

पर्यावरण दर्पण

बीसीसीएल की समाचार पत्रिका

Time For Nature
Biodiversity



भारत कोकिंग कोल लिमिटेड
धनबाद

ENVOPEEDIA

AIR POLLUTION DROPS BY 40-50% IN BIG INDIAN CITIES LIKE DELHI, MUMBAI AFTER LOCKDOWN- New satellite maps, produced using data from the Copernicus sentinel—5P satellite, shows averaged nitrogen dioxide concentrations over India from January 1 to march 24 and march 25 (the first day of lockdown) to April 20 and compared them to the same time-frame as last year. The significant reduction in the NO₂ concentrations can be seen over major cities across India. Mumbai and Delhi saw a drop of around 40-50% compared to the same time last year.

LESS AIR POLLUTION MEANS THOUSANDS FEWER DIES- European countries under corona virus lockdown have seen 11,000 fewer deaths in April compared to the same period last year due to the sharp drop in fossil fuel pollution. Measures to halt the spread of corona virus have slowed down the region economies to a crawl, with coal generated power falling by nearly 40 percent and oil consumption by one third. The happenstance evidence that less air pollution saves lives should guide governments deciding on how to reboot their economies.

GLOBAL CO₂ EMISSION TO DROP 4-7% IN 2020, BUT WILL IT MATTER?- As reported by researchers, Global CO₂ emissions from fossil fuels are set to drop up to seven percent in 2020 because of the corona virus pandemic, but even this dramatic decline- the sharpest since WWII- would barely dent long-term global warming.

POTENTIALLY FATAL COMBINATIONS OF HUMIDITY AND HEAT ARE EMERGING ACROSS THE GLOBE- A new study has identified thousands of incidents of previously rare or unprecedented extreme heat/humidity combinations in parts of Asia, Africa, Australia, South America and North America, including in the U.S. Gulf Coast region

UN BODY TO POSTPONE ITS FLAGSHIP CLIMATE MEETS COP26 –The COVID19 spread has forced the UN body to postpone its flagship annual climate change conference, which was scheduled to hold at Glasgow in United Kingdom (UK) in November. This crucial meet will now be held in 2021—the first year of the operationalisation of the Paris agreement.



MESSAGE

This year, the world is going through one of the toughest times in the history of mankind. As the nation is fighting against the COVID-19 pandemic with full valour and courage, BCCL, apart from fulfilling the energy needs of the nation, has also contributed in the fight against COVID-19 in various ways from distributing rations and food packets, gloves, sanitizers etc to the needy people. BCCL has also contributed through the District administration by providing sanitization materials and financial aids. BCCL's Central Hospital has been earmarked as COVID-19 hospital in Dhanbad District. Apart from contributing at the local level in this fight, BCCL employees have contributed one day salary to PM CARES Fund. In this hour of crisis Ministry of Coal, Government of India, Coal India Limited, Jharkhand State Government and District administration, Dhanbad are supporting BCCL for the progress of the company.

This year, World Environment Day is being celebrated on theme 'Biodiversity'. Biodiversity - all forms of life existing have right to live on this planet. Many species have extinct or facing the threat of extinction due to the rapid industrialization and increasing needs of the mankind. This World Environment Day earmarks the importance of the all living beings present on the planet. All the species, only humans have the capabilities and responsibility of conserving, protecting and existence of the endangered species as the most evolved species on the planet. Biodiversity existing on this earth is the major factor not only for trade, industrialization and economic growth of the mankind but also for the survival of the mankind. It assists industrial activities by providing vast range of inputs ranging from raw materials for food, cloth, shelter and even leisure. It also plays a vital role in abatement of air, land and water pollution hazards.

BCCL has been working for the enhancement and conservation of the biodiversity at the degraded lands /OB dumps of BCCL by implementation of the ecological restoration. For this purpose, BCCL has a long association with Forest Research Institute, Dehradun, one of the premier institutes in the field for biodiversity conservation. BCCL is taking necessary measures for sustainable development of the region.

I congratulate Environment department for taking initiatives for biodiversity conservation in coal mines Areas of BCCL and release of the 14th edition of the 'Paryavarn Darpan' which bring awareness among the stakeholders of coal mining about the Environmental issues and developments.

P M PRASAD

Chairman cum Managing Director
Bharat Coking Coal Limited



MESSAGE

Biodiversity is the greatest treasure we have, its diminishment is to be prevented at all cost. And I feel very honored to inform you that the environment department of Bharat Coking Coal limited has always realized the importance of protecting the biodiversity and thus has always ensured that BCCL remains firmly committed to exploration and mining in a manner that is compatible with sustainable development. This environment day celebration has been associated with the theme "Biodiversity". According to 2030 Agenda for Sustainable Development, agreed by the 193 states Members of the United Nations, biodiversity is essential for sustainable development as Biodiversity and ecosystem feature prominently across many of the Sustainable Development Goals (SDGs) and associated targets. They contribute directly to human well-being and development priorities. Biodiversity is at the centre of many economic activities.

While the economic benefits of mining is clearly recognized by India, concern for the protection of the natural environment has increased in recent years and BCCL has acknowledged and recognized the importance of its environmental responsibilities by adopting a range of protective measures like ecological restoration of mined out land etc. In BCCL, a total of 1404 Ha Biological reclamation in the form of plantation and ecological restoration has been conducted over mined out land /OB Dump which resulted in the conservation of biodiversity and the work has been appreciated at various national and international platforms. BCCL has developed five eco-parks over degraded mined out areas and OB dump sites with an aim to connect with the local communities residing nearby the mining areas thus, transforming the image of the company among the stakeholders and has also provided a suitable place to the local people for recreation and rejuvenation. In order to create a sense of ownership and affection for plants and trees, BCCL has initiated small movements like the creation of "15 nos. of Sneh Smriti Upvan" which is based on the concept that one should plant a tree in reminiscence of one's ancestors to make a cleaner and greener earth for future generations. BCCL has also been promoting eco-mining tourism in its mines and eco-parks and usually conduct the visit of the students of the schools and colleges to bring awareness about the mining and environment.

Further, I am delighted to inform you that a Sustainable development Cell (SDC) has been established in BCCL which will advise, mentor, plan and monitor the mitigation measures for maximizing the utilization of available resources in a sustainable way, minimize and mitigate the adverse impact of mining.

I am happy to know that the environment department is releasing the 14th issue of its newsletter "Paryavaran Darpan" on the occasion of world environment day and wish that they will continue their work in improving the environmental conditions. No company can reach its greatness without ensuring that the employees are equal partners in its prosperity and success. Hence, I would also like to thank all the employees who put in their hard work even during this pandemic (COVID19) to render their service towards the nation.

RAKESH KUMAR

Director (Technical) Operation
Bharat Coking Coal Limited



MESSAGE

In these difficult times of COVID-19 pandemic throughout the world, Bharat Coking Coal limited, indulged in coal mining business is determined to serve the country's interest by providing essential services. I congratulate all the employees of this company and other essential servicemen, doctors, policemen, cleaning staffs etc. who are deployed in country's service at the time of this need. These soldiers are battling an invisible enemy for the safety of our people.

The worldwide lockdown to contain this pandemic has created a situation which is not favourable to economic growth of the world but there is a silver lining to it. Several news articles, tweets etc. have claimed that the effect of lockdown on ambient air, water bodies, wild life, and nature as a whole has been very positive. This World Environment Day, to be celebrated on 5th June 2020, I sincerely hope that people realise the need of balance in Nature for the long-term survival of humankind. This year World Environment Day 2020 will focus on Biodiversity and will be hosted in Colombia in partnership with Germany with the theme "Biodiversity". Ecosystems are relying on all parts from the smallest bacteria to the largest vertebrate. It is all interconnected. Some are producing oxygen that others are breathing. Every living organism has a role to play in the maintenance of balance. Since the beginning of time, humans have taken from nature more than any species ever can and the result of this exploitation is quite evident in recent times. Therefore, it is high time we take a step back and think about the much needed balance in the nature.

We, at BCCL are continuously trying to do our best to restore the mined-out degraded land to its best form and some of the sites have shown exceptional results in restoring Biodiversity. Various animal and birds species have been seen at these sites from time to time. Nature heals itself in time but we need to expedite this process by giving our Mother Nature a little nudge in healing herself with our efforts.

I am delighted to know that the team of Environment Department is releasing 14th issue of newsletter "Paryavaran Darpan" on the occasion of this World Environment Day. I am confident that they will succeed in their endeavours for nurturing the environment to make a clean and green nation.

CHANCHAL GOSWAMI

Director (Technical), Project & Planning
Bharat Coking Coal Limited



MESSAGE

I am elated to know that the environment department is going to release the 14th edition of its newsletter “Paryavaran Darpan” on the occasion of world environment day, 2020. This year environment day celebration has been associated with the theme “Biodiversity.” It gives me immense delectation to inform you that BCCL’s environment department has taken a number of steps to conserve biodiversity by doing Biological reclamation in the form of plantation and ecological restoration over mined out /OB Dump/degraded land etc. It has also established a sustainable development cell that will advise, mentor, plan and monitor the mitigation measures for maximizing the utilization of available resources in a sustainable way and minimize the adverse impact of mining.

Environment is the surrounding in which we live; it is the source of life as every aspect of life is dependent on environment. It is a matter of great happiness that in Bharat Coking Coal Limited, consciousness about environment concerns has grown and also resulted in action on part of all the employees in the company. The Publication of Paryavaran Darpan to create awareness for the protection of the environment for the future generation reflects this consciousness.

I congratulate the team of officials at the Environment department for their endeavor to publish the newsletter for the benefit of public at large and wish the newsletter “Paryavaran Darpan” a grand success.

