

Operationalizing the Vision in Land Administration

Brent Jones, PE, PLS
bjones@esri.com

Global Standards, Frameworks, Initiatives, Models, Data.....

Global vision for improving our lives,,,,,



SUSTAINABLE DEVELOPMENT GOALS

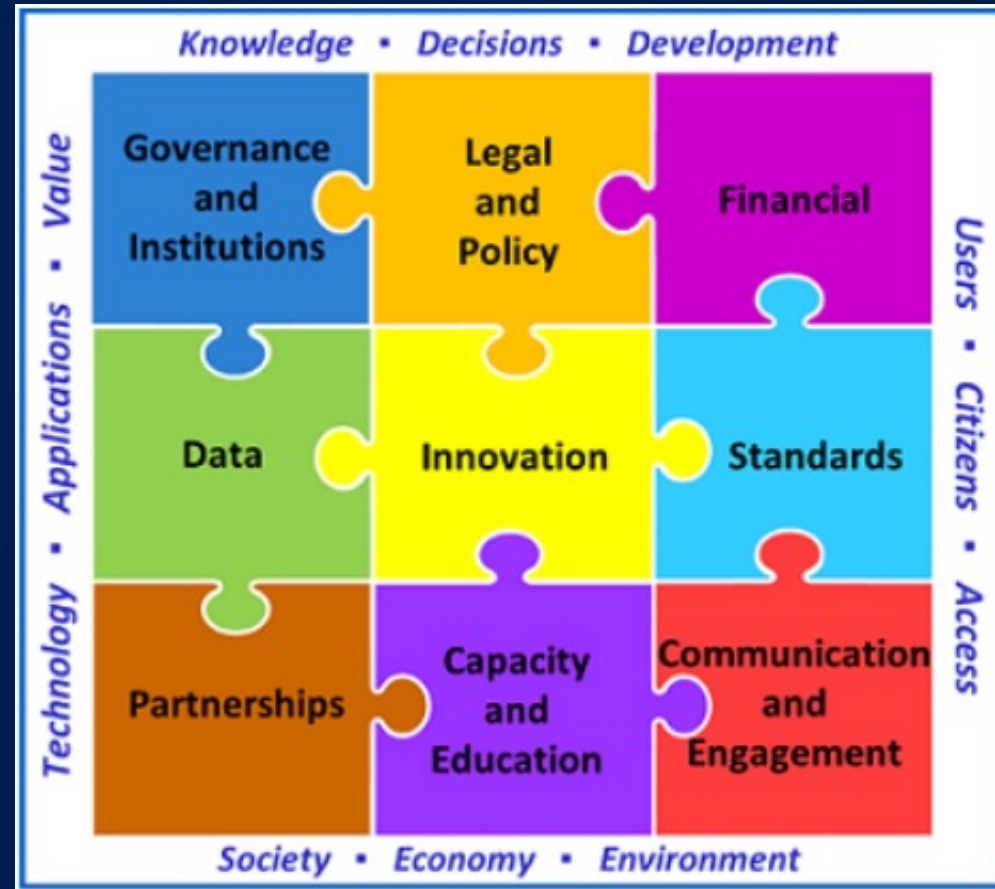
17 GOALS TO TRANSFORM OUR WORLD



UNGGIM – Integrated Geospatial Information Framework (IGIF)

A Framework for Implementing Modern SDI

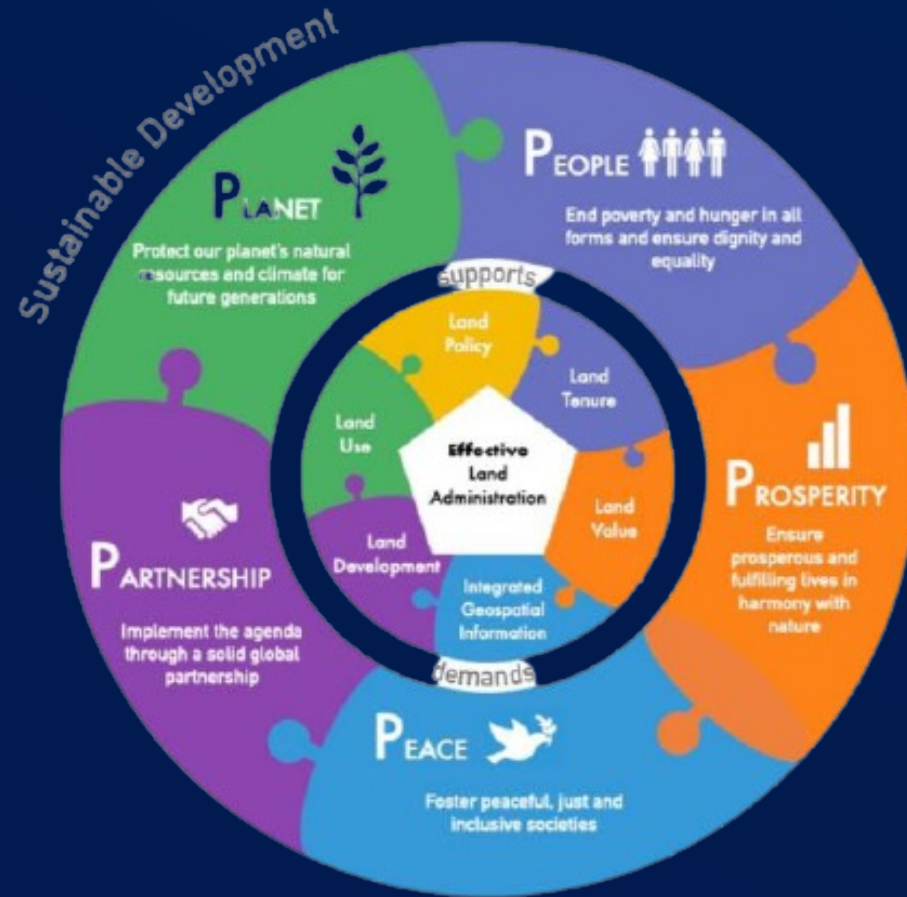
The Integrated Geospatial Information Framework provides a basis and guide for developing, integrating, and strengthening geospatial information management.



