



Envision

CCL's Green Bulletin



CENTRAL COALFIELDS LIMITED

A Miniratna Company

**Darbhanga House
Ranchi-834001**

A cartoon illustration of a globe with continents in yellow and oceans in blue. Various animals and a person are depicted around the globe, representing biodiversity. On the left, a man in a yellow shirt holds a smartphone. Above him, a reindeer, a blue yeti-like creature, a brown bear, and a small cat are shown. On the right, a panda is climbing a tree, and a turtle is swimming in the water. At the bottom, a blue whale, a pink octopus, a starfish, a penguin, and a small robot are visible. The background is a light green gradient.

A photograph of a savanna landscape with a herd of elephants. The elephants are of various sizes, including adults and young calves, scattered across a green grassy field. In the background, there are trees and a hazy horizon. The word "Biodiversity" is written in a large, red, serif font, centered over the image. It is flanked by two large, stylized red quotation marks.

biotic and abiotic components of environment.

It is inspired from the theme of World Environment Day 2020 -

&



World Environment Day - 2020

Our Inspiration



Gopal Singh
Chairman-cum-Managing Director



V. K. Srivastava
Director (T)(O)



Bhola Singh
Director (T) (P&P)



N. K. Agarwal
Director (F)



Vinay Ranjan
Director (P)

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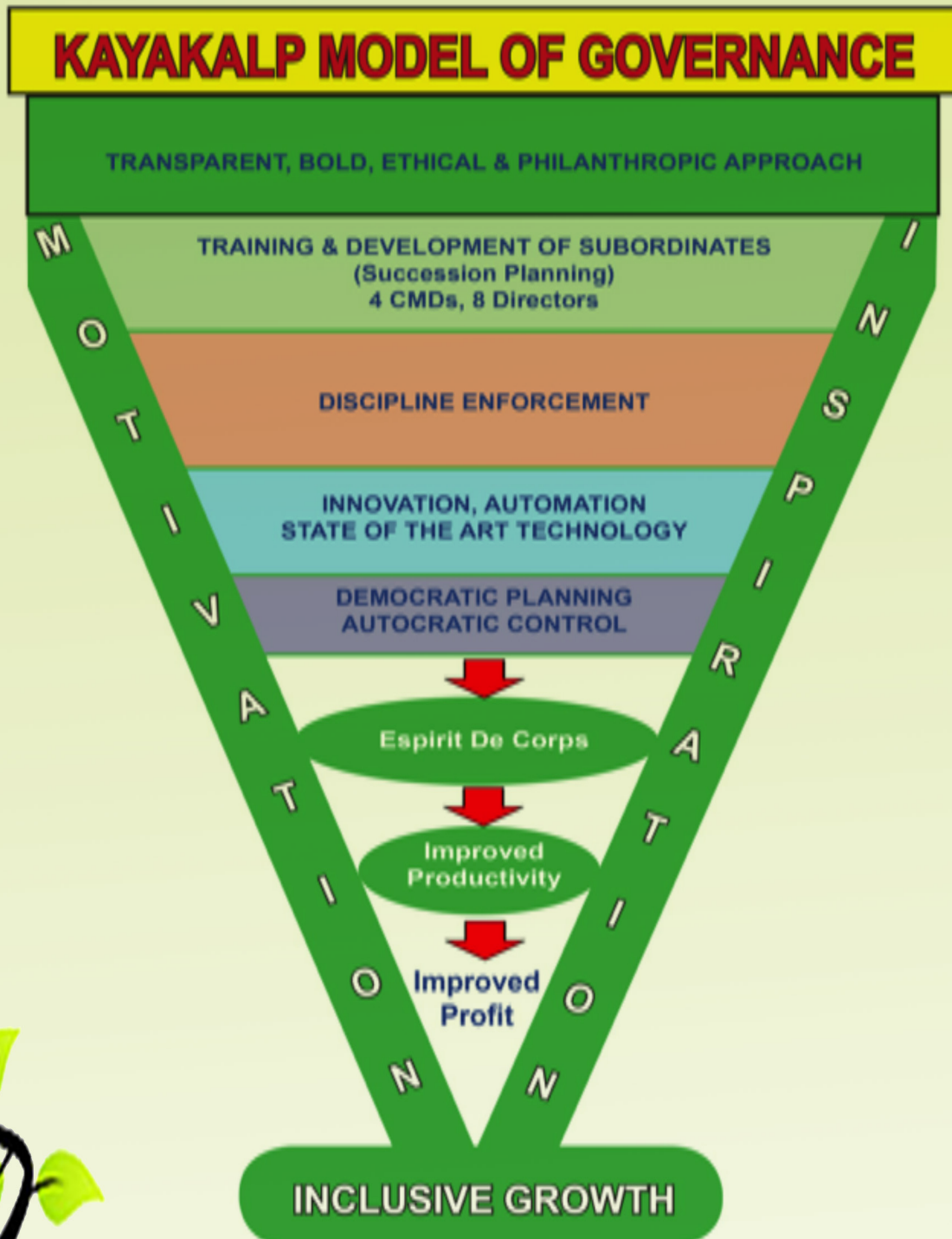
About World Environment Day

