Review on outcomes in big development projects (mining and dams)

Case studies

This document presents the full case studies received to inform section 4.5.5 in the IPBES values assessment, on big development projects.

Contents

Case Study 1. Hidrosogamoso Dam, Colombia[1]

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Type of project:

Dam

Location:

Magdalena river in Colombia, Santander district, Girón, Betulia, Los Santos, San Vicente de Chucurí, Zapatoca towns

Prior social geography & land-uses: What was happening at the site prior to the project in terms of type of biotic nature and the use of biotic nature (forestry, agricultural land use, village settlements, etc.)? Who were the communities involved? Were there 'indigenous communities'? What was the extent of poverty? Unemployment? Landlessness?

This whole area is inhabited by farming communities (comunidades campesinas), the last indigenous peoples lived here until the beginning of the XX century.

Upstreams communities are largely farmers, most of them landless peasants and waged workers in large ranches (haciendas), or seasonal waged labourers. The main product of the area is cocoa, considered to be the one of best quality of Colombia. Large and medium-scale farmers never felt to be part of the affected population by the dam.

Downstream communities depend on the river and fisheries, on small scale farming on islands and river banks (besides occasional occupation on haciendas and oil companies). Downstream communities are much poorer, have less access to education and health care, they are socially, politiclaly and economically more marginalized. Richest fishery stocks in the department (especially the endemic bocachico fish - Prochilodus magdalenae), small scale agriculture (best cacao production in the country), husbandry

Basic features of environmentally disruptive project proposed:

[1] This contribution was originally provided in Spanish, but for the purposes of this report, it is presented only in English.

Sub-type: what kind of mining (coal, iron ore, etc), or what kind of dam (hydro, irrigation, mixed), technologies involved (such as open-cast vs underground, or inter-year vs intra-year storage, etc.)

Hydropower dam

Size: Million tonnes per year, or MW, or land area irrigated, area submerged, Dam height

The dam is 190m high and 345 m long on the top. Installed capacity of 820 MW. Submerged area of 7,000 hectares, however, more land will be needed for buffer zones for a total of 10.422 hectares. Water storage in the Topocoro reservoir of 4,800 million cubic metres.

Estimated production of 5056 GWh/year, providing an equivalent to the 10% of national energy consumption and aiming to export the rest to other countries.

Year proposed, year work/construction started, year commissioned, year closed (if closed)

Construction began in 2009, operations started and officially inaugurated at the beginning of 2015 by the president of the country.

Proposed by: private agent (name), government, mixed

ISAGEN, operator, now a private company, owns the project. At the time of construction, it belonged to the Colombian government but was later sold to the Canadian Brookfield (in 2016).

Funding of the project was mixed, 50% from the Colombian government, the rest is private.

Brookfield Asset Management Inc. from Canada - Main shareholder of ISAGEN

Salini Impregilo from Italy and Sacyr from Spain as contractors

What kinds of values and extent of benefits under them were highlighted in the proposal?

The project has been justified with the possibility of generating renewable energy and thus contributing to the energy transition and also with the aim of exporting of electricity to neighboring countries. There is wide criticism around whether large hydropower can be considered 'renewable energy' and whether this kind of energy transition is desirable for marginalized communities or not. Beside this, data on the actual export of electricity could not be found and is not included in the Management Report (Informe de gestión) of the company (ISAGEN, 2019). One more attractive benefit presented by the project proponents was the generation of jobs associated with the dam. However, direct employment was limited and only for a few years. Indirect jobs such as services (food, laundry, etc) and accommodation for newcomers only for a few months despite investments made by local families, because then the company provided camps and its own services. Locals remained indebted.

What kinds of negative impacts were originally highlighted in the proposal?

The construction of the dam considered the displacement of peasant communities settled in the flood zone and in that of the construction of the work. However, people questioned the methodology by which 'affected people' have been identified and others excluded. For example, workers of the haciendas or the landless peasants continued to oppose the project, as they were not compensated for the loss of their jobs either by the owners or Isagen, since they were not considered as affected families.

The project contemplated the flooding of around 7 thousand hectares, and another 14 thousand were considered protection areas. The flood eventually covered productive lands and important areas of dry forest and the habitat of wild animals in the area was lost.

It was foreseen in the EIA that the waters would suffer the deterioration in terms of water quality after passing through the reservoir and in the reservoir itself, given that the dammed rivers are highly polluted. This caused bad odors in the "downstream" area.

One risk reported by the communities is the induced seismicity. The dam is built in a highly seismic zone. In the official seismicity report, the company states the dam will behave normally under a intense event and that it complies with the ICOLD recommendations. However, local people are not informed about how monitoring is being carried out nor what safety measures have been taken. They also criticize the report (in attachment) for being very limited and poorly argumented.

Impacts which have not been considered in the EIA:

The main concern of the populations "downstream" of the dam wall was the loss of the productive fishing area, as in fact happened. Hundreds of fishing families lost their ways of life and most were not taken into consideration. This impact has not been considered in the EIA.

Women fish sellers suffered from the loss of their workplaces and as fishing declined substantially, they had no fish to sell. The company built a small stall for fish selling only after people's struggle for getting it, especially women. It was not considered in the EIA.

With the arrival of thousands of workers, the local population suffered problems that were not there before, such as drug addiction, alcoholism, prostitution and unwanted pregnancy of girls and adolescents, care of elderly and other vulnerable sections fo the society. It was not considered in the EIA.

The noise and the felling of trees caused many animals to flee and move away. When the work was in the middle of the Bucaramanga - Barracabermeja road, with high traffic, animals lost their lives on the road. Isagen never responded to the complaints that were made and limited itself to saying that they had a contingency plan for such a situation. The animals continued to appear dead on the road during the time of the work. It was not considered in the EIA.

What measures were proposed to mitigate these losses/impacts?

The company has carried out programs and projects to employ some people in the community, however, this did not solve the situation of the majority of the population that lost their livelihoods.

The women fish sellers were offered the relocation of their fish stalls, and they had to wait for many years before obtaining some stalls on the beach in the municipality of Betulia. This happened only after another closeby road project, the Cacao Route (Ruta del cacao), wopuld have affected the same commmunities. The two project authorities came to an agreement then for relocating the stalls. However, the new location is now facing land instability due to digging and debries of construction works.

According to claims of the Movimiento Social en Defensa de los Ríos Sogamos y Chucurí, the agreements established in the different minutes of the mobilizations carried out were never fulfilled by the company with the affected communities.

What methods were used to assess the impacts and balance them against benefits?

According to Colombian legislation, hydroelectric projects require an Alternative Assessment Study and an Environmental Impact Assessment. In the case of the dam, only the EIA was carried out.

What methods were officially to be used in decision making:

Colombian legislation includes a series of citizen participation mechanisms, including prior consultations for ethnic populations. In this case, because they are peasant organizations, only a public environmental hearing was required prior to the project. However, the hearing was held when the construction work had already started. This hearing does not have the right to veto the project.

What values were foregrounded in the opposition to the project?

In 2008, local residents together with environmentalists, NGOs, workers and trade unionists from the area of influence of the dam created the Social Movement for the Defense of the Sogamoso River. As the construction of the project progressed, the Movement intensified the struggle for the recognition of rights.

The Movement represents the various expressions of discontent from local people, which were not reflected in the "developmental illusion" or false promises of jobs by Isagen. Nor were they convinced by the promises of social investment, which were inconsistent with local realities: bakery courses or production projects alien to the local culture.

Over the years, the Movement was increasingly led by women affected by the project, as men received most of the compensation money and compensation projects. Some of them are fish sellers or even fisherwomen or farmers. Their complaints were mainly due to the impacts on the river.

Since 2011, the regional movement has been part of a larger one, the Living Rivers Movement (Movimiento Ríos Vivos) which is active in several affected regions of the Colombia due to other dam and energy projects.

The river is considered by most of the riverside communities as their main means of subsistence. It provides them with food, financial resources, recreation, contemplation and spirituality.

During the initial phase of the project, many people denounced the company for not including them in the census of affected peoples. These communities denounced that the censuses were conducted in a way that the number of population to be compensated was importantly reduced.

During the construction and prior to it, several social leaders were killed, including Luis Arango, a recognized leader of the fishermen, while Miguel Pabón, leader of the resistance, disappeared, and other people received life threats.

What forms of knowledge were foregrounded?

During the resistance process, the communities have resorted to the traditional knowledge of the fishermen to denounce the possible impacts of the project (as in fact happened), but they have also used the scientific knowledge of some independent professors who have established the loss of the quality of the water in the reservoir and for several kms down the dam wall. Regarding seismicity, they demanded that the company carry out a study to determine the risk of the dam. The study was finally ordered to the Universidad industrial de Santander (UIS, 2012). The report handed over to the communities (in attachement) is a brief document containing some methodological details on the study and recommendations. The communities point out they have not been informed about the implementation of such recommendations. A petition filed some years ago for more details on the matter remained unattended.

Strategies used in the protests?

The Movement has mainly organized marches and protests in the area and mobilizations towards Bucaramanga demanding a greater presence of the State and responses from the departmental government.

During the construction of the wall there were protests that stopped the works on several occasions. For example, on March 14, 2011, the international day of action against dams, the movement advanced a three-day mobilization, until a negotiation table was set up between the company and those affected. On that occasion, the diocese of Barrancabermeja, the Program for Peace (PPPMM), some NGOs, departmental assembly members and the Union of Workers of the Petroleum Industry participated as trustees. In this protest, as in others made by the communities, agreements were reached that the company never complied with.

After filling the reservoir, and as a way to report the bad odors caused by filling and the fact that the government and the company neglect their demands, a group of 70 women marched on March 16, 2015 towards Bucaramanga to claim their rights and guarantees for the protest. For six months they stayed in the García Rovira park, in front of the Santander government, in extremely harsh conditions, demanding answers to the humanitarian crisis that is being experienced in the area. The agreement between the protesters, the government and Isagen consisted of the promise by the last two of a property and productive projects to address the serious situation. After almost a year, the affected people have received nothing.

In general, few legal actions have been taken by communities. Only one peoples' action was filed for the impacts caused during the drying up of the river when the filling of the dam began.

In 2017. The women carry out an exercise in environmental historical memory that is reflected in 24 pictures of arpillería (an embroidery technique). The paintings are assembled in an exhibition called: "Art made language that with words we do not mean" that is presented at the VI Festival of Rural and Urban Expressions: Embroidering and weaving the memory of our territory, carried out in the city of Bucaramanga on September 29, 30 and October 1, 2017.

In 2018, the National Center for Historical Memory recognized it as an environmental historical memory initiative, and this exhibition is promoted and moved around in the region as a way to highlight the damages and impacts before and after the dam.

At present, the Movement has concentrated its efforts on an organizational work based on children and young people, which they call "pollinators of the territory", they also build "life projects to remain in the territory" (proposal for local livelihoods and activities to stay in the territory and not being displaced).

What new decision-making avenues were opened up by the protests?

In almost all the mobilizations against the project, agreements were established between the communities, the local authorities and the company, but these were rarely fulfilled. With the mobilization in front of the government of Santander, an agreement was reached between the Government of the Department, the company and the communities that moved to Bucaramanga.

What were the eventual outcomes?

