are an economically marginalised caste, in terms of hierarchy they enjoy a better position than other marginalised castes such as *Thakore*s. On the other hand, as the *Rabaris* do not own land, they lack power and position. Education was another important factor in the formation and functioning of the representative group. Though some of the (generally illiterate) *Rabari* leaders became members of the group, the lead was taken by the educated *Gadhvi* representatives. Two representatives from upper castes stressed the importance of education in political empowerment:

People in this village are not so educated and are not updated with what's happening around them. Without education how would one know about the

> *politics, whom to vote for and other things? (*Respondent #2, Female, *Gadhvi*)
>
> *There are so many illiterates in this village...If you see the literate population it will be only around 100 people in total, 400-500 will be kids, other old people and most of the Rabaris are illiterates. (*Respondent #11Male, other upper caste)

The woman who belonged to the *Gadhvi* caste and was a government employee claimed that her employment was because of her education (18 yrs of education) and that her maternal village was more educated and developed than Charanaka. She added that education gave her access to more knowledge about the project and also placed her in a 'mediator role' between the government and the people. The male respondent from another less common upper caste also felt that lack of education had been obstructing the *Rabaris* in moving from unrealistic traditional life-styles to modern life.

Nevertheless, the representative group had some success in protecting some interests of the villagers. By the group's suggestion, the private farm owners, other than those who had already sold land to mediators without knowledge about the solar park, stood firmly against selling land for the project. Due to the resultant failure in acquiring large amounts of private land, though the Charanaka solar park was initially planned for a total installed capacity of 500MW, the final commissioned capacity was only 216MW. Through collective action, although the group was unsuccessful in protecting the rights over government land long used by the *Rabaris* and the private land which was sold before, they were partially successful in protecting the privately owned farmland from acquisition. While the acquisition of government land did not have a major effect on the large sedentary farming communities, the livelihood of *Rabaris* who were mostly reliant on the government land was greatly impacted.

Similarly, many small private land owners, due to lack of information about the project and land values, had already sold their land at a low price to mediators who in turn sold it to the government at much higher prices. These small farmers lost their livelihoods by giving up the land and then spending the money they earned from its sale. The result of the collective action then was good for the larger landowners but did not help the more marginalised *Rabaris* and small landowners, who remained unprotected and largely uncompensated.

5. DISCUSSION

Several important points regarding procedural justice and its deficit emerge from the empirical findings of this paper. First, the research found that two-way information exchange, or lack of it, was one of the central issues. Whilst the authorities did fulfil the minimum requirement of giving notice for land acquisition in the local *Panchayat* office (14km away) and in local newspapers, this was not accompanied by any detail regarding the nature of the development. Such minimal provision of information was also insufficient to reach all members of the Charanaka community, many of whom cannot read, and do not regularly travel to the neighbouring village. This amounts to neglect to adequately inform the affected community, a contravention of one of the basic aspects of procedural justice. Information selectively reached the more mobile and educated strata of the village, who were able to make use of it, whilst the less educated and less well connected were disadvantaged by their ignorance, in some cases being induced to sell their land at less than its (development-related) value and losing their livelihoods in doing so.

The discussions around taking feedback from the local communities, considering their indigenous and local knowledge, emphasised that the authorities did not recognise local knowledge in the process of identifying the location for the project or understanding the impacts of the project. Literature on renewable energy projects more generally identifies

ecological and landscape impacts as some of the most important factors behind local resistance to such projects (Devine-Wright, 2005, 2007; van der Horst, 2007; Wolsink, 2007). Though it is inevitably not always possible to act on all information provided by local communities, due consideration of aspects relating to landscape and environmental impacts early on in the development can help address and mitigate such impacts, as well as wider social impacts (Casimir, 1996). Such local knowledge could have been especially valuable in this context where an environmental impact assessment was not a requirement, despite the size of the development and its proximity to several protected areas. Soliciting the perspectives of villagers would also have identified the impacts of the loss of access to government land for grazing and fuel and could have suggested alternative zones for consideration with fewer or more evenly spread impacts on livelihoods.

