

Burning Coal:

EMBERS OF A CRITICAL LAND



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Perhaps time's definition,
of coal is the diamond
Perhaps man's definition,
of coal is the end summoned.

FARZAN DALAL

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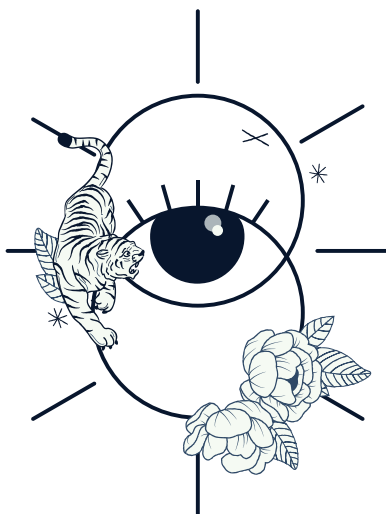
About us

The Matter Collective is a professional collaborative network of Indian creatives from all over the country and the world. Currently, with over 40 contributors across 12 Indian states and 4 countries, we are growing steadily and attempting to create and curate relevant easy to consume content, related to environmental justice and climate action.

Our long term goal is to push for environmental democracy and better environmental laws.

After running a successful campaign voicing our unease with the Environmental Impact Assessment Draft Notification 2020, The Matter Collective now brings its 2nd publication on Coal Mining. We hope to throw light on the various aspects of coal, its extraction, and the environmental effects that we see today.

As of 18th October, we are 14 weeks old and looking forward to continuing our work with interested collaborators who wish to be a part of our constantly growing network. We look forward to producing a set of 4-6 quality publications around Environmental Justice and Climate Action every year.



Before you delve deeper into this publication, we would like to highlight some facts:

Currently in India, the Minister of Environment, Forest and Climate Change, Minister of Heavy Industries and Public Enterprises and Minister of Information and Broadcasting is the same person.

MOEFCC was the body to release the Environmental Impact Assessment Draft Notification 2020 and the Ministry of Heavy Industries and Public Enterprises is highly dependent on the coal industry.

There are built-in loopholes within the EIA draft 2020 which allow for the piecemeal expansion by coal mines, among other large industries.

Public consultation on the EIA Draft Notification 2020 ended on August 11th. The auction process of 41 coal mines was inaugurated on the 18th of June. The number was later revised to 38, with a few changes.

“The government has recently amended several rules to make the coal mines more attractive for private players in the upcoming auctions, and some of the blocks offered fell in areas which had been earlier designated as ‘no-go zones’.” - Financial Express, 29th August 2020

The current auction of 38 coal blocks for commercial mining, has started, with the offline process being completed. The online bidding process is expected to start on the 19th of October. This is expected to contribute to the country being self-reliant or “*Atma nirbhar*”.

The bygones, the now, and our actions to come...

COAL IS A NON-RENEWABLE SOURCE OF ENERGY.

We have all read this in our school textbooks, and could maybe use a recap.

Due to the pressure on organic matter, coal was formed over millions of years, metres below the rocks and dirt we walk on. When we say non-renewable, we mean that the coal we have and use today is all our species is going to see before we go extinct. Over another millennium, the planet will make more, but our industries will not be around to use any of it.

Through centuries of documentation and archaeological evidence, we know that coal has been used in various forms. What we know as China today, is said to have used coal since 4000 BC, and Romans were documented to have been using coal since 200 BC. Many other early economic hubs were known to mainly coal as domestic fuel. Before coal, people used forms of wood fuels, but due to the high energy per mass ratio produced by coal, it became the fuel of choice over generations of industrial and domestic use. Modern scale mining, as we see today, became largely popular during the 18th and 19th century, when coal fueled the industrial revolution and all that came after.

The harmful effects of coal and the increase in contents of air pollutants are not exactly new knowledge. **As far back as 1306, King Edward I was known to have prohibited the sale and burning of sea-coal in London, to improve the air quality of the city.** Many acts, parliamentary laws and other legislation have since been passed around the world to help remedy the situation.

In the modern world, apart from localized legislation, countries are coming together to ponder upon the sustenance of our species and the quality of life hereafter. One such global initiative was set by the UNGA (United Nations General Assembly) in 2015- the Sustainable Development Goals or SDGs, within their 2030 Agenda. These goals, apart from highlighting the sustainable use of fossil fuels like coal, also acknowledge the need to envision a future for all, and not look at environmental justice and global climate action concerns in silos.

The recent auction of 38 coal mines (earlier 41) for commercial mining in India has sparked a debate about saving a post-pandemic plummeting economy v/s putting climate action at stake. **If we fail to act today, factors like global warming will torment the generations to follow and wipe us off the planet in the centuries to come.** Although dramatic, as per scientific data, if we are unable to curb the current rate of global warming by 2040, there will be no turning back for the human species. Currently perceived as anomalies in weather patterns– extreme cold/drought, devastating wildfires/hurricanes/ floods will soon become our seasonal markers instead.*

We, at The Matter Collective, felt it was imperative to share various aspects for the upcoming pillage and allow us all to contemplate on where we stand within this conversation. Let us hold ourselves and our representatives responsible for what is to come and what we, collectively, are accountable for.

