FIG WARSAW CONGRESS 2022

XXVII FIG CONGRESS
11–15 SEPTEMBER 2022
Warsaw, Poland

Volunteering for the future – Geospatial excellence for a better living

Presented at the FIG Congress 2022,
11-15 September 2022 in Warsaw, Poland

Advancing Land Administration System - Implications of Recent International Trends

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Land Administration Systems are the basis for recording the complex range of ***RRR-rights, restrictions, and responsibilities*** related to people, policies, and places.

Land is Important

Land Administration Systems

- Land Use
- Land Registration
- Land Valuation
- Land Development

- The ultimate resource
- The primary factor of production
- Foundation of Economic
- Integrity of each country related to Land-Human relation

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LAS & CSDILA

2002

PRINCIPLES FOR AN
INTEGRATED LAND ADMINISTRATION SYSTEM TO
SUPPORT SUSTAINABLE DEVELOPMENT

by

Lisa A. Tang

2004

A Framework for the Evaluation
of Land Administration Systems

Daniel Steudler

Submitted in total fulfilment of
the requirements for the degree of

Doctor of Philosophy

February 2004

Department of Geomatics
The University of Melbourne

2008

Cadastral Data Modelling -
A Tool for e-Land Administration

By

Saeid Mohsen Kalantari Soltanieh

April 2008

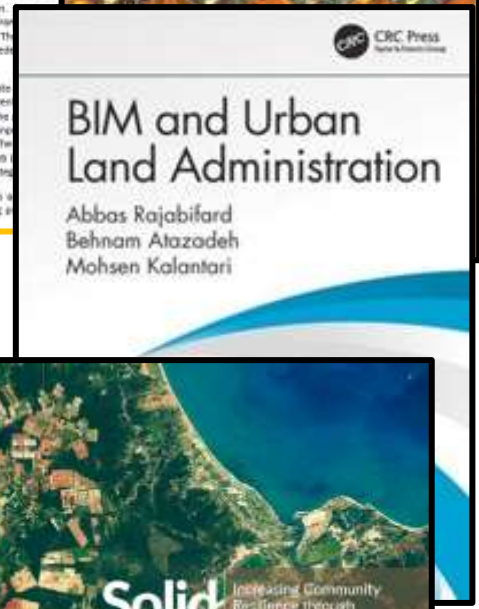
A thesis submitted to The University of
[illegible] in fulfilment of the degree of
Doctor of Philosophy

