WGITA WORKPLAN AND COLLABORATION & COORDINATION BETWEEN WGISTA AND WGITA

SAI India

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OVERVIEW

- Introduction to WGITA
- WGITA Projects
- WGISTA mandate
- SAI India - Remote Sensing and GIS Technology used in audits
- Areas of Collaboration and Coordination

WORKING GROUP ON INFORMATION TECHNOLOGY AUDIT (WGITA)

Introduction

- **Established:** 1989 at XIII INCOSAI in Berlin.
- **Chair:** Comptroller and Auditor General of India.
- **Purpose:** Supports SAIs in IT audits and use of IT in audits through knowledge sharing, skill development, and cooperation.
- **Operates under:** INTOSAI Knowledge Sharing & Knowledge Services Committee (KSC).

Mission

- Develop standards & guidance for IT audits and for using IT in audits.
- Facilitate knowledge exchange & best practices.
- Encourage cooperation among SAIs for capacity building.

MANDATE & OBJECTIVES OF WGITA

- ✅ Develop Standards & Guidance on IT Audits and use of IT in audits
- ✅ Share Best Practices & Methods for IT audits
- ✅ Encourage Bilateral & Regional Cooperation
- ✅ Promote Partnerships with SAIs, academic & international bodies
- ✅ Disseminate Guidelines & Toolkits for development and adoption of professional standards
- ✅ Facilitate Joint & Coordinated IT Audits among SAIs

WGITA Projects 2020-25

Knowledge Development Activities

1. Development of Guideline on Cybersecurity and Data protection.
2. Development of Guideline on Audit of IT Management Functions- including IT Governance, Contract management and Sustainability.
3. Development of Guideline on Performance evaluation of Information systems.
4. Guidance on use and review of Artificial Intelligence (AI) solutions.
5. Supplement to updated WGITA-IDI handbook on IT Audit.
6. Biennial review of WGITA-IDI IT Audit handbook.
7. GUID 5101 on Information Systems Security Audit.

Status of Work Plan 2023-25

AI Solutions Guidance

- **Project:** Guidance on the use & review of AI solutions
- **Led by:** US GAO
- **Participating SAIs:** Egypt, Hungary, Japan, Mexico, Pakistan, USA, AFROSAI-E
- **Completion:** May–Sept 2025
- **Status: Ongoing**

IT Audit Handbook & Matrices

- **Project:** Supplement to WGITA-IDI IT Audit Handbook (2022)
- **Led by:** SAI India
- **Focus:** Detailed audit matrices for IT audit professionals
- **Completion:** By 2025
- **Status:** Finalizing endorsement version

Biennial Review of IT Audit Handbook

- **Project:** Regular review of WGITA-IDI IT Audit Handbook (approved in 2013)
- **Led by:** US GAO, SAI India, IDI
- **Purpose:** Keep IT audit standards updated
- **Next Review:** 2025
- **Status:** Scheduled

✅ **Completed Projects**

- **GUID 5101 – Information Systems Security Audit** *(IFPP Project – Approved & Completed)*
- **Guidelines on Performance Evaluation of Information Systems** *(Led by SAI Pakistan – Completed)*

✅ **IT Audit Webinars**

🎤 **Regular Webinars on IT Audit Topics**

📅 **Hosted by:** SAI India & US GAO **(Quarterly)**

Global IT Audit Database

🌍 **IT Audit Report Database on WGITA Webpage**

📄 **Total Reports Shared: 252**

📤 **Reports Uploaded: 193**

🔷 **Status:** Ongoing (To continue in 2026-28 Work Plan)

WGITA Projects 2020-25

Knowledge Sharing Activities

1. WGITA webinars
2. Creation and maintenance of Global IT Audit database in WGITA webpage

Capacity Building Activity

1. Development of Global curriculum for IT Audit

Tentative WGITA projects 2026-28

1. Biennial Review of IT Audit Handbook
2. Supplement to IT Audit Handbook – Audit Matrices
3. Development of Cybersecurity Audit Guidance
4. IoT-based Remote Audit Guidance
5. Expanded WGITA Webinars
6. IT Audit Database Enhancement

WGITA Work Plan 2026-28

Key Projects Identified for the Next Work Plan

1. Biennial Review of IT Audit Handbook

First Review (2025-26), Second Review (2028)
Ensures IT Audit Handbook remains updated

2. Supplement to IT Audit Handbook – Audit Matrices

Will complement the Biennial Review of IT Audit Handbook

Planned Completion: By 2028

3. Development of Cybersecurity Audit Guidance

Need: Cybersecurity risks require dedicated audit standards

Objective: Provide INTOSAI members with cybersecurity-specific audit guidelines

Outcome: New Guidance Document on Cybersecurity Audit

4. IoT-based Remote Audit Guidance

Need: Real-time Data Collection and Improved Audit Accuracy & Efficiency

Audit efficiency by handling Large-Scale Data Remotely

Outcome: New Guidance Document

5. Expanded WGITA Webinars

Quarterly Webinars with Contributions from all SAIs

📢 **Goal:** More SAIs presenting their IT Audits and Audits using IT

- 🔷 **New Format:** SAIs to submit topics for upcoming two quarters
- 🔷 **Outcome:** Improved Cross-Learning & Knowledge Sharing