9 Strategic Pathways

Framework for Effective Land Administration (FELA)

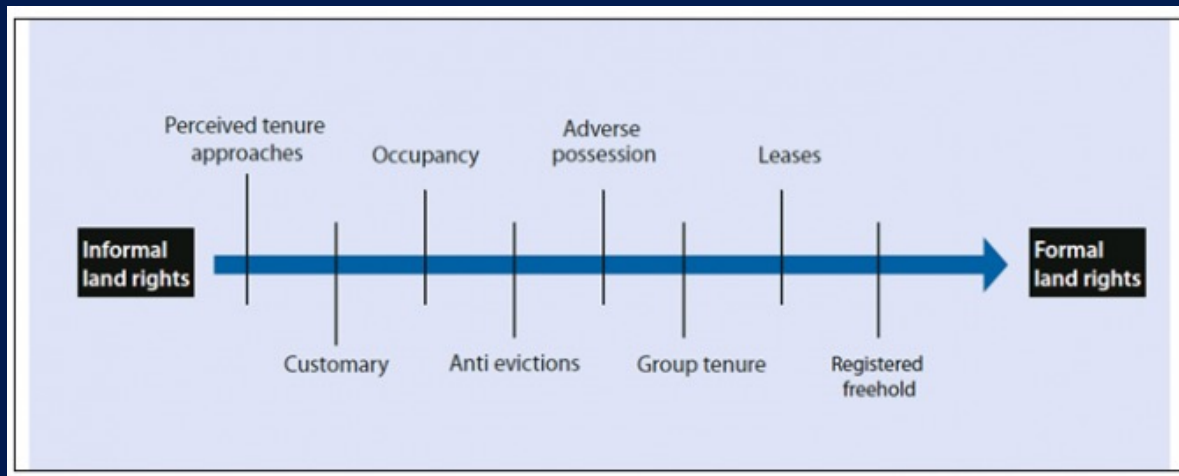
Applying IGIF to Land Administration,,,,,



A reference for developing, reforming, renewing, strengthening, modernizing, and monitoring land administration

Continuum of Rights

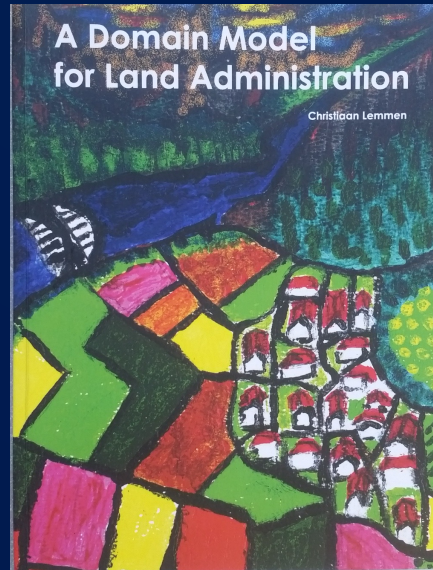
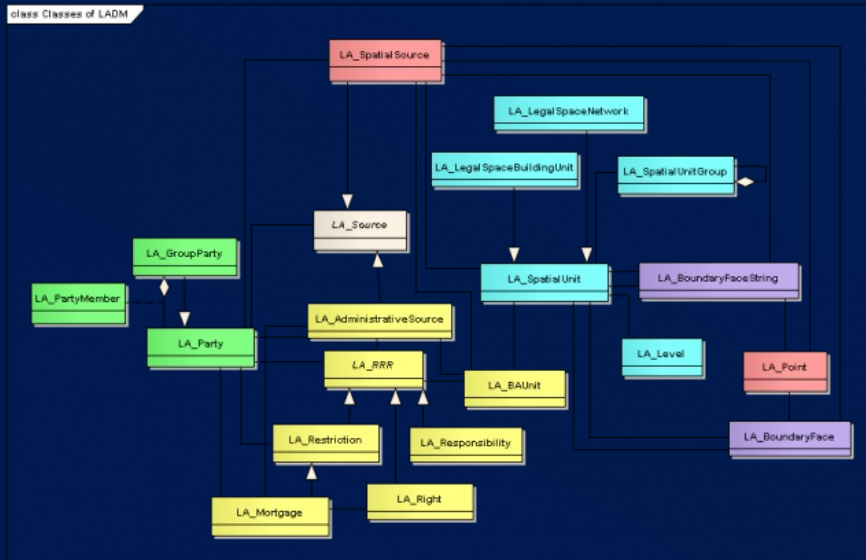
Helps understand and communicate tenure systems....



The continuum of land rights is a concept or metaphor for understanding and administering the complexity of land rights.

Land Administration Domain Model (LADM)

Standardizing technology communication in land administration,,,,,



ISO 19152:2012

LADM attempts to align both: the data model provides a standardised global vocabulary for land administration.

