Standard Operating Procedure

COAL MINE SURVEILLANCE AND MANAGEMENT SYSTEM (CMSMS)

&

MOBILE APP KHANAN PRAHARI

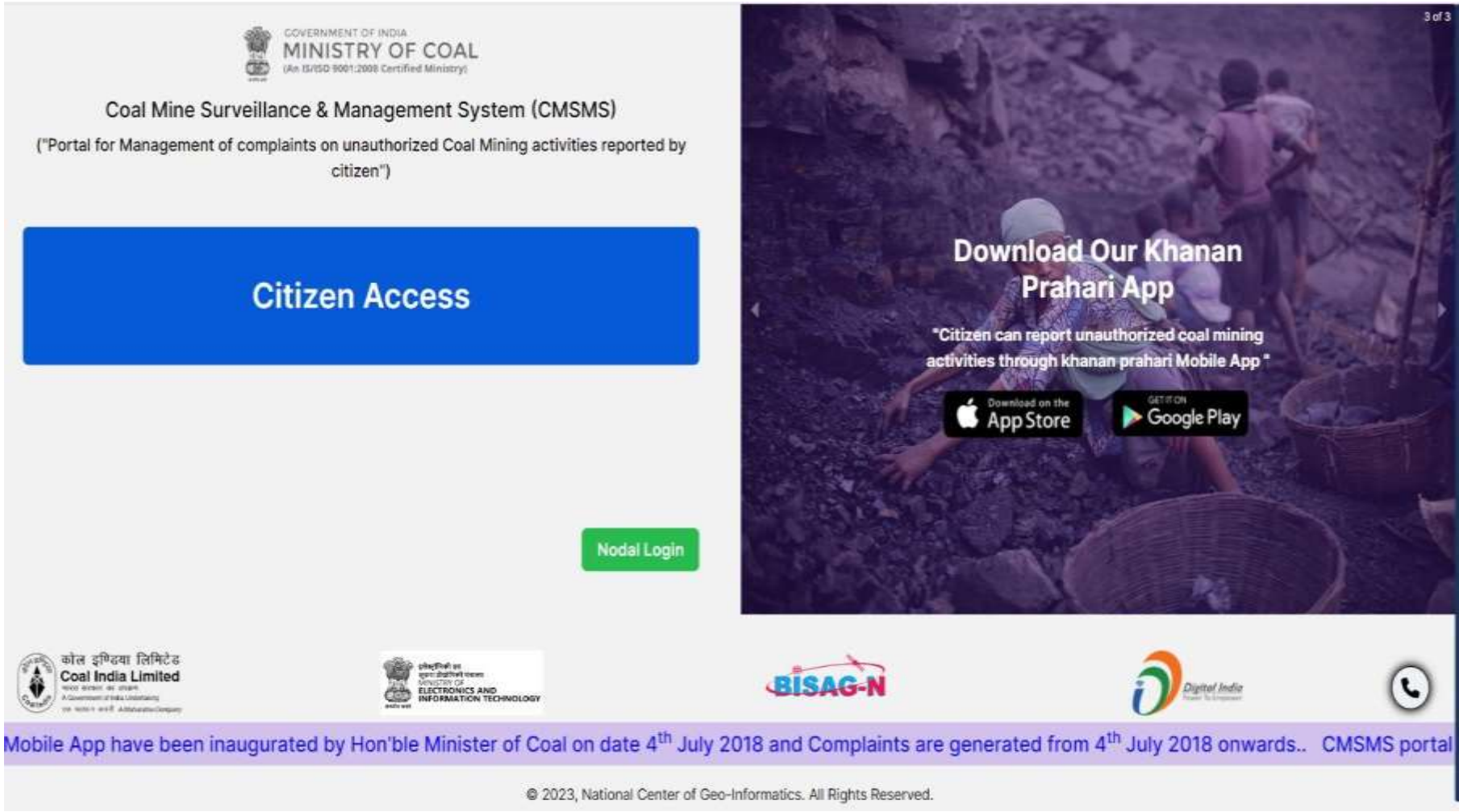
Coal Mine Surveillance & Management System (**CMSMS**)

- A web-based GIS application
- Launched by Ministry of Coal, GoI in July 2018
- Associated mobile app - *Khanan Prahari*.
- Developed by: Bhaskaracharya National Institute for Space Applications and Geo- informatics (BISAG-N), Gandhinagar and Central Mine Planning and Design Institute (CMPDI), Ranchi, Subsidiary of Coal India Limited.
- Objective: detection of illegal/ unauthorized mining sites, report, monitor and take suitable action based on complaints received from Khanan Prahari Mobile App.
- The complaints generated through Khanan Prahari Mobile App are registered at the CMSMS portal with a specific ID and is automatically sent to Nodal Officer of the concerned area (CIL/ Non-CIL) through Email and SMS. The areas are geo-fenced in the App and Portal.
- Platform: of Ministry of Electronics & Information Technology (**MeitY**) and National Center of Geo-Informatics (**NCoG**).

CMSMS Landing Page

URL: https://cmsms.ncog.gov.in/CMSS/login/

- Citizen Access
- Nodal Login
- Download Our Khanan Prahari App – for App Store and Google Play Store