The second major point is that the lack of information exchange was largely due to lack of appropriate and adequate participation, and lack of enfranchisement of the affected communities. Apart from informing a small group of people about the land acquisition in the *Gram Sabha*, no effective participatory or consultative process took place at any stage of the project, despite repeated appeals for discussion. Such exclusionary decision-making processes signify highly unjust procedures. This is not unusual in the face of rapid development: numerous cases of disenfranchised valley farmers facing floods by large dam construction or marginalised small landholders facing policies in favour of large industries in India provide examples of the exclusion of local communities and the poor in decision-making processes (Shiva, 1997; Vasudevan, 2008). However, providing opportunities for inclusion and democratic participation is not only central to procedural justice but also to increasing the legitimacy of and trust in the government (Leach et al., 2005; Mitra, 1992; Renn et al., 1995) and potentially to greater social acceptance of new and 'environmentally

good' technologies (Gross, 2007; Zoellner et al., 2008). In Charanaka, powerlessness in getting their voices heard led the village resorting to a form of collective action through a 'representative group', which was partially successful but which did not succeed in achieving full procedural or distributional justice.

The deficit of procedural justice overall, acted to further marginalise those who were already the least advantaged in society, thus producing more unjust outcomes. The fact that more educated members of the village were able to find information about the development, and the domination of the representative group that was formed to protect village interests by the upper caste and more affluent members, reasserted the hierarchies that operated in the village. This very much echoes the concerns in the literature regarding the propensity for inadequate processes to perpetuate and legitimise existing inequalities (Cooke and Kothari, 2001; Cornwall, 2004).

The procedural injustices in the case study could be largely attributed to the political environment in India where community participation in large scale development project planning is as yet not completely recognised, and where political decisions tend to be taken by policy-makers with the influential involvement of large private investors. These findings also echo Reddy and Dixit (2010)'s policy paper on civil society participation in India's solar energy implementation, which argues that although most of the policies require the protection of public interest through effective public participation, this has not translated into serious action.

In rural India, the principles of democratic participation are often weakly implemented due to a strong caste system, its associated power structure and the public misperception of local self-government, e.g. through *Gram Panchayat* and *Gram Sabhas*. Thus, before undertaking any participatory studies in India it is important to understand the socio-power dynamics of

Indian rural societies. The socio-cultures vary within and between regions; understanding the specifics of local social structures is vital for successful implementation of participatory and democratic processes.

Similar to the findings in this case, extensive anthropological work on *Rabaris* in India emphasises that these marginal communities' traditional, migratory occupation and low rates of literacy often bring acute economic and political marginalisation (Dyer and Choksi, 1998; Rao, 2006; Sharma, 2011). *Rabaris* were largely ignored or overlooked in development projects in both colonial and post-colonial India, and any policy outcomes or legal mechanisms largely favoured sedentary farmers (Dyer, 2006; Sharma, 2011). With the aim of recognising the nomadic and tribal communities, preserving and promoting their art and culture, and supporting their socio-political participation, the Ministry of Justice and Empowerment of the Government of India established a temporary 'Nomadic commission'[7] (NCDNSNT, 2005). However, to date, no strong provisions have been made for sustaining their livelihoods either through access to lands or mitigating their systematic marginalisation from development initiatives. Even today these nomadic communities are not included in the census and they remain invisible and un-enumerated citizens (Sharma, 2011).

In villages such as Charanaka, the *Gram Sabha*, as a powerful institutional mechanism has the potential to support the less powerful and more marginalised sections of a community by providing opportunities for full discussion in all the matters of a village. To strengthen the role of the *Gram Sabha*, making *Gram Panchayat* an executive committee of the *Gram Sabha* would be beneficial. The *Gram Panchayat*, as an elected local institutional body and with representation of members from each caste of the village, is accountable to the

[7] See http://ncdnsnt.gov.in/ for more information on the National Commission for Denotified, Nomadic and Semi-Nomadic tribes (NCDNSNT) released in 2005.