Voluntary Guidelines on the Responsible Governance of Tenure

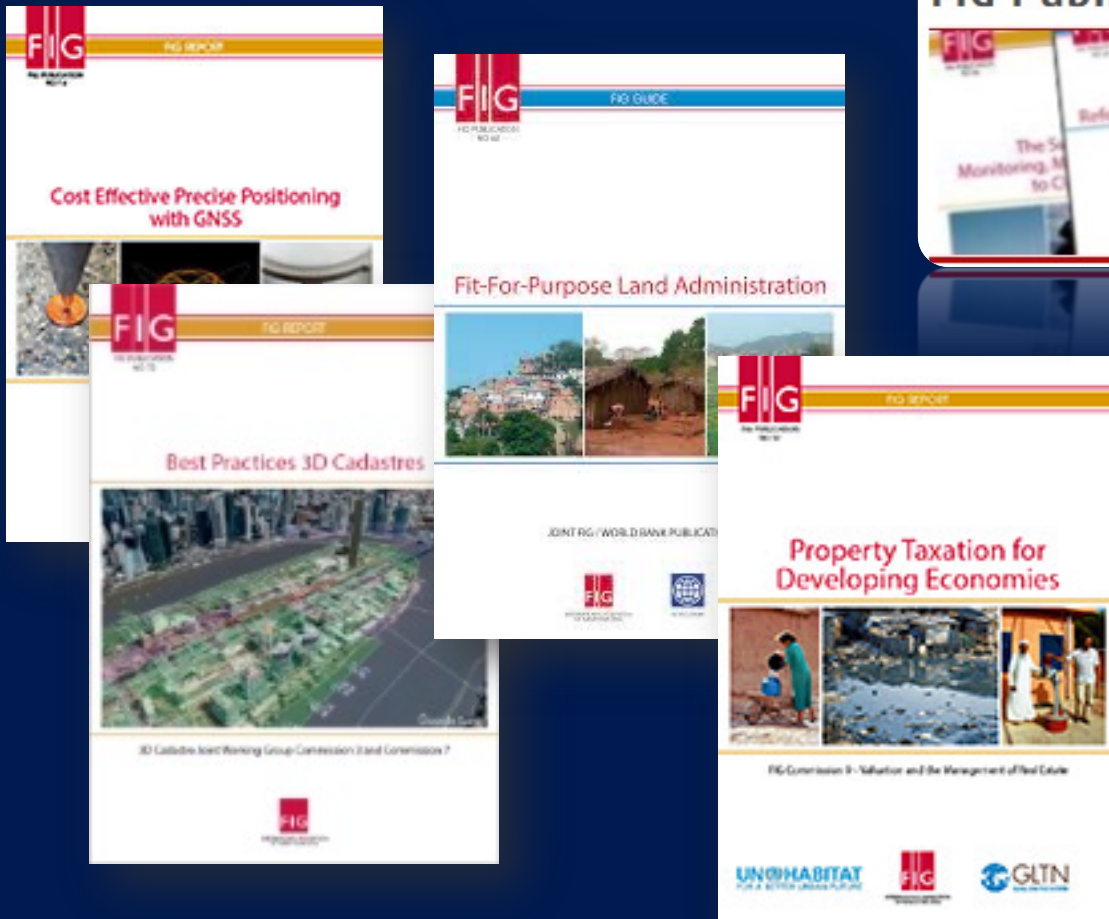
Internationally negotiated framework to improve land governance,,,,,



Voluntary Guidelines on the Responsible Governance of Tenure (VGGT) are a global norm of reference in the governance of land tenure. The guidelines outline principles and practices that governments can refer to when making laws and administering land, fisheries, and forests rights.

FIG Publications and Research

Meaningful research and practical guidelines,,,,,

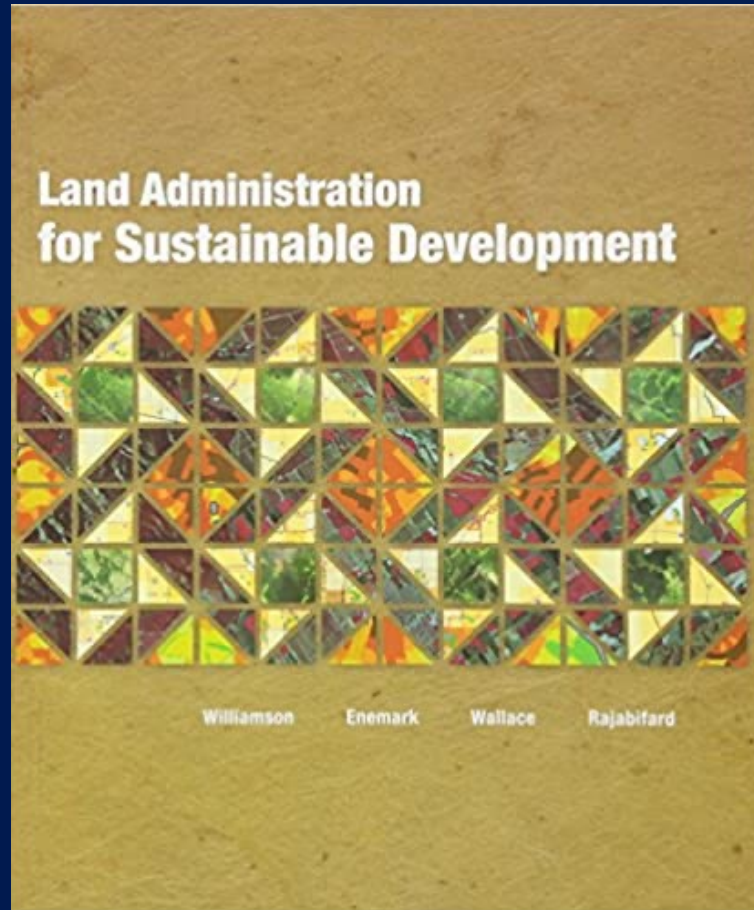


Fit-for-Purpose Land Administration
Property Taxation for Developing Economies
Best Practices for 3D Cadastres
Cost Effective Precise Positioning with GNSS

.....

Land Administration for Sustainable Development

Global Land Administration Systems and Principles,,,,,



The book shows how to help ensure social equality, economic growth, and environmental protection through holistic land management.



A Lot of Great Books.....

