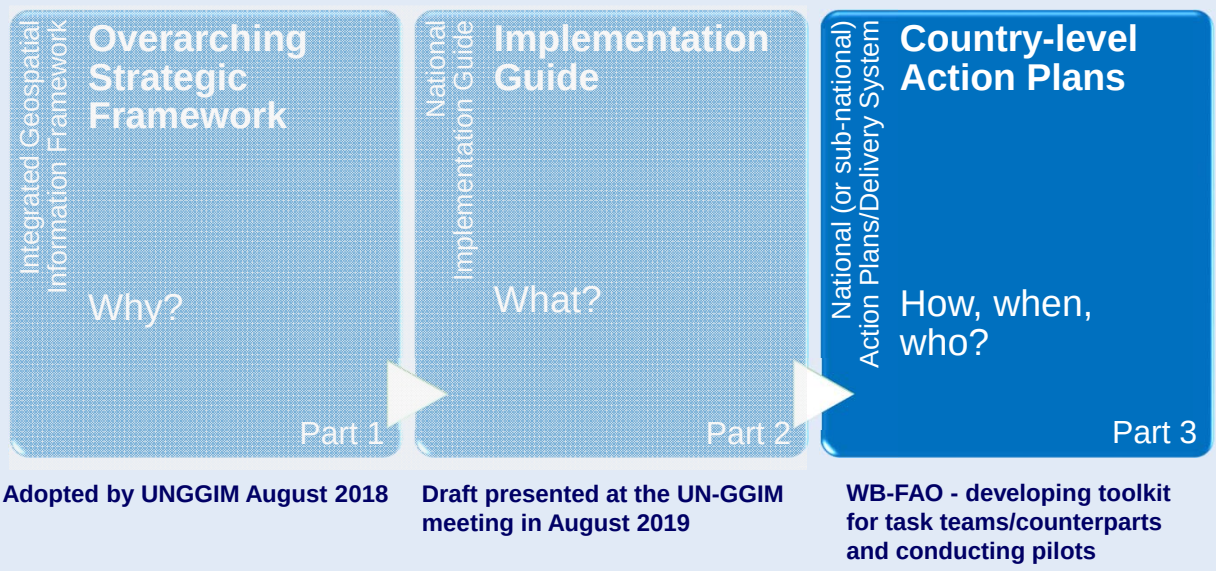
Integrated Geospatial Information Framework (IGIF) How it Works?

IGIF Implementation at Country Level

Rumyana Tonchovska, UNFAO
Kathrine Kelm, World Bank
Andrew Coote, ConsultingWhere

Vrdnik, Republic of Serbia/19-09-2019

OPERATIONALIZING THE IGIF



Adopted by UNGGIM August 2018

Draft presented at the UN-GGIM meeting in August 2019

WB-FAO - developing toolkit for task teams/counterparts and conducting pilots

IGIF COUNTRY LEVEL IMPLEMENTATION METHODOLOGY

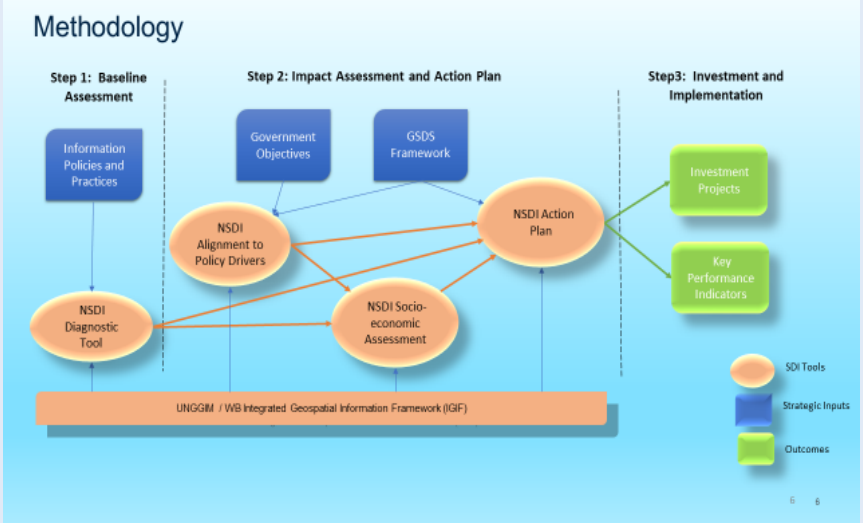
Step. 1: Diagnostic
- Initial Assessment
- Country Diagnostic Report