Author & Artist • **MUDITA PASARI**



COAL ISN'T COOL ANYMORE — and the whole world knows it!

The modern environmental movement against coal consumption began in the 19th century, but even today, coal-fired power plants are responsible for 40% of total fossil fuel emissions, causing lethal environmental damage. In 2008, climatologist James Hansen & nine other scientists called for phasing out coal power by 2030, and a few leaders listened & responded! In June 2015, the G7 nations* agreed to phase out the use of fossil fuels by 2100. That served as a precursor to the Paris Agreement. Signed in December 2015, the Paris Agreement requires each participating country to regularly report on the actions it takes to lessen its blow on global warming. In the agreement, member nations promised to reduce their carbon output "as soon as possible". In April 2016, the top two economies of the world, the United States of America and China, issued a joint statement confirming they would sign-on, but, even in 2020, the superpower nations continue to be responsible for 40% of all global CO2 emissions!



The arrival of the Coronavirus pandemic in 2020 managed to scare governments across the world with some wanting to revive their economy through fossil fuel industries. In September 2020, UN Secretary-General Antonio Guterres urged nations that are mobilizing economic stimulus funds for bailouts to not 'throw away' taxpayers' money on fossil fuels. The UN Secretary-General further pushed leaders to see the only rational path hereon – investing in technologies of the future, renewable energy, nature-based solutions, sustainable transport and green technologies. He emphasized on the fact that without taxpayer subsidies, fossil fuel industries will go bankrupt!

"We can either throw away money on the fossil fuels of the past. That is the road to more pollution... Or we can invest in the technologies of the future, renewable energy, nature-based solutions, sustainable transport and green technologies. Only one of these paths is rational,"

~

UN Secretary-General Antonio Guterres

Author • **RAUNAQ BAJAJ**
Illustrator • **AKSHATA C BIRAJDAR**

NOTE:

G7 Nations : Canada, France, Germany, Italy, Japan, the United Kingdom and the United States

While The Sun Shines On India's Solar Efforts

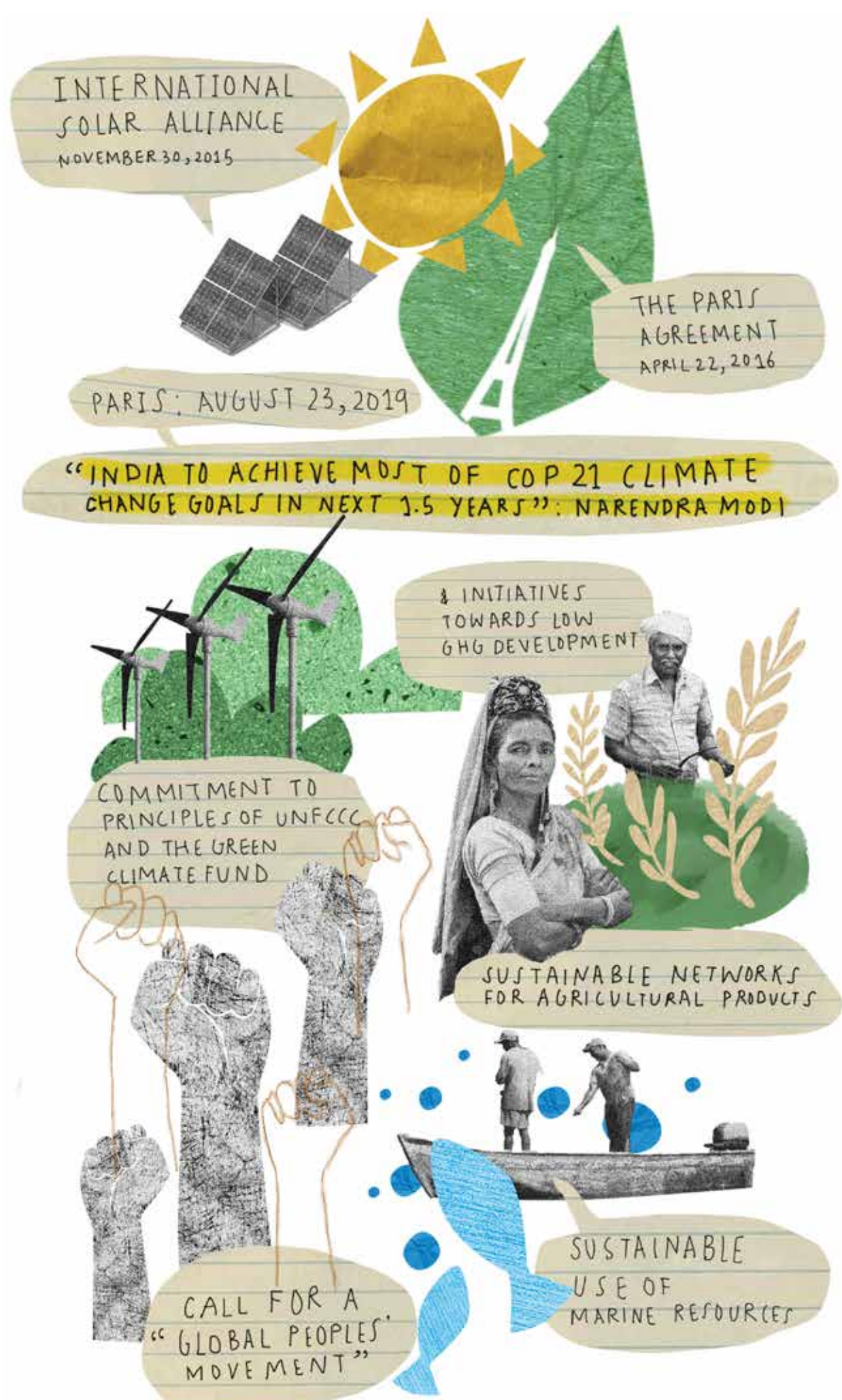
Close to home, India became the 62nd nation to join the Paris Agreement and made a strong move in 2016 towards renewable energy by launching the International Solar Alliance. The ISA is an alliance between India and France with the core focus on solar power utilization. Our geographical positioning as a country in the tropical zone gives us the advantage required for solar energy. The Alliance in partnership with the World Bank launched the Global Solar Atlas– a free online tool that enables governments and investors to check the average annual solar power potential in any part of the world and identify potential sites for solar power development. **In January 2018, India announced the establishment of a \$350 million dollar solar development fund to finance projects and work with France to devise long term strategies for low-greenhouse gases emissions by 2020.**

