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Visualize IT. See IT Through.



SDI Odisha Spatial
Data Infrastructure

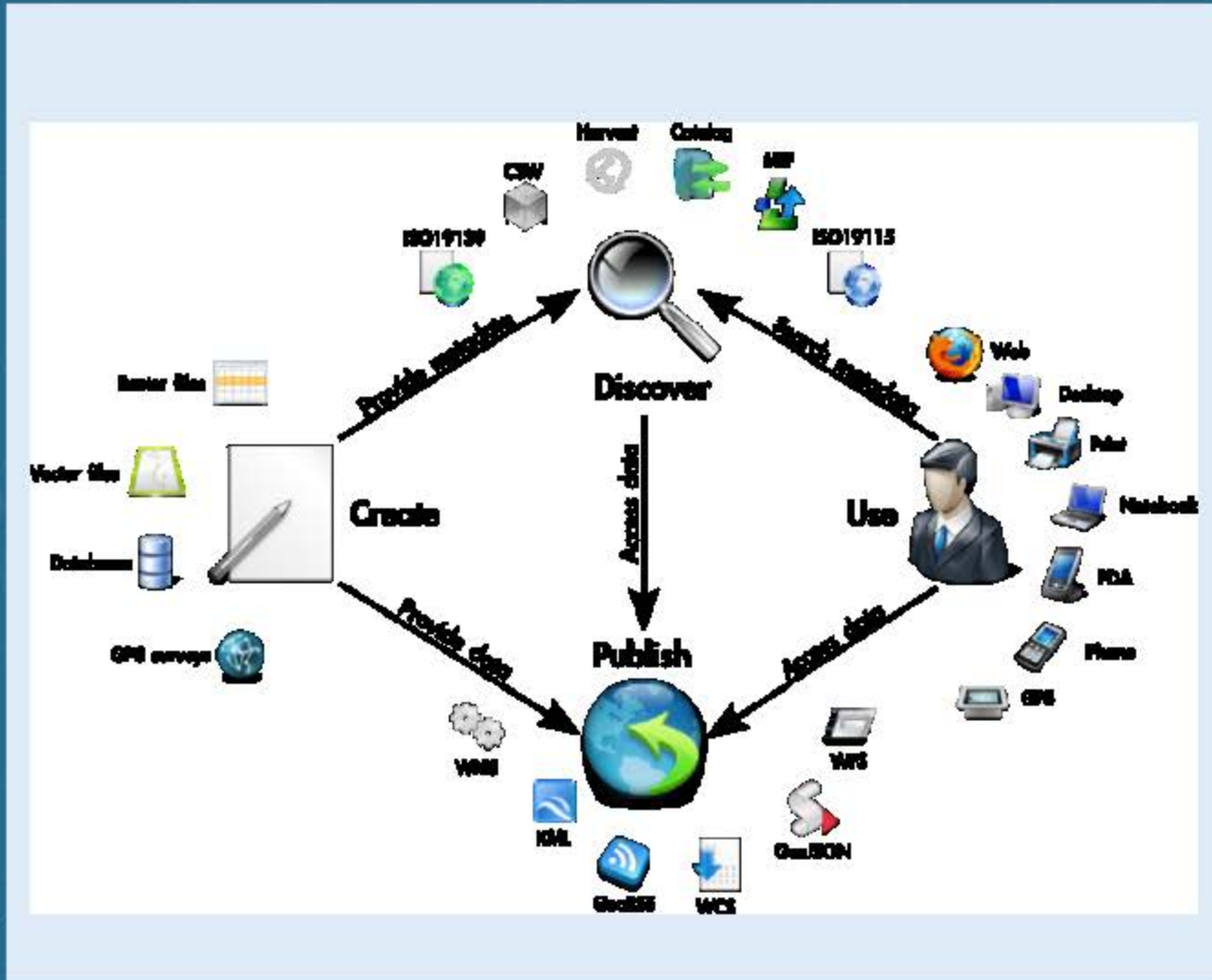
Dec 22, 2018

Agenda

- **Introduction**
- **SDI Overview**
- **Accomplishments @ OSDI**
- **Demo of OSDI Portal**
- **Key focus areas – Next phase**

What is SDI?

