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11–15 SEPTEMBER 2022
Warsaw, Poland

Volunteering for the future – Geospatial excellence for a better living

Cadastral data modernization in the land management process

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Cadastral data – part of geospatial data (data about objects, events, or phenomena that have a location on the surface of the earth)
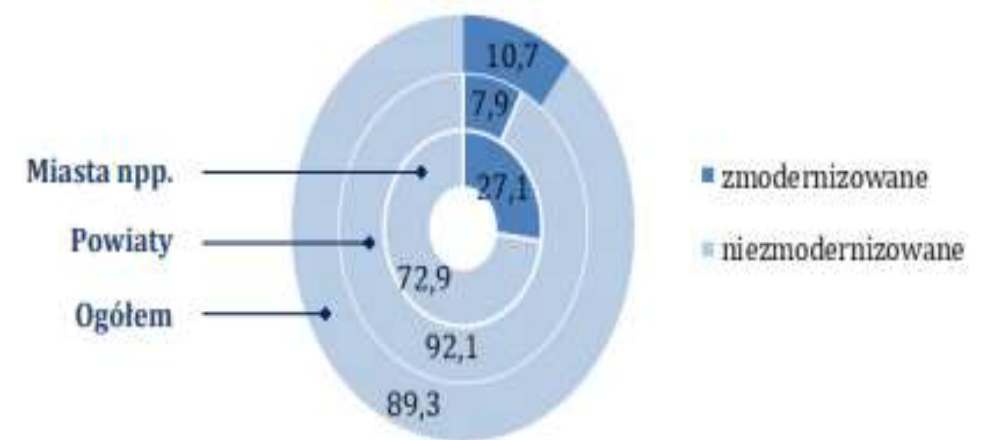
➢ effective data verification and regular updating are essential in **land management** (the process of managing the use and development of land resources);

Why?

effect on:

➢ **design of the development strategy, public policy projects, etc.**

➢ **land ecosystems** (improper use of land, degrading it, reducing productivity, and disturbing the natural balance)

➢ **public finances** (economic planning, spatial planning, tax, etc.).

Miasta npp. → 10,7 / 7,9 / 27,1
Powiaty →
Ogółem → 72,9 / 92,1

89,3

■ zmodernizowane
■ niezmodernizowane

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Why should cadastral data be modernized?