We all have great libraries,,,,,



Operational(ize)

op·er·a·tion·al

äpə'rāSH(ə)n(ə)l/

adjective

in or ready to use

relating to the routine functioning and activities of a business or organization

-ize

Suffix

make or become

mod·ern

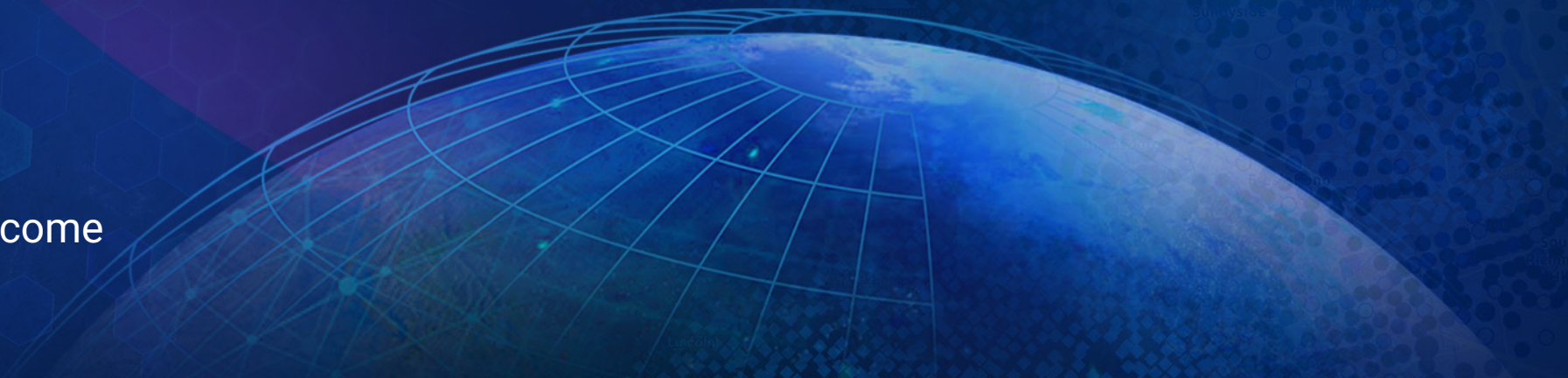
'mädərn/
adjective

Modern(ize)