- Secure spatial data sharing platform
- Data standardization enabler
- Avoids duplication of data across stakeholders
- Provides data discovery, download tools
- Enables departments without IT infrastructure to load/share data
- Provides tools for spatial data analysis
- Enables stake holders to build decision support tools using SDI



Key drivers of NSDI





OSDI – Phase 1



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Key Highlights of Odisha SDI

- **Access to Cadastral data of 15 Districts**
- **Cadastral information along with (RoR) Record of Rights details (Bhulekh integrated)**
- **Metadata, Application Schema accessible to users**
- **Map Services accessible via Web & Desktop - independently of software they use.**
- **Facility for Crowdsourcing Inputs via Geoportal and Mobile**
- **Register Map Services from other Department of Odisha (OPTCL, ORAMS)**

Odisha SDI Phase-1 : Accomplishments

- **Adopted ISO & BSI standards for spatial data classification**
- **Adopted ISO 19115 standards for metadata catalogue**
- **Data analysis and developing data model for over 65 layers**
- **Sample non spatial data integrated (Census data, Meteorological data etc.,)**



Data Services/Layers on OSDI

BOUNDARY ADMINISTRATIVE	STATE BOUNDARY
	DISTRICT BOUNDARY
	BLOCK BOUNDARY
	GRAM PANCHAYAT BOUNDARY
	CENSUS VILLAGE BOUNDARY
	REVENUE DIVISIONAL COMMISSIONER ZONE
	REVENUE DISTRICT BOUNDARY
	SUB DIVISION BOUNDARY
	REVENUE TEHSIL BOUNDARY
	REVENUE VILLAGE BOUNDARY
BOUNDARY POLITICAL	PARLIAMENTARY CONSTITUENCY
	ASSEMBLY CONSTITUENCY
	MUNICIPAL CORPORATION
	MUNICIPALITY
	WARD ZONE BOUNDARY
BOUNDARY OTHERS	NOTIFIED AREA COUNCIL
	TRIBAL MADA
	TRIBAL ITDA
	TRIBAL PRIMITIVE
	TRIBAL CLUSTER

TRANSPORTATION / RAILWAY NETWORK	RAILWAY STATION
	RAILWAYLINE
TRANSPORTATION / ROAD NETWORK	ROADS
LAND USE & LAND COVER	LULC 10K
	LULC NRSC 50K
	LULC NRIS 50K

SURFACE WATER	DRAINAGE
	CANAL
	RIVERS
WATERSHED BOUNDARY	REGION
	BASIN
	CATCHMENT
	SUB CATCHMENT
	WATERSHED
	SUB WATERSHED
	MINI WATERSHED
MICRO WATERSHED	



Data Services/Layers on OSDI

SLOPE	SLOPE
SOIL	SOIL
GEOMORPHOLOGY	GEOMORPHOLOGY
GEOLOGY	LITHOLOGY

CIVIL SUPPLIES MARKETING FACILITIES	CONSUMER SUPPLIES CENTRE
UTILITIES / POWER GENERATION	HYDRO ELECTRIC POWER PLANTS
CADASTRAL INFORMATION	CADASTRAL

CDP BOUNDARIES	CDP ZONE BOUNDARY CDP DEVELOPMENT AUTHORITY BOUNDARY 59 TOWNS CDP VILLAGE BOUNDARY 59 TOWNS
CDP LOCATION	CDP GPS 59 TOWNS LOCATIONS CDP SUNABEDA LULC CDP KAMAKHYANAGAR LULC CDP BHUBAN LULC CDP REDHAKHOL LULC CDP NIMAPADA LULC CDP KU CHINDA LULC CDP NILAGIRI LULC CDP KHARAR LULC CDP HINDOL LULC CDP DASPALLA LULC CDP KHARAR ROAD LULC
CDP TOWN LAND USE	CDP PIPILI LULC CDP JUNAGARH LULC CDP PATNAGARH LULC CDP ATHMALIJK LULC CDP ATABIRA LULC CDP BINIKA LULC CDP UDALA LULC CDP KESINGA LULC CDP BARPALI LULC CDP PADAMPUR LULC CDP TARAVA LULC CDP KOTPAD LULC CDP BAUMEIA LULC