6. IT Audit Database Enhancement

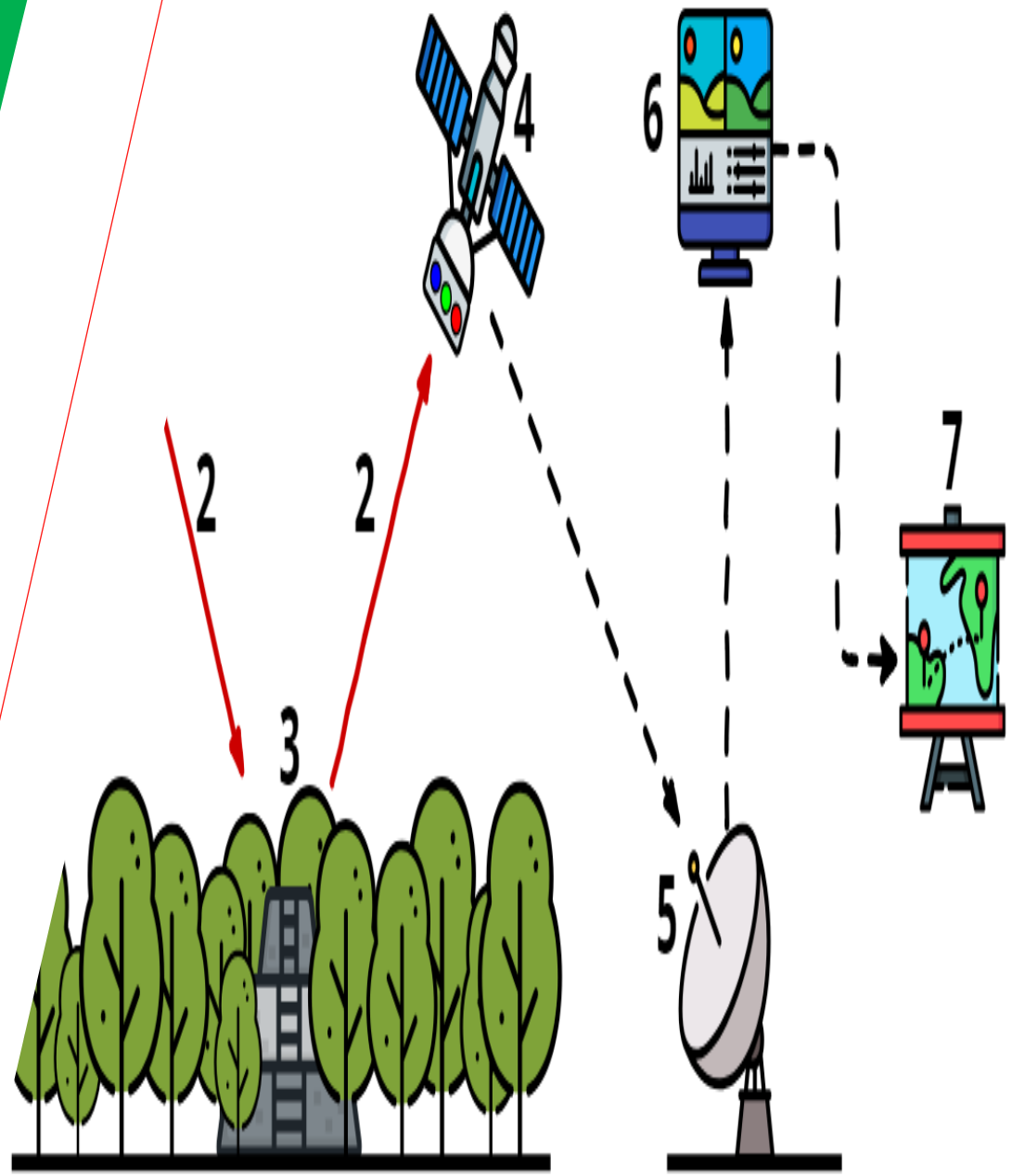
- ❖ Improved Database for IT Audit Reports & its Guidelines
- ❖ **New Proposal:** SAIs to submit audit guidelines & matrices
- ❖ **Challenge:** Ensuring legal permissions for document sharing
- ❖ **Next Step:** Consult with SAI Poland & Other SAIs

STRATEGIC OBJECTIVES OF WGISTA

- Work closely within INTOSAI and with key external stakeholders,
- Conduct environmental scanning to identify key issues in science and technology that will affect governments and their auditors,
- Assess and share best practices in auditing governments' response to developments in science and technology,
- Assess and share best practices in developing and maintaining expertise within SAIs and applying science and technology in their auditing,
- Identify competencies required by SAIs and auditors to incorporate rapid developments in science and technology,
- Strengthen cooperation among SAIs and other relevant entities with a shared interest in this subject matter, and
- Create a list or database of experts or consultants that can be shared and used by INTOSAI members and Regional Organizations.

SAI INDIA - ENHANCING PUBLIC SECTOR AUDITS WITH REMOTE SENSING & GIS

- Technologies like Remote Sensing & GIS revolutionised data collection and analysis.
- Enabled real-time data collection, spatial analysis, and improved governance.
- Strengthen accountability, decision-making, and transparency.
- Aid Public Sector Audits by improving efficiency, identifying discrepancies, and optimizing resource allocation.