- * United Nations first major conference on international environmental issues was held in Stockholm, Sweden from June 5–16 in 1972. World Environment Day is celebrated on 5th June every year as declared in Stockholm Conference.
- * This year's World Environment Day has the theme "Biodiversity". Colombia, one of the world's "megadiverse" countries and sustaining close to 10 per cent of the planet's biodiversity, is the host country of WED 2020.
- * In the current COVID-19 situation strong and global stewardship of nature and biodiversity is the need of the hour.



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Corporate Philosophy of CCL



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Dust Control Measures in CCL

Existing Dust Control Measures in CCL

CCL has started new initiatives for pollution abatement apart from generic methods. These are as follows-

- (a) **Mobile Mist Sprinklers :** Provision of water sprinkling by mobile sprinkling is in all the opencast mines. At present, CCL has 61 mobile sprinklers and now CCL has taken an initiative to procure only mist type of sprinklers which are technologically superior to normal sprinklers, 17 mist type sprinklers of 28 KL capacity have already been deployed.



Mobile Sprinkling on coal transport road

- (b) **Surface Miners :** Introduction of surface miners for coal mining instead of shovel dumper system. Surface miners have eliminated the need of drilling, blasting and crushing of coal.



Surface Miner

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(c) **Dust control measures in Railway Siding :** Fixed sprinklers, wind screens and green belt are the mitigative measures being adopted in Railway Sidings of CCL.



*Wind screen, fixed sprinkler system
and
Plantation in Sidings of CCL*

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Land Reclamation

Every year CCL undertakes large scale plantation in its command area to improve the green cover in the mines. The afforestation in mines include reclamation of mined-out area, external OB dump, avenue plantation and block plantation.

The status of reclamation of mines of CCL is monitored regularly through Remote Sensing. The bigger mines having a composite capacity of more than 5 million M³ are monitored annually and other mines having composite capacity of less than 5 million M³ are mapped once in every three years.

As on date CCL has planted about 83 lakhs of saplings and the biologically reclaimed area is about 2754 Ha which includes external overburden dumps and backfilled areas in the mines of CCL.



Avenue Plantation at Kargali Mine



Plantation Along Mine Road at Ashok OCP



Plantation on OB Dump at Piparwar OCP



Plantation on OB Dump at Parej East OCP



Plantation Near Ashok OCP



Plantation Near Coal Stockpile

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Sustainable Use of Mine Water

Scenario in CCL

The mines of CCL are equipped with oil and Grease trap to treat workshop effluent.

The source of water in a coal mine is precipitation, surface run off and aquifer discharge. CCL has a mix of old and new mines including abandoned and discontinued mines. In CCL, mine water occurs in two forms:

1. Discharge from running mines and
2. Water stored in abandoned voids.

The available mine water in CCL is used for multiple purposes i.e. for

A) Industrial use

- (a) Water sprinkling on haul roads& transport roads (reduces dust emission),
- (b) Washing of HEMM, beneficiation of coal(in CHP's &Washeries).

B) Community supply

1. Colony Supply: CCL supplies Mine water for domestic use at North Karanpura, Piparwar, Barkasayal, Argada, Kuju, Hazaribagh, Kathara and Dhori Areas.
2. CCL supplies mine water to nearby population for community use like drinking, domestic and irrigation purpose.



View of Pipradih Mine void



Argada Water Treatment Plant



Kuju and Giridih Area- State Govt Water supply scheme

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New washing platform with Oil and Grease Trap in KDH OCP

MOU between CIL and GOJ for utilisation of mine water

An MOU was signed on 30.10.2017 between CIL and state Govt. of Jharkhand for utilization of 25250 million gallon of water. As per MOU, CIL shall bear all initial cost for construction of civil works like foundation, platform and shed for installation of motor and pumps for drawal of water at identified mine sites. Government of Jharkhand shall bear the cost of pumps, motors, associated power supply, pipelines and their installation at identified mine sites from where water is to be drawn. The cost of running these facilities would be borne by Government of Jharkhand or community benefitted.