Relating to the present or recent times as opposed to the remote past

-ize

Suffix
make or become



Necessary Conditions for Successful Operationalization

GIS is Geospatial Infrastructure,,,,,

Open/Transparent

Current and Accurate Data

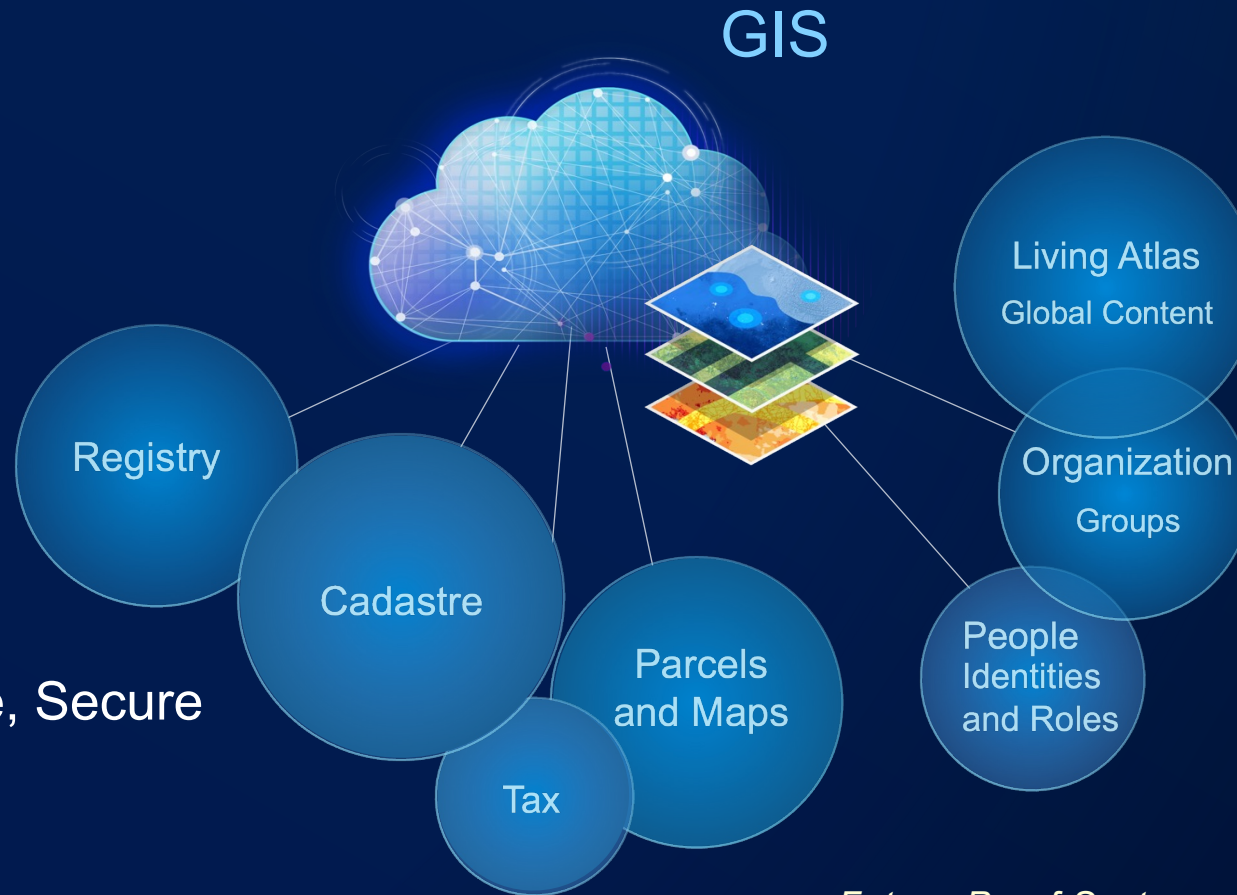
Multiple Data Sources

Configurable

Standards-based

Sustainable, Scalable, Stable, Secure

Interoperable