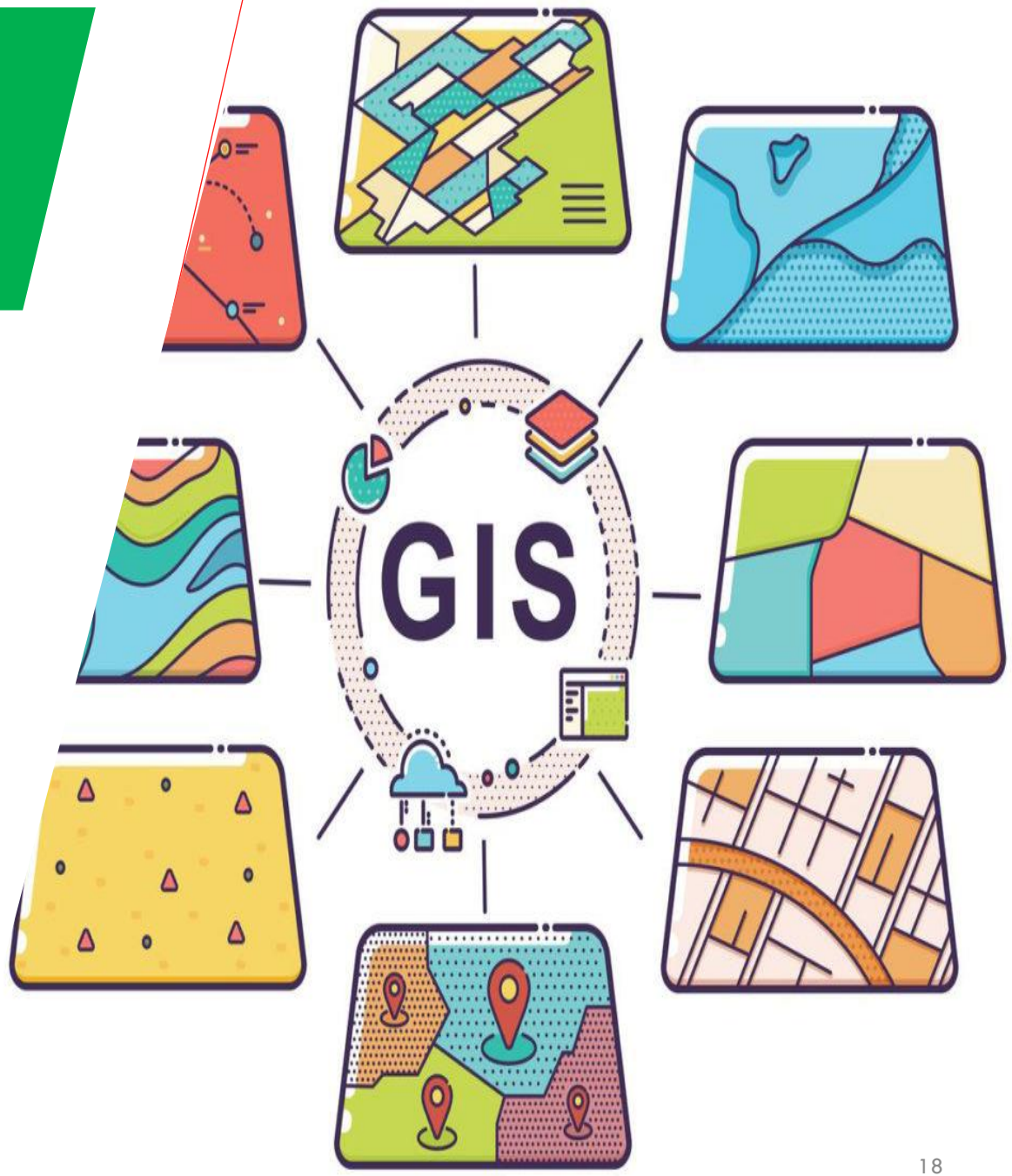


APPLICATIONS OF REMOTE SENSING IN AUDITS

- Uses **Satellites, Drones,** and **UAVs** for high-resolution imagery & tracking changes.
- ***Eliminates*** physical inspections, covering hazardous & remote areas.
- **Applications:**
  - Mining & Land Use Monitoring – Detect illegal mining & deforestation.
  - Disaster Management – Assess floods, fires, and affected regions.
  - Environmental Monitoring – Track climate change impacts & conservation efforts.
- Supports SAIs in verifying environmental policies, natural resource management & disaster relief.

ROLE OF GIS IN PUBLIC SECTOR AUDITS

- GIS integrates spatial data for in-depth policy analysis.
- Enhances transparency, efficiency, and structured audits.
- **Key Applications:**
  - Urban Planning & Zoning – Identifies development patterns & service gaps.
  - Transportation & Public Health – Maps infrastructure & health service reach.
  - Resource Allocation & Risk Assessment – Ensures equitable distribution & identifies high-risk areas.
- Facilitates cross-verification of claims with real-world data.



IMPACT & FUTURE OF REMOTE SENSING & GIS IN PUBLIC SECTOR AUDITS

- **Enhanced Oversight** – More precise, data-driven evaluations.
- **Predictive Insights** – Identifies trends & potential governance risks.
- **Data Accuracy & Efficiency** – Minimizes reliance on subjective reports.
- **Policy & Governance Improvements** – Supports long-term planning & resource optimization.