CMSMS Home Page

Citizen Access

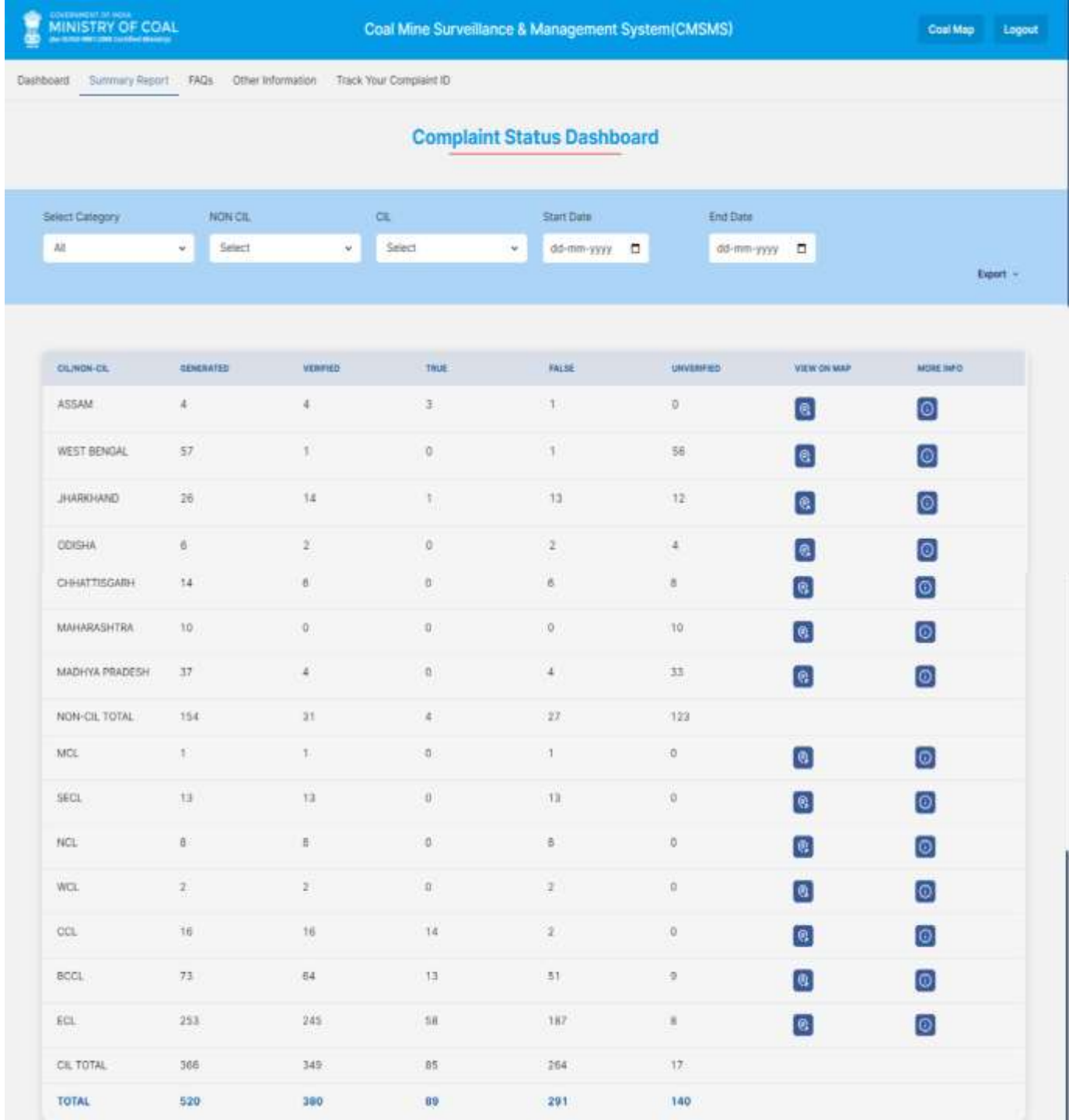
Nodal Login

Dashboard

- The first page shows Boxes of cumulative status of complaints and Pie charts of complaints - generated through Khanan Prahari Mobile App in different categories of CIL and Non CIL area.
- facility to sort the complaints in different levels.
- On clicking on pie chart of CIL and Non CIL pie zone, complaints are further distributed in Subsidiary level in CIL and State level in Non CIL.
- Date wise Sorting available
- Nos. of complaints shown when mouse is moved over different zones of Pie Charts
- True/ False Status of Complaints
- Verified/ Unverified status
- Action Taken report in detailed database table when last level of subsidiary/State has been selected further.
- View on Map

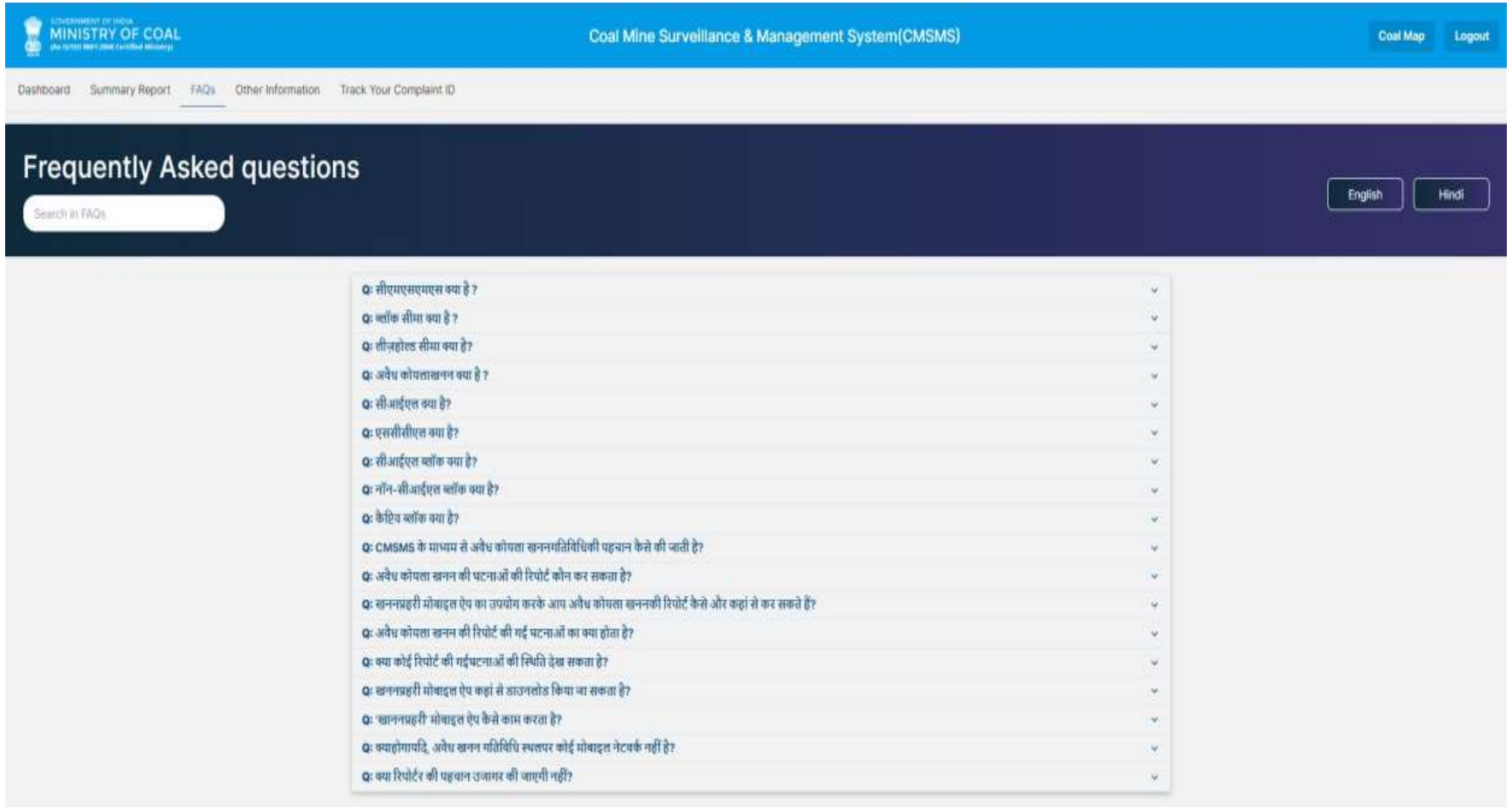
Summary Report

- The Summary Report Tab on the Home Page takes the user to Complain Status Dashboard wherein the detailed information of the complaints registered on the CMSMS portal are available.
- This page has facility for sorting the registered complaints. Sorting can be done for All/ CIL/ Non CIL complaints in Date wise and State wise manner.
- Further, location and action taken status of the sorted complaints can also be seen by clicking the View on Map or More Info buttons available on the page
- These reports can also be downloaded in PDF format by clicking the Export button present on the page



Frequently Asked Questions (FAQs)

- Users may select ‘FAQs’ tab to view the Frequently Asked Questions in this section related to CMSMS and Khanan Prahari Mobile App.
- FAQs in both English and Hindi are available under this tab

