Organisational and digital transformation of land administration ecosystems - how do changing legislation and technology affect the LA ecosystems?

Prof. dr. ir. Walter T. de Vries / Technical University of Munich

Dr. Claudia Lindner / Kadaster

Theory of Land Administration Ecosystems – land administration systems

Land administration systems (LAS) are:

1. (inter-)organizational systems
2. guided by the institutional procedures and regulations (and institutionalized practices)
3. ensuring that the land information is kept up-to-date and accessible.

The organizational system refers to:

1. A set of professionally educated actors (including surveyors, notaries, lawyers, conveyancers), and
2. organizations (including ‘cadastres’, ‘land registries’, municipalities, courts, land offices, land ministries)
3. responsible and accountable for land administration activities, workflows
4. for maintaining land information systems.

Theory of Land Administration Ecosystems – land administration ecosystem

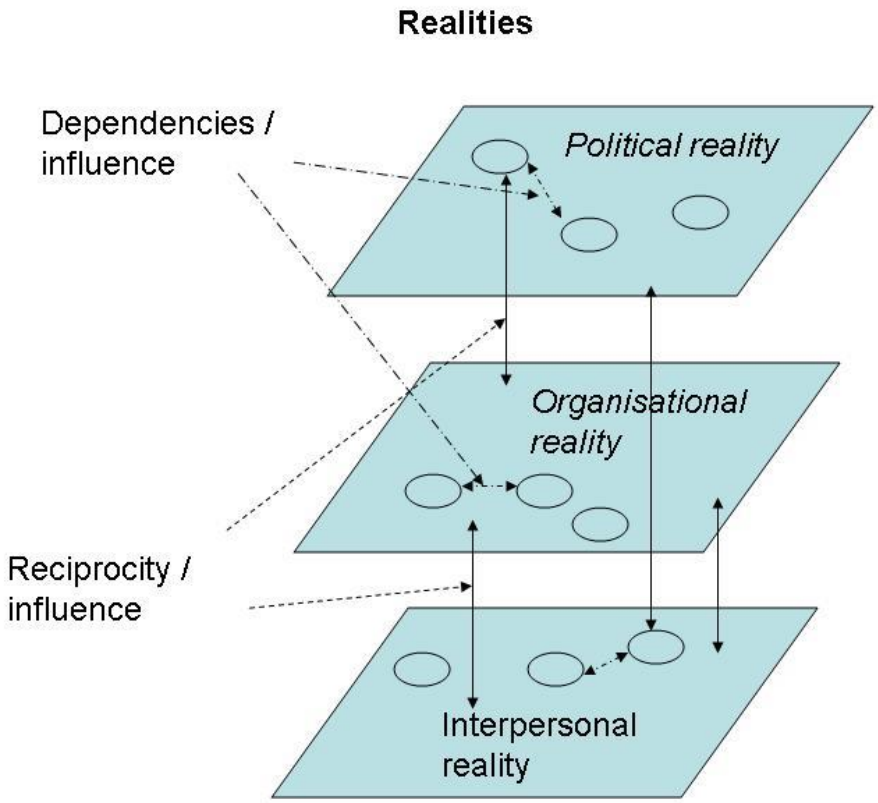
Land administration ***ecosystems*** refer to:

1. Institutional and socio-political context in which LASs operate
2. the public administrative as well as institutional procedures and regulations (and institutionalized practices) of which LASs are part
3. The influence of the changing societal, political, economic, legal/regulatory and technological factors which affect LASs.

The ecosystem itself is affected by the agency of:

1. Multiple external actors and forces
2. Multiple political frames, perspectives and realities
3. Multiple logics and rationalities
4. Multiple factors

