Generating WUDAPT’s Specific Scale-dependent Urban Modelling and Activity Parameters: Collection of Level 1 and Level 2 Data

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The need for WUDAPT

Local Climate Zones (LCZs)
- Appropriate scheme
- Range for UCPs
- Workflow for creation
- Workshop on Wed
- Levels of data collection
Levels of Data Collection

- Level 0 – LCZ mapping
- Level 1 – Sampling to refine parameter ranges, e.g. sky view factor ranges between 0.2 and 0.4 for LCZ1
- Level 2 – Wall-to-wall approaches

Need standardized methods and protocols
Need data collection tools + experts
### Information Needed on Urban Form and Function

<table>
<thead>
<tr>
<th>Feature</th>
<th>Variable</th>
</tr>
</thead>
<tbody>
<tr>
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<td>Land cover, vegetation type, vegetation organization</td>
</tr>
<tr>
<td>Geometry</td>
<td>Building height, width of streets, contiguous or isolated buildings, roof geometry</td>
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<tr>
<td>Material</td>
<td>Wall type, roof type, window type, road materials, window fraction on the wall, colour/albedo</td>
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<tr>
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Geo-Wiki

Visualization of Global Land Cover, Biomass, Photos, etc.

Crowdsourcing of Land Cover (Google Earth, Bing Maps)

Creation of Hybrid Land Cover Maps

In-situ Data via Geo-Wiki Pictures app

Validation of Land Cover Maps

Serious Games (Cropland Capture)

www.geo-wiki.org
Cities Geo-Wiki

GEO-Wiki

CITIES

- Dublin Urban Atlas
- Dublin Building Footprints
- Dublin LCZ

Start validation

- Hamburg
- Houston
- Sao Paulo
- Medellin
- Kuala Lumpur
- Additional Data
- Geocoding
Validating the LCZ Map

Don't show any overlays

Start validation

Select a landcover type:

Submit:
Level 1: Sampling Across LCZs
Level 1: Point sampling

- Sampling at a regular spaced grid across Dublin using Geo-Wiki - completed
- Allows you to create % land cover types for any type of grid size
- Need to determine the optimal spacing & sensitivity of model results
- Experimenting with OSM to reduce sampling
## Information Needed on Urban Form and Function – Level 1

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Example Serious Game Interfaces

Is there cropland in the red box?

Score: 78
Sorted: 0.15%

Do you see any trees in the red box?

Follow us on twitter to get the latest news about Cropland Capture!
App to Gather Information from Photos: Type 1

- Geotagged pictures from different sources (e.g. Flickr, crowsourcing, Streetview)
- User would identify building materials and roof types
- Automatic translation to UCPs for each LCZ
- App could also be used to take pictures and classify buildings and roof materials

Classify the Picture by Building Material

- Building: Brick, Wood, Glass
- Roof: Tile, Shingle, Thatch
App to Gather Information from Photos: Type 2

- Typical photos collected by city experts
- Could have photos on a wheel on the right to encompass more than 4 photos
- Automatic translation to UCPs for each LCZ

Match the closest picture
Welcome to Geopedia

What Geopedia is

Find out what Geopedia is and discover how it can help you to view and create spatial data.

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Find interesting data to browse.

Learn about Geopedia's features

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Terms and conditions

View the terms and conditions for using Geopedia maps and geospatial data.

About Geopedia

Geopedia was established with a desire to have the ability to store, view and edit geographic data in one place.

Geopedia World Launch
Visualization of LCZs
Collection of Level 1 Data
Collecting Data on Individual Buildings
FotoQuest Austria

- Part of the ERC CrowdLand project
- Combines science with photography and outdoor exploration (photocaching)
- Month long citizen science campaign
- Mobile phone app to take pictures at specific locations using a protocol
  - 4 directions
  - Questions about the land cover
## Information Needed on Urban Form and Function – Level 2

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Next Steps

- Expand LCZ classifications to as many cities as possible
- Begin level 1 data collection (Geo-Wiki / expert-sourcing to sample land cover types for cities with LCZs)
- Use Geopedia to extract information on buildings, roads, vegetation
- Further develop methods, protocols and tools for Level 1 data collection
The World Urban Database and Access Portal Tools (WUDAPT) is an initiative to collect data on the form and function of cities around the world. The impact of cities on the climate at urban, regional and global scales is a topic of considerable debate. Much of the relevant research to date has been focused on mapping urban centers using demographic and administrative information, often supplemented by remote sensing. However, these data provide no information on the internal make-up of cities, which is important for understanding their impact on the environment as well as their vulnerability to change. The most recent report from the Intergovernmental Panel on Climate Change (IPCC) notes the dearth of information on urban areas. The WUDAPT initiative is designed to fill this gap.
• Missing a way to:
  – contribute or upload maps / data
  – download data (‘access’ part)
  – process data (‘portal’ part)
See you at the workshop! Wed at 4pm

Questions?