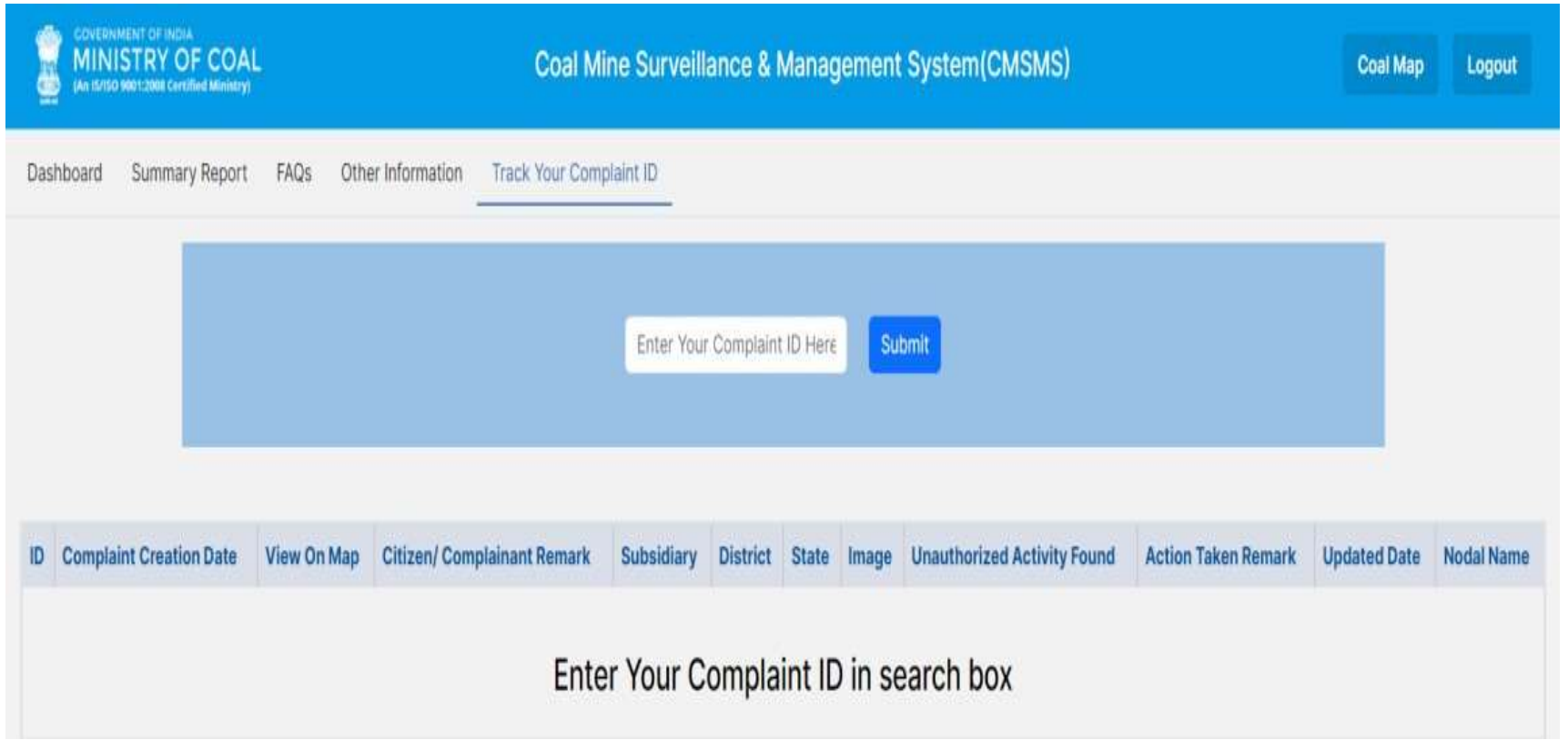


Other Information

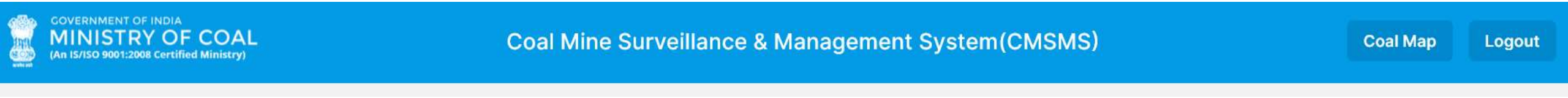
- The user may select '**Other Information'** tab to view the reports on Satellite Data based monitoring of Land Reclamation activities undertaken in CIL mines.
  - Land Reclamation reports are available under two categories:
    - Projects with annual production of more than 5 million cubic meter (Coal + OB)
    - Projects with annual production of less than 5 million cubic meter (Coal + OB).

Track Your Complaint ID

- A tab using which Complainant on Khanan Prahari Mobile App can track his/her complaint status by entering complaint id.



COAL MAP



- The '**Coal Map'** Tab on the CMSMS Home Page takes the user to India Map page where the user/ visitor can view various layers like Base Map Layers, Vector Layers, Raster Layers, Satellite Images of Coalfields etc.
- 'Base Map' provides various boundaries like state boundary, district boundary, taluka and village boundary. River, Rail, and Road are also provided under the base map category.
- Satellite Map of India is available under 'Raster Layers tab'.
- Under Vector Layers option, Coalfield boundary, Lease boundary and Coal Block boundary are provided.
- Satellite images of various coalfields are provided separately also under 'Raster Layers'.
- Selecting Khanan Prahari Data under Mobile App Data Tab will show the flagging of places from where cases of illegal coal mining incidents have been reported.

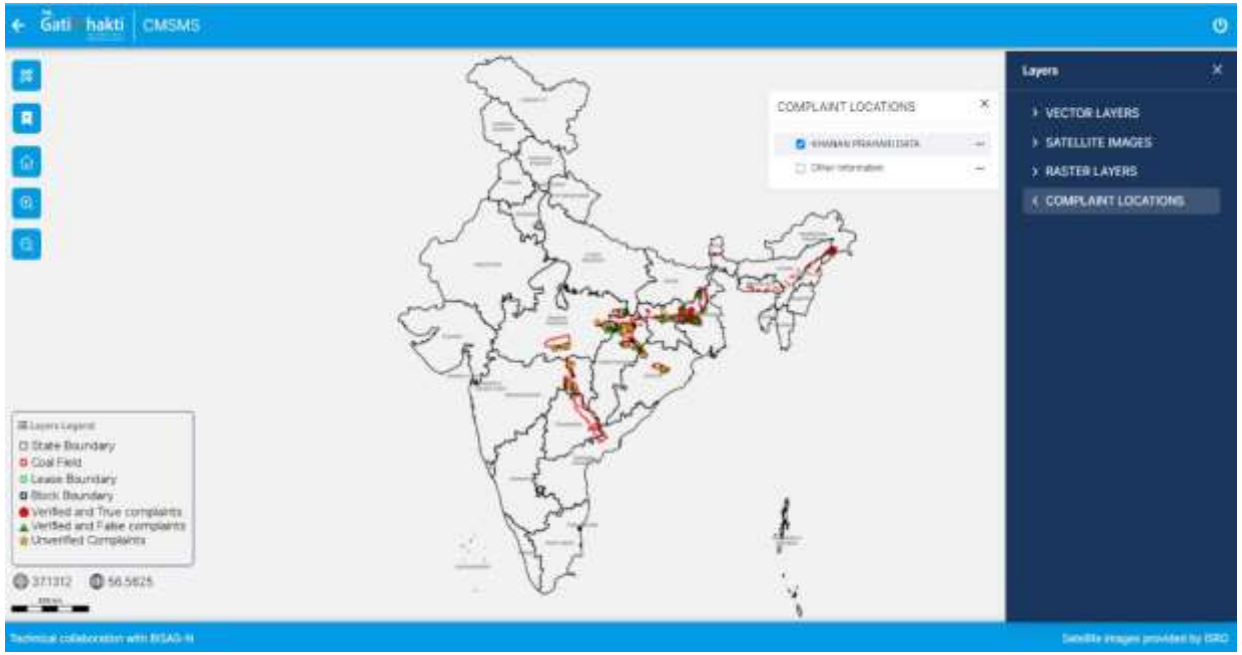
INDIA MAP

On clicking at **Coal Map** Tab- India Map will displayed at default showing all state boundaries

- The left bottom corner will show scale and legend of the map which is dynamic in nature on zoom by scrolling the map.
- Top left corner has a menu for analytical tools, which can be expanded on clicking on it.
- The right top corner has a panel for different GIS layers set.
- The top is search menu where input keywords for layers can be entered for any specific layers or data.
- Next in line is High Resolution image tab where API based satellite maps of Google, Bing aerial and FCC image of 60 CM resolution of PAN India is available for display.
- 3rd tab is for different layers like Vector layers, Satellite images, Raster layers and complaint location are integrated which are provided by CMPDI.
- 4th tab is basemap for Road, Rail and River for Pan India level.

