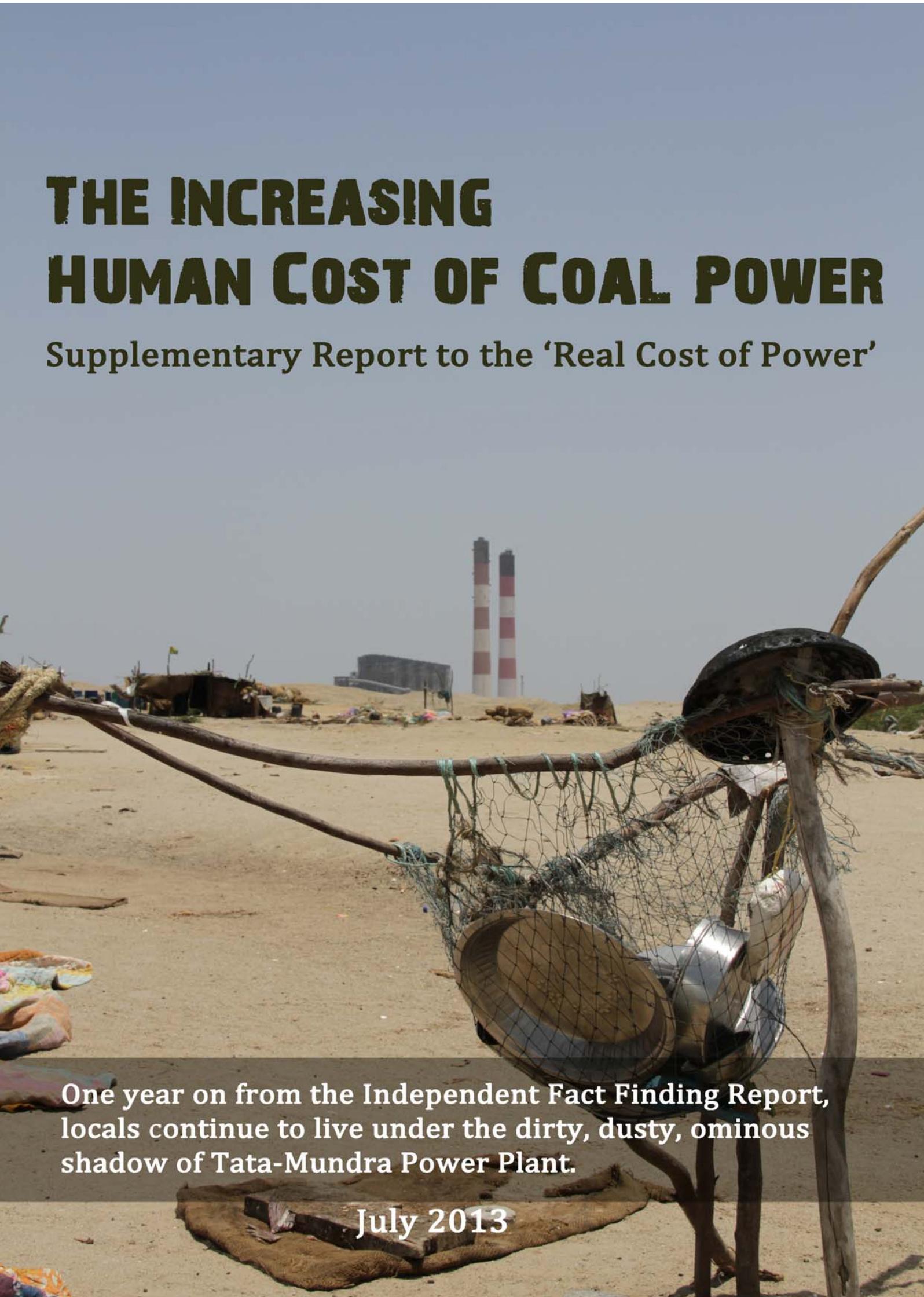


# THE INCREASING HUMAN COST OF COAL POWER

Supplementary Report to the 'Real Cost of Power'



One year on from the Independent Fact Finding Report, locals continue to live under the dirty, dusty, ominous shadow of Tata-Mundra Power Plant.