Odisha Geoportal



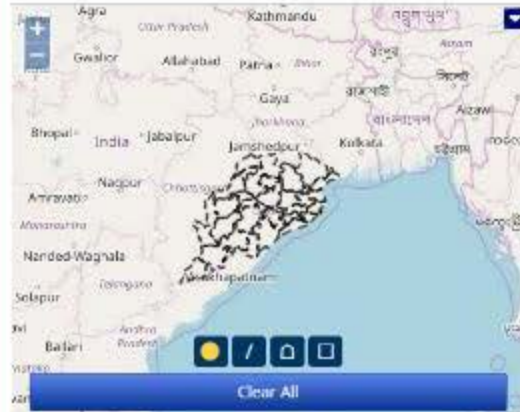
The screenshot shows the Odisha SDI Geoportal website. At the top, there are browser tabs for 'Odisha SDI GEO PORTAL', 'Google News', and 'ODISHA Spatial Data Infrastructure'. The address bar shows 'osdi.orsac.gov.in/OSDI/'. The website header includes the SDI logo and navigation links: 'ABOUT OSDI', 'USER MANUAL', 'DOWNLOAD MOBILE APP', and 'LOGIN'. A green banner below the header reads 'Please go through the USER MANUAL for effective use of Website'. The main content area features a large background image of an industrial facility at dusk. Below this, there are four main service categories: 'OGC SERVICES' (diagram showing Web Feature, Web Coverage, and Web Map Servers), 'MAP SERVICES' (word cloud with 'Service' and 'Web' as central terms), 'APPLICATION SCHEMA' (diagram of a GIS application architecture), and 'SPATIAL ANALYSIS' (3D visualization of spatial data layers). At the bottom, there are sections for 'IMPORTANT LINKS' (with logos for Bhuban, GO PLUS, and Bhukosh), 'OUR SERVICES' (with links for OVERVIEW, GEOPORTAL, and a link for the 06 FEB update), and 'LATEST NEWS' (with two news items dated 06 FEB 2018 regarding server hosting). The Windows taskbar is visible at the very bottom.



Metadata Catalog



Catalogue



Category Type (19)

1. Administrative and Political Boundaries(2)
2. Inland Water Resources(1)
3. Transportation Networks(1)
4. Atmosphere and Climate(0)
5. Cadastre(0)
6. Cultural, Society and Demography(0)
7. Elevation and Derived Products(0)
8. Business and Economic(0)
9. Environment and Conservation(0)
10. Facilities and Structures(0)

Service Type (3)

1. OGC:WMS
2. OGC:WFS
3. OGC:WES

Keyword Search:

Search by Layer, Services or keyword

Show Advance Options

Category Type:

Service Type:

Data Created: From:

To:

Search

View by Services Layers



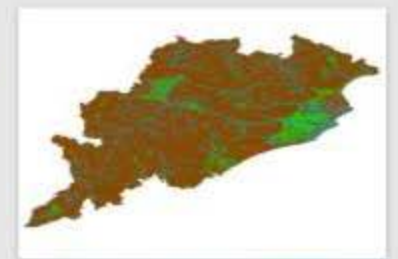
Admin(OGC:WMS)



Political(OGC:WMS)



Trnsport(OGC:WMS)



Physical Waterbody(OGC:WMS)



Metadata info

The screenshot displays the OSAC Geo Portal interface. The main map shows the state of Odisha, India, with several districts highlighted in purple. A metadata window is open on the right side of the map, displaying the following information:

Metadata

NSDI Metadata

geomorphology

NSDI Metadata

1) Data identification information:

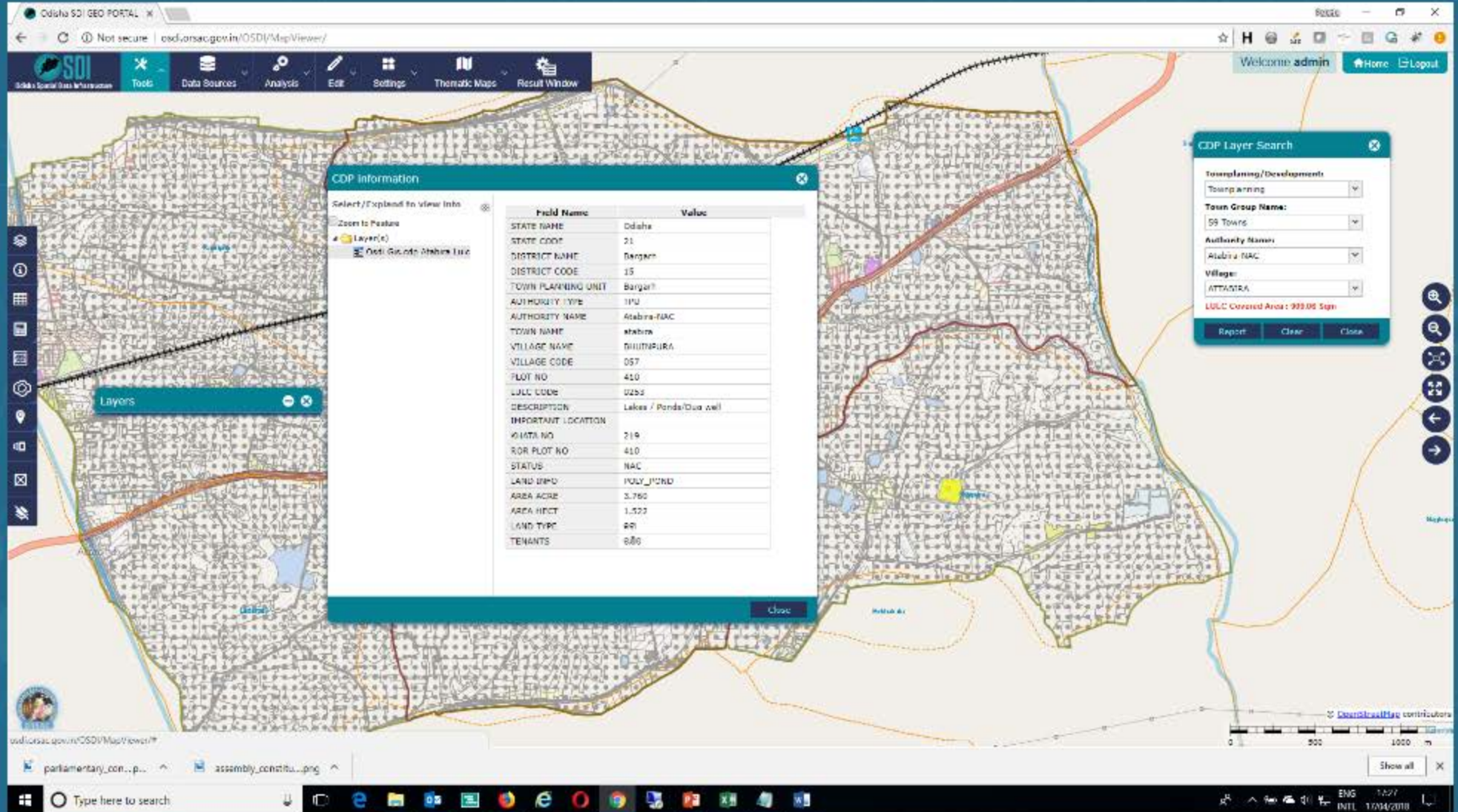
1. Name of the Dataset :
2. Name of the Data :
3. Theme :
4. Keywords : GEOM,GEOMORPHOLOGY,1:50000,1:50K,ODISHA,GEOM
5. Access Constraints :
6. Use Constraints :
7. Purpose of Creating Data :
8. Data Type : vector

(2) Citation Information:

9. Data Prepared by :
10. Original Source :
11. Source Scale and Date :
12. Mapping year :
13. Digitizing year : 2019
14. Survey year : 2000
15. Lineage : null
16. Associated Project pertaining the data :
17. Associated Publications :
18. Email : osac.od@nic.in/osac2012@gmail.com
19. Affiliation :
20. Corporate Name :
21. Corporate Address :

(3) Contact Information:

22. Contact Person : OSAC
23. Organization : ODISHA SPACE APPLICATIONS CENTRE (OSAC)
24. Mailing Address :
25. City : BHUBANESWAR- 751023, ODISHA
26. Country : INDIA



The screenshot displays the Odisha SSI GEO PORTAL web application. The browser address bar shows the URL `od.srsac.gov.in/OSDI/MapViewer/`. The application interface includes a top navigation bar with options like Tools, Data Sources, Analysis, Edit, Settings, Themes: Maps, and Result Window. A central map shows a grid of land parcels with a yellow highlight on a specific parcel. A 'Layers' panel is visible on the left side of the map. A 'CDP Layer Search' panel on the right contains dropdown menus for 'Town Planning/Developments' (set to 'Town Planning'), 'Town Group Name' (set to '59 Towns'), 'Authority Name' (set to 'Atabira NAC'), and 'Village' (set to 'ATTASTRA'). Below these is a 'LULC Covered Area : 993.06 Sqm' and buttons for 'Report', 'Clear', and 'Close'. A 'CDP Information' popup window is open, displaying a table of metadata for the selected parcel.