GIS Layers

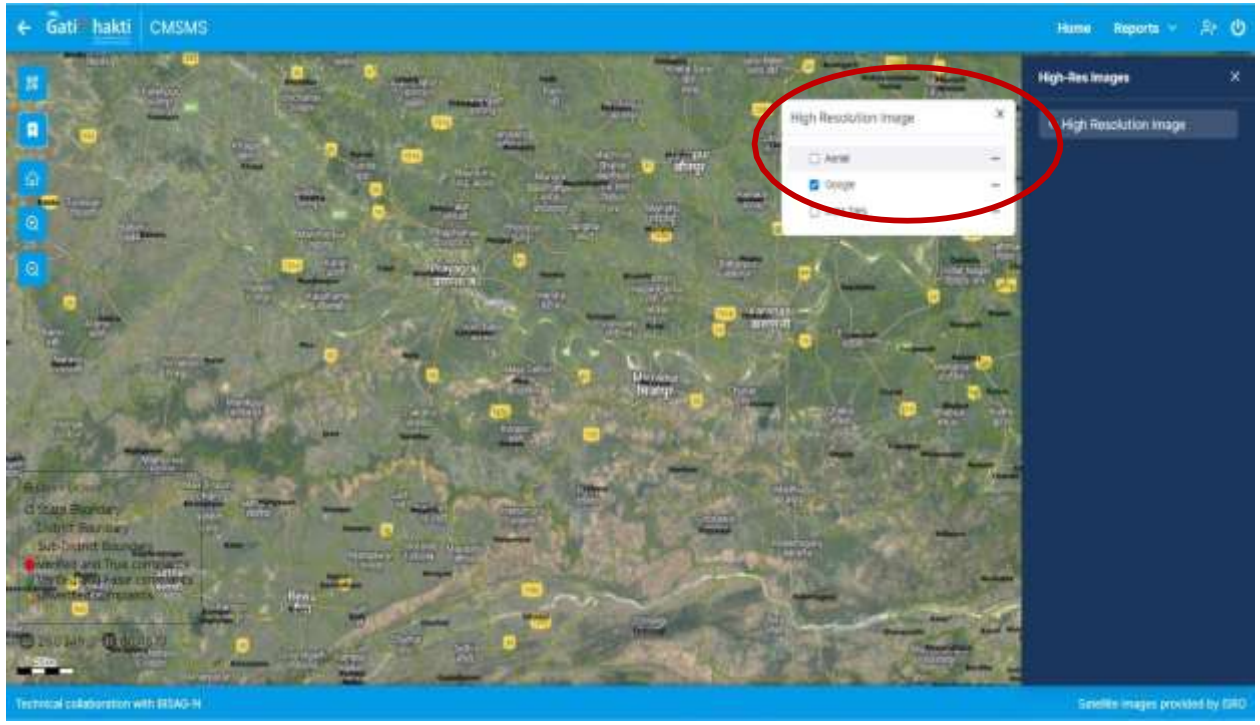
- At right corner of the India Map page different categories of GIS layers are incorporated.
- These are Vectors layers, raster layers, Satellite images and Complaint locations of the reported locations.



S.N.	Layer Tab	Layer Information	Details/Source
1.	Search panel	Input keyword search tab	Search tab
2.	Vector layers	Blocks, Lease, Coalfield of Coal	Supplied by CMPDI
3.	High Resolution Image	Google, High resolution images	API based layers
4.	Satellite Images	LISS 4 images (year 2021)	
5..	Raster Layers	Coalfield FCC images	Supplied by CMPDI
6.	Complaint locations	Khanan Prahari data	Khanan Prahari app data
7.	Base MAPS	Administrative (District to Village)	As a Basemap
		Base layers (Road , rail ,River)	As a Basemap

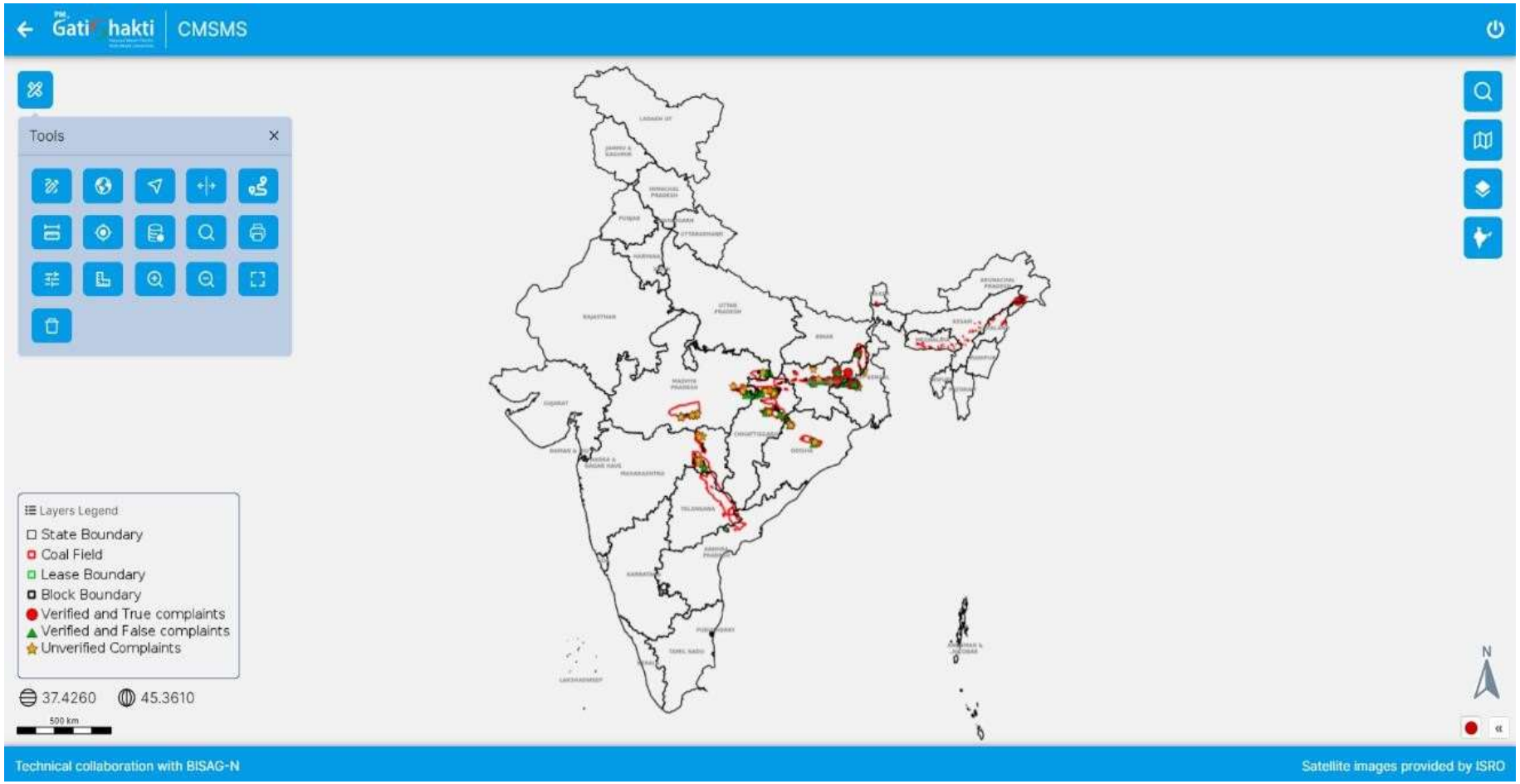
Image showing the District and State Boundaries of a region