2012

Chapter 4: Land Administration
for Housing Production

Mojiwa Agunbiade

Overview



2012

Land Administration for
Macroeconomic Management

Nilofer Christensen

Submitted in total fulfilment of the requirements of the degree of

Doctor of Philosophy

November 2012

Department of Infrastructure Engineering
The University of Melbourne

2013

Using land administration for
land risk management

Katie Elizabeth Potts

Doctor of Philosophy

October 2013

2014

TOWARDS 3D-ENABLED URBAN
LAND ADMINISTRATION

INVISIBLE CONSTRAINTS AND
STRATEGIC CHOICES

Serene Shih Lynn Ho

Doctor of Philosophy

2017

Building Information Modelling fo
Urban Land Administration

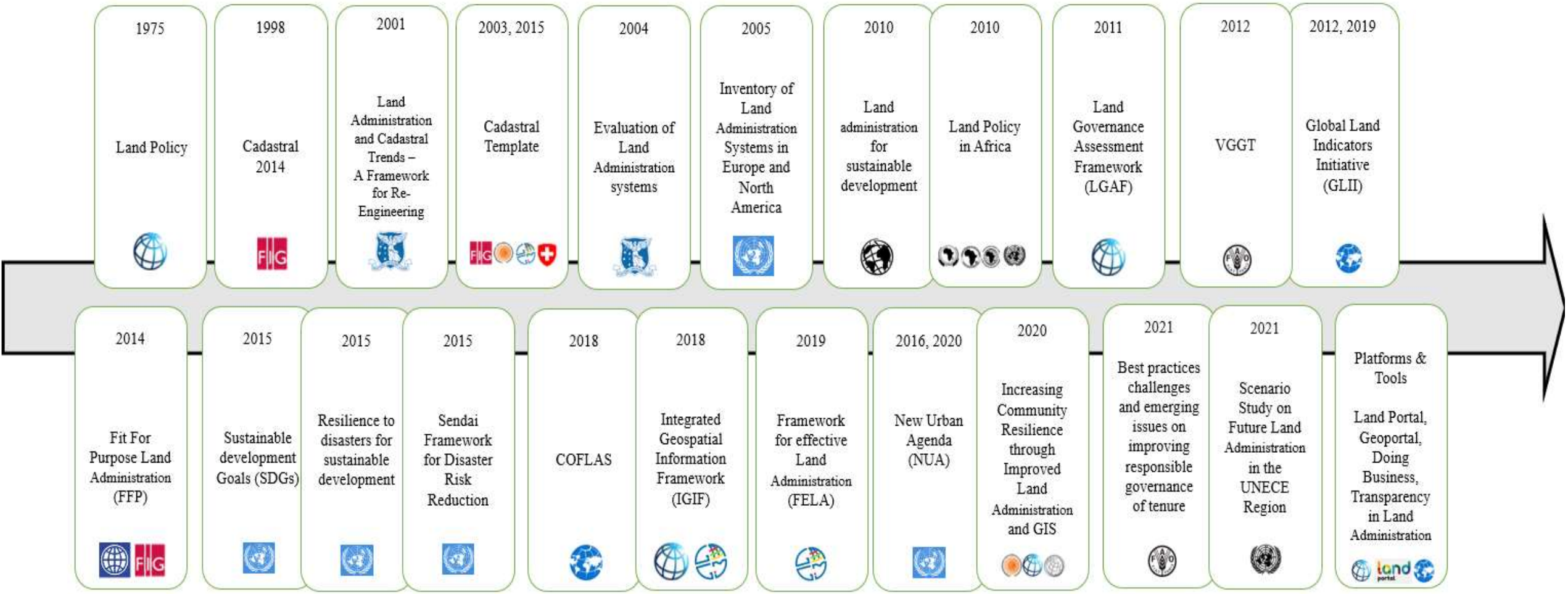
Behnam Atazadeh

ORCID: orcid.org/0000-0001-9295-4220

Doctor of Philosophy

May 2017

Identifying Global Initiatives



Since 1975, international efforts have been on a trajectory toward sustainable land management

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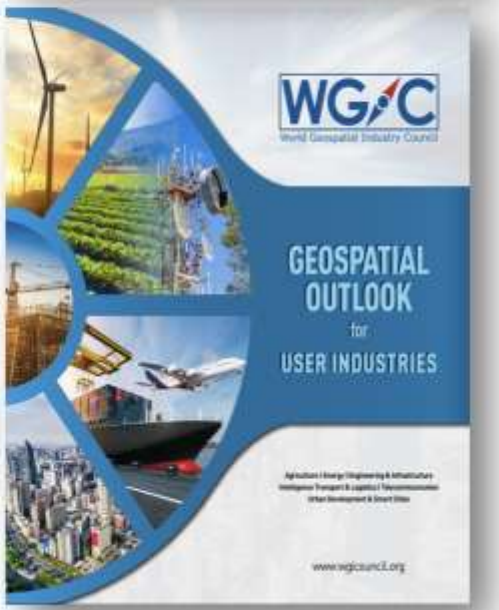