Step 2: Action Plan

2.1. Business case
- Geospatial Alignment to Business Drivers
- Socio-Econ analysis

2.2. Action Plan

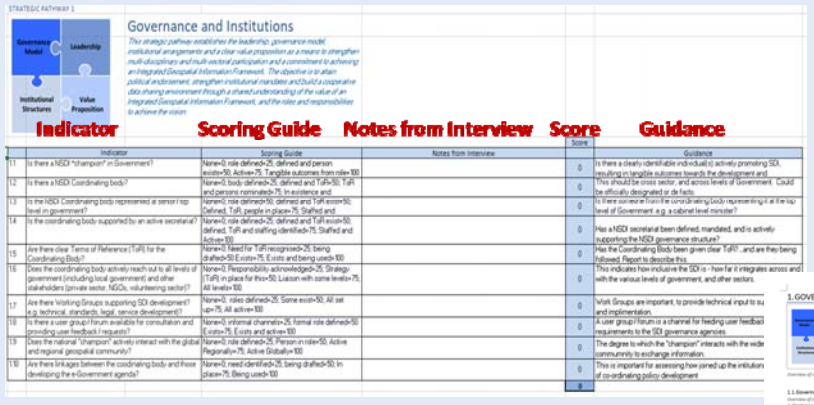
Step 3. Implementation
- Investment projects
- KPI
- Risks

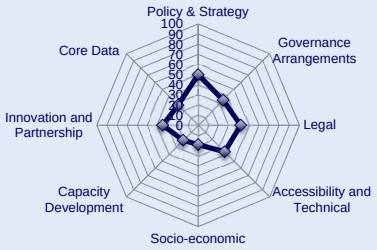


Food and Agriculture Organization of the United Nations

THE WORLD BANK IBRD • IDA

Step 1: Guyana: Results of SDI Diagnostic – Current Status





Initial version conducted in 15 countries 2017-2018
IGIF version conducted in: Guyana, Vietnam, Seychelles

Food and Agriculture Organization of the United Nations

THE WORLD BANK IBRD • IDA | WORLD BANK GROUP

5

Step 2.1: Guyana: Geospatial Alignment to the Guyana Business Drivers

6

Reflecting National Objectives:

- Green State Development Strategy (GSDS)
- National Energy Strategy
- Sustainable Land Development and Management
- Digital Governance Roadmap

Step 2.2: Guyana: Socio-Economic Benefits Assessment

7

Economic

- Increased rate of granting leases to state land, leading to higher Government rental income
- Cost savings in transport, energy and coastal defenses design and construction
- Improved billing rates for utilities
- Land market growth – reduced threat of development of a shadow (unregulated) market
- Increase revenue from forestry and mining concessions
- Improved agricultural production
- Reduced Data Procurement Costs
- Enhanced Support for Aviation Industry

Benefit to Cost Ratio:
2.7 : 1 (RoI of 270%)

Societal

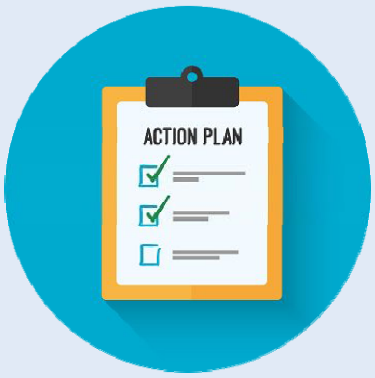
- Additional jobs and economic growth from new software products and services
- Reduced numbers of Land and Property-related Court Cases
- Improved water services through better planning and lower costs of maintenance
- Improved Sustainable Development Goal (SDG) reporting
- Enhanced preparedness and response for flood and other disaster risks