While the solar efforts continue, **India has set a very difficult target at emission reduction of increasing renewable energy from 22% to 40% by 2030.**

Indian Environmentalist and Energy Expert, Chandra Bhushan said,

"This is one of the most ambitious renewable energy targets in the world, far more than the targets set by developed countries. Overall, these targets are highly desirable, but will need major reforms in the transmission and distribution sectors and stable policies to achieve."

The need for reform is glaring as India continues to be the 3rd largest emitter of greenhouse gases, behind China & USA.



Author • RAUNAQ BAJAJ
Illustrator • NANDINI NEGI

*No human, no matter how
ancient, or how popular, can be
above the laws of nature.*

~

ABHIJIT NASKAR

Neuroscientist, Author, Speaker

India's heart burns of Coal, but speaks of

RESPECT NATURE

'Undermining Tadoba's Tigers' recommended that no new mines should be given clearance in the region and further expansion of operation of coal mines should be stopped.



THE JOURNEY TO DESTRUCTION

Illustrator • **NANDINI NEGI**



At the 74th United Nations General Assembly (UNGA) hosted in September 2019, Prime Minister Narendra Modi stated, “We need to have respect for nature and Need not Greed has been the guiding principle for our government...”.

2019 also happened to be the fourth consecutive year where the Modi Government gave orders to clear wildlife rich areas for industrial use and coal mining. By September 2020, the total number of government sanctioned projects that forced action against wildlife rich areas sits at a total of 680! The Greenpeace NGO and ATREE (Ashoka Trust for Research in Ecology and Environment) found more than one million hectares of forest in Central India facing the threat of destruction owing to the government's efforts towards coal mining. And the additional costs of such a disastrous project leads to irreversible changes in the form of displacement and periodic extinction of indigenous people, tigers, leopards and elephants.

At the same addressal in 2019, PM Modi added, “Our Country has not just come to talk about the seriousness of the issue, but to present a practical approach and a roadmap...”



Hear my Roar, Stop the Coal!

“We believe that an ounce of practice is worth more than a ton of preaching.”

~

The Indian Premier

Tadoba Andhari Tiger Reserve (TATR) is the oldest national park in the state of Maharashtra but even regions of such rich heritage face the risk of being completely cut off from surrounding forests if new coal mining ventures are enabled. **Wildlife Experts Praveen Bhargav, Biswajit Mohanty and environmental lawyer Rahul Choudhary did a study together called Undermining Tadoba's Tigers wherein they explained how the Tigers won't get the chance to move to the neighbouring woods, which can lead to demobilization and cause extinction of the tiger population.** The only practical approach the government had to offer was afforestation – appalling is the government's belief that whole ecological systems can be compensated through planting trees.

The Indian Premier summed up his speech at 74th UNGA and said, “We believe that an ounce of practice is worth more than a ton of preaching.”

The Environment Ministry of India gave its clearance to ten coal mining projects with an annual capacity of 160Mtpa with four more washeries receiving approval in January, 2020. **The practice of approving coal mining projects comes from turning a blind eye to destruction of wildlife and forest connectivity, erosion, altering entire landscapes, deterioration of drinking water and air pollution.**

Author • **SUSHMITA RAI**

Editor • **RAUNAQ BAJAJ**

Illustrator • **MUDITA PASARI**



IS INDIA'S LOVE FOR COAL A DEATH SENTENCE DISGUISED AS DEVELOPMENT?