Compatibility between the state in **cadastral documents** and in **the field** (the same condition).
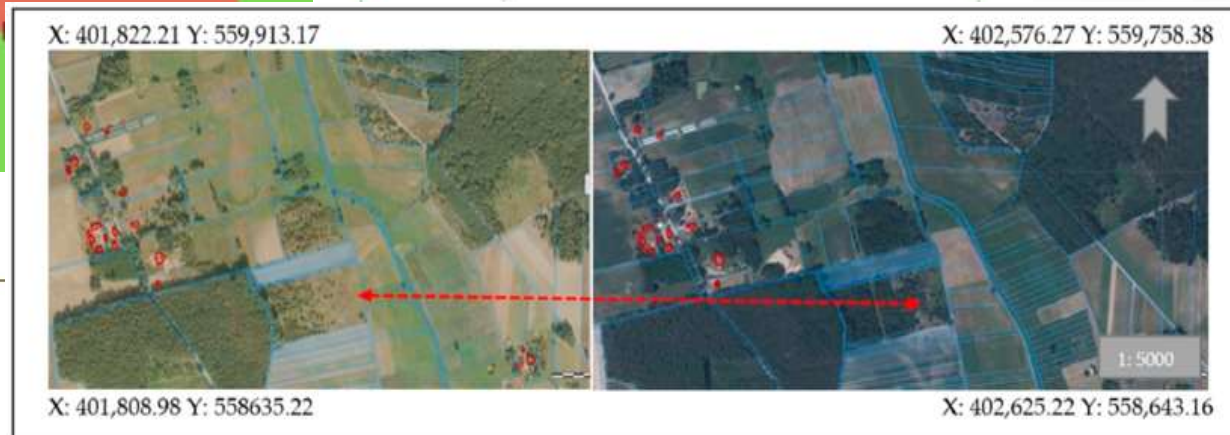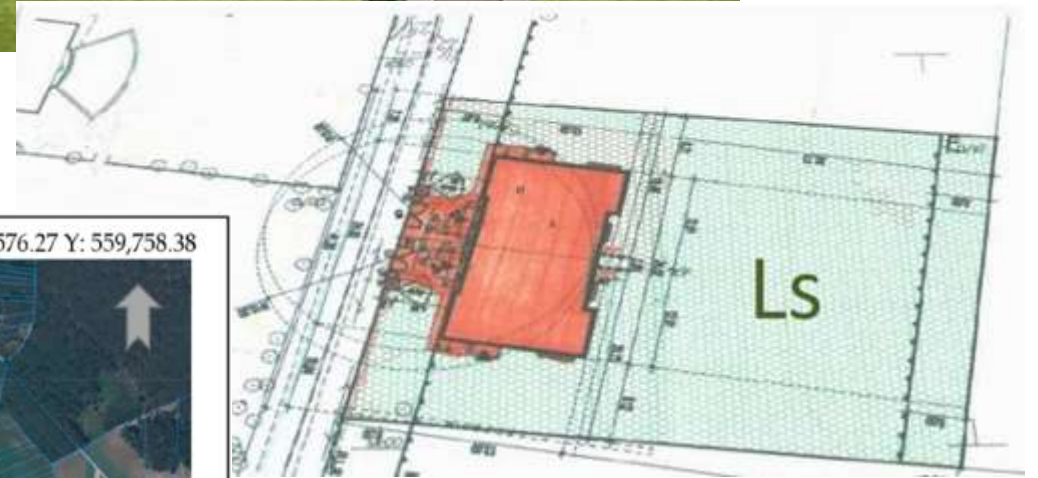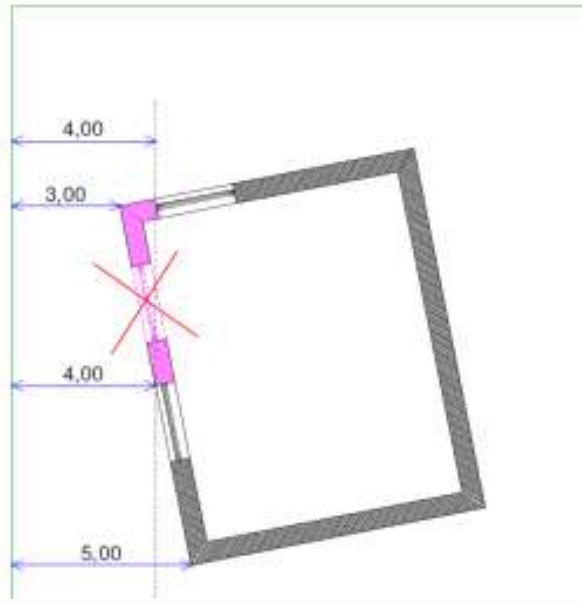
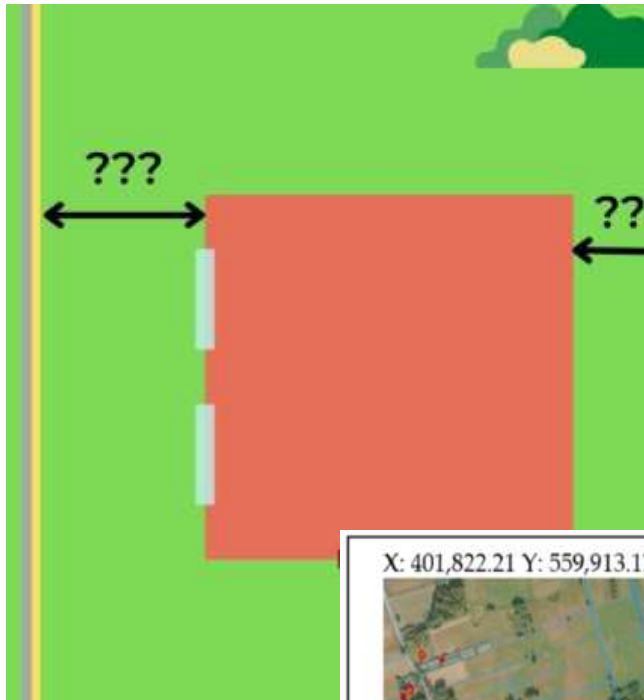When investors want to implement new project
needs cadastral documents that depict the state on the field.
Example of data in a local scale:

✓ who is the owner;
✓ distance the house from highway, road, etc.
✓ distance from plot boundary;
✓ distance between buildings;
✓ distance from the forest;
✓ quality of land use in the plot, etc.
✓ width, length of the plot;
✓ width of the access road….

