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on:



Building Modern Land Administration Systems in Developed Economies – Aspects and Experiences from Germany*

at the Expert Group Meeting “Incorporating Sustainable Objectives into ICT
Enabled Land Administration Systems” 9 – 11 November 2005 in Melbourne

- A. General remarks
- B. About the six components of integrated Land Administration Systems
- C. Analysis and trends in general and from the German viewpoint

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Dr. W. Hawerk (FIG-Com. 7), Dr. R. Bauer, R. Ludwig and Dr. A. Donaubaue (TUM)

A. General remarks

I. Spatial information as economic good on the market: cost and access to be reasonable

Traditional markets are based on:

- goods (products and land),
- services,
- capital and
- labour.

Economic growth within traditional markets is stimulated by lowered productions costs + transaction costs (Douglass C. North (1990): “Institutions, Institutional Change and Economic Performance”) – (Theory of institutional economics: 3 basic aspects of economic transactions)

Land Administration is a good example of market because it involves all four above mentioned components of a traditional market

Modern digitized Data Systems are cheaper than traditional ones.

II. Land Administration as part of Spatial information

▪ Data level

EU-Influences:

Land administration data is part of the Public sector information (PSI). The EU-PSI-directive as well as EU-INSPIRE-directive strongly support and intend to facilitate access and use of PSI for multiple purposes.

EU-INSPIRE (**I**nfrastructure for **S**patial **I**nformation in **E**urope):

Spatial Information for EU and national level

- Metadata
- Data:
 - cat.I = basic data (georeferencing, coord. Admin units...)
 - cat.II = basic data (cadastre, addresses, land cover, orthophoto)
 - cat.III = environmental data (land use, buildings, risk zones)
- Services

The development regarding ISO-based AFIS-ALKIS-ATKIS (AAA-model) in **Germany** fully refers to those developments on EU-level:

Cat. I = AFIS: Official Geodetic Control Station Information System

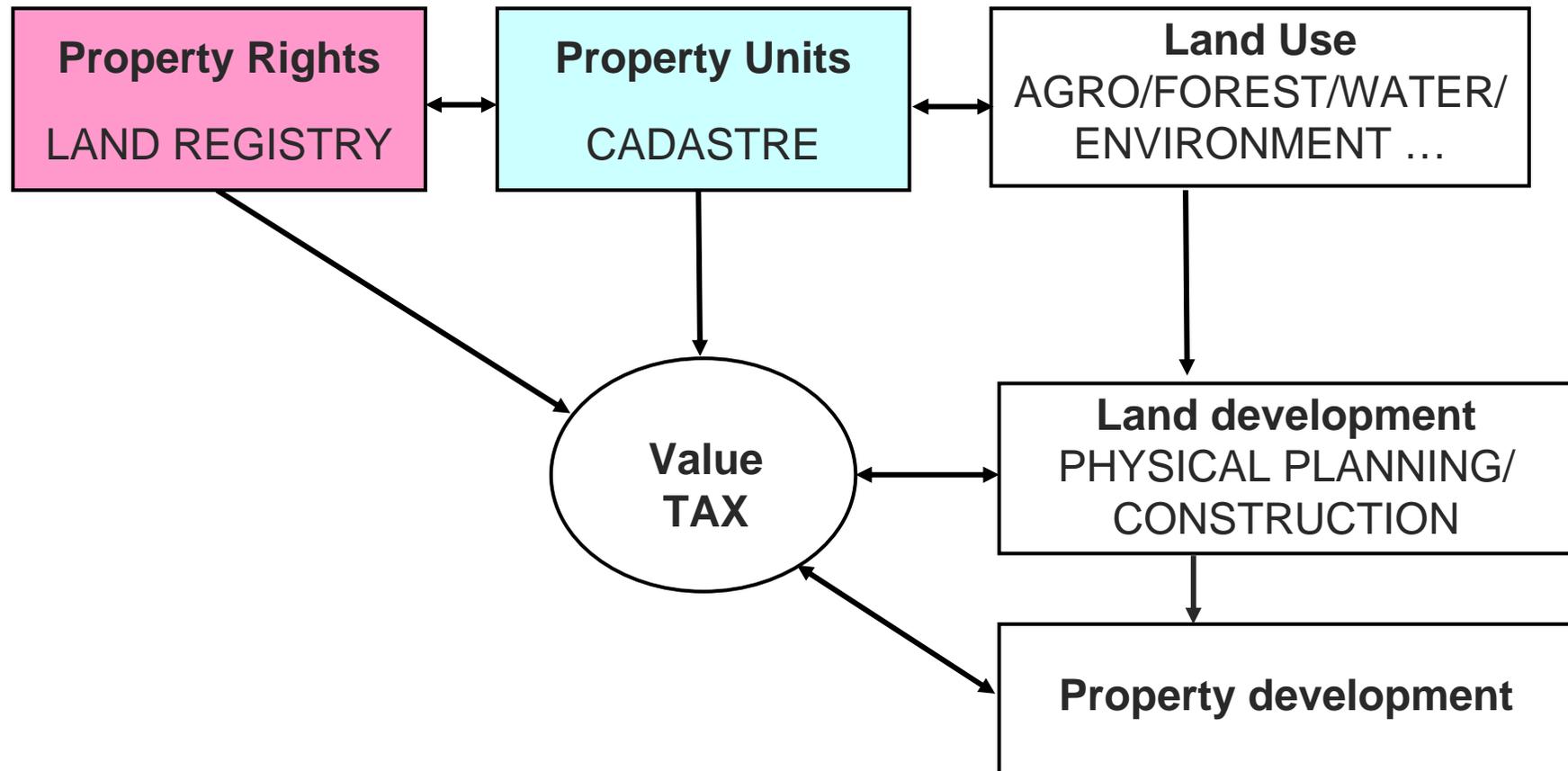
Cat. II= ALKIS: real estate cadastre + ATKIS: topographic survey

Cat. III= environmental data coming from multi-institutional sources

INSPIRE forces European countries to offer metadata **without charge**, also Geo basis Data.