Environmental

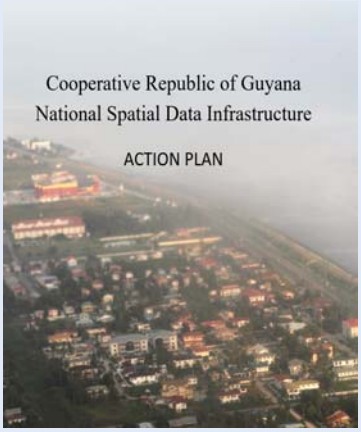
- Smarter and more sustainable Urban Development Planning and agricultural land use
- Better support for Climate Change Adaption
- Reduced rates of land degradation
- Improved control of aquifer pollution from mining

Step 2.3: Guyana: Action Plan

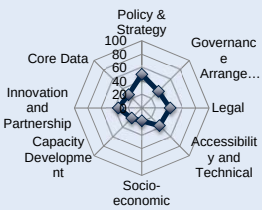
8



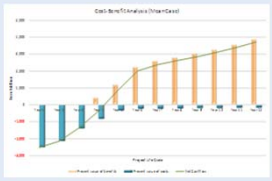
GUYANA: IGIF ACTION PLAN



Food and Agriculture Organization of the United Nations



National Policy Drivers



ACTION PLAN

7˚¸˚˘#-#&ɪ1-˘1-

Preface
Executive Summary
Country Context
Integrated Geospatial Information Framework (IGIF)
Geospatial Information in Guyana
Methodology
Baseline Assessment
Business Case
- *Strategic Alignment with Government Policy Drivers*
- *Socioeconomic Benefits*

NSDI Vision and Mission
Goals: What will NSDI success look like?
Action Plan
Conclusions

GUYANA: ACTION PLAN

7. Strategic Pathways

In this chapter we outline the recommended Action Plan in terms of the IGIF strategic pathways. It includes an overview of the current situation, summarized from the current state diagnostic report and possible measures by which the success of Actions can be evaluated, referred to as Key Performance Indicators (KPIs).

The following chapter then arranges these in the form of an outline implementation program.

7.1. Governance and Institutions

Governance and Institutions *This strategic pathway establishes the leadership, governance model, institutional arrangements and a clear value proposition to strengthen multi-disciplinary and multi-sectoral participation and a commitment to achieving an Integrated Geospatial Information Framework.*

The objective is to attain political endorsement, strengthen institutional mandates and build a cooperative data sharing environment through a shared understanding of the value of an Integrated Geospatial Information Framework, and the roles and responsibilities to achieve the vision.

7.1.1. Action 1.1: Ministerial Approval of National Geospatial Policy (High Priority)

Overview of Current Situation

The policy has been further revised based on the emerging action plan and ECLAC input.

Another round of consultation is not necessarily helpful as the policy is only setting a framework, which should be fleshed out by regulation, so the Commissioner could proceed direct to Ministerial approval now. The feeling from stakeholders throughout this study has been that GLSC need to "get on with it".

Strategic Alignment

This is a necessary underpinning to all use cases. Particularly NSDI Institutional collaboration (use case3.1).

Tasks:

- Soliciting set of supportive letters from major stakeholders to this effect may be helpful.
- Sensitise relevant Permanent Secretary-level representative(s) in stakeholder organisations, through a briefing session on the Action Plan.

For supporting communication plan, see strategic pathway on communication and engagement.

7.1.2. Action 1.2: Establish Geospatial Advisory Committee (GAC) (High Priority)

Overview of Current Situation:

Tasks:

- An initial "summit" meeting to agree priorities, based upon the final agreed action plan, may be useful.
- One of the most obvious first priorities is the need for coordination of the existing initiatives to avoid wasteful duplication of effort and ensure proper curation of their information products, without stifling innovation or their overall objectives.