Theory of land administration ecosystems – multiple realities and rationalities

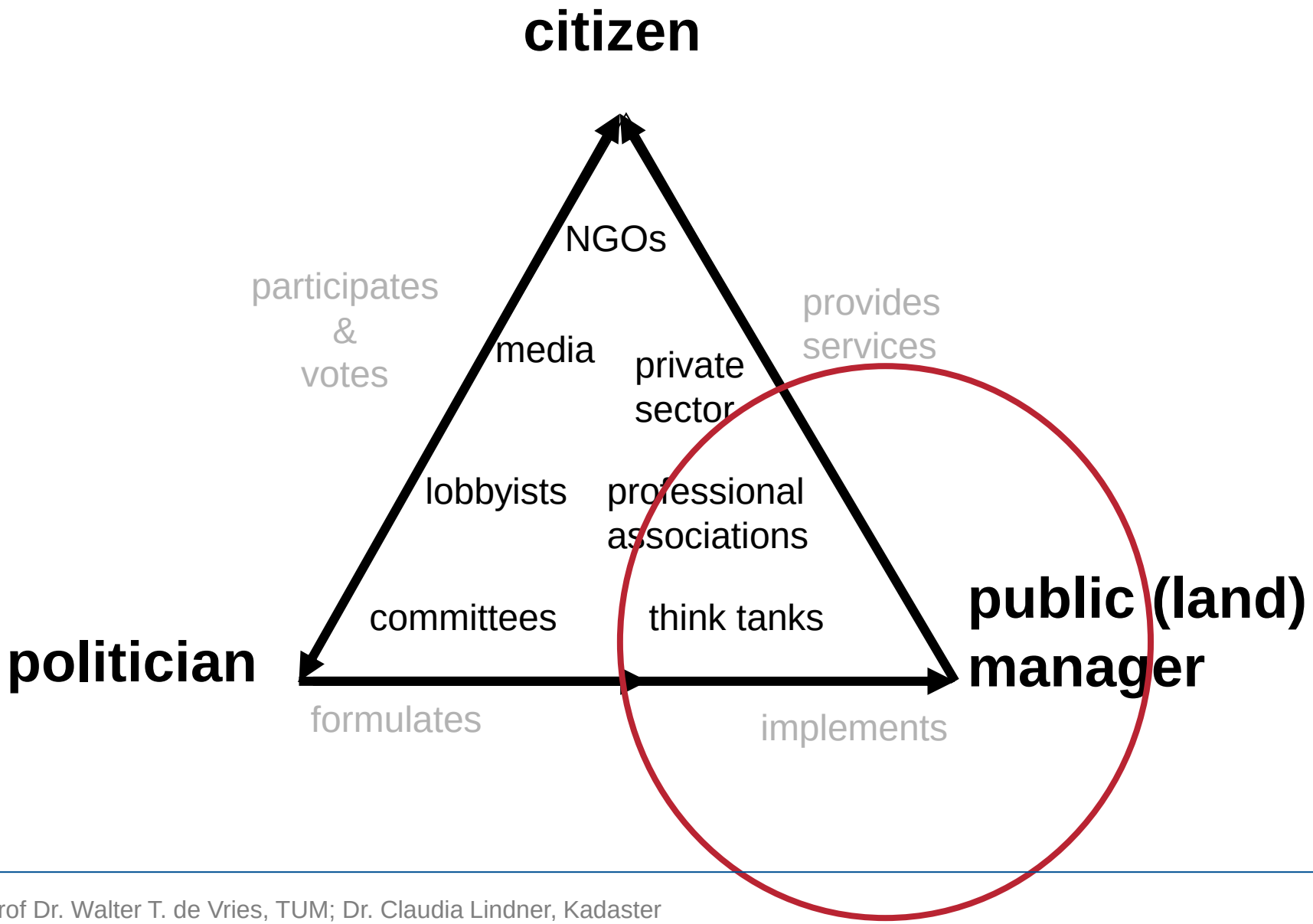


Evaluation elements

Legitimacy
Image
Representativeness
Trust

Efficiency
Integration
Harmonisation

Collegialities
Interpersonal trust
Communality
Historical experiences


citizen
NGOs
participates
&
votes
provides
services
media
private
sector
lobbyists
professional
associations
committees
think tanks
politician
public (land)
manager
formulates
implements