SAMIRAN DUTTA
Director (Finance)
Bharat Coking Coal Limited



संदेश

इस वर्ष विश्व पर्यावरण दिवस 'जैव विविधता' विषय पर मनाया जा रहा है, जो सबसे महत्वपूर्ण मुद्दों में से एक है और वर्तमान परिदृश्य में इस पर ध्यान दिया जाना चाहिए। जैव विविधता एक प्राकृतिक संपत्ति है और मानव विकास में महत्वपूर्ण भूमिका निभाती है और हमारी दिन प्रतिदिन की आवश्यकताओं को पूरा करती है। हमें पृथ्वी की जैव विविधता को बनाए रखने और इसके संरक्षण पर ध्यान केंद्रित करना चाहिए क्योंकि सभी जीव एवं प्राणी अपने अस्तित्व के लिए एक दूसरे पर निर्भर हैं। बीसीसीएल ने पारिस्थितिकी पुनरुद्धार और इको-पार्कों की स्थापना को लागू करके अपनी कोयला खदानों में पारिस्थितिकी एवं जैव विविधता के संरक्षण के लिए कई कदम उठाए हैं। बीसीसीएल बेहतर पर्यावरणीय परिस्थितियों के लिए पर्यावरण, वन और जैव विविधता के क्षेत्र में विशेषज्ञ एजेंसियों के साथ काम कर रहा है और कंपनी में कोयला खनित भूमि के पारिस्थितिकी पुनरुद्धार तथा क्षेत्र की जैव विविधता को बनाए रखने के दिशा में निरंतर कार्यरत है।

बीसीसीएल समाज के समावेशी विकास और सामाजिक-आर्थिक उत्थान के लिए प्रतिबद्ध है, और अपनी सीएसआर गतिविधियों के माध्यम से आसपास के समुदायों को लाभान्वित करने की दिशा में काम कर रहा है। वर्तमान संकटकाल में, बीसीसीएल राशन किट, भोजन के पैकेट, मास्क और सैनिटाइजर आदि प्रदान करके क्षेत्र के जरूरतमंद लोगों की मदद के कर रहा है। आसपास के क्षेत्रों में स्वच्छता अभियान के माध्यम से बीसीसीएल ने अपने संसाधनों को भी COVID-19 के खिलाफ लड़ाई में लगाया है। बीसीसीएल ने अपना केंद्रीय अस्पताल COVID-19 उपचार के लिए उपलब्ध कराया है जिसे धनबाद में COVID-19 अस्पताल के रूप में चिह्नित किया गया है। महामारी के खिलाफ लड़ाई के लिए बीसीसीएल ने राज्य सरकार को भी सीएसआर मद के तहत आर्थिक योगदान दिया है।

पर्यावरण समाचार पत्रिका का यह संस्करण विशेष है, क्योंकि जब वैश्विक महामारी, COVID-19 के कारण आवश्यक सेवाओं को छोड़कर पूरी दुनिया की गति थम गयी है, ऐसी परिस्थिति में भी बीसीसीएल विश्व पर्यावरण दिवस को सादगी के साथ मनाने और कोयला उद्योग के हितधारकों के बीच पर्यावरण के बारे में जागरूकता बढ़ाने के लिए प्रतिबद्ध है।

बीसीसीएल द्वारा की जा रही पर्यावरण गतिविधियों तथा दुनिया भर में हो रही तमाम पर्यावरण संबंधी गतिविधियों के बारे में जागरूकता लाने वाले बीसीसीएल के पर्यावरण समाचार पत्रिका 'पर्यावरण दर्पण' के 14वें संस्करण के विमोचन के अवसर पर, मैं पर्यावरण विभाग को बधाई देता हूँ।

पी. वी. के. आर. मल्लिकार्जुन राव
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MESSAGE

World Environment Day is one of the biggest days of recognition for encouraging people worldwide to save and protect our environment from different environmental challenges the world is facing today. It is the United Nations' flagship day for promoting worldwide awareness and action for the environment and sustainable goals. Over the years, it has grown to be the largest global platform for environmental public outreach and is celebrated by millions of people in more than 100 countries. The theme of World Environment Day 2020 is "Biodiversity" and will be hosted in Colombia.

With 1 million species facing extinction, there has never been a more important time to focus on biodiversity. Biodiversity is the variation of Earth's terrestrial, freshwater, and marine species, as well as their habitats. It provides us with food, water and resources as well as services such as climate control, pollination, flood mitigation and cycling of nutrients. All the species on earth are interrelated and dependent for survival on each other. We can ultimately lose much more than one species by removing one element. We are a part of this nature and we are very much dependent on it. This pandemic situation has made us realise our nature's worth in various ways. Let's not go back to being ignorant and selfish as a species.

I am happy to learn that the 14th edition of Paryavaran Darpan is into publication. This will certainly add to the knowledge-base of readers and create awareness. I am hopeful that this newsletter takes us another step closer to what is happening around us and in our industry for betterment of environment. I wish the team of Paryavaran Darpan and Environment Department a grand success.

KUMAR ANIMESH
Chief Vigilance Officer
Bharat Coking Coal Limited

संपादकीय

विश्व पर्यावरण दिवस के उपलक्ष्य में पर्यावरण दर्पण का नया अंक प्रस्तुत है। पर्यावरण संरक्षण के लिए प्रत्येक वर्ष एक आधार स्तंभ को पहचान कर उसपर केन्द्रित यह उत्सव मनाया जाता है ताकि समाज को इसके महत्त्व की ओर जागरूक किया जा सके। इस कड़ी में इस वर्ष का विषय है – “प्रकृति के लिए समय”। प्रकृति के दर्शन जैव विविधता में होते हैं जिसपर पृथ्वी पर जीवन चक्र संचालित होता है। इस पारिस्थितिकी को, जिसपर मानव का जीवन भी निर्भर है, संरक्षित करने की आवश्यकता है। मानव के पास इसकी क्षमता भी है एवं जिम्मेदारी भी है। समग्र योजना बनाने, उसका अनुपालन करने एवं उचित आचार व्यवहार से ही इसे प्राप्त किया जा सकता है।

भारत कोकिंग कोल लिमिटेड ने दस वर्ष पूर्व ही इस दिशा में कदम बढ़ा दिए थे। पारिस्थितिकी पुनरुद्धार द्वारा क्षरित भूमि में प्राकृतिक वन बनाने का प्रयास किया गया है। जनसामान्य के लिए ऐसे कई स्थानों को इको पार्क का भी रूप दिया गया है। इस विधि का जैव विविधता पर प्रभाव का अध्ययन कर वन अनुसंधान संस्थान, देहरादून ने यह बताया है कि २०१०-११ से शुरू हुए तेलुलमारी पारिस्थितिकी पुनरुद्धार पार्क में २०१३-१४ में ५८ प्रकार के पौधे थे जो २०१७ में बढ़कर १०३ हो गये। इनमें ८० पौधों में औषधीय गुण पाए जाते हैं। पौधों की विविधता एवं प्रचुरता ने जीव-जंतुओं को आकर्षित किया ताकि वे इसे अपना घर बनायें। यहाँ २० प्रकार के पक्षी, १४ प्रकार की तितलियाँ, २७ प्रकार के कीड़े तथा अन्य जीव पाये गए। प्राकृतिक वन का विकास न केवल जीव-जंतुओं को आश्रय देगा, बल्कि कुटीर उद्योग को कच्चा माल भी मिलेगा एवं आर्थिक विकास में सहायक होगा।

इस वर्ष एक विश्वव्यापी आपदा ने सामान्य जनजीवन पर रोक लगा दी है। इसका जन सामान्य के स्वास्थ्य, सामाजिक एवं आर्थिक स्थिति पर प्रभाव पड़ रहा है, जिसके निराकरण के लिए भारत कोकिंग कोल लिमिटेड प्रशासन के साथ मिलकर यथासंभव योगदान दे रहा है। इस आपदा से मुकाबले के लिए देश ने कई नयी शुरुआत की है एवं आपदा की समाप्ति के बाद देश ओर शक्तिशाली होकर उभरेगा, जिसमें हमें अपना योगदान देना है। इस ठहराव ने वायु एवं जल प्रदूषण के क्षेत्र में उम्मीद की किरण दिखाई है जिसे हम सभी आर्थिक एवं सामाजिक गतिविधियों की सही योजना एवं इसके अनुपालन कर प्राप्त कर सकते हैं।

आइये मिलकर कदम बढ़ायें

प्रकृति की ओर

शुभकामनाओं सहित
संपादकीय मण्डल

A PEEK INSIDE....

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CELEBRATING INTERNATIONAL DAYS

Why do we mark International Days?

International days are occasions to educate the general public on issues of concern, to mobilize political will and resources to address global problems, and to celebrate and reinforce achievements of humanity. The existence of international days predates the establishment of the United Nations, but the UN has embraced them as a powerful advocacy tool.

Each international day offers many actors the opportunity to organize activities related to the theme of the day. Organizations and offices of the United Nations system, and most importantly, governments, civil society, the public and private sectors, schools, universities and, more generally, citizens, make an international day a springboard for awareness-raising actions.

Who chooses them and how?

It's the most representative organ of the Organization, the General Assembly, which designates a particular date as an International Day. International days are proposed to the UN General Assembly by Member States. The General Assembly then decides by consensus whether to adopt the resolution establishing the particular day.

The themes of international days are always linked to the main fields of action of the United Nations, namely the maintenance of international peace and security, the promotion of sustainable development, the protection of human rights, and the guarantee of international law and humanitarian action.

In its resolutions, the General Assembly usually explains what prompted it to proclaim the International Day. For example, in declaring 23 May the International Day for the Eradication of Obstetric Fistula, the resolution cited “the interlinkages between poverty, malnutrition, lack of or inadequate or inaccessible health-care services, early childbearing, child marriage, violence against young women and girls and gender discrimination as root causes of obstetric fistula, and that poverty remains the main social risk factor.”

Many people may never have heard about this disease, which causes some of the most devastating injuries that can occur in childbirth, despite the fact that some two million women in developing countries live with it, and between 50,000 and 100,000 new cases occur every year. This is a great example of the crucial awareness-raising job that International Days do.

In addition, this UN body points out in its resolutions which aspects of the problem are of the most concern to UN Member States – or in other words, to humanity as a whole, given that the Assembly is made up of 193 countries, that is, most of the states of the world. A great example of this is the resolution that designates 23 June as International Widows' Day, in which the General Assembly states that it is: "deeply concerned that millions of

children of widows face situations of hunger, malnutrition, child labor, difficult access to health care, water and sanitation, loss of schooling, illiteracy and trafficking in persons."

Some of international days are proclaimed not by the General Assembly, but by specialized agencies of the United Nations to draw the attention of the public to topics under their field of expertise, such as health, aviation, intellectual property, etc. For example, World Press Freedom Day, which is celebrated on 3 May, was proclaimed by the United Nations Educational, Scientific and Cultural Organization (UNESCO), based in Paris, and was later adopted by the General Assembly.

In addition to raising awareness, the UN takes advantage of these Days to advise States on actions to tackle the serious problems around which many of these dates revolve. An example is the resolution on the International Day of Biological Diversity, celebrated on 22 May, in which the Organization invites its Member States to sign and ratify the Cartagena Protocol on the protection of biological diversity.

How do we measure the impact of these Days?

The international observances (which also include weeks, years and decades) are some of the most visited pages on the UN website. Each international day has a dedicated website, available in the UN's six official languages.

The International Days also serve as an indicator of the interest that a given subject attracts in each part of the world. To find this out, we look at the level of engagement that these commemorations receive in different regions and languages across the world. A case well worth highlighting is the International Day of Human Rights, which takes place on 10 December. This Day is observed all around the world with initiatives ranging from military and police officers swapping guns for running shoes in South Sudan, to a student competition in Russia, or a exhibit in Brazil. All in all, a multitude of individuals from all walks of life get involved, in a way or another, in the celebration of this special day.