7.1.3. Action 1.3: Establish Working Groups (Medium Priority)

Overview of Current Situation

No bodies currently exist to advance the technical development of the NSDI. An informal exercise has been undertaken to identify persons in stakeholder organisations who would be capable of participating in these working groups. The GAC will need to ratify these recommendations.

Strategic Alignment

This supports most directly use cases on geostatistical integration 4.1,4.2, blue economy (use case 8.2), air navigation (use case 8.3) and improving capacity and skills of human resources (use cases 7.1,7.2)

Tasks:

The working groups should be led by specialist members of the GAC and will specify practical steps and decisions to guide execution of the projects defined by the Action Plan. The groups that need forming first are:

- Standards and Guidelines: to implement technical interoperability.
- Data Content: to agree missing (or out of date) content of fundamental data themes (e.g. land use)
- Architecture: defining a distributed technical architecture for the NSDI to foster data sharing and collaboration.
- Geographical names approval (no current body)
- Innovation: including setting up a Centre of Excellence.
- Education and Capacity.

The Working Groups need to be properly established by the development of Terms of Reference (ToR) and appropriate work plans.

7.1.4. Key Performance Indicators

The following possible indicators are identified:

i) Geospatial Policy approved within 3 months.
ii) GAC and working groups established and operational within 6 months.