For all the wrong reasons, India's relationship with coal has been under the microscope every now and then. To avert a global climate crisis, the world has been trying to fight tooth and nail to keep the rise in global temperature below 2 degrees Celsius. Meanwhile, India has been on a coal-burning spree to power its dying economy, which took a dip due to the ongoing coronavirus pandemic. Since coal is still the most competitive fuel when it comes to price and is abundantly available in the country, India continues to increase its coal consumption by pushing to open new mines.

So Who Is Bearing the Brunt in the Name of Development?

Amid these ***coal-d wars between the economy and the environment***, it is the latter that suffers the most. Unchecked mining damages our biodiversity, pollutes our already scarce water resources and severely affects the indigenous peoples living in the areas, where coal is mined. These illegal coal mining activities lead to thousands of lives being stripped off of the land, that is rightfully theirs, and forced to take its protection in their own hands.

An example is the resistance by the Arunachal Voice Against Black Marketing (AVABM) in February 2020 against the illegal mining activity at Kharsang and Namchik under Changlang district in Itanagar. Another case occurred in 2012 when the government gave 32.79 acres of land belonging to the Santal and Bhumij indigenous communities of Jharkhand to a company named Bir Birsa Minerals Pvt. Ltd. without consulting with the Gram Sabha, as is required by law. When the communities resisted, criminal cases were filed against their leaders in which they were falsely accused of attacking, kidnapping, assaulting, and threatening to extort the company's employees.

For How Long Will This Toxic Relationship Continue?

India's love-hate relationship with coal isn't a new affair. The indigenous peoples have always borne the ill effects of the developmental activities by the government. In 2001, the Planning Commission of India stated that the development projects during 1951-1990 led to the displacement of 21.3 million people out of which 8.54 million, i.e. 40.1%, were indigenous peoples while they accounted for only 8% of the total population of the country during the 1991 census. With no support from the local authorities or the police, these communities are driven to retaliate with little to no advantage. The country needs to snap out of its false dream and realise that its citizens are at the heart of development and not some black piece of rock buried in the ground.

NOTHING CAN SEVER INDIA'S RELATIONSHIP WITH COAL — NOT EVEN A PANDEMIC

Shift in demand for coal generated power from March to September during the Pandemic.

Coal mining accounts for 70% of India's electricity generation. During the lockdown in March, due to reduction in energy demands, the share fell as low as 60%. However, the share of coal in India's overall electricity generation rose to nearly 66 per cent during the first 15 days of September, the highest since March 2020 levels of 71.2 percent, data from POSOCO showed.

Source:
<https://energy.economictimes.indiatimes.com/news/coal/indias-coal-fired-power-output-picks-up-as-industrial-use-rises/78145168>



Even as the country went through almost a 70 day lockdown — starting in March 2020 — to control the spread of COVID-19, there was one thing that stood the test of time - India's love for coal. Even though everything was shut and life as we knew it stopped, our country still held on to coal's hand. In fact, it was coal that she turned to, to save its crumbling economy.

The Invincible Coal

By August 2020, during the lockdown, India's thermal coal imports fell nearly 20%, due to a drop in power demand, as reported by Iman Resources. This drop resulted in a decline in coal-fired power to 60% as compared to 71.2% in March 2020.

However, this set back was temporary; in the first fortnight of September, coal's share in power rose to 66% due to an increase in power demand as the “unlock” replaced the “lockdown” and the relationship began to thrive again.

Life for One, Death for Another?

To revive the dying economy, the Indian Government again took out its "Brahmastra" - COAL - and decided to boost commercial coal mining. It recently announced an auction of 41 coal blocks in June 2020 under the "Atmanirbhar Bharat Abhiyan" or the self-reliant India mission. This number was revised to 38 in September 2020.

This announcement, however, received a backlash owing to the irreparable damage that mining causes to the forests and to the lives of indigenous people living there. The government used the creation of much-needed job opportunities as an excuse to justify its decision. However, we know what the nature of these jobs will be - perilous, thankless, and inhumane, to say the least.