The company relocated a few families displaced by the flood to new settlements built by them where some economic activities were promoted by the company. However, the communities denounced that these activities did not work out because they were alien to their culture, and because there are difficulties in accessing water and a lack of adequate advice.

In addition, some peasant families do not have water supply basins, much less an aqueduct, which makes daily activities and productive projects difficult. It turns out to be a direct violation of the right to water.

The 2015 agreement agreed to the land compensation by the company to the communities and economic activities by the Government. None of the points of agreement were met. The communities are still demanding its compliance.

What were the final impacts (if the project was implemented in any form at all)?

The project has been built and is now in operation. Some communities adapted to the programs promoted by the company as a form of compensation. The communities organized in the Social Movement in Defense of the Sogamoso and Chucurí Rivers continue to demand compliance with the agreement signed with the company and the local authorities.

Impacts during construction:

The movement of the machinery caused noise, dust, passage of heavy machinery.

In a period of four years of construction, the region underwent a profound territorial transformation. The 190-meter wall over the river, the project and substitute roads, 24 the works on the Cerro de la Paz and the tunnels to divert the river were built.

The works caused geomorphological changes, in water quality, in the dynamics of water flows, in deforestation processes, in sediment transport and in the population sizes of the fish fauna. The increase in sediment altered the quality of the water. The sediments came from the works (roads, wall, tunnels and roads), from the mass removal of the mountains (Cerro de la Paz was devastated to build the dam), from the material deposit and from the sewage from the camps.

In many cases, the sediments were discharged directly into the Sogamoso River or into the streams influenced by this river (La Cabezonera, La Peña, La Putana and La Flor), which caused frequent fish death, as reported in 2011.

The use of explosives for the construction of the tunnels and the works on the Serranía de la Paz, released geochemical elements from the rocky material that, when mixed with the waters, contaminated them.

The noise of the explosions drove away the wildlife. “Tigrillos, armadillos, reptiles and bears have been found, according to testimonies of inhabitants of the area, dead or injured on the roads. The company captured the animals that were saved and placed them in zoos and captivity areas.

In the places on the river where the Isagén company extracted the materials for the work (stone and sand), large pits remained which, together with the changes in the regulation of their waters, caused the disappearance of some plains and islands where the landless peasants cultivated papaya, plantain and yucca on the land during times of drought. Furthermore, these crops were also threatened by changes in the river flow.

The food security of the fishing families became increasingly dependent on the external market.

The "rise and fall" of the flow of water in the river, which depends on the generation of hydropower, began to erode the plains of Sogamoso.

The sediments that used to fertilize the river valleys no longer go down: now, they are retained in the wall of the dam.

During the diversion of the river to build the cofferdam, there was a massive die-off of fish. Although the company disclosed the rescue days that took place for three days; the mortality was high and, as on other occasions, there was little chance of saving the fish.

On April 14, 2011, a flood threatened to break the cofferdam and kept the populations “downstream” in status of emergency, who were temporarily displaced to higher areas. All these transformations altered local ways of life: fishing decreased, the sale of fish ended, community tourism dropped..

Impacts once the dam is built:

According to official data, 900 families engaged in agricultural, livestock and fishing activities suffered harmful effects, but those affected consider that this figure is far below reality. The communities assure that the company ignored in the census of affected families of peasants, fishermen, day laborers, artisanal miners and fish sellers, among other communities.

It is estimated that the hydroelectric project displaced more than a thousand people due to the flood and other thousands are affected and displaced by the transformations of the basin.

The company was left with control of 21,417 hectares declared of public utility by Executive Resolution 230 of 2008. Not only the area of the reservoir and the engine room, but also the protection zones, since Isagen was left with the control the basin and micro-basins that carry their waters to the reservoir. People who lived or worked in this area were evicted. And 21 thousand hectares were left for the direct control of Isagen so that hundreds of families are suffering a new phenomenon of displacement, no longer due to political violence.

On June 8, 2014, the Sogamoso River literally woke up dry. The day before, at 6 p.m., Isagen began filling the reservoir. However, a technical failure, which closed all the compounds, completely interrupted the flow of water, for more than twelve hours. Thousands of fish died.

The emotional impact of this event still survives on the inhabitants of La Playa, a town in Betulia “downstream” from the wall, on the Sogamoso River, most of whom were born next to the river. A woman fisherman recounted with emotion: "our river is dying, our river is sad, its waters are no longer useful even for farming, children cannot swim in it."

La Playa and other coastal fishing villages lived for decades from fishing, fishing trade, community tourism, pancoger agriculture and artisanal sand mining. Now, there are radical changes produced by Hidrosogamoso.

Many had their basic rights violated. People say that sharecropping families were displaced, rented, or that they were simply in the vicinity of the river and did not have titles to their land. It says that the Isagen company filed administrative actions against them, carried out by local mayors and that in many cases they evicted them through the improper use of force. Many others resisted in their territory, but the stage of construction of the dam with the consequent destruction of their livelihoods forced them to leave.

In the upstream area, where today the reservoir is, thousands of peasants lost their lands and workers on the farms and estates were unable to work.

A study by the Santo Tomas University, led by the renowned environmentalist and chemical engineer Jairo Puente, concluded that the lack of oxygen is serious in the waters of Sogamoso. One of the reasons for the

poor quality of the water is the non-removal of organic matter, a requirement of the environmental license, but also the damming of polluted rivers. The Sogamoso River is formed by the waters of three of the most polluted rivers in Colombia: the Chicamocha, the Suárez and the Fonce. So the water in the reservoir is not of first quality, this favors anaerobic conditions, produces toxic gases and greenhouse gases. When the oxygen drops to these levels, it is not possible for fish to develop, even if they say that fingerlings have been stocked.

The temperature of the water in the dam ranges between 31 and 32 degrees Celsius, while below it is reduced to 25 degrees Celsius.

There are extreme changes in temperature (very high in the day and very low at night) and in humidity. Relative humidity conditions change from 94% to even 44%.

The decrease in harvests, according to local inhabitants, is notorious: the plants do not give fruits as before, and pests and diseases of the crops have also increased. The region of influence of the project is known in the country for its production of high quality avocados and cocoa that are highly sought after in the country and abroad. The region's soils and climate are considered to be ideal for the production of this rich fruit. However, now, these crops are threatened by changes in the local microclimate caused by the reservoir.

With the filling of the reservoir, the runaway of the animals was massive and is affecting the crops of the communities, damaging the work and income of the peasants. It is observed the presence of pumas, tigrillos, hogs, chácharos, jars, chiguieros, squirrels, monkeys, cotudo monkeys, picuro, birds such as: chachivos, parakeets, churicas, cochas, tulcán, papayero siéntaro. Herds of wild pigs or baquiro (Pecarí tajacu) have appeared in the villages of Lebrija, Girón and Piedecuesta. The pigs destroy the crops.

The flood control mechanism and the opening of gates, usually in rainy season, cause serious damages of crops, drastic changes in the river flow that affected the precarious fishing activity and the flood-prone areas along the river.

The social movement strongly criticizes the lack of consideration of specific impacts on the most vulnerable section of the society, including women, elderly, adolescences and children. They are the most affected by the changes in the territory and those who mostly bare the impacts on their way of life. It is very complicated for them now to rebuild their lives and livelihoods in order to remain in the territory and not being forced to leave.

Other information

In reality, there was no such division by upstream and downstream, it was a division that had more to do with their social class. Upstream, there were the farms that would later be flooded by the reservoir. The company negotiated the purchase of land with large ranchers, the small or medium owners were left at a disadvantage and also sold their farms or asked to be transferred to the settlements built by Isagen. In any case, they received some compensation and were resettled. Laborers at the haciendas or the landless

peasants were not considered as affected groups thus did not receive compensation. They continued resisting for the loss of their jobs.

The downstream communities were mainly fishermen, fish sellers, or landless workers from downstream farms, or oil companies. Communities were divided because some decided to accept the programs or projects offered by the company, while those who did not agree with the project have continued to resist and in opposition to the company.

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Case Study 2. Piparwar coal mine, North Karanpura coal block, Jharkhand, India

The Piparwar mine is an opencast coal mining project in the eastern Indian state of Jharkhand. It covers an area of 1120.25 hectares and has a capacity of 12.5 MTPA (normative) and 14.5 MTPA (peak). The 1120.25 ha can be further divided into 163.6 ha of agricultural land, 186.5 ha of forestland, 490.80 ha of wasteland and 279.35 ha of settlements. The project straddles the villages of Mangardaha, Benti, Kichto, Bahera, Kanuada, Rajdhar, Kalyanpur, Karo and Bijain, in Tandwa Tehsil, of Chatra district, Jharkhand. According to the 1981 census data, the land-use pattern in Piparwar region showed 38 percent forest land, 28 per cent wasteland and 34 percent cultivated area (Roy 2001).

It is operated by Central Coalfields Limited, a subsidiary of Coal India Limited, and is a part of the North Karanpura coal field. Piparwar coal project has a mineable coal reserve of 197 million tonnes, and the open pit mining started in January 1990. Two mining leases were initially granted for 50 years period each- from 17 Feb 1982 to 17 Feb 2032, and from 25 Dec 1985 to 25 Dec 2035. The mine was started with a sanctioned production of 6.5 MTPA. However, it applied for an environmental clearance to expand production to 10 MTPA (normative capacity) in 2007, and was granted an EC, with certain environmental mitigation conditions. It was further modified to 11.5 MTPA peak production in 2012 and 12.5 MTPA (normative capacity) in 2014. However, the production of coal from the mine was shut down in June 2020, with only existing stock being transported currently but no official communication about this has been given to the Ministry of Environment, Forest and Climate Change (NGT Committee Report 2020).

The North Karanpura coalfield as a whole consists of approximately 118,668 ha of land, of which forest comprises an area of 41,457 ha (Kalpavriksh and Greenpeace India, 2012). According to official data, the entire area is 122,000 ha and contains 9 per cent of India´s coal reserves (CMPDI 2013). Currently there are 59 coal blocks identified by the government in the North Karanpura coalfield, of which 17 are operational as mines (Oskarsson et al 2019). The population of this region as a whole is more than 600,000, and at least 100,000 are from Adivasi (Scheduled Tribe) communities (Census 2011 data). The controversies around Piparwar OCP overlap with or capture in a microcosm those surrounding most of the other mines in the North Karanpura coalfield.

Basic features

While there were other smaller mines in the area prior to Piparwar OCP, the Piparwar project initiated in the 1990s was one of the largest Australian aid supported project, being valued at A$ 500 million, with the Australian company White Industries selected after high level diplomatic consultations to act as mine developers and consultants, replicating their experience with the Ulan coal mine in New South Wales, Australia (Vicziany 1993). White Industries was given a five-year consultancy contract for transfer of technology and implementation of Australian coal mining practices, which would result in efficiency in water management, land rehabilitation as well as less polluting production of coal (Vicziany 1997).

Negative impacts originally highlighted in the proposal

The landscape of the North Karanpura coalfield is covered with fertile agricultural land, and forests. It also is of archaeological significant, with pre-historic rock paintings being discovered in cave shelters at Isco and Thethangi in the east of the North Karanpura valley. Close to the Piparwar mining site, ancient stone implements, iron slag and burial grounds have been found in multiple locations, which indicate the remains of a rich and long cultural history (Imam 2004).