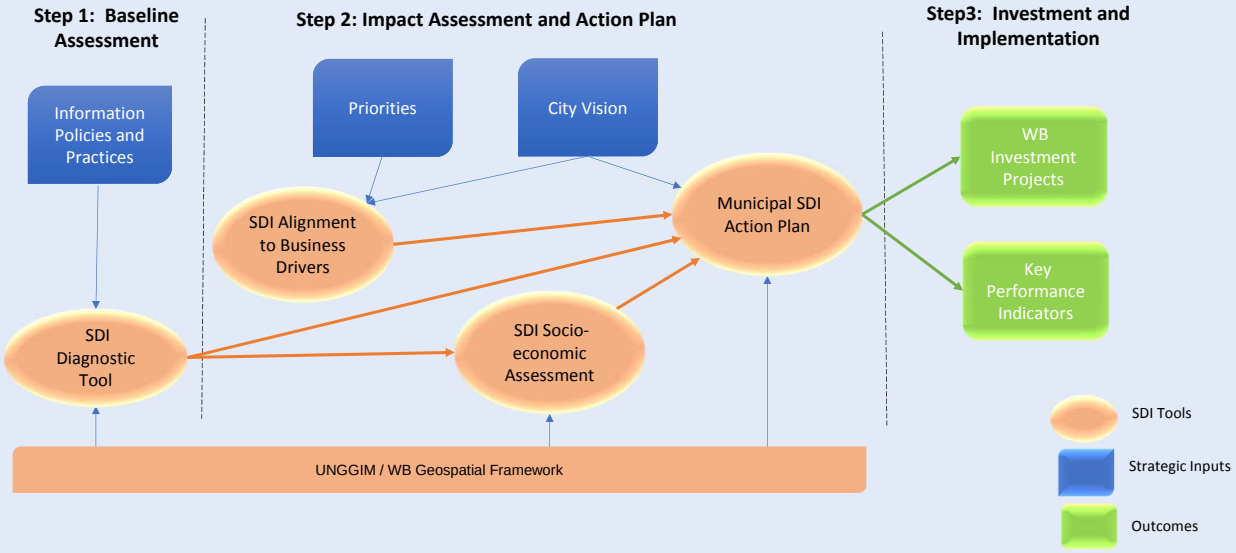
GUYANA: IMPLEMENTATION PLAN

Task Type					Financial			Timeframe							Comments
Action Ref	Title	GGIM Strategy Pathway Type	Priority	Description	Total Investment (US$)	Capital or Recurrent	Funding	Start Date	End Date	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	
	Section 1: Program Management															
1.1	Secretariat Support to Geospatial Advisory Group (GAC)				486,340	C		1.00	6.00							Note: Secretariate Support Costs only. Members assumed self-financing.
1.2	Program and Change Management				217,952	C		0.75	6.00							
	Title	GGIM Strategy Pathway Type		Description	Total Investment (€k)					Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Comments
	Section 2: Strategic Actions															
1.1	Ministerial Approval of National Geospatial Policy	Governance and Institutions	High		0	C		1.00	1.25							Use of existing resources
				Soliciting set of supportive letters from major stakeholders.												
				Sensitise relevant Permanent Secretary-level representative(s) in stakeholder organisations, through a briefing session on the Action Plan.												
1.2	Establish Geospatial Advisory Committee (GAC)	Governance and Institutions	High		0	R		1.25	1.50							Use of existing resources
				An initial "summit" meeting to agree priorities, based upon the final agreed action plan, may be useful.												
				Coordination of the existing initiatives to avoid wasteful duplication of effort and ensure proper curation of their information products, without stifling innovation or their overall objectives.												
1.3	Establish Technical Working Groups	Governance and Institutions	Medium		0	R		1.50	2.00							Use of existing resources
				Standards and Guidelines: to implement technical interoperability.												
				Architecture: defining a distributed technical architecture for the NSDI to foster data sharing and collaboration.												
				Innovation: including setting up a Centre of Excellence.												
				Education and Capacity Building.												

FROM NATIONAL …….TO SUB-NATIONAL

MUNICIPAL GEOSPATIAL ACTION PLAN Tirana, Albania

APPROACH: IGIF STRUCTURE FOR SUB-NATIONAL LEVEL



IGIF: MUNICIPALITY OF TIRANA, ALBANIA

- **Largest City in Albania**, recently enlarged and incorporates surrounding rural areas
- **Tirana 2030 Plan** envisages more the **doubling of size**:

  Current Population (est) 650,000…. Projected in 2030 1,6 million
- **Request for assistance from the City Mayor** :

*" In its daily activity, Tirana Municipality encounters endless problems - land registration is still incomplete, and service provisions, territorial planning, decentralization initiatives and tourism development **are limited by the lack of current and accurate spatial and land ownership information."***

ALIGNMENT OF INTERVENTIONS TO BUSINESS DRIVERS: TIRANA 2030 PLAN

Objective	Facilitated by:
Digital Government	Cadastral Upgrade to register state land and agricultural land on City fringe, 3D City models for valuation and taxation, participation in development of key registers, particularly completion of the National address database
Urban Regeneration	Upgrade of fundamental spatial datasets for master planning, formalised data sharing, spatial-enabled permitting, better real estate asset management
Accessible City	Spatially-enabled transport modelling, open geo-information for public mobile apps to increase public transport efficiency and minimise congestion
Flood Management	Overlays of critical infrastructure and population on Digital Elevation Models for smart zoning, evacuation planning and disaster recovery
Reduced Environmental Pollution	Using 3D models to predict air and noise pollution levels, reduction in congestion through better transport planning and building permit control
Quality Human Resources	Applied GIS education in local University. Improved internal communication of socio-economic benefits of a Municipal Spatial Data Infrastructure
Economic Competitiveness	Geovation program – stimulating innovation in the use of open geospatial information to generate new jobs in ICT and other sectors
Tourism Growth	Spatial-enabling market analysis and online promotion of Tirana as a destination

THE WORLD BANK

ACTION PLAN: PRIORITY INTERVENTIONS AND INVESTMENTS

Governance (€325k)

- Management Group; Program management; Data sharing regulation

Integrated Land Management Plan Interventions (€10.5m)

- Implementing and enhancing Key Registers (€2.2m)
- Cadastral Upgrade (€7.8m)
- Taxation System (€375k)
- Enhanced Land Value Capture (€75k)