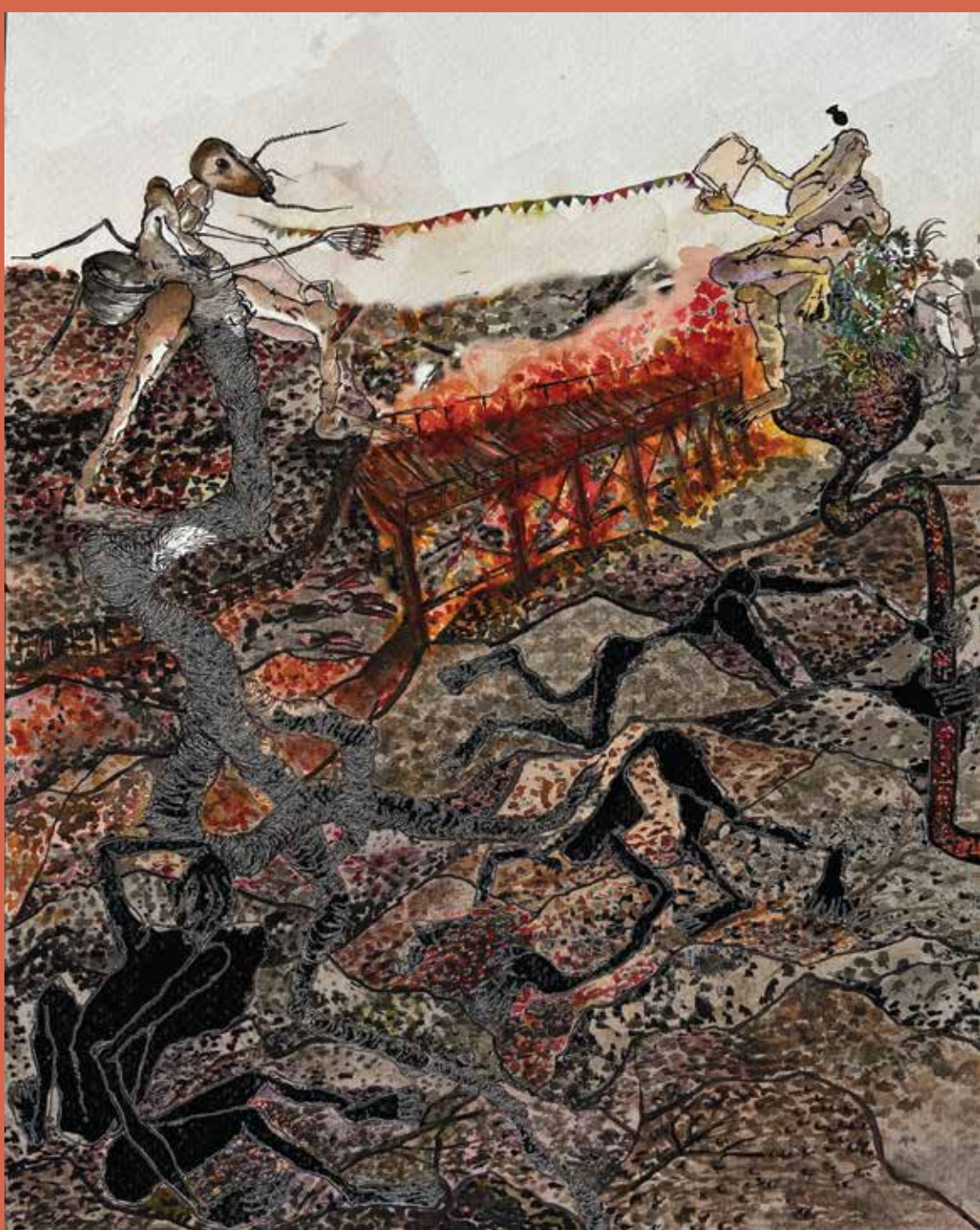
Author • **BAANI ARORA**
 Illustrator • **MUDITA AGARWAL**

Dark Slumber

Zillion greens like's compelled to sleep with eyes open,
Churning grave secrets into black gold frozen.

Sopho - maniac driven by their ageless greed,
This standing ant having an elephant appetite.

Power of black, fueled their endless hopes,
Dreaming its magic with dystopian kaleidoscope.



Fairyland decorated with toxic lakes and smog,
Nature scripting it's own atrophic Testimony blog.

Council's designed a unique employment game,
Brutal barter of homo sapiens with monetary fame.

The loud chief flirting with its biome & The Trivials,
Competing for the top spot of the link un-spiritual.

Boasting it's toxic traits; burning the bridges it gets.
Bankrupt-ing Trivials from it sun toiled Sweat.

Even their breaths for generations are sold,
We thought it's just loot of a foot land as per told!

Drains being dug now, more deeper than ever.
They waiting for their saviour with shining armour.

Chinese whispers travelling through unlit space,
Echoes of just words lost in room full of reflecting faces.

We are searching for a rainbow in the dark stained rains,
Hoping to be an aspirin to the decade long casteist pain.

Let's try to pick up this incomplete dead phrases,
And hold up our Lights, until we learn to grow more daisies!

Poet • HELLY SOLANKI
Artist • ANUSHA DHAWAN

Nations as vast as ours struggle with our dependency on coal. **On one hand we try to elevate our population from poverty, provide education and reduce inequality for those of us who live in the 21st century with no access to basics like clean water, food and electricity.** On the other hand, we only attempt to create sustainable cities and communities through affordable and clean energy in the second most populated country on this planet.

This ideal scenario can be achieved through a collaboration of multiple SDGs like **Goal 1. No Poverty**

Goal 3. Zero Hunger

Goal 4. Quality Education

Goal 7. Affordable and Clean Energy

Goal 8. Decent Work and Economic Growth

Goal 11. Sustainable Cities and Communities

Goal 13. Climate Action

and Goal 17. Partnerships to achieve the Goal

But this is only a surface level reading and example of what the true application of SDG goals would look like in a country like ours.. It is a complex concern, but we must be ready for what we have signed up for.