Other most popular days include World Environment Day (5th June), International Women's Day (8 March), World Water Day (22 March) and the International Day of Peace (21 September).

ESTABLISHMENT OF BIO-DIVERSITY: A STEP TOWARDS TRANSFORMING MINE SPOILS INTO HABITAT

World Environment Day is the biggest annual event for positive environmental actions that takes place every 5 June. Aware of the reason that protection and improvement of the human environment is a major issue as it affects the well-being of peoples and economic development throughout the world, The United Nations designated 5th day of June as World Environment Day. Since it began in 1974, it has grown to become a global platform for public outreach that is widely celebrated in more than 100 countries. The celebration of this day provides us with an opportunity to broaden the basis for an enlightened opinion and responsible conduct by individuals, enterprises and communities in preserving and enhancing the environment. This year's theme for celebration of the World Environment Day is "Biodiversity".

Significance of Biodiversity

The earth holds a vast diversity of living organisms, which includes different kinds of plants, animals, insects, and microorganisms. The earth also holds an immense variety of habitats and ecosystems.

Biodiversity defined as the sum of species richness i.e. number of species of plants, animals and micro-organism living in a community or an ecosystem. Diversity acts as an important measure in any ecosystem that increases its ability to withstand stress.

The biodiversity at the restoration site enhanced through direct seeding of plant species (seed broadcast). Biodiversity at restoration site can be enhanced through accelerated the process of natural succession

Biodiversity includes diversity within species, between species and of ecosystems. Man has made remarkable advancements in many fields of science but when it comes to recording and scientifically describing different kinds of plants, animals and microorganisms, there remains much more to be explored and recorded than they are known.

Uses OF Biodiversity

Humans derive many direct and indirect benefits from the living world. Biodiversity is the source of food, medicines, pharmaceutical drugs, fibers, rubber and timber. Promoting Biodiversity is a major focus in restoration. The biological resources contain potentially useful resources as well. The diversity of organisms also provides many ecological services free of charge that are responsible for maintaining ecosystem health.

Increase plant diversity and diversity of plant functional groups on the assumption that plant diversity is positively correlated with the diversity of microbes, fungi, insects, birds, and animals in general. As the biodiversity increases, food web develops building the complex ecosystem which in turn makes the ecosystem more stable

The importance of coal mining cannot be ignored or side lined, whose significance in thermal power and steel production cannot be denied. The coal mining industry has a significant contribution in our country's GDP. However, mining causes direct impacts on the environment and ecology of the region. These impacts are further aggravated which directly affect the well-being of the humans living in the vicinity of the mining areas. Sustainable

mining can serve the dual purpose of providing resource as well as protecting the ecology and environment. Ecological restoration provides the measure to reverse the biodiversity loss in the mining area. Promoting biodiversity is a major focus in restoration. It can also contribute to the improvement of human livelihood. The diversity of organism also provides resilience and also many ecological services free of charge that are responsible for maintaining ecosystem health. In other way the restoration process can bring about the restoring of basic ecological functions besides biodiversity conservation of the region. Biodiversity represents the very foundation of human existence. Today, it is mandatory for the mining industries to develop and execute such initiatives and many have even become successful in carrying out the work. However, the proper planning and execution should be ensured.

Impact of mining on flora and fauna

There are several negative effects of mining for the environment. A number of smaller plants and creepers that grow with the support of the trees also die due to deforestation. Every single forest in the world is a biosphere of its own. It is impossible to create a biosphere artificially as the various processes and inter-dependence of organisms is too complicated. Dust in atmosphere contributed to retard the growth of the plant species in surrounding areas. It is imperative from the above that the mineral extraction process must ensure return of productivity of the affected land. To make mining possible, several forests are cleared and this leads to deforestation. The vegetation is cleared in order for mining operations. Several organisms and animals live in these forests. With the deforestation, these organisms and animals lose their natural habitat.

Ecological Restoration in BCCL

Prior to nationalization of coal mines, Mining was carried out without any regard to safety, conservation and environment. Such type of unscientific mining over a long period resulted in change of the original land-use and severe land degradation in the form of quarries, subsidence, depressions, coal mine fires, spoil dumps, loss of soil, alteration of original topography as well as drainage pattern. Adding to the problem of land degradation, Jharia coalfields is thickly populated with a population density of 2,200 heads/sq km which further led to stress on the natural forest and vegetation cover.

Management of mined out degraded land by way of ecological restoration offers the ultimate solution for reverting negative impacts on environment due to mining. The ecological restoration should primarily focus on the natural process of succession and also use the diverse group of species in restoration process rather than monoculture plantation as evidenced in many studies.

Ecological restoration encompasses the use of native species in the biological approach of land restoration. There are many advantages in using native species as the native vegetation evolves gradually to live with the local climate, soil types, and animals. This long process brings us several advantages such as saving water, low maintenance, freedom from pesticide attraction of wildlife.

A road map for Eco-restoration of BCCL Mine Area was prepared in 2011 by Forest Research Institute, Dehradun after a rapid appraisal of the extent of disturbance to biotic and abiotic components of the ecosystem. After road map One Model Eco-restoration Project was started through Forest Research Institute, Dehradun on an OB dump over 8 ha in 2011 and completed in July 2014 and another pilot project undertaken at about 7 ha OB dump at Damoda Colliery under expert guidance of Prof. C. R. Babu, Project Director, Centre of excellence of MOEF, Centre for Environmental Management of Degraded Eco-systems (CEMDE), University of Delhi at the same time. The mined out area including OB dumps which was taken for development of model restoration was fully invaded by the exotic weeds particularly by *Lantana camara*, *Eupatorium odoratum* and *Hyptis suaveolens*. Both the sites have shown excellent results to restore the greenery in the project site. Till now, Ecological restoration is being carried out over approx. 300 Ha OB dumps/ mined out degraded land in BCCL

Ecological Restoration involves three tier plantations with native species consisting of lower level grasses, middle level shrubs/ bushes and top level trees. The objective being establishing a natural forest eco-system with biodiversity and to bring back original normalcy of function, structure, potential, service and process of eco system as existed prior to mining activity.



ENHANCEMENT OF BIODIVERSITY AND ITS CONSERVATION IN THE ECOLOGICALLY RESTORED SITE AT TETULMARI, SIJUA AREA

Biodiversity defined as the sum of species richness i.e. number of species of plants, animals and micro-organism living in a community or an ecosystem

- Diversity acts as an important measure in any ecosystem that increases its ability to withstand stress
- The biodiversity at the restoration site enhanced through direct seeding of plant species (seed broadcast)
- Biodiversity at restoration site can be enhanced through accelerated the process of natural succession

Taking a step ahead to strengthen the ecological functions of earlier developed Ecological restoration site, BCCL has carried out a Project/ Study on Enhancement of Biodiversity and its conservation in the Ecological Restoration Sites through Forest Research Institute,

Dehradun in 2016. Biodiversity and ecosystem function relationships have clear relevance for conducting habitat restoration. A satisfactory restoration of mine overburdens demand a permanent vegetation cover that will prevent soil erosion, permitting the long term sustainable soil development. In order to establish a sustainable ecosystem, biodiversity enhancement and proper monitoring is required even after once the site has been biologically reclaimed so that a self-sustained ecosystem could be developed having attributes such as similar diversity and community structure in comparison with reserve/natural forest, presence of indigenous species and functional groups necessary for long-term stability, improvement in physical environment to sustain reproducing populations and resilience to natural disturbances etc.. The project completed in the year 2018 (2016-18) and the report is submitted to BCCL.

HABITAT FORMATION FOR FAUNAL SPECIES



Centropus sinensis
(Greater Coucal or Crow
Pheasant)



Canis aureus indicus
(Indian Jackal)

RESULTS:

The project was carried out in Tetulmari Eco-restoration site spread over an area of 08 Ha which is under administrative control of Sijua Area, BCCL. This study inferred that in comparison to 58 species recorded in 2013-14, the ecorestoration site is enriched with total 103 species out of which 37 are trees, 15 shrubs, 27 herbs, 9 grasses, 2 bamboo, 2 fern, 1 creeper, and 10 climbers species are there. Out of these, 80 recorded plant species have medicinal use in one or the other way.

TOTAL VEGETATION RECORDED ON THE SITE AFTER COMPLETION OF THE STUDY (2016-2018):

Flora	Before 2016	After 2016
Tree species	32	37
Shrub species	8	15
Herb	7	27
Grasses	11	9
Creeper	0	1
Fern	0	2
Climber	0	10
Bamboo	0	2
Total	58	103

The enhanced biodiversity has promoted the species introduction as many species of birds (20), butterflies (14), insects (27), reptiles (1) and few of animals etc. have naturally recolonized or visiting at restored site. Presence of functional groups signifies the long-term stability and indigenous species have been found onsite as well. In 2017, 259.09 ton/ha Equivalent CO₂ sequestration was also estimated as compared to 213.33 ton/ha Equivalent CO₂ sequestration in 2015 (study by IIT-ISM, Dhanbad) at Tetulmari ecological restoration site.

CONCLUSION

This study confirmed that plant-animal interactions improved the ecosystem structure with respect to frequency, density and diversity of both the communities. Successful restoration of floristic diversity in mine spoil dump not only facilitated the natural process of speciation but also became a source of germ plasm of various species. It improved the environmental conditions of the local area, including the economical aspects and elimination or reduction of potential threats to the environment. Restoration programme by plant-animal interaction is more likely to support and strengthen ecosystem resilience. Re-vegetation facilitated the development of microbial population, which is fundamental for maintaining the soil quality by mediating the processes of organic matter turnover and nutrient cycling. The ecologically restored areas have finally turned normal functioning dense forest areas that will support food chains with resilience to natural disturbances, self-sustaining and with the full biodiversity.

Results of this study suggest that mining sites can be recovered and converted into carbon sinks, if appropriate management strategies are adopted.

DRAFT EIA NOTIFICATION 2020

The Ministry of Environment, Forest & Climate Change (MoEFCC) had published the Draft EIA Notification 2020 on its website on 12 March 2020 and invited comments from the general public within 60 days. However, a gazette notification was later published on 23 March 2020. The deadline for comments has now been extended till 30 June 2020 by the MoEFCC. The draft can be read on environment ministry's Parivesh website.