Field Name	Value
STATE NAME	Odisha
STATE CODE	21
DISTRICT NAME	Bargarh
DISTRICT CODE	15
TOWN PLANNING UNIT	Bargarh
AUTHORITY TYPE	TPU
AUTHORITY NAME	Atabira-NAC
TOWN NAME	atabira
VILLAGE NAME	BHUMIPURA
VILLAGE CODE	057
PLOT NO	410
LULC CODE	0253
DESCRIPTION	Lakes / Ponds/Dua well
IMPORTANT LOCATION	
KHATA NO	219
ROR PLOT NO	410
STATUS	NAC
LAND INFO	POLY_GROUND
AREA ACRE	2.780
AREA HECT	1.123
LAND TYPE	RR
TENANTS	0/00



New Railway line – Proximity Analysis

The screenshot displays the Odisha SGI GEO PORTAL web application. The main map shows a new railway line (highlighted in orange) overlaid on a cadastral map. A 'Buffer Analysis' dialog box is open, showing the following data:

Field Name	Value
STATE NAME	Odisha
STATE CODE	21
DISTRICT NAME	Ganapali
DISTRICT CODE	15
TOWN PLANNING UNIT	Ganapali
AUTHORITY TYPE	TPU
AUTHORITY NAME	Atabira NAC
TOWN NAME	atabira
VILLAGE NAME	ATTAPIRA
VILLAGE CODE	1501056
PLOT NO	3834
LULC CODE	1153
DESCRIPTION	Urban Roads (1, 2, 4 & 6 lane)
IMPORTANT LOCATION	
KHATA NO	411
ROR PLOT NO	3834
STATUS	NAC
LAND INFO	POLY_PARCEL

The 'CDP Layer Search' dialog box shows the following search criteria:

- Townplanning/Developments: Township
- Town Group Name: 09 Towns
- Authority Name: Atabira NAC
- Village: ATTAPIRA
- LULC Covered Area: 993.06 Sgn

The 'Buffer Analysis' dialog box also shows the following settings:

- Buffer (Mts): 50
- Type: Urban
- Layers: cdp Atabira_Lulc (selected), Railwayline, Railway Station, Census Village Boundary, State Boundary, Area Census Village Boundary
- With: Draw geometry

The 'Layers' panel on the left shows a list of layers, including 'cdp Atabira_Lulc'.



New Development Impact



The screenshot displays the Odisha SDI GEO PORTAL interface. The main map shows a cadastral layout with various plots outlined in blue and some highlighted in orange. A 'Cadastral Analysis' window is open, showing a table of field names and values for a selected plot. Another 'Cadastral Analysis' window is also visible, showing a 'Huffer (Mts):' input field and a 'WHH:' dropdown menu.

Odisha SDI GEO PORTAL
Address: od.orsac.gov.in/OSDI/MapViewer/

Layers

- Layers
- Data Sources
- Galaxy
- ODS
- Transportation / Road Network
- Transportation / Railway Network
- Land Use & Land Cover
- CDP Layers
- Surface Water
- Geomorphology
- Geology
- Slope
- Soil
- Watershed Boundary
- Bal-makia-ortho-odisha
- Balshil Cadastral
- Dhenkanal Cadastral
- Dhansupata Cadastral
- Khurda Cadastral
- Kandhapada Cadastral
- Narasimpur Cadastral
- Buapada Cadastral
- Ganhapur Cadastral
- Sonepur Cadastral
- Puri Cadastral
- Open Street Map
- Google Maps

Cadastral Analysis

Select/Expand to view info

Zoom to Position

Layer(s)

Pun, pun Tehsil

Field Name	Value
SID	120547
DISTRICT NAME	Puri
DISTRICT COOP	11
TEHSIL NAME	Pun
TEHSIL CODE	04
REVENUE VILLAGE NAME	Parasakar GUM 01 Nakola
REVENUE VILLAGE CODE	032
REVENUE PLOT	253

Cadastral Analysis

Huffer (Mts):

50

WHH:

Draw geometry

Pause Cancel



Catchment/Basin - In Selected Assembly regions



Layers

- BaseMapWPMPS 1
- Analysis #2 [od_gis_assembly_constituency]
- BaseMapWPMPS
- Boundary Political

Analyses

Update Analysis #2 [od_gis_assembly_constituency]

Select features in: od_gis_assembly_constituency

Where filter is: Simple

Ruffer around: []

Spatial filter: That

That not

With: Features in

od_gis_catchment

Where filter is: Simple

Buffer around: []

