



# XVI FIG Congress 2018

6-11 May 2018  
ISTANBUL

## A CONSIDERATION FOR A CONCEPTUAL PARTNERSHIP FRAMEWORK IN BUILDING SPATIAL DATA INFRASTRUCTURES IN DEVELOPING COUNTRIES

Maphale and Moreri  
(Botswana)

EMBRACING OUR SMART WORLD WHERE THE CONTINENTS CONNECT:  
ENHANCING THE GEOSPATIAL MATURITY OF SOCIETIES

ORGANISED BY



MAIN SUPPORTERS



PLATINUM SPONSORS



## Introduction

- SDI as a Conglomerate: Data, Technologies, Networks, People, Institutions, Policies, Standards
  - Functional Partnerships
- Business: Duplication, wastage of resources, policies and standards
- SDI origins in the 1990s: Political and technological influences
- Partnership drives: Data sharing and exchange
  - Spatial data as a multi-stakeholders commodities
  - SDI ambiguity
- SDI on an uphill struggle: African assessments reveals slow diffusion
- Ways to improved SDI Diffusion
  - SDI partnership framework

## SDI Components

- Technical Standards:
  - Spatial data
  - interoperability
  - data integration
- Access Networks:
  - Internet,
  - Global Positioning Systems (GPS) units and
  - smart mobile phones
  - **slow Internet bandwidth in developing countries**

## SDI Components ontinued

- Policies:
  - SDI policies backed by the highest office. E.g. USA, Europe.
  - South Africa with good foundations, but has experienced slow diffusion (Partnership problem)
  - Comprehensive cooperation, collaboration and coordination need to be in place
- Fundamental Datasets and Services
  - The commodities of SDI
  - Greater value in integration
  - Expanded user base
  - Robust geospatial data governance structure
  - structure should be secured through partnerships

## SDI Components Continued

- Institutional arrangements
  - Institutions are platforms
  - Informal and disjointed efforts
  - Lack of proper partnerships
  - Challenges SDI development
- People (users and producers)
  - Traditional producers
  - Users (Turning in producers)
  - Impact of Volunteered Geographical Information (VGI)
  - Fertile ground for partnerships

## Partnerships

- “Partnerships represent an important mechanism for bringing government departments, local authorities and professional groups both within and between agencies, the private and the voluntary sector, those who deliver services and those who receive them to work together towards a common goal. (Mclaughlin 2004)
  - Partnership Hierarchies
  - Useful in encouraging development of new products
  - SDI adaptability through partnerships
  - Delivery to a wider audience
  - SDI concepts and partnerships need to be harmonized
  - Cross-disciplinary research to arrest SDI ambiguity



