Online repository for information on pollution monitoring in India

www.indiapollutionmap.org

The POLLUTION MAP developed at the **Centre for Development Finance (CDF)** endeavours to support more meaningful tracking of environmental change by creating a repository of pollution monitoring data to capture and disseminate information to civil society in a systematic and user-friendly manner. The pollution map initiative will link information about location of pollution sensors/monitors to data accessed through various Central and state government agencies, so that the spatial distribution of pollution can be visually represented and the gaps in the monitoring regime identified. Information about air and water pollution and other forms of point source and non point source pollution will be presented with data on socio-economic and development indicators to portray problematic scenarios and highlight gaps in information.

The visual presentations shown by the map would add value to the data that is currently only available less digestible form of excel spreadsheets, while the website's data download facility would also make data available for further analysis. In due course, the map would enable both government and citizens to understand the pollution loads in the local environment prioritize actions to reduce pollution levels and improve environmental quality. In the first phase the map has been piloted for the states of Maharashtra and Tamil Nadu to demonstrate the potential of such a tool and seek wider input to refine it to make it more geographically and socially relevant.

Activating information & measurement to improve environmental quality

Environmental monitoring, regulation, and protection have not matched the pace of development India is witnessing. Modern technologies and newer chemicals are being introduced and new streams of wastes and emissions are continuously being generated, but our ability to track the build-up of toxic pollution and take preventative or remedial measures is limited. A well-thought through combination of public and civil society efforts is critical to not only improve efforts at mitigation but also to make the population aware of the quality of environment and take collective action to prevent deterioration. The pollution map project is a key part of this larger initiative at CDF and will endeavour to understand better the measurement of environmental quality - (i) what is being measured, (ii) what more needs to be measured and (iii) how better can it be measured? By representing the information in a map-based form CDF's attempt is to activate and add-value to information and thus realize the usefulness of information by showing it pictorially and spatially. In all, an online repository will help consolidate scattered information and provide a holistic understanding of the monitoring regime.

Objectives of the map

- To present information on pollution monitoring to civil society using map-based tools for easily digestible visual portrayal.
- To indicate gaps in measurement of environmental quality that would need to be filled by improving monitoring regimes.
- To provide an opportunity to demonstrate the map and seek input from civil society organizations, representatives of communities faced with pollution risks, academics and experts to make it more socially and geographically relevant to its users.
- To understand better what aspects of pollution stakeholders in civil society as well as central and national governments would like to see depicted on the map, which will in turn assist in their endeavours for pollution prevention and control.
- To foster partnerships to assist the development of the map such that information can be captured and visualized in a more timely manner and at a more regional and local level.

Methodology

The map has been built on the Google API (Application Programmable Interface) platform using Java programming. Datasets are uploaded to the platform which are then converted to map-based visualization into point-based or boundary-based display and provides a layered view of

information to make multiple comparisons and interpretations. The data for the map has been accessed through two main methods – (a) Desk research for secondary data (b) Right to Information (RTI) applications. Various standardized websites and data clearing houses have also been tapped to ensure as current data as possible is available for map displays.

Using the Map

The map provides an interface easy to understand and simple clicking mechanisms to enable the user to navigate through the map and choose the desired information to be displayed in map form. A left column listing the various desired 'drop-down' layers denoting the data available have been created which when highlighted (clicked on) will generate a map. Users have the option of first choosing a base layer of selected demographic and pollution related indicators at district or state level and various years depending on availability of data. This will show as shaded state or district polygons. Users can then overlay either points showing the location of various sensors or pollution parameter values captured through these sensors. Depending on the zoom level, the map automatically clusters sensors and their values to reduce clutter on the map. Please see below the data layers and samples of displays generated by the map.

Figure 1 shows the data layers and display of point-based and boundary-based data.

Figure 2 shows the expanded data layer comprising of boundary-based data denoting different development aspects

and the year and resolution of data

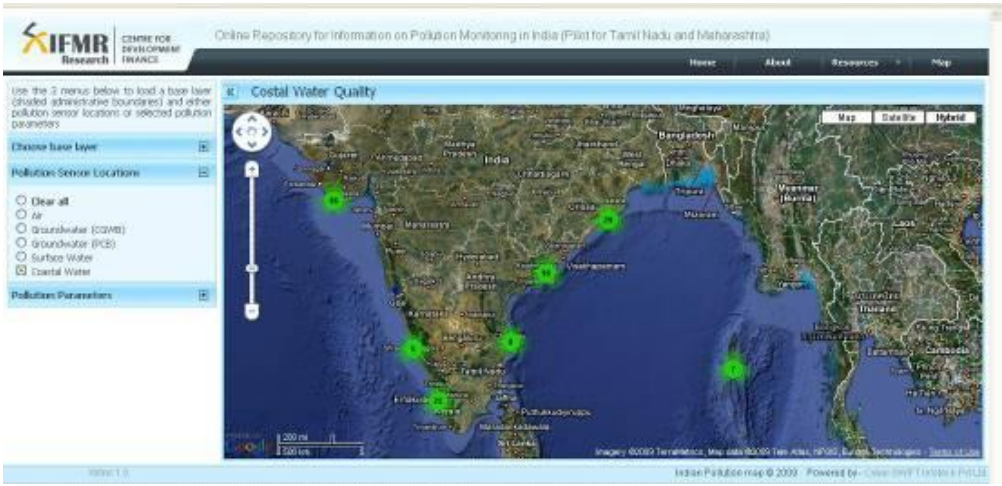

Figure 3 shows display of point-based data based on the chosen data layer on the left menu.

Figure 4 below shows the left menu/data layer comprising of information on air and water quality parameters.

Catalysing action against pollution

The map has been developed with a view to provide better access to data and generate meaningful and insightful interpretations for the purpose of catalysing action on pollution control and mitigation. Thus, civil society organisations, citizen activists and NGOs will find the website useful towards purposes of research and advocacy. Policy-making bodies and regulating agencies too would find this tool a guiding factor in improving the monitoring regime. In all, the pollution map is hoped would be supporting step in progressing towards better environmental quality for India.

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