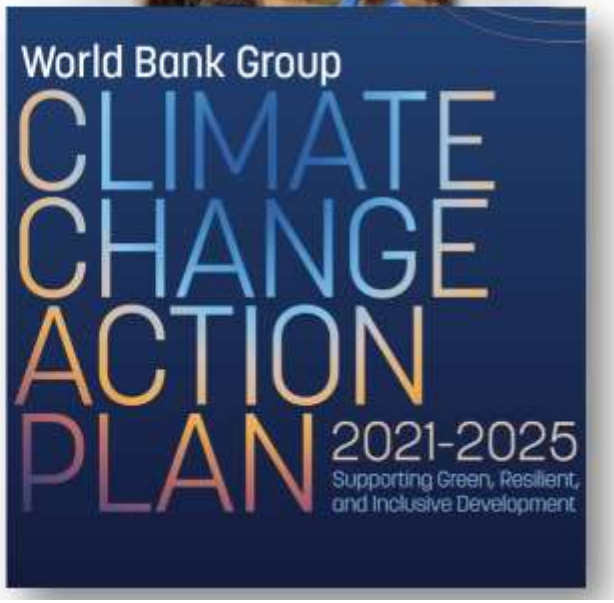

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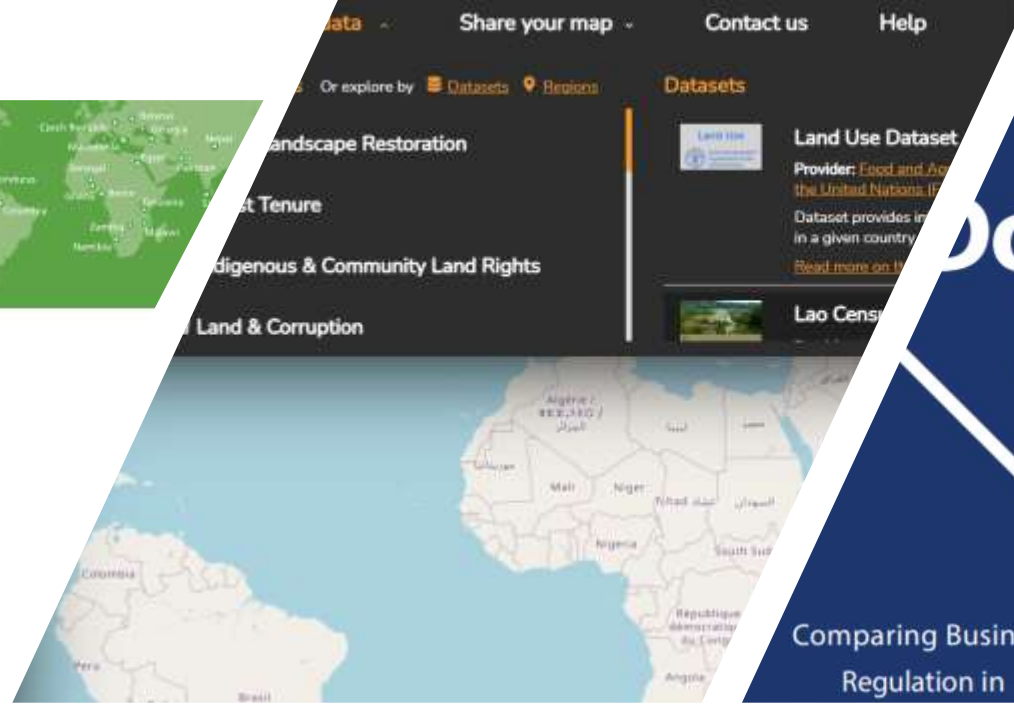
TOOLS TO SUPPORT TRANSPARENCY IN LAND ADMINISTRATION

SECURING LAND AND PROPERTY RIGHTS FOR ALL

UN-HABITAT FOR A BETTER URBAN FUTURE

ITC

ITC an Associated Institution of the UNITED NATIONS UNIVERSITY



Doing Business 2020

Comparing Business Regulation in

TRENDING Launch of The AfCFTA-anchored Pharmaceutical Initiative's Ce

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Opportunities

land portal

Countries Issues Join the Debate Data Library News & Events Com

Data / Statistical Data (indicators)

Statistical Data (indicators)

Explore our collection of open land data from around the world using a range of different statistica
filter results. All the data can be downloaded freely for use offline.

Displaying 1 – 16 of 60 statistical indicators

Indicator name	Dataset	Provider	Iss
	FAO – Land Use	- Any -	

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The 2030 Agenda:
Sustainable Development Goals

Land Matters In SDGs

Transforming our world, Leave no one behind

SDGs - Goal 1

End poverty in all its forms everywhere

Target 1.4: By 2030, ensure that all men and women, in particular the poor and the vulnerable, have equal rights to economic resources, as well as access to basic services, **ownership and control over land** and other forms of property, inheritance, natural resources, appropriate new technology, and financial services, including microfinance.

Target 1.5: By 2030, **build the resilience** of the poor and those in vulnerable situations and reduce their exposure and vulnerability to climate-related extreme events and other economic, social, and environmental shocks and disasters.