respective castes. In communities where the participation of all individuals is not practical, increasing the role of *Gram Panchayat* committee members in the *Gram Sabha* can also facilitate accommodating the views of all sections of the community who had hitherto been excluded in decision-making. However, capacity building among lower caste and lower social status members and better 'recognition' of such members and their needs may be needed, in order to avoid the *Gram Panchayat* and *Gram Sabha* acting to exercise traditional power structures. There is also a need to sensitize governments, legislatures, civil society organisations, media, and local communities to promote *Gram Sabha* as an essential grassroots platform for inclusive and participatory development. Finally, it should also be noted that India recently released the long awaited 'The Right to Fair Compensation, Resettlement, Rehabilitation and Transparency in Land Acquisition Act 2014'[8] after repealing the colonial period 'Land Acquisition Act 1894'. One of the three governing principles upon which the new Act is built is to organise consultative, participative, informed, and transparent procedures involving local self-government (*Gram Panchayat*) and *Gram Sabhas*. Thus, it is also hoped that the new Act, if implemented legitimately, paves the way for improved participatory justice in future land acquisition processes.

6. CONCLUSIONS AND POLICY IMPLICATIONS

This investigation of procedural justice in the implementation of the mega- solar park development in Charanka, India, highlights an important new arena for research on procedural justice in energy policy and suggests new areas of energy justice research for investigation in different geographical contexts. The empirical research found that procedural justice principles - providing detailed information, valuing local knowledge, listening to the communities through responding to their concerns, and securing the involvement of all

[8] See http://indiacode.nic.in/acts-in-pdf/302013.pdf for the act.

affected communities with representation of marginalised groups, - in solar park implementation are important not only for protecting the interests of the community and promoting distributive justice, but also for community acceptance and for mitigating any socio-environmental impacts of the project. Failure of procedural justice in the implementation of energy projects in developing economies is problematic because it can not only impact the social acceptance of low-carbon and 'environmentally good' energy projects (Ockwell et al., 2009; Gross, 2007), but also perpetuate and widen inequalities, and further side-line the voices of powerless and lower status groups, such as pastoralists, nomads, tribes, small farmers, and other socio-culturally marginalised members of a community (Gujit and Shah, 1998; Hickey and Mohan, 2004).

The framework for procedural justice that we have implemented, covering two way information exchange, meaningful participation, and adequate representation of all groups including the marginalised, signposts the major elements of procedural justice that need to be addressed. Governance arrangements surrounding economic and infrastructure development in India need to be strengthened, especially with regard to their interface with existing local institutions through which community interests may be addressed, specifically the *Gram Panchayat* and *Gram Sabha*. Meanwhile, procedural justice would also require community capacity building and strong representation and recognition of all community sectors in these local institutions.

In conclusion, the results of our research are capable of better explaining - and for the future, anticipating - the procedural justice issues underlying large scale solar energy implementation, in India specifically and developing countries more generally. We found that in socially unequal and culturally diverse developing countries like India, unless specific steps are taken to ensure otherwise, the voices of the poorly educated and the already least

advantaged sections of a community are likely to be unheard and dominated by the educated, higher status and more affluent members of the same community, and other development agents such as local governments, private investors, and the central state in any policy decisions or legal mechanisms, including renewable energy. These findings thus not only bring a developmental perspective to the largely western dominated energy justice literature (Gross 2007, Walker and Day 2012; Walter & Gutscher 2011), but also stimulate further research and add weight to the increasing demand for recognition and meaningful public participation in the development of 'environmentally good' projects.

Consideration of procedural justice principles along the lines that we highlighted could not only provide a road map for addressing justice issues identified in the Phase – I (2010-13) implementation of India's National Solar Mission (NSM) (Ghosh et al., 2012), but also in the Phase-II (2014-17) and Phase – III (2017-22) of the NSM, the new Gujarat Solar Power Policy due to be released in 2015, and other developing countries seeking to successfully unleash the potential of clean and sustainable energy through national policies. Finally, on a wider scale and contexts, there is immense potential for advancing energy justice literature in developing country contexts. The research could be expanded to other technologies (such as wind, hydro etc), conducting comparative studies with other regions of India (Gujarat, Rajasthan, Madhya Pradesh, etc), and other developing (China) and developed countries (USA, Germany, etc). Through interrogating not only the implementation of justice principles in practice but also their saliency and applicability in diverse cultural contexts, such studies have the potential to produce significant advances in energy justice research.

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