Data

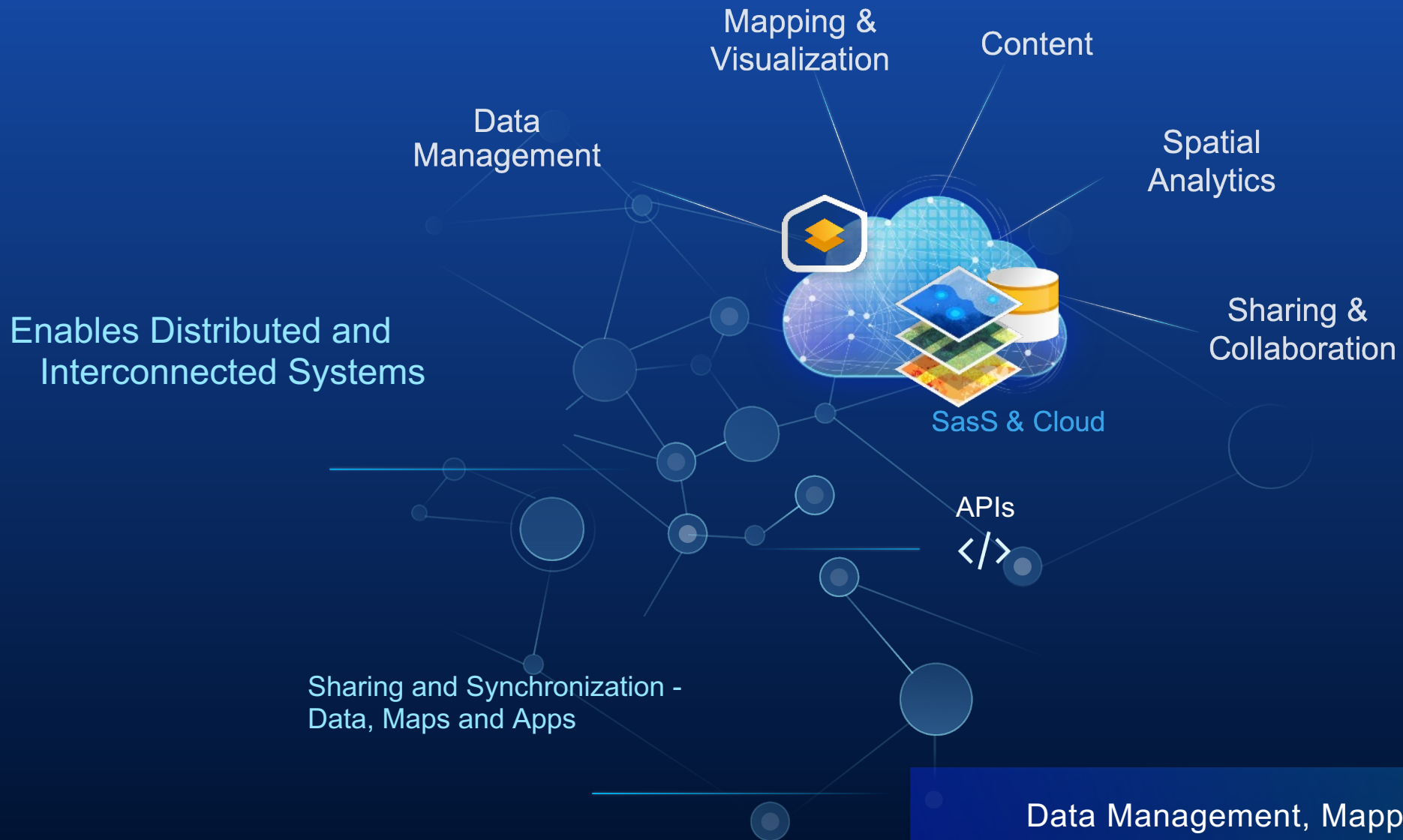
Data Models

Apps and Tools

Infrastructure

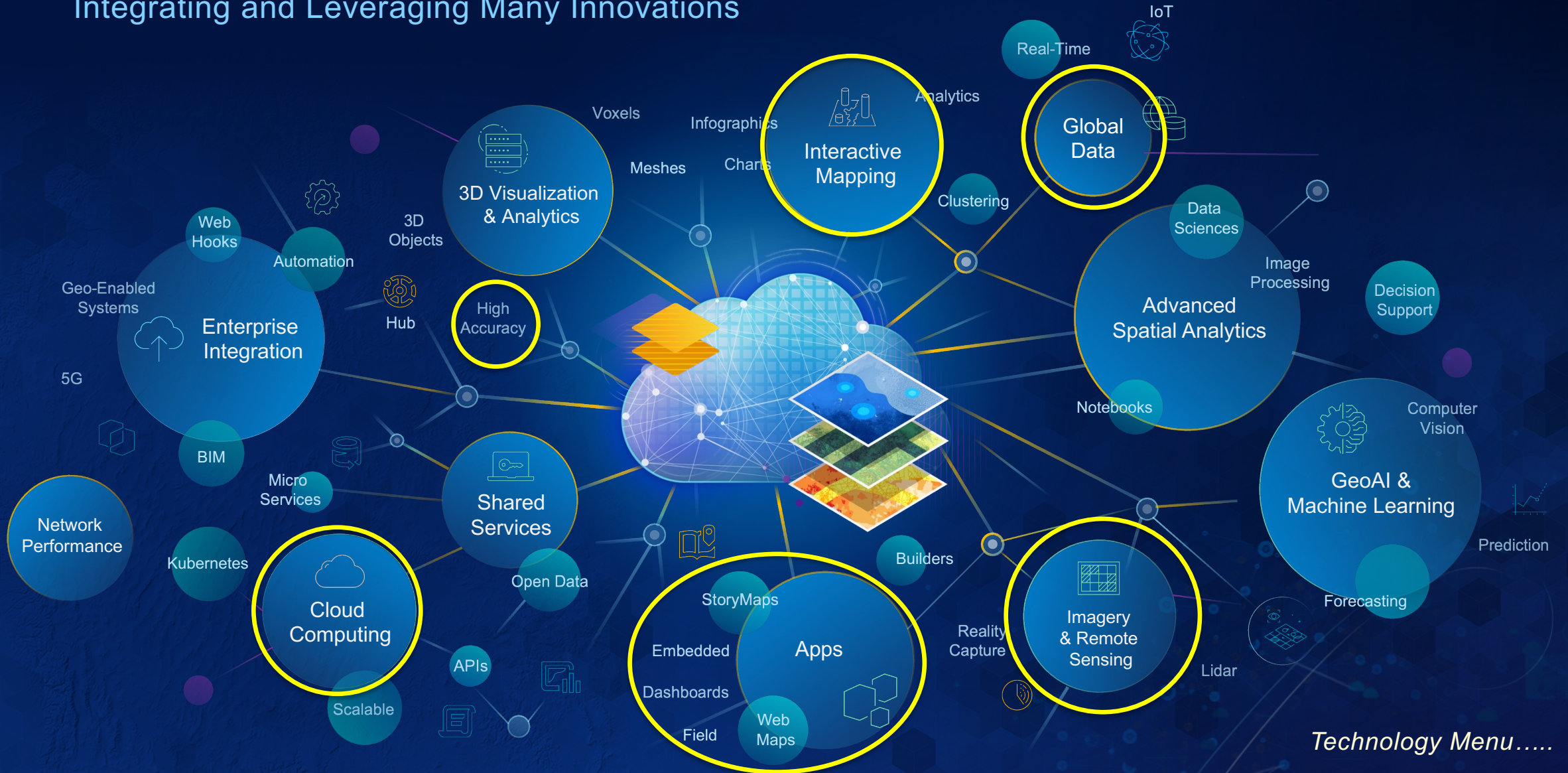
Future-Proof Systems with Modern Technology

GIS Comprehensive Geospatial Infrastructure



GIS Technology Is Interconnected Innovation Infrastructure

Integrating and Leveraging Many Innovations

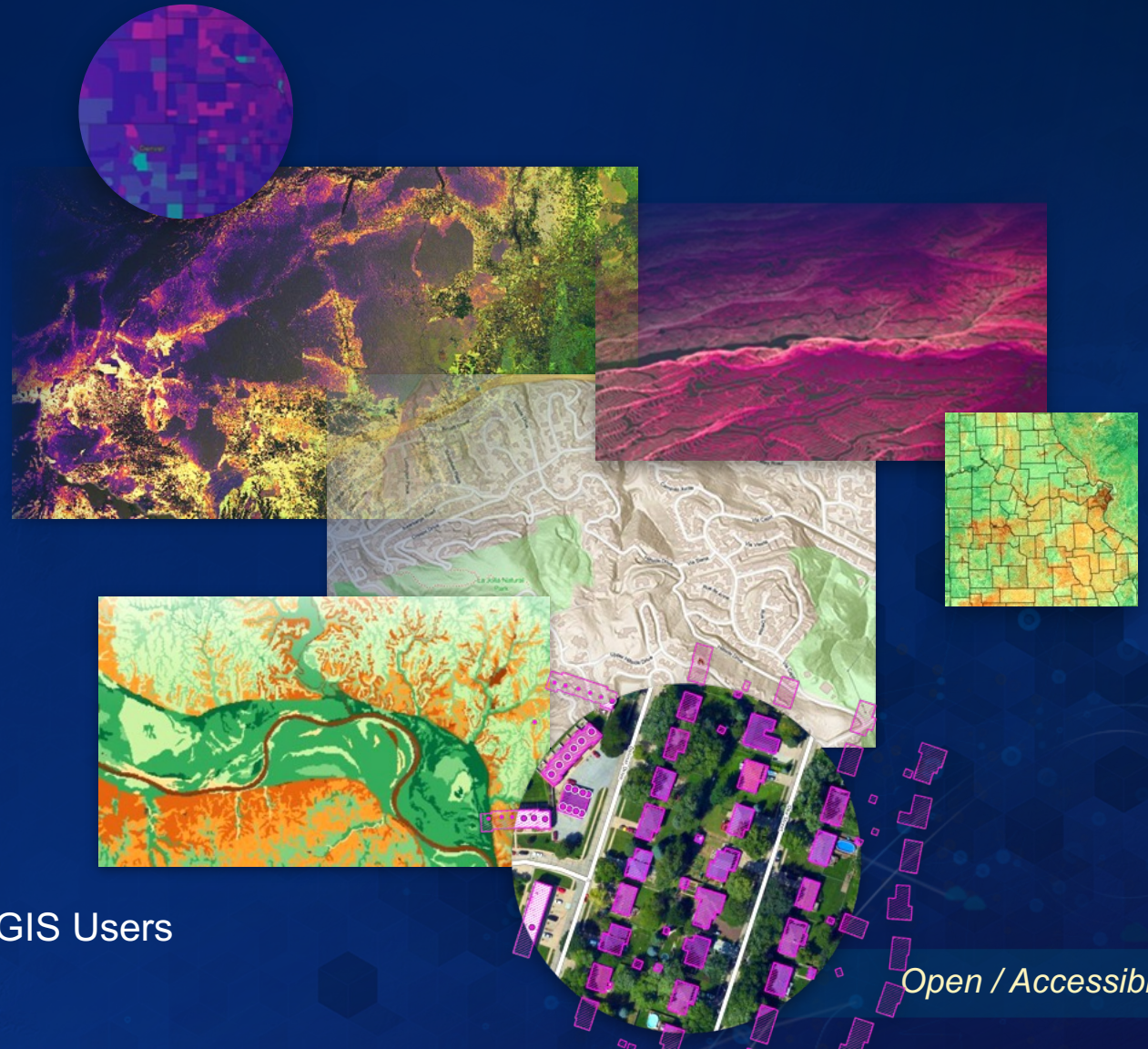


Technology Menu.....