Land Records

Resilience

Public Disclosure Authorized

WORLD BANK GROUP

GFDRR

CSDILA

World Bank Group

The ability of land and people-to-land relationships to recover after hazard events requires reliable administration systems and authoritative geospatial information

2018-2020

Research Problem

Current Land Administration Systems design and development need to be reassessed, *reformed* and adjusted in line with the **global trends, challenges, and advancements**.

Different Approaches and Framework for Re-Engineering LAS

Different Aspects of LAS

Technical Aspect

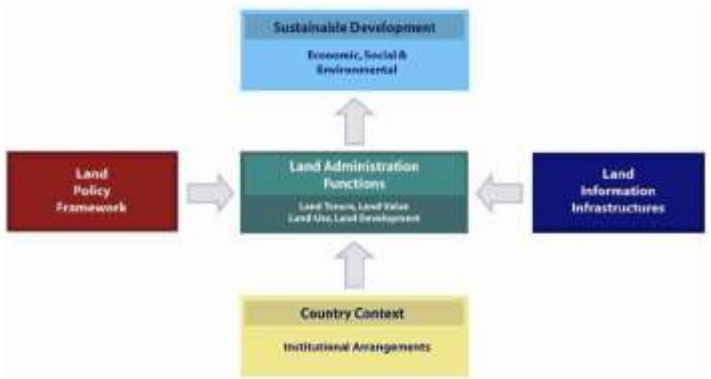
- Data Acquisition
- Data Validation
- Storage and Integration
- Visualisation
- Data Dissemination and Sharing
  - Data Modelling
- Data Query and Analysis

Institutional Aspect

Legal Aspect

Requirements

Land Management Paradigm, Enemark



Williamson, Ian P. "Best practices for land administration systems in developing countries." (2000).
Enemark, Stig. "Understanding the land management paradigm." Proceedings: Innovative technology for land administration. International Federation of Surveyors, 2006. 17-27.
Saeidian, Bahram, et al. "Underground Land Administration from 2D to 3D: Critical Challenges and Future Research Directions." Land 10.10 (2021): 1101.

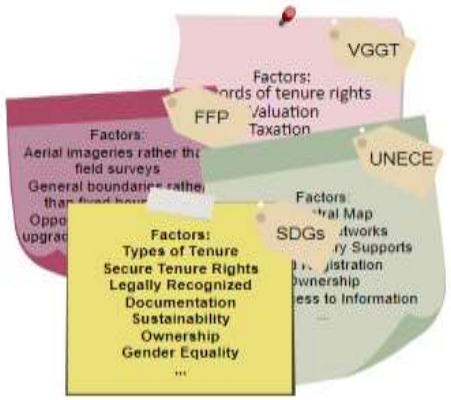
Research Aim

Proposing required parameters for designing an effective Land Administration System by considering the implications of new technology and the latest global initiatives on land management. Also by mapping parameters on the Land Management Paradigm, we suggest the important parameters for decision makers.