Satellite image along with the places names



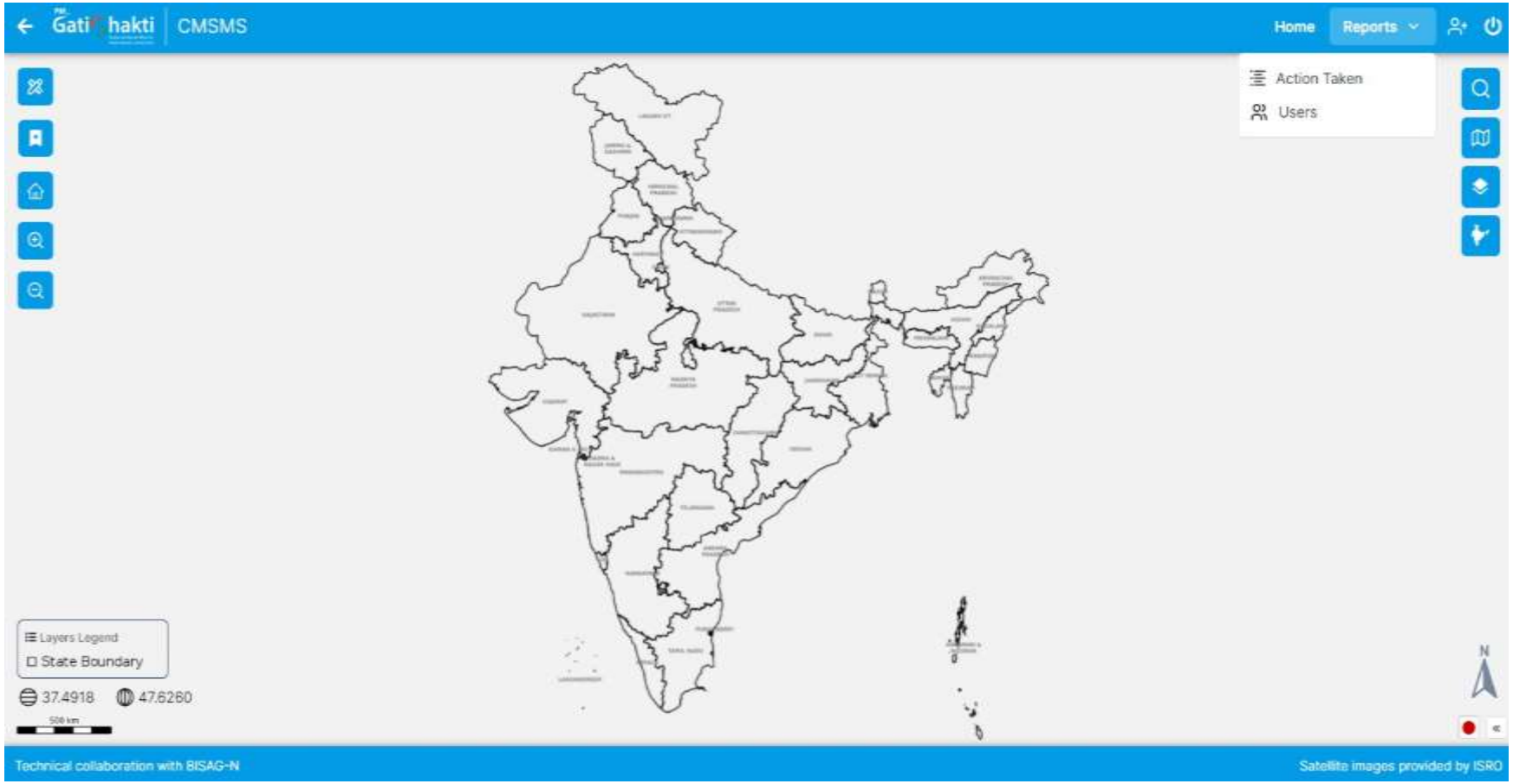
Analysis Tools

- Various tools for Navigation, Search, Add Geometry, Print Drag & Drop Kml, Compare Layers, Routes, Measure Line, etc., are available in left side of the *GIS Map Visualiser Page*