Global Basemaps and Data in GIS

Basemaps Soils
Agriculture Topo Maps Addressing
Ecology Sentinel Earthquakes **Traffic** Rainfall
Geology **Vegetation** Roads
Imagery Scientific **Demographics**
Stream Gauges **Landsat** Species NAIP Planes
Water MODIS Biology **Elevation** Lifestyle POIs
Land Cover Protected Areas
Hazards Climate DigitalGlobe **Floodplains** Distribution
Weather Historical Maps Landscape Oceans Stream Forecasts
Population **Boundaries** **OSM**
Sea Temperature Wildfires Railroads

Millions of Maps and Layers
Shared by GIS Users



Open / Accessible


Standards-based GIS

Systems Integration


Open Standards and Formats

LADM

WMS GML WCS WWW XLSForm KML WFS
IFC SQL Web Scene (I3S)
OPeNDAP SLD SOAP WMTS
LERC JSON LAS CSW WPS
REST WaterML INSPIRE
NetCDF Shapefiles
ISO GeoPackage
OneGeology
CityGML



Principal Member

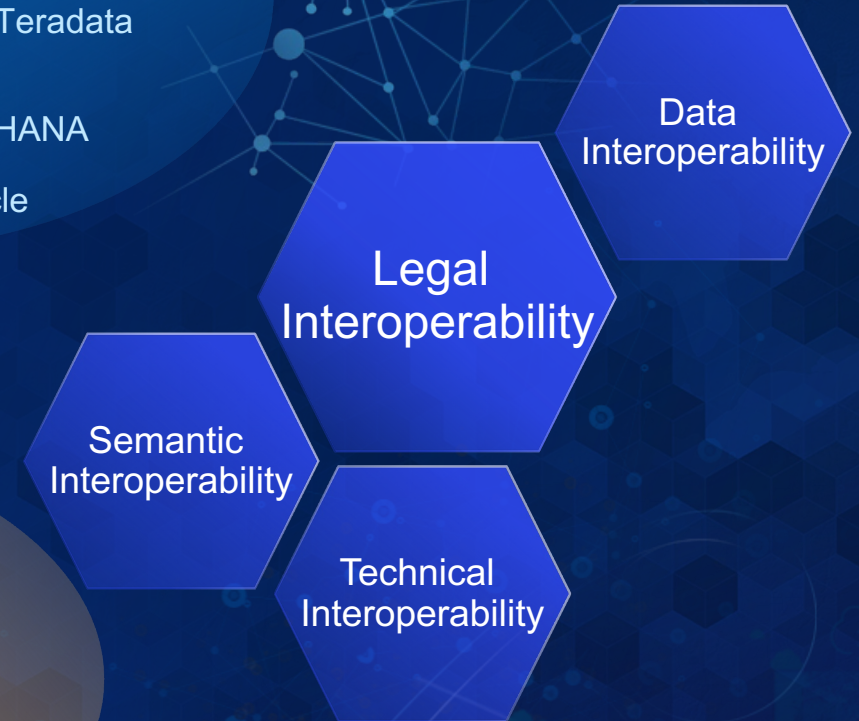


Many OGC Certifications

MS Office
Adobe Creative Cloud SharePoint
SQL Server Azure Jupyter Notebooks
Power BI Netezza Teradata
AWS Python R
AutoCAD IBM Cognos SAP HANA
Oracle

Open Software

Open Data Access
Open APIs & SDKs
Extensible Architecture
Embeddable Components
Open-Source Contributions (500+)
Open-Source Integration



Future-Proof Systems with Standards

LADM on GIS Infrastructure

Leveraging COTS Apps and Global Data,,,,



Cadasta

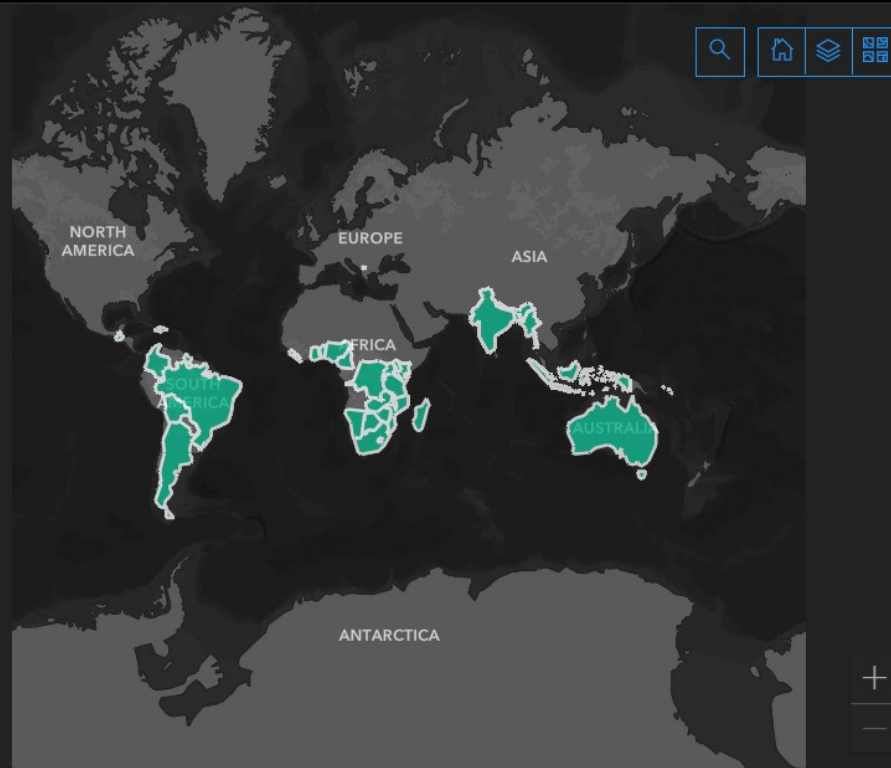


Cadasta Global Impact Dashboard - General Statistics

Month:
October

Year:
2021

Welcome to the Cadasta Impact Dashboard!



