

# CLART

## Composite Landscape Assessment and Restoration Tool

CLART is a Geographic Information System (GIS) based Android tool – developed to enhance the planning of region-specific soil and water conservation measures.



Almost 60% of the funds spent under Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA, annual budget INR 60,000+ crore) are earmarked for employment and livelihood asset creation, mostly through the restoration of common land and water resources. However, a major portion of such expenditure does not consider location specific characteristics that determine recharge of ground water or availability of surface water, as result of which, measures are undertaken with suboptimal outcomes. The planning process for restoration measures could significantly improve with location specific information for planning soil and water conservation measures. Further, such information needs to be made available in a manner that village communities can easily apply this information for planning and implementation processes, with little dependence on external resource persons.

**Composite Landscape Assessment and Restoration Tools** (CLART in short), is a Geographic Information System (GIS) based Android tool –developed to enhance the planning of region-specific soil and water conservation measures. CLART enables rural communities in designing measures that would either help recharge of ground water or augment surface water availability, depending upon the location specific geo-hydrological characteristics. Made available in a user friendly manner for semiliterate village communities, it enables them to undertake major part of the planning and designing, thereby assisting the local government functionaries in speeding the process of approvals, as well as improving the efficacy of ground level implementation.

## Salient features

- Provides location specific information, thus improving planning and decision-making by 70-80%
- User-friendly, open-source tool installed on Android devices
- Works offline with devices' inbuilt GPS, pinpointing the exact location on the map. The color codes further suggest possible activities
- Collects, saves evidence offline (photograph, lat/long and a set of questions), that can be synchronized to the web portal, once the device connects to the web

## How CLART works

The tool analyses publicly available data sets on lithology, geomorphology, lineament, watershed, drainage, slope, land use and land cover and makes recommendations through color coded maps on a mobile device.

Enabled to work without internet connection, village-level functionaries could visit the locations and by using the inbuilt GPS on their phone, the CLART guides them on specific recommendations for soil and water conservation measures for that specific site. Such recommendations are aligned with the specific activities allowed under MGNREGA.

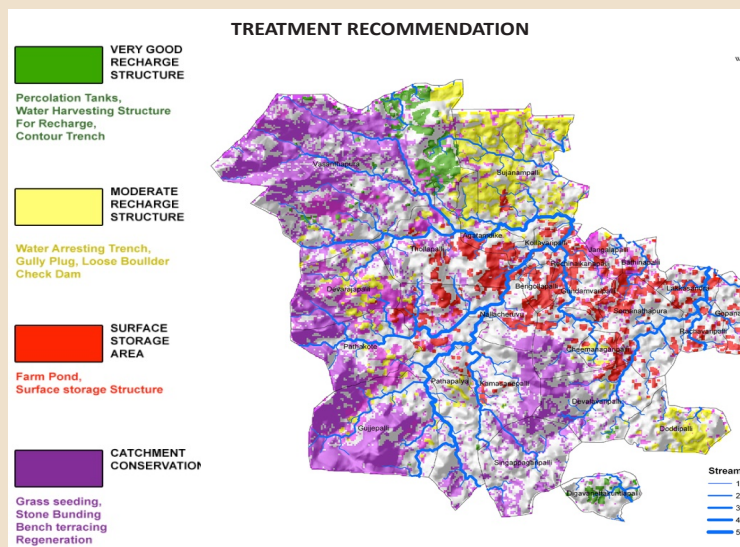
After identifying a location-specific intervention, the user can input basic measurements such as length, width and height (of the proposed activity) into the app-based estimation tool. Based on this, CLART generates an estimate of approximate cost, labour days and the sketch of the engineering design for the proposed intervention. All the information is saved offline and synchronized with server when online, for preparing detailed project plans.

## Outreach

Introduced in 2014, CLART is currently being used by the Agriculture Department and Panchayati Raj Department, the Government of Odisha; Panchayati Raj Department, Government of Chhattisgarh; MGNREGA Department, Government of Andhra Pradesh; the Andhra Pradesh Drought Mitigation Program (APDMP); and the Watershed Development Department, Government of Karnataka. A MoU has also been signed with the National Institute of Rural Development and Panchayati Raj (NIRDPR), for taking CLART to 50,000 Gram Panchayats under 'Mission Antyodaya'. FES is also building capacities of government and partner NGOs officials, including MGNREGA staff members, – on using the tool to facilitate its adoption across the country.

In a few months, CLART would be enhanced to include features for planning the planting of the right tree species at the right place.

**CLART was awarded the 'Mobile for Good' Award by Vodafone Foundation in 2016.**



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