According to official claims the project displaced 460 families from two villages, but the unofficial figures are much higher (Areeparampil 1996). It may be noted that households that lose their agricultural land but not their homes are not considered 'displaced', although clearly they lose their livelihoods (in return for a cash compensation, if they have proper records). The initial documents also did not mention that the region is such an important corridor for elephant and tiger movements which was later highlighted by studies (Fernandes 2012).

The involvement of the White Industries and funding from Australia was supposed to bring in the adequate ´transfer of technology´ to implement best mining practices in the Piparwar project. These included technologies to limit air pollution by setting up automated coal handing plants and silos/hoppers for loading the coal onto train wagons for export from the mine, thereby avoiding road transport and the much higher coal dust pollution it causes. It also included a coal washery for reducing ash content, thereby reducing ash-related pollution at the point of use (the thermal power plant). As a recent report by a committee appointed by India's National Green Tribunal shows that the rail transport aim has never fructified, and coal transport by road is perhaps the single largest polluting activity in the region (NGT Committee Report 2020).

Measures to mitigate impacts

The subsequent environmental clearances given also had measures in place to mitigate the harmful impacts of coal mining in the environmental and local communities. The specific conditions included adequate measures to guard against mine inundation for Damodar river/Safi nala, construction of appropriate catch drains and siltation ponds to arrest silt and sediment flow from soil, overburden and mineral dumps, regular monitoring and controlling of vehicular emissions by optimally loading and covering it with tarpaulins in roads which are metal topped, afforestation of at least 976 ha with density of trees to be around 2500 plants per ha, regular monitoring of ground water level and ambient air quality, etc. (CMPDIL 2013). The most important air pollution mitigation measure was to be the construction of a dedicated railway siding within the mine lease area, and setting up a 'coal handling plant' including conveyor belts, coal washery, silo and hopper for directly loading the railway wagons so as to minimise coal dust generation. There were also measures in place for long-term dismantling, decommissioning and restoration works (CMPDIL 2013). Indeed, the involvement of Australian aid and technical support was meant to bring the latest technology that would make mining efficient and minimize environmental impacts.

Opposition to the project

The reasons for the opposition to Piparwar coal mining in general and North Karanpura coalfields have been documented in both academic literature and activist reports. Some of the main reasons

for the opposition to the project range from displacement and relocation (Areeparampil,1996; Bharat Jan Andolan and Nav Bharat Jagriti Kendra, 1993; Herbert and Lahiri-Dutt, 2004; Lahiri-Dutt et al., 2012), loss of biodiversity (Fernandes 2012; Imam, 2017), destruction of cultural heritage (Imam, 2004), and violation of human rights (SARINI and JMAC, 2010). The expansion of coal mining in North Karanpura coalfield in general as well as in Piparwar mine has been characterised as a cumulative land grab (Lahiri-Dutt, 2016; Oskarsson et al, 2019).

The Environmental Clearance granted to Piparwar in 2007 (for expansion in normative production capacity to 10 MTPA) and in 2012 (introduction of peak capacity of 11.5 MTPA) was without increase in lease area. In 2014, CCL requested for another expansion in normative capacity from 10 MTPA to 12.5 MTPA, with a corresponding increase in peak capacity from 11.5 MTPA to 14.5 MTPA. The need for electricity, both at household level and for industries was the main reason why the project commenced; reducing coal imports and improving the country's 'energy security' was an argument used in the continued expansion.

Initial concerns in the 1990s were on the methods in which locals were notified about the mining and the consequent displacement, with notifications issues for some villages, and not for the others (Roy 1993). The process of land acquisition and the pace of mine expansion in the region was discussed in a workshop organized in 1993 by INTACH in collaboration with Council for Social Development (CDS) and the Indian Social Institute, where some people were concerned with potential coal-mining disasters which had earlier occurred in Singrauli or Dhanbad (INTACH, 1993, Roy 2001). A series of studies and action projects with families affected by the Piparwar mine in the ten revenue villages which were fully or partially impacted were also carried out by CDS after the workshop covering a total area of 4223 hectares and 909 families (Roy 2001). These studies showed major discrepancies with official data in terms of affected population, loss of green area as well as land-use patterns (Roy 2001). Concerns from environmentalists in both India and Australia also highlighted how the Piparwar project would cause double harm- by damaging the environment by destroying the watershed and cutting down forests with rich biodiversity, and in return providing minimal economic benefits since most of the money would be sent back to Australia (Sherman 1992). The Environmental Management Plan was also criticized to be limited in scope in terms of including provisions for resettlement and employment (Sherman 1992). The subsequent Environmental Clearances granted were conditional on strict measures to address environmental concerns, especially air pollution and water pollution, but the main measure (transporting all coal by rail instead of by road) was not followed even till the mine was supposedly closed in 2020 (CAG 2019, NGT Committee Report 2020). The coal handling plant was set up, but the siding was not commissioned for many years, and eventually commissioned and operated for a token period, while the bulk of the coal transport continued by road, at least till the nearest railway siding located in an urban area, resulting in enormous coal dust pollution (NGT Committee Report 2020).

The Piparwar mine was a controversial project right from the start, due to a lack of community consultation, unavailability of project documents of the environmental impact assessments to general public and no advance warning about the decision to mine coal, as well as its impacts on the local socio-economic settings (Vicziany 1993, 1997). Protests were also observed against the disruption of elephant and tiger movement, as well as loss of ancient cultural artifacts, including rock art dating back to the Meso-Chalcolithic age (10,000 B.C.) and sacred groves (Fernandes 2012). The campaign against Piparwar sought to the foreground many

inadequacies and non-compliances of CCL´s policies with regards to rehabilitation and environmental safeguards.

Multiple strategies were employed through the years for the protest, from involvement of environmentalists and activists both in India and Australia in the beginning of the project lobbying against the mine through letters, petitions, etc. (Vicziany 1993), to conducting studies to show the important wildlife corridors and ancient cultural artifacts in the region, to filing cases against non-compliance to pollution and environmental standards. In as recent as 2019, complaints were lodged about non-compliance or partial compliance with the conditions stipulated in the 'environmental clearance' granted to the mine, including inadequate measures for coal dust suppression, and bad management of the high levels of pollutants (NGT Committee Report 2020).

Outcomes and impacts

After the many concerns and complaints by Indian and Australian environmentalists, a report was published after site visits by the Australian High Commissioner´s office, which stated that adequate measures were taken, but this report did not deal with the ´externalities´ of mining on the environment and the communities living in the area (Roy 1993). Hence, the two concerns of degradation of the environment and displacement of local communities were the main reasons for protests against the Piparwar project (Roy 2001). According to the project document, 451 PAPs were successfully relocated and rehabilitated. However, studies conducted showed that the R&R programs were only able to marginally mitigate adverse social impacts, and people continued to struggle for both livelihoods and basic facilities, such as potable water supply, health services and education (Lahiri-Dutt 2016).

However, the mining continued, and subsequently was granted clearance for expansion in both production and area in the 2000s multiple times. At each stage, the likely social and environmental costs were played down and the benefits were emphasized. Thus, e.g., a cost-benefit analysis conducted for the diversion of 43.3 hectares of forest land in 2017 rendered a cost-benefit ratio of 1:2.48 (CCL 2017). Similarly, the documents for environmental clearance stated that no endangered flora and fauna were present in the area, a highly questionable claim since this is an important wildlife corridor and there is movement of many animals, including elephants (Fernandes 2012). Even though in the public hearing held on 19 May 2006 with regards to the expansion of the mine, concerns raised regarding employment, the absence of the railway siding and water and air pollution, no improvements took place in the subsequent years.

Thus, despite the opposition, the project has continued to receive environmental clearances to increase its capacity. From the initial 6.5 MTPA during the commencement of the project, it was subsequently increased to a normative capacity of 10 MTPA in 2007, followed by an amendment for peak production of 11.5 MTPA, and further expanded to a normative capacity of 12.5 MTPA (NGT Committee report 2020). CCL kept promising that it would set up rail-based coal transportation when it applied for clearances for expansion of production, and kept violating this promise (NGT Committee report 2020). Despite the current status of a closed mine, the project did not follow many regulations, resulting in air, water and land pollution, and negatively impacting public health. Ambient air pollution levels in areas around the mine were found to be far above the acceptable levels. The continued transportation of the previously mined coal by road would

result in further deterioration of public and environmental health if policies to allow on-road transportation persist, and clean-up and remedial protocols are not followed (NGT Committee report 2020).

The many years of resistance to coal mining expansion in the region has led to the formation of two active grassroots organisations in the region- Karanpura Bachao Sangharsh Samiti (KBSS) and Karanpura Bisthapita Morcha (KBM), who along with other people´s organizations had formed a united platform in 2008 with a decision to not land over any land for coal mining or thermal power production (Fernandes 2012). These grassroots movements have been actively since the early 1990s, and continue to assert their rights, and raise concerns of justice and equality in various old and new coal projects in the North Karanpura coalfield (Roy and Schaffartzik 2021). Since 2008, the different people´s organisations in the area, such as Karanpura Bachao Sanghrash Samiti, Bhartiya Mahila Jagriti Samiti, Ekta Parishad, Addi Haq Jan Sanghrash Samiti, and representatives of Vistaphan Pratirodh Samiti created a united platform to fight to prevent further allocations of land, as well as provide means for developing local agricultural production, with a variety of activities, such as protest marches, spearing awareness, mobilizations against forced displacements etc. (Fernandes 2012).

A mine reclamation and restoration initiative was conceptualized to accelerate the natural process of regeneration, known as Kayakalp Vatika. The project was started in 2015, over an area of 5 ha, and has since been expanded to cover 20 ha of backfilled areas where landscaping, soil enrichment, rainwater harvesting etc. is being carried out to restore the degraded mining areas. Thus, it remains as a token effort, while the large over-burden dump and mined area will take decades to be restored, if at all.

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Case Study 3. Sardar Sarovar Dam Project, India

Sharachchandra Lele

A. Type of project: Dam

B. Location: India, on the Narmada River, which forms border between states of Maharashtra, Madhya Pradesh and Gujarat. Dam itself is located in Narmada district of Gujarat state.

C. Prior social geography & land-uses: The Narmada river is the largest west-flowing river in the Indian peninsula, originating at Amarkantak in Madhya Pradesh and flowing for 1,312 km to reach the Arabian Sea through rocky gorges, dense forests and rich agricultural plains The river basin population was ~16 million as per the 1971 census, predominantly rural, including indigenous communities (officially called Scheduled Tribes in India: Bhils, Bhilalas, Gonds, Baigas, others) and many other non-tribal agrarian communities. Forests covered ~32% of the basin and agriculture ~60%. The region was classified largely as 'under-developed' by various development indicators. (Kothari & Bhartari, 1984).

D. Basic features of the project:

- Sub-type: The Sardar Sarovar Project (SSP) is a large multi-purpose dam: irrigation-cum-hydropower. Part of a series of 30 major, 135 medium and 3,000 minor dams proposed under the Narmada Valley Project.

