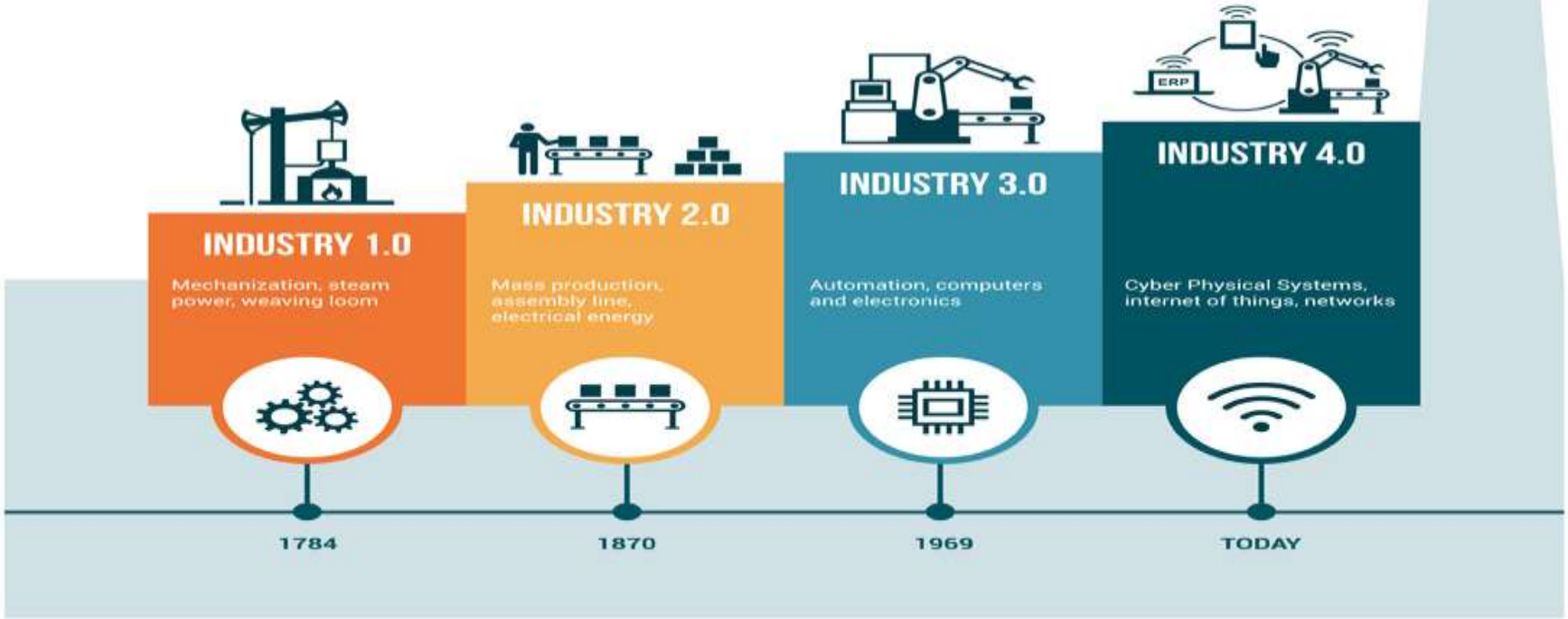
Trimble

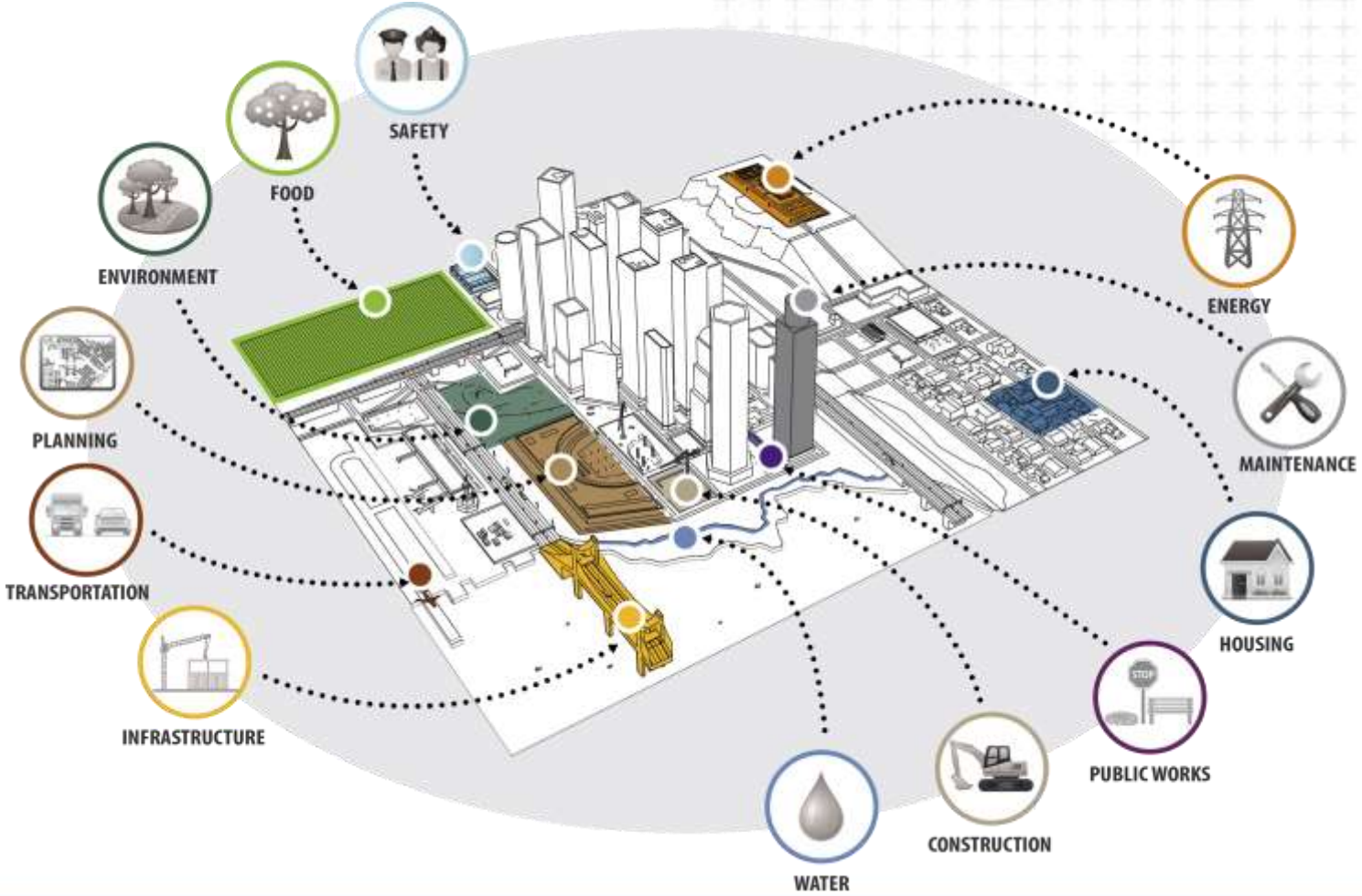
Ronald Bisio | Vice President, Geospatial

Industry Address: Geo-enabling the 4th industrial revolution … and the next agricultural revolution

INDUSTRIAL REVOLUTION

TRANSFORMING INDUSTRIES AND INNOVATION