Geospatial interventions (€4.4m)

- Improved City Spatial Data Management (€1.0m)
- 3D City Model (€1.15m)
- Mobile GIS for Operations (€465k)
- Satellite Imagery-based Systems for Agri-business (€835k)
- City Open Data (€300k)
- Sponsorship of Applied GIS Professorship (€500k)
- City Geospatial Advisor (€115k)

Total Investment: € 15.5

Return on Investment (RoI)
Provisional benefit to cost ratio: 3:1
Significant costs of Inaction

Assumes conservative values for all impacts
Not all impacts quantified
Financial Model: project life cycle of 12 years
- 5 year implementation + 7 year use
- Based on 12% discount rate

THE WORLD BANK

ACTION PLAN: PRIORITY INTERVENTIONS AND INVESTMENTS

IMPLEMENTING AND ENHANCING KEY REGISTERS (€2.2M)

Title	GGIM Strategy Pathway Type	Intervention	Total Investment (€k)	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5
Section 2: ILMP Related Interventions									
Key Registers									
	Governance and Institutions	Agree business processes with custodians and associated stakeholders, e.g. Municipalities, for maintenance of Key Registers	20						
	Technical	Upgrade ICT solutions custodians and associated stakeholders to support key registers and their interoperability.	1,667						
	Data	Implement data quality assessment and improvement programs for all Key Registers. This will be incrementally implemented by geographical priorities.	533						

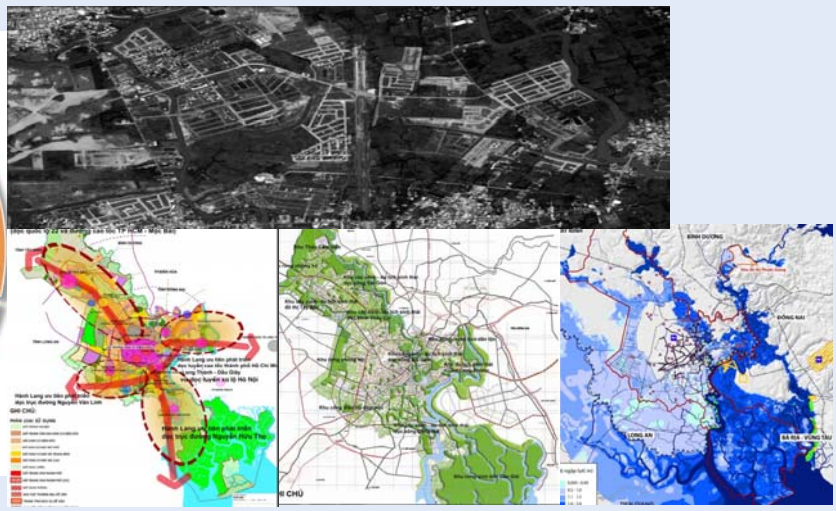
THE WORLD BANK

FROM NATIONAL …….TO SUB-NATIONAL

HO CHI MINH CITY - SMART CITY PROGRAM

FROM NATIONAL TO SUBNATIONAL SPATIAL DATA INFRASTRUCTURE
HO CHI MINH CITY - SMART CITY PROGRAM

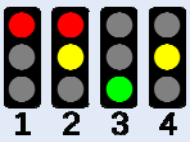
HO CHI MINH CITY
7 BREAK-THROUGH PROGRAMS
2016-2020

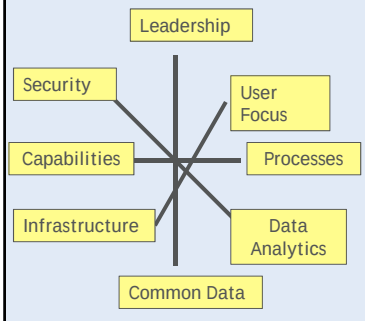


PRIORITY CORRIDORS | GREEN SPACE PLAN | FLOODING SCENARIO 2050

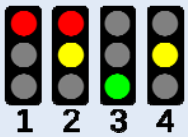
HO CHI MINH CITY: ASSESSMENT FRAMEWORK
LINKING DIGITAL GOVERNMENT + OPEN DATA + MUNICIPAL SPATIAL DATA INFRASTRUCTURE