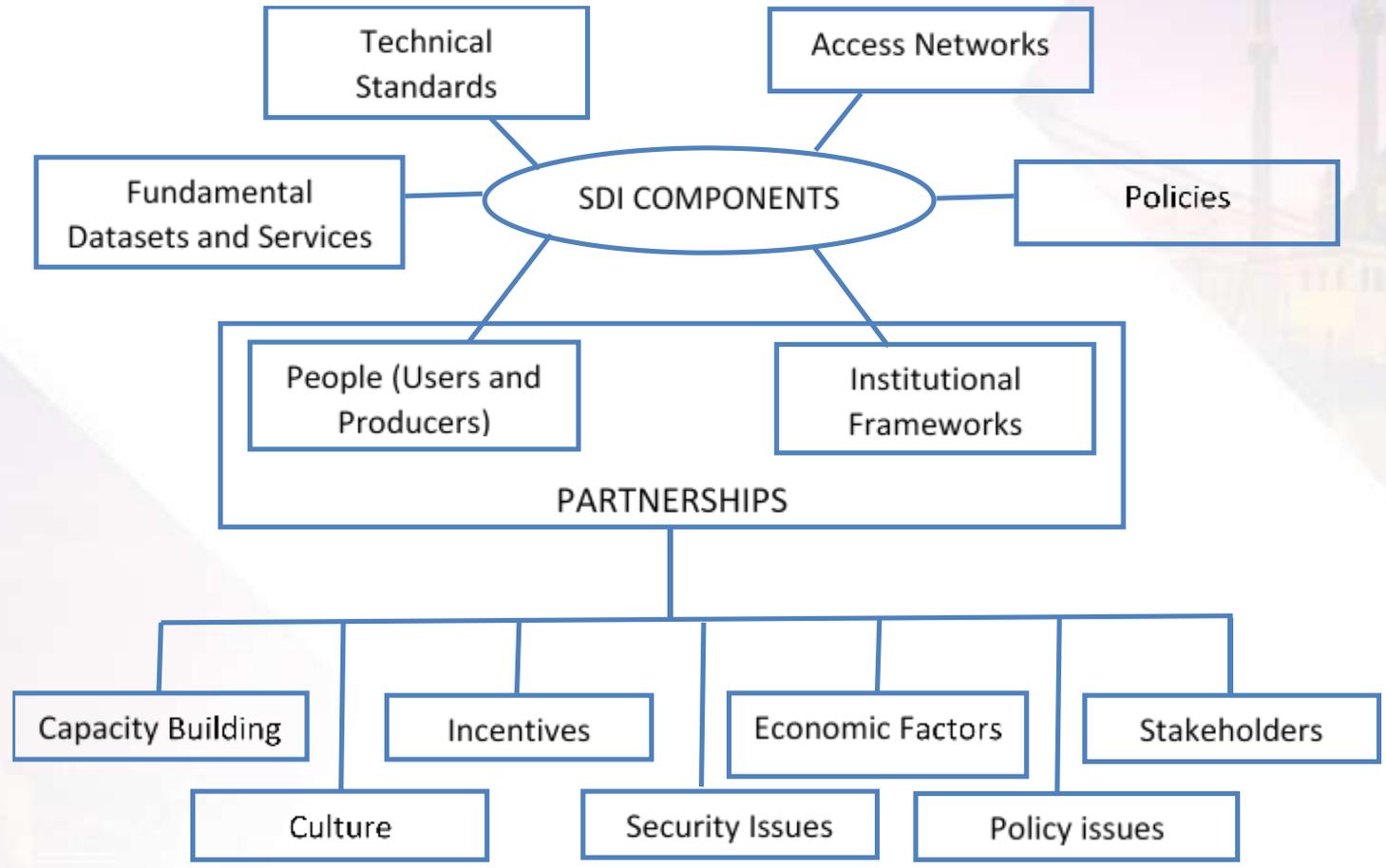
# XXVI FIG Congress 2018

6-11 May 2018 ISTANBUL

EMBRACING OUR SMART WORLD WHERE THE CONTINENTS CONNECT:

ENHANCING THE GEOSPATIAL MATURITY OF SOCIETIES

## The Conceptual SDI Partnership



ORGANISED BY



MAIN SUPPORTERS



PLATINUM SPONSORS



## Conceptual SDI Partnership Framework Explained

- Institutional recognition of value addition in partnerships
- Identification of partnership building block or elements
- Start from small steps and grow the partnership model
  - institutions operational levels: Data production and dissemination
  - Tactical : creating policies for conducive environments
  - Strategic: decision making and Inter-organizational
- Relate partnerships to;
  - organisational behaviour
  - Technical remits
  - information policy issues

## Elements of the Partnership Framework

- Capacity building:
  - improvements in the ability of all stakeholders
  - Multi-sectoral
- Culture:
  - SDI develops gradually. (Leadership understanding)
  - Embedding in organisational culture
  - improved awareness amongst stakeholders
- Policy issues:
  - Guiding principles
  - Policies that formalize and legally bind partnerships
  - Sharing fundamental datasets and services

## Elements of the Partnership Framework

- Economic factors:
  - Budgetary constraints as motivation for partnerships
  - A pool of shared resources
  - Use of open source technologies as they offer opportunity to inhouse development
- Security issues
  - Variety of stakeholders as concern to data and services security
  - Trusted and properly registered sources
- Incentives:
  - identify areas where each participant may benefit (Return on investment studies)
  - Ongoing incentives and their identification
- Stakeholders: defined roles and responsibilities

## A CASE FOR AFRICAN COUNTRIES

	Organisation	Informational	Human	Technology	Financial	SDI Index
Botswana	0.1357	0.2345	0.5244	0.6530	0.4665	0.3477
Ethiopia	0.5466	0.4000	0.3820	0.4340	0.3038	0.4058
Ghana	0.6459	0.6837	0.5537	0.5904	0.5673	0.6063
Kenya	0.5676	0.5500	0.5178	0.6148	0.5500	0.5592
Malawi	0.5960	0.6837	0.2668	0.3382	0.2030	0.3755
Nigeria	0.7468	0.6205	0.3742	0.5390	0.7274	0.5841
Rwanda	0.8411	0.6837	0.5263	0.5225	0.7274	0.6489
Senegal	1.0000	0.7714	0.5802	0.5729	0.6069	0.6893
South Africa	0.7114	0.7348	0.6039	0.6649	0.5130	0.6404
Tanzania	0.2802	0.2500	0.4158	0.4468	0.3038	0.3307
Zambia	0.5500	0.5500	0.4627	0.4517	0.5673	0.5140
Zimbabwe	0.2924	0.3708	0.4433	0.5664	0.1531	0.3342
Overall	0.5761	0.5444	0.4709	0.5329	0.4741	0.5030

- Extract of SDI Readiness Index (Source: Mwange, Maluku and Siriba 2016)
- Low and High SDI readiness index values
- Bench marking among countries (E.g Botswana learning from Senegal the secret behind high organisation index)
- The overall values depict a general SDI implementation readiness that is low

## Conclusion

- SDIs can also be successful in developing nations
- Partnerships key to successful SDI implementations
- How stakeholders can actively collaborate in partnerships
- Issues to innovatively consider by developing countries;
  - Common geodetic reference framework,
  - records linking,
  - sharing and data exchange between stakeholders,
  - removal or reduction of data inconsistencies,
  - cumbersome data presentation and record keeping,
  - lack of standards in spatial data handling,
  - production of fit for purpose spatial data products
  - reduction of geo-information transaction costs