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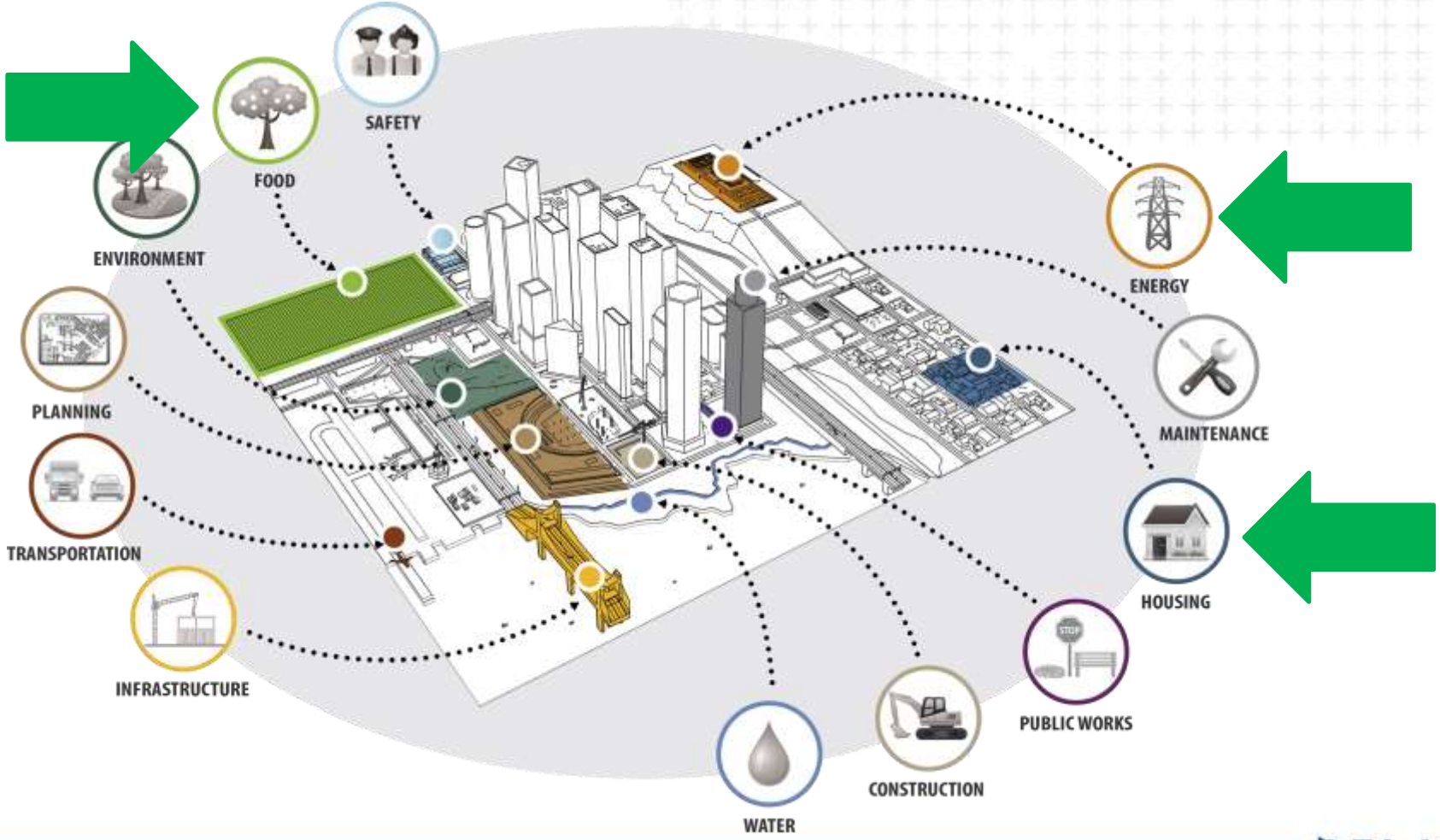
CONSTRUCTION
WATER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GEO4IR in Italy – Geospatial data capture solutions help reduce light pollution and energy use