Existing water supply to State Govt at Argada, Giridih, Hazaribagh and Kuju Area

S.No.	Area	Detail of water supply
1.	Argada	Raw water supply: Sirka abandoned quarry no.1 alias Pokhariya. Water treatment plant - Badki Chumba village. Overhead tanks capacity: 100000 litres and 150000 litres at Behratad and Chhotki Chumba villages respectively.
2.	Giridih	Raw Water supplied: Central pit (Patrodih mine) Treatment plant Capacity : 2MLD
3.	Hazaribagh	Source of water : Tapin quarry no 45. Overhead tank capacity : 1lakh gallon Water supplied : 3.28 Lakhcum/yr.
4.	Kuju	Source: 2AW quarry of Topa project. Balsagra overhead tank capacity : 4 Lakh Litres.

In FY 2020-21, NOC has been given for two number of Rural Water Supply Scheme of Drinking Water & Sanitation Department, Govt. of Jharkhand. The scheme will benefit approximate 46540 population in 17 villages of Ramgarh district.

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Utilizing Solar Energy

India has embarked on an ambitious target of having **450 GW** of renewable energy by **2030**. The country is already working on the target of having 175 GW of renewable energy by 2022 which includes **100 GW of Solar** and 60 GW of Wind energy.

CCL is also contributing towards national goals by installing Roof Top Solar power plant on Company buildings at its different projects. Already Solar Power Plants of a combined capacity of 872.50 KWP have been installed in CCL.

Sl. No.	Established (May 2016 to December 2019)			To be Established (June 2020 to March 2024)		
	Description	Installed Capacity	Area	Description	Installed Capacity	Area
1.	Roof Top Solar Power Plant	25 KWP	Central Workshop, Barkakana	Roof Top Solar Power Plant	90 KWP	Kuju
2.	Roof Top Solar Power Plant	400 KWP	CCL Headquarter, Ranchi	Roof Top Solar Power Plant	250 KWP	Rajrappa
3.	Roof Top Solar Power Plant	220 KWP	Gandhi Nagar Hospital, Ranchi	Roof Top Solar Power Plant	35 KWP	Barka Sayal
4.	Roof Top Solar Power Plant	50 KWP	Kathara Executive Hostel, Kathara	Ground Mounted	20 MWP	Piparwar
5.	Solar Power Plant with Battery backup	7x7.5 KWP	Magadh & Amrapali Area	Ground Mounted	180 MWP	At different places of CCL
6.	Roof Top Solar Power Plant with Battery back up	125kWp	CRS Barkakana			



Pictures Showing Installed Roof Top Solar Plant (400KWP) in CCL Head Quarter



Pictures Showing Installed Roof Top Solar Plant (25 KWP) installed in Central WorkShop, Barkakana

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Sustainable Mine Closure — A Journey from Liability to Opportunity

Introduction

Mining has played a vital role in development of society and improvement in quality of life, without which today's world would undoubtedly be significantly worse off. Although mining, especially opencast mining, is a short-term phenomenon, it has long lasting impacts on biodiversity, landscape, ecology and on the livelihood of local population.

The development of a mining project, including associated facilities and infrastructure, usually involves (i) Disturbance to the existing landscapes, (ii) Disturbance to flora and natural vegetation, (iii) Disruption of habitats, (iv) Impact to Ground Water & Surface Water and (v) Rehabilitation & Restoration issues.

To ensure that negative effects of mining are minimized, proper planning for Mine Closure should be done so that the post-closure landscape is ecologically suitable and merges with pre-mining landscape. Mine Closure is a process which includes all activities that are required to be done continuously and sequentially during the entire period of mining until the area is restored as per needs of society.

Mine Closure Legislation in India

The Central Government vide Notification No. GSR 329 (E) dated 10.04.2003 and No. GSR 330 (E) dated 10.04.2003 amended the Mineral Concession Rules, 1960 and Mineral Conservation and Development Rules, 1988 respectively.

For Coal and Lignite mines, a separate guideline was formulated on 27.8.2009 for preparation of Mine Closure Plan by Ministry of Coal, Govt. of India, New Delhi. The same was amended on 11.1.2012, 25.4.2012 and on 07.01.2013.

Ministry of Coal has issued a new guideline for preparation of Mining Plan including Mine Closure Plan vide No: 34011/28/2019-CPAM, dated 16.12.2019. The base rates as on 01.04.2019 for mines closure as per this guideline has been changed to Rs. 9 Lakhs/Ha for opencast mines and Rs. 1.50 Lakhs/Ha for underground mines. The revised guidelines also set the limit to 50% of the total deposited amount including interest accrued in the ESCROW account which may be released after every 5 years against 80% as per earlier Mine Closure Guidelines.

