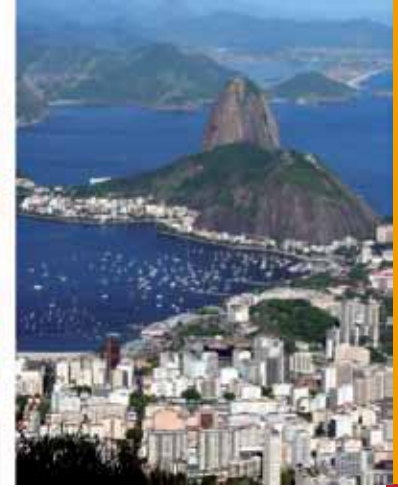


UN HABITAT
FOR A BETTER URBAN FUTURE



Rio de Janeiro - Brazil
22-26 March 2010



RIGHTS TO THE CITY: BRIDGING THE URBAN DIVIDE

How to use Participatory GIS for targeting vulnerability and inequality at neighbourhood-city level



Outline of this event



- § Introduction & objectives
- § About vulnerability & inequality
- § Role of Participatory GIS
- § Discussion
- § Spatial data availability
- § Using free ware to map Inequality and Vulnerability
- § Spatial data collection:
 - § Transect walk in the City
 - § Virtual transect walk in Google Earth
- § Discussion

Who we are



Graciela Peters-Guarin
(IRPUD - TU Dortmund, Germany)

Jeroen Verplanke
Javier Martínez
(ITC - University of Twente, the Netherlands)

...

What do we want to achieve?



The overall aim of the training is

- § *to promote a critical and reflective use of (participatory) spatial information and mapping technologies*
- § *to identify, analyze and target both social and environmental vulnerability using a bottom-up and multiple scale approach*

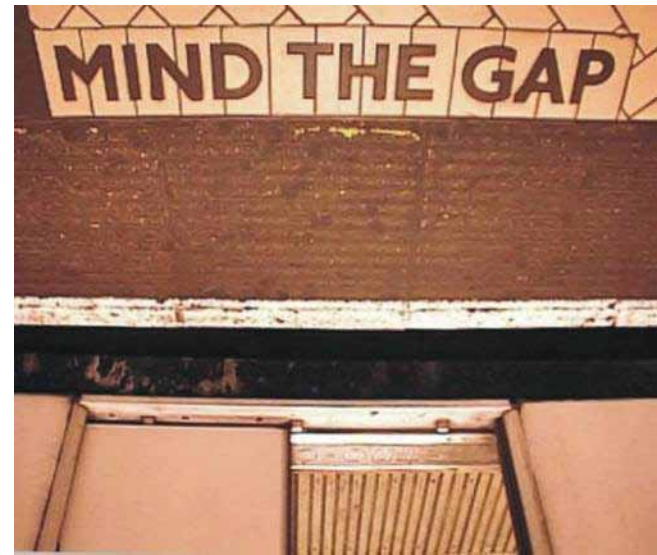
What do we want to achieve?



- § Skill 1: How to identify and discuss relevant aspects of socio-environmental vulnerability and inequality in a participatory way
- § Skill 2: How to acquire and scale up information that is relevant to analyse vulnerability and inequality from neighborhood to city level
- § Skill 3: How to prioritize and make decisions to bridge the identified gaps making use of geo-information

Inequalities

To achieve an “Inclusive Sustainable Urbanization”,
to “Bridge the Urban Divide” and,
to implement effective remedy policies,
we need to be able to **recognize, identify and monitor urban inequalities**



Inequality as a global problem

What are urban inequalities?



Inequality as a global problem



The spatial dimension of inequalities



- *Inequalities are particularly evident and more problematic in cities in developing countries, where there is a permanent state of growth, urban poverty and vulnerability*
 - § *Unequal Quality of Life Conditions,*
 - § *Inadequate habitat conditions, unemployment,*
 - § *Unequal access to physical and social infrastructure...*
- § *What all these problems have in common is a spatial dimension, since **they all occur and tend to be concentrated in specific areas of the city***

Cities at Risk

- § Urban areas provide a number of **socio-economic opportunities** for jobs and income generation
- § but are also simultaneously becoming increasingly **risky places** to live, especially for low-income residents of cities in developing countries.
- § Exposure to environmental risk and hazard is a result of **physical** processes (i.e. poor building construction, lack of urban planning, lack of infrastructure), and **human** processes (i.e. lifestyle choices and consumption) that renders the more informal parts of cities particularly **vulnerable**



What does Urban Vulnerability mean?