Urban Activity Accounts for 80% of Energy Consumption and CO_2 Emissions

Cities of Padua Province, Italy

Province Population 2014	940 090
Capital	Padua
Established	1183 BC
Total surface area	92,85 km^2
City Population 2014	214 125
City Population density	2,300 persons/km^2
Number of jobs	50 000

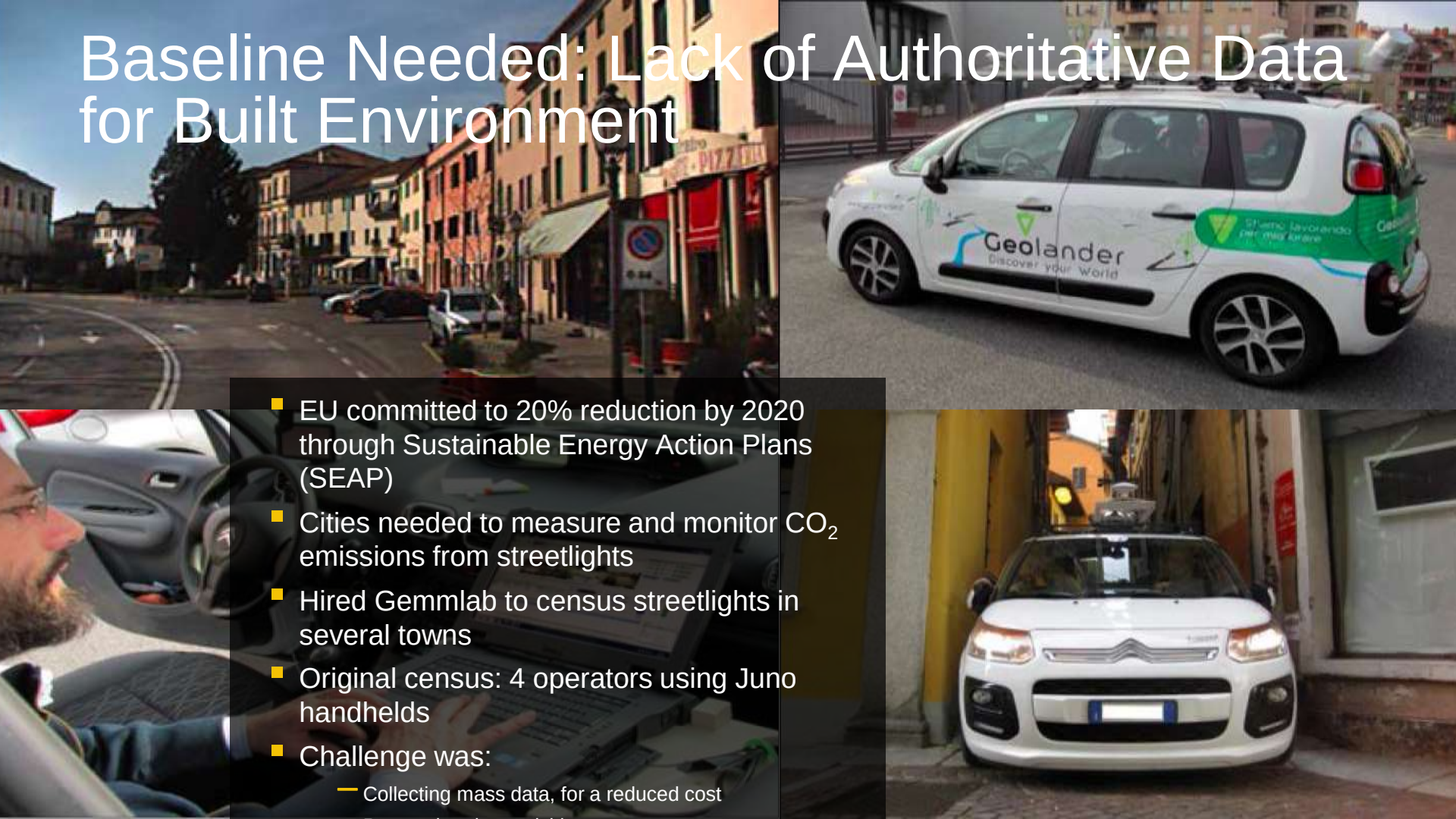
Famous for

- Home to Dante
- Galileo's Observatory

City of Padua, Italy

Source: United Nations | Statista

Baseline Needed: Lack of Authoritative Data for Built Environment



- EU committed to 20% reduction by 2020 through Sustainable Energy Action Plans (SEAP)
- Cities needed to measure and monitor CO_2 emissions from streetlights
- Hired Gemmlab to census streetlights in several towns
- Original census: 4 operators using Juno handhelds
- Challenge was:
  - Collecting mass data, for a reduced cost

Mass Data Collection: Integrated Solution Doubles Productivity; Halves Resource Requirements

- Evolved census: 2 operators using vehicle mounted Trimble MX2 and Trimble AP20 GNSS – Inertial System