Mine Closure in CCL

In CCL 99% of mining operations are performed by Open Cast mining and reclamation is a major activity of closure of such mines. 67 mines in CCL have approved Mine Closure Plans and the amount reimbursed is Rs. 157 crores as on April, 2020.



*Reclaimed void of Piparwar OCP
showing migratory birds*



View of Biological Reclamation

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New Initiatives for Environment Management in CCL

KAYAKALP VATIKA

Piparwar OCP in Piparwar Area is one of the prestigious project of CCL commissioned in 1990 as a green field project with Inpit - Crusher and conveying technology.

In Piparwar OCP , a unique mine reclamation & eco restoration initiative, in the form of Kayakalp Vatika has been conceptualised and foundation of which was laid by the Hon'ble Sri Piyush Goyal, the then Minister for Coal, Power & New Renewable Energy, Govt. of India on 4th May 2015 during his visit to the Piparwar Area.

Kayakalp Vatika is an in-house initiative conceptualised with many unique interventions like landscaping, soil enrichment, rain water harvesting, development of water bodies apart from plantation over the reclaimed land. The interventions in Kayakalp Vatika is to accelerate the natural process of regeneration. Initially, the Kayakalp Vatika initiative was started over an area of 5 Ha. out of which plantation was done on 1 Ha. of land and it is now being expanded to cover additional 20 Ha. of backfilled areas.

The reclaimed land under Kayakalp Vatika initiative has been undergoing a gradual change in to a lush green land with increased soil moisture level and soil fertility, with grasses & shrubs coming over, with several tree growing over 10ft height. Slowly the reclaimed land is getting converted into a rich bio-diverse area. In the years to come, this area will grow in to a forest with diverse habitats sustaining each other and developing into as a self sustainable eco-system.

Kayakalp Vatika initiative is an endeavour towards developing a mine reclamation model to reclaim & restore degraded mining land and to facilitate development of forest and wild life habitats by letting Nature heal through natural regeneration & succession.



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Ecological Restoration in Sangam OCP

A novel experiment was started in Sangam opencast mine Barkasayal area, CCL under the guidance of Delhi University's Professor CR Babu and his team to restore the area ecologically with following objectives.

- (i) stabilize overburden dumps to control soil erosion and leaching of toxic chemical to water body
- (ii) restore native flora and enhance biodiversity at mined out areas
- (iii) generate ecological services and ecological goods for local community
- (iv) quench underground fire of OBDs by vegetation development.

The flat areas of OBD have now been ecologically restored to three storeyed tropical mixed deciduous forest ecosystem with Bambo – Terminalia – Syzgium dominated community while the slopes of the 30-40 m high dump were stabilized with carpet of thick grasses of about 20 varieties.

A total of 50,000 plants of more than 50 different species including host of Tasar silk worm, Lac and horticulture species have been planted in the project site. The tree species included Albizia lebbeck (black siris), Albizia procera (white siris), Bauhinia variegata (kachnar), Dalbergia sissoo (sisam), Cassia fistula (amaltas), Madhuca indica (mahua), Terminalia arjuna (arjun), Terminalia tomentosa (asan), Aegle marmelos (bael), Artocarpus heterophyllus (kathal), Mangifera indica (mango), Psidium guajava (guava), Phyllanthus emblica (amla), Syzygium cumini (jamun), Zizyphus spp (ber), etc.

With the help of local people Tasar silk worm will be introduced on Terminalia trees for cocoon cultivation in next year.



Site before restoration



Site after restoration

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Pisciculture

In 2015 CCL in association with Birsa Agriculture University, Ranchi and CMPDIL started another project of development of adjoining mine voids filled with water for development of fisheries. The objectives of study were

1. Improvement of water quality through biological methods for suitability of fish culture.
2. Selection of suitable fish species and fish culture techniques.
3. Study of economics and to develop a suitable and cost effective method for income generation through fish culture.
4. Development of a guideline for further use of mine voids for fish culture.

Altogether 210000 fish seeds (105000 each) were stocked in the two adjoining / nearby mine voids. The average weight initially was 7-8g, and after eight months of culture it was found that Catla variety has grown to 450g and Tilapia variety has increased to 250g i.e growth rate is 1.62 g/day and 1.28 g/day respectively.



Harvested fish from mine voids

Seed Ball Plantation by CCL

In FY 2019-20, afforestation using seed ball is now been undertaken in all the major mines of CCL.