- ***Integration of Remote Sensing & GIS is crucial for modern auditing, fostering transparency & accountability.***

CASE STUDIES

USE OF REMOTE SENSING, SATELLITE IMAGERY, AND DRONES IN AUDITING

SAI INDIA

SUPREME AUDIT INSTITUTION OF INDIA

लोकहितार्थ सत्यनिष्ठा

Dedicated to Truth in Public Interest

SAI INDIA'S ADOPTION OF REMOTE SENSING & GIS IN AUDITS

- SAI India leveraged Remote Sensing, Satellite Imagery & Drones for auditing.
- Utilized data from NRSA, Google Earth & UAVs for enhanced monitoring & compliance.
- Enabled real-time detection of irregularities & operational inefficiencies.
- Strengthened transparency & accountability through precise documentation & change tracking.
- Provided evidence-based assessments for effective governance & corrective actions.

(Illustrations & Report References follow.)

MINING SECTOR AUDITS

Strengthened audits in mining sector through geospatial analysis.

Key Findings:

- **Illegal Mining:** Identified unauthorized activities beyond lease boundaries.
- **Mining Operations Assessment:** Verified compliance using satellite data.
- **Over-Mining:** Detected excessive resource extraction.
- **Under-Reporting:** Exposed discrepancies in declared vs. actual extractions.
- **Approval Lapses:** Found errors in mining plans (overlapping areas, proximity to infrastructure, rivers, vegetation).

(CAG Reports: Bihar 2022, MP 2022, TN 2017)

ɔ. 3.5: Google image View as on – 25 March 2014

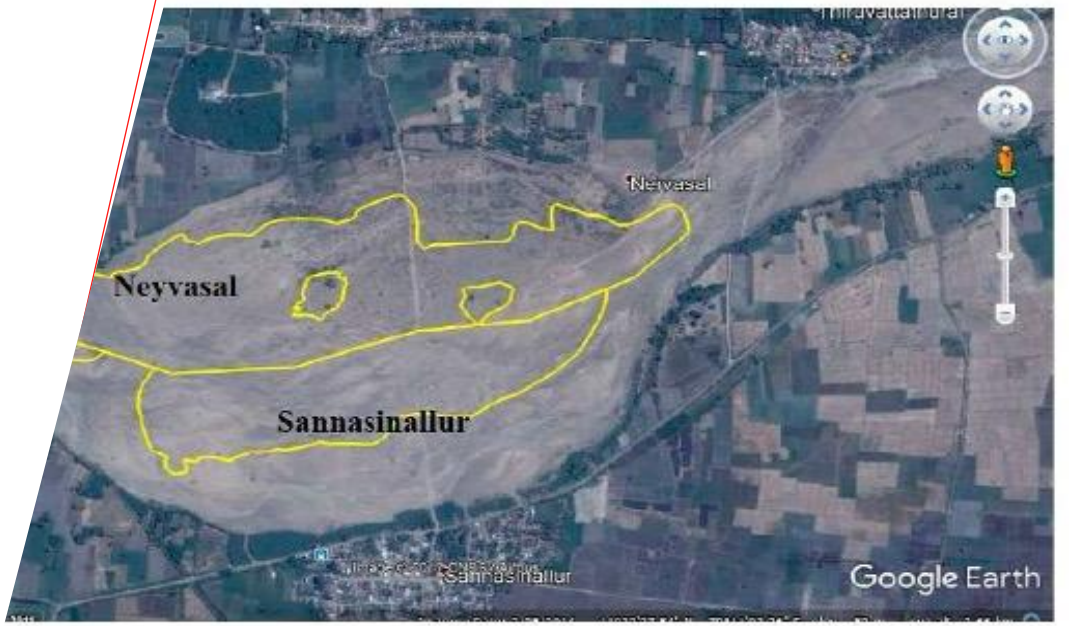


Figure No. 3.6 UAV Ortho Image as on – 03 November 2017

Incorrect Coordinates compared to Approved Mining Area

2.2.1 Approval of incorrect Geo-coordinates

Audit analysed total 86 sand *ghats* of Sone river in three districts[3] and 20 sand *ghats* of Chandan river in Banka district. Coordinates of the above *ghats* were plotted on Google Earth Pro and it was found, as per available free images, that areas of five sand *ghats* of two districts[4], approved for mining activities in Mining Plan, were not correct. Further, the expert agency also highlighted above such deficiencies, as shown in **Figures 4 to 11**:

Figure 4: LISS-IV Satellite image analysed by NIT, Patna as sand *ghat* Rani Talab demarcated by white polygon shown away from riverbed.

Figure 5: Satellite image of Rani Talab sand *ghat* of Patna district in January 2019 from Google Earth Pro.

Figure 8: Screenshot satellite image of Kamluchak sand *ghat* in Bhojpur district shown away from riverbed.

Figure 9: Screenshot satellite image of Sandesl sand *ghat* in Bhojpur district shown some part is away from riverbed.