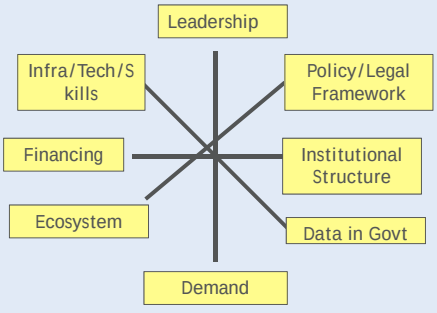
DIGITAL GOVERNMENT



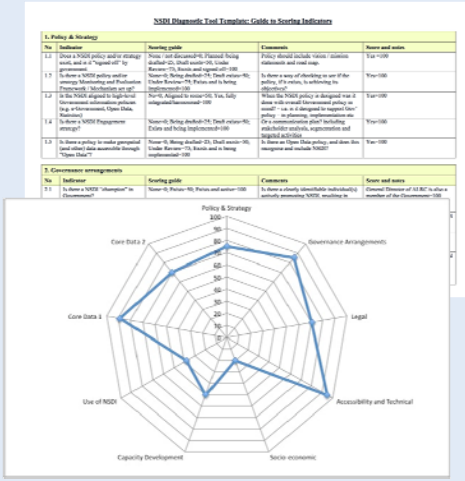


OPEN DATA

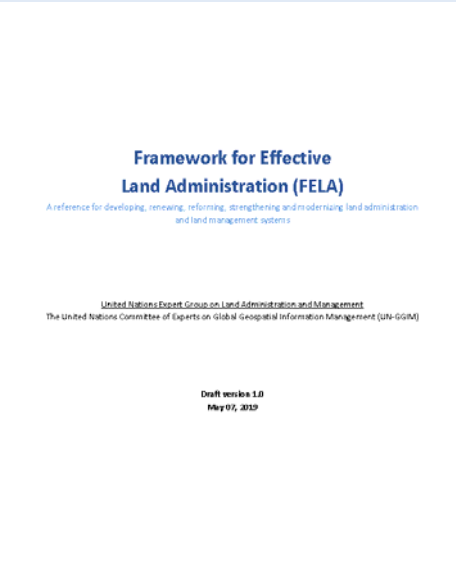




MUNICIPAL SDI

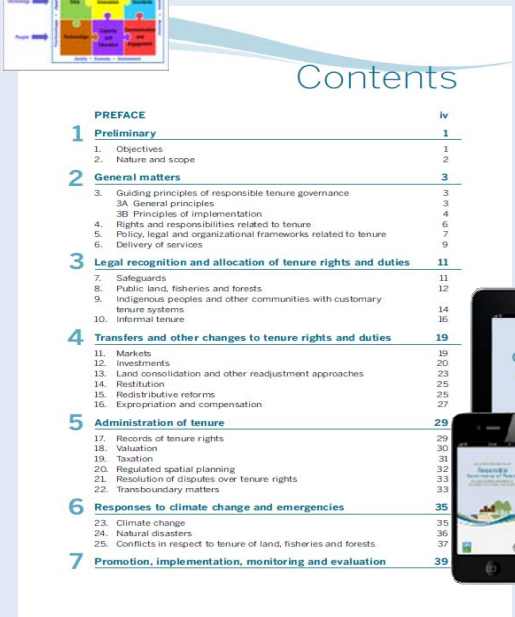


IGIF – SECTORAL CONTEXT: LAND ADMINISTRATION

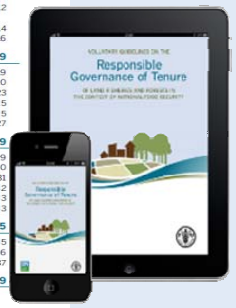

Framework for Effective
Land Administration (FELA)
A reference for developing, renewing, reforming, strengthening and modernizing land administration and land management systems
United Nations Expert Group on Land Administration and Management
The United Nations Committee of Experts on Global Geospatial Information Management (UN-GGIM)
Draft version 1.0
May 07, 2019