A view of seed ball plantation in Magadh Amrapali Area

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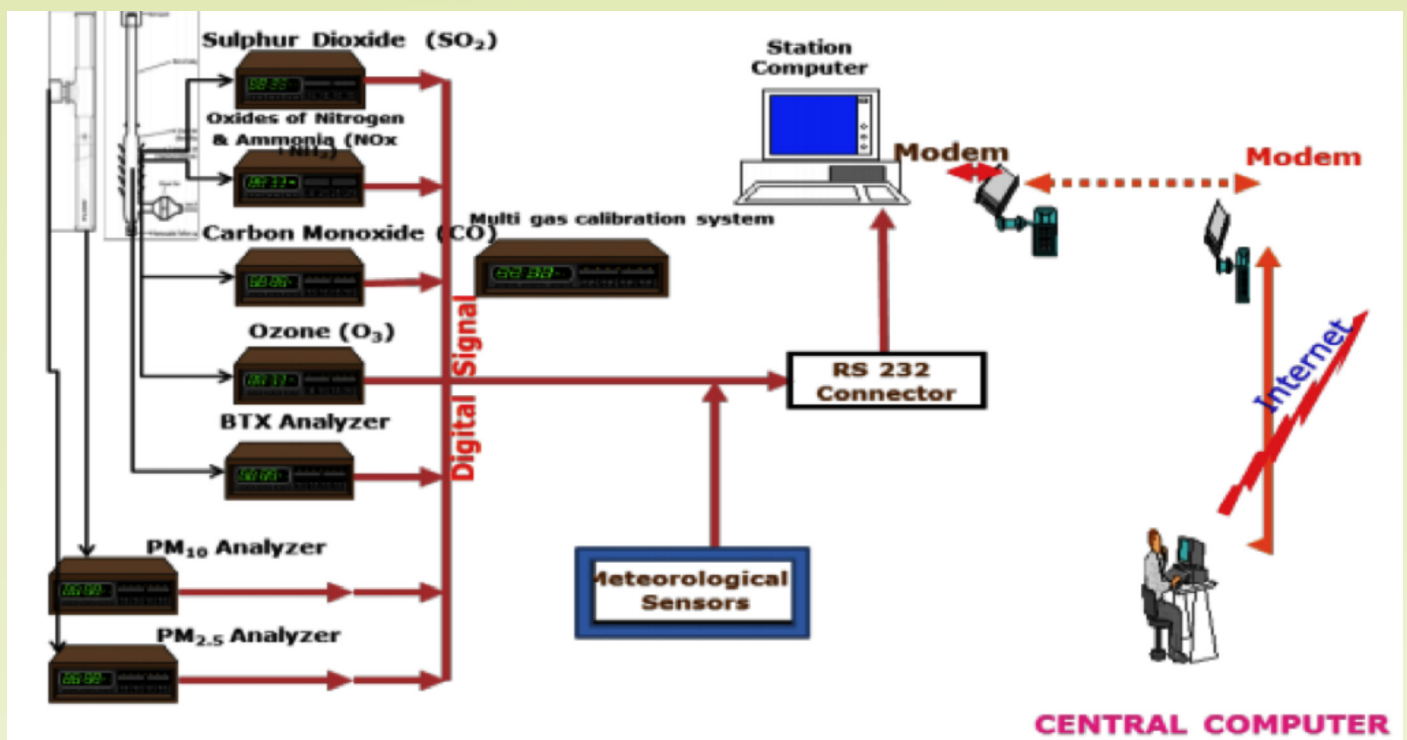
A view of seed ball plantation in Dhori Area

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Future programme for dust control in CCL

Environment & Forest Department, Central Coalfields Limited is in the process of procuring Continuous Ambient Air Quality Monitoring Stations (CAAQMS) for all the areas of CCL. Commissioning of CAAQMS will allow CCL to report real time concentrations of parameters like Carbon Monoxide(CO), Sulphur dioxide (SO₂), Nitrogen Oxides (NO & NO₂), Particulate Matter less than 10 microns and less than 2.5 microns (PM₁₀ and PM_{2.5}) on the website of JSPCB.

Railway Sidings of CCL are also in the process of procuring Continuous PM₁₀ analysers.



Architecture of CAAQMS

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Environment and Forest Clearances Procedure in CCL : In A Nutshell

Overview

Ministry of Environment Forest and Climate Change (MoEF & CC) is the nodal agency in the administrative structure of the Central Government for the planning, promotion, co-ordination and overseeing the implementation of India's environmental and forestry policies and programs. To accelerate the process of project approvals and its continuous monitoring with the help of technology and vision of Hon'ble Prime Minister of Digital India, MoEFCC rolled out a portal named as PARIVESH portal (Proactive & Responsive Facilitation by Interactive & Virtuous Environmental Single Window Hub) which is a single window integrated system for environment, forest, wildlife & CRZ clearance process.