Mining in Prohibited Areas

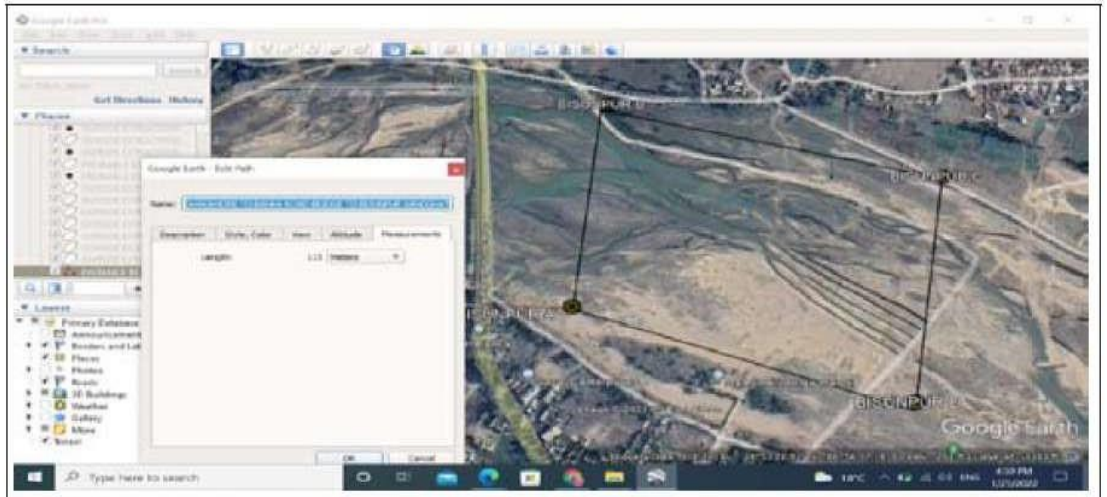


Figure 23: Bisunpur sand *ghat* of Banka district, area allowed for mining was only 113 metres away from road bridge.

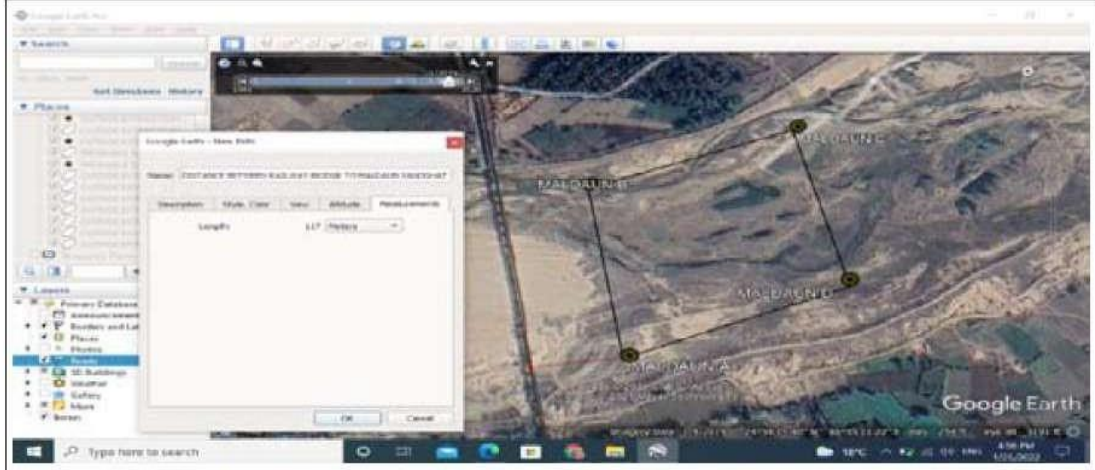


Figure 24: Maldaun sand *ghat* of Banka district, area allowed for mining was only 117 metres away from rail bridge.

Mining of Sand near Bridges

Figure 26: Baisa sand *ghat* area allowed for mining was in middle of the river.