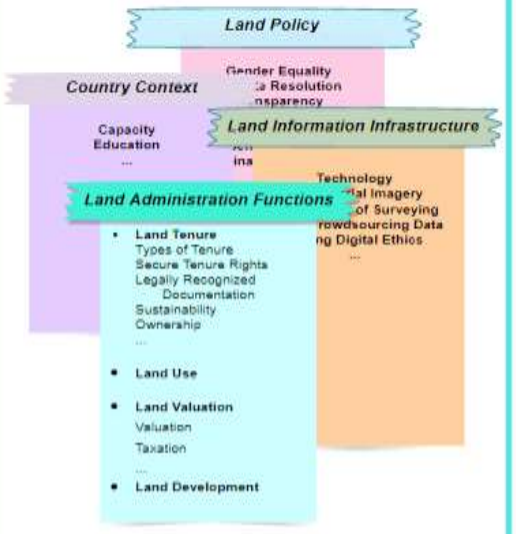
Methodology

STEP 1 → STEP 2 → STEP 3

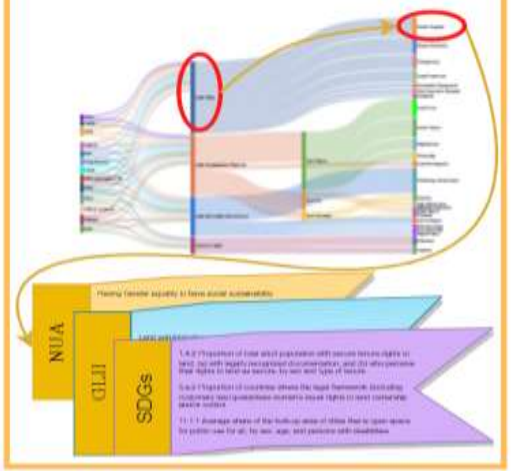
- Selecting land management initiatives to extraction their point of interest in reforming land administration
- Characterizing land related factors of initiatives



- Mapping factors of selected global initiatives to Land Management Paradigm by giving equal weight to each factor in visualization application to find the majority concern group of initiatives



- Investigating the most mentioned group by initiatives to reform land administration by analyzing the weight of mapped groups in Land Management Paradigm
- Identifying the factors related to the most mentioned group to taking them into account in land administration reforms by decision makers