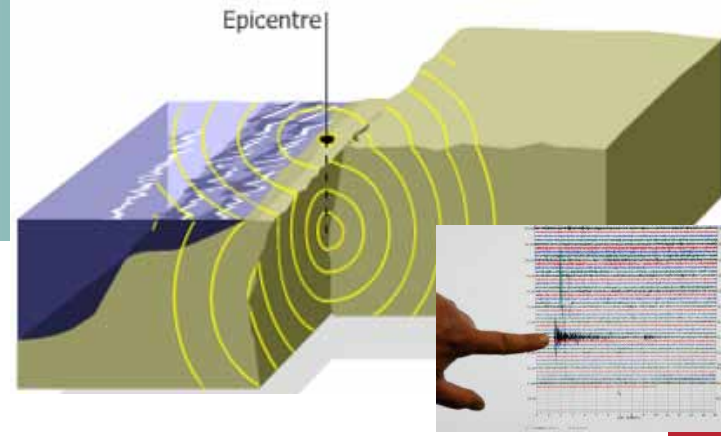


- § The characteristics and circumstances of a community, system or asset that make it **susceptible to the damaging effects** of a hazard (ISDR).
- § **Urban vulnerability** to natural (i.e earthquakes, floods, hurricanes) or man-made (global warming, chemical spills, contamination) events is a **function of human behavior**.
- § It describes the degree to which socioeconomic systems and physical assets in urban areas are either **susceptible or resilient** to the impact of environmental hazards.