  - Supported by Junos (when manual collection necessary)
- Office staff use
  - Trimble POSPac to improve GPS accuracy
  - Trimble Trident for object classification and extraction
- Rapid and authoritative (8cm) street lighting baseline inventory for policy analysis
  - GIS and CAD deliverables
  - Census 40% more efficient

GEO4IR in Asia – Using Geospatial analytics to improve building safety

5 to 10% of Residential Housing Estimated to Have Illegal Vertical Build

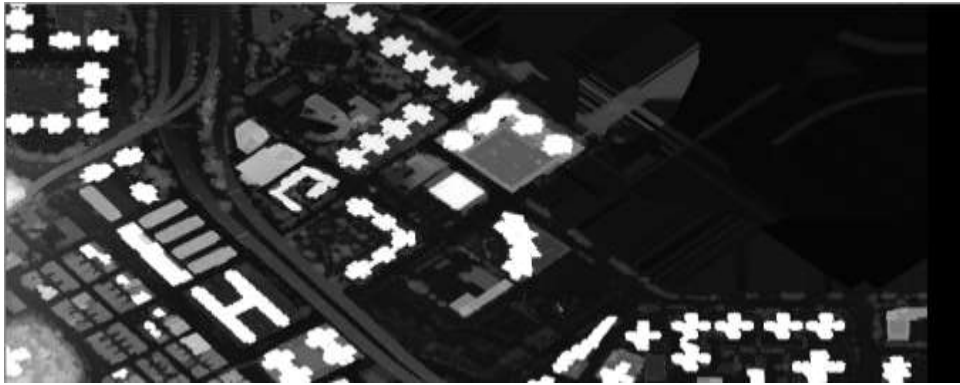
- Limited ability to detect infractions
- Undetected illegal Vertical Builds Cause:
  - Safety Issues
  - Emergency Response Issues
  - Loss of City Revenues
    - Fees
    - Fines

Geospatial Analytics Enables Rapid Identification of Vertical Build Infractions

- Trimble eCognition used for analysis
- Trimble teamed up with city (3 resources total)
- City provided initial datasets
  - Elevation
  - LiDAR
- 1 week from scoping to ground truthing analysis