Global Initiatives

Global Agenda

01 Voluntary Guidelines on the Responsible Governance of Tenure (VGGT)

02 Fit For Purpose Land Administration (FFP)

03 Sustainable Development Goals (SDGs)

04 Sendai Framework for Disaster Risk Reduction

05 Integrated Geospatial Information Framework (IGIF)

06 Framework for Effective Land Administration (FELA)

07 The New Urban Agenda (NUA)

08 VGGT Best Practices Challenges

09 UNECE Specified Factors Affecting Land Administration

+

Evaluating Models & Frameworks

01 Working Party on Land Administration (WPLA)

02 A Framework for Re-Engineering Land Administration

03 LAS Evaluation Framework by Daniel Steudler

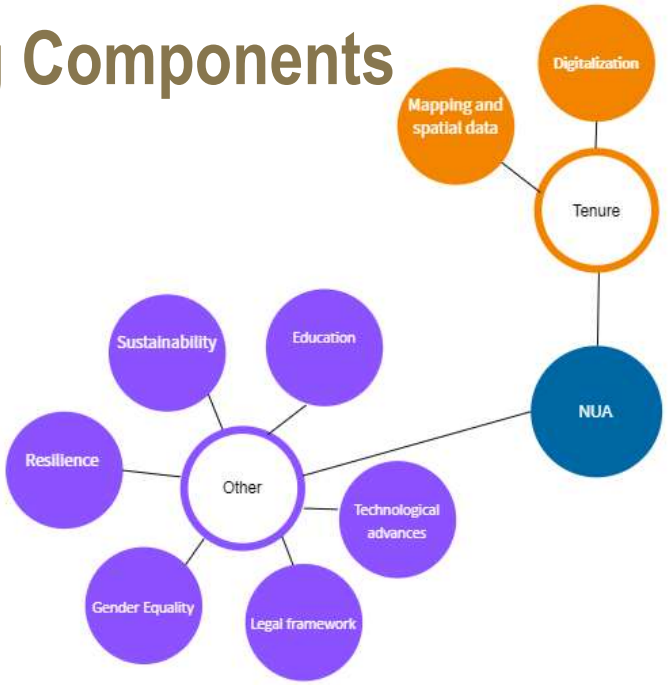
04 Cadastral Template

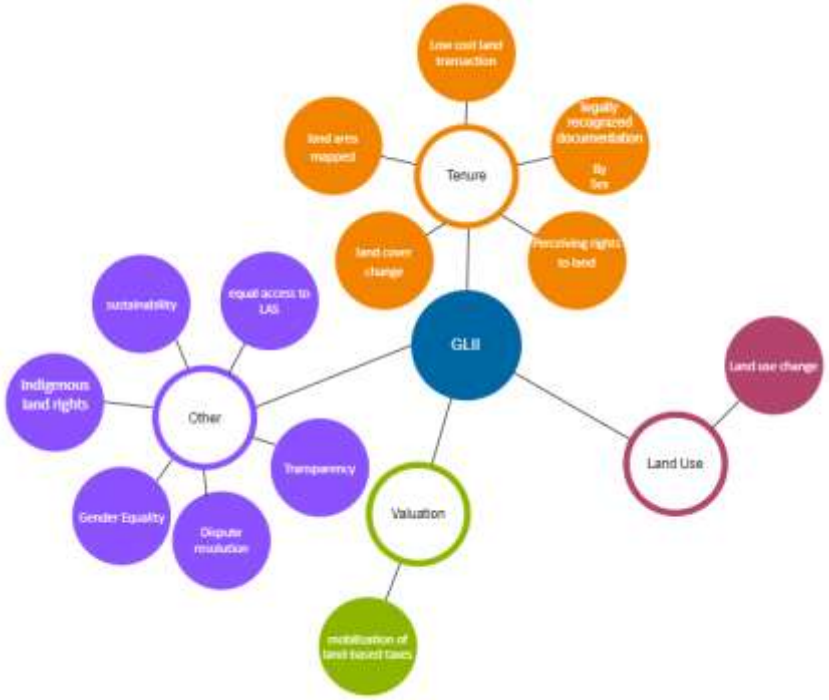
05 Land Governance Assessment Framework (LGAF)

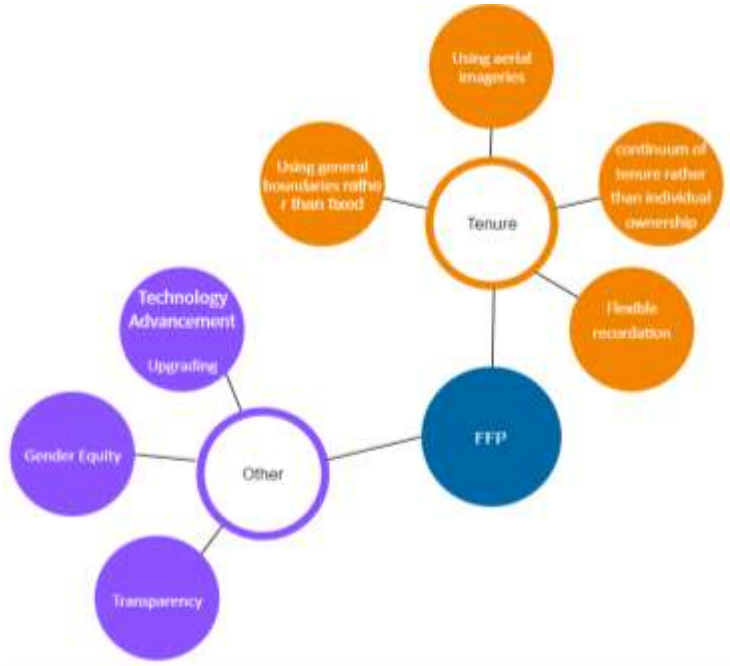
06 Global Land Indicators Initiative (GLII)