Objectives

- Enhance efficiency, transparency and accountability in the clearance process.
- Enhance responsiveness through workflows automation and availability of real time information.
- Enhance ease and convenience of citizens and businesses in accessing information and services.
- Achieve standardization in processes across regional and state level.

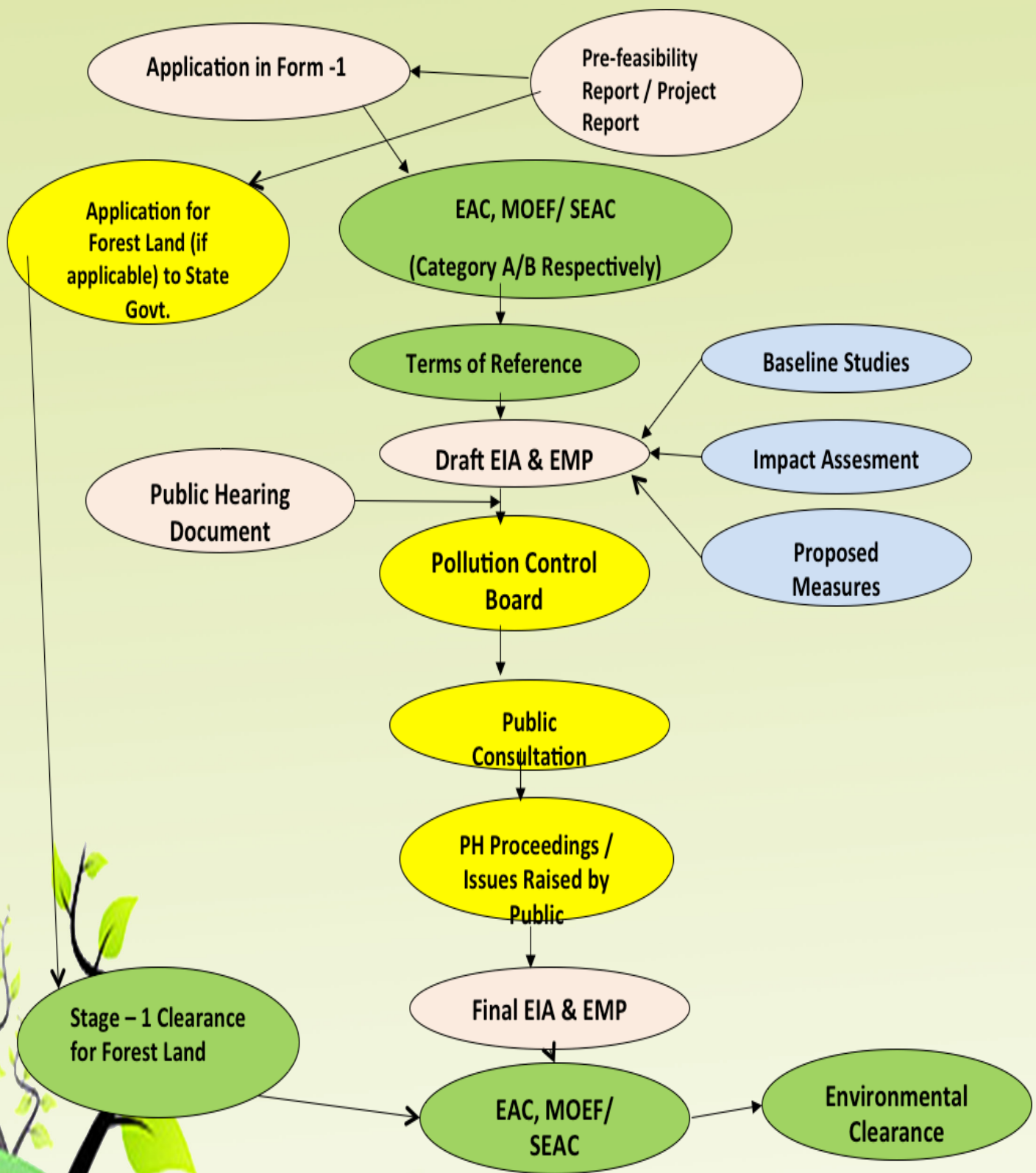
Core Features

- Submission of projects in single window interface.
- A unique-id for each proposal for future reference.
- Real-time availability of status of application.
- Automatic mailer notification to take instant action.
- Delays in clearance process can be ascertained and monitored efficiently



