Supporting Integrated Rural Development in Central Asia
An Example from Uzbekistan

eotap — earth observation for a transforming asia pacific

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Rural development is an important process of improving the quality of life and economic well-being of people living in sparsely populated areas in Central Asia.

Since 2011, the Asian Development Bank (ADB) supports the Housing for Integrated Rural Development (HIRD) Program in Uzbekistan with the main goal to build up to 50,000 private homes within the country.

Recently, collaboration programmes such as the EOTAP (Earth Observation for a Transforming Asia Pacific) initiative from the European Space Agency (ESA) have been launched for demonstrating the value of Earth Observation-based products supporting ADB for planning, implementation, monitoring and evaluation for their specific project activities (HIRD in this case).
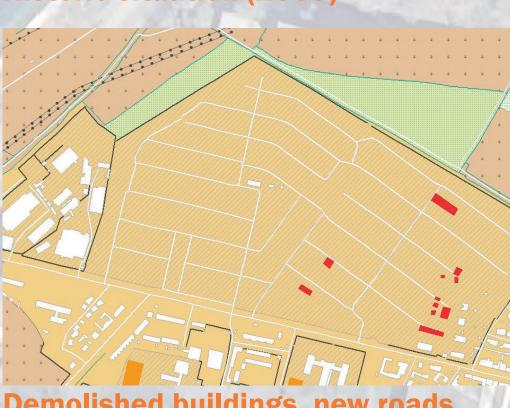
ADB · esa

Rural Development Support in Greater Tashkent Region

Technical Approach
Example for housing complex mapping
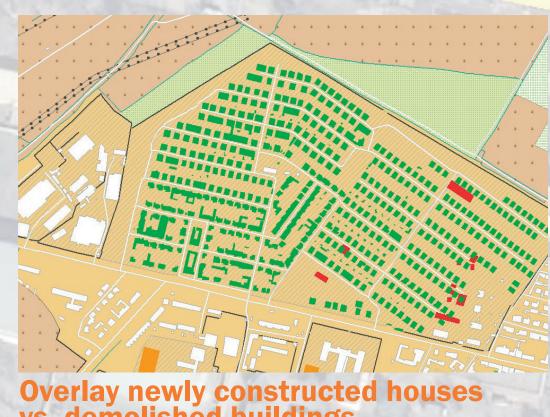
Historic situation (2009)
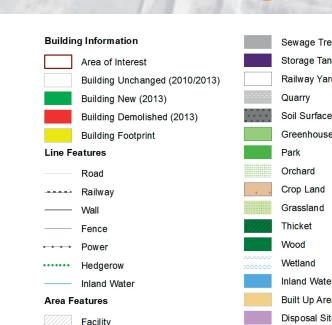

Recent situation (2014)

Demolished buildings, new roads

Overlay newly constructed houses vs. demolished buildings

Overlay with recent Earth Observation Image

Building Information
- Area of Interest
- Building Unchanged (2010/2013)
- Building New (2013)
- Building Demolished (2013)
- Building Footprint

Line Features
- Road
- Railway
- Wall
- Fence
- Power
- Hedgerow
- Inland Water

Area Features
- Facility
- Sports Ground

- Storage Tank
- Railway Yard
- Quarry
- Soil Surface Region
- Park
- Orchard
- Crop Land
- Grassland
- Thicket
- Wood
- Wetland
- Inland Water
- Built Up Area
- Disposal Site