- Size: The SSP itself is a dam 455 ft (139m) in height, impounding XXXX mcum of water, submerging at least 37,000 ha of land, and designed to divert 9.5 million acre feet of water from the Narmada valley into a canal irrigation system taking water to northern Gujarat. The canal itself would extend for 450km, and be 250m wide at its head and 100m wide at its end. It required 80,000ha of land (more than twice the land submerged in the reservoir). The SSP was also designed to generate electricity via two powerhouses (canal-head and riverbed) with a combined capacity of 1450 MW.

- The proposal was developed in the 1950s, and the foundation stone of the SSP was laid in 1962. Actual construction was delayed till the Narmada Water Disputes Tribunal (NWDT) adjudicated on the sharing of water, electricity and displacement costs between the three states and gave an 'award' in 1979 (Wood, 1993) (Cullet, 2007a). Work on SSP started full swing in 1987, was then stalled somewhat due to a stay order of the Supreme Court in 1995, but then construction resumed full swing when the Supreme Court lifted the stay and gave a conditional approval for proceeding with

the project on 18 October 2000. The dam height reached 121 m in 2006 and 139m in 2017. The irrigation canal network is not fully completed yet.[2]

- The SSP was proposed by the Government of India as part of the Narmada Valley Project scheme. Funding for various other dams in the NVP came from the private sector. But the SSP is a fully state-designed and state-constructed project. The SSP received World Bank funding, which was, however discontinued after the Morse Commission Report (Morse & Berger, 1992). However, the governments of India (federal) and Gujarat (state) decided to fund the project through public funds and a public bonds issue (TISS, 2008).

E. What kinds of values and extent of benefits under them were highlighted in the proposal?

- The primary objectives of the SSP have shifted over time. Originally the focus was on irrigation for the arid zones of northern Gujarat and southern Rajasthan, thereby leading to agricultural development. The target areas are: 1.792 million ha in Gujarat (across 12 districts) and 73,000 ha in Rajasthan (across 2 districts).

- Subsequently, the idea of 'drinking water security' for the same regions (but indirectly also including cities such as Ahmedabad on the way) was emphasized.

- At some point, this argument: that citizens residing in the arid regions of northern Gujarat and southern Rajasthan were facing 'acute water scarcity' and therefore had a 'human right' to water from anywhere, was made a central argument (Mehta, 2003).

- The third benefit was supposed to be power generation, which would be shared between Madhya Pradesh, Gujarat and Maharashtra states.

- As the project progressed, water supply to the industrial belt of southern Gujarat also became a priority.

- Flood protection is mentioned as a benefit in some documents, but was never a significant part of the rationale for the project, given that the Narmada river is not prone to flooding in the same way as (say) the rivers in the Indo-Gangetic plain.

- "National development" was a larger goal /backdrop / value that drove this project.

- Thus, the main 'values' reflected in the proposal to build the dam are instrumental use of the abiotic nature (water & energy) to provide material benefits to distant populations. Also espoused is the

[2] Sardar Sarovar Dam - Wikipedia

more symbolic value of 'national development'. Also paradoxically raised was the 'human right to water' of the population in parched regions of Gujara/Rajasthan, far away from the Narmada valley.

F. What kinds of negative impacts were originally highlighted in the proposal?

- The original proposal acknowledged land submergence due to the reservoir, leading to two major impacts:
    - Displacement: the number of persons and families likely to be 'displaced' by the project was a massive bone of contention between proponents and opponents of the dam, both in terms of definition and in terms of estimation. The official documents put the number displaced by the dam itself at 48,304 families across 648 villages, i.e. about 230,000 people (TISS, 2008). Alternative estimates are much higher. Also not included in this estimate is those displaced or losing livelihoods due to the land lost to the canals, which as mentioned above is a larger area than the area submerged.
    - Forest loss: Official estimates were submergence of 13,385 ha of forests.
- Possible waterlogging in the command area due to flood irrigation was identified subsequently as a potential impact.

G. What measures were proposed to mitigate these losses/impacts?

- At the early stages, the dam was proposed to be of 500 ft height. Noting the high costs of submergence, the NWDT set the dam height at 455 ft or 139m.
- The other major measure was not mitigative, but compensatory. The NWDT laid down conditions for rehabilitation and resettlement (R&R) which were the strongest till that point in the history of infrastructure projects in India. In particular, it required a 'land-for-land' compensation (not monetary) for all 'project affected families', including housing with civic amenities.
- Similarly, to 'compensate' for forest loss, a compensatory afforestation programme was launched in the unsubmerged parts of the catchment.
- To mitigate the threat of siltation in the dam, extensive 'catchment area treatment' (tree plantation and soil and water conservation measures) was recommended.
- A fourth concern highlighted was the possibility of waterlogging and salinity in the black cotton soils of the command area due to flood irrigation that would be practised. Improved drainage and more efficient irrigation practices were proposed to mitigate this impact.
- The World Bank, which was a major financier of the project originally, laid down a number of conditions for its financial support, including its R&R policies, definition of project affected people, special safeguards for indigenous communities, etc.(Agricultural Operations Division, 1995).

H. What methods were used to assess the impacts and balance them against benefits?

A conventional cost-benefit analysis conducted early on asserted that the project met the B/C ratio requirement of 1.5. An alternative cost-benefit analysis conducted later (Paranjpye, 1990) argued that the costs were highly underestimated and the benefits overestimated.

No EIA was required by law at the time the project was proposed. Subsequently, the then Department of Environment & Forests of the central government conceded that adequate environmental impact assessment had not been done and such assessment would require several years (Anonymous, 1986), but nevertheless the government issued a so-called 'conditional' environmental clearance to the project (MOEF, 1987).

No official social impact assessment or cumulative impact assessment of all the dams planned on the Narmada was ever carried out. No participatory appraisal was officially conducted.

I. What methods were officially to be used in decision making:

Cost-benefit analysis was one of the criteria used to appraise the project. But the primary decision taken by the NWDT was an expert appraisal of non-commensurate benefits and costs. However, the NWDT only allocated water and power shares and made the over Narmada Valley Project development legally feasible, but the decisions to go ahead with the SSP and other projects were taken at the political level (state chief ministers, group of ministers, prime minister) through a subjective and non-transparent appraisal of the non-commensurate benefits and costs. The 'veto' power rested with individual states—if the states failed to come to an agreement on sharing of benefits and costs, the project could not have gone through. No public hearing was legally required at that point in time (1987) nor held subsequently.

J. What values were foregrounded in the opposition to the project?

a. Who opposed?:

i. The primary opposition to the project came from the people in the Narmada valley who stood to lose land and livelihood and were to be displaced by the reservoir. Under the leadership of Medha Patkar, a researcher from Tata Institute of Social Sciences who originally went to the Valley to study the displacement problem, the Narmada Bachao Andolan (Save Narmada Movement) was set up and it worked for almost 30 years to organize the potential 'oustees' to both resist the dam and to obtain proper R&R if the dam went ahead.(Baviskar, 1999) (Dwivedi, 2020). Several other organizations worked on the question of R&R: e.g., ARCH Vahini in Gujarat and Lok Sangharsh Morch in Maharashtra.

ii. Additional opposition came from some of the people who would lose land to the massive irrigation canal.

iii. Initially the governments of Maharashtra and Madhya Pradesh were also opposed to/sceptical about the project, because their populace stood to face only the displacement costs and not get any benefits. The NWDT awarded power generation benefits to these states and they withdrew their opposition. At a later point, the MP government opposed an increase in the height beyond the point at which the Supreme Court had stayed dam construction in 1995, saying that it did not have enough land to compensate those who would displaced. But later it withdrew its opposition.

iv. A very large number of environmentalists and human rights activists, academics, public intellectuals, students, and laypersons across India and abroad also joined in the struggle against the dam at various stages (e.g., see Bhagabati et al., 2014). Several international NGOs such as Environment Defense Fund (USA) supported the struggle, and specifically targeted the World Bank's funding of the dam. Others, such as Booker prize winner Arundhati Roy (Roy, 1999) joined later.

b. What material interests? Cultural values?

i. A whole array of material and cultural values or relational values are reflected in the arguments made by the critics of the dam. These include simply the material impact on the displaced population, the poor benefit-cost ration, the loss of biodiversity, loss of traditional ways of life.

ii. The issue of negative impacts on public health was also raised (Baviskar & Singh, 1994)

iii. The issue of distributional justice was raised time and again: who should gain at whose cost? (see interview of Medha Patkar in Fisher, 1995)

iv. The issue of procedural justice and recognition justice and social justice was also raised frequently:

1. Through what procedures were decisions made and why local (dam affected communities) were never heard, never involved in any decision-making

2. That the official definitions of 'dam-affected' or 'project-affected' people left out many people from the ambit of compensation & rehabilitation.

3. That many of the communities to be displaced by the dam were 'indigenous communities' that had been historically marginalized within India.

v. The cultural value of the river in its flowing form was raised repeatedly: the River Narmada is seen as sacred by a very large population—both within and outside the valley. Circumabulation of the 1400km river from source to sea and back (on foot) is a centuries old tradition of expressing this religious value. The SSP (and other projects on the river) destroyed the flowing nature of the river—which was a source of much criticism/opposition/concern.

c. Were the values new/different from those in the original appraisal or were the contest over the extent of loss of these values? (i.e. on the veracity of the EIA)

i. As indicated above, the values espoused by the opponents of the project overlapped with those of the proponents (to the extent that they contested the value of the dam in material terms) but also included values of distributive justice, social justice, recognition and procedural justice also.

ii. Opponents also contested the knowledge—see below.

d. Were the values foregrounded those about nature? If so, what kind?

i. Some of the opposition to the dam was indeed on the basis of conventional 'environmental values', i.e., the loss of forests, biodiversity,(values for pristine nature). (Bhartari et al., 1985).

ii. Sacredness was another value invoked.

iii. But much of the opposition rested on the idea of fairness, equity—who has first claim on nature's use value.

e. Were the values foregrounded in the protests questioning the decision-making process: democracy, inattention rights of indigenous communities, voice for marginalized, Human rights violations? Violation of due diligence, etc?

All of the above.

K. What forms of knowledge were foregrounded?

a. **Same formal scientific knowledge, but applied by independent scientists, other experts, to come up with alternative estimates**

This was a major thrust of the project opponents. (Paranjpye, 1990) offered an alternative benefit-cost analysis. Salinity and waterlogging in the command area was a major point raised. The political aspects of water appropriation, the fact that although meant ostensibly for arid northern Gujarat and Rajasthan, the water was being diverted to industrial uses in southern Gujarat (TISS, 2008), were raised.

b. New formal scientific knowledge: such as seismic effects of large impoundments. Public health impacts. Downstream impacts on fisheries and reduced flows into the Arabian sea, leading to saltwater intrusion.

c. TEK: this was not particularly emphasized in the discourse.

