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Rainwater harvesting may reduce Green house gases

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Statement of the Problem: Asia Pacific Network training programme was organized in Jawaharlal Nehru University The aim of the hands-on-training programme in Jawaharlal Nehru University is to develop the capacity of various stakeholders to use various remote sensing data (optical and Synthetic Aperture Radar (SAR)) to monitor forest cover and deforestation. The potential of the Rainwater harvesting needed to be emphasized to minimize the carbon foot printing. Rainwater harvesting can improve the level of zone of saturation of aquifer water. Above the zone of saturation the vadose zone or the zone of suspended water can be improved which helps the deep rooted vegetation to extract water for the plants. The training programme aims to develop a better understanding to use optical and SAR data to monitor forest cover and deforestation that will be useful for Reducing Emissions from Deforestation and forest Degradation (REDD+) mechanism implementation.

Findings: The experiment of Rainwater harvesting (RWH) in Jawaharlal Nehru University (JNU) was initiated in 1997 followed by drilling of tube wells in three locations inferred by using high spectral reflectance, low resistivity and magnetic values. These RWH structures recharged the existing aquifers of JNU and surrounding areas. Nine tube well locations were identified for drilling by using Down the Hole Hammer cum Direct Rotary Drilling Machine in JNU in between 1998 to 2008. All of these tube wells were in confined condition, which recharged the near surface aquifer by raising groundwater level. The area has been monitored using satellite images of optical, near infra red and microwave sensors from 2002 to 2016. The data shows improvement of the vegetation canopy, mathematically calculated as Normalized Difference Vegetation Index (NDVI). NDVI values shows a remarkable improvement, which may help in absorbing Carbon Dioxide (Green house gas) from the polluted atmosphere. However, the erratic change in diurnal temperature and rainfall due to climate change puts more need for Rainwater Harvesting for sustenance.

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