EIA was initially introduced in India for river valley projects during the 1970's. The process only got streamlined after the Rio declaration in the year 1992 which laid down principles for undertaking EIA for proposed activities likely to have a significant impact on the Environment, also focusing on the inclusiveness of effective public participation in decision making process. In the year 1994 the first legislation on EIA was brought into effect which made Environment Clearance mandatory for 32 categories of developmental projects. This was later replaced with the EIA notification 2006 which provides a more detailed and comprehensive procedure for the projects to obtain Environment Clearance. The draft of the Environment Impact Assessment (EIA) notification 2020 proposes to supersede the existing regulations of EIA notification 2006 that regulates the environment clearance given by the national government for projects such as dams, mining, thermal power plants, infrastructure projects like highways, ports, airport and big construction projects. According to the government, the new notification is being brought in order to make the process more transparent and expedient by the implementation of an online system, further delegation, rationalisation and standardisation of the process. The reason draft EIA 2020 is being seen as important development is because it proposes a number of relaxations for various projects which have violated the EIA 2006 norms and extends the validity of environmental clearance in various sectors by several years. Below are some of salient points of the draft notification which have direct impact on BCCL mining operations:

- **Post-Facto Approval with Penalty:** The new draft allows for post-facto approval for projects. It means that the clearances for projects can be awarded even if they have started construction or have been running phase without securing environmental clearances. The draft states that violations can be reported suo moto by the project proponent, by any government authority or found by the committee appraising such projects. The appraisal committee will assess whether the construction or expansion carried out in violation of the norms can "run sustainably" with "environmental safeguards." Those that will be regularised will have to pay a late fee for violating norms.
- **Validity Extension of EC:** The draft increases the validity of the environment clearances. The draft provides environment clearance validity for 50 years for mining projects, against 30 years in the present notification.
- **Compliance Report:** Project proponents will have to submit environment clearance compliance reports once a year against every six months in the current system. The draft also states that no fresh studies by EAC should be asked for unless "new facts" come to the notice and it becomes "inevitable" to seek additional studies.
- **Public Consultation Process:** The draft notification provides for a reduction of the time period from 30 days to 20 days for the public to submit their responses during a public hearing for any application seeking environmental clearance.
- The 2020 draft notification has a clause dedicated to definitions to several terms related to EIA. It may be beneficial in the sense that it consolidates the EIA rules and has the potential of alleviating some ambiguity in the present law.

Further a detailed comparative table is listed below for better understanding of Draft EIA notification provisions:

COMPARITIVE STUDY OF EIA 2006 Vs DRAFT EIA 2020 NOTIFICATION

POINTS	EIA 2006 notification	Draft EIA 2020 notification																																																
VIOLATION	Any contravention of provisions of EIA 2006 amounts the violation of EPA 1986	1. in case of the suo moto: 1.5 times the ecological damage assessed and economic benefit derived due to applications 2. by Regulatory authority: 2 times the ecological damage assessed and economic benefit derived																																																
In case Violation above, late fees will be	would attract penal action u/d the EPA 1986.	1. On cognizance of violation through suo moto application: Rs. 5,000/ day for Category ‘A’ projects. 2. On cognizance of violation reporting by any Government Authority or if any, by the Regulatory Authority: Rs. 10,000/day for cat. ‘A’ project																																																
EC VALIDITY	For mining up to 30 years.	maximum of 50 years; or up to the period of validity of mining lease; whichever is earlier																																																
PH timeline	Within 45 days of a request to the effect from the applicant.	within 40 days																																																
PH exemptions	Upto 40% enhancement in capacity - No PH (official memorandum of 2015)	<table><tr><td>Intended increase in production capacity through modernization</td><td>Application in form through online portal</td><td>Requirement of Scoping</td><td>Requirement of revised EIA report</td><td>Requirement of revised EMP</td><td>Whether refer to Appraisal Committee</td><td>Requirement of Public Consultation</td></tr><tr><td>Modernization without increase in the production</td><td>Form-2</td><td>NO</td><td>NO</td><td>NO</td><td>NO</td><td>NO</td></tr><tr><td>Up to 10 %</td><td>Form-2</td><td>NO</td><td>NO</td><td>Yes</td><td>NO</td><td>NO</td></tr><tr><td>10%-25%</td><td>Form-2</td><td>NO</td><td>NO</td><td>Yes</td><td>Yes</td><td>NO</td></tr><tr><td>25%-50%</td><td>Form-2</td><td>NO</td><td>Yes</td><td>Yes</td><td>Yes</td><td>NO</td></tr><tr><td>>50%</td><td>Form-1</td><td>Yes</td><td>Yes</td><td>Yes</td><td>Yes</td><td>Yes</td></tr></table>							Intended increase in production capacity through modernization	Application in form through online portal	Requirement of Scoping	Requirement of revised EIA report	Requirement of revised EMP	Whether refer to Appraisal Committee	Requirement of Public Consultation	Modernization without increase in the production	Form-2	NO	NO	NO	NO	NO	Up to 10 %	Form-2	NO	NO	Yes	NO	NO	10%-25%	Form-2	NO	NO	Yes	Yes	NO	25%-50%	Form-2	NO	Yes	Yes	Yes	NO	>50%	Form-1	Yes	Yes	Yes	Yes	Yes
		Intended increase in production capacity through modernization	Application in form through online portal	Requirement of Scoping	Requirement of revised EIA report	Requirement of revised EMP	Whether refer to Appraisal Committee	Requirement of Public Consultation																																										
		Modernization without increase in the production	Form-2	NO	NO	NO	NO	NO																																										
		Up to 10 %	Form-2	NO	NO	Yes	NO	NO																																										
		10%-25%	Form-2	NO	NO	Yes	Yes	NO																																										
		25%-50%	Form-2	NO	Yes	Yes	Yes	NO																																										
>50%	Form-1	Yes	Yes	Yes	Yes	Yes																																												
EC compliance report	Six monthly compliance reports.	Annually by 30th June.																																																
Non submission of report	No late fee	Late fee for cat. A project:- Rs. 2,500/-																																																
Bank guarantee	No such provision	Requirement of submission of a bank guarantee valid for five years with the SPCB or UTPCC.																																																
Dealing of Non-compliances of conditions of prior-EC	No such provision of committee formulation	Category “A” projects shall be referred to the Expert Committee constituted for the purpose by the Ministry, at central level.																																																

Since such a amendment takes place in a very long time, it is important to submit feedback and comments for betterment of law making. The deadline for comments has now been extended till 30 June 2020 by the MoEFCC. The draft can be read on environment ministry's Parivesh website.

FOREST CLEARANCE PROCESS FOR COAL MINING PROJECTS

Documents/ details required for submission of Forest Clearance application:

- Authorization letter
- Cost benefit analysis
- Justification for locating the project in the forest land
- Authenticated Land schedule (Schedule of notified forest land & jungle jhadi attested by Circle Office)
- Undertaking of NPV payment
- Undertaking of CA payment
- Mouza plan (1:50,000)
- NoC for GMJJ (Jungle Jhadi) land from DC
- Certificate under FRA 2006 obtained from DC & Gram Sabha Proceedings
- Tree Enumeration list
- Geo-reference map (DGPS map)
- Toposheet (1:50,000 scale)
- Village-wise & component wise breakup of the land
- KML file & DGPS map of CA land
- KML file & DGPS map of forest land, mining lease boundary also showing land use
- Certificate of bare minimum use of forest land
- Undertaking for compliance of conditions stipulated by State Government/Forest Deptt.)
- Employment likely to be generated
- Displacement of People due to the project
- Status of Environmental Clearance
- Status of Wildlife Clearance (if applicable)
- Mining Details (Details of mineral concession & mining plan)
- Surface Plan
- Details of bore holes drilled for prospecting
- Estimated Reserve along with accuracy and confidence level (in forest & Non-forest land
- Details of approval under the Forest(Conservation) Act,1980 obtained for undertaking prospecting activities in the forest land located in the mining lease.

Type of Forms for obtaining Forest Clearance:

- Form A: For allocation of fresh forest land
- Form B: For renewal of lease
- Form C: For prospecting of minerals

Process of grant of Forest Clearance

- Registration of user Agency in Parivesh Portal (<https://parivesh.nic.in>)
- Submission of Part I of online application (Form A /Form B) in the portal (PARIVESH)
- After examining the completeness of the proposal, Nodal Officer/ PCCF generates online acknowledgement slip regarding acceptance of the proposal and submission of hard copies of the proposal to concerned DFO (Eight sets) & DC (one set).
- Signed copy of acknowledgement uploaded in the portal by user agency after submission of hard copies of the proposal to concerned DFO & DC.

- Proposal is forwarded online by the Nodal Officer to DFO. DFO conducts site inspection and fill part II of the application and forward the proposal along with site inspection report & recommendation to CF.
- Part III of the application will be filled by CF, if forest area > 40 Ha then site inspection is done by CF. The proposal along with site inspection report and recommendation is forwarded to Nodal Officer.
- Nodal Officer/PCCF fills Part IV and recommend & forward the proposal to State Government.
- State Government fill Part-V of Form-A on the portal along with his/her recommendation. When, State Secretary uploads his/her recommendation on the portal. Proposal details are forwarded automatically to concerned Regional Office or Head Office, Delhi as per the flow defined in the system.
- After approval from state government, the proposal is forwarded to:
- Regional Office, MoEF&CC (if Area of forest land < 40 Ha & all linear projects irrespective of area of forest land) /
- MoEF&CC, Head Office, New Delhi (if Area of forest land >40 Ha)
- After approval from state government, the proposal is forwarded to RO, MoEF&CC (if Area of forest land <40 Ha & all linear projects irrespective of area of forest land)/ forwarded to MoEF&CC, HO, New Delhi (if Area of forest land >40 Ha)
- REC/FAC conducted by MoEF&CC to discuss the proposal
- Grant of Stage I approval by MoEF&CC
- Demand note regarding NPV, CA & other charges raised by CF/DFO against diversion of forest land.
- Payment to be made online in CAMPA account by User Agency and submission of compliance report of Stage I conditions to DFO.
- DFO scrutinizes the compliance report of Stage I, recommends & forward the same to CF.
- CF scrutinizes the compliance report of Stage I, recommends & forward the same to Nodal Officer/PCCF.
- Nodal Officer scrutinizes the compliance report of Stage I, recommends for final approval to MoEF&CC.
- MoEF&CC scrutinizes the compliance report of Stage I and grants final approval i.e Stage II FC.
- Compliance Report of Stage II FC is submitted by User Agency to DFO.
- Letter for release of forest land is issued by State Government.
- Letter for handover of forest land to user agency is issued by State Forest Department (DFO).
- Note:
- RO conducts SAG/REC meetings for the proposals related with diversion of forest land up to 5 Ha (Mining and regularization of encroachments only) and all other projects related with diversion of forest land from 5 to 40 Ha.
- All mining, Hydel and regularization of encroachment proposals (0-40 Ha) along with recommendation of SAG/REC are forwarded to RO (HQ), Delhi for the approval of Competent Authority of Ministry of Environment, Forests & Climate Change.
- The fates of other proposals are decided at RO level only. Regional Office (HQ), Delhi can view the proposal and recommendations of DFO, CF/CCF, Nodal Officer, State Secretary and Regional Office after logging in to portal and can take print out (if needed) of the entire details and then process it for the approval of the Competent Authority of the MoEF&CC.
- HO (Delhi) can view the proposal and recommendations of DFO, CF/CCF, Nodal Officer, State Secretary and Regional Office after logging in to portal and can take print out (if needed) of the entire details and then conducts FAC meetings.