L. Strategies used in the protests?

a. Street protest: The major avenue of protest was street protest at multiple scales: local, regional, national. This included vigils at the time of the closing of the dam gates at various heights, 'satyagraha' at the dam site and in the backwaters, including willingness to drown in the rising waters

(which was thwarted forcibly by government intervention) and countless sit-ins, protest marches, and representations at various points in the thirty-year long history of the anti-dam struggle.

b. New studies: the protestors tried to commission many new studies/analyses of the SSP and the overall Narmada Valley projects. But they were seriously hampered by lack of resources and the lack of access to government data on the project. The alternative benefit-cost analysis (Paranjpye, 1990) was one of the few published full-fledged studies.

c. Judicial intervention: A major strategy adopted was a public interest litigation in the Supreme Court of India, as well as various petitions at the state High Court levels, which led to temporary relief and/or improved R&R at various points, but were ultimately unable to either stop or significantly revise the project design and impacts. Ultimately, the Supreme Court put a greater value on 'aggregate development' than on human rights or procedural justice and took the government's claims/ data/official knowledge on face value rather than questioning its (Cullet, 2001) (Sahu, 2014)

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d. Proposing alternatives: A major attempt was made to propose an alternative design at the reduced (90m) height by a group of civil society experts (Paranjape & Joy, 1995). Detailed deliberations were held on this proposal, but it was rejected by the government.

e. Neutral Mediation: The protests forced the World Bank to appoint an Independent Commission to review whether WB guidelines were being followed or not. The Independent Review gave a negative report (Morse & Berger, 1992),[3] resulting in the withdrawal of the Bank from funding the project.

f. Spillover: The Narmada protest movement was one of the major reasons for the setting up of the World Commission on Dams in 1998; Medha Patkar was one of the Commissioners. Although the WCD did not mediate on the Narmada issue per se, it set the 'gold standard' for what constitutes good process in deciding upon whether and how to build large dams in the future.

g. Political Mediation: This was also attempted: The Chief Minister of Madhya Pradesh state in particular (which faced the largest displacement problem) was petitioned at various points. A Group of Ministers was formed to go into the issue. The state of Madhya Pradesh did propose at some point that the dam height not increase above 90m due to their constraints in rehabilitating more people. (Sangvai, 1995)

M. What new decision-making avenues were opened up by the protests?

[3] The Morse Commission concluded: *Unless a project can be carried out in accordance with existing norms of human rights and environmental protection, norms espoused and endorsed by both the World Bank and many borrower countries, the project ought not to proceed*.

a. The protests did bring the Indian judiciary into much greater involvement with environmental issues.

b. The Supreme Court did set up a Narmada Grievance Redressal Authority to oversee the entire R&R process more rigorously—to that extent a new institution got created. (see documents in Cullet, 2007b)

c. The protests also tried to set up 'jan sunwais' (people's courts, people's hearings) ast alternative forums for debate.

d. But it is hard to say that new avenues really got opened up.

N. What were the eventual outcomes?

a. Mitigation measures were introduced: improved R&R, catchment area treatment, etc (see above).

b. Compensatory measures were introduced: compensatory afforestation, higher compensation for land-losers, new forms of compensation (land for land instead of cash, jobs in the project, etc). Places of worship were occasionally relocated.

c. Project went through with the above changes: The dam height was not changed. The focus on irrigation did not change, although in reality significant quantities of water has been diverted to industrial and urban uses.

O. What were the final impacts?

There are **major disagreements** on the 'final' extent of benefits and costs from the SSP. It is therefore hard to sum up the 'final impacts'. Government agencies have consistently maintained that the SSP has produced enormous benefits (e.g., (sardarsarovardam.org)). A detailed study by (Jagadeesan & Kumar, 2015) claims that the net benefits were hugely positive. However, a study by TISS points to huge cost-overruns, incomplete project benefits, diversion of benefits to industrial and urban users, hugely inadequate compensation and R&R, incomplete mitigative measures, etc. (TISS, 2008). A more recent analysis (Dwivedi, 2020) also points to many lacunae and an overall destructive development pattern. Since the dam reached its full height only in 2017 and the canal network in the command area is not yet complete, nor is the R&R fully completed yet, the 'final benefits and costs' will not perhaps be knowable for another decade.

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Case Study 4. Ilisu dam is located on the Tigris River in Southeastern Turkey

Dr. Duygu Avcı, Turkey

A. Type of project: Dam and hydropower plant project

B. Location: The Ilisu dam is located on the Tigris River in Southeastern Turkey, at the border of Mardin and Şırnak provinces, close to the Ilısu village near the Dargeçit district of Mardin.

C. Prior social geography & land-uses:

- The dam is constructed on the upstream of the Tigris river, which with the Euphrates, make up the river system extending from the mountains of southeastern Turkey down through Iraq and Syria and discharges into the Persian Gulf. The plain between the two rivers is the historical region of Mesopotamia, which is part of the larger Fertile Crescent. In its course, the river crosses through landscapes that include deep canyons, gallery forests, sandbanks, semi-deserts and calcareous steppes, and creates unique riparian ecosystems that provide habitat for diverse species of plants and animals, many of them endemic and/or threatened (Ahunbay and Balkız, no date; Eken et al., 2006; Welch, 2004).

- The historic town of Hasankeyf, which was awarded archeological protection by the Turkish State in 1978, is located northwest of the dam and by 2020 is partially inundated by the dam's reservoir.

- Southeastern Turkey, including the area of impact of the dam, was the site of armed conflict between the Turkish state and Kurdish guerillas in the late 1980s and 1990s. It is estimated that about 4000 villages were destroyed and 3 million people either fled the conflict or were subjected to forced migration (Ronayne, 2005).

- The majority of the affected population affected are Kurdish.There are also Arab, Aramean and Armenian minorities living in the region. The main livelihood activities in the area of impact of the dam are subsistence and small-scale agriculture, livestock rearing, fishing, apiculture and tourism, mainly in Hasankeyf (IDMC, 2017; Morvaridi, 2004; Ronayne 2005).

- The Southeast Anatolia, together with Eastern Anatolia, are the most disadvantaged regions in socio-economic terms in Turkey, characterized by high levels of poverty, unemployment, landlessness, low literacy levels, and poor access to social services (IDMC, 2017; Morvaridi, 2004; Ronayne, 2005). Morvaridi (2004) indicates that approximately 35% of rural people are landless, and about 50% of the people in the dam area do not have title deeds.

- Additionally, the Tigris valley is on the migration route of nomadic herders (*Koçer)*, estimated to include 20 to 25 thousand people, who risk losing access to water, grazing land and migration routes due to the dam (Hasankeyf Coordination, 2019).

D. Basic features of environmentally disruptive project proposed:

- The Ilisu dam and hydropower plant are part of the Southeastern Anatolia Project (*Güneydoğu Anadolu Projesi-GAP*), comprised of existing and planned 22 dams and 19 hydropower plants to produce electricity and irrigate 1.7 million hectares of land. The project, initially designed in the 1970s to develop the water resources in the region, became an integrated regional development plan aimed at overall transformation of the socio-economic structure of the region. The project also served to consolidate the state's territorial and political control in the region (Bilgen, 2018; Çarkoğlu and Eder, 2005; Özkahraman, 2017; Ronayne 2005).

- The preliminary surveys to develop the water resources of the Tigris river were conducted in the 1950s. The initial plan for the Ilisu dam was formulated in 1971 and the government decision to build it was taken in 1982.

- The General Directorate of State Hydraulic Works (*Devlet Su İşleri*-hereafter DSI) is the governmental agency in charge of the project. In 1997, an initial consortium made up of Swiss, Austrian, British, Italian, Swedish and Turkish companies was contracted to build the dam. The consortium applied for credits to the United Bank of Switzerland, and to the Swiss Export Credit Agency (ECA) for credit guarantees. The successful campaign by civil society groups against the dam (more on this below) succeeded in pushing the companies to withdraw from the project in late 2001 and early 2002. Negotiations for a second consortium started in 2004, and the second Ilisu consortium, this time including four Turkish companies and six European companies was established in 2005. Between 2005 and 2009, while the negotiations between the consortium and the European ECAs to ensure that the project complied with international standards continued, opposition groups campaigned at the local, national and international levels to stop the project. The European ECAs finally withdrew the credit guarantees in 2009. Thereafter, the Turkish government secured credits from national banks. The construction of the dam started with full capacity in 2010 and was completed in 2018. The dam reservoir started filling in the summer of 2019 and power generation began in May 2020.

- The Ilisu dam has a height of 135 meters and a width of 1820 meters. It is reservoir will extend over 136 km of the Tigris river, cover an area of 313 km^2 and will store 10.4 billion m^3 of water. The hydropower plant has a capacity of 1200 MW, will generate 3833 GWh of power annually (latest reports also cite 4120 GWh of power generation) and is expected to contribute about 2.5 billion Turkish Liras (about 295 million USD by November 2020) to the economy per year (Hasankeyf Coordination, 2019). The Ilisu dam will also enable the construction of a smaller dam and hydropower plant in the Cizre district of Şırnak province. The Cizre dam is aimed principally to irrigate 121 thousand hectares of land in the Şırnak ve Mardin provinces. Official numbers put the cost of the Ilisu

dam at 1.2 billion Euros, and the cost of resettlement at 800 million Euros (Hasankeyf Consortium, 2019).

E. What kinds of values and extent of benefits under them were highlighted in the proposal?

- The Southeastern Anatolia Project embodies the modernization and development paradigm that has dominated policy making in Turkey since the establishment of the Republic in 1923. Therefore, the main rationale of the Ilisu project is to realize the modernizing and developmental ideals and goals as set out in the GAP (Bilgen, 2018; Harris, 2008; Hommes et al., 2016; Morvaridi, 2004). Within this broader context, the main benefit of the Ilisu project emphasized by the Turkish government is energy production. Framed in the language of energy security, the Ilisu project aims to increase domestic electricity production to help meet the increasing energy demand that accompanies economic growth and reduce the country's high dependence on energy imports (Hommes et al., 2016). Hydroelectric power generation is touted as a means to utilize water resources to achieve clean and sustainable energy development (Scheumann et al., 2014).

- In line with the regional development goals of GAP, the Ilisu project is also expected to promote local development by generating employment in construction, raising living standards, and improving infrastructure (Eberlein et al., 2010; Hommes et al., 2016). A critical report prepared in 2019 by Hasankeyf Coordination, a network of local, national and international opposition groups, suggests that about 2000 local people were temporarily employed during the construction period, and during the operation phase, the dam will only provide employment for about 300 people (Hasankeyf Coordination, 2019).

F. What kinds of negative impacts were originally highlighted in the proposal?

- The initial project documents are currently not available in any government website. Therefore, the information on what impacts the proposal identified is based on the information from project documents included in articles published in scientific journals and reviews of project documents prepared by experts for various civil society organizations that participated in the campaign to stop the project.

- Information provided by Morvaridi (2004, p. 723) indicates that the impacts identified by DSI included 184 affected villages, displacement of 61.000 people, and flooding of large areas, including the historic town of Hasankeyf. IDMC (2017, p. 5) reports that the amendments to the 2005 Resettlement Action Plan (RAP), dated 2006, identified 61.620 fully or partially displaced people in 199 villages and hamlets.

- Reviews of the Environmental Impact Assessment (EIA) reports and RAPs published by opposition NGOs reveal that in addition to displacement, the project developers pointed out the following impacts: water pollution in the reservoir due to wastewater from upstream settlements and

agricultural runoff, changes in river hydrology, impacts on archeological sites, loss of habitat due to flooding, impacts on terrestrial and aquatic biodiversity, health impacts due to water-borne diseases, and dam safety risks (see Doğa Derneği, 2006; Hilyard et al., 2000; IDMC, 2017; Kitchen and Ronayne, 2002; Williams & Bozkurt Frucht, 2006).