Hurricane Katrina - 2005

Natural
event



Environmental
Hazard



+

Vulnerable

context



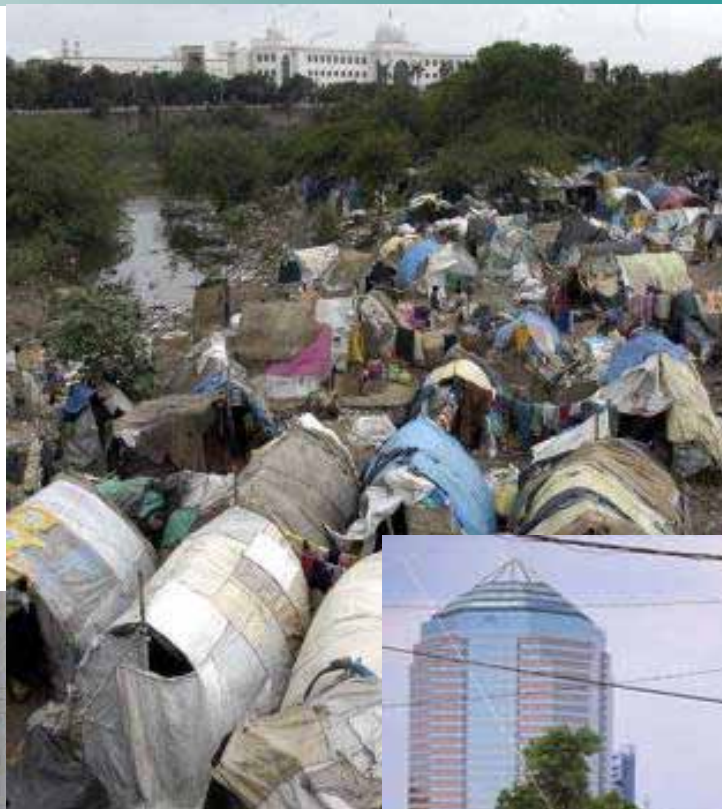
New Orleans - 2005



Port-Au-Prince, Haiti 2010

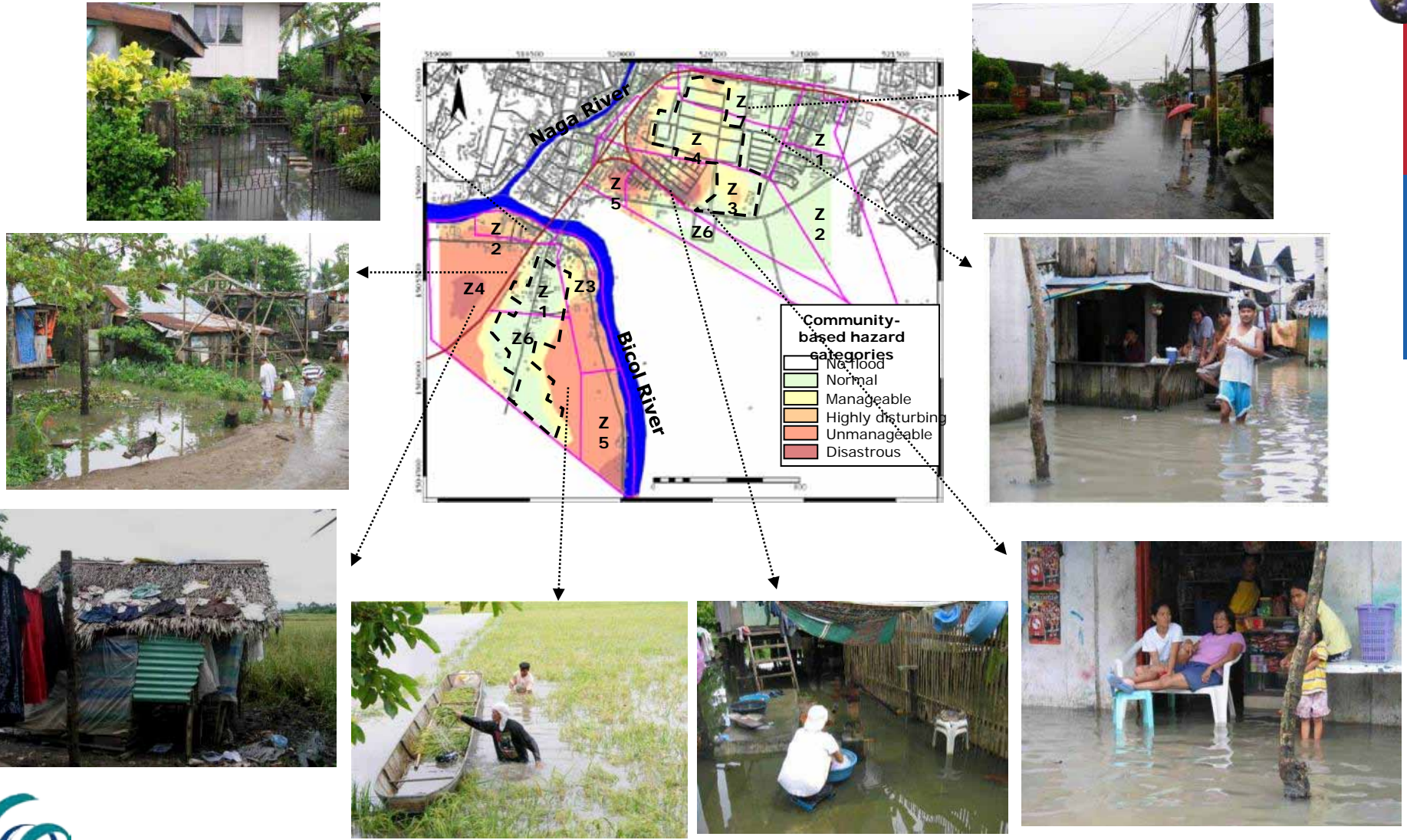
economic loss and social **disruption** = **Disaster**

forms and severity of Vulnerability vary remarkably among different areas and groups of people



... and even within any local community...

Spatial distribution of differential flood vulnerability:



Inequity and 'vulnerability' are spatial problems



- § can be assessed through a combination of ecological factors associated with the **physical conditions of the geographic space** where the urban community is located (i.e. where you are), and the **social conditions of the population** in that place (i.e. who you are).
- § In many cities the **segregation patterns** of ethnicity and socio-economic classes, accompanied by successive waves of economic restructuring and population expansion, are reflected by the **built environment**, urban infrastructure, road and facilities networks.

PGIS can help to target Inequity and 'vulnerability' at urban level

- § It helps to **identify and target factors** such as environmental stress, poverty, inequality, health status and various aspects of governance (Adger et al., 2004).
- § Allows the **involvement of different perspectives** regarding prevention, vulnerability and risk reduction.
- § multi-criteria **modeling** using indicators may help to identify the status of the system before the hazardous event occurs characterized by **unequal access to safe conditions** or the "vulnerability" that may lead the system to crisis.