II. Land Administration as part of Spatial information

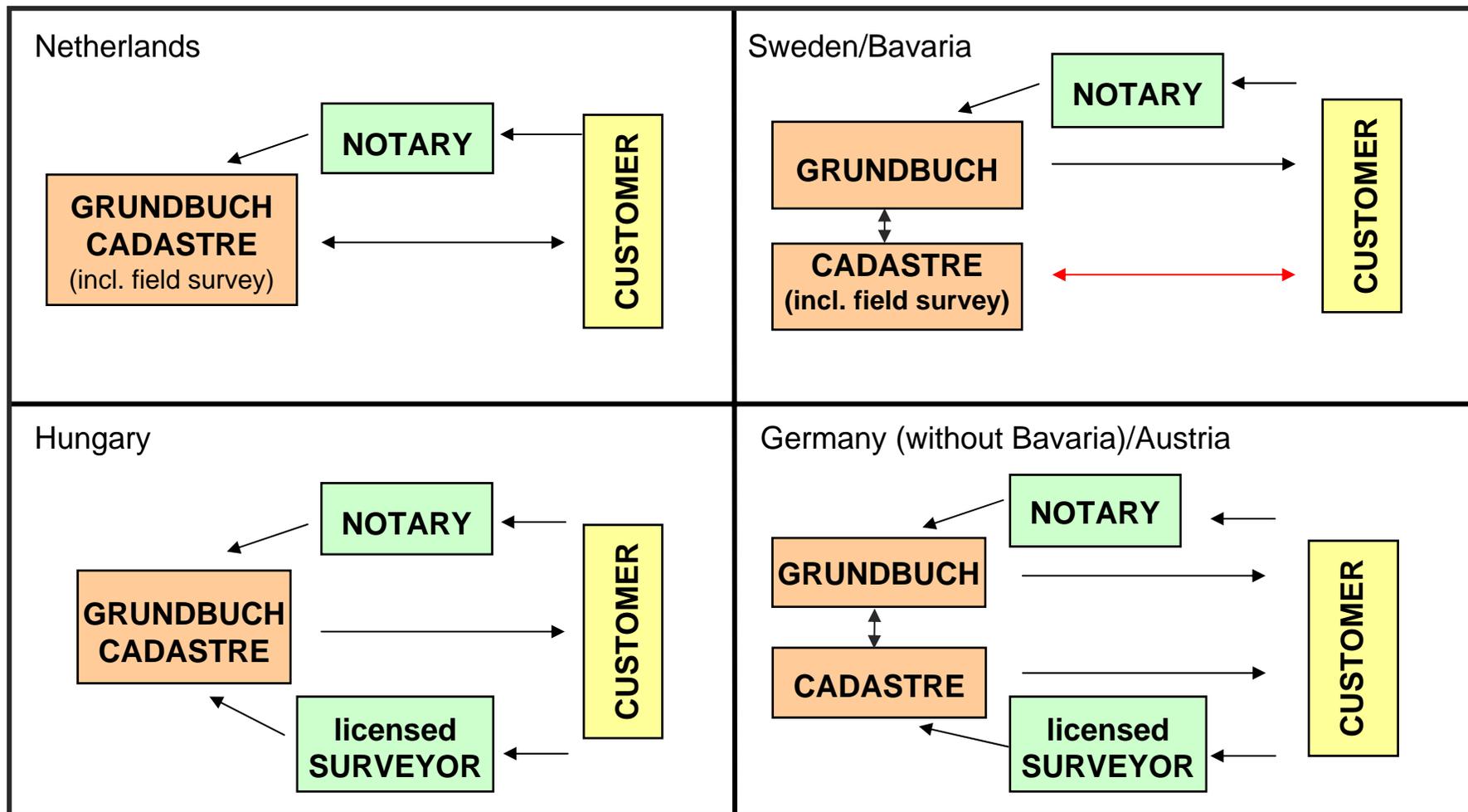
- Institutional level – cooperation through integration of function



Core message: Central Europe has a long tradition in institutional cooperation, with similar results under different institutional settings