Trimble

Geospatial Analytics Enables Rapid Identification of Vertical Build Infractions

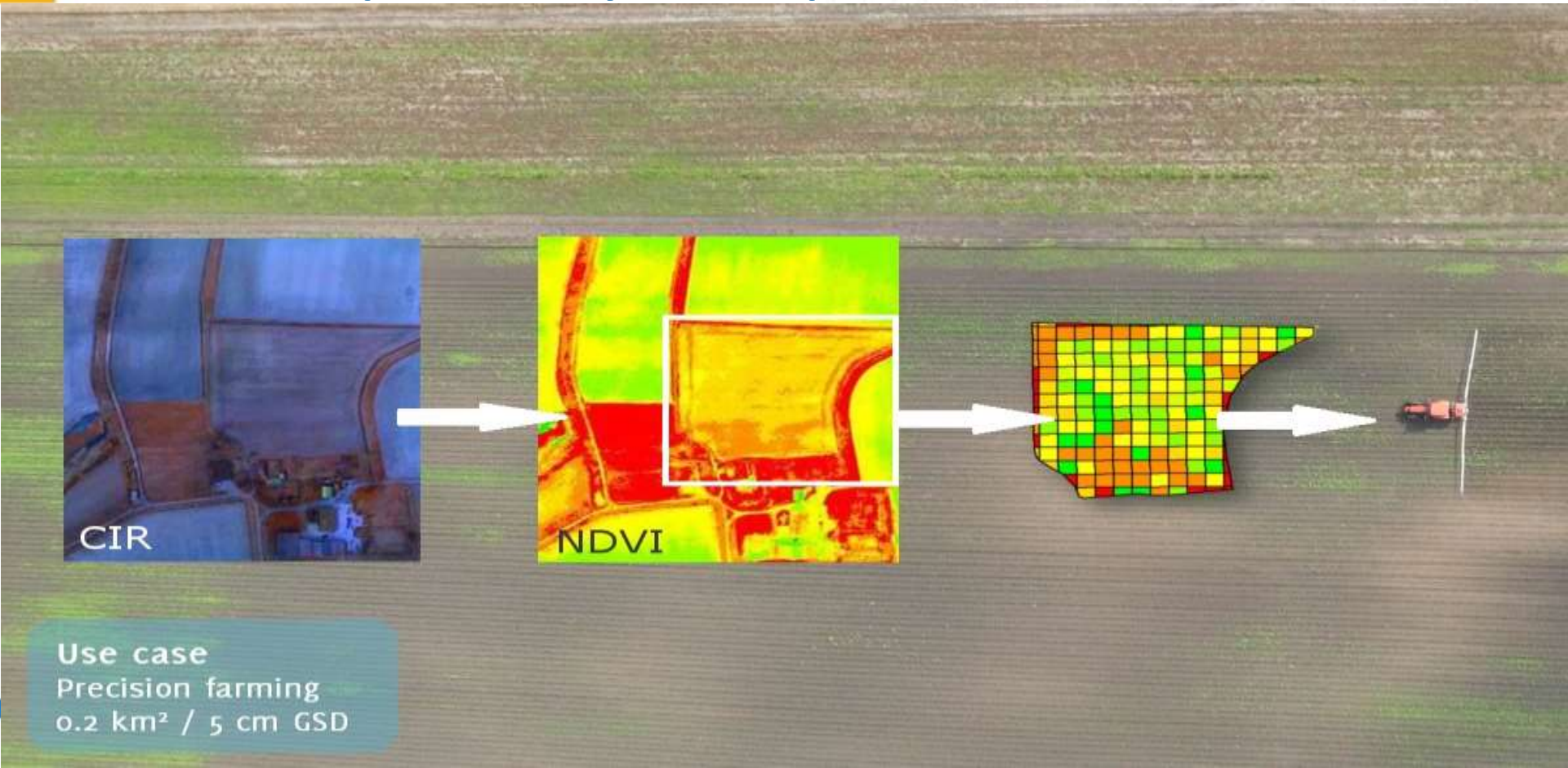


- Resulted in mass analysis for rapid infraction detection of illegal vertical builds
- Information offered to adjacent departments to
  - Action inspections
  - Amend safety issues
  - Reclaim revenues