Display as: Analysis #2 [od_gis_assembly_constituency]

With style

Show Attributes

id	assembly_name	assembly_code	parliament_name	parliament_c	district_name	state_name
223	Lanjigarh	077	Kalahandi	11	Kalahandi	Odisha
247	Meyrow	143	Koraput(SI)	21	Koraput	Odisha
248	Korason	144	Koraput(SI)	21	Koraput	Odisha
249	Laximpur	145	Koraput(SI)	21	Koraput	Odisha
250	Pottang	145	Koraput(SI)	21	Koraput	Odisha
251	Kotaco	142	Newarangpur(SI)	12	Koraput	Odisha
252	Chitrakonda	147	Newarangpur(SI)	12	Malkangiri	Odisha
253	Halkangin	146	Newarangpur(SI)	12	Malkangiri	Odisha
254	Ustugun	076	Newarangpur(SI)	12	Newarangpur	Odisha
254	Jharigan	074	Newarangpur(SI)	12	Newarangpur	Odisha
255	Newarangpur	075	Newarangpur(SI)	12	Newarangpur	Odisha
256	Umarizote	073	Newarangpur(SI)	12	Newarangpur	Odisha
261	Nayaguda	140	Koraput(SI)	21	Koraput	Odisha

Page 1 of 1

Displaying 1 - 13 of 13



Data Services Integrations



- OPTCL
 - Towers, Feeder lines, Sub Stations
- Rural & Urban GIS
 - 12 Dept's Scheme locations
 - Department Assets
- ISRO/NRSC
 - Thematic maps – Geomorphology, Land Use, Soil Erosion, Watershed
- NIC – RoR
 - RoR information



Departments Schemes & Assets location



The screenshot displays the Odisha SDI GEO PORTAL web application interface. The browser address bar shows the URL osdi.orsac.gov.in/OSDI/MapViewer/. The application features a top navigation bar with tabs for 'Tools', 'Data Sources', 'Analysis', 'Edit', 'Settings', 'Thematic Maps', and 'Result Window'. A 'Layers' panel on the right side of the map lists various data layers, including:

- Rural and Urban GIS data
 - Village_name
 - Block_name
 - Distric_name
 - State_name
- Fisheries & Animal Resources
 - Panchayat_Raj
 - Agriculture_Food_Production_point
 - Food_Supply_Consumer_Welfare
 - Housing_Urban_Development_point
 - Housing_Urban_Development
 - Women_CHIC_Development
 - Rural_Development
 - Works_Department
 - Agriculture_Food_Production
 - Water_Resource
 - Food_Supply_Consumer_Welfare
 - School_Mass_Education
 - SI_SC_Development
 - Fisheries_Animal_Resource_point
 - Panchayat_Raj_point
 - Rural_Development_point
 - School_Mass_Education_point
 - SI_SC_Development_point
 - Women_CHIC_point
 - Works_Department_point
 - Water_Resource_point
- Housing_Urban_Development_Line
- Works_Department_Line
- Rural_Development_Line
- Women_CHIC_Development_Line
- Water_Resource_Line
- SI_SC_Development_Line
- School_Mass_Education_Line
- Panchayat_Raj_Line
- Food_Supply_Consumer_Welfare_Line
- Fisheries_Animal_Resource_Line
- Agriculture_Food_Production_Line
- Housing_Urban_Development_Line
- Panchayat_Raj_Line

The map shows a detailed street network with various colored lines and points representing these assets. The bottom status bar indicates the coordinates $80^{\circ}52'29.93''$ N $20^{\circ}28'50.43''$ E and a scale of 1:8531. The Windows taskbar at the bottom shows the system time as 14:11 on 10/04/2018.