II. Land Administration as part of Spatial information

■ Institutional settings of Land Administration

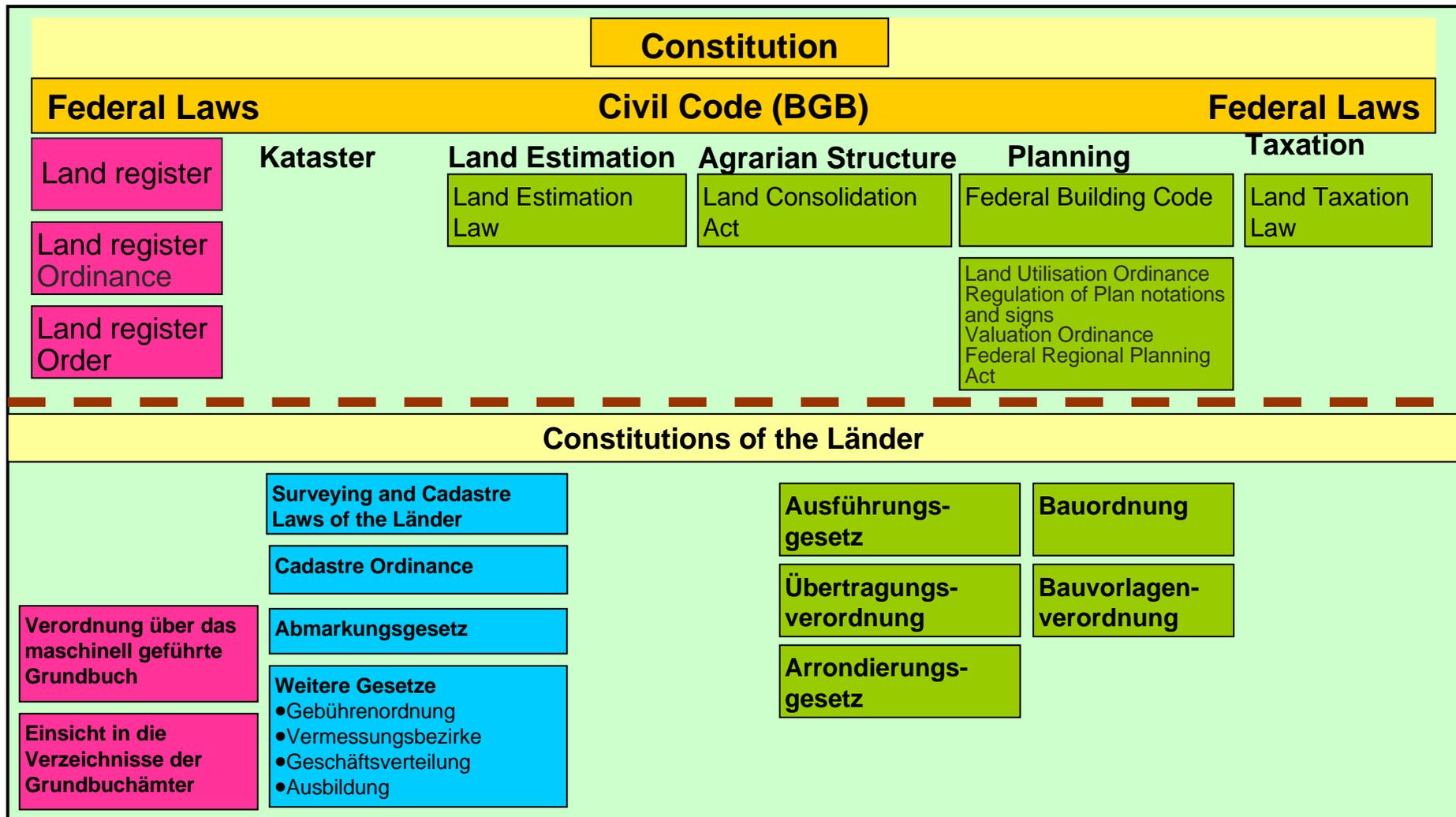


“It is the institutional settings of Land Administration”

Graphic: Gerhard Muggenhuber

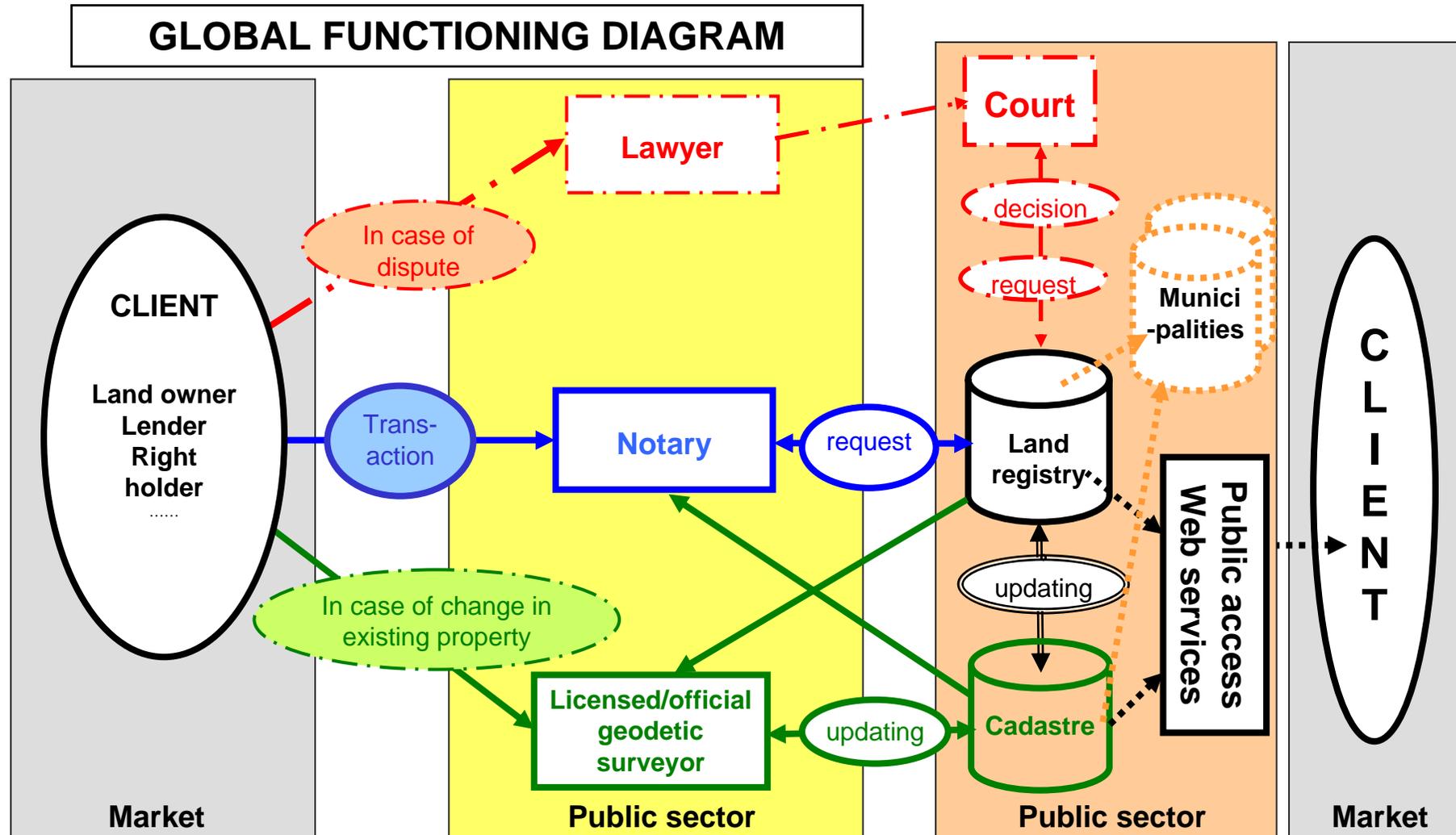
II. Land Administration as part of Spatial information

Legal setting in the Federal State of Germany



II. Land Administration as part of Spatial information

- Process level



III. Conclusion

**Shaping the change:
from single office solutions to eGov with interoperability**

We have to take a more holistic approach:

- efficient contribution to the markets
- collaborate on local / regional / international
- shape financially sustainable services
- create win-win-situations

CURRENT SITUATION



TRANSITION



TARGET SITUATION



**B. About the six components of
integrated Land Administration
Systems from the special viewpoint
of German/Austrian experiences**