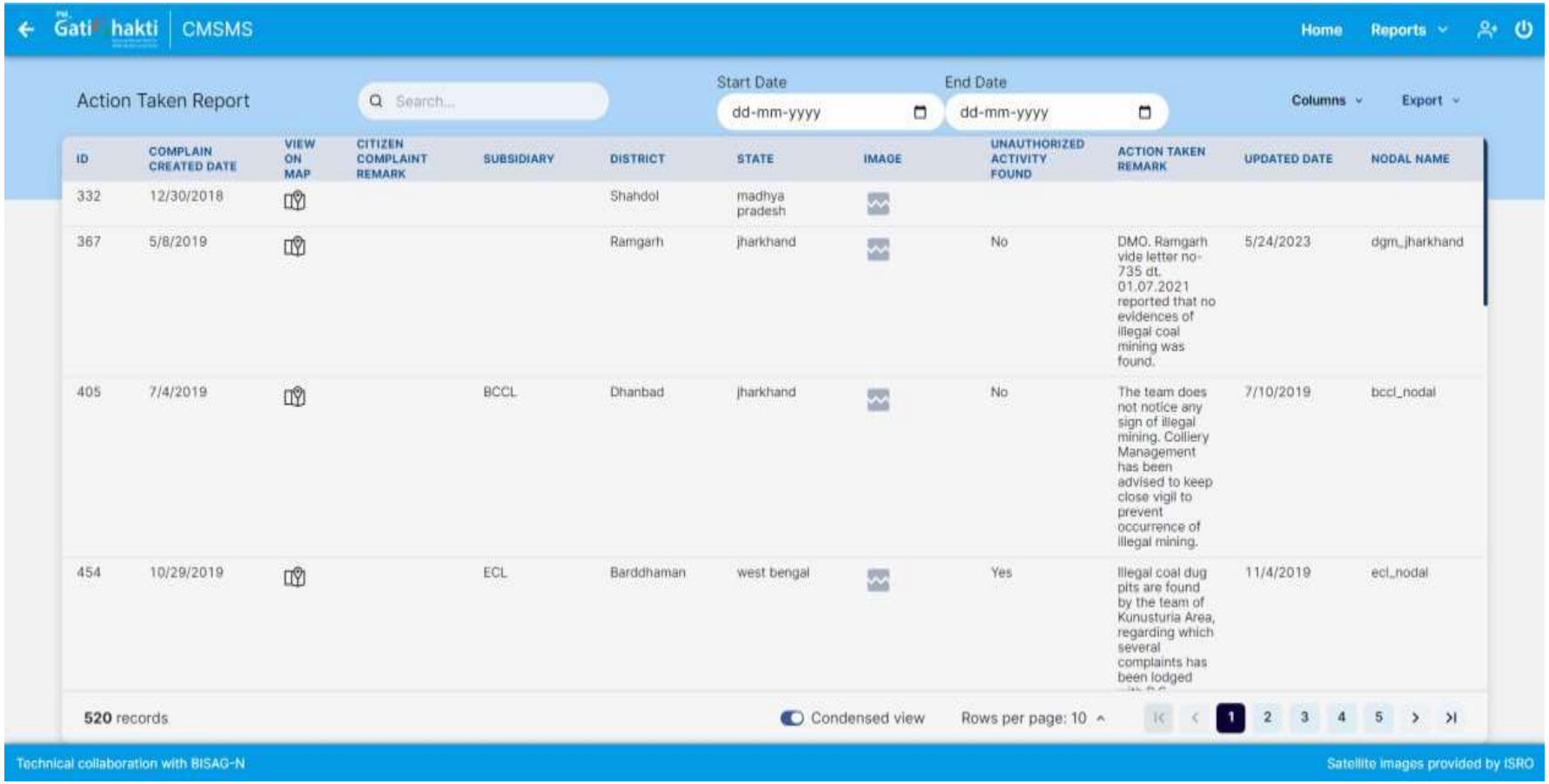


Action Taken (for Nodal officers)

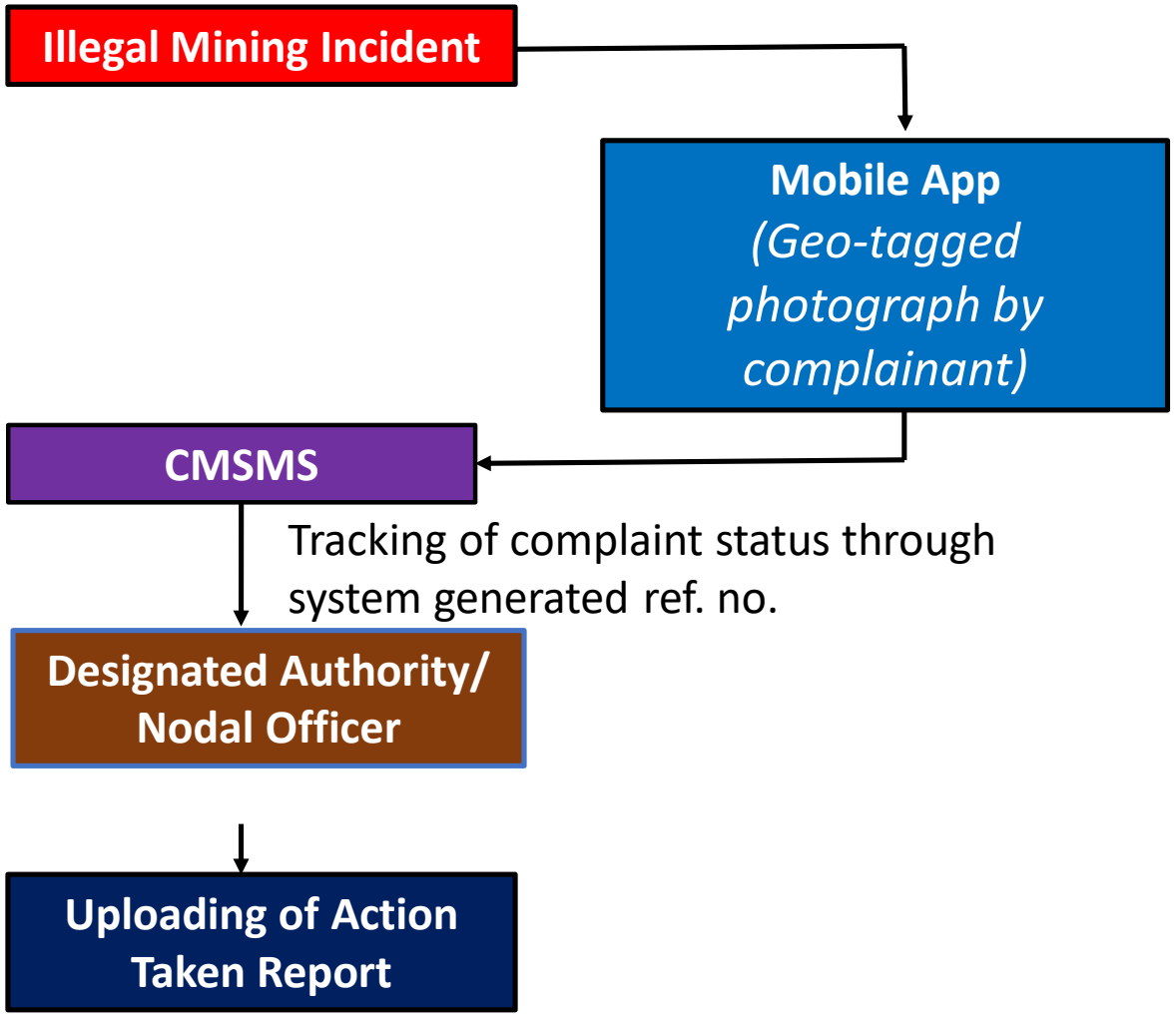
- Developed only for authorized Nodal officers and citizen cannot access this section



- The nodal officers can view the generated complaints in their command area and based on location value, the complaint shall be verified on ground.
- If complaint found true a detailed report will be submitted by concerned nodal officer in Action Taken Report. Otherwise, Nodal Officer shall write as- not found True in the Action Taken Report



CMSMS DATA FLOW DIAGRAM



Nodal officers

- Nodal Officers have been nominated by competent authority of respective subsidiary companies of CIL to view, verify and take suitable actions on the illegal coal mining reports generated within CIL command area.
- For the areas outside CIL, Director of Mines & Geology of respective States or their representatives have been nominated to function as Nodal Officers for taking suitable action against reported incidents.
- CMPDI communicates ‘User ID’ and ‘Password’ to Nodal Officers for accessing the CMSMS website
- **Nodal officers Access:** Nodal Officer of each subsidiary/ State Government can log in using their credentials provided by CMPDI. They can view the Khanan Prahari / CMSMS reported incidents and verify the same in the field and give feedback on the reported incident in Action Taken Report under Administrative Tools on GIS Map Visualiser Page.