- HO may ask Regional Office to upload site inspection reports in cases in which area is more than 100 Ha. FAC recommendations (along with decision of Competent Authority) and agenda and minutes of the meeting are uploaded on portal.
- Automatic mailer notifications will be triggered for each and every transaction committed in the PARIVESH System.
- The status of proposal will be updated at each transaction and the same would be reflected automatically in the dashboard of the User's and reports available in public domain.

Timeline (in days) for processing of Forest Clearance proposals at State Level:

Level	5 Ha	5 to 40 Ha*	40 to 100 Ha	More than 100 Ha
Nodal Officer	10	10	10	10
DCF/DFO	30	30	45	60
District Collector (FRA)	-	-	-	-
CF	10	10	30	30
Nodal Officer/PCCF	10	20	25	30
State Government	30	30	30	30
Transit Period	20	20	20	20
Total	110	120	160	180

*Including the proposals seeking diversion of forest land upto 5 Hectares for mining and regularization of Encroachments.

Timeline (in days) for processing of Forest Clearance proposals at MoEF&CC level:

Activity	5 Ha	5 to 40 Ha*	40 to 100 Ha	More than 100 Ha
Pre Inspection by MoEFCC/RO to examine completeness	5	5	10	10
Site Inspection by RO	-	-	-	45
FAC	-	-	30	30
REC	-	30	-	-
Approval by Competent Authority (CA)	20	30	30	30
Communication of approval of CA	5	5	5	5
Transit Period	-	5	-	10
Total	30	75	75	130

*Including the proposals seeking diversion of forest land upto 5 Hectares for mining and regularization of Encroachments.

ECO-MINING TOURISM PROGRAMME OF BCCL

BCCL has taken necessary steps to remediate the degraded mined out lands and OB dumps in its mining area to reduce the impacts of the environmental pollution and transform the degraded mined out areas in ecologically restored forest like areas through the ecological restoration method. Since 2011, BCCL has adopted ecological restoration for restoration, stabilization and establishment of biodiversity over the degraded mined out areas and OB dumps being generated due to the mining activities in JCF. Ecological restoration has helped in establishment of the natural forest comprising of the native species of grasses, bushes and trees of the region within a short period of 5-7 years. This method not only helps in formation of the natural forest but also helps in establishment of biodiversity of flora as well as fauna of the region and ecological food chains. This helps in development of the habitat for the wildlife of the region over these degraded mined out areas. Since 2016-17, BCCL has been promoting the Eco-mining tourism in its mines and ecological restoration sites /Eco-Parks with an aim to bridge the gap between the company and other stakeholders and creating a positive image of the company by showcasing the mining activities and ecological restoration sites /Eco-Parks, to the students as well as residents of Dhanbad so as to enhance their knowledge about mining and reclamation works being done by BCCL for the improvement in Environment. Under this programme, every year various schools, colleges and professional institutes have been visiting the mines as well as eco-restoration sites and eco-parks to know about the mining and the suitable method to restore these degraded lands into natural forests of the region.

Like every year, in 2019-20 also, BCCL has organized the eco-tourism visit of different schools and colleges of Dhanbad to its mines and eco-restoration/eco-parks. Under the Eco-mining tourism program students from Delhi Public School, Dhanbad, DAV Moonidih, Dhanbad Public School, Dhanbad, Guru Gobind Singh Public School, Dhanbad, Symbiosis Public School, Dhanbad & IIT- ISM Dhanbad visited the mines as well as eco-restoration sites/eco-parks of BCCL for enhancing their knowledge about mining and reclamation works being done in BCCL. During visit to mines students were excited to see the mines and huge machineries that are being used in the mining operations. Visit to the mines made the students curious and they were having various queries which were explained by the mine management. Students enjoy the beauty and serenity of the eco-restoration sites/eco-parks. During the visits, students were also explained about the method of reclamation being followed in BCCL. When they were told that the site was once a mined out degraded area after the completion of the mining operation they were amazed and wondered that such degraded mined which they have seen in the mine could be transformed into such lush green area. Students were very keen to know about the process of restoration while seeing the eco-restoration sites and BCCL officials explained the students about ecological restoration method being adopted by BCCL for transforming such degraded mined out areas to forests with native flora and ultimately establishing the biodiversity, fauna and food chains similar to the natural forest that exists in this region satisfying to the queries raised by the young lads regarding mining and eco-restoration process. Some have the queries that Will all the degraded land seen around will be developed in such forms, to which it has been replied that similar kind of work is being carried out in all areas of BCCL for restoration of degraded mined out land.

The students, faculties as well as local visitors opine that these sites prove to be very good picnic spot especially for those who love to be close to the nature amidst of the mining activities being carried out in the coalfield. With a view of inculcating the importance of environment, BCCL always is making efforts to bring these young minds amidst the nature. These eco-tourism visits are aimed to bring the knowledge and works of BCCL among the young students and may help in inculcating the importance of environment and its conservation methodology and the ways in which industry could be made sustainable, environment friendly and even benefit the local communities.

The students as well as teachers thanked BCCL management for making them able to see the works being carried out by BCCL in the field of mining as well as restoration and they said that such educational tours are very much beneficial and full of knowledge for the students.



Eco-tourism cum Excursion visit of the Guru Govind Singh Public School,
Dhanbad to GKKC Eco Park, Kusunda Area on 05.12.19



Eco-tourism cum Excursion visit of DAV Public School, Moonidih to Murulidih
Eco-restoration site, W J Area on 07.12.19



Eco-tourism visit of IIT-ISM Dhanbad to Gokul Eco-Cultural Park, Lodna Area on 12.12.2019



Eco-tourism cum Excursion visit of Symbiosis Public School, to Parasnath Udyaan, Katras Area on 09.12.19



Eco-tourism cum Excursion visit of Symbiosis Public School, to Parasnath Udyaan, Katras Area on 09.12.19

A WAY TOWARDS THE COMPANY-WIDE INTEGRATED MANAGEMENT SYSTEM IN BCCL

An integrated management system is one that simultaneously handles the requirements of ISO 9001, the quality management system standard; and ISO 14001, the environmental management system standard, both from the International Organization for Standardization (ISO); and OHSAS 18001, the Occupational Health and Safety Assessment Specification. ISO 45001 Occupational Health & Safety Management System was intentionally developed to be compatible with the ISO 9001 (Quality) and ISO 14001 (Environmental) management systems standards for easier integration of quality, environmental and occupational health & safety management systems by organizations. An Integrated Management System (or “IMS”) can benefit organization through increased efficiency and effectiveness, and cost reductions while minimizing the disruption caused by several external audits. It also shows company's commitment to increased performance, employee and customer satisfaction, and continuous improvement.

ISO 9001 is the international standard for a quality management system (“QMS”): A quality management system (QMS) is a set of policies, processes and procedures required for planning and execution (production/development/service) in the core business area of an organization which will ultimately provide products and services that consistently meet the requirements and expectations of customers and other relevant interested parties in the most efficient manner possible. A QMS integrates the various internal processes within the organization and intends to provide a process approach for project execution that will lead to improved business performance. In order to be certified to the ISO 9001 standard, a company must follow the requirements set forth in the ISO 9001 Standard. The standard is used by organizations to demonstrate their ability to consistently provide products and services that meet customer and regulatory requirements and to demonstrate continuous improvement.

ISO 14001, the environmental management system standard: a systematic framework to manage the immediate and long term environmental impacts of an organisation’s products, services and processes. By completing ISO 14001 certification, an organisation can assure stakeholders that company's environmental management system meets international industry specific environmental standards. EMS provides a framework for best practice to help organisations such as Minimize their environmental footprint Diminish the risk of pollution incidents Provide operational improvements, Ensure compliance with relevant environmental legislation, and Develop their business in a sustainable manner



OHSAS 18001, the Occupational Health and Safety Assessment Specification: An international standard which provides a framework to identify, control and decrease the risks associated with health and safety within the workplace. Implementing the standard will send a clear signal to company's stakeholders that view their employee’s health and safety as a priority within the

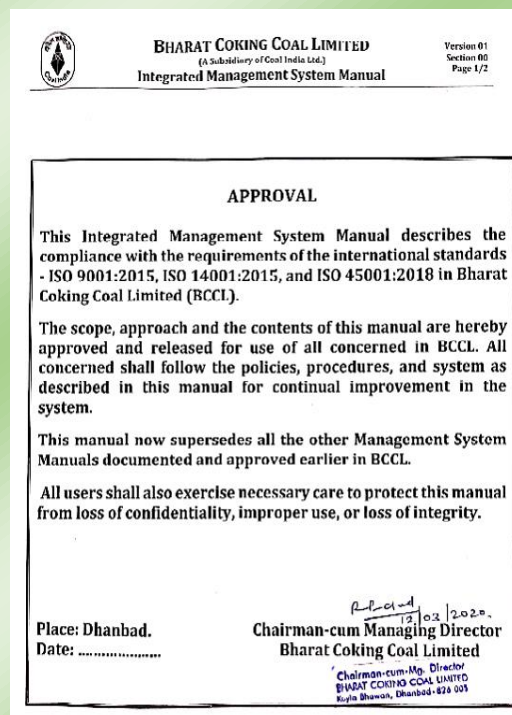
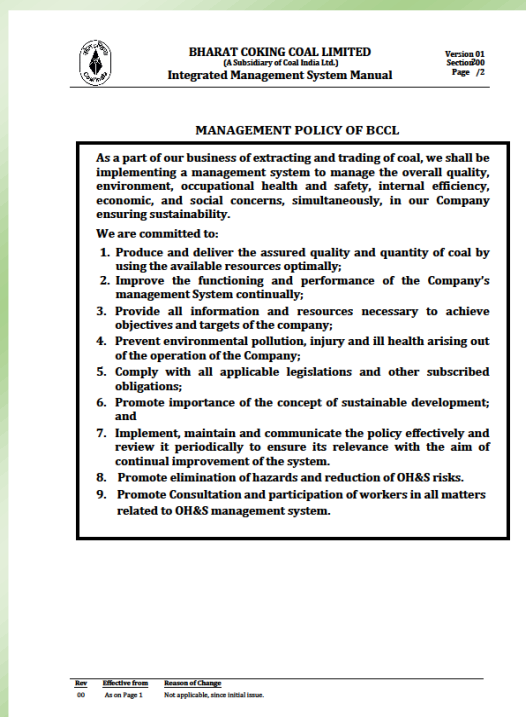
organisation. It ensures that a rigorous health and safety policy is in place which protects employees against possible occupational risks and reduces the likelihood of accidents in the workplace. benefits of OHSAS 18001 are Improves corporate image and credibility among stakeholders, regulators, customers, prospective clients and the public, Adoption of international best practice in relation to risk management, Ensures health and well-being of employees, sub-contractors and the public, Minimisation of liability of employers through adoption of proactive rather than reactive controls, Ensures legislative awareness and compliance, Reduces accident and incident rates by reducing or eliminating workplace hazards, and Improves the incident investigation process.

