

# GIS-based Gram Panchayat plan for water security and climate adaptation

## CWRM GP Plan

Engineers, government officials, and citizens of the Gram Panchayat benefitted as the proposed GIS plan is used to allot appropriate work and budget for village development

### Context ●●●

Without a scientific GIS Plan, engineers with the Department of Rural Development (DRD), Government of Tamil Nadu, found it a challenge to implement the Natural Resource Management (NRM) and non-NRM works in Gram Panchayats (GPs) allotted under the Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) budget. MSSRF, as a technical partner with GIS expertise together with DRD officials, tried to address this problem through the Water Security and Climate Adaptation in Rural India (WASCA) project in Thiruvannamalai and Ramanathapuram districts, Tamil Nadu. GIS plans can help to allot appropriate works and budget for village development by the department of rural development, and GIS tool is very useful for planning and monitoring MGNREGA works and reporting to the Ministry of Rural Development, Government of India.

### ●●● Intervention

GIS and RS technologies are extensively used for Composite Water Resources Management (CWRM) plan at the GP level under WASCA project, which is supported by GiZ, New Delhi, in partnership with the Ministry of Rural Development (MoRD). Detailed GIS-based proposed work plans and thematic maps were prepared by MSSRF in collaboration with DRD officials for 860 GPs in Thiruvannamalai district and 429 GPs in Ramanathapuram district.

1289 GPs

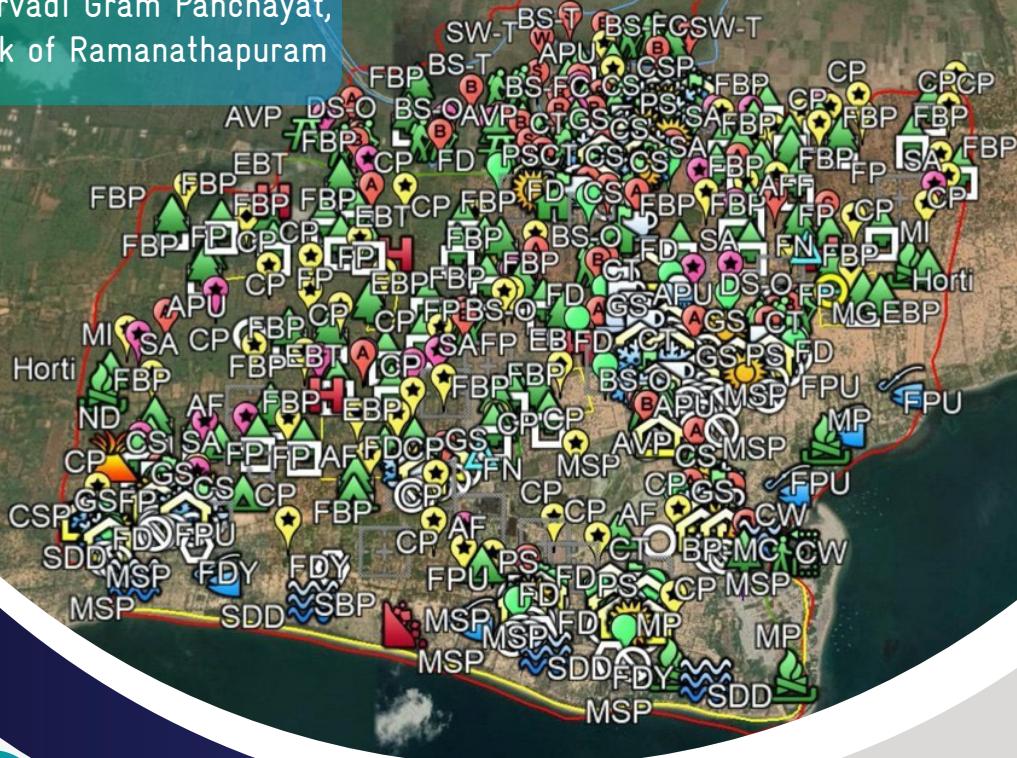
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The integrated plans are prepared by analysing the CWRM non-spatial data and spatial data from the thematic maps such as landuse landcover, soil, geomorphology, lineament, ground water prospectus, erosion, salinity, etc. The thematic maps were extracted from the Bhuvan, ISRO portal, and processed through Google Earth Pro to create assets, while managing them more effectively along with better understanding of their impact/outcome.

According to the MoRD guidelines, all the permissible works under MGNREGA that are suitable for a GP were included in the GIS-based plan. Work identified in the GIS-based plan was included in the shelf of projects and phased out in such a way that the GPs are saturated in three to five years.



Model plan: Ervadi Gram Panchayat, Kadaladi Block of Ramanathapuram



- Cattle Through
- Check Wall
- Community Soak Pit
- Composting
- Contour Continues B
- Desilting of Waterbod
- Earthen Bunding
- Farm Bund Plantation
- Farm Pond
- Fencing
- Fish Drying Yard
- Fish Processing ur
- Fodder Developm
- Goat Shed
- Horticulture
- Individual Soe
- Mulching
- Nurs

GIS Based plan



Outcomes

The engineers and officials from the MoRD are now trained in CWRM planning and on using GIS methodologies for planning, field verification using GPS-based android app and uploading in the MGNREGA software to implement the proposed works. As a result, Thiruvananthapuram district ranks first in the country to complete the GIS plan for their Gram Panchayats and have shelf of works for the next five years. DRD in Thiruvananthapuram and Ramanathapuram are implementing MGNREGA activities and works related to climate resilience measures based on the scientific plan developed with MSSRF guidance under WASCA project. This will result in an increase in surface and ground water levels, green coverage, and full employment benefit from MGNREGA wages in the districts. The proposed GIS plan is now used to allot the appropriate budget for the village development by DRD.



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