G. What measures were proposed to mitigate these losses/impacts?

- The project required the expropriation of lands and other physical assets (principally houses), hence was subject to the stipulations on the Turkish laws on expropriation and resettlement. According to the national legislation, only individuals with title deeds are eligible for compensation; the expropriation law does not require compensation for tenants, sharecroppers, illegal users of properties, and users of collective lands (IDMC, 2017). As required by law, the government offered different compensation packages to eligible households: monetary compensation for loss of lands and physical assets, government-assisted resettlement (new housing and land, and loans to cover the difference between the value of the expropriated and new assets), and no-interest loans for the purchase of new land (Morvaridi, 2004). The RAP prepared in 2005 and amended in 2006 stipulated further measures for livelihood restoration and proposed to establish a grievance mechanism (Eberlein et al., 2010).

- To address water pollution in the reservoir, by 2019, water treatment plants in the larger cities upstream of the river (Diyarbakir, Siirt and Batman) were built, yet in other smaller cities such as Bismil, Ergani and Silvan, there were still no treatments plants (Hasankeyf Coordination, 2019).

- To mitigate the transboundary impacts, the 2005 set a minimum flow release at an average monthly flow of 60 m^3/s (Williams & Bozkurt Frucht, 2006).

- The response to the impacts on cultural heritage, included in the 2005 EIA, was to relocate twelve historic monuments to an archeological park on the reservoir's bank (Eberlein et al., 2010). Between 2017 and 2019, seven artefacts, including the Tomb of Zeynel Bey, and the village mosque with its 600 year-old minaret were relocated to the park in the resettlement town New Hasankeyf, and several artefacts found in the excavations in the region are collected in the museum adjacent to the park (Hasankeyf Coordination, 2019).

H. What methods were used to assess the impacts and balance them against benefits?

- According to the national regulation, Ilisu Project is exempt from EIA requirements. However, to meet the requirement of ECAs, EIA reports and RAPs were prepared and updated several times. Additionally, DSI and the ECAs agreed upon 153 conditions, called Terms of Reference (ToR), that the DSI had to fulfill to receive project funding. With the agreement, Committees of Experts on Resettlement, Environment and Cultural Heritage and an External Monitoring Group on Resettlement were established, and these committees made several site visits and published reports between 2007 and 2009 to monitor the progress in ToR (Atzl, 2014).

I. What methods were officially to be used in decision making:

- In Turkey, in general, decisions on energy projects are taken without public participation, and the state responds either with disregard or hostility to criticisms and protests on energy issues. GAP as a whole and its component projects have all been formulated, planned and implemented in a top-down manner (Çarkoğlu & Eder, 2005). The decisions on how to develop the water resources and hydropower exploitation are based on hydrological assessments and feasibility studies conducted by the DSI (Scheumann et al., 2014), and the 1982 decision to build the Ilisu dam as part of GAP was taken in this manner. Moreover, the construction and financing deals with private companies and banks were reached by private negotiations without any transparency or accountability.

J. What values were foregrounded in the opposition to the project?

- The initial opposition to the Ilisu dam included the Platform to Keep Hasankey Alive (*Hasankeyfi Yaşatma Platform*) that was established in 1999 by local NGOs and professional organizations from Diyarbakir and Batman provinces, and a group of Kurdish human rights, and environmental organizations from Europe, that campaigned against the project. The European campaign was influential in the withdrawal of the first consortium from the project. Soon after the second consortium was formed, European NGOs reinitiated their campaign to put pressure on their governments not to issue export credit guarantees for the project. At the local level, about 20 NGOs, municipalities, professional organizations and unions from Diyarbakir, Batman, Hasankeyf and Ilisu founded in 2006 the Initiative to Keep Hasankeyf Alive (*Hasankeyf'i Yaşatma Girişimi*-HYG). The initiative was later broadened to include 86 organizations, as well as activists and dam-affected people. In this second phase of the opposition movement, the national environmental organization *Doğa Derneği,* Birdlife International's partner in Turkey, also joined the opposition. Many other groups and individuals in Turkey and Europe, including universities, professional organizations, journalists and celebrities supported the protestors. Although the construction of the dam is complete, the HYG is still active and has participated in networks of local environmental justice struggles across the country. Additionally, in 2012, a group of Iraqi and international organizations launched the Save the Tigris campaign to protest the building of dams by Turkey and the Kurdistan Regional Government in Iraq on Tigris (Atzl, 2014; Eberlein et al. 2010; Hasankeyf Coordination, 2019).

- The arguments of the opposition groups highlighted the violation of the human and cultural rights of the local population, principally the Kurdish majority, as the project was claimed to intentionally erase the history and culture of Kurdish people, and exacerbate the problems of displacement, loss of cultural identity, impoverishment and marginalization caused by armed conflict and state repression. Another key argument was that the project violated the rights of communities to be informed, never truly consulted them or allowed them to participate in project planning or implementation. The opponents also claimed that under conditions of armed conflict and state repression, local people had no freedom of expression to voice their demands and concerns.

- Another issue regarding rights concerned the impacts of displacement, including its social impacts (migration to urban centers, impoverishment, impacts on women, children and the elderly, dissolution of the social fabric) and loss of livelihoods; and the inadequacy of resettlement measures to address these impacts.

- The project opponents further asserted that the dam would have significant impacts on the river ecosystems and biodiversity; lead to loss of cultural heritage; and have downstream impacts on the riparian states and increase the risk of conflicts over water between Turkey and its downstream neighbors (Cernea, 2006; Conker, 2014; Eberlein et al., 2010; Hasankeyf Coordination, 2019; Hildyard et al., 2000; Hommes et al., 2016; IDMC, 2017; Morvaridi, 2004; Ronayne, 2005; Warner, 2012).

- The contest over displacement and livelihood loss, environmental impacts, loss of cultural heritage and impacts on riparian states principally concerned the extent of the impacts. The opposition groups claimed that the impact assessments conducted by project developers were far from being adequate and fell short of meeting international standards. On the other hand, the opponents emphasized that the Turkish state did not consider the rights of Kurdish population, and even deliberately aimed at undermining them, and instead sought to reinforce its power over the Kurdish people (Hommes et al., 2016; KHRP, 1999; Ronayne, 2005).

- Relational values about nature were the most prominent in the opposition, particularly the value of the local environment for the cultural identity of the Kurdish population, and the value of the historical and cultural heritage the region housed. The natural and cultural landscape of the region was valued for its aesthetic qualities, being an example of harmonious relations between nature and humans, and providing opportunities for education and scientific research for the larger society and globally. It was pointed out that the monuments in Hasankefy hold spiritual and religious value for both local communities and pilgrims who visit the site.

- The benefits of nature for humans were also important in the opposition: land for agriculture and grazing, habitats for fish consumed and sold locally, and provision of tourism opportunities.

- Additionally, the biodiversity value of the valley, with its species richness and habitat integrity, was strongly emphasized. The opponents highlighted that since the river ecosystems along the Euphrates river had already been damaged due to dam development, protecting the Tigris valley was particularly important as the single remaining river and canyon ecosystem in the Upper Mesopotamia.

- Another value related to nature foregrounded in the opposition was the importance of maintaining the flow of the river to protect the Iraqi marshes as a unique wetland and home to the Marsh Arabs, whose livelihoods and culture would be threatened by the construction of the dam.

K. What forms of knowledge were foregrounded?

- Formal scientific knowledge was deployed by opposition groups to dispute the adequacy and reliability of information provided by project developers. The opponents asserted that no proper assessment of the existing archeological or ecological values in the region, nor a complete socio-economic survey of the affected population was conducted, and therefore, there was no solid ground to know the true extent of the archeological, ecological, socio-economic or cultural values that would be impacted by the dam (Doğa Derneği, 2006; IDMC, 2017; Kitchen and Ronayne, 2002).

- The opponents also worked with various experts—archeologists, sociologists, development consultants, resettlement experts, environmental and international law experts, biologists and conservation experts—to carry out a number of desktop studies, fact-finding missions, biodiversity inventories and surveys to assess project documents (EIA reports, RAPs, and the archeological salvage plan), gather information on the project implementation, monitor the application of international standards agreed by the Turkish government, observe the impacts of resettlement, assess biodiversity and cultural values of the region, and understand the perspectives of the local communities about the dam. The findings of these studies were published as reports, disseminated via NGOs' websites, press releases and other media, and shared with European politicians and decision-makers to influence the decisions of ECAs (Atzl, 2014; Eberlein et al., 2010).

- The opponent groups also questioned the energy politics of the Turkish state based on the official estimates of energy demand, energy production from the Ilisu dam, and energy loss in transmission (Hasankeyf Coordination, 2019). There were also proposals to alter the dam design (e.g. reducing the dam elevation) and one study that proposed an alternative project to the Ilisu dam consisting of five small scale dams that would save Hasankeyf from inundation, while generating the same energy (Yalçın & Tigrek, 2016). The latter proposal was presented to the DSI, but was dismissed by the institution on technical grounds (Conker, 2014).

L. Strategies used in the protests?

- The key strategy used in the protests was to put pressure on the European ECAs, and the governments of respective countries not to issue export credit guarantees. This was pursued through media campaigns, organizing meetings with and informing European policy makers, representatives from ECAs and companies, and demonstrations (Eberlein et al., 2010; Atzl, 2014). This strategy indeed proved successful since the European ECAs pulled out of the project twice.

- In these efforts, appeals to international standards (World Bank Operational Policies, OECD's Common Approaches to the Environment and Officially Supplied Export Credits, World Commission on Dams recommendations) in impact assessment and resettlement, and the failure of the project developers to comply with these standards have occupied a central role. Although Turkey has not signed the UN Convention on the Law of Non-navigational Uses of International Watercourses, opposition groups have also referred to the convention to argue that Turkey was violating the rights of riparian states. Additionally, in 2011, the German NGO CounterCurrent, together with anti-dam organizations from different parts of Turkey submitted a report to the UN Committee on Economic,

Social and Cultural Rights arguing that the Turkish state violated several of the rights covered under the International Covenant on Economic, Social and Cultural Rights.

- As indicated earlier, questioning of the scientific knowledge provided by project developers and production of new knowledge was another key strategy. The studies and assessments that opposition groups conducted provided inputs for the public campaigns, appeals to financiers, information sharing directed at the local population and court cases.

- Networking between local, national and international organizations has also been important. While the Initiative to Save Hasankeyf brought together local organizations, the European actors coalesced around the "Stop Ilisu campaign". These networks organized several protest activities, including media campaigns, petition campaigns—one demanding that of Hasankeyf is recognized as a UNESCO Natural and Cultural World Heritage Site, another one asking the Turkish government to stop the project—, demonstrations, symposiums, tree planting events, street theaters, concerts, and production of short films and documentaries. The protestors from Turkey and Europe also built alliances with Iraqi organizations who organized the "Save the Tigris Campaign". In May 2012, these organizations together wrote the "Mesopotamian Tigris Declaration", which was then sent to the UN asking the governments to halt dam projects on Tigris (Conker, 2014).