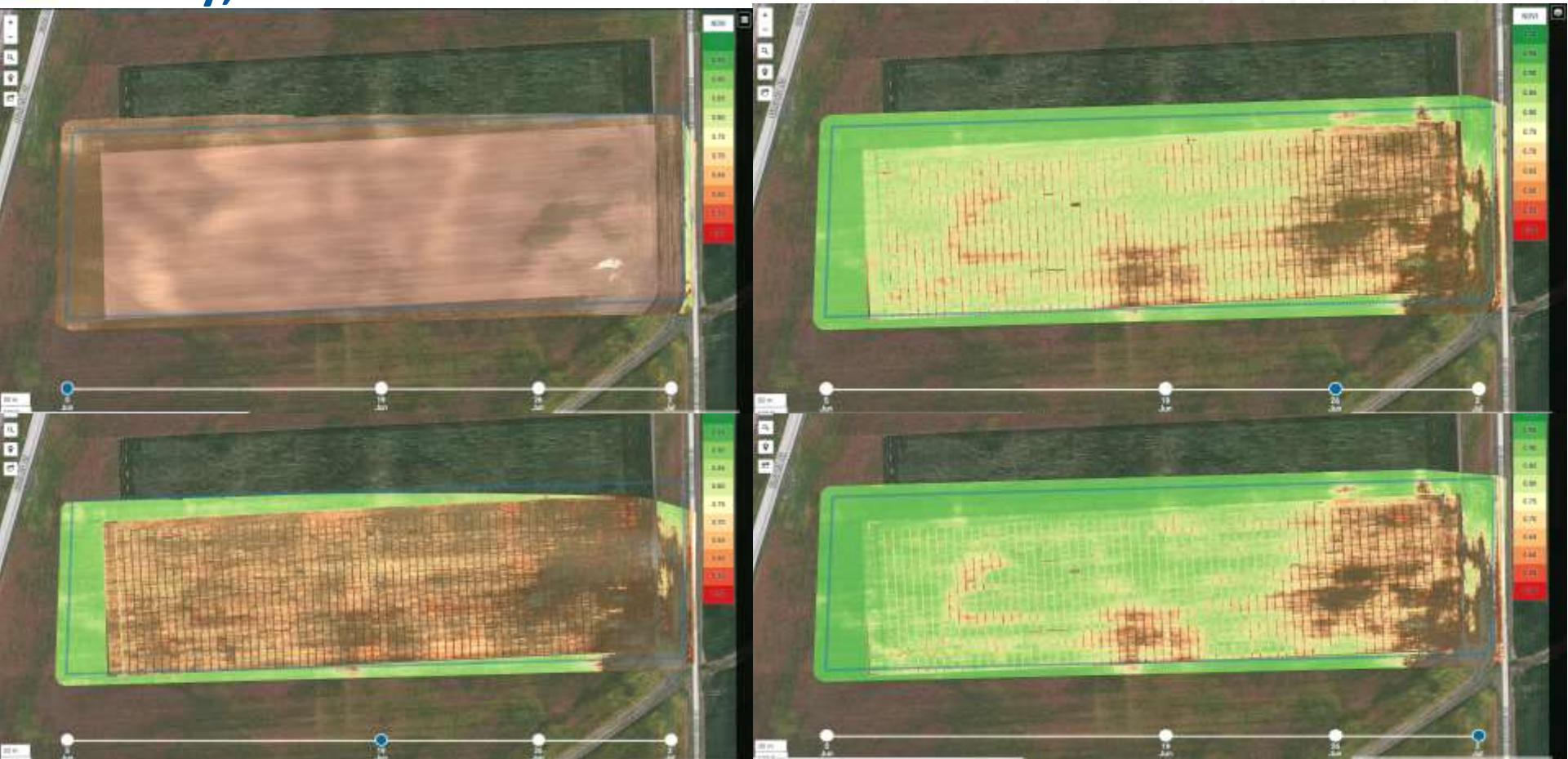
GEO … for the 4th Ag Revolution (GEO4AgR) – Using Geospatial analytics to increase food production

Using imagery to improve agriculture

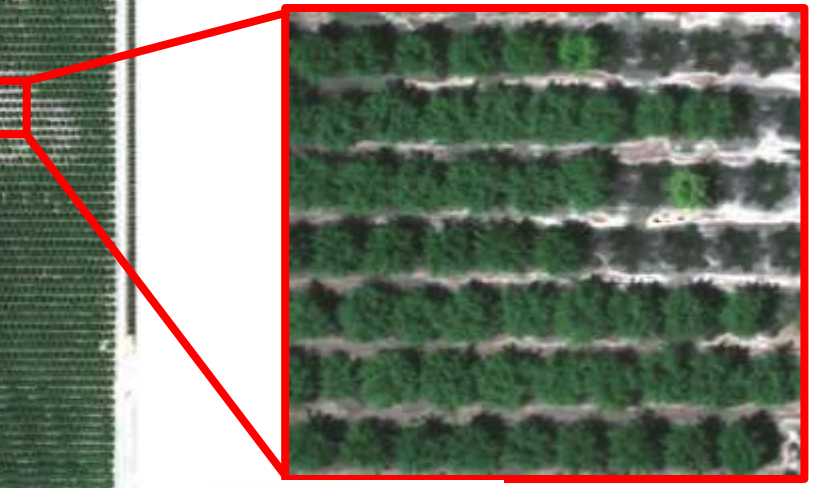
UAS in agriculture – using our solutions and knowledge to help increase the productivity of food production