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Distance from building to plot boundary, roads, ect. – 4m, 3m, wall of the building without window

ODLEGŁOŚCI BUDYNKÓW OD GRANICY DZIAŁKI

Distance from water bodies – min. 100 m from the shoreline of a water bodies, if we have current information about buildings

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State on the field (ground) – rural area – boundaries of the right of the ownership

Poland

Great Britain

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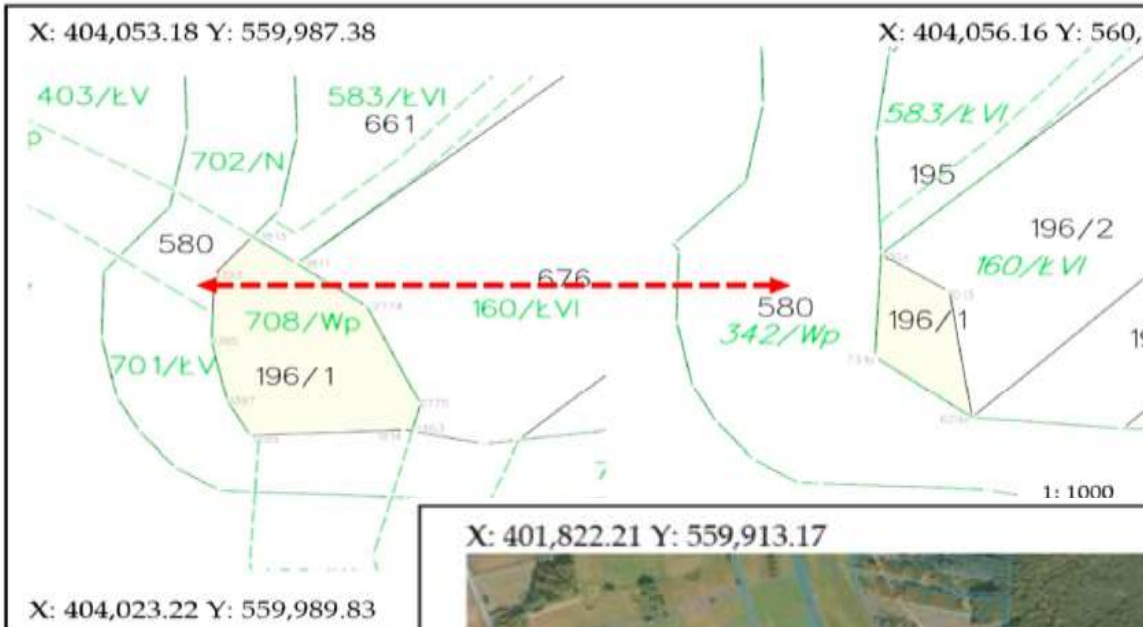
Land use and the boundaries of ownership, boundaries of natural environment

Comparison: municipal income from real estate, agricultural and forest tax before and after modernization cadastral data

Year	Description	Budget from Property Tax [PLN]
Before modernization cadastral data	Estate duty	4,288,817.00
	Agricultural tax	817,022.00
	Forest tax	65,000.00
	total	5,170,839.00
After modernization cadastral data	Real estate tax	4,962,197.00
	Agricultural tax	536,087.00
	Forest tax	72,043.00
Total		5,570,327.00
Difference	Real estate tax	673,380.00
	Agricultural tax	−280,935.00
	Forest tax	7043.00
Total		399,488.00