PROCEDURES TO BE FOLLOWED BY NODAL OFFICER

	Activity	Action	Response Time
A)	Updation, deletion and GIS data layers' upgradation will be administered by CMPDI	a) Viewing of report - The Nodal Officer will receive information about illegal mining in their control area through email and SMS. ▪ On receipt of information, the Nodal Officer will login into the System by entering User Name and Password allotted to them and Captcha shown on the screen. • After login - Click 'Coal Map' Tab in dashboard - Click on 'Reports' Tab - Search/Select Complain ID No. - Press "View on Satellite Map" to view complain location.	One Day
B)	Reporting of illegal coal mining by general public through Mobile App (Khanan Prahari)		
C)	Once Nodal will login through its credentials the complaints generated in there area will only displayed for verification.	b) Verification: The Nodal Officer will verify the report by verification in the field (Ground Truthing).	One Week
		c) Action: After ground truthing the Nodal Officer will have to update the information into "Action Taken Report" of CMSMS.	One Week
		d) Action Taken details to be entered into the System – - Nodal Officer will confirm about veracity of the report of illegal mining by selecting on Yes / No. Yes, will imply that the activity reported is found to be that of 'illegal coal mining'. - No means "No Illegal Coal Mining activity was found". - Nodal Officer to also put his additional remarks	One Day

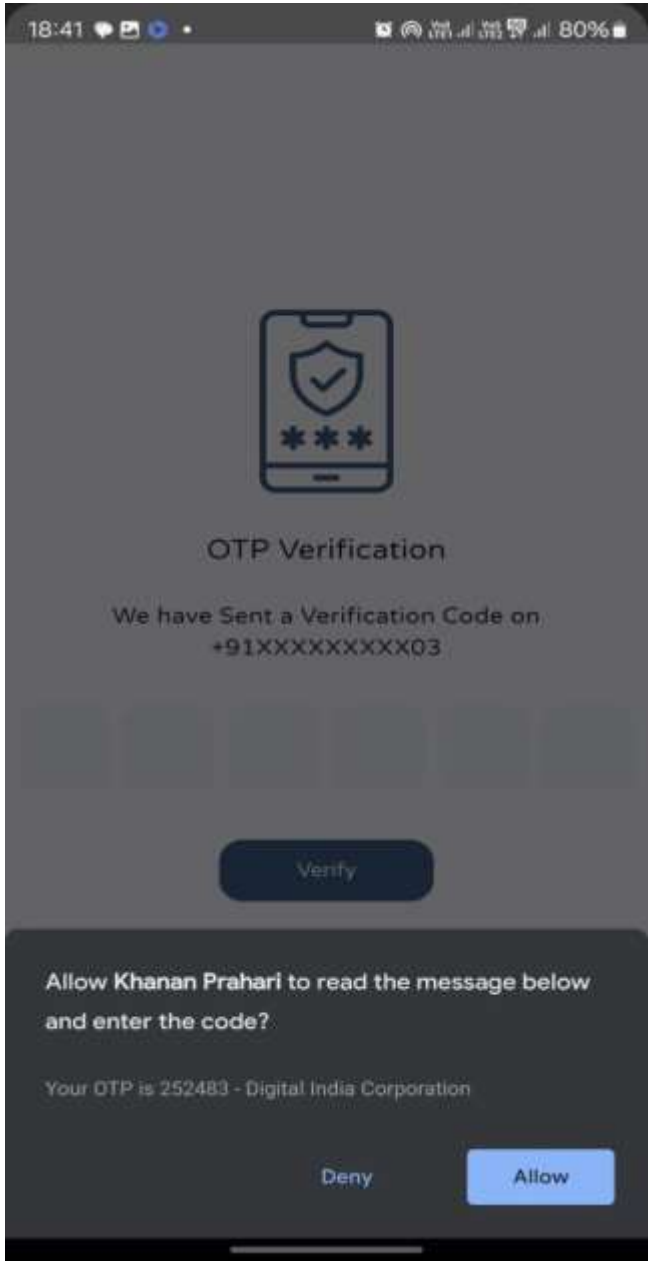
“खनन प्रहरी” - THE MOBILE APP: OPERATIONAL PROCEDURES

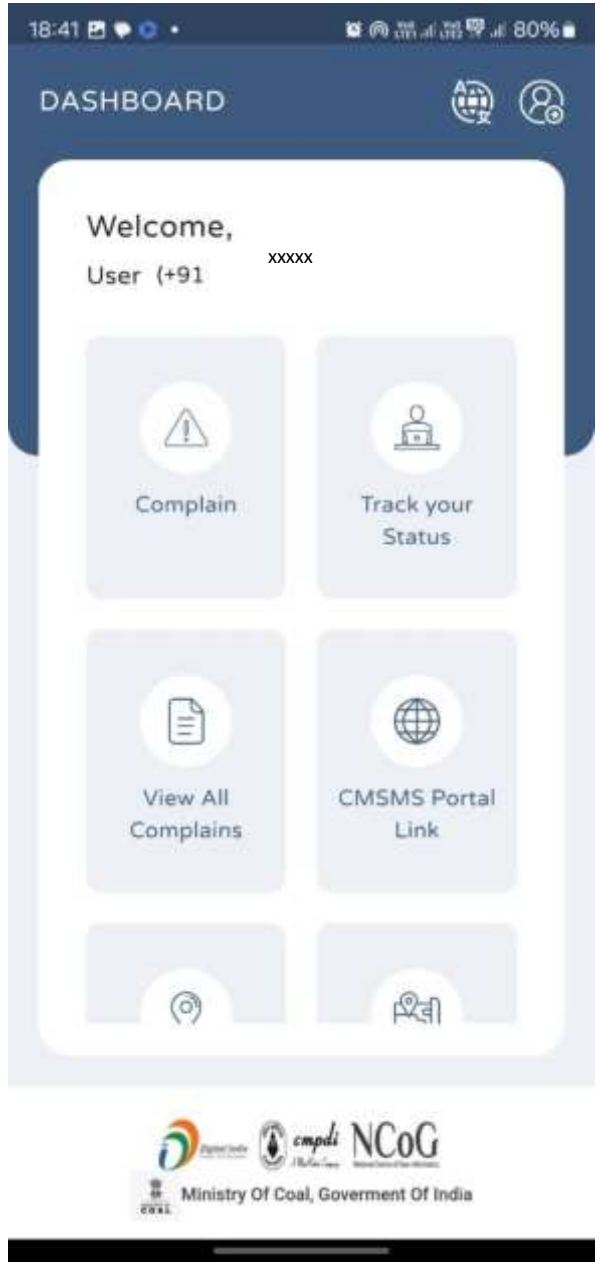
It is a Mobile App of Ministry of Coal for Reporting Illegal Coal Mining. It is a tool for reporting any illegal coal mining incident through geotagged photographs as well as textual information by any individual from the place of incidence

The download link **of Khanan Prahari mobile app** is available at CMSMS Portal on right side