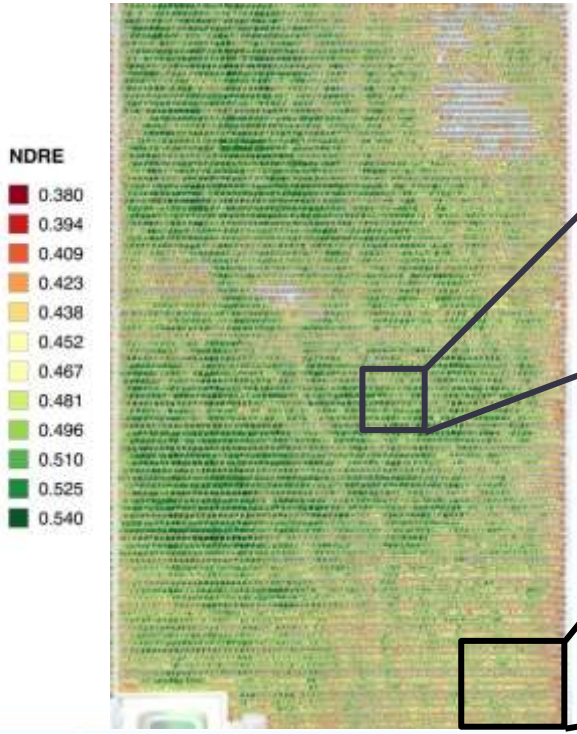
Decision making is improved by providing the farmer with timely, consistent and accurate data

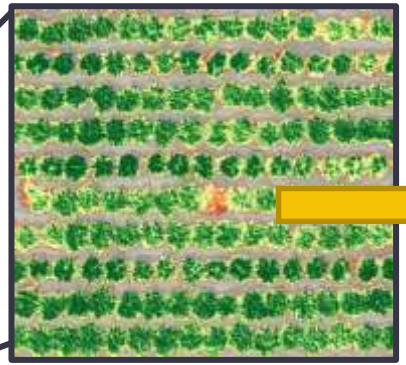


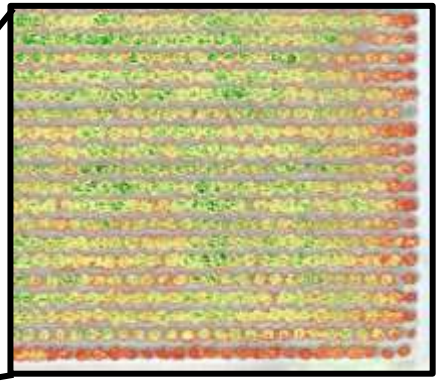
Farmers can use this information to identify and target under performing areas



Leveraging accurate imagery the farmers can manage at the individual tree level







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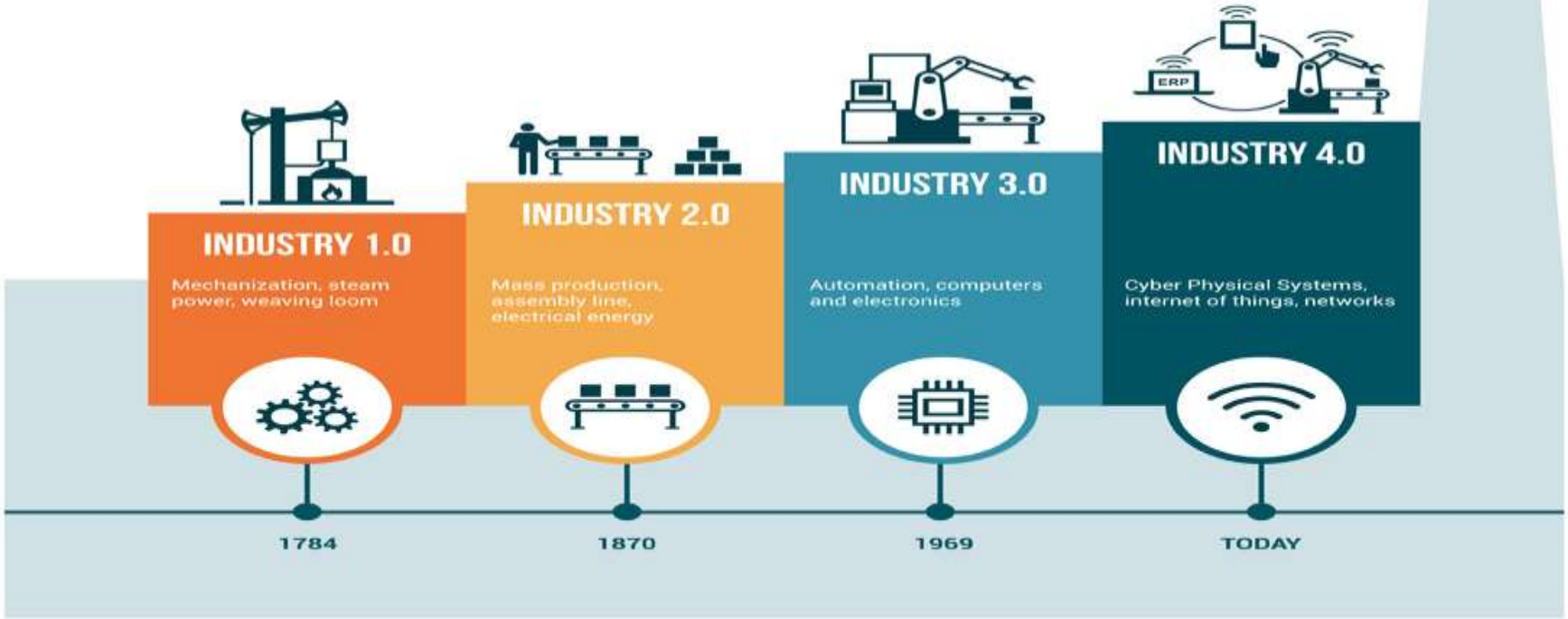