Companywide IMS (Integrated Management System) manual for compliance of the international standards ISO 9001 : 2015, ISO 14001:2015 and ISO 45001: 2018 has been prepared through CMPDI, Ranchi and the same has been approved by CMD, BCCL.

Two days training program on Basic awareness of ISO 9001: 2015, ISO 14001:2015 and ISO 45001: 2018 has been conducted for employees of BCCL.



Two Days training programme on IMS at Kalyan Bhawan, Jagjeevan Nagar



MINE CLOSURE PLAN, GUIDELINES AND ITS AMENDMENTS

Mine closure planning involves planning effectively for the after-mining landscape – all activities required before, during, and after the operating life of a mine that are needed to produce an acceptable landscape economically. Closure performance refers to the activities near and after mine closure and how well activities listed in the closure plan are carried out.

The mining industry has learned that plans for closure of mine, plus post-closure use of the land, must be presented to stakeholders as part of a successful planning process and to obtain the “social license” from the community. Historic mining operations that were abandoned without closure methods that mitigated physical and environmental impacts have negatively influenced the ability of mining firms to obtain a social license. The new modern mine will not create the same impact during as the abandoned historic operations for which the operation and closure has to be tackled efficiently during the initial steps of the exploration program. The closure planning begins during project conception.

The objectives of the mine closure planning are to allow productive and sustainable after-use of the site that is acceptable to the mine owner and the regulatory authority; protect public health and safety; eliminate environmental damage and thereby encourage environmental sustainability; minimize adverse socio-economic impacts of mining activities; protect the flora and fauna of the area affected by the mining and the Effective use of the assets created during the course of mining. Mine closure plans will have two components viz. i) progressive or concurrent mine closure plan, and ii) final mine closure plan. Progressive mine closure plan would include various land use activities to be done continuously and sequentially during the entire period of mining operation, whereas the final mine closure activities would start towards the end of mine life, and may continue even after the reserves are exhausted and/or mining is discontinued till the mining area is restored to an acceptable level. The mine closure details of the mining plan are being oriented towards the restoration of the land to its original condition as far as practicable.

In India, the Guideline for preparation of Mine closure plan was issued by Ministry of Coal on 27th August 2009 which was later on modified on 7th January 2013. In BCCL, a total of 56 Mine Closure Plans have been prepared on the basis of Ministry of Coal Guideline for preparation of mine closure plan dated 7th January 2013.

Afterwards, guidelines for preparation of mining plan and mine closure plan was amended by Ministry of coal on the 16th of December 2019 and all coal (including lignite) mining operation in India is henceforth to be governed by this guideline. Few of the changes made to the provision in guidelines for preparation of mine closure plan 2013 and 2019 issued by the Ministry of Coal which are:-

S.N .	Head	Provision in guidelines dated 16 th December 2019	Provision in guidelines dated 7 th January 2013
1.	Clause no. 2.6 Escrow Account Calculation	The closure cost for opencast mine based on base year 1.4.2019 is Rs. 9 lakhs per hectare of project area and Rs. 1.5 Lakhs per hectare of project area for underground mine.	The closure cost for opencast mine was Rs. 6 lakhs per hectare of project area and Rs. 1 Lakhs per hectare of project area for underground mine.
2.	Clause no. 2.3, 2.12 Impact of 1. Changing from 80% to 50% Reimbursement from Escrow Account during Progressive Closure. 2. Wherever backfilling of mine void is carried out as regular mining operation, it shall not be included in the list of Progressive Mine Closure Activities.	As per clause 2.12: “...The amount released should be equal to expenditure incurred on progressive mine closure in past 5 years or 50% whichever is less.” As per clause 2.3: “...Where Backfilling of the mine void is carried out as regular mining operation, it shall not be included in the list of Progressive mine closure activities. However, in case, Backfilling of the mine void is being carried out specifically for closure of the mine, the same shall be included in the list of activities to be taken up for mine closure.”	The amount released should be equal to expenditure incurred on progressive mine closure in past 5 years or 80% whichever is less. Internal dumping / Backfilling were wholly considered as a mine closure activity. Further, the cost of internal dumping excluding cost of drilling and blasting was considered as a financial proof of Completion of activity. As per guidelines dated 07 th January 2013 and subsequent orders from CCO, 71% of the amount Available in Escrow Account was eligible for claim under this head.

Progressive reimbursement helps Coal Companies like BCCL etc. to execute Mine Closure Activities with stimulus without putting extra financial burden on accounts. Thus, it leads to a win-win situation for the spirit of Mine Closure and Coal Companies both.

The Financial Impact of changing from 80% to 50% reimbursement from Escrow Account combined with nullifying the eligibility of progressive OB backfilling as a Mine Closure Activity will be calamitous and will have huge impact on the cash inflow of the Mining Companies like BCCL etc. which may even lead to a liquidity crunch in extreme cases.

VISIT OF THE SHRI PRAMOD AGRAWAL, CHAIRMAN, COAL INDIA LIMITED TO NT-ST MINES AND GOKUL ECO-CULTURAL PARK

Shri Pramod Agrawal, Chairman, Coal India Limited visited NT-ST mines of BCCL and was accompanied by Shri PM Prasad, CMD, BCCL for inspecting the operations and mine fire dealing in BCCL. He was astounded to see the plight of the mine fire and applauded the courage of the officials and workers of BCCL for working in such harsh conditions and extinguishing the mine fires by directly digging out the firey coal. He further enquired about reclamation activities taken up on degraded mined out area after the quenching of mine fire. He was informed that mined out area will be reclaimed by physical reclamation followed by restoration through ecological restoration, in similar manner as the land over which Gokul Eco-cultural Park has been established adjoining the NT-ST mine of Lodna Area.

After visiting the mine, Chairman visited the adjoining Gokul eco-cultural Park and was appraised about the reclamation and restoration activities being carried out over the degraded mined out Area. Chairman, CIL and Shri PM Prasad, CMD, BCCL planted the plants at the park to commemorate the visit. He appreciated the efforts of BCCL in transforming the mine fire inflicted degraded mined area in to the lush green Park and restored area. He also appreciated that such beautiful park can be developed over the once degraded mined areas and be used for the recreational and rejuvenation activities for the local communities and establishment of the ecology and biodiversity.



Plantation done by Shri Pramod Agrawal, Chairman, Coal India Limited at Gokul eco-cultural Park, NT-ST-JG mine, Lodna Area



Plantation done by Shri P M Prasad, CMD, BCCL at Gokul eco-cultural Park, NT-ST-JG mine, Lodna Area

IMPACT OF COVID 19 LOCKDOWN ON ENVIRONMENT WORLD-WIDE BASED ON VARIOUS MEDIA REPORTS

The COVID-19 pandemic has caused industrial activity to shut down and cancelled flights and other journeys, slashing greenhouse gas emissions and air pollution around the world. If there is something positive to take from this terrible crisis, it could be that it's offered a taste of the air we might breathe in a low-carbon future.

The World Health Organization (WHO) estimates that about 3 million people die each year from ailments caused by air pollution, and that more than 80% of people living in urban areas are exposed to air quality levels that exceed safe limits.

Air pollution has dropped to unprecedented levels across the world as major cities and countries impose lockdown measures to curb the spread of the coronavirus. As humans stay inside, the environment is temporarily changing: wild animals are roaming the streets and some typically smog-filled skies are clear. People in Punjab, India say they can see the snow peaks of the Himalayas, a view that for decades has been blocked by air pollution. New Delhi alone has recorded a 60% drop in fine particulate matter, the world's deadliest air pollutant. Los Angeles, the traffic-congested city with some of the highest smog levels in the U.S., has seen nitrogen levels drop significantly and rush-hour traffic essentially vanish. Despite these rare glimpses of natural beauty like snow-crested mountains and clearer skylines, scientists warn against celebrating any short-term benefits from the decline in air pollution since levels will rebound once global restrictions lift.



Langtang range seen from Kathmandu

The Langtang range is visible from Kathmandu during the sixth day the nationwide coronavirus lockdown in Nepal on March 29. The restrictions have decreased air pollution in Kathmandu Valley, which consistently ranks among the most polluted areas in the world.



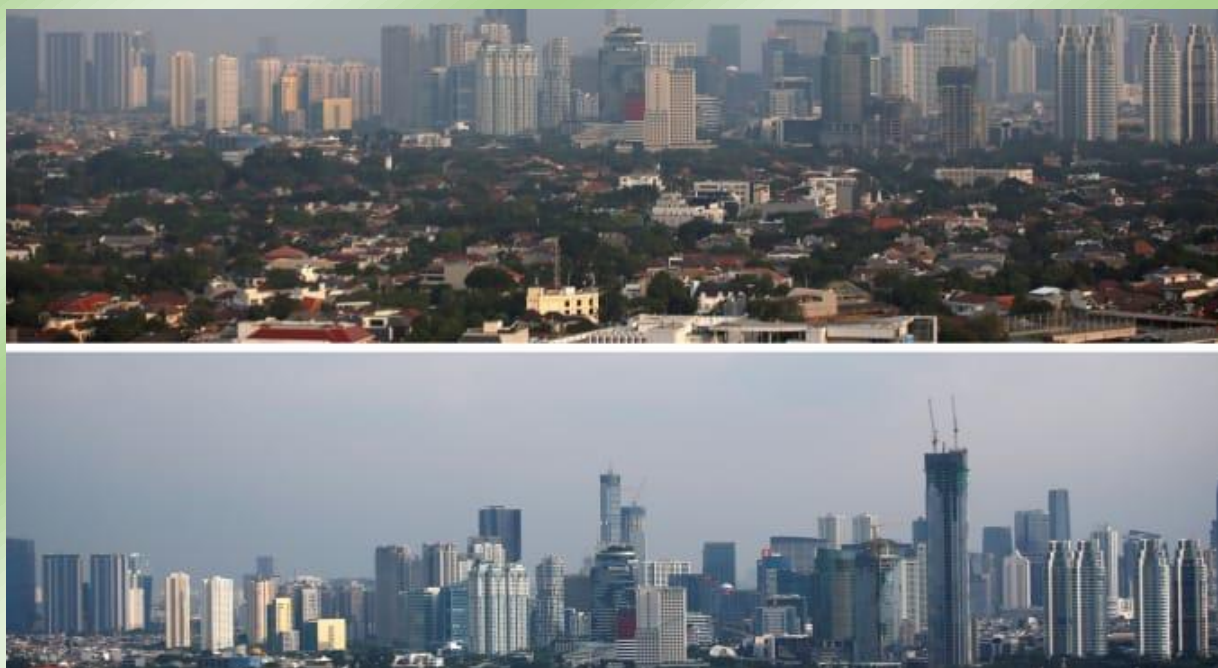
India Gate war memorial in New Delhi

The top picture shows the India Gate war memorial on October 17, 2019, months before the nationwide lockdown. The bottom picture shows the memorial after air pollution levels began to drop during the lockdown in New Delhi on April 8.