Login Page and Dashboard Page after login at Khanan Prahari Mobile app

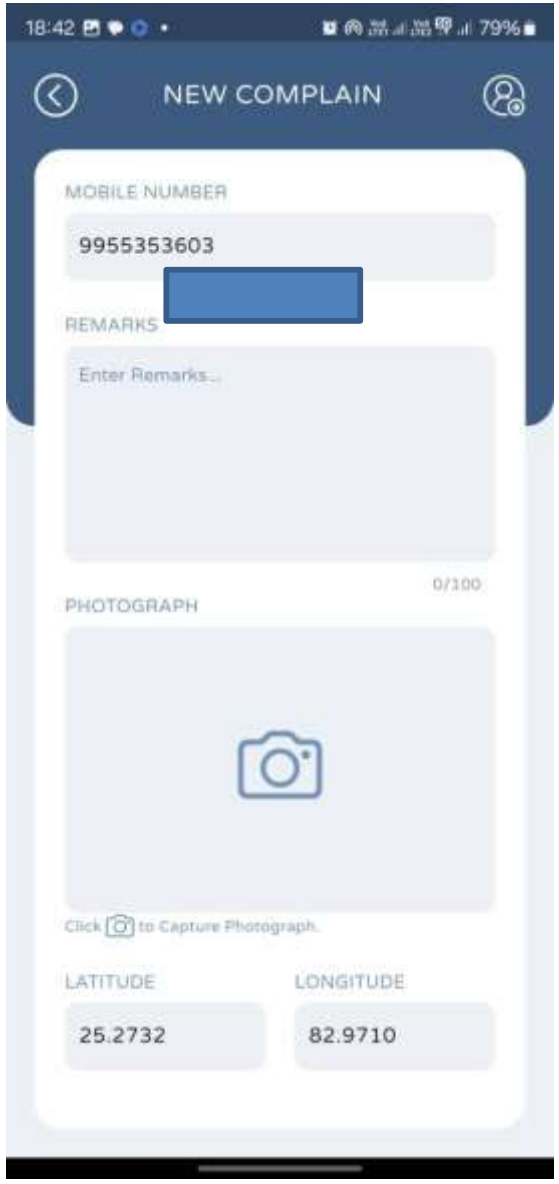
After successful login verified by OTP based Security, any person willing to report any incident of illegal mining, may do so using the first option ‘Complain’ at the top of the home page of the app. User can switch to HINDI/ English language facility by choosing by language icon at top right corner before Profile area.

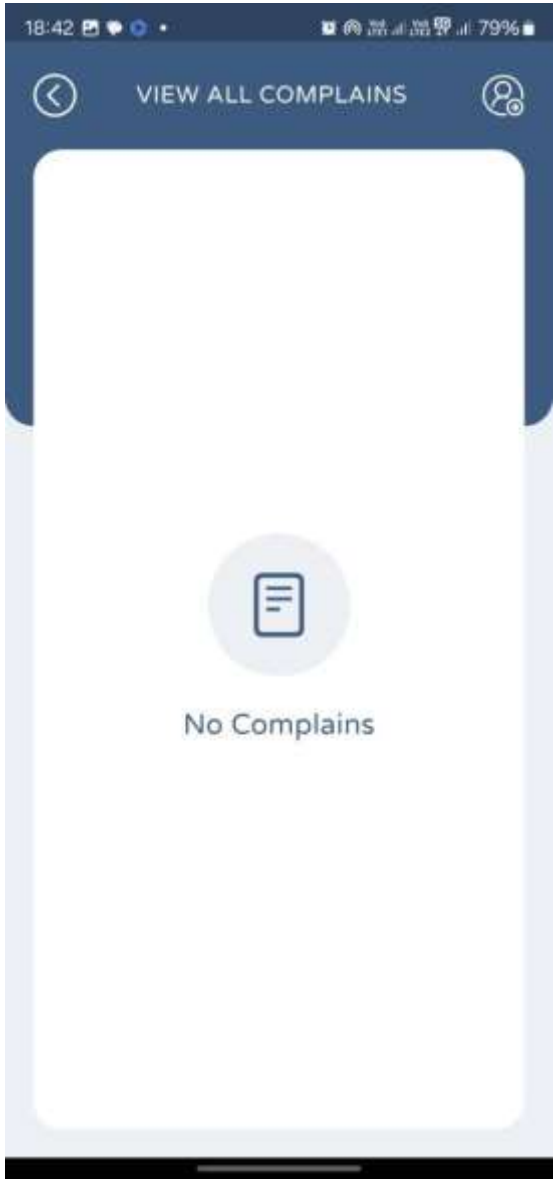




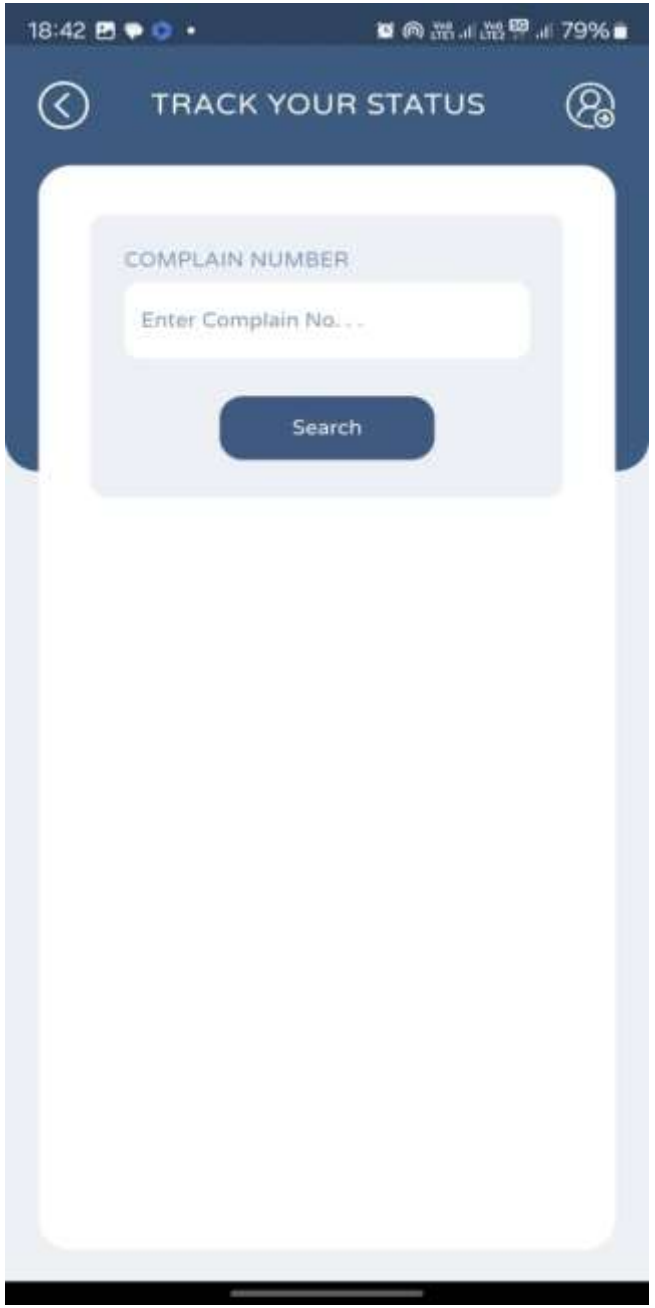
Complain Lodging on Khanan Prahari

1. The c**omplaint** page opens the new section of input form. Enter the mobile no. and the complaint details in the Remarks row. Take a picture of the incident site through camera of the Mobile App. GPS enabled devices will instantly record the latitude - longitude of the location.
2. Press the ‘Submit’ button. The complaint will be submitted to the system for verification. A complaint number will be generated for future reference.
3. History of previous complaint can be seen in **View all complaints** menu.





4. The complaint number is unique for each complaint, and can be seen in the system for tracking of the status.
5. To know the current status of the complaint, click on ‘Track Your Status’ option on the home page of the app (marked as 2 in Fig 18). The tracking page is displayed (Fig. 20). Enter the complaint number and submit it. The current status of the complaint will be displayed.
6. The designated nodal officer can also login through Khanan Prahari mobile app and verify the complaints with action taken remark and action taken pics.



Two Map options are provided in the home page: ‘Mines Map’ and ‘Google Map’. ‘Mines Map’ displays the Satellite imagery along with names of places and roads and, ‘Google Map’ shows the map provided by Google. GPS enabled devices will also show the current location of the device (mobile).

FAQ’ option provides more information regarding the commonly asked questions about the various terminologies mentioned at Khanan Prahari Mobile app.

Thanks