Participatory GIS (PGIS)



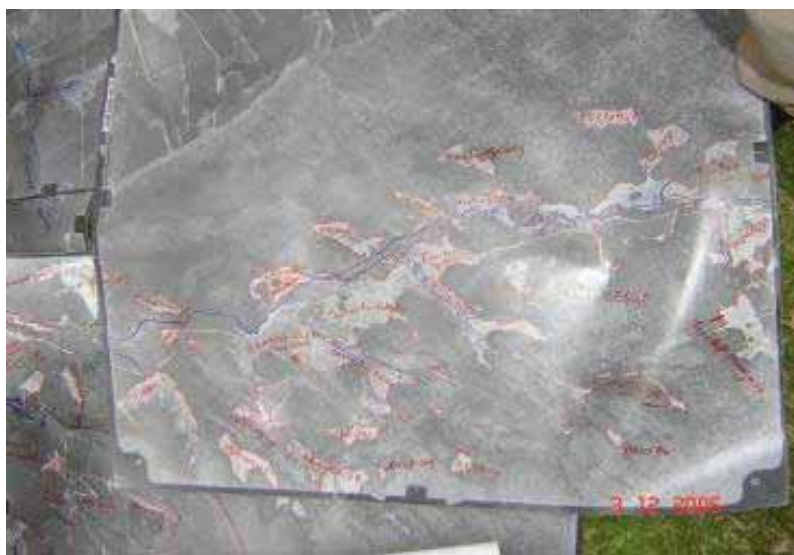
- § PGIS (PPGIS) is NOT a software or a “kind of GIS”
- § A ‘practice’ combining Participatory tools and spatial information.
- § Tools mainly known from PRA, RRA, PLA
- § Spatial information coming from external and in particular local sources

PGIS & P-Mapping Applications:



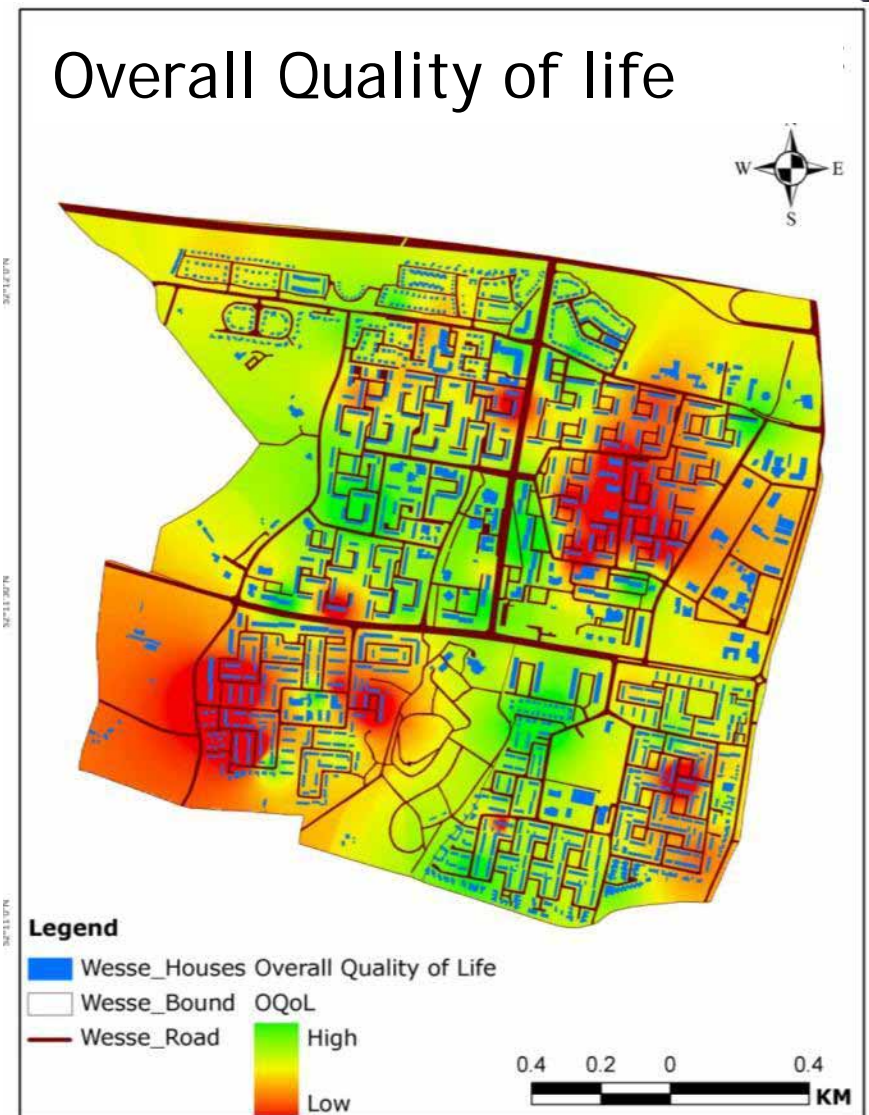
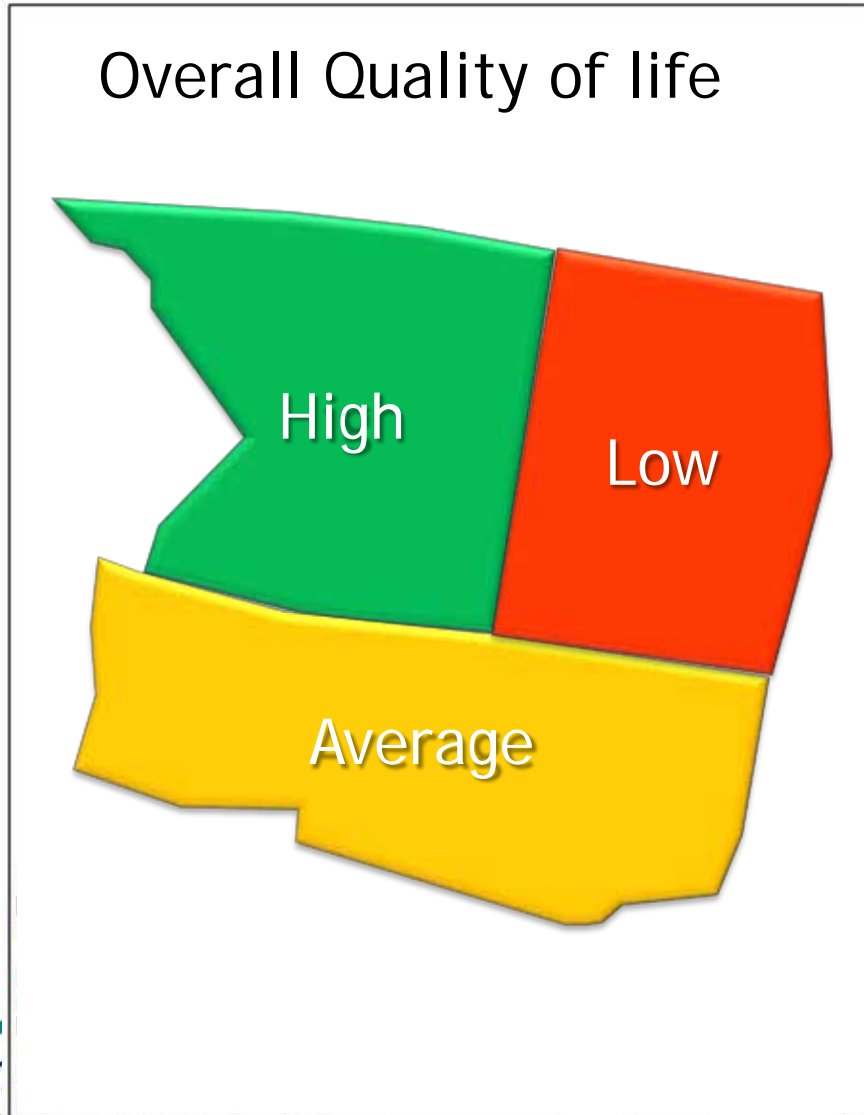
- § Land & Resource Claims
- § Local Spatial Planning
- § Community/neighbourhood action
- § Community Risk Assessment