July 2013

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**One year on from the Independent Fact Finding Report, locals continue to live under the dirty, dusty, ominous shadow of Tata-Mundra Power Plant.**

**July 2013**

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# The Increasing Human Cost of Coal Power

## BACKGROUND

"**The Real Cost of Power**" report on the serious environmental & social policy violations by the 4000 MW coal-fired Ultra Mega Power Plant (UMPP) owned by Tata Power, the Coastal Gujarat Power Ltd (CGPL - Tata Mundra) was published by an independent fact finding team in July 2012. The team was headed by Justice (retired) S N Bhargava, former Chief Justice of Sikkim High Court, as well as former Chairperson of Human Rights Commissions of Assam and Manipur. The other members are Dr. Varadarajan Sampath, a marine scientist; Praful Bidwai, senior journalist and columnist; Jarjum Ete, former Chairperson of the Commission for Women, Arunachal Pradesh; and Soumya Dutta, energy specialist and national convenor of Bharat Jan Vigyan Jatha. The report brought out a number of serious adverse impacts that the communities of fisher-folk on the Mundra (in Kutchh, Gujarat) coast are facing due to the operation of CGPL and the nearby Adani Mundra power plants. (Since these projects are located adjacent to each other, their impacts in the air or in the sea are inseparable.) The report also highlighted the impacts on the fragile environment of Gulf of Kutchh, along with the various social impacts, including threat to traditional livelihoods - not only of fisher-folk, but also of the pastoralists, salt makers etc.

## Critical findings of Fact Finding Team

The report **The Real Cost of Power** is available at:

<http://tinyurl.com/pz363fa>

The critical findings of the report were:

**First, the IFC failed to recognize and consider enormous social, economic & environmental damages.** The IFC and other financiers, the company, different government bodies, including the Ministry of Environment and Forests, Pollution Control Board who cleared the project and the financial institutions supporting this project have either failed to recognize, or willfully ignored the serious social and environmental impacts of the project. The EIA and SIA failed to assess the damages and have failed to recognize certain communities as affected.

**Second, the IFC did not conduct adequate, meaningful and informed consultations to the affected communities.** The communities repeatedly complained about the lack of consultations before the project started and failure to share key information about the impacts and mitigation plans.



**Third, the IFC failed to provide mitigation in response to the destruction of large areas of mangroves, dry-land forests and biodiversity-rich creeks.** Large stretches of mangroves and dry-land forests were destroyed for the construction of the inlet and outfall channels and other associated activities of the project. The team could not find the required forest clearance for the same. The company refuses to own up this destruction.

**Fourth, the IFC's co-financing of the project and failure to comply with its applicable policies contributed to the loss of livelihoods and drastic reduction in fish catches.** The team corroborated available data of fish-catch and identified considerable reduction in fish catch in the past three years, since the adjacent Adani power plant was commissioned. The partial commissioning of Tata Mundra has further reduced the catch and communities fear total loss of aquatic wealth when the project is fully commissioned, resulting in loss of livelihood.

**Fifth, the IFC was party to the violation of environmental clearance requirements.** The team identified that the company and the IFC have violated the Environmental Clearance given by the Government of India by adapting a one through cooling system, than the permitted closed cycle cooling system.

**Sixth, the IFC failed to require and/or disclose chemical pollution studies.** The fact finding team confirmed high chemical content, which is present in the increasing acidity of the outlet water from the project. The levels are detrimental to the fish eggs and larvae. This needs further, in-depth investigations.

**Seventh, the ash contamination of drying fish, salt and green fodder has not been thoroughly examined by the IFC and there nowhere in the mitigation plan that adequately address this ash contamination.** The partially operational plant is already contaminating the drying fish, salt and fodder. Of the total salt production in India, about 75 % is produced from Gujarat coasts. Salt contamination is a high risk, which is hitherto overlooked. Unusual increase of diseases in cattle and abnormal abortions in pregnant cattle has also been reported recently.

**Eight, IFC has not thoroughly assessed the health impacts based on its applicable policies.** Gujarat is the leading fish producing state in India. The dry fish, with the toxic coal ash containing heavy metals including cadmium, lead, selenium and mercury, which are also known to bio-accumulate in animal and human bodies, could have serious health problems to a larger population than the one in the vicinity of the project.

**Ninth, IFC failed to adequately address the adverse impacts of the project on local economy of the urban and rural population.** The high tariff rate of power (demanded by the company to the Govt of India in the wake of the increase of international coal prices) would exclude the fishing communities from benefiting from the project. The rural communities suffer disproportionately, as the natural resources they were dependent on for their traditional livelihoods and jobs, have been taken away or considerably reduced and/or polluted/damaged.

**Tenth, women's safety, security and free access to their livelihood sources have been obstructed.** Communities constantly complain about the presence of a large migrant labour force being a cause of women's safety concerns.

**Eleventh, access to fishing and grazing grounds has been blocked.** This IFC co-financed project catalyzed the blocking of access. The team found that access roads for the fisher-folk and the pastoralists to fishing and grazing grounds have either been blocked or are forced to take an unusually long route. They are forced to pay more for their transport and considerably delay their women returning from the markets after selling the fish.