Currently we don't seem to be doing a very good job.

Let us look at the following example:

The tribal women of Tamnar are protesting against South-Eastern Coalfields and demanding unconditional implementation of India's rehabilitation policy, Forest Rights Act and Panchayats Act while the Gond community of Hasdeo Arand is fighting the billion dollar Adani group for the ownership of their ancestral land – our marginalized and oppressed are waging a war. It is us, the privileged, who've taken a backseat...



Illustrator • **NEELANCHAL GUPTA**

Why do the Adivasi community and their resources lack protection from state and law, despite hostile acquisitions of their land?

How have we contributed to a declining economy that values unrenewable resources, like coal, over the lives who have endured systemic oppression, ecological inequity, and persecution?

Author • **ANKUR GANGWAL**

SOURCES

Coal in India: Adjusting to Transition, **Brookings' Report**

India's ancient tribes battle to save their forest home from mining, **The Guardian**

Mining-affected Adivasis in Chhattisgarh have forced a coal firm and the state to hear them out, **Scroll.in**

The role of Coal — INEVITABLE BUT SUSTAINABLE

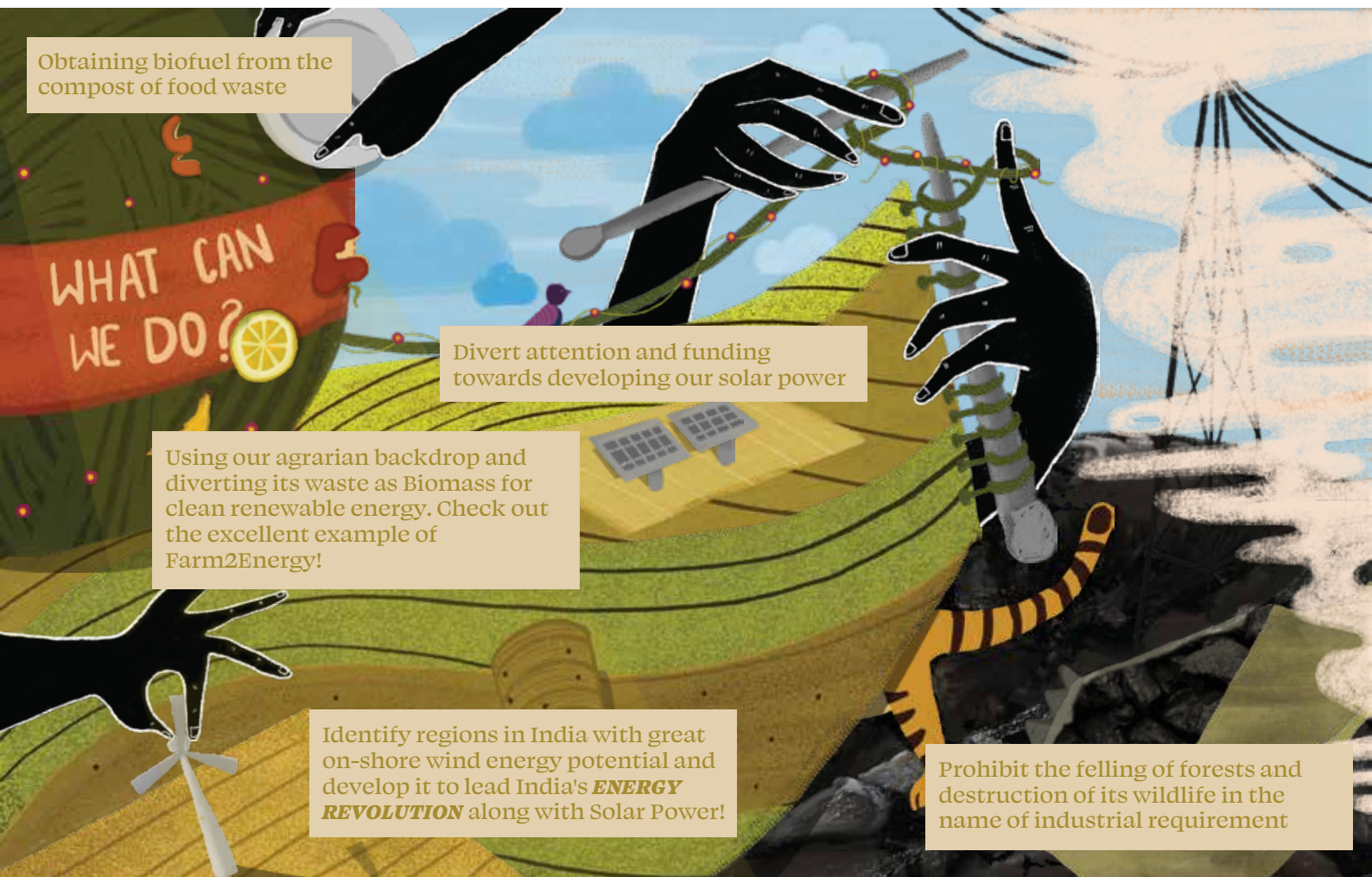
Considering everything you've read in this publication up until this point, here's a bizarre fact: **IT WOULD BE MISPLACED TO SAY INDIA IS IN A POSITION TO ABANDON COAL AT ALL. WE ONLY WISH OUR DEPENDENCY ON IT COULD BE WISHED AWAY!** So for now, coal is here to stay.