Mapping Land Claims using Aerial Photographs & LK





Priorities for local spatial planning





Community Action

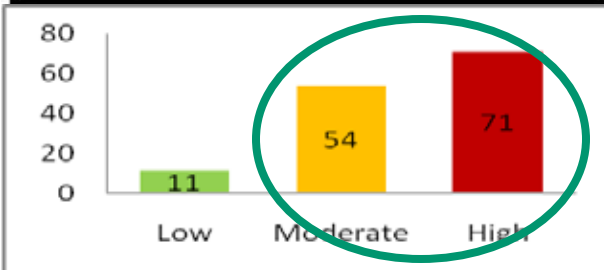
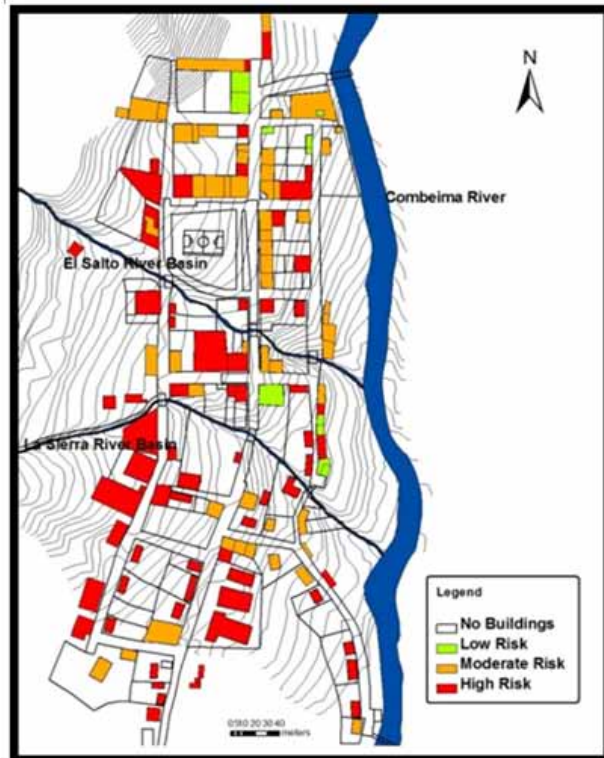
Mapping Urban Security with Aerial Photos



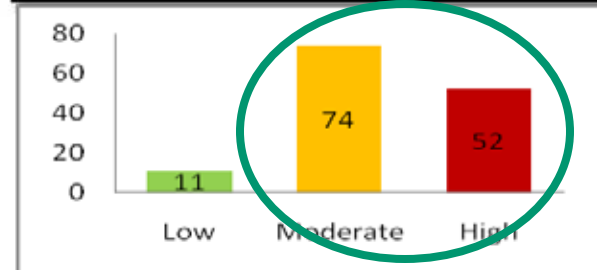
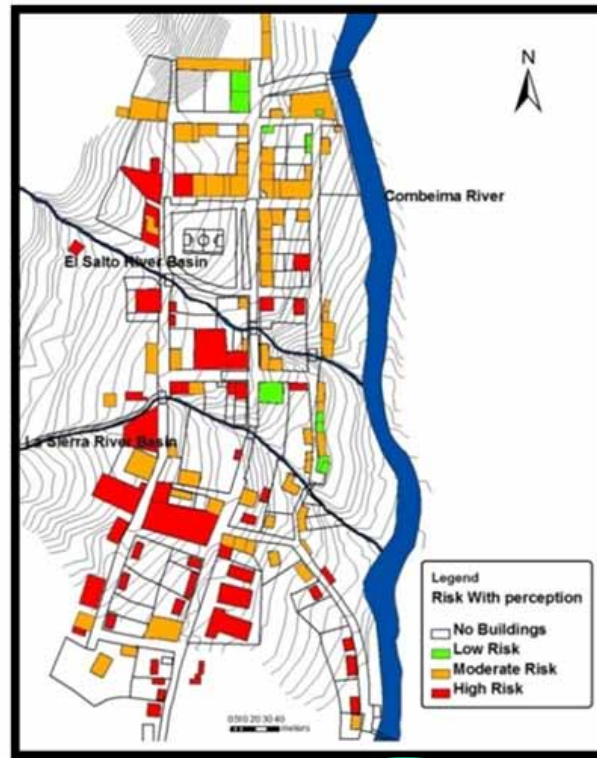
Involving Children