- In the course of the 20 years, the opposition groups filed for several court cases, including those concerning irregularities in the tendering process, the legal grounds for expropriation, protection of historical monuments, compensation payments, and exemption of complementary construction works from EIA requirements. Although some of these court cases were ruled in favor of the opponents, they were not enough to stop the construction of the dam (Atzl, 2014; Conker, 2014). Opposition groups also tried to initiate a case with the European Court of Human Rights, but the Court rejected the application.

M. What new decision-making avenues were opened up by the protests?

- The campaigns targeted at the ECAs succeeded in pushing them to negotiate conditions (aforementioned Terms of Reference) with the Turkish government to be fulfilled to issue the required export credit guarantees. This agreement and the establishment of committees of experts to assess progress on the set conditions can be seen as mechanisms of neutral mediation. Apart from that, the protests could not succeed in opening up new decision-making avenues due to the centralized and top-down decision-making processes of the Turkish state and its denial of any room for participation of civil society actors or affected population in the decision-making process.

N. What were the eventual outcomes?

- Despite the withdrawal of external funding and protests, the Ilisu dam project went through with minimal changes. Yet, due to the involvement of ECAs and their demands from the Turkish state to ensure project implementation met international standards, some improvements were achieved in

the areas of resettlement planning and implementation, salvage of cultural heritage, and development of environmental management measures (Eberlein et al., 2010; IDMC, 2017).

O. What were the final impacts (if the project was implemented in any form at all)?

- According to government sources: By 2013 1.109 people from project affected areas were employed in the project. A total of 875 housing units, improved facilities for public and social services (including administrative units, a primary school, hospital, water treatment plant, sports center, commercial center and others) were built and transportation infrastructure were improved. In the new Ilisu village, 48 families were resettled, several income restoration activities were implemented (greenhouses for vegetable production, planting of olive and almond seedlings) and improved public facilities were provided. A news article on the website of the Housing Development Administration of Turkey (TOKI), the agency responsible from construction works within the resettlement plan, indicates that between 2008 and 2020, DSI allocated a total of 550.4 million TL (approximately 65 million USD by November 2020) to TOKI for the resettlement works.

- IDMC (2017) reports that although it is yet difficult to assess the full impacts of displacement and resettlement, several impacts can already be observed, including: the cost of new houses are significantly higher than the compensation payments, hence families risk not being able to pay the difference and falling into debt; the housing units provided are not appropriate for the needs of the local population, especially of the women; and families without title deeds did not receive any compensation. Yet, the report also concedes that the new housing units were of better quality and the local population appreciated the new school and the hospital.

- According the information provided by the DSI manager reported by the government news agency, by the beginning of September 2020, the hydropower plant produced approximately 1.000 GWh of energy and contributed 600 million TL (about 7 million USD by November 2020) to the national economy.

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Case Study 5. Bauxite Mining in Niyamgiri Hills and Local Communities in Odisha, India

A. Type of project: Mining

Vedanta Alumina Ltd (VAL), a subsidiary of Vedanta UK, proposed development of aluminum refinery and bauxite mining in the Niyamgiri Hills of Orissa state in India. The agreement to develop an open cast bauxite mine in Niyamgiri hills of Orissa was signed between VAL (later succeeded by SIIL) and the Orissa Mining Corporation Limited (OMC), a company owned by the State of Orissa on October 5, 2004.

B. Location

Niyamgiri hill- located in Lanjigarh Block of Kalahandi District and Kalyansinghpur *Block of* Rayagard District, Odisha, is rich in bauxite, the raw material for aluminium.

C. Prior social geography & land-uses:

Niyamgiri hill comes under the Eastern Ghats of India and is known for its rich bio-diversity. The proposed mining lease area in Niyramgiri hill is a very dense forest area and consists of a number of ecological features such as tropical evergreen forests, tropical moist deciduous forests, dry deciduous mixed forests, moist peninsular sal forests, dense bamboo forests, scrub woodlands and open grasslands (Saxena et al 2010). The N C Saxena report also pointed out that the Niyamgiri forests provide links with Karlapat wildlife sanctuary in the North West and Kotagarh wildlife sanctuary in the North East. These forests thus have high functional importance in providing an uninterrupted forest tract outside the protected area forming a continuous long corridor. Such corridors are particularly important for the conservation of wildlife species like elephant and tiger found in this region. Wildlife Institute of India (WII) in its detailed analysis found that widespread evidence indicated that the habitat was used by Sambar, Chital, Barking Deer, Four Horned Antelope, Gaur, Wild Boar, Porcupine, Sloth Bear and Elephant (WII, 2006).

Dongria Kondh and Kutia Kondh- tribal communities are members of particularly vulnerable tribal group (PVTG) in India, were living and dependent on Niyamgiri hill for their traditional and customary rights including livelihood, shifting cultivation, cultural and religious activities. While the Kutia Kondh were living near the foothills, the Dongaria Kondh were living in the upper side of the Niyamgiri hills-the proposed mining site- which was their only habitat (Daspattanaik, 1984). The Dongria Kondh tribual community is one of the most vulnerable tribal communities in Odisha and live in extreme poverty without basic infrastructure and facilities in the proposed mining areas.

D. Basic features of environmentally disruptive project proposed:

According to the MoU signed by Vedanta Alumina Limited, a subsidiary of M/S Sterlite Industries (India) Limited (SIIL) and Orissa Mining Corporation (OMC) in October 2004, SIIL would set up an Alumina Complex, which includes 1.0 MTPA Alumina Refinery Plant, 3.0 MTPA of bauxite mining and 75 MW Captive Power Plant in Kalahandi and Rayagada districts. On 28 February, 2005, a proposal was forwarded by the State Government of Orissa for the diversion of 660.749 hectares of forest land for mining of bauxite ore in

Lanjigarh Bauxite Reserve in favour of OMC in Kalahandi and Rayagada districts (Saxena et al 2010). The refinery is adjacent to the Niyamgiri Hills, while the proposed mine about 5 km away is on the edge of the hills. The Rapid Environmental Impact Assessment report prepared by Tata AIG Risk Management Services Ltd (2002) for SIIL mentions that the estimated bauxite reserve in the lease area was about 73 million tons and the estimated life span of the mining was 23 years. Mechanized open cast mining was proposed for the deposit particularly due to low overburden thickness, high bauxite seam thickness and high production levels. The blasted material would be loaded by hydraulic excavations and subsequently transported by 35 tonner dumper to semi mobile Crusher Hopper. The crushed bauxite ore was then proposed to be sent to the Alumina refinery by conveyors.

E. What kinds of values and extent of benefits under them were highlighted in the proposal?

The proposed project proponent argued that as steel is the dominant metal used, so aluminium is poised to become the most important metal of the 21st century in India. The Vedanta company in its report highlighted that India is using 40% of its aluminium production to support the growth of its electrical power supply and the Government of India has a national priority to massively expand power supply for the country generally and in rural areas in particular, and aluminium is vital to achieving that goal.

F. What kinds of negative impacts were originally highlighted in the proposal?

[Need a bit more clarity on what impacts were highlighted in the original EIA and what were highlighted later on by others]. Several reports including the WII and Saxena report were of the view that mining in Niyamgiri hills, which is one of the most ecologically biodiverse areas of the state with its wide range of flora and fauna, rivers and streams defies logic and reasoning. From human rights point of view, the proposed mining would have affected the traditional and customary rights of around 8000 Dongria Kondh tribes. It was clearly mentioned in the REIA report prepared by Tata AIG Risk Management Services Ltd (2002) that the proposed project will result in change in land use pattern. There will be reduction in the forest cover (mainly reserve forest cover). Similarly, several media reports opined that a rich resource would be lost forever if the mines become operational. Not only will the project spell doom for these tribes and the ones whose lands fall under the alumina plant area, it would also devastate the local ecology-springs, rivers, and many endangered species. The people of south Orissa will lose their permanent source of water from Vamsadhara and Nagavalli, which irrigate their fields and meeting their drinking water, needs.

G. What measures were proposed to mitigate these losses/impacts?

The State of Orissa had brought to the notice of the Court about the lack of basic infrastructure facilities in the Tribal areas of both the districts, so also the abject poverty in which the local people were living in Lanjigarh Tehsil, including the tribal people, and also the lack of proper housing, hospitals, schools etc (18th April 2013 Supreme Court Order, Page Number-6). The project proponent Vedanta Alumina Limited promised to undertake a series of socioeconomic and environmental measures to address the consequences of the Bauxite mining activity in Niyamgiri hill. Vedanta argued that the socio-economic situation of the Dongria

Kondh is characterised by poverty and lack of access to sustainable livelihoods that is beyond what is usual, even in this poor region. They have major development needs and while they have a distinct way of life and cosmology relating to their lives in the forest, they are becoming more acculturated and want a better life. The Company emphasised that it will undertake various need-based community programs as part of its Corporate Social Responsibility practice that commits to aligning all activities with the evolving national and state priorities as well as local needs. At the project site-Lanjigarh, the Company planned to introduce 25 Green field Nand Ghars[4] and 125 Brown Field Projects. The Company also sited its past initiatives to enable villages with the development of basic infrastructure like approach roads, drinking water projects, local drains, community centres, etc. The Company assured the Government of Odisha that it will endeavor to provide equal opportunities to local women through multiple initiatives. On environmental front, the Company agreed to take measures to minimise the impact of mining on local environmenta. In respect of the refinery the initial proposal was for a flat bed belt to carry the bauxite to the refinery from the hills. The Company agreed to replace this with structure piped conveyor to minimise disruption to normal farming practices. Water supply was also of great concern to the community and the company pledged to secure water from the Tel river more than 60 km away to ensure there was no additional pressure on local supplies. As part of the its efforts to downscale pollution, industrial wastes/ effluents are being recycled, massive afforestation drives are being organised under the auspices of its Greenbelt Development Programme and continuous monitoring of its environment is being carried out (Vedanta, 2012).

The M/s SIIL also agreed to pay Net Present Value of Rs 55 crores and Rs 50.53 crores towards Wildlife Management Plan for Conservation and Management of Wildlife around Lanjigarh bauxite mine and Rs 12.20 crores towards tribal development. In addition, M/s SIIL agreed to bear expenses towards compensatory afforestation. As per the Rahabilitation and Resettlement policy of the State Government, the company was directed to earmark 5% of the net profit accrued in the Project to be spent for the development of health, education, communication, irrigation and agriculture of the said scheduled area within a radius of 50 km (18th April 2013 Supreme Court Order, Page Number-9).

H. What methods were used to assess the impacts and balance them against benefits?

The decision-makers relied only on the Environmental Impact Assessmet (EIA) report prepared by the project proponent. The EIA Notification of 1994, Government of India introduced a legal framework for regulating activities that access, utilise, and affect (pollute) natural resources makes. The EIA Notification of 1994 makes it mandatory for all types of mining projects to undertake a comprehensive multi-disciplinary study focusing on the socioeconomic and environmental consequences of the project. However, the EIA report in India is prepared by the project proponent only. There is no independent EIA report commissioned by the

4 The Nand Ghar Project is the Vedanta company's flagship national initiative that aims to build new-age *Anganwadis* to support the health and education of young children in rural areas and promote women's empowerment and skilling.

environmental clearance authority i.e Ministry of Environment, Forests and Climate Change. Give a bit more detail of this particular EIA.