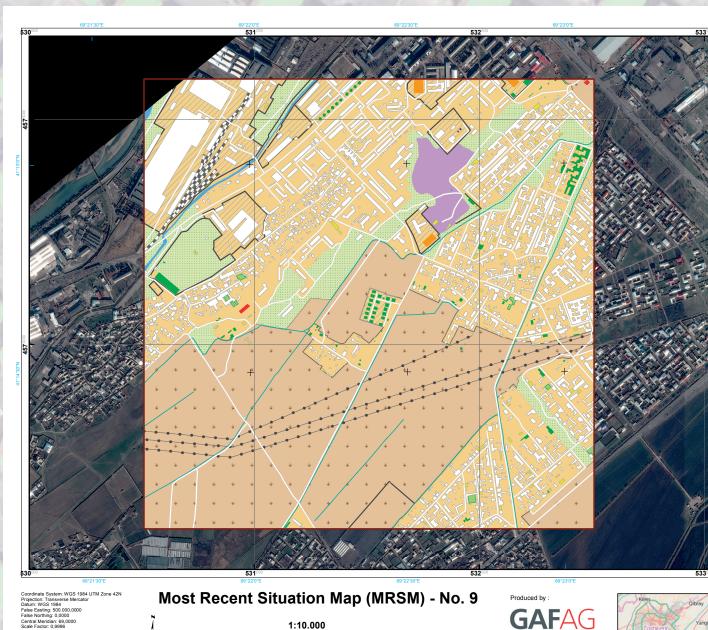- Sewage Treatment Plant

Key Facts

- Mapping over **20,000 buildings** and **1,700 linear features** such as power lines, hedgerows, railroads and others.
- Recent AIRBUS PLÉIADES data with **very high spatial resolution** as baseline data for various development and infrastructure planning tasks.
- **Land use/land cover** classes mapped with **extreme high precision**, including **31 different thematic classes**.
- Historic **high resolution** AIRBUS SPOT-5 data for change detection analysis.
- Interactive and user-friendly **Web-based Map Viewer** as exploration tool for results next to dedicated thematic maps.

Benefits

- Mapping of **accurate building footprints** of existing housing complexes and of new houses under construction.
- **Standardised information layers** and **map products** for housing complexes, ready for GIS import and further value adding.
- **Analysis** and **identification** of **spatial development trends** within the Greater Tashkent area; **improved understanding** of dynamic processes in space and time.

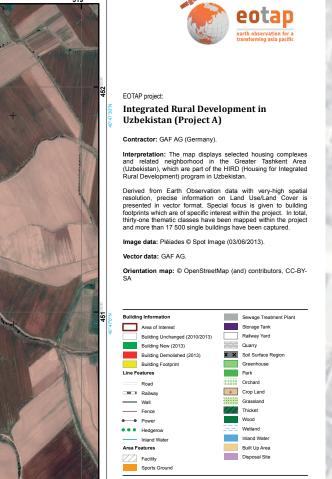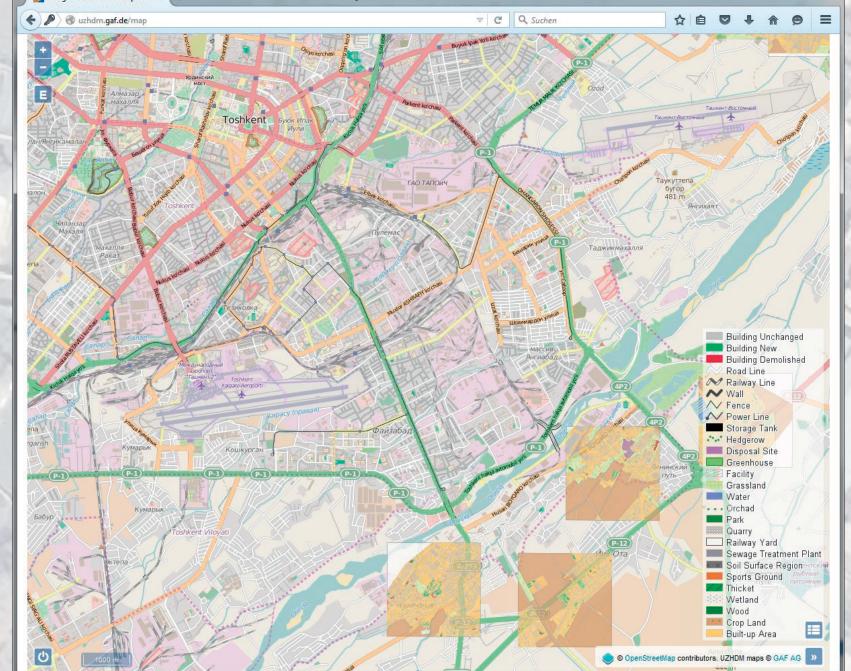## Products and Results
Situation Maps - Examples

Most Recent Situation Map (MRSM) - No. 9
1:10.000

Most Recent Situation Map (MRSM) - No. 1
1:10.000

Web-based Map Viewer

Overview modus

Detail modus

GAFAG
an e-GEOS (ASI / Telespazio) Company