The government's promises of tackling the climate crisis through initiatives like privatization of mines and the abandonment of "Washing"- are just falsified moves to cloud the development agenda. Our "reform" is far. The world is shifting towards renewable energy (RE) and considering the abundance of sunlight and wind in our country, transitioning to RE should be easy for India, in its initial phase. We are expected to achieve 175GW or 20% of our energy requirements through RE by 2022. But with our geographic expanse and population, inevitably we would require much greater grid management and storage capacities and a lapse in commitment towards it will be a mammoth roadblock.

Today, coal is a necessity but it's negating effect on our planet's lifespan should be a cue for us to start looking for ways to make its mining more sustainable; by harnessing Coal-bed Methane and finding ways to reclaim mined swathes of land.

And while we working on coal's sustainability, let's look at alternative Energy sources that could be big players in the distant future:

1. What can we do?



Obtaining biofuel from the compost of food waste

Divert attention and funding towards developing our solar power

Using our agrarian backdrop and diverting its waste as Biomass for clean renewable energy. Check out the excellent example of Farm2Energy!

Identify regions in India with great on-shore wind energy potential and develop it to lead India's **ENERGY REVOLUTION** along with Solar Power!

Prohibit the felling of forests and destruction of its wildlife in the name of industrial requirement

Illustrator • **UNNATI SHARMA**

Research • **MANAN PAHWA, NOORA YASMIN & ANONYMOUS CONTRIBUTOR**

SOURCES

Farm2Energy Website

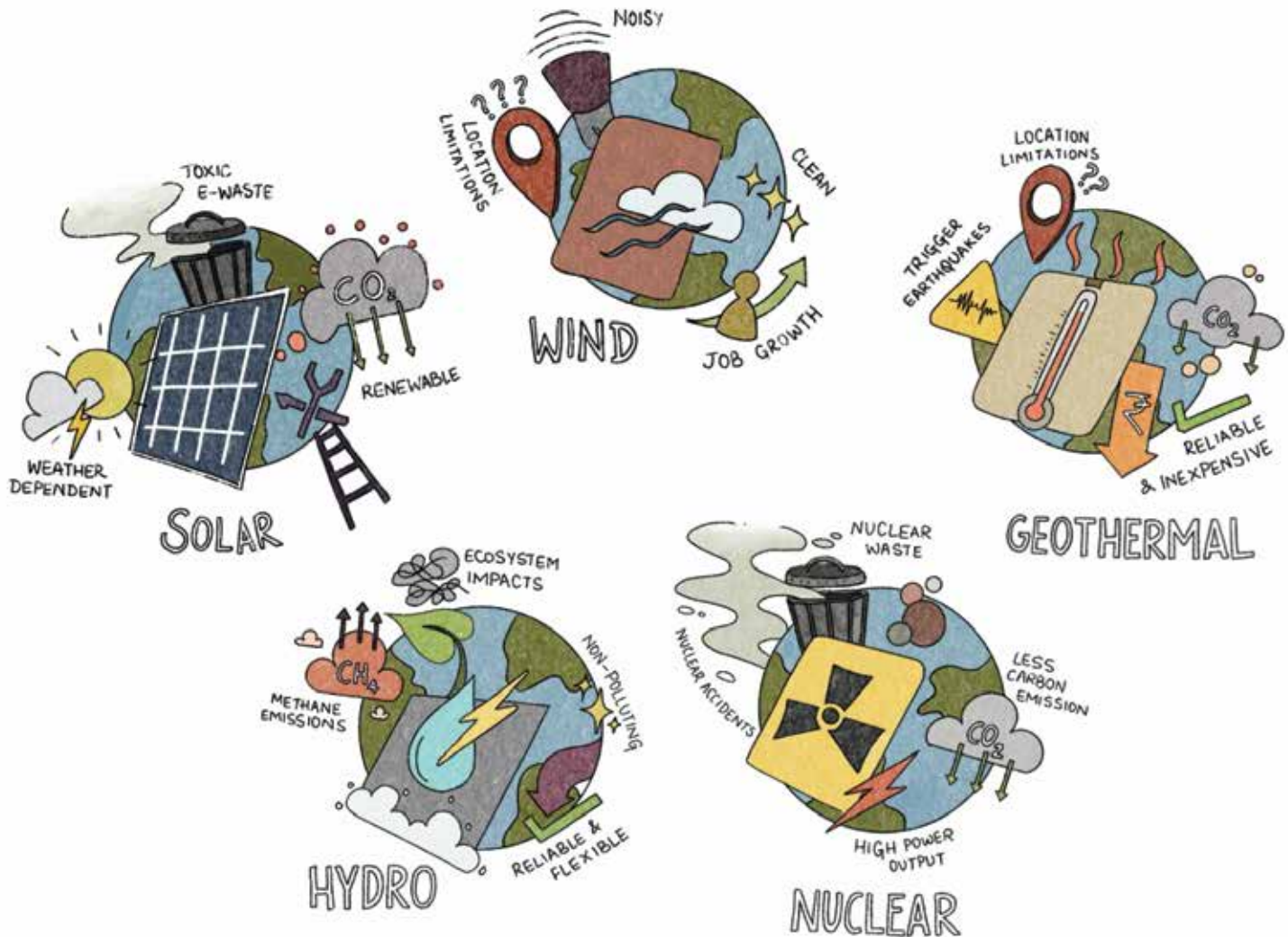
How Coal Mining is Thrashing Tigerland, **GreenPeace Report**