07 Doing Business

Identifying Components







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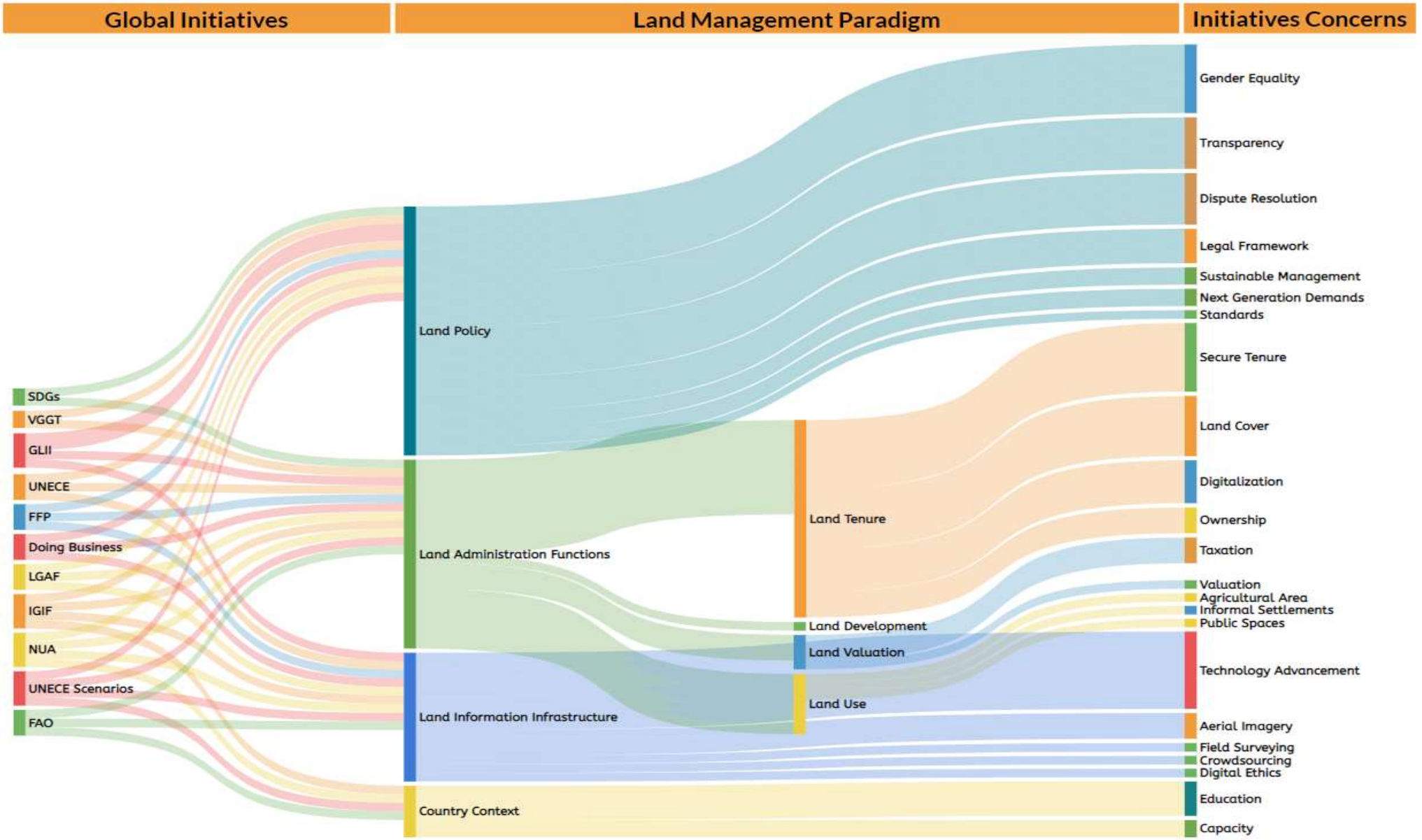
Mapping Global Initiatives to Land Management Paradigm



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CORE CAPABILITIES

CSDILA
CENTRE FOR SPATIAL DATA INFRASTRUCTURES AND LAND ADMINISTRATION

CAPABILITY KEY

Strategy and Policy Development, Consulting, Advisory Services and Training

Modelling and Analytics Frameworks

Prototype Platforms, Tools and Applications

MODERN LAND ADMINISTRATION SYSTEMS

Modernisation of Land Administration Systems and development of 3D cadastres

BUILDING INFORMATION MODELLING (BIM)

Developing multi-dimensional land and building rights, restrictions and responsibilities

SPATIAL DATA INFRASTRUCTURES (SDI and NSDI)

Enhancing governance and digital engineering capabilities in our societies via SDI

DISASTER MANAGEMENT AND COMMUNITY RESILIENCE

Developing Spatial Information ecosystems for management and decision support

DIGITAL TWIN TECHNOLOGIES

D-LAB DIGITAL TWIN SOLUTIONS

Developing leading-edge spatially enabled digital twin solutions to meet business and decision-making requirements.

CROWDSOURCING FEED

SUSTAINABLE DEVELOPMENT GOALS (SDGs)

Supporting the development of data infrastructures that implement the SDGs

URBAN ANALYTICS & PLANNING SUPPORT SYSTEMS

Enhancing SDI platforms and tools for urban planning, design, management and urban analytics

SMART CITIES

Modernising digital land and building data in the context of the Smart City

EXECUTIVE TRAINING & CAPACITY BUILDING

Developing a training centre that builds capability in local practitioners and executives and developing organisations.

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SCAN ME

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