External development

citizen

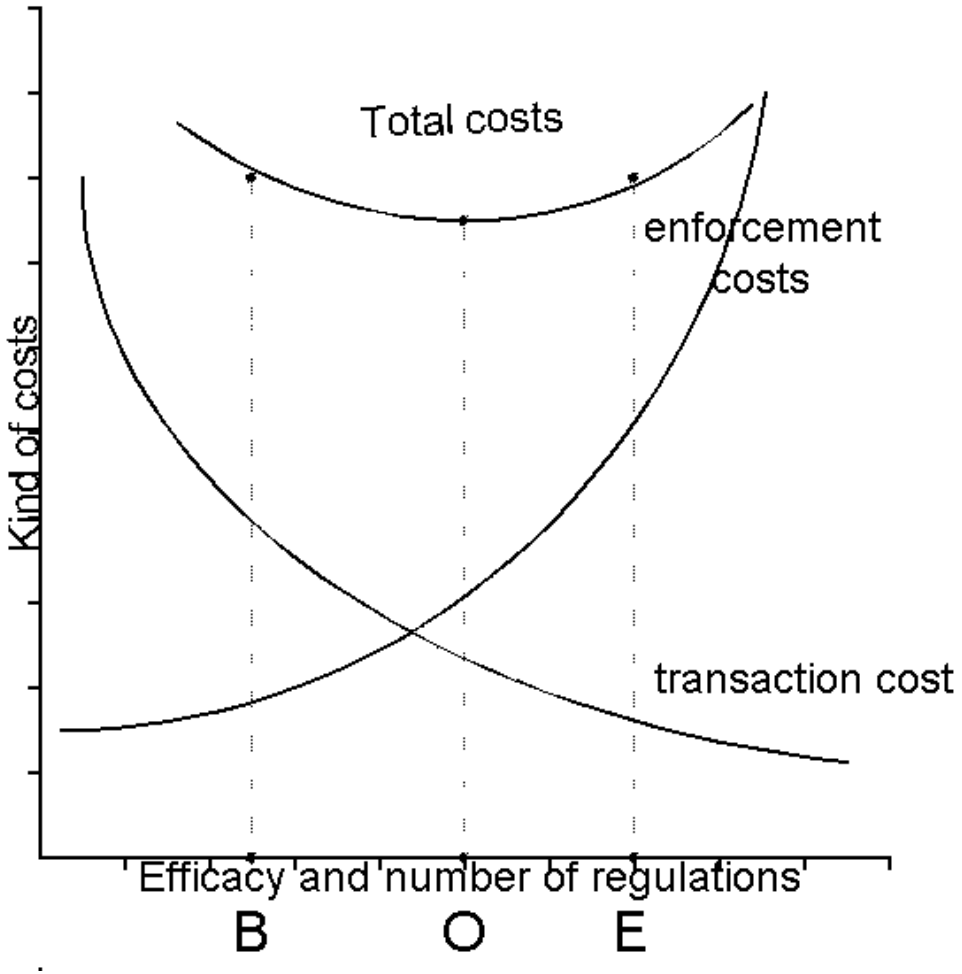
Effect on LA?