The nine strategic pathways of the IGIF have been used for the development of the Framework for Effective Land Administration

IGIF AND THE VOLUNTARY GUIDELINES ON TENURE


Contents

PREFACE iv
1 Preliminary 1
1. Objectives 1
2. Nature and scope 2
2 General matters 3
3. Guiding principles of responsible tenure governance 3
3A General principles 3
3B Principles of implementation 4
4. Rights and responsibilities related to tenure 6
5. Policy, legal and organizational frameworks related to tenure 7
6. Delivery of services 9
3 Legal recognition and allocation of tenure rights and duties 11
7. Safeguards 11
8. Public land, fisheries and forests 12
9. Indigenous peoples and other communities with customary tenure systems 14
10. Informal tenure 16
4 Transfers and other changes to tenure rights and duties 19
11. Markets 19
12. Investments 20
13. Land consolidation and other readjustment approaches 23
14. Restitution 25
15. Redistributive reforms 25
16. Expropriation and compensation 27
5 Administration of tenure 29
17. Records of tenure rights 29
18. Valuation 30
19. Taxation 31
20. Regulated spatial planning 32
21. Resolution of disputes over tenure rights 33
22. Transboundary matters 33
6 Responses to climate change and emergencies 35
23. Climate change 35
24. Natural disasters 36
25. Conflicts in respect to tenure of land, fisheries and forests 37
7 Promotion, implementation, monitoring and evaluation 39



Where the Geospatial technology could help?

Contents

Part 3: Legal recognition and allocation of tenure rights and duties: Safeguards, Public land, Informal tenure

Part 4: Transfers and other changes to tenure rights and duties: Markets, Investments, Land consolidation and other readjustments, Expropriation and compensation

Part 5. Administration of tenure: Valuation, Taxation, Regulated spatial planning, Disputes resolutions

Part 6. Responses to Climate change and emergencies: Climate change, Natural disasters, Conflicts

Part 7: Promotion, implementation, monitoring and evaluation

SUMMARY AND NEXT STEPS…

- **Update Templates for Country Level Action Plans as per the IGIF Implementation Guide by May 2020**
- **Develop/Implement training programs and capacity building**

World Bank and Korean Government Support for Geospatial Information Management

K-POK program for geospatial information management:
- IGIF eLearning Program Preparation
- Knowledge Exchange for **6 countries**
- Tied to WB lending/technical assistance projects to ensure link to financing and capacity building

New grant awarded to support **4 countries** to:
- Review the IGIF through a green growth lens
- Prepare IGIF country level action/investment plans
- Hold national/regional stakeholder workshops
- Link to implementation financing

…SUMMARY AND NEXT STEPS

- **Support to the development of Country Action Plans**

The World Bank

2017-2018 Pilots Completed:
- **Albania and Municipality of Tirana, Albania**
- **State of Palestine**

Ongoing/Planned:
- **Cambodia**
- **Colombia**
- **Indonesia**
- **Laos**
- **Malawi**
- **Mongolia**
- **Pakistan**
- **Philippines**
- **Seychelles**
- **Vietnam**

FAO of the UN
- **Guyana**

UN Development Account:
- **Mongolia**
- **Tonga**
- **Fiji**
- **Burkina Faso**
- **Ethiopia**

Norwegian Government:
- **Kyrgyz Republic**
- **Georgia**
- **Moldova**
- **Ukraine**

Greece requested WB support to develop an IGIF Strategy

If you want to go fast,
go alone.
If you want
to go far,
go
together.
- african proverb

THANK YOU!