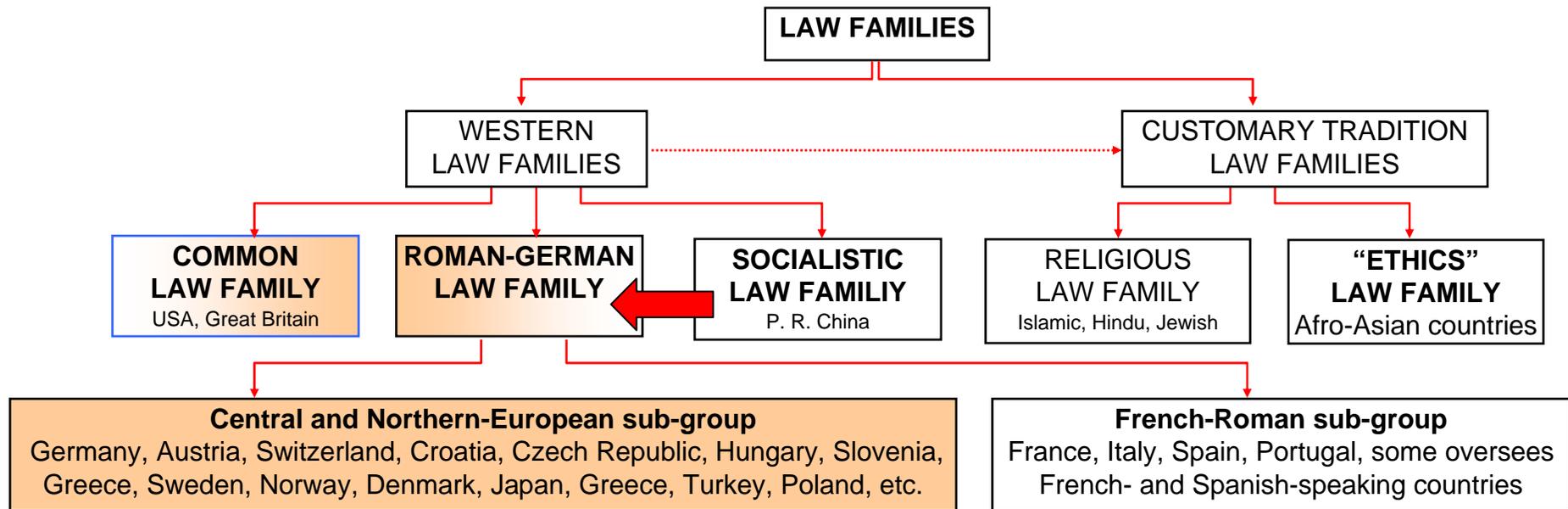
Component 1: Overall frame (legal frame)

How can we make a step forward? How to become more successful?

Any integration has to consider the legal setting in a country, which can be rather different due to the concept and tradition. The legal setting differs much more than cadastral processes or ICT. International cooperation is essential to overcome these legal limitations as part of EESSD. Europe experiences many aspects of harmonizing of legal settings like “European Contract Law” etc.

Legal setting: Approach to ownership rights changed significantly in Europe since “Communist System” transferred to “Social Market system”. Germany is an example for a way of “paradigm shift in concept of ownership” in the East. If the status of property rights is unclear, privatisation, investments and land markets are more problematic.

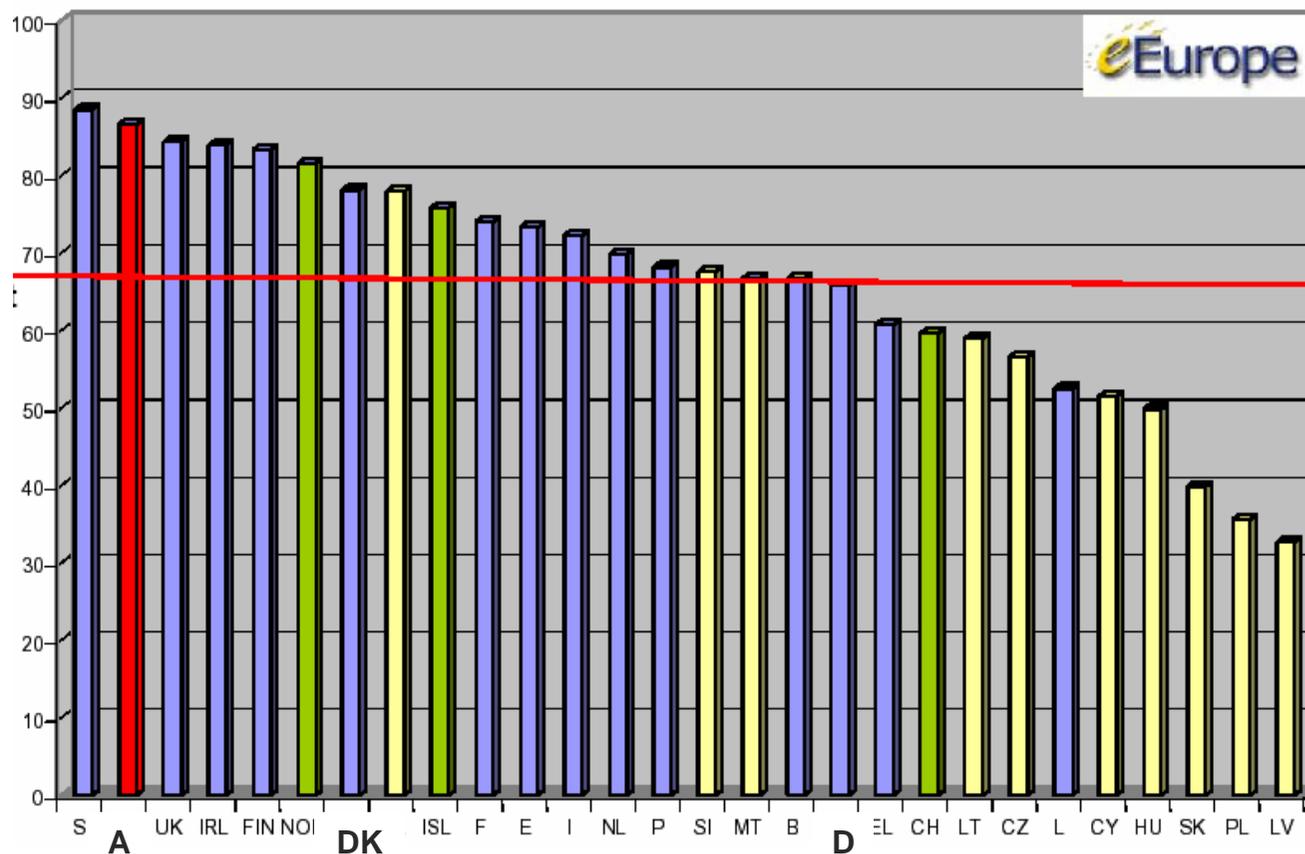
Component 1: Overall frame (legal frame)



No other country in Europe than Germany had the challenge to integrate traditions of both systems at the same time in addition to restitution and privatization, which happened in many other countries too.