politician

public (land) manager

Studying Land Administration Ecosystems – examples of theories - 1

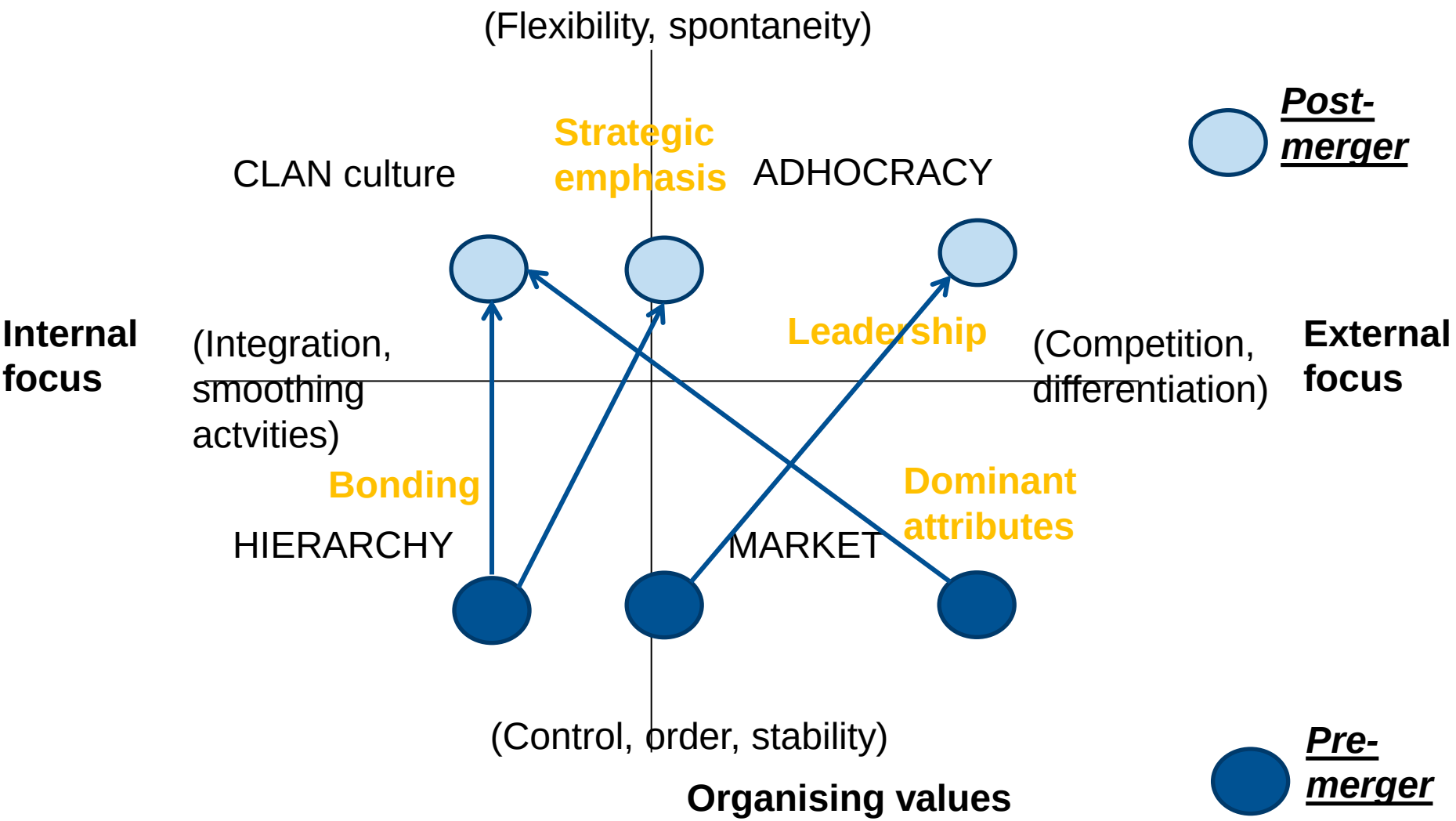
Theory	Units of analysis	Key tenets
Transaction cost theory	Transaction cost; Enforcement costs;	• Uncertainty in legality and regulatory power leads to societal higher transaction costs • Standards and unitary rules lead to higher societal enforcement costs • Socio-political effectiveness relies on finding the right balance of legitimacy and trust
Resource dependency theory	Resource dependencies; Principle-agent relationships	• Holding resources (incl. information) creates power • Actors aim at optimizing power and minimizing dependencies • Socio-political effectiveness relies on finding common/public interests and mutual benefits


Total costs
enforcement costs
transaction cost
Kind of costs
Efficacy and number of regulations
B
O
E

Studying Land Administration Ecosystems – examples of theories - 2

Theory	Units of analysis	Key tenets
Cultural value theory	Beliefs and perceptions	• Cultural values decide what is good or rights • Professional epistemologies influence organisational choices and preferences
Technology adoption theory	Performance and effort expectancy Social pressure	• Individuals believes that technology will ease their work determines overall acceptance • Social pressure will influence overall acceptance

Shift in values – pre versus post merger



Theoretical expectations of how new legislation and new technologies will influence Land Administration Ecosystems

Theory	Theoretical expectations
Transaction cost theory	• Unified legalisation will reduce societal transaction cost, yet may create more complexity in upholding execution of the law • Technology can only reduce transaction costs if it leads to more legitimacy of public administration
Resource dependency theory	• New legislation creates new dependency relations, which may be opposed / obstructed by those who held previous powers • Technological advances create new inter-organizational dependency relations (possibly more power of technology providers)
Cultural value theory	• Integration of laws will create competing values internally; new attitudes and values will have to emerge • Technology is not value-neutral; blockchain, AI, etc. carry the contingent societal norms of their creators;
Technology adoption theory	• New rules are necessary to capture new ethical concerns • Societal adoption of new technologies will influence how which LA's choices of technology will be accepted

An example from The Netherlands: The Environment and Planning Act

An example from The Netherlands: The Environment and Planning Act

What is the goal of the new Environment and Planning Act?