Esri, FAO, NOAA

Powered by Esri

HOUSEHOLDS



PEOPLE

5,394,094

* estimated based on number of households and an average of 6 people per household. See Notes tab for more

PARTNERS

89

PROJECTS

113

LAND DOCUMENTS
ISSUED

269,106

COUNTRIES



42

PARCELS

362,183

NUMBER OF GOVERNMENTS



24

HECTARES

19,687,044

GENDER OF



COMMUNITIES

3,280

Odisha India



Kadaster International

Post conflict areas need sustainable empowerment



Land in Peace project in Colom



Providing security during reconstruction in Nepal



Colombia



<https://www.esri.com/about/newsroom/blog/how-one-million-people-in-indias-odisha-slums-gain-land-rights/>

Kenya

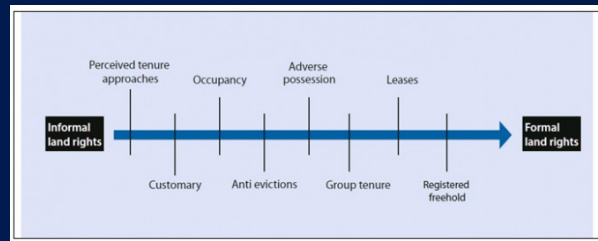
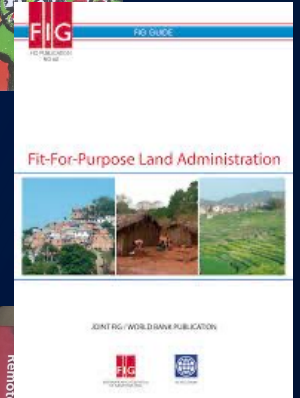
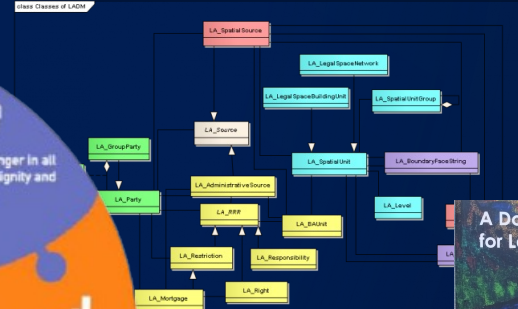
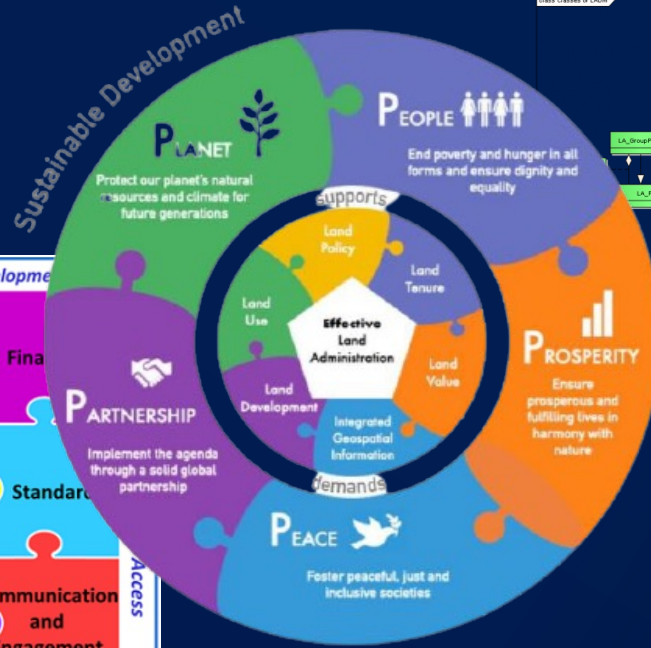
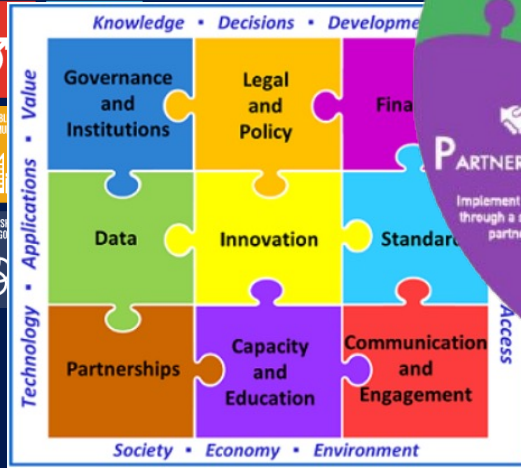


<https://www.esri.com/about/newsroom/blog/how-one-million-people-in-indias-odisha-slums-gain-land-rights/>

- Technology Innovations and Inventions Will Continue (and at an increased rate)
 - Faster, Cheaper, Smarter, Better.....
- GIS Operationalizes Good Research and Pilot Projects
 - Global Data
 - Apps, Tools and Geospatial Infrastructure
- Standards Enable Faster and Repeatable Deployments
 - Leveraging past research and experiences
- New Opportunities and Technology Capabilities Will Continue

GIS Operationalizes and Modernizes Land Administration.....

Geospatial Infrastructure enabling secure, scalable, sustainable land systems....





esri[®]

**THE
SCIENCE
OF
WHERE**[®]