Component 2: e-Services/e-Governance

eGov is an additional challenge for developing countries in addition to their need to collect and maintain data digitally. In Europe however most of the data are already digitized, harmonized and cross-referenced. **eGov facilitates good governance, however the citizens also require benefit.**

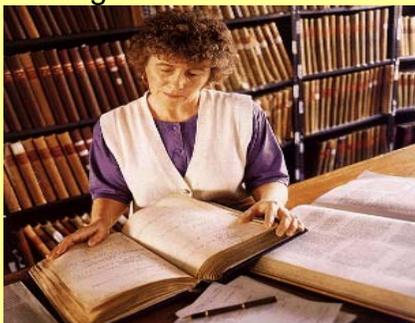


Component 3: Built on country's capacity

Core message: The countries of EU have gone through similar steps of improving. 1. Digitizing data, 2. Improving our internal processes (quality management), 3. Improving our services (marketing, coop. with partners and customers), 4. Optimizing use of resources (staff reduction). In a multi-institutional setting it is important that these steps are tuned between institutions involved. EU facilitates cooperation with e-content program focusing on spatial information.

1. Digitizing data

Linking with historic records



2. Improving processes

Improves reliability



3. Improved services

through technology / cooperation

4. Optimizing use of resources

Just cut / new business opportunities

Component 4: ICT as a major driver

Core message: ICT is not a challenge any more (but standardisation). Even when we have to be aware that ICT is reflecting all our work processes. However interoperability of work process is still a challenge (in EU: eGov co-operation of public authorities in a country and among countries)

Projects with a sole technology driven approach often fail in many disciplines – not only within Land Administration. The World Bank learnt the lesson and is even reluctant to finance purely technology driven projects. Similar to that we observe that the sustainability of foreign aid programme is often not ensured at all.

Transfer of knowledge is more than just transfer of technology! It seems that in “technocratic” societies the processes correlate with the legal frame, organizations and responsibilities. However most of the societies of the world seem to have a severe impact from informal habits overruling official processes.

Component 5: covering essential areas of land management

Core message: a full package of land management with the wider perspective of a solid land market requires instruments from (1) land administration (2) valuation (3) land use planning and land development, (4) financial services.

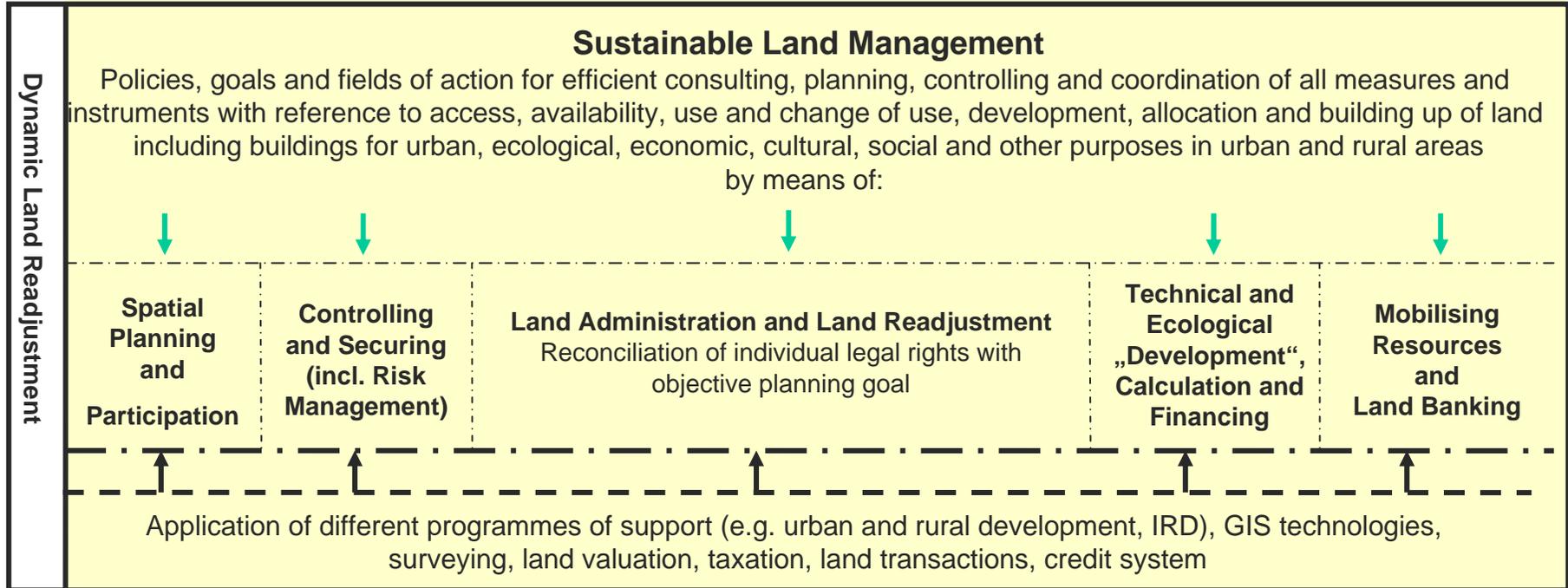
Due to the fast development and changing use of land resources special attention has to be given to land use planning tools including land consolidation (rural), land readjustment (urban) and urban and rural land development! The interrelation of urban and rural is often ignored...

Bavaria developed successful models for urban rural interrelated improvements of infrastructure with land as a focus.

