



REPUBLIC OF ESTONIA
AGRICULTURAL BOARD

DIGITAL FUTURE IN ESTONIAN LAND IMPROVEMENT

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AGRICULTURAL BOARD

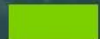
- Subordinate establishment for ministry of rural affairs;
- 8 different activities;
- One of them is land improvement;
- 195 employees/chief specialists;
- 64 of them as land improvement specialists;
- Authorized processor of land improvement register;
- We use MapInfo Professional;

OVERVIEW OF LAND IMPROVEMENT IN ESTONIA (1)

- Total area of Estonia is about 4,5 million hectares;
- Number of land improvement system structure is 17 711;
- Total area of land improvement systems in Estonia is 1 336 400 hectares, it's about 30 % of total area;

OVERVIEW OF LAND IMPROVEMENT IN ESTONIA (2)

- Total area of drained cropland is 640 400 hectares
- Total area of drained forest is 726 000 hectares
- Total length of recipients is 19 400 kilometers
- Total length of state recipient is 5440 kilometers



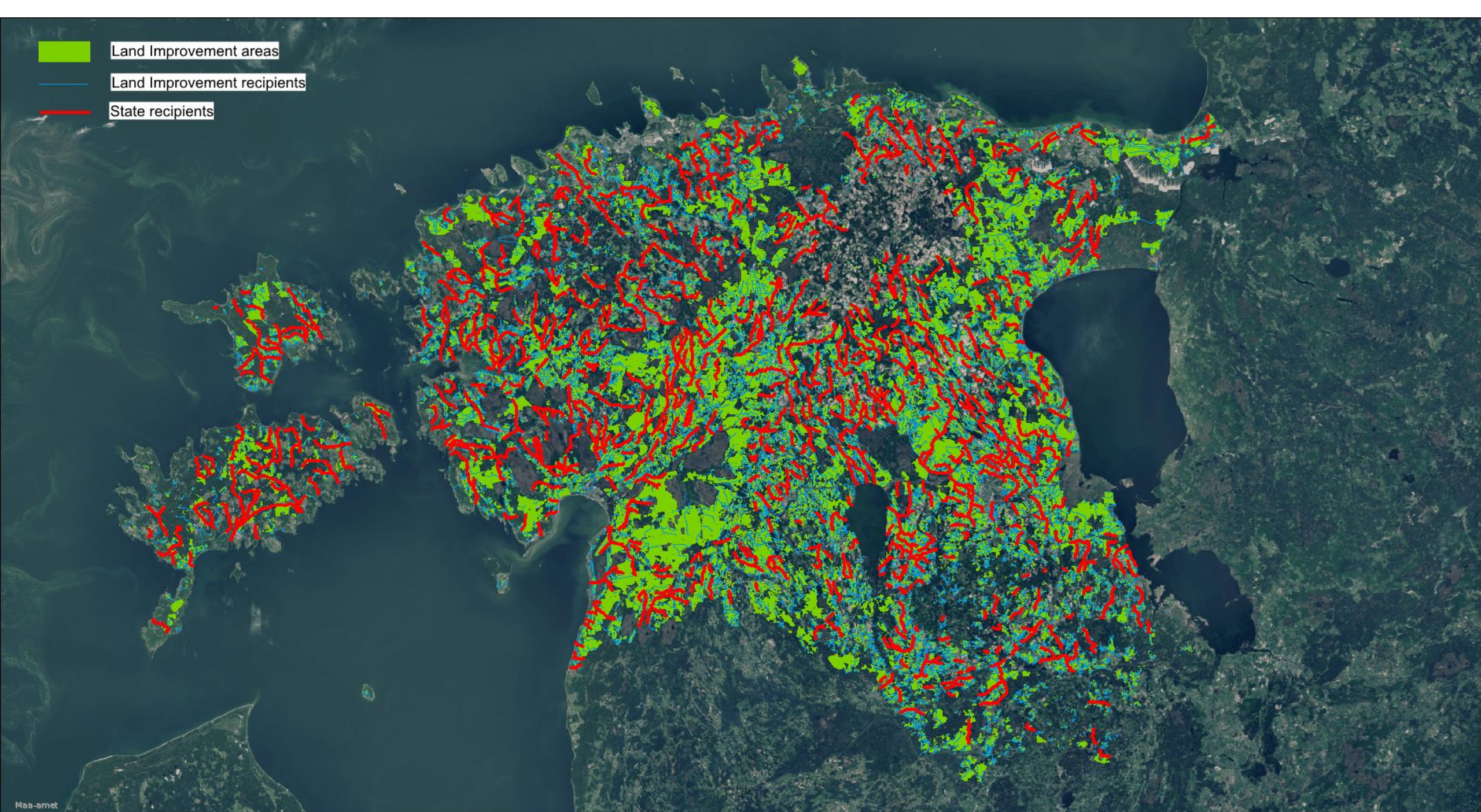
Land Improvement areas



Land Improvement recipients



State recipients



LAND IMPROVEMENT REGISTER

- Detail technical and numeric data of land improvement system constructions;
- Vector data (systems, recipients, state recipients);
- Coordinated drainage plans (raster) of land improvement systems;



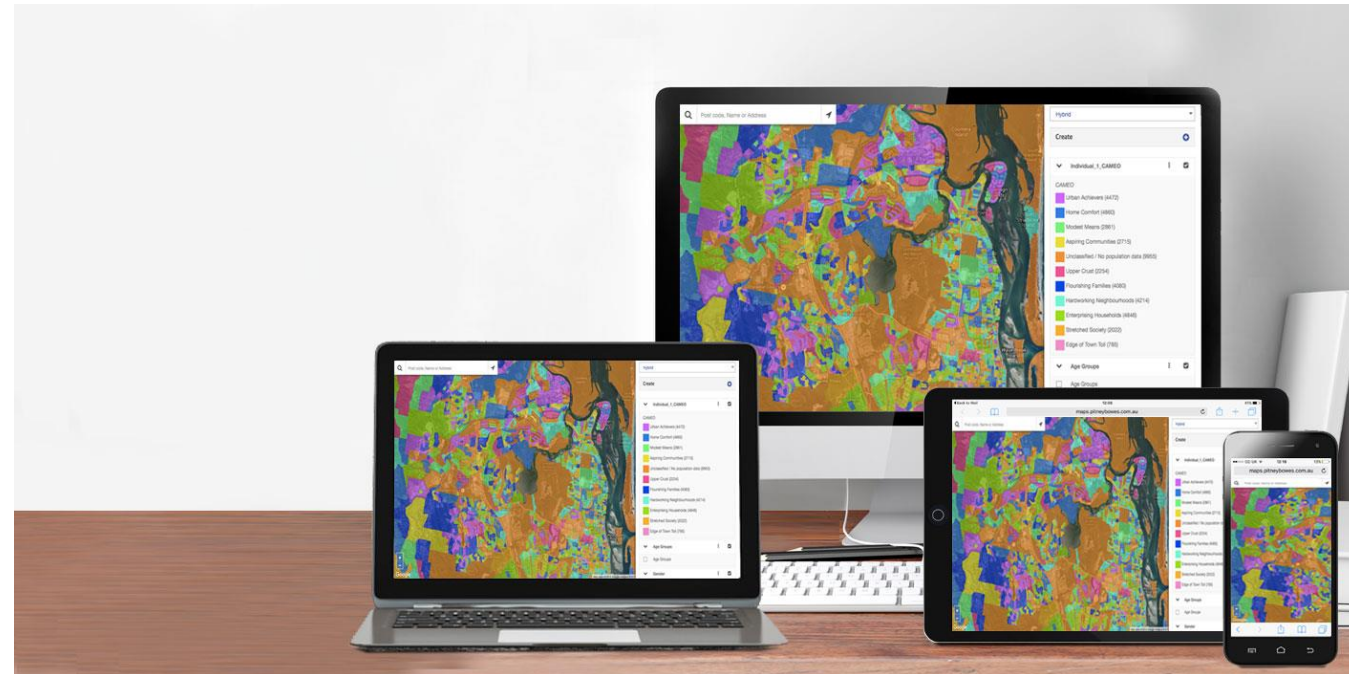
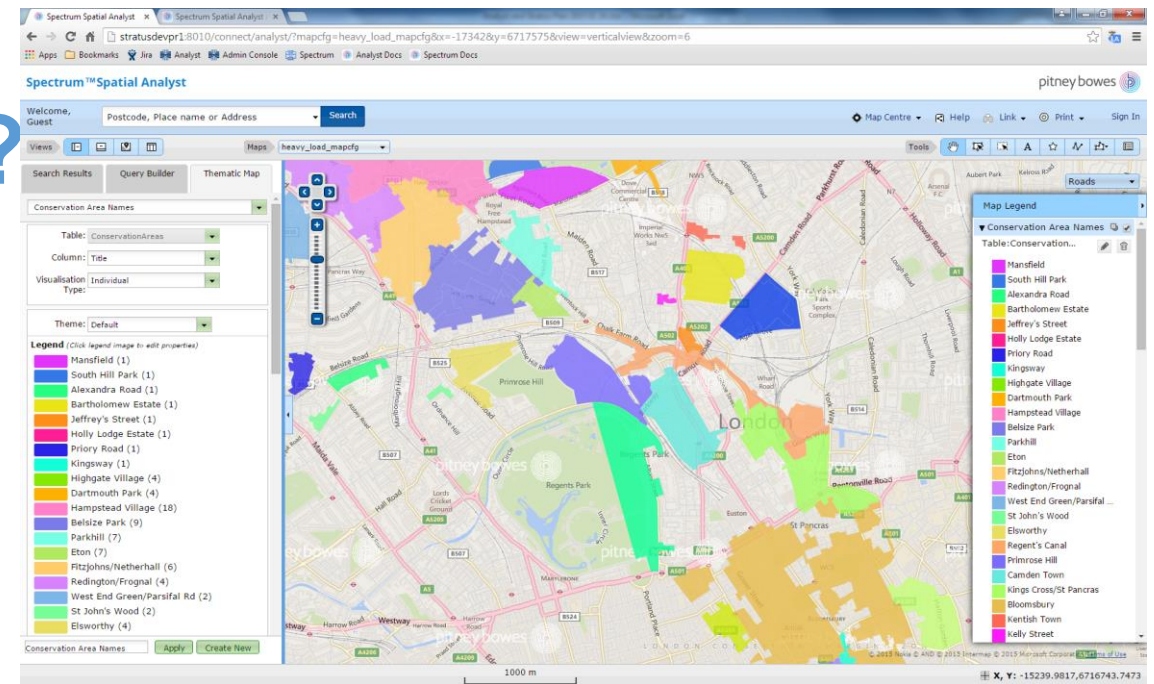
WHAT WE ARE DEVELOPING?