1. Fewer regulations and more cohesion
2. One-stop-shop for citizens and companies
3. Accelerated and improved decision-making
4. Paradigm shift towards an enabling system

One regulation
One digital portal

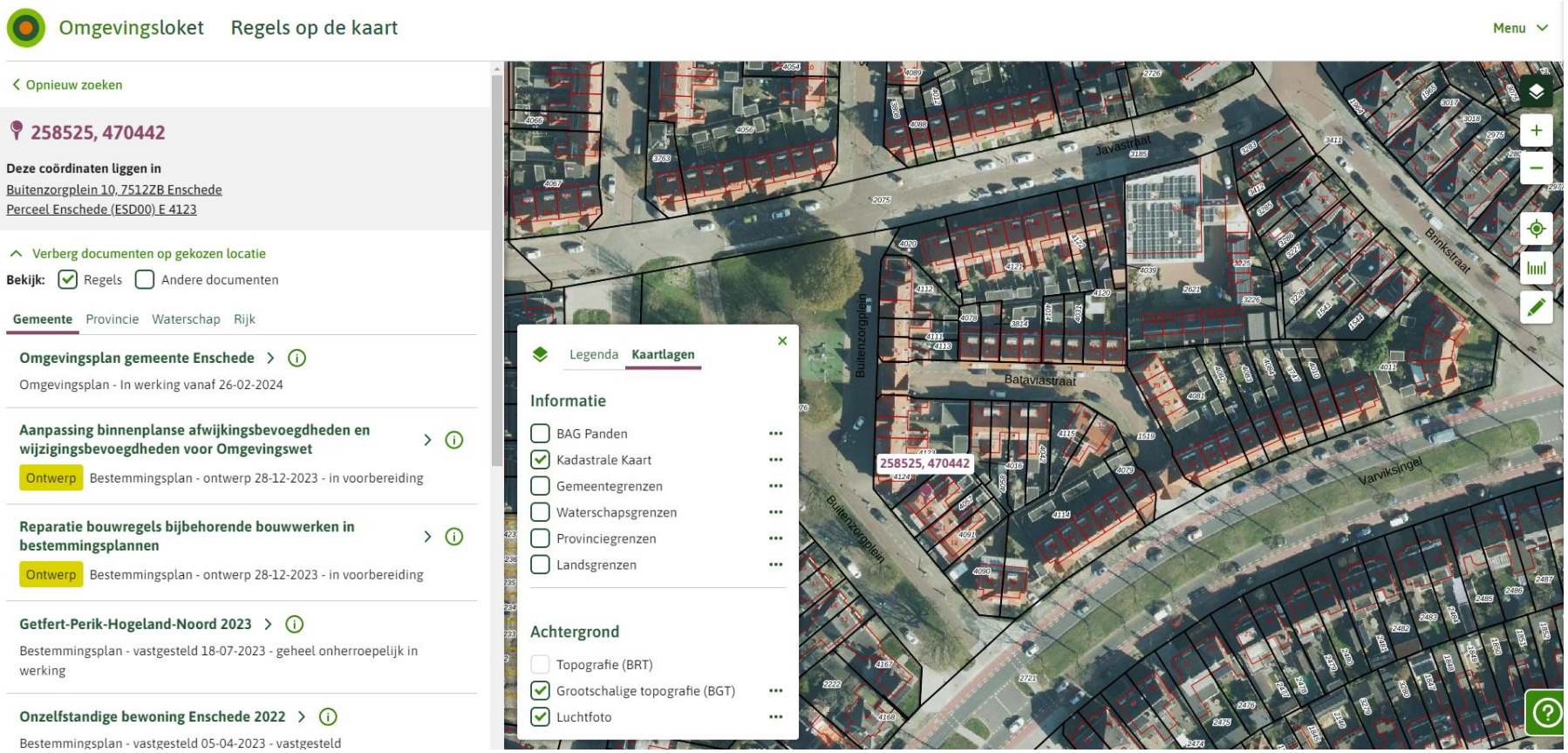
An example from The Netherlands: The Environment and Planning Act

How is it implemented?