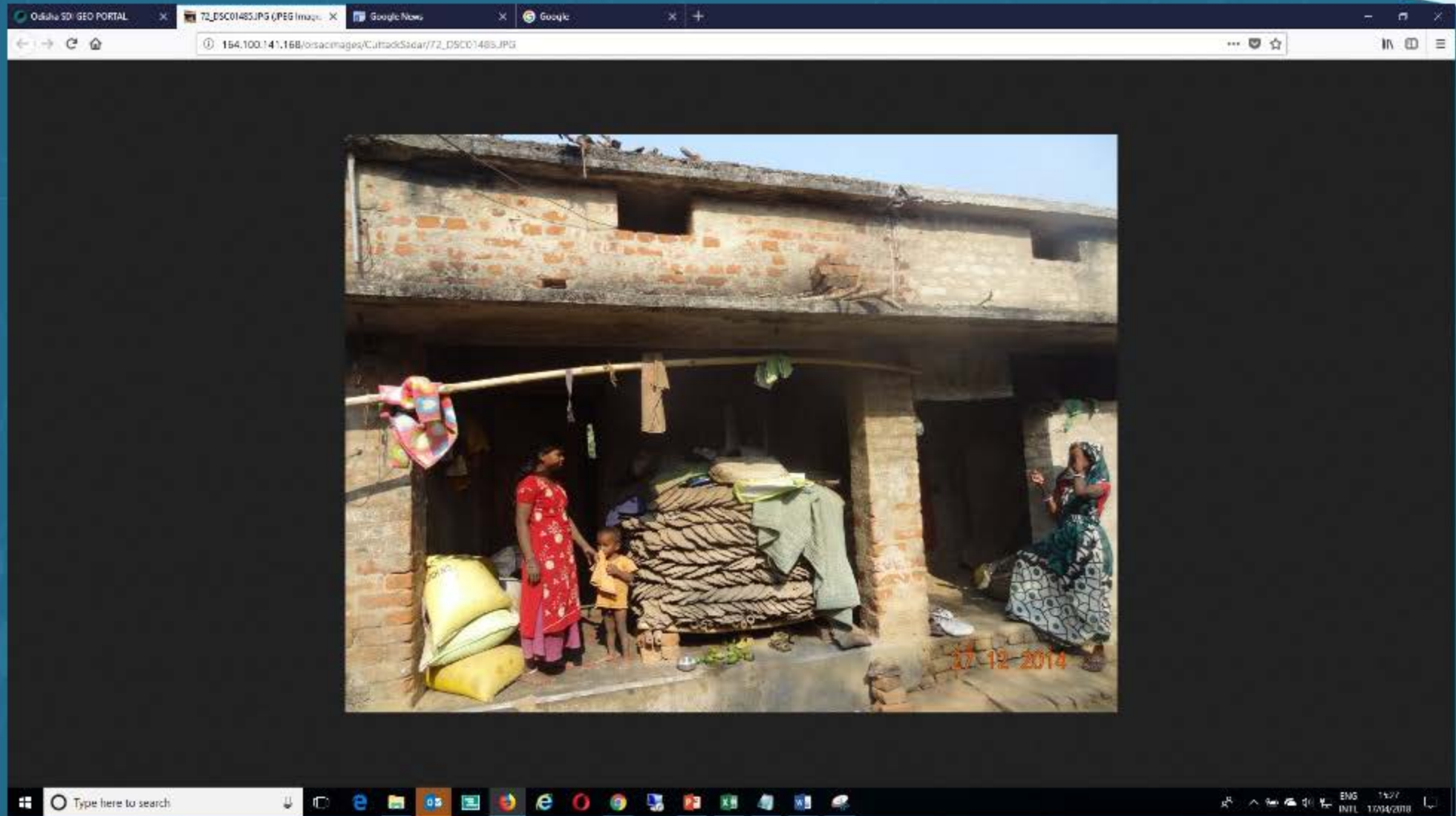
Panchayat Raj Schemes



The screenshot displays the ORSAC Geo Portal interface. The browser address bar shows the URL osd.orsac.gov.in/OSD/MapViewer/. The application has a top navigation bar with tabs for Home, Tools, Data Sources, Analysis, Edit, Settings, Thematic Maps, and Report Window. A user is logged in as 'admin'. A 'Feature info' popup window is open, displaying the following data:

State Boundary	Panchayat Raj	ad-in_boundary	ad-in_boundary
Name:	Value:		
OBJECTID	11		
rscheme_id	1AY		
rscheme_name	1AY		
department_name	PRD		
photo_link	http://159.100.101.159/orsac/maps/OrsacRadar/757_5ACD1405.JPG		
longitude	85.9176033334		
latitude	20.366083333		
village	AMAR NO.123		
photo_no	1485		
description	INDIRA AWAS YOJANA		
feature_id	11		
feature	HOUSES		

The 'Layers' panel on the right lists various data layers, including 'Rural and Urban GIS data', 'Panchayat Raj', 'Agriculture Food Production_point', 'Food_Supply_Consumer_Welfare_point', 'Housing_Urban_Development_point', 'Housing_Urban_Development_line', 'Water_Development_point', 'Water_Development_line', 'School_High_Education_point', 'School_High_Education_line', 'ST_STC_Development_point', 'ST_STC_Development_line', 'Fisheries_Animal_Resources_point', 'Fisheries_Animal_Resources_line', 'Agriculture_Food_Production_line', and 'Housing_Urban_Development_line'. The map shows a road network and a highlighted feature. The bottom status bar displays coordinates (E: 80°54'48.0", N: 20°21'37.0") and a scale of 1:144.