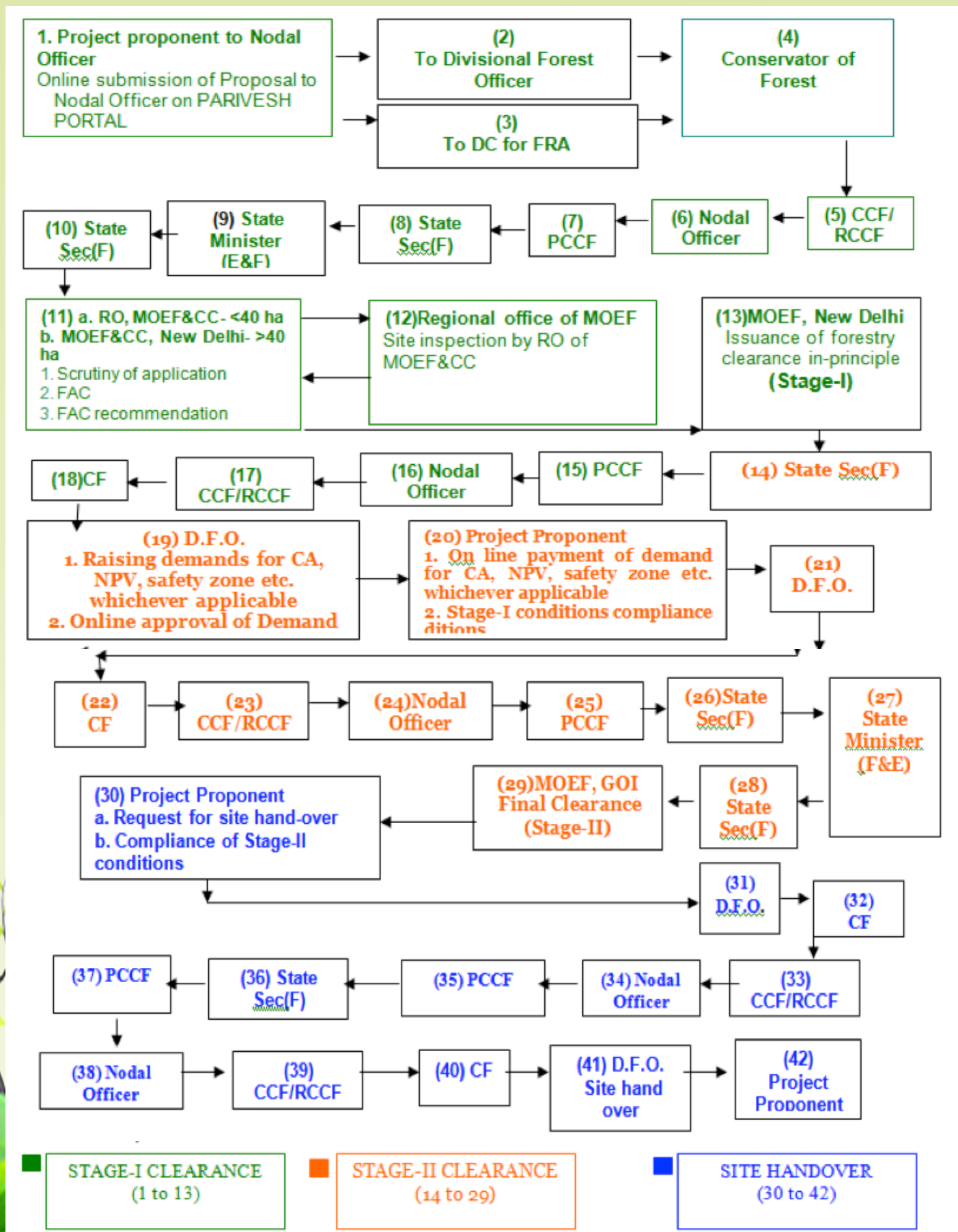
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Environmental Clearance Process