- Development of register (geoserver);
- Standardization of spatial data;
- Services from server (wms/wfs);
- Vectorizing spatial data;
- Updating register data by spatial data and analysis;
- Up-to-date spatial data for/from other ministries and boards;

WHAT WE PLAN TO DO?

SPECTRUM SPATIAL ANALYST

- Web gis application;
- Web mapping application (different activities, different maps);
- Access from any device;
- Client can draw an area in our procedural system;
- Collecting data;



TABLETS

NOW

- Converting data to use it in tablet;
- Use in monitoring, supervisions, outdoor jobs and in many different procedures;

NEAR FUTURE

- Data from server;
- Collecting data straight to server (spatial data, photos)



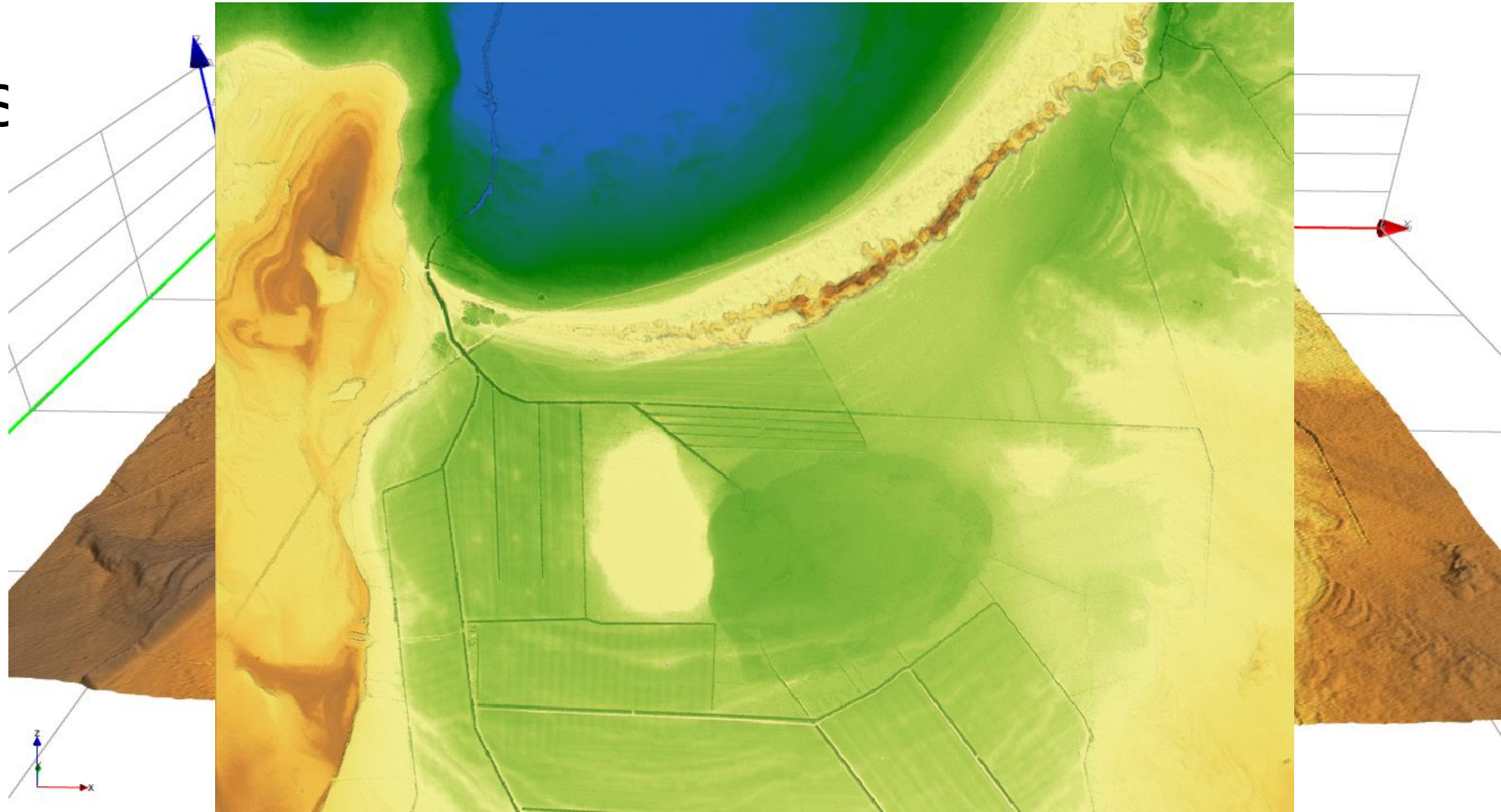
PHOTOGRAMMETRY

ESTONIAN LAND BOARD:

- Performs aerial photography and airborne laser scanning;
- Performs post-processing of aerial images and height data;
- Compiles and updates ortophoto maps and elevation models;
- Archives digital aerial photos and ortophotos;

USAGE OF AIRBORNE LASER SCANNING AND ELEVATION MAPS (1)