- Omgevingsloket (Environment and planning portal)
- Unified single point of access
- Integration of processes
- Permission and authorization handling
- Merging of over 50,000 zoning plans into unified Environmental Plans until 2032

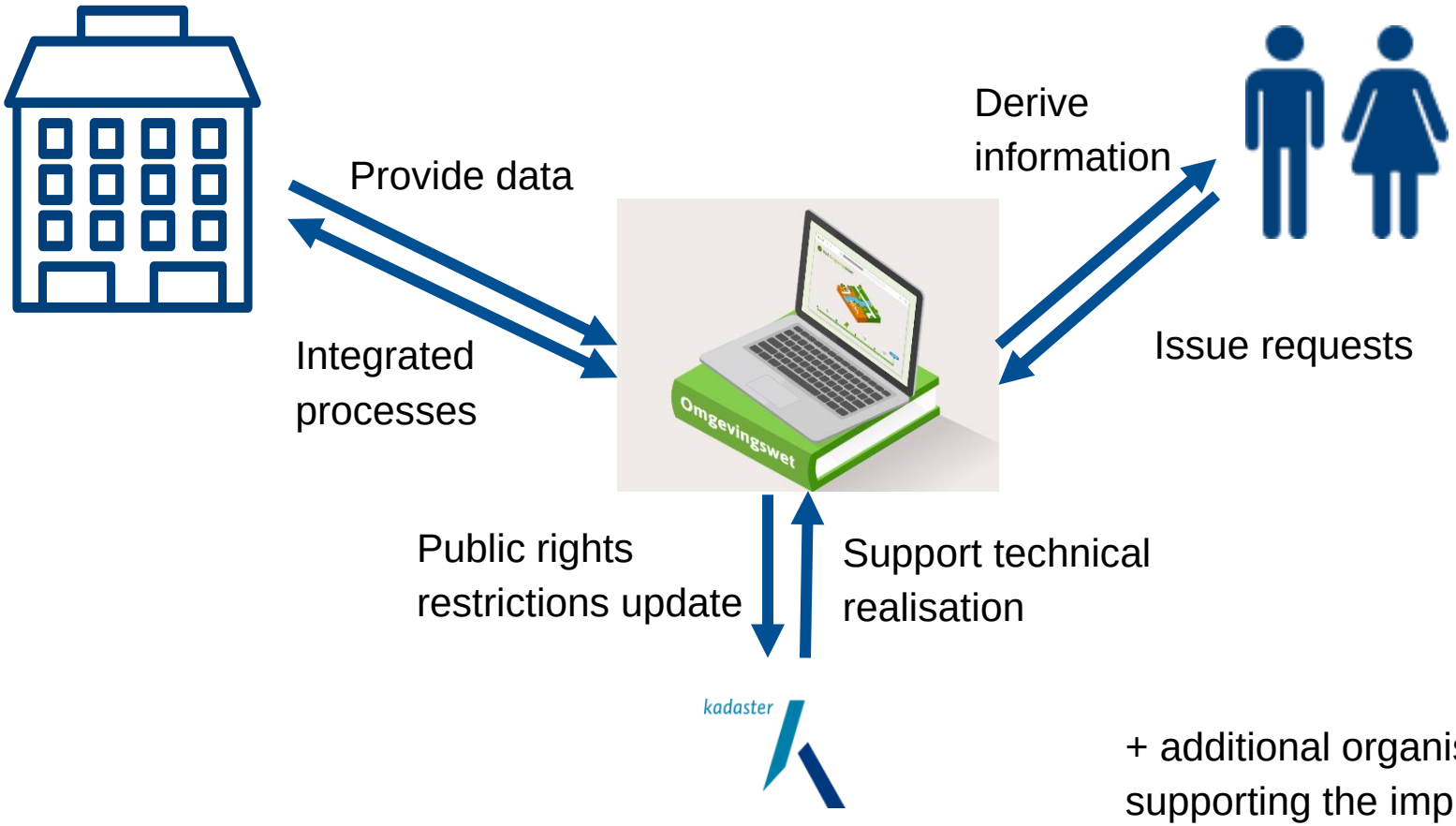
One regulation
One digital portal

Digital system for the implementation of the Environment and Planning Act: The Omgevingsloket