**Twelfth, IFC ignored the potential impacts of radioactivity produced by the Tata Mundra UMPP.** IFC and the company have failed to take into account the possible impacts of radioactivity emanating from the coal ash on the people and the animals in the vicinity of the project. Independent reading by the team recorded double the radiation dose level around 300-400 meters away from the ash pond than in the villages. While the current reading is within the permissible limits, with only one-fifth of the project operational, the permissible limits have touched half. None of the impact assessments have taken note of this.

**Thirteenth, the promised employment/job creation in the project is hardly evident.** The team was told by the communities that only a very few locals are employed in the project for menial jobs. Depriving people of their livelihood and denying jobs in the project is a double blow to them.

**Lastly, the IFC failed to conduct cumulative impact study.** The project, coming up in the vicinity of other large scale polluting industries, failed to do a cumulative impact assessment and thus failed to take adequate steps to lessen the negative impacts.

#### NEW FINDINGS

The fact finding visits for the study and the published report were undertaken in March and April 2012.

At that time, only one unit of the planned five 800 MW each supercritical boilers of CGPL were operational, along with some of the

Adani units. Since that time, all of the five 800 MW units of Tata-Mundra (CGPL) have come on stream, along with the other units of Adani power plant. There were many reports from the local community that some of the impacts have intensified, though it was also reported that the Tatas have taken some token measures around the time the compliance mechanism of International Finance Corporation, the Compliance Advisor Ombudsman (CAO) team was



visiting for their investigations! With that background, a couple of visits to the area was undertaken to ascertain the change in situation (in March and June 2013), and find out what are the new developments - both positive and negative. This brief report is intended to bring these findings to light.

### The Menace of Coal Dust

One of the major increases in the adverse impacts of the full operation of CGPL is the coal dust invading houses all around the plant. Coal dust has engulfed all walks of life, whether food, drinking water or even their houses. Fly-ash has intensified. As per their own admission, the CGPL plant is burning anything between 12-13 million tons of coal every year, and that coal is coming in (post landing after a long sea voyage) through a nearly 15 KMs long coal conveyor



(picture below) from the landing jetty in Mundra port (which is owned by the Adani's - a benefactor & beneficiary). And this is creating havoc in the Tunda-vandh village, whenever the wind blows from the conveyor side to their side (which is quite often).

There are layers of coal dust covering their floors, their bodies when they sleep outside on the terrace (something which is normal in summer). We were

shown a crude video recording (done with an old basic mobile phone) by Vankabhai of how his relative on the other side of the village is sweeping the accumulated coal dust (just one night's) from the terrace of their house. The older people who remain in the houses are affected more, as testified by his parents, in serious manner (picture below). They are as yet not aware of the cost they are paying in terms of bad health.

But that investigation has not yet been done properly. Most of the people here are concerned a little, but feel that the impacts will come 'later' as it's only a year since the full plant operation started in CGPL. In this, they are partly right, but not fully - as shown by latter findings.

Villagers from Tunda-vandh also reported breathing difficulties, whenever the coal conveyor runs "at speed". There are also wide-spread complaints about foul smells spreading whenever this happens. Devjibhai and Vankabhai - independently of each other - also reported several incidents of fires in the dumped coal stock of CGPL, and this aggravates the breathing problem, along with increasing bad smell. As a token gesture, the



CGPL management had erected (just around the time of the visit by CAO auditors) a hard-cloth barricade around the area it stores its coal, but that has not helped much, except hiding the sight.

### Children's Health at Risk

The question of adverse health impacts due to both huge amounts of coal dust from CGPL and fly-ash from CGPL (+ Adani power), is a critical one, as these two together are bringing in and burning nearly 28 million tons of coal every year in that small area. If one take a close look at the satellite image of the location of the villages Tunda, Vandh, Navinal, Mota Kandagra and Nana Bhadiya - one is struck by the closeness of all these to both the mega coal plants. In fact Tunda-Vandh is sandwiched between the two mega polluters, as has been written earlier. The huge amounts of dust and ash are spreading in the area,

damaging health, crops and more. In our search for the health damage, we were looking for some doctor in the area who will 'know'.