Relationships between Land Policy, Land Tenure and Land Management in Germany

L a n d P o l i c y a n d L a n d T e n u r e
 overall concept and basic conditions of land related action
 as well as the initiation of corresponding measures by public authorities
 based on Art. 14 German Basic Law and § 903 German Civil Code and special laws (substance and limits)

Static LR | **Land Administration (with Cadastre and Land Register as central elements) and Land Readjustment (LR)**
 existing constitution, distribution, use and documentation of land and land ownership as well as overall concept and regulations for its sustainable use in conformity with the relevant plan in urban and rural areas

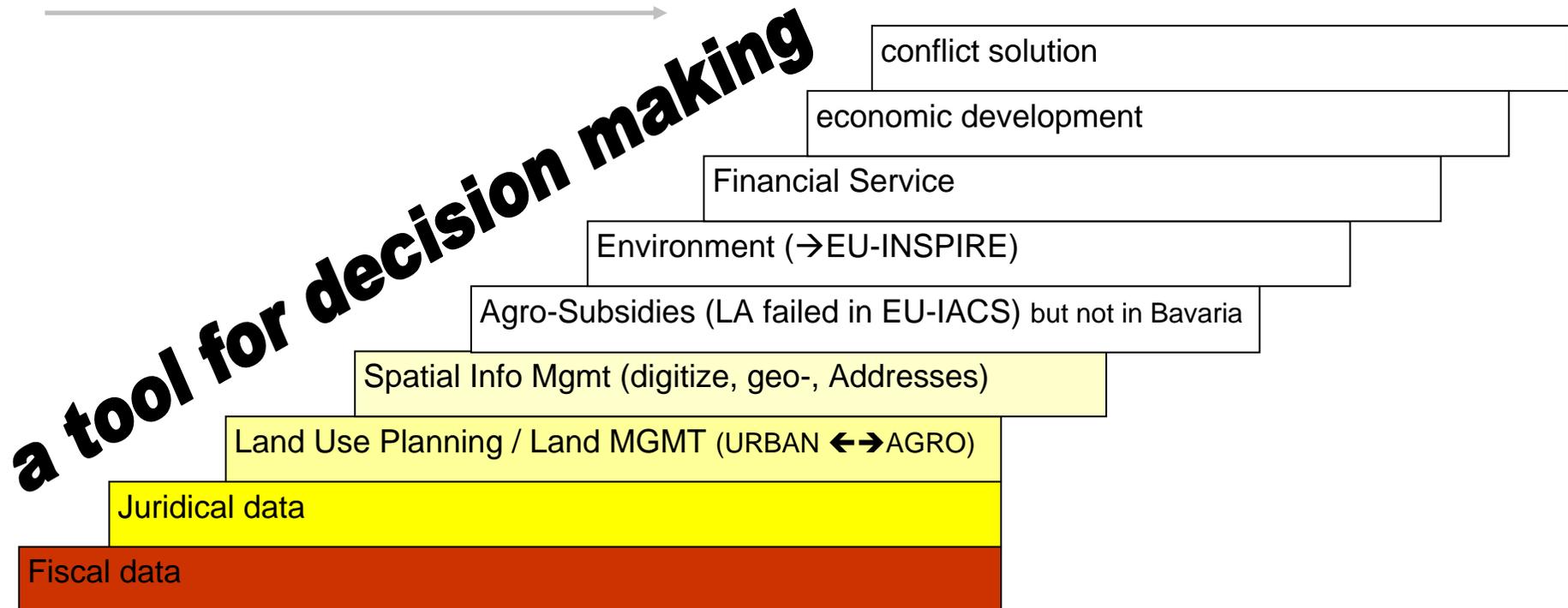


Static LR | **Land Administration (with renewed Cadastre and Land Register) and Land Readjustment**
 New (rearranged) constitution, allocation, distribution, use and documentation of land and land ownership

Component 6: seamless information to support policy implementation

Cadastre serves for an increasing amount of customer groups. In Bavaria and some other countries, cadastre and orthophoto as well as e-services for access to this data were successfully used for EU-administration of agricultural subsidies (IACS). However, some other Cadastre Agencies in Europe lost this important customer group.

1800 1900 1950 1970 1990 2000 2005



C. Analysis and trends in general and from the German viewpoint

Country description

Official Surveying and Mapping in Germany

Part of a high class geodata infrastructure and a must for a modern state



Due to translation problems spatial data in Germany are called geo data.