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Forest Clearance Process

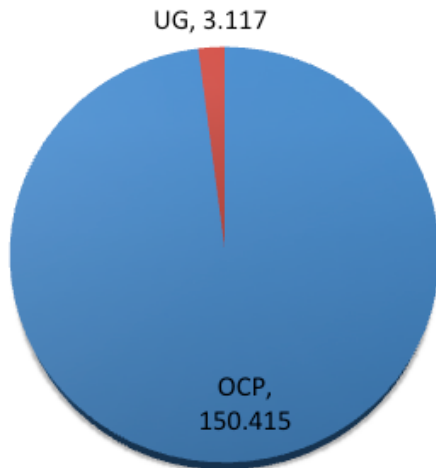


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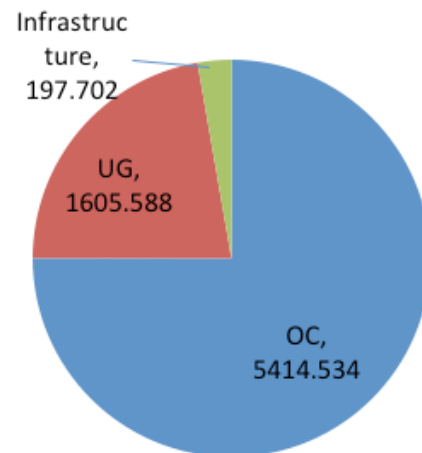
Present status of EC & FC in CCL

1. 66 nos. of Environment Clearance for 153.532 MTY
2. 61 nos. of forest clearance covering 7217.824 Ha forest land.

Total EC granted for CCL projects (In MTY)



Total FC granted for CCL projects (In Ha)



The application and monitoring of Environment & Forest Clearance through digital platform is a novel and holistic approach of MoEF&CC towards transparency, IT initiatives & Digital India Programme vision of Hon'ble Prime Minister of India.



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Environment Impact Assessment (EIA) notification 2020 Proposed changes & way forward for Mining Industry

A Draft EIA-2020 is proposed which is put in the public domain on 12.03.2020 for comments and views from the stakeholders. This draft EIA-2020 is prepared keeping in mind the sustainable development requirement of India and ease of doing business while ensuring the need of proper impact mitigation of environment concerns and due diligence.



Major provisions of EIA-2020 related to Mining Industry

a) Cognizance of Violation Cases:

The draft EIA-2020 has proposed a new section called "Dealing of violation cases". Ministry has earlier issued notification number S.O. 804 (E), dated 14.03.2017 laying down procedure for appraisal of the violation cases with a time window of six month. However it was realized that due to recurring nature of violations it is necessary that a defined procedure should be adapted to bring such cases under the regulations. The draft EIA-2020 has proposed an exhaustive procedure for regularizes such cases along with defined time-bound action plans & penalty.

b) Issuance of Standard ToR:

It is proposed in the EIA-2020 that Standard ToR shall be issued to all expansion proposals of existing projects having earlier Prior Environment Clearance, which will help in faster appraisal of projects as issuance of ToR can take upto 90-120 days.

c) Procedure for grant of Prior Environment Clearance for modernization:

EIA-2020 proposes that in case of modernization and increase in production upto 10 % shall be issued online, on acceptance of application with revised EMP report by the Regulatory Authority without consideration by Expert Appraisal Committee. EIA-2020 also proposed expansion of upto 50 % over existing EC as compare the present norm of 40 %.

d) Change in frequency of submission of compliance report:

The compliance report was in respect of conditions mentioned in the EC was earlier being submitted every six-month. EIA-2020 revises the requirement to yearly, which will help in fulfilling the compliance, and reporting will be easier to monitor and assess.

e) Change in category of Mining (Schedule -1)

As per EIA-2020, the Mining of Major Minerals including Coal having an Area of ≥ 100 Ha are placed in Category 'A' while those with less than <100 Ha will be placed as Category 'B' projects.

f) Duration of Environment Clearance of Mining projects:

The general validity of the environmental permit/ environmental clearance has been proposed to be increased to 10 years with separate provisions for construction phase, installation phase and the operational phase. The duration of environmental clearance for Mining projects has also been revised from the earlier 30 years to 50 years.

g) Reduction in period of Public hearing:

The period for Public Hearing has been reduced to 40 days from existing norms of 45 days.

h) Exemption from prior environmental clearance:

Some activity such as coal and non-coal mineral prospecting, solar photo voltaic power projects, solar thermal power plants and solar park and extraction or sourcing or borrowing of ordinary earth for the linear projects such as roads, pipelines, etc. has been exempted from obtaining prior environmental clearance.

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Award for Excellence in Environment Field



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Covid-19 Warriors of Environment Department, CCL

काहि रहींम संपति सगे बनंत बहंत बहू रीत ।
विपति कसौटी जे कसे तै सांचे भीत ॥



/kjt dɛkj
एमटी (पर्या.)
रजहरा क्षेत्र



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सहायक प्रबंधक (पर्या.)
बरकाकाना



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मगध-आम्रपाली क्षेत्र



'kɛh diɔ
एमटी (पर्या.)
गिरिडीह क्षेत्र

सीसीएल के संकल्प “कोई भूखा ना सोए”
को सिद्ध कर रहे इन कोरोना योद्धाओं को नमन!