Town Planning Authority

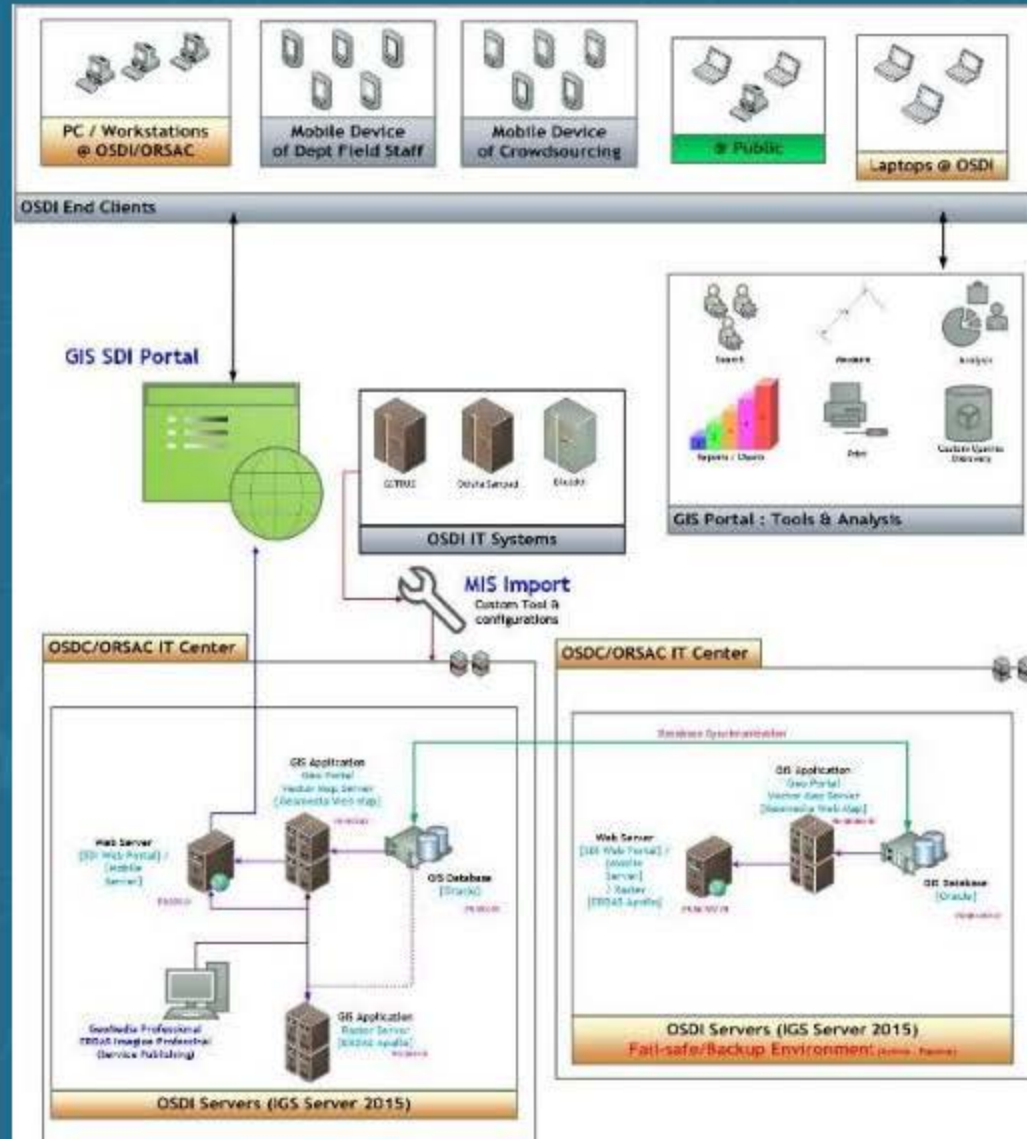
Navigate & Provides Land use, Cadastral & RoR information

1) Town Planning

- **59 towns by Authority name & Village Name**

2) Development

- **Bhubaneswar Development Authority**
- **Puri Konark Development Authority**





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