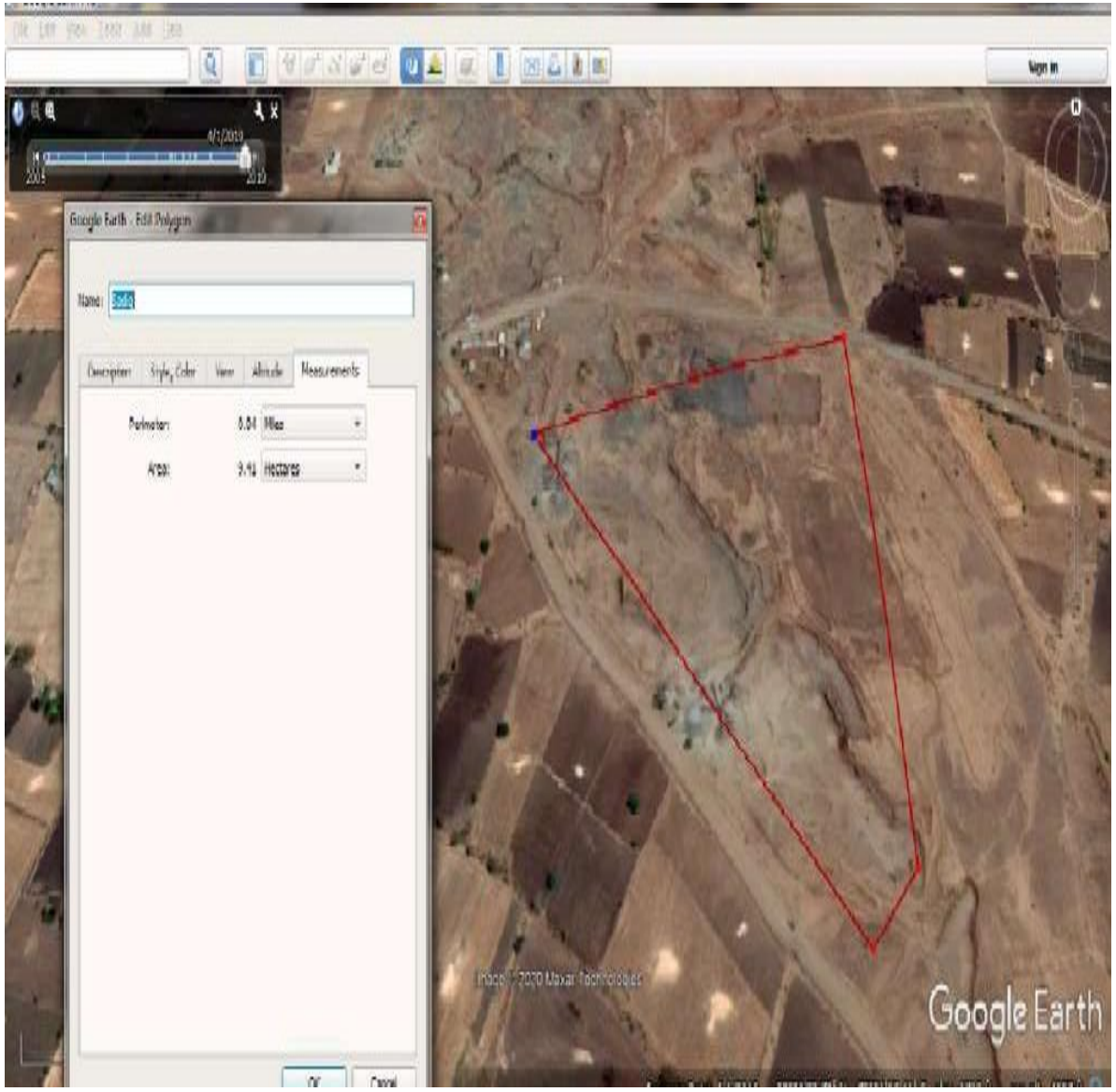
Figure 27: Bisunpur sand *ghat* area allowed for mining was in middle of the river.

Figure 28: Govindpur sand *ghat* area allowed for mining was in middle of the river.

Figure 29: Lakhnouri sand *ghat* area allowed for mining was in middle of the river.

Mining of Sand in the middle of the river

Larger Mining area than allotted



Mining activities seen in Satellite Images where Nil Extraction Report was submitted by lessees