Downtown Los Angeles with clear blue skies

Smog has cleared up over downtown Los Angeles during the coronavirus pandemic on April 17. The skyline is usually obscured by air pollution, but nitrogen levels have plummeted in the city since the beginning of quarantine.



Less smog in Jakarta

The top picture shows a typical view of high-rise buildings covered by smog in the Indonesian capital on July 4, 2019. The bottom picture shows the same view of Jakarta during the pandemic on April 16.



The Eiffel Tower is seen clearly from the Parisian suburb of Saint-Cloud on April 22

CONTRIBUTION OF BCCL IN TACKLING COVID-19 SITUATION IN DHANBAD

The world is going through one of the toughest times in the history of mankind due to the outbreak of COVID-19 pandemic. This pandemic has brought the world to stand still and has heavily impacted, even day to day activities across the globe. One of the most recommended steps taken by many countries is to observe the complete lock down to prevent the spread of the pandemic in spite of huge impact on economic activities. Due to the outbreak of this pandemic, even the slump in global economic growth is forecasted by the expert organizations.

India, second most populous country with about 1.3 billion population and 2% of the land with many constraints including the vast diversity in socio-economic conditions of the population, has also been impacted by this disaster. India is also under the lockdown since May 24 and since then India is under 4 continuous lockdown till May 31 to prevent the spread and end this pandemic in the country. This pandemic has particularly adversely impacted the poor, daily workers and lower levels of the society which barely meets their two ends requirements, as the lock down has shut most of the economic activities in the country except the essential services.

In these hard times, governments are trying hard and leaving no stone unturned to end this pandemic, protect the people and help the needy ones. In these harsh times, government organizations, corporate houses and individuals are contributing in this fight. BCCL has also come forward and extended all possible help in this fight through various means. BCCL has contributed to government by providing funds, providing resources for sanitization drives and treatment of COVID-19 patients and helping general public directly. The glimpses of the few efforts being made by BCCL during this period are as follows:

Awareness Drives: Awareness regarding Corona virus and COVID-19 has been made through campaigning through wall painting, loud speaker announcements and social media. Awareness regarding the prevention measures against this pandemic like regular hand washing, maintaining social distancing, covering face with face masks etc has been brought among the company employees and general public.



Sanitising the Surroundings: BCCL has procured 20 metric tonnes of bleaching powder under its CSR. Out of which, 12.5 MT of bleaching powder has been provided to Dhanbad Nagar Nigam for sanitation. Apart from this, BCCL has also carried out sanitization drives in areas around its mines.



Glimpse of the Sanitization Drives during the COVID-19 pandemic

Ration Kits Distribution: BCCL has also taken steps to provide the rations to the needy people in Dhanbad Districts. BCCL has till date distribute 24000 ration kits having essential day to day items to the needy people those who are daily earners and could not find any work due to ongoing nationwide lockdown.



Distribution of the Ration to the needy people in Dhanbad

Food to Needy People: BCCL Areas have also provided cooked food packets in the nearby populace to ease the burden on the needy/ daily wage labourers/ vulnerable section of the society. Till date, over 1,05,000 nos of cooked food packets have been distributed by the Areas in and around their operating area.



Distribution of the meals to the people in different Areas of BCCL

Distribution of the meals to the migrant workers in Shramik express trains: BCCL is also distributing food packets to the migrant workers travelling by special trains ‘Shramik Express’ for ferrying the migrant workers to their homes. Food packets are being distributed to the passengers of ‘Shramik Express’ passing through Dhanbad Junction.



Distribution of food packets to migrant workers travelling through Shramik Express

Distribution of Face Masks and Hand Sanitizer/ Hand Wash: In order to prevent the spread of global pandemic COVID-19, BCCL has distributed face masks and hand wash to its Areas and HQs to be distributed amongst the populace in and around the Areas and HQs. Accordingly, 7000 nos. of masks & 7000 nos. of liquid hand wash are being distributed amongst peripheral populace.

Medical Assistance: BCCL has also come forward to provide its medical infrastructure for the treatment of the COVID-19 cases in Dhanbad. The following measures have been made:

- BCCL's Central hospital has been earmarked as COVID-19 hospital and has 100 bed capacity for the treatment of COVID-19.
- 20 beds have been reserved for the quarantine of COVID-19 suspects in Regional Hospital, Baghmara.
- 30 beds have been reserved for the quarantine of COVID-19 suspects in Regional Hospital, Jealgora.
- Arrangement of the PPE kits for the doctors engaged in the treatment of the COVID-19 patients.



Discharge of COVID-19 patients after treated successfully at Central Hospital, BCCL

Financial Contributions made to government/ Government Funds: Apart from directly helping general public and prevention of the spread of pandemic in BCCL command Area. BCCL has also directly contributed in the government funds so that the help could reach to more people in these harsh times. The following contributions have been made by BCCL till date:

S N.	Project	Cost (₹)
1.	To Dhanbad District Administration to tackle the various aspects of COVID-2019	2 Crores
2.	To Dhanbad Police towards setting up Community Kitchen and support daily wage earners	40 Lakhs
3.	To Dhanbad District Administration for procurement of Fogging Machine and Sprayers	10 Lakhs
4.	Contribution of One day's salary of employees towards PM CARES Relief Fund	10.5 Crores

**AN INTERACTION WITH DR. V.K. SINHA, M.B.B.S, D.T.M & H,
F.I.A.M.S, CONSULTANT PHYSICIAN AND EX-C.M.O (MED. DEPT),
CENTRAL HOSPITAL, DHANBAD**



Dr. V.K. SINHA graduated from JLNMC, Bhagalpur in 1979 and post graduated in tropical medicine from Darbhanga medical college in 1989. He joined Coal India in 1982 (WCL, Nagpur area) and transferred to BCCL in 1984. He has served as senior physician at central hospital, Dhanbad in the department of medicine from 1993-2014. After serving coal India for 32 years, he superannuated from service in 2014 and since then has been practicing as consultant physician and serving the people of Dhanbad.

He is a life member of INDIAN MEDICAL ASSOCIATION and IMA-AMS (M.A.M.S). He has also been a member of ROYAL SOCIETY OF HEALTH, LONDON (U.K). He was awarded “FELLOWSHIP” by IMA Academy of medical specialties at the national convocation held at Kolkata in 2018. Currently, the whole world is fighting with a deadly disease “CORONA” and terms like social distancing, self-quarantine and pandemic are punctuating in household conversations and raising pertinent questions. He answers in an open interview about the novel corona virus, SARS-CoV-2 which is given below:

1) Can you explain what this novel corona virus disease is?

The present corona virus disease or COVID-19 is an infectious disease caused by a newly discovered corona virus called NOVEL CORONA VIRUS or SARS COV -2 as named provisionally by WHO.

2) Can you tell about the history of corona virus?

Corona virus (first isolated in 1930) is a group of related RNA virus that causes disease in mammals and birds. In human beings, this virus causes respiratory tract infection that can range from mild (common cold) to lethal like severe acute respiratory syndrome and pneumonia. For example SARS COV identified as a cause of outbreak of severe acute respiratory syndrome (SARS) in 2002 while MERS COV identified as the cause of Middle East respiratory syndrome (MERS) in 2012.

3) Where did the disease COVID 19 originate?

The present SARS COV-2 has been identified as the cause of covid 19 pandemic and is widely suspected to originate from infected animals or bats in Wuhan, China and got transmitted to human accidentally. The first case was reported in Wuhan, china on

31/12/2019 and since then it has spread around the world. In India the first case was reported on the 30th of January 2020 from Kerala.

4) **Was there any concern/alert given by World Health Organization (WHO)?**

Initially WHO declared COVID19 as a Public health emergency of international concern (PHEIC) on 30/1/2019 and later a global pandemic on the 11th of March, 2020.

5) **How the disease transmits and spread in humans?**

COVID 19 spreads mainly during close contacts and by small droplets produced during coughing, sneezing and talking. During close contact (1-2 m or 3-6 ft), people catch the disease after breathing in contaminated droplets exhaled by infected people or if they settle in the nose or mouth of the people. When the contaminated droplets fall on the floor or surfaces, they remain infectious for a certain period. If people touch these contaminated surfaces and then their eyes, nose and mouth with unwashed hands then, corona virus gets transmitted to them.

6) **What is meant by incubation period? What is the incubation period of corona virus?**

Incubation period is the period between infection or exposure by pathogen and the onset of disease displaying the symptoms. In COVID19, the incubation period (IP) is 1 to 14 days (median: 6-7 days).

7) **What are the symptoms of COVID19?**

The most common symptoms are fever, cough, and shortness of breath. In some cases, symptoms like loss of smell, sore throat, muscle pain, wet cough, diarrhoea and abdominal pain can be seen. Most cases are mild or moderate severity and do not need hospitalization while some covid infection will lead to viral pneumonia and respiratory failure, kidney failure, blood clots etc.

8) **Who is the most vulnerable/high risk population to be affected by corona virus?**

The elderly people aged above 60, children below 10 years, pregnant ladies, persons suffering from chronic illness or diseases like diabetes, hypertension (high BP), chronic kidney disease, cancer patients, immune compromised patients are the most vulnerable cases due to their low immunity.

9) **Are health workers at risk from corona virus?**

Yes, they can be, as health care workers especially doctors, nurses, paramedic staff, ward boys, ambulance drivers come into direct contact with the patients more often than the general public.