An example from The Netherlands: The Environment and Planning Act

Distribution of roles and responsibilities



An example from The Netherlands: The Environment and Planning Act

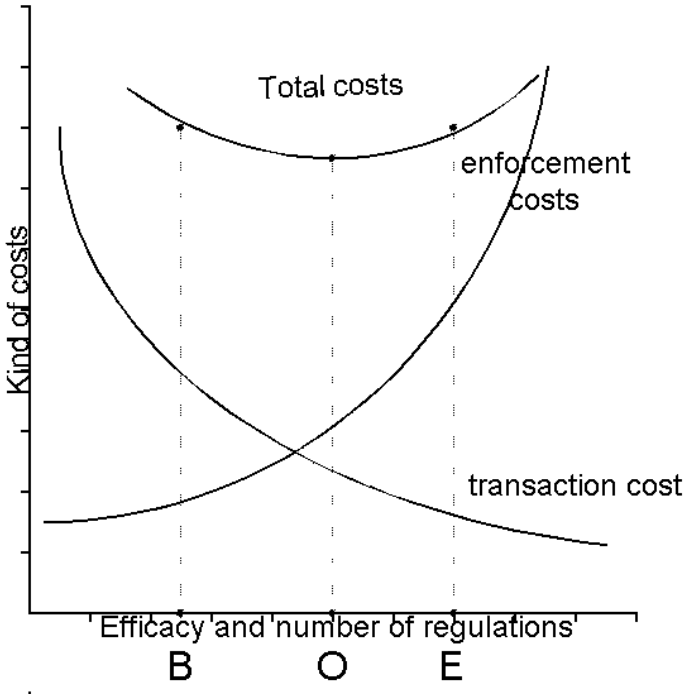
Organisational and digital transformation of land administration ecosystems

Transaction cost theory:

- Societal transaction costs are reduced
- Enforcement costs go up

Resource dependency theory:

- No change in dependencies and nodality
- Expectations of the public could rise
- Municipalities more accountable / responsible



An example from The Netherlands: The Environment and Planning Act

Organisational and digital transformation of land administration ecosystems

Cultural value theory

- More emphasis on service orientation (more transparency and responsive public sector)
- Change of paradigm (enabling law)

Technology adoption theory

- Some ethical dilemmas, unintended and wicket effect are likely to arise but not evident yet