Excess quarrying of Sand

Figure No. 3.7: 3D image showing height difference 5.90 m

Figure No. 3.8: 3D image showing height difference 6.23 m

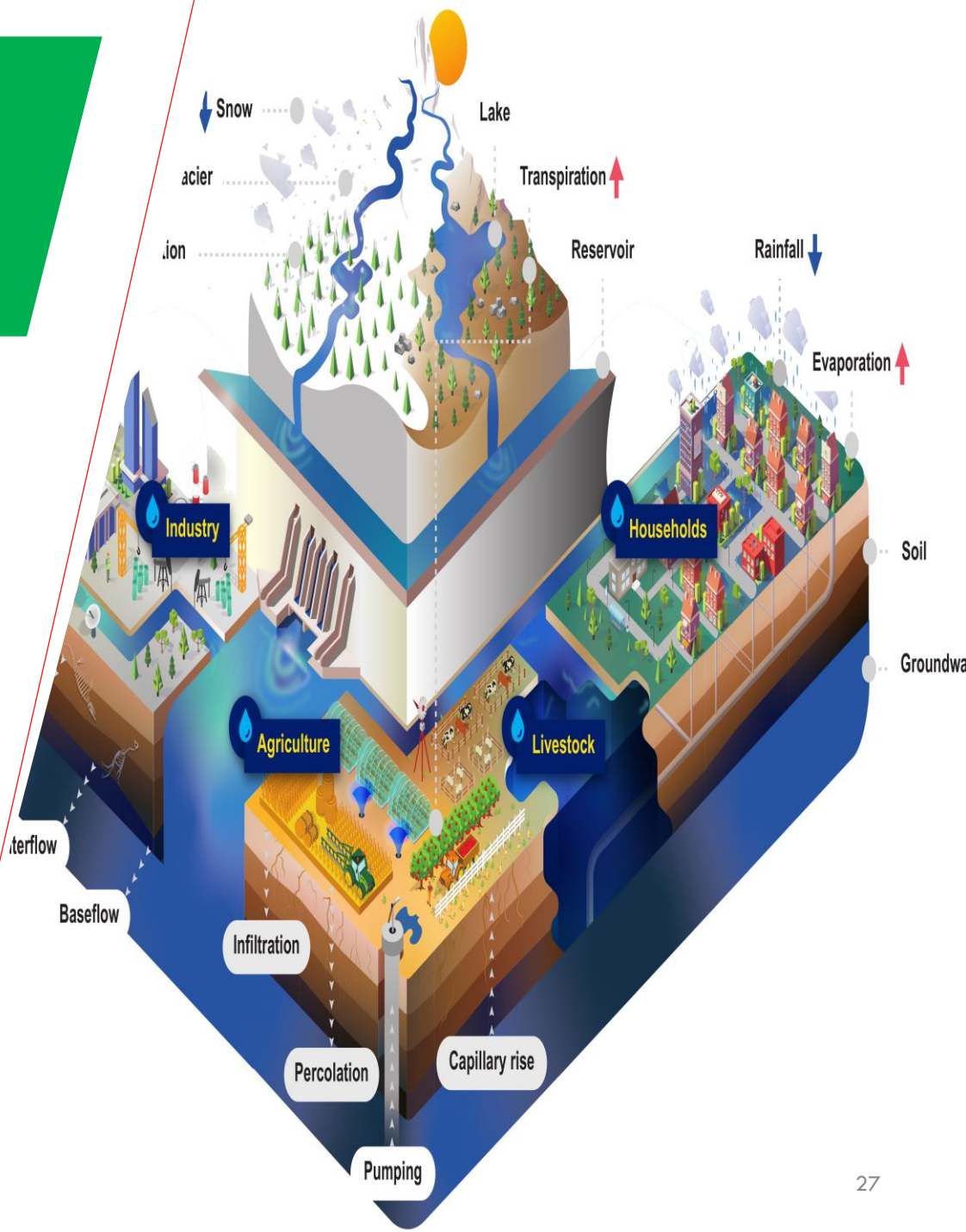
MANAGEMENT OF LAKES, WATER BODIES, AND STORM WATER SYSTEMS

Enhanced audits in water resource management using geospatial tools.

Key Findings:

- **Lake Conversion:** Detected unauthorized land use in lakes & ponds.
- **Encroachments:** Identified illegal constructions affecting water bodies.
- **Urban Flooding:** GIS mapping exposed drainage obstructions & flood risks.

(CAG Reports: Karnataka 2021, Maharashtra 2018)



Encroachment of Water Body / Reduction in area of Lake

Lingarajapuram kere 2000

Lingarajapuram kere 2020

Encroachment on Water Bodies

Image No. 1: Google Earth Image of May 2005 of Lendi Talab, Nagpur

Image No. 2: Google Earth Image of July 2017 of Lendi Talab, Nagpur

AFFORESTATION & PLANTATION ACTIVITIES

Enhanced monitoring of afforestation programs for transparency & effectiveness.

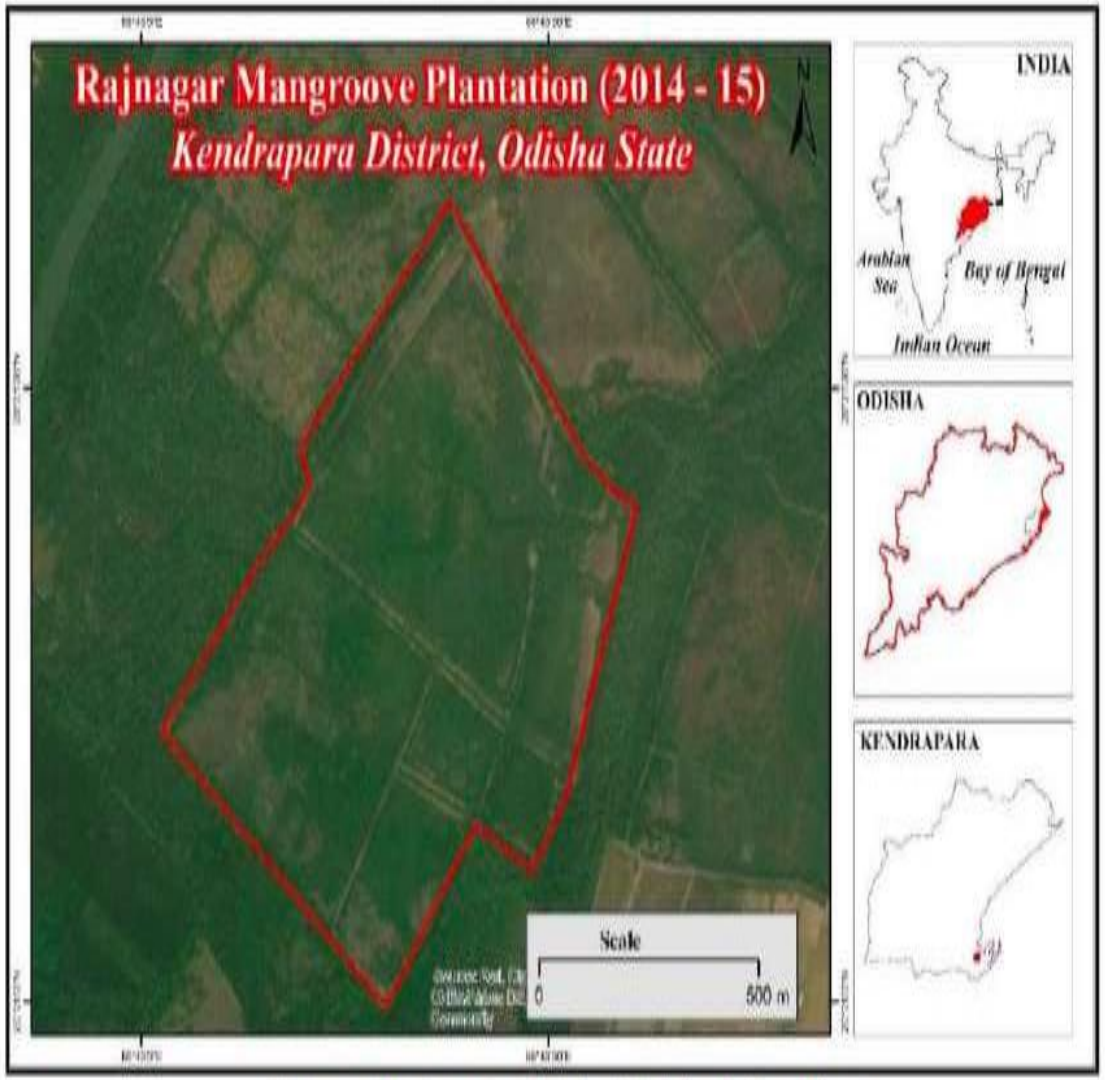
Key Findings:

- **Plantation Verification:** Identified ghost plantations where trees existed only on paper.
- **Survival Rate Analysis:** Tracked tree growth and mortality, revealing gaps in care and environmental challenges.
- **Infrastructure Audit:** Evaluated sustainability measures like water trenches & irrigation facilities to support plantations.
- **Impact Assessment:** Assessed afforestation efforts in combating deforestation, improving biodiversity & mitigating climate change.

(CAG Report: Odisha 2022)

Survival of Plantations

Photograph No.19



Mangrove plantation at Santubi under Mahakalapada Forest Range

The evaluation of the site was done using UAV as detailed in Table 2.17.

Table 2.17: Results of evaluation of mangrove plantation by UAV

Forest Division	*Range/ plantation site*	*Scheme/ year of plantation/ area in ha*	*Type of trees*	*Tree as per Plantation journal*	*Trees as per UAV*	*Plantation expenditure (in ₹)*	*Survival percentage*
Rajnagar	Mahakalpada/ Santubi	ICZMP/ 2014-15/ 65	*Sindhuca and Rai*	2,88,925	1,05,333	23,98,500	36.46
Total				*2,88,925*	*1,05,333*	*23,98,500*	*36.46*

The survival percentage of the plantation was 36.46 at Santubi, which should be treated as a failed plantation.

No water trenches to support plantations

Photograph No.10

No Water Trenches in Rajpur 2 (December, 2018)

Photograph No.11

Water Trenches in Rajpur 2 (May, 2020)

ENHANCING AUDITS WITH REMOTE SENSING & GIS

Increased Accuracy & Efficiency:

- Enables comprehensive assessments using historical data and time-series analysis.
- Strengthens audit findings for better decision-making & policy recommendations.

Cost & Resource Optimization:

- Reduces reliance on extensive fieldwork, lowering operational costs.
- Automates data analysis, improving precision and minimizing human errors.

Ethical & Regulatory Considerations

- Due care should be taken to ensure compliance with legal frameworks, environmental regulations, and data protection standards.
- Need to maintain public trust by safeguarding data integrity, privacy, and security.

FUTURE OF PUBLIC SECTOR AUDITS

Integration with AI & Machine Learning:

- Enhances anomaly detection, risk assessment & predictive modelling.
- Makes audits more dynamic, adaptive, and data-driven.

Strengthening Governance & Transparency:

- Drives accountability & efficiency in government operations.
- Supports evidence-based policy decisions, reinforcing public trust.

A Call for Innovation:

- Adoption of advanced technologies is essential for modern governance.

SAIs must leverage Remote Sensing & GIS to create a sustainable, performance-driven audit system

COLLABORATION & COORDINATION BETWEEN WGITA & WGISTA

- Both the working groups aim to work in similar areas of IT Audit and in using various IT tools in carrying out audits.
- WGITA's ambit is quite broad wherein it seeks to enhance cooperation, cross learning and sharing of best practices among SAIs in not only IT Audits but in using IT in audits i.e., GIS, AI/ ML, Block chain, etc.
- Both groups share a common interest in the advancement of information technology in public sector auditing, audit management automation, and applications of IT in Audit.
- The similarities in respective mandates and scope of activities of both WGITA and WGISTA allows for multiple areas in the field of audit where the two Working Groups can collaborate in developing methodologies and checklists for use of Science and Technology in audit management and field audit.

AREAS OF COLLABORATION & COORDINATION

Standardisation & Best Practices	Research & Innovation	Cybersecurity	Education & Training Programs	Data Analytics	Policy Advocacy & Regulatory Frameworks
Develop shared standards and best practices for integrating automation and information technology in audits	Joint research on the use of AI, machine learning, and other advanced automation tools in Audit, leading to the creation of new and more efficient audit methodologies and outcomes	Develop joint frameworks, tools, and guidelines to safeguard automated systems and data infrastructure from cyber threats	Educational/training programs like joint certification courses, workshops, and online resources focused on topics like AI, automation, cloud computing, and data systems to upskill professionals	Joint training programs and workshops can be organised by the two Working Groups to cross learn the CAATs and cross use the licences of these CAATs for better utilisation	Shaping policies related to the ethical use of automation and information systems and thereby promote innovation while addressing concerns such as data privacy, workforce displacement, and the responsible use of AI and automation.

THANK YOU

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