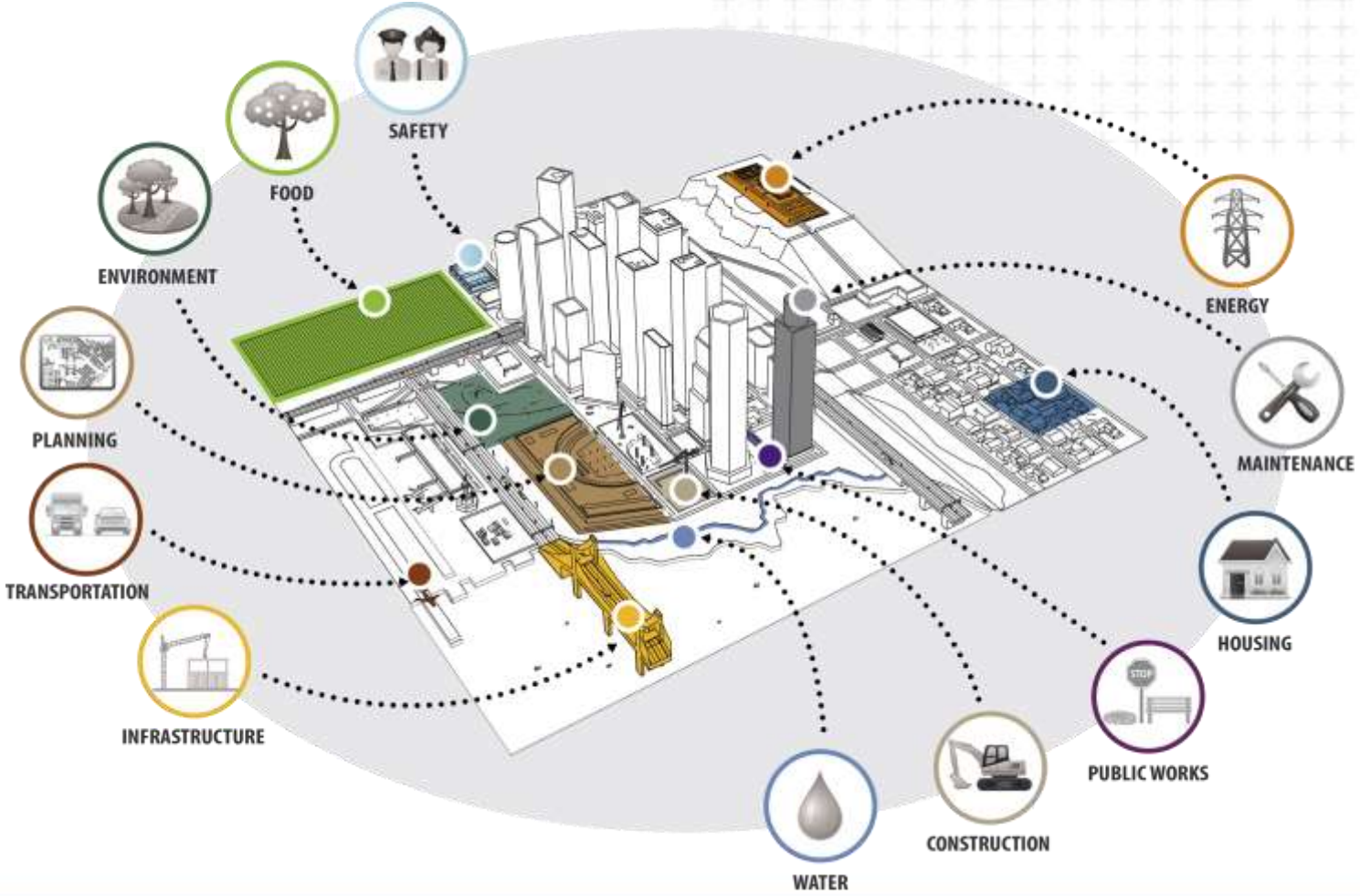
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