I. What methods were officially to be used in decision making:

As per the requirement under the EIA Notification 1994, public hearing of the project affected people needs to be conducted prior to environmental and forest clearance given by the authority. The first rounds of public hearings were conducted in Lanjigarh and Muniguda for both proposed refinery and mining project of Vedanta company between February-March 2003 (Vedanta, 2012). MoEF then granted environmental clearance to OMC vide its proceedings dated 28.04.2009 with a condition that "Environmental clearance is subject to grant of forestry clearance under the Forest Necessary forestry clearance (Conservation) Act, 1980 for diversion of 672.018 ha forest land involved in the project shall be obtained before starting mining operation in that area. No mining shall be undertaken in the forest area without obtaining requisite prior forestry clearance and settlement of forest dwellers' rights as per the the provisions of Scheduled Tribes and other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006.

The Ministry of Environment and Forests, Union of India constituted a team composed of specialists under the Chairmanship of N C Saxena in 2010 to look into the settlement of rights on forest dwellers and the "Primitive Tribal Groups" under the Forest Rights Act and the impact of the Project on wildlife and biodiversity in the surrounding areas. The committee found that the Primitive Tribal Groups were not consulted in the process of seeking project clearance and also noticed the violation of the provisions of Forest Rights Act, the Forest (Conservation) Act, 1980, Environmental Protection Act, 1986 and also the impact on ecological and biodiversity values of the Niyamgiri hills upon which the Dongaria Kondh and Kutia Kondh depend. The recommendations of the Saxena Committee report were considered by MOEF and the request for Forest Clearance was rejected on 24.8.2010.

J. What values were foregrounded in the opposition to the project?

The Dongari Kondh-tribal community is of the belief that the Niyamgiri hill belongs to Niyam Raja Penu, a male deity represented by a sword and worshipped during local religious festivals. They claim themselves to be descendants of the Niyam Raja. The Dongrias have derived their name from 'dongar' meaning agricultural land on hill slopes. If one claims to be a Dongaria Kondha, he must reside in the Niyamgiri hills and possess land of his own, and pass on to his posterity (Daspattnaik, 1984). The Dongrias have a distinguished heritage, because of their dress style, mode of living, indigenous skills, cultural pattern and social system interlinked with nature and forests.

The sacradness of the Niyamgiri hill as a place of worship became a point of contention in the legal case (Temper and Alier, 2013). The refusal to recognize culturally specific claims of loss was echoed by Jairam Ramesh, the then Minister of Environment and Forest, Government of India, in the Niyamgiri case, who was at pains to highlight that: "There was no emotion, no politics, no prejudice in this decision. It was not because Niyamgiri is considered sacred [by the Dongria Kondhs]. It is a decision on a purely legal basis." The decision was taken merely on procedural elements of justice. The procedural elements include provisions under the

Schedule V of the Indian Constitution and Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Rights) Act, 2006.

It is also to be noted that although 'sacredness' was the most visible and valorized reason cited by the tribal community for its decision, interviews with individuals indicated that subsistence and livelihood issues were also intertwined with this. The communities felt that the forests and the hill were a source of water, and mining would severely endanger it [cite Patrik Oskarsson?]. Some members had also considered the possibility of 'development benefits' accruing (such as hospitals or roads) if they agreed to the mining project, but were highly sceptical of Vedanta actually coming through on developmental commitments, based on what they had seen elsewhere. [author's personal interviews]. Thus, the unreliability of new material benefits and the likelihood of existing ones being negatively affected by the mine were also part of the values that influenced the position of the tribal communities.

[Note: Schedule V of the Indian Constitution which enjoins the government to respect and uphold the land rights of Scheduled Tribes applies to the entire Niyamgiri hills region (Sahu 2019). Similarly, the Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Rights) Act, passed by the Government of India in 2006, is considered a unique piece of legislation. The act is unique not only for securing indigenous communities' tenured and traditional rights over forest land and resources but also for providing democratic, community-based forest governance led by the local people (Sahu, 2020). The Ministry of Tribal Affairs-nodal agency in the implementation of FRA-through various orders and Ministry of Environment & Forest through its landmark order on 3rd August 2009 specified that no forest land can be diverted without settlement of tribal rights, especially the rights of PVTGs. These staturory provisions, however, were bypassed to approve the mining project which was a clear violation of tribal cmmunities' fundamental and statuory rights. Furthermore, it was found by the Saxena committee (2010) that the District Administration in both Kalahandi and Rayagard Rayagada was reluctant to implement the FRA in the proposed mining site. Both the district administrations neglected to inform the communities about the legal recognition of forest dweller rights through filing claims and verifications, and had neither informed nor initiated the claim filing and verification procedures.]

K. What forms of knowledge were foregrounded?

The affected forest dwellers Dongaria Kondha had directly challenged the submission made by the Odisha Government to get forest clearance. Their appeals—filed with the help of civil society activists--highlighted the several violations in the Environmental Clearance process. Some of the key charges raised were that the full Environmental Impact Assessment Report was not made available to the Public before the public hearing, different EIA reports made available to the public and submitted to the Ministry of Environment and Forests, the EIA conducted was a rapid EIA undertaken during the monsoon months. It is also argued by the affected party in the legal case that "while customary rights of the Primitive Tribal Groups are not recognized in the National Forest Policy, 1988 they are an integral part of the Forest Rights Act, 2006. An Act passed by Parliament has greater sanctity than a Policy Statement. The primary responsibility of any Ministry is to enforce the laws that have been passed by Parliament. For the MoE&F, this means enforcing the Forest (Conservation) Act, 1980, the Environmental (Protection) Act, 1986, the Scheduled Tribes and Traditional

Forest Dwellers (Recognition of Forest Rights) Act, 2006 and other laws" (18th April 2013 Supreme Court Order, Page Number-25-29).

The communities and the other groups opposing the project drew upon modern scientific knowledge where they could, such as biodiversity assessments showing the rarity of biota in the Niyamgiri hills. They also drew upon traditional knowledge to argue that deforesting and mining the hill would lead to drying up of their streams (Oskarsson, 2017), but no formal studies were carried out to investigate this claim.

L Strategies used in the protests?

With the support of Non-Government Organisations and human rights groups in the country, the affected tribal communities in Kalahandi and Rayagada Districts of Odisha asserted their constitutional and statutory rights over the Niyamgiri hill forests. The local tribal communities formed the Niyamgiri Suraksha Samiti (Niyamgiri Protection Committee) to express their concerns in different forums through constitutional means. Consistent protest from local to international level gathered momentum between 2005-2013. For example, The Council on Ethics for the Norwegian Government Pension Fund undertook a comprehensive review of Vedanta's operation in 2007 and subseqently pulled out US $ 13 miillion of investments in the company. The ethics council also said "allegations levelled at the company regarding environmental demage and complicity in human rights violations, including abuse and forced eviction of tribal people, are well founded" (Ghosh, 2007).

Similary, continuous protest also resulted in a series of independent fact finding committees and government appointed committee (Usha Ramanathan Committee 2010, N C Saxena Committee 2010) studies to understand the key issues and concerns around the forest diversion and mining project in Niyamgiri hill.

But the failure of state and local administration to respond to the concerns of local tribal communities and negligence of the established constitutional and statutory laws in approving the mining project, resulted in a series of litigation and judicial intervention to address various claims and counter-claims by the project proponent and affected local tribal communities in Kalahandi and Rayagada Districts of Odisha. Throughout the legal process various petitions were filed with the court, employing a range of litigation strategies. Hearing the Writ Petition (Civil) No. 180 Of 2011 filed by the Orissa Mining Corporation v Ministry of Environment, Union of India, on 18 April 2013 the Supreme Court of India gave a landmark order directing the State Government of Odisha to seek free and prior consent of the gram sabhas (village assembly) before giving clearance to the Vedanta Company for mining of bauxite in the Niyamgiri Hills of Odisha (Orissa Mining Corporation v Union of India and Others (2013) 6 SCC 476).

M. What new decision-making avenues were opened up by the protests?

The protest led to recognition of the constitutional and statutory laws to protect the land rights of tribal communities in Schedule V areas. Exercising rights under the Forest Rights Act 2006, the tribal communities demanded that their free prior informed consent to decide the fate of the project. The FRA was a landmark

legislation that sought to restore the rights of forest dwellers over land (for cultivation and habitation), community forest resources and habitats, and the governance and management of forests. More importantly, devolution of power to *gram sabhas* to manage its customary forest boundary, especially in mineral rich areas of India, has provided a legal platform to challenge the indiscriminate eviction of people without settling their rights. It was FRA which played a crucial role in protecting the rights of tribals in the Niyamgiri mining area. Tribals living and dependent on Niyamgiri hill had invoked FRA provisions to assert their rights over forest land and resources. Finally, the long struggle against the mining project by the tribal communities residing in twelve villages in Kalahandi and Rayagard districts of Odisha's Niyamgiri hills had culminated in an outright rejection of the company's plans to mine bauxite to feed its alumina refinery at Lanjigarh in August 2013, a process overseen by the Supreme Court and watched by the national and international press. This set a benchmark that could be followed in other cases (see below).

N. What were the eventual outcomes?

Following the unanimous decision of twelve Gram Sabhas (Village Assemblies) to deny permission to the mining project, the project was abandoned completely. The decision of the Gram Sabhas forced the Government of India to cancel the forest clearance given to Vedanta Ccompany on 9 January 2014.

O. What were the final impacts (if the project was implemented in any form at all)?

Local people's rights over forest land and resources have been reinstated. Reluctant to give up a lucrative deal, the State Ggovernment launched a fresh bid to overturn this by approaching the Supreme Court again in early 2016. The Odisha Mining Corporation filed an application before the Supreme Court for reconvening of the *gram sabhas* to seek afresh the mandate of the affected Dongaria tribals. But the Supreme Court dismissed the application in May 2016. The Vedanta alumina refinery, after denial of mining from Niyamgiri hill, mostly uses costly bauxite imported from as far as Brazil and Guinea and brought 170 miles (275 km) by train from a port in neighbouring Andhra Pradesh state (Das and Dash, 2018).

Following the anti-Vedanta mining project and the kind of success the movement has achieved, the hope of tribal communities to access, use and manage the resources through employment of their constitutional rights has increased. Over the last few years and so, the resistance by tribal communities due to various mining and infrastructure projects across India has grown and is reflected, in varying degrees, in the rights of indigenous and tribal communities to ownership, control and management of land and resources traditionally held by them either individually or as a community; the right to a decisive role in decision-making for development needs in their areas; and the right to free and prior informed consent (FPIC) to any projects in their areas. Some of them include: protest by tribal villages in Raigarh, Chhattisgarh, against the plans of South Eastern Coalfields Limited (SECL) to mine in their forests, is eligible to be recognised under FRA; rejection by the tribals of Koida Tehsil of Sundargarh district in Odisha of the proposed Rungta Mines in their forest areas by the Industrial Infrastructure Development Corporation of Odisha Limited; protest by the villagers of Lipa in Kinnaur district of Himachal Pradesh against the Kashang hydroelectric project to be built by the state-owned body Himachal Pradesh Power Corporation Limited, and so on (Sahu, 2019).

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