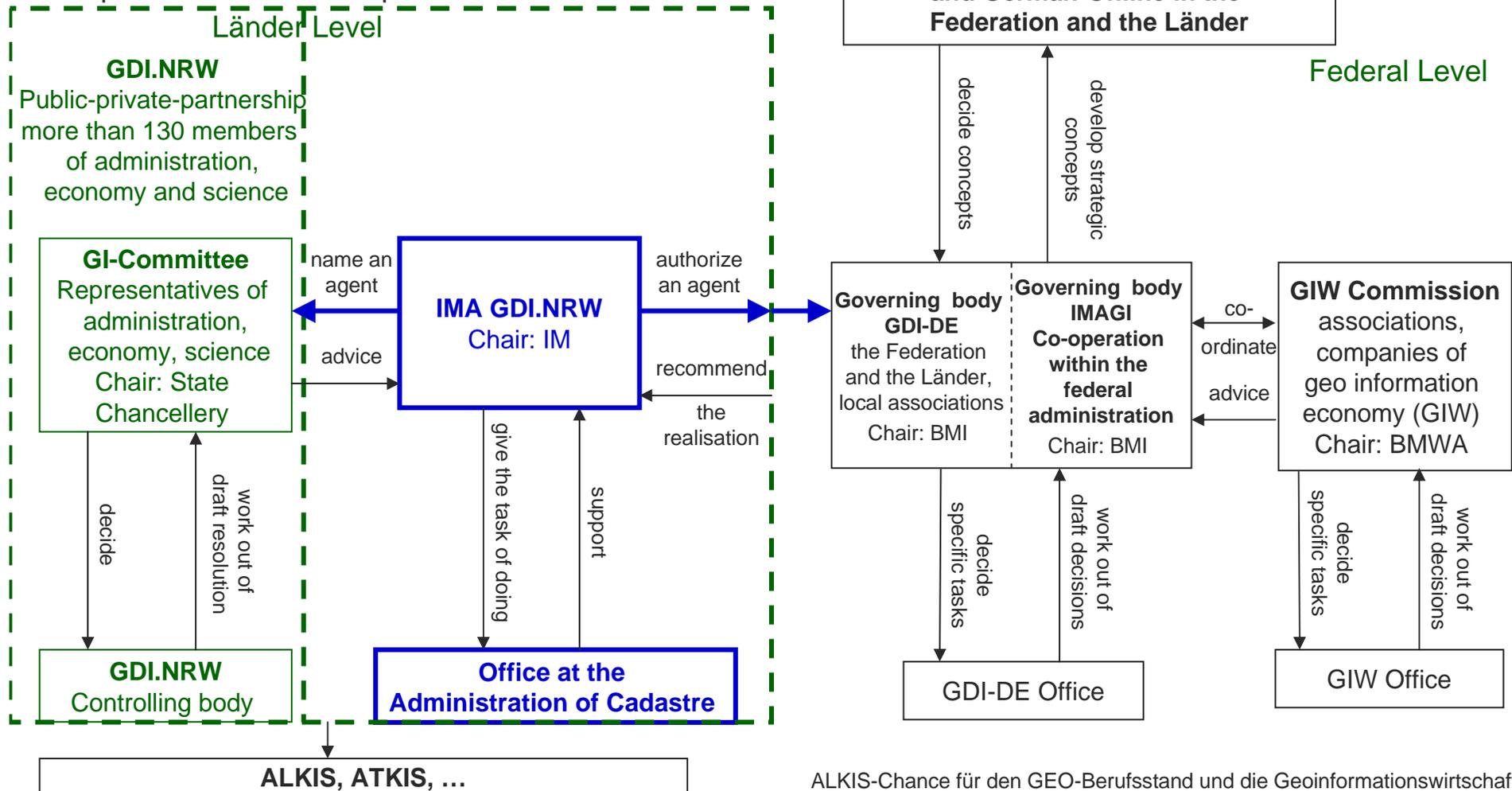
Country description



Common Development of Geo Data Infrastructure Germany – GDI-DE

GDI and Geo Information Economy

Example North Rhine Westphalia



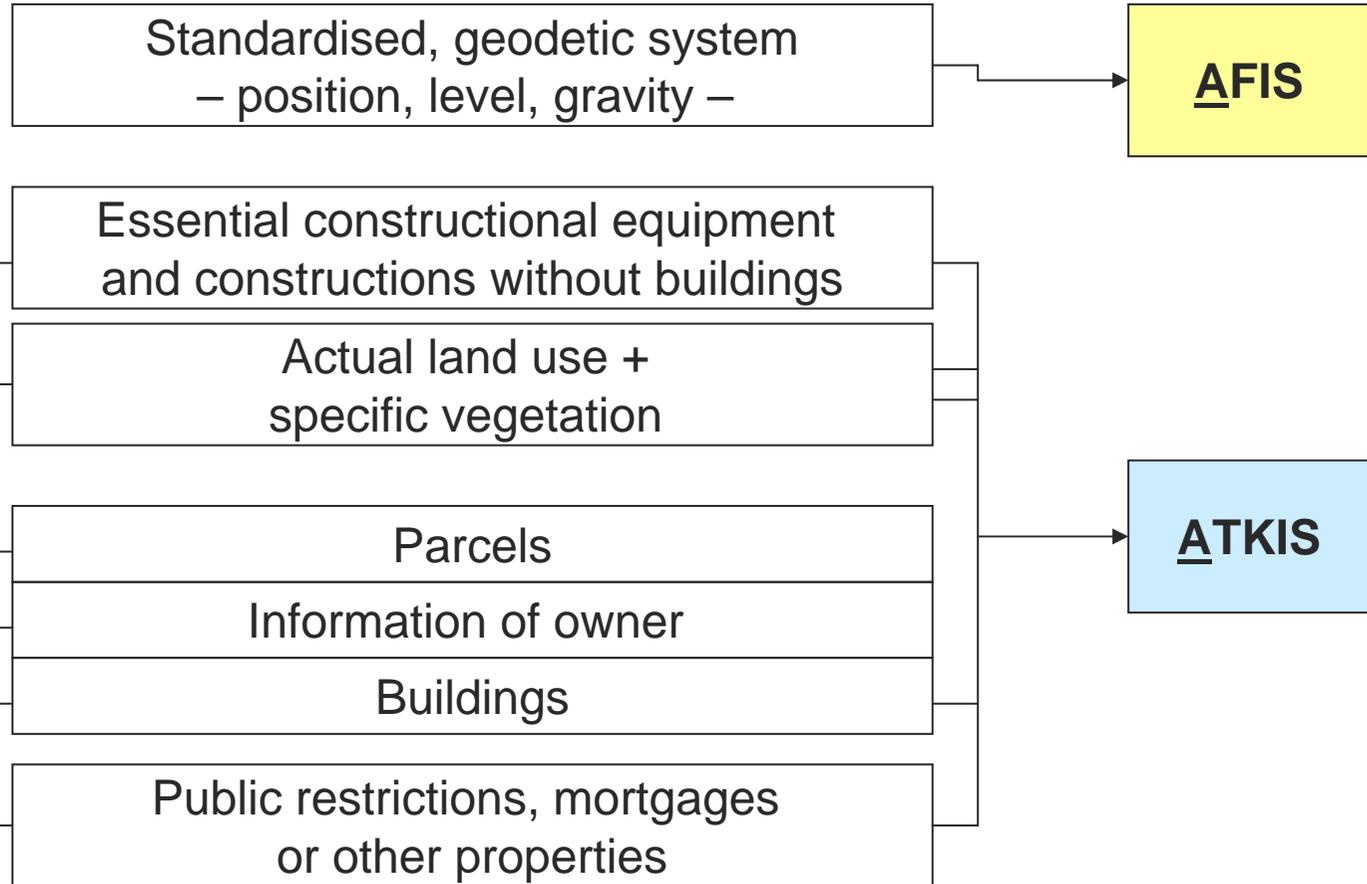


Country description

AAA-Target System

Spatial Geo Base Data

(incl. Geo reference and Geo spatial data)