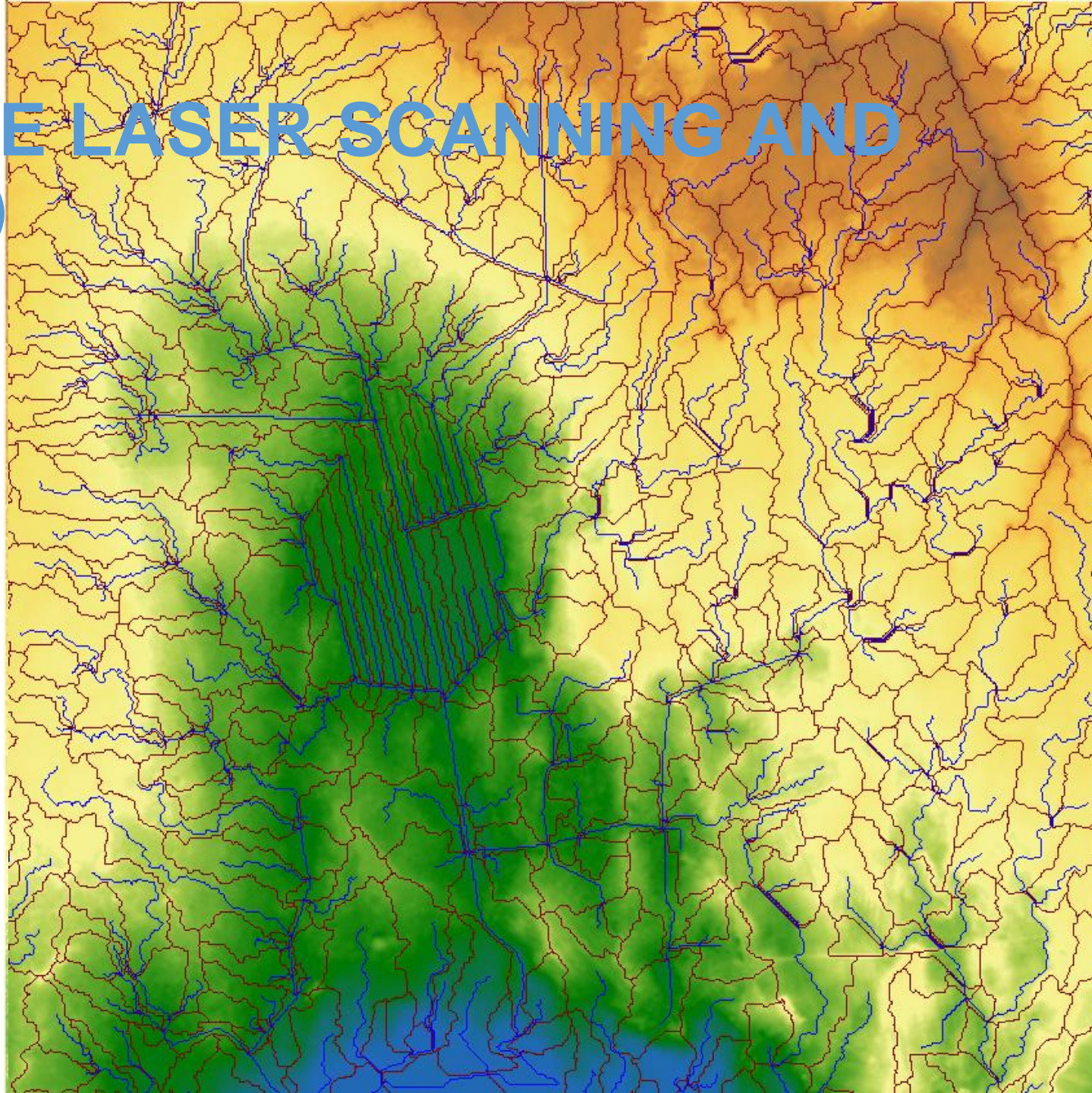
3D MODELS



USAGE OF AIRBORNE LASER SCANNING AND ELEVATION MAPS (2)

CATCHMENT AREAS

- Elevation model;
- 5m pixel model;
- 1m pixel model;



USAGE OF AIRBORNE LASER SCANNING AND ELEVATION MAPS (3)