10) **How is COVID19 diagnosed?**

Diagnosis of covid 19 is done by pathological tests that is :-

The First is VIRAL TEST- RtPCR (reverse transmission polymerase chain reaction) which is the standard method of diagnosis of active covid 19 by taking swab of back of nose and back of throat (nasopharyngeal swab) which is then tested for virus; this test tells you if you have a current infection or not.

The Second is ANTIBODY TEST-(IGM & IGG estimation) which tells you if you had a previous infection of corona virus. This test takes about one to three weeks after infection to make antibodies, and is done as screening test, which needs to be repeated. Chest x-ray and CT scan may be required in severe cases.

11) What is the treatment of this disease?

About 80% of cases do not need any specialized treatment and currently, there is no specific treatment of covid19. However, patients are treated by the guidelines given by WHO, CDC & ICMR. These are treatment of symptoms, Supportive care, Isolation of positive cases, Hospitalization for severe cases and by experimental measures like using anti-viral drugs like REMDESIVIR, OSELTAMIVIR (TAMIFLU), RETROVIR, anti malarial drug like HYDROXYCHLOROQUINE (HCQ) and anti parasitic drug like IVERMECTIN. Some antibiotics like AZITHROMYCIN, DOXYCYCLINE as well as VITAMIN C supplement has also been tried. PLASMA THERAPY treatment is also being tried by taking blood (plasma) from the recovered patients of covid 19 and transfused to active and severe cases. But, these treatments are given on experimental basis only. Severe patients especially who've developed pneumonia, respiratory failure and other complications need specialized treatment and are kept in intensive care unit (ICU) and put on oxygenation and ventilator etc.

12) Is there any vaccine available for COVID-19?

Currently, there is no vaccine available for the disease. However, many countries especially India, USA, Italy, China, Israel, U.K. are making full efforts to make a vaccine at the earliest. India is very close to develop a vaccine in near future with the help of ICMR, Biotechnical institutes, Serum Institute and Pharmaceutical companies and has reached at human trial stage.

13) How can we protect ourselves?

For personal protection, some measures are recommended like frequent hand washing with soap and water and use of alcohol based sanitizers, social (physical) distancing, covering coughs and sneezes with a tissue paper or inner elbow, keeping unwashed hands away from the face, use of three layer cotton mask and those who are at high risk like health workers are recommended to wear surgical mask, face shields, high filtration mask like N95 mask. One should do warm saline gargling and steam inhalation, which may kill corona virus in nasopharynx if present. Herbal drinks and regular YOGA, which help in boosting immunity system are also recommended. In addition, doctors, nurses and paramedics are recommended to wear Personal Protection Equipment (PPE).

14) How much time it takes to recover from corona disease?

The average recovery time for mild covid-19 cases is about 2 weeks and 3 to 6 weeks for severe and critical cases.

15) Can COVID19 be spread by flies or mosquitoes?

There is no such evidence of this type of spread.

16) Can you tell something about the statistics of COVID19?

As on 24/5/2020, the SARS COVID2 has resulted in more than 5.4 million infection world-wide and about than 3.44 Lakhs death cases. In India, the total cases are about 1.32 lakhs and the no. of death is about 3867, while more than 54000 have also recovered.

In Jharkhand, currently we have 350 positive cases and number of death is only four. In Dhanbad, the positive cases are 7 while the number of death is nil.

17) What are the measures taken by the government to combat COVID 19?

The central government has imposed nationwide lockdown which is ongoing in different phases. All districts have been classified into red, orange and green zones having varying levels of restrictions. Government has also issued advisory for mass diagnostic testing, surveillance and quarantine of suspected people to prevent further spread of disease.

18) Can you tell about the steps being taken at local level in Dhanbad?

Local administration in coordination with BCCL and Dhanbad Municipal Corporation has taken many important measures to contain the disease. Many quarantine centers /Isolation wards have been set up at PMCH, Dhanbad; Sadar hospital; SSLNT hospital; railway hospital, Polytechnics, Kaushal Vikas Kendra, Jharia; Regional hospitals of BCCL, resorts & guest houses. BCCL has converted its main hospital Central Hospital, Dhanbad into COVID19 hospital providing all required equipment and facilities.

BCCL is operating coal mining under strict regulations and measures like use of minimum work force, mandatory social distancing of 1.8 meter , use of mask & sanitizer, disinfection of mines & offices by bleaching spray, temperature check up by thermal scanner and also sanitization of surroundings of mining areas on mass scale. BCCL has also given about five MT Bleaching to Dhanbad Municipal Corporation who is also doing mass sanitization and cleanliness of roads and buildings of entire municipal areas with the help of its hard workers (SAFAI KARMI) through door-to-door services.

19) What are the challenges in combating the present corona disease?

Social distancing and movement of people are the major challenges. Further non-availability of specific antiviral drug and delay in making a proper and effective vaccine are the other constraints being faced at present.

20) What is your take home message to fight corona virus?

Follow the lockdown regulations and maintain social distancing strictly. In brief,

**“STAY HOME,
STAY SAFE, STAY HEALTHY”.**

हमारा फ़र्ज़....प्रकृति का उतारे ये क़र्ज़

सड़कें हुई अब खाली,
पड़ी घर पर कार है,
जैसे प्रकृति दे रही संदेश,
निर उसके सब बेकार है।

जहर रिसती फैक्ट्रियों को,
तुम जब-जब बसाओगे,
तो पीने का वह मिनरल वाटर,
तुम कहां से लाओगे!

उपजाऊ धरती मिली,
हमें पेट हमारी भरने को,
ना कि कोई बंगला गाड़ी,
उसके ऊपर धरने को।

प्रकृति का संतुलन बिगाड़,
क्यों जीव-जंतुओं को खा रहे,
अरे दुर्बुद्धि! अपना अंत देख,
अब क्यों पछता रहे

अरे! दुर्योधन की भांति मत अड़,
अब तो सच्चाई जान जा,
क़र्ज़ बड़ा है प्रकृति का,
समय रहते पहचान जा।

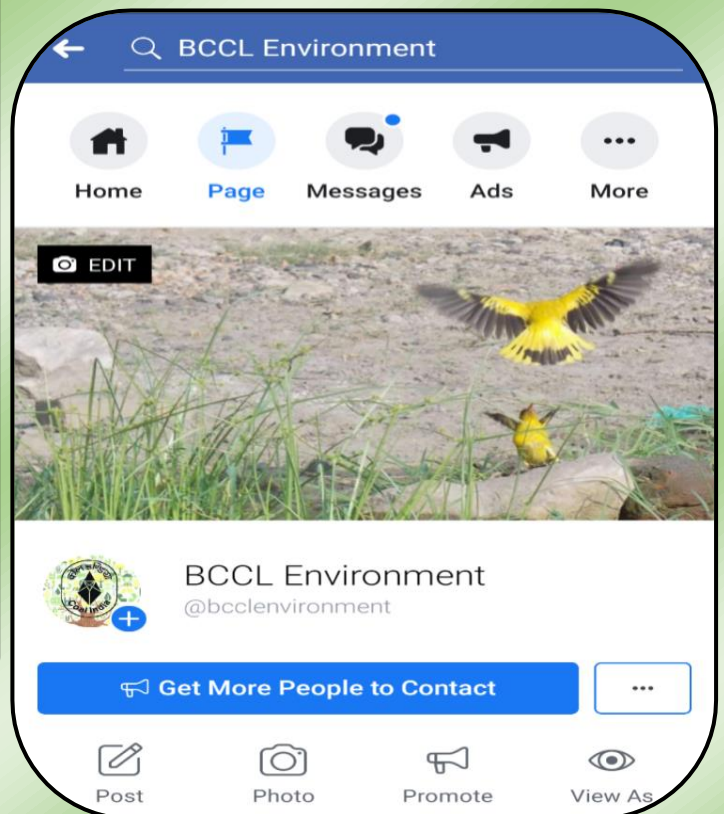
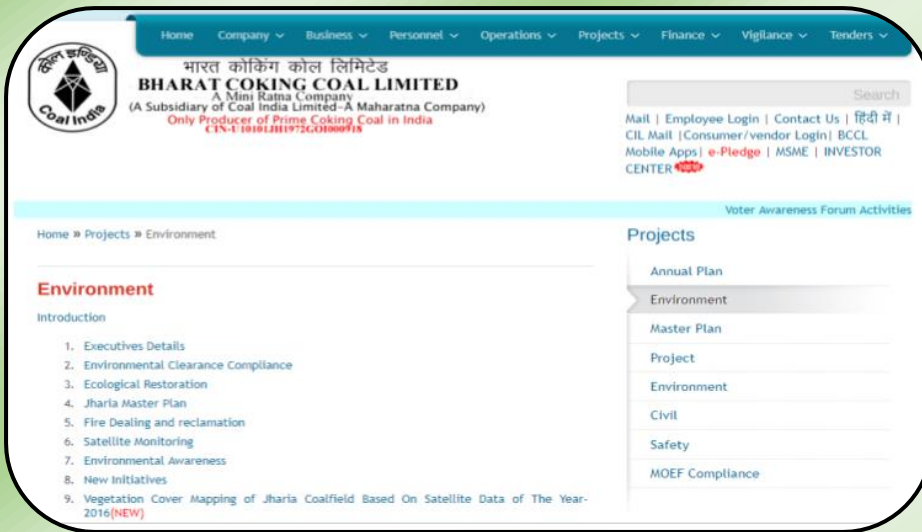
पर्यावरण के इस असंतुलन से,
क्षुब्ध पूरा संसार है,
कोरोना के अब मार से,
देख! पूरा विश्व बीमार है।

अरे जीने को जीवन में,
बस एक आस काफी है,
अन्न-जल काफी है,
वो स्वच्छ स्वास काफी है।

ऐशो-आराम की लालसा,
को तुम कब तक पालोगे,
प्रकृति को दूषित कर, देखना!
स्वयं को संकट में डालोगे।

आज फिर से उन चिड़ियों की,
चहचहाहट लौट आई है,
हवा अब नहीं है दूषित,
ना कहीं धुंध छाई है।

BCCL ENVIRONMENT IS ACCESSIBLE AT





पर्यावरण विभाग
भारत कोकिंग कोल लिमिटेड
एक मिनी रत्न कम्पनी
(कोल इंडिया लिमिटेड का एक अंग)
कोयला भवन, धनबाद-826005



The foods we eat, the air we breathe, the water we drink and the climate that makes our planet habitable all come from nature.

Yet, these are exceptional times in which nature is sending us a message:

**To care for ourselves we must care for nature.
It's time to wake up. To take notice. To raise our voices.**

It's time to build back better for People and Planet.

This World Environment Day, it's Time for Nature.

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MAIL YOUR SUGGESTIONS AND FEEDBACK TO – darpanpariyavarana@gmail.com

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