Country description

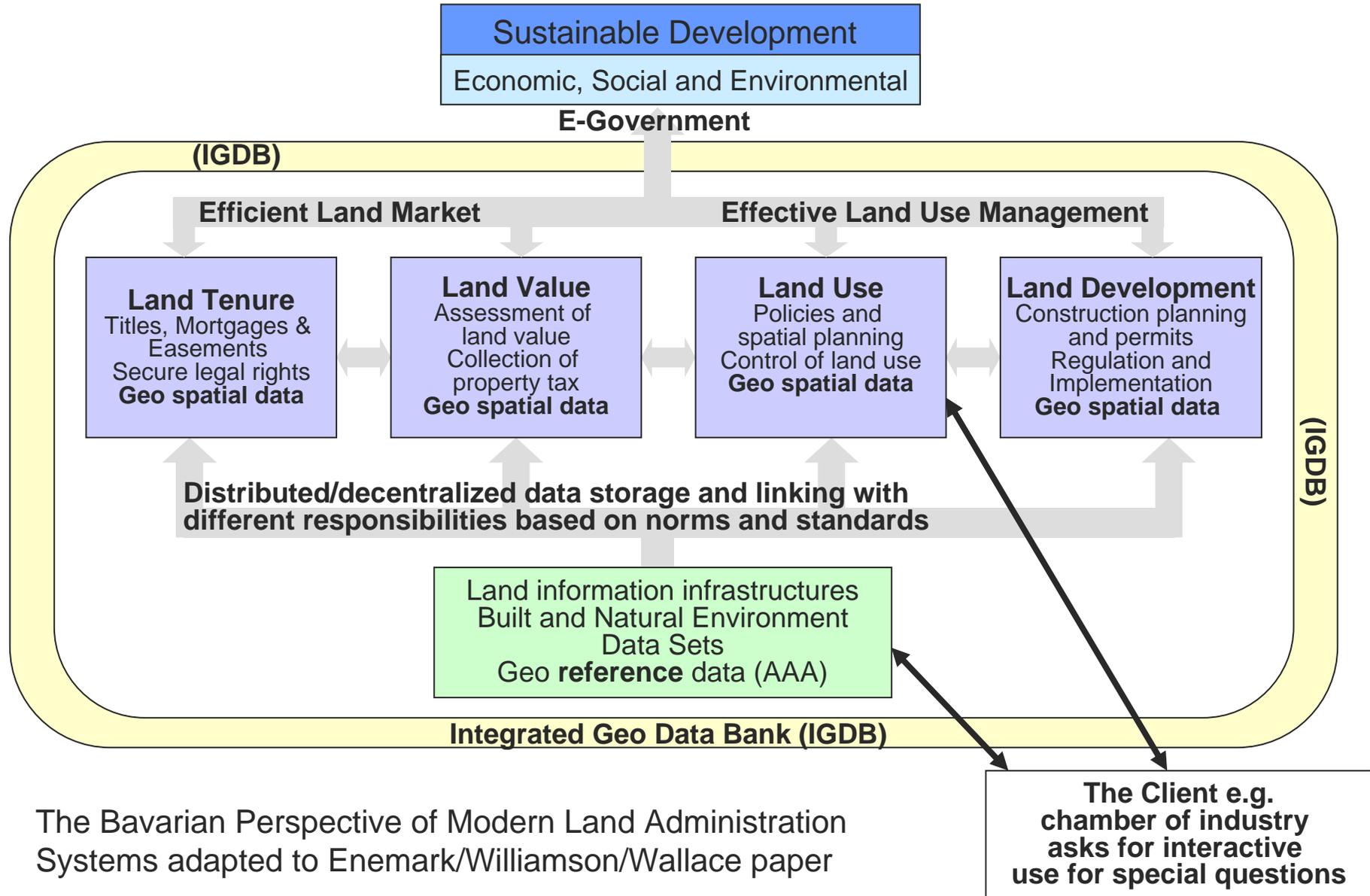


Advantages of AAA-Application Schema

- **Standardization in the German Surveying**
 - Standardised feature catalogue
 - Standardised data contents
 - Standardised format of data exchange
 - Utilisation of international standards (ISO/OGC)
 - Standardised project management, online ability
- **General object view**
 - Harmonised feature catalogue AFIS-ALKIS-ATKIS
 - Modelling base for specialised information
- **Transparent offer by the use of quality and metadata**

Country description

GDI-Bavaria: The essential basis IGDB



The Bavarian Perspective of Modern Land Administration Systems adapted to Enemark/Williamson/Wallace paper

Positive aspects of country experience

- cadastre becomes part of e-government and thus more important for business/industry (new clients!); it's not any more a matter of only securing property!
- reputation of surveyors services in politics, public, municipalities and in industry is growing
- more and quicker information is possible
- a more comprehensive view of environmental etc. situation and (possible) land (use) conflicts
- strengthening citizens interest in public planning (e-participation by e-governance/services)
- new jobs for private experts
- the more clients are asking for ICT and LAS-Data the lower the costs will be

Negative aspects of country experience

- German Land Administration Systems are not explicitly focussed on EESSD
- “black box” surveying and new ICT reduces state personal staff and jobs
- increasing clients and users demands can't be met in time enough or not at all
- emerging of ICT and surveying endangers surveyors influence and role
- too many clients ask for data and information without will to charge adequately

To do list for German (and other?) LAS experts

We should aim at

- recognition of the importance of spatial data infrastructure by politics and government
- local and Länder SDI initiatives as prerequisites for a national SDI
- user-orientation as the key to a successful and sustainable SDI

Buildings in the (multi-purpose?) Cadastre

- parcel owner
- parcel number
- geometry
- buildings
- state soil type evaluation
- actual land use

modelled in, respective based on ALKIS/ATKIS/AFIS

- legal public restrictions (not private one)

to **be combined with**

- orthophotos
- ...

EU-Influences

- see fore mentioned influential initiatives like EU-PSI-directive, INSPIRE, EU-EULIS-project, EU-Company-register

Three key-improvements in the next decade

- GDI and IGDB is a daily tool in politics
- dynamics of land markets will be reflected in real time
- regular participatory approach for the need and the use of data

Criticism/questions to the model of 'Building Modern LAS in developed Economics'

- Can such a model really function everywhere?
- Does it respect enough individual/local habits, traditions and informal processes or isn't it too much technology – and business – driven/oriented?

First Conclusion:

Can we transfer success stories?

Yes, but only if we care about the whole bundle of interrelated work processes and improve these functions as well. These work processes are again linked with local traditions and habits.

Congratulation to the Melbourne
“Modern Land Administration
Systems for EESSD”-Team!

Good Luck!