MODELING



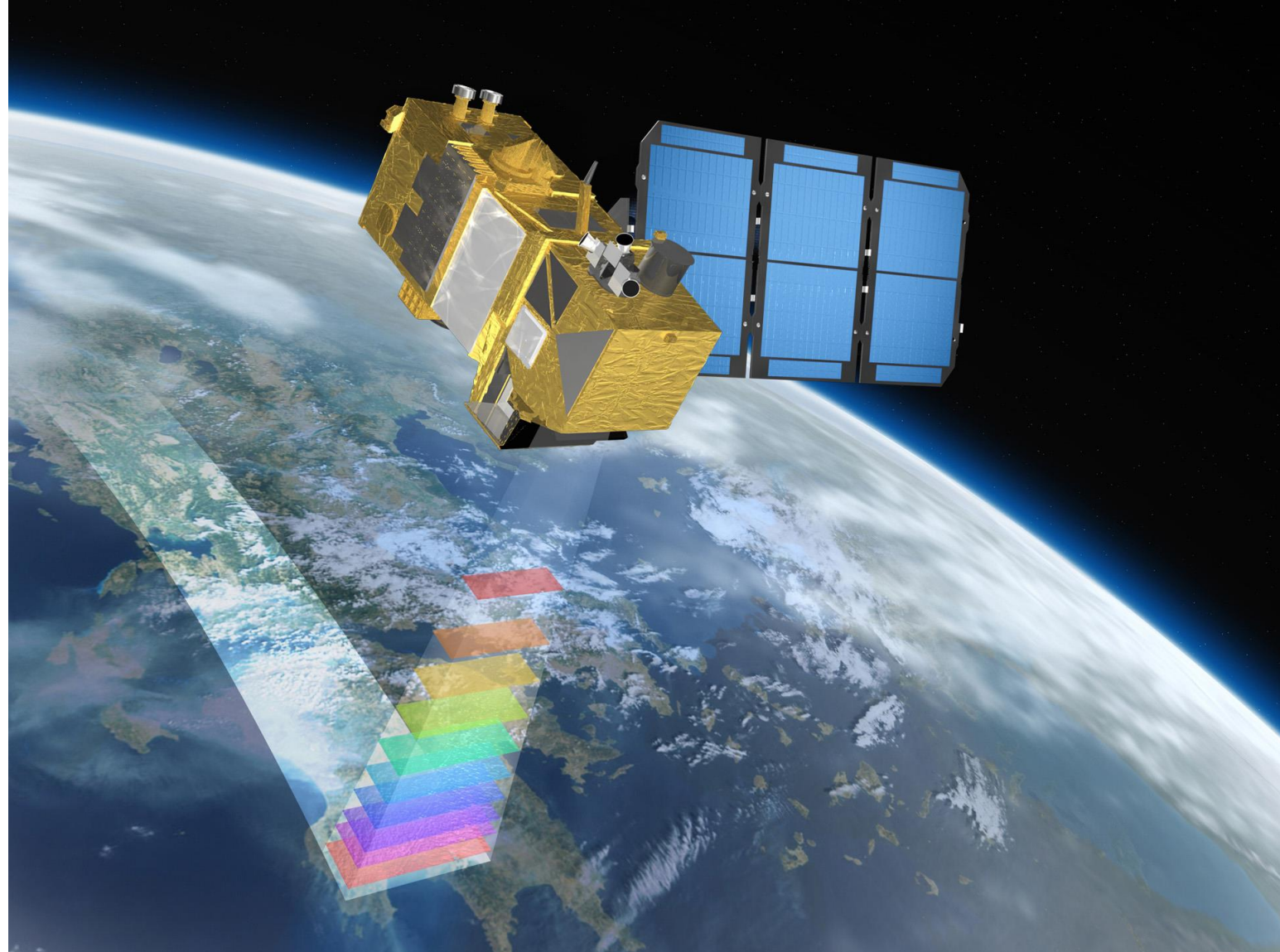
SATELLITES

RADAR INFO

- Changes in surface;
- Land deformations;