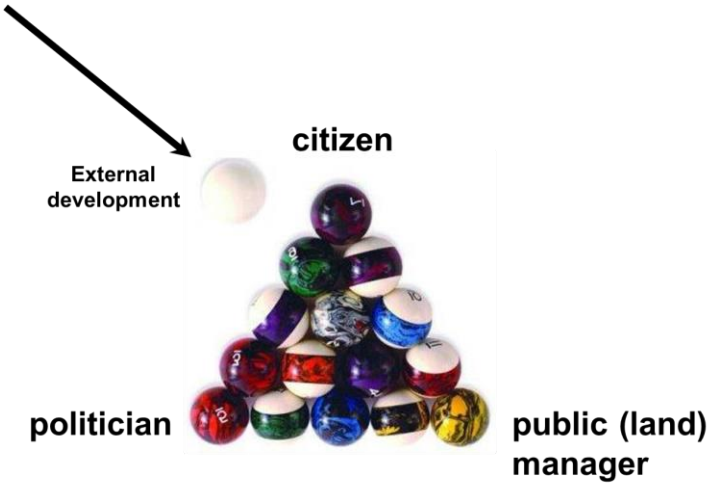


FIG International Federation of Surveyors

Commission 7

Commission 8

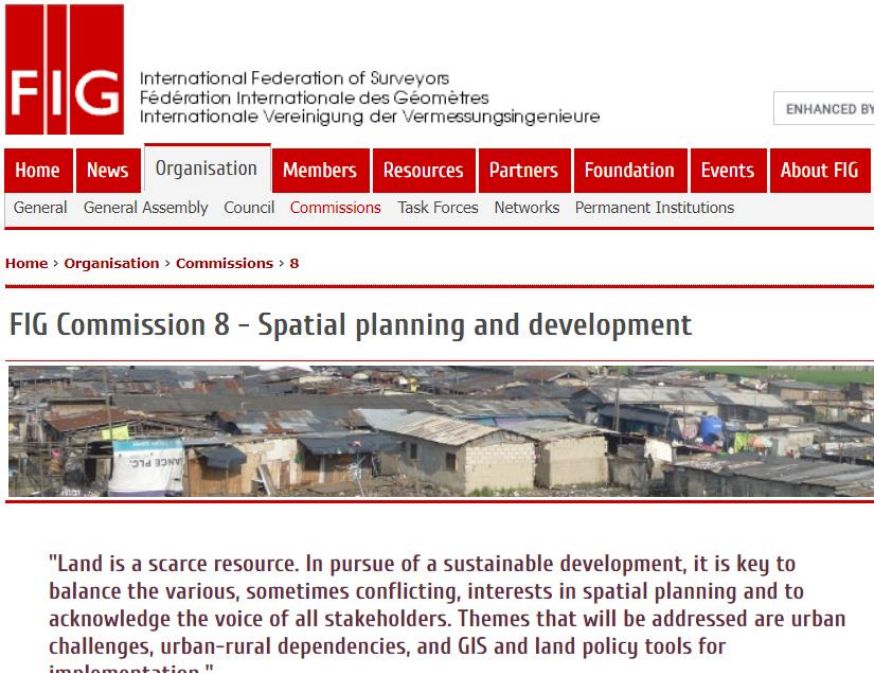


FIG Working group 7.6/8.4:

Digital Transformation for Integrated Land Management

Chair

- Dr. Claudia Stöcker, Germany
- Prof. Timo Walter de Vries, Germany

Key Players

- Kwabena Obeng Asiama, Ghana
- Ganesh Bhatta, Nepal
- Trias Aditya, Indonesia

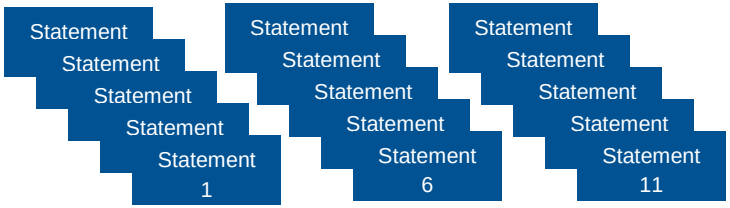
Specific objectives

- Building on the FAO, FIG, UNECE publication on Digital Transformation and Land Administration, 2022
- Knowledge on ‘Integration’ and ‘transformation’ (drivers, benefits, challenges)
- Practice and case on ‘Integration’ and ‘transformation’ (country-level)

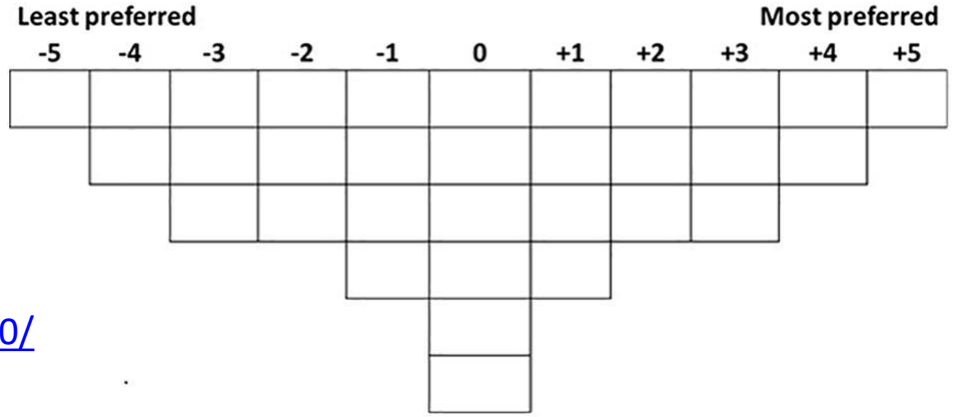
FIG Working group 7.6: Digital Transformation for Integrated Land Management

Survey:

- qualitative and quantitative insights into perceptions of digital technologies and digitally-enabled processes
- 20min time to be completed - open until end of Mai 2024
- results will be presented at upcoming FIG events and published in academic journals



https://application.qsortware.net/user/devries2000/



THANK YOU FOR YOUR ATTENTION