Community Risk Assessment



Without Perception of Debris Flow Risk



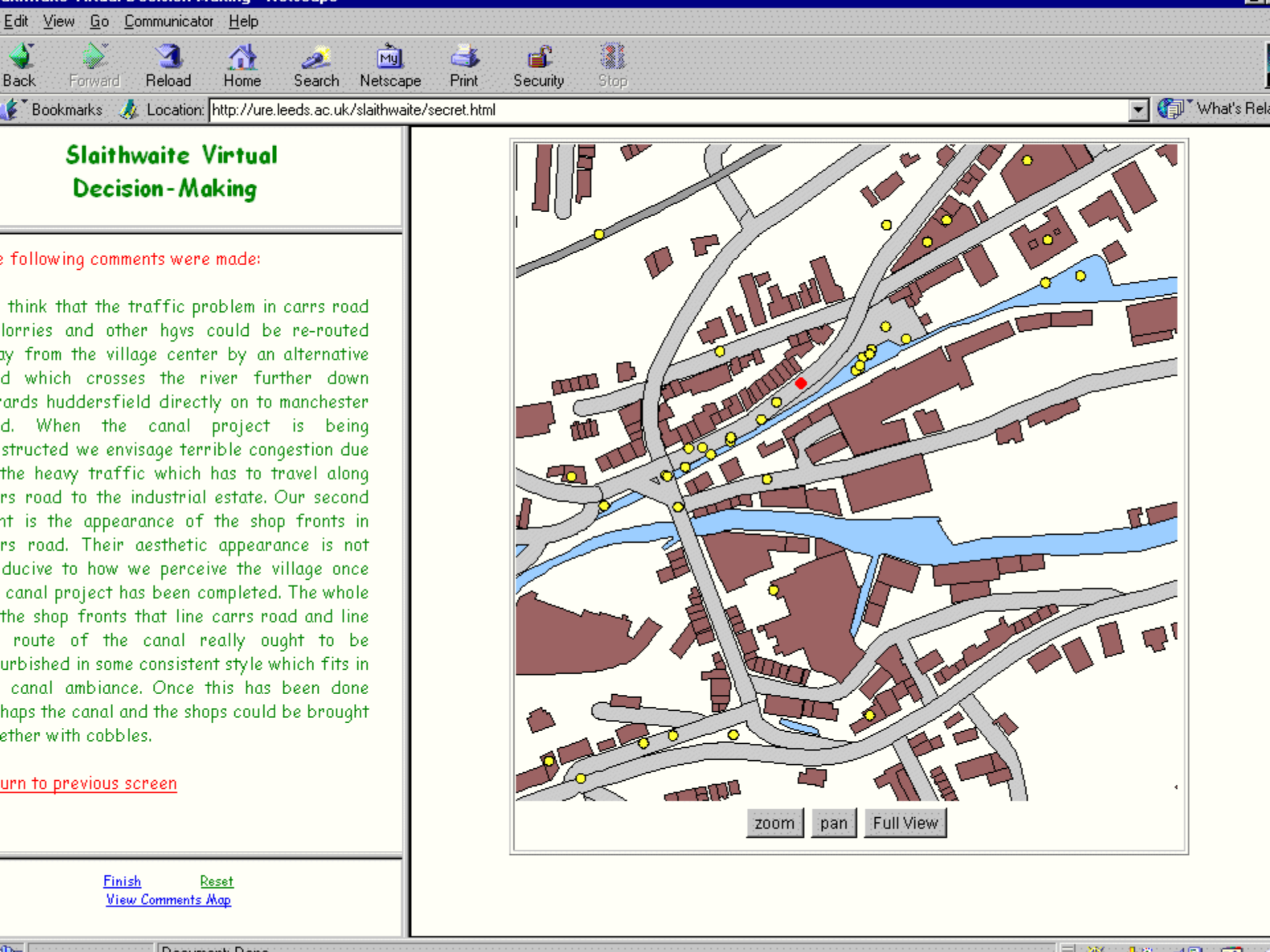
Including Perception of Debris Flow Risk

Using the Web (1.0)



- § Information access to the public
- § Assists transparency
- § Enables communities to formulate their own plans

- § Not very participatory although it offers the opportunity to add local and qualitative information.



Slaithwaite Virtual Decision-Making

The following comments were made:

I think that the traffic problem in carrs road lorries and other hgvs could be re-routed away from the village center by an alternative road which crosses the river further down towards huddersfield directly on to manchester road. When the canal project is being constructed we envisage terrible congestion due to the heavy traffic which has to travel along carrs road to the industrial estate. Our second comment is the appearance of the shop fronts in carrs road. Their aesthetic appearance is not conducive to how we perceive the village once the canal project has been completed. The whole of the shop fronts that line carrs road and line route of the canal really ought to be refurbished in some consistent style which fits in with the canal ambience. Once this has been done perhaps the