The Adani's have played smarter by sending a doctor every morning to Tunda-Vandh, and thus one cannot hope to get any medical data from



this source. The villages do not have many private doctors either, and the Tata's have also taken to sending a medical check-up van. After some searching, we could locate a doctor in one of these villages who is treating people in the area for over three decades (but whose identity we are not disclosing yet, for fear of unwanted attack by Tata's + Adani's), and the revelation was easy and instantaneous - there is a roughly 20% increase in children's respiratory diseases in the past two years !! It is a startling figure, never seen in "normal" change situations, but this was expected by all normal logic of exposure to heavy air pollution, where young children are impacted first. The huge injustice of the situation is that the CGPL plant is sending overwhelming part of its generated power to five states, including far off Maharashtra, whereas the health cost (totally un-compensated in any way) is being borne by the young children of this area the most. Others are also affected, but the effects are not so prominent - yet. And how much is the impact of the massive acidic sulphur oxide emissions - as the Tata-Mundra plant criminally omitted the installation of a Flue Gas De-sulphurizer (FGD), has not been studied till now.

# Adani project in Mundra has violated environmental norms, rules MoEF committee

Saswati Mukherjee

There is incontrovertible evidence that the Adani project - port and SEZ - at Mundra in Gujarat has violated and not complied with environmental clearance conditions. The company has also bypassed environmental procedures in certain cases - says the report of a committee set up by the Union ministry of environment and forests (MoEF) to inspect the project. The committee's report was officially presented to the Union minister of state for environment and forests, Jayanthi Natarajan, in New Delhi recently.

The Adani Waterfront and Power Plant project has been in the eye of the storm for its massive adverse ecological impacts. Based on complaints received, the MoEF had set up the Committee to examine allegations of environmental destruction and non-compliance, including distortion of the original HTL/LTL by the company. The five-member committee, headed by environmentalist Sunita Narain, included officials from the MoEF and experts on coastal ecosystems and disaster management.

Natarajan received the report and assured that the recommendations would be looked into by her officials. The Committee used remote sensing technology to assess environmental damage that had occurred over the past decade. It concluded that there were cases of non-compliance, including the following:

- ◆ There has been widespread destruction of mangroves; 75 hectares of mangroves have been lost in Bocha Island, which was declared as a conservation zone under the environmental clearance conditions.
- ◆ The company has not taken precautions to guard against blocking of creeks because of construction activities; satellite imagery shows signs of deterioration and loss of creeks near the proposed North Port.
- ◆ The company has not taken stipulated measures to ensure that the channels that bring large volumes of seawater for use in the thermal power plant and then discharge as well as the storage tank is lined so that there is no chance of salinity contamination in groundwater. This was a clear condition set at the time of clearance.
- ◆ The company was found to be wanting about the inventory of its fly ash utilisation and disposal.
- ◆ The company has been less than serious about reporting on compliance with the conditions set at the time of clearance. In many cases, non-compliance with reporting conditions has been observed.

"The Committee in its investigations has found that there have been instances to circumvent statutory procedures by using different agencies, at the Centre and state, for obtaining clearances for the same project. The public hearing procedure, which is a critical part of project clearance and helps to understand and mitigate the concerns of local people, has also been bypassed on one pretext or another," said Sunita Narain.

The fisher community, which depends on the coasts for their livelihood, is the worst hit by these changes. "The development on the coast, on their land has clearly left little space for them," said Narain. The report of the Committee suggests that there should be a plan for their ensuring access and provision of basic facilities, including a dedicated fishing harbor.

## Key recommendations

- ◆ The ministry should create an **Environment Restoration Fund**, which should be 1 per cent of the project cost (including the cost of the thermal power plant) or Rs 200 crore, whichever is higher. The Fund should be used for remediation of environmental damage in Mundra and for strengthening the regulatory and monitoring systems.
- ◆ **Cancel environmental clearance of the North Port** - this will lead to an increase in the mangrove conservation area and ensure ecological balance in this coastal zone.

Times of India  
April 22, 2013

Note: Tata Mundra project imports coal through the Adani port. The inlet channel of both Tata and Adani projects are the same.

### Changing Weather Conditions

One of the least expected impacts, that we did not foresee, came in the shape of complaints by several people in the villages of Mota Kandagra, Navinal, Tunda-vandh. They are feeling an unusual heat starting roughly in the last one-and-half years, and this is irrespective of summer or winter (which shows that this is an additional impact over the climate impacts). We could not immediately



verify this with any instrumental records, but resident after resident stated the same (two of those - Nem Chand Gala from Mota Kandagra village, and Devji bhai who complained about this, not from the same family or house or even same village, are pictured below).

We later realized that this should have been expected, as the two nearby giant thermal plants are throwing out around 7-8,000 MW of heat in the air in the area, apart from what goes into the cooling waters (which also contributes to warming the air, by surface interaction). What impacts this

huge additional heat is having and will have - on people's health, on crops, on water availability (increased heat and temperature increases evaporation rate) in this water-scarce area - are serious concerns and should be studied with rigour. In the meantime, people (particularly the older ones) keep paying with stress.