How South Korea Is Composting Its Way to Sustainability, **The New Yorker**

Can Biomass Replace Coal?, **Renewable Energy World**

What does the future look like?

2. Beyond Coal: THE *CURRENT* ALTERNATIVES



Illustrator • UNNATI SHARMA & PRIYA KINI

What does the future look like?

3. What can one do to make a difference?

I live in a modest 1BHK which has: 2 fans, 4 lights and other appliances. On an average day, I spend roughly 15 hours at home. If I were to use only 1 fan + 1 light,

I consume 65-70 watts of electricity per hour

If I use 1kW every day, I would use roughly 1000kW which is 1Mega Watts in 3 years. If I were optimistic and decided I were to live upto the age of 90, I would at the minimum consume 30MW of electricity. This is all without a TV, computer, phone or air conditioner. 1MW of electricity requires 500kgs of coal.

By the time I am 90, I could have, at the minimum, consumed 15,000kgs of coal all by myself.

If I were to add all my appliances, one could only imagine the number.



What does the future look like?

What if I take a step back and decide to spend 1-hour in the evening with nature, go for a walk, sit in a park or maybe play a sport?

Over 90 years of my life, I could save a 1000 kgs of Coal.

If my building has 15 floors with 12 flats on each floor and...

each home decides to spend that 1 hour outside, in 90 years we could save 1,80,000 kgs of coal.

My society has 5 such buildings, together in

90 years we could save 9,00,000 kgs of coal.

How to do Better?

Together, there is much we can accomplish. Reach out to The Matter Collective to calculate your coal impact and create a plan for conservative consumption. Let's do the math and make a difference.

If you want to give it a try yourself, here is a formula:

Daily use, $d = \{(\text{no of fans} \times 50) + (\text{no of lights} \times 18)\} \times \text{no of hours of use}$

Yearly use, $y = 365 \times d$

Yearly use in MegaWatt, $m = (365 \times d)/10,00,000$

Yearly coal consumption, $c = m \times 500 \text{ kg}$

Lifetime coal consumption, $L = c \times \text{life expectancy}$

Does the number look too big?

How about taking that 1 hour walk in the open?

And we hope you don't forget to switch off your fans and lights on the way out.

*Many individuals are doing what they can.
But real success can only come if there is a
change in our societies and in our
economics and in our politics.*

~

SIR DAVID ATTENBOROUGH



WE HAVE PRESENTED TO YOU MULTIPLE SIDES OF THE CURRENT SITUATION.

We acknowledge the present and hope for a better future. Not just for ourselves alone, but for the continuation of our species, as a whole.

In all of this, what worries us the most, is the ethics of measuring the profit generated from coal mines against the human cost paid by those living on, and off the land. While you and I can afford to have this debate from the comfort of our homes with a blasting air conditioner while twittering away our opinions, the people on the lowest rung of the ladder lose not just land and livelihood, but their voices and senses of identity — bound to the soil and their homes.

As The Matter Collective learns more on this issue, we hope to bring to you our next publication on the ideas of caste, class, social status and the warped impacts of environmental concerns on those marginalised by society for long. We know not many of them have voices that reach us, we collectively hope to be a medium for the same.

And more than the above, it is only ethical to start measuring the human cost of a coal mine before auctioning it to a private profit maker. Because, for a country obsessed with numbers, one can hope that the total loss of human lives may someday elicit more response from us than the sound of a 5 trillion-dollar economy.

But until then, we have blood on our hands.

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The identity of The Matter has been designed by Eemon Roy and made available for adaptation by each collaborator.

The body text of this publication is set in IBM Plex Sans, IBM Plex Serif and Swear, designed by Mike Abbink & Bold Monday, and OHNO respectively. Designed by Nidhi Singh Rathore, this publication was developed specifically for mobile devices; in remote collaboration during the global pandemic (COVID-19) lockdown. Published digitally on 19 October, 2020, this booklet is created for circulation and education of the masses.

The cover features a photograph produced by Farzan Dalal, supported with his haiku on the following page.



Acknowledgements



Instagram • @themattercollective_
LinkedIn • @The Matter