MULTISPECTRAL IMAGES

- Plant health;
- Water bodies;
- Disaster maps
- Changing lands

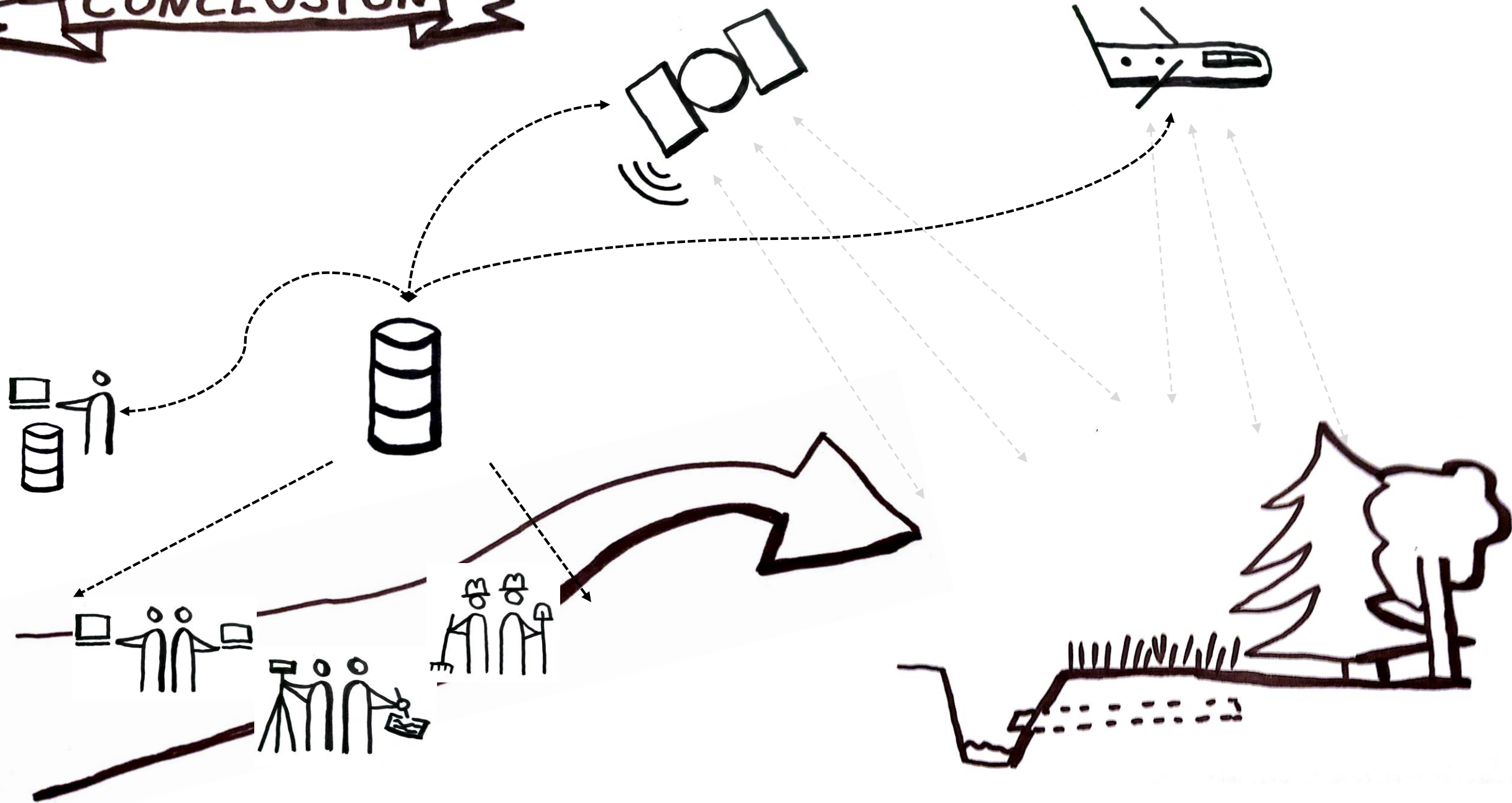


SATELLITES

- Spectral image
- Purple areas are fields where rapeseed flourishes



CONCLUSION





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THANK YOU

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