### Impacts on Horticulture

This is an impact that we were sure would come. Even last year (2012) during the fact finding visits, some farmers complained that since these two huge power plants started (even before all units were operational), some crops like "chiku" ('safeda') has drastically fallen in yield (similar reports came from other locations close to coal power plants, like Dahanu in Maharashtra). Many chiku farmers have cut down their plants and gone to other crops. In March 2013, during a short visit to Mundra area, we found the economically important



Date Palms - those coming under many of the power transmission lines - withering away. Without a proper scientific study, we are not sure how it is happening, but the connection seems to be there (picture below - the wires of the

transmission lines are faintly visible in the glare of a dusty sunny sky, just above the palms on left).

In 2012, the date production was very poor in Jarapra, Navinal, Dhrab - all within five kilo-meters from these two gigantic thermal plants. Last year the rains didn't come early to reduce any impacts that these two plants are causing - both by their heat and coal dust/ash emissions, unlike this year, when the rains came early. Even with a 'good natural climate', date farmers - as well as the local Krishi Vigyan Kendra worker we met and discussed with - said that the production is just about 60% of what it used to be earlier. Date being one of the main cash crops in many villages in the area, the huge adverse impact can easily be imagined. Another impact reported is that of ground water table having gone down fast in the last few years. In an area with little rain, the gigantic construction projects, along with port & other factories, have withdrawn massive amounts of water from the precious aquifers, depleting them extensively.

### Destruction of Mangroves

The Tata Mundra (CGPL) management contested the many documentary evidence cited by the earlier fact finding report, claiming that they have not destroyed any mangroves. On the contrary, they are now claiming to be re-generating mangroves. A simple look at the satellite image from google (below) showed that the

area of CGPL (right half, when the construction was ongoing) is devoid of any mangroves and with clear signs of extensive earth moving and disruptions, while just a little west of the area, mother nature has blessed us with plenty of these mangroves (the green belt visible on the left)!



Has anyone seen any such blatant discrimination from mother nature before, or did she knew beforehand that the Tata's will come here with their coal power plant, so it's best not to grow mangroves in that particular area, to save the Tata's from doing the criminal deed? Even if the Tata's have not cut down the mangroves themselves (not true, as we have seen their earthmoving machines removing coastal vegetation even in 2012), and it was done by the Adani's - this was for the CGPL plant, so the responsibility cannot be passed like that.

**Labour Issues and Social Unrest**

The Tata's (and Adani's too) are giant corporate houses with enormous resources, and claims to be 'responsible & ethical' ones. What then explains the existence of a large number of shanty colonies of contract labours of both these companies there in Mundra area? These colonies are often built by the local rich, and are exploiting the least-benefit contract/ out-sourced labour of these plants by charging usurious rates for a shared room (picture below). Why these companies are not giving regular jobs to the labour, why not even minimum facilities like decent accommodation, water, medical facilities?



The results are a large number of stressed out migrant labour, who often indulges in alcoholic drinks and the associated ills. As a result, the illegal

production and sell of liquor in the area, in a dry state like Gujarat, has sharply increased. The local men folk are now being impacted directly, getting hooked onto this, and domestic violence has increased sharply after the entry of these



two mega coal plants (and port etc) in this area. Local women's groups have started feeling the heat, and are also acting to control the menace, but the "responsible and ethical" corporations have not taken any responsibility for this un-ethical acts, not even taken notice! The paper clipping shows the news when these women's groups persuaded the police to raid some illegal liquor vends and seizes the stocks. But in the absence of any effort to tackle the root cause, these are temporary gains.

**Higher Water Temperature**

During the last fact finding visits in 2012, we recorded the outfall water temperature of the CGPL plant, almost near the point where it falls into the Gulf - to be between 32 and 33 c, well above the 'normal' temperatures. This time we measured the water temperature at a point close to the last measuring point, and it was a whopping 35.6 35.8 c ! No marine life accustomed to a Gulf

of Kutchh 'normal' of 30-31.8 C at this time of the year, will be able to bear this massive hit. The resulting loss of dissolved oxygen etc is pretty obvious, and the fish cannot be expected to live close here. Clearly, the Tata Power management and the Gujarat government do not expect the fisher-folk to live here either (if the fish disappears, can the fishers be far behind?), for long.

### Footnotes

<sup>1</sup> In June 2011, the people's movement of fishing communities, Machimar Adhikar Sangharsh Sangathan (MASS - Association for the Struggle for Fishworkers' Rights), lodged a complaint with the CAO. After a year of preliminary enquiry, CAO had ordered a full investigation.