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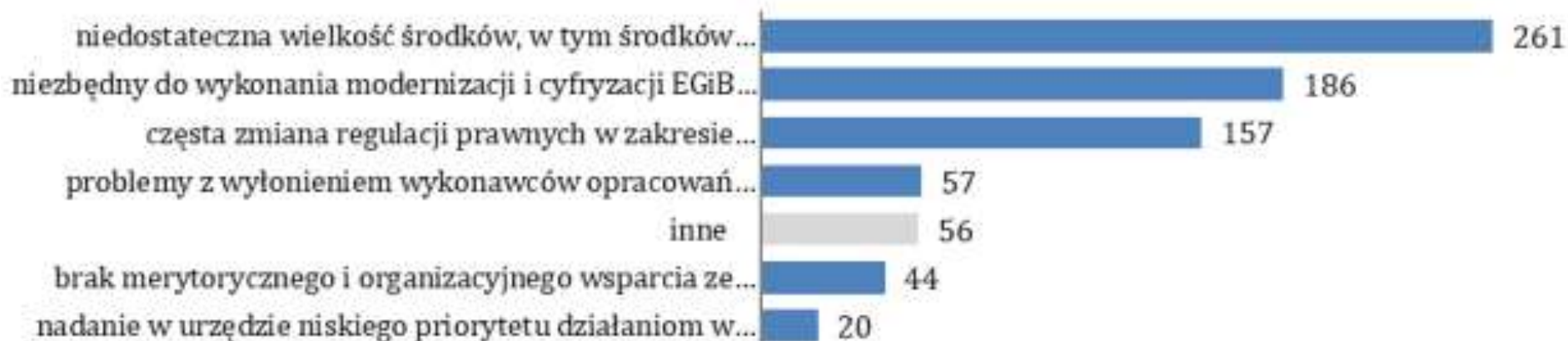# Why there is no compatibility between documents and state on the field?

➢ **cadastral data was based on old documents** – less accurate;

➢ **graphic part of cadastral data based on digitalization of analog map** –
discrepancies on the edge of the maps;

➢ **human errors**;

➢ **changes in regulations** regarding the accuracy of the plot recording
on rural areas (from 0.01 ha to 0.0001 ha) without professional measurements;

➢ **new technology of measurement/equipment**, more accurate
then 50-60 years ago;

➢ changes in regulations about **the kind of object**
that should be on the cadastral map (shed, well,
building under construction, etc.);

➢ **inheritance proceedings** not performed – who is the current owner?
the cadastral data contains the entry on the dead;

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What we have learned after this research? What needs to be done now?

- ➢ our cadastral data have better and better quality after process of modernization
- ➢ real estate tax should be based on cadastral value (not based on qualities of land use and area for all kinde of property) – it will allow reducing the negative impact of poor quality of cadastral data;
- ➢ municipal budgets benefit from the fact that the cadastral data is consistent with the state in the field;
- ➢ more safety for investment projects.

Recommendation: **More modernization projects**.

niedostateczna wielkość środków, w tym środków…	261
niezbędny do wykonania modernizacji i cyfryzacji EGiB…	186
częsta zmiana regulacji prawnych w zakresie…	157
problemy z wyłonieniem wykonawców opracowań…	57
inne	56
brak merytorycznego i organizacyjnego wsparcia ze…	44
nadanie w urzędzie niskiego priorytetu działaniom w…	20

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Source:

Kocur-Bera K., Pietrulińska A. 2022. **Cadastral Data Modernisation In The Land Management Process.** Fig Congress;

Kocur-Bera K., 2019**.** *Data compatibility between the Land and Building Cadaster (LBC) and the Land Parcel Identification System (LPIS) in the context of area-based payments: a case study in the Polish Region of Warmia and Mazury***.** Land Use Policy vol. 80, 370-379, https://doi.org/10.1016/j.landusepol.2018.09.024**;**

Kocur-Bera K., Stachelek M., 2019. *Geo-Analysis of Compatibility Determinants for Data in the Land and Property Register (LPR). Geosciences* 2019, *9*(7), 303; https://doi.org/10.3390/geosciences9070303;

Kocur-Bera K., Frąszczak H., 2021. *Coherence of cadastral data in land management – case study for rural areas in Poland*. Land 2021, *10*(4), 399; https://doi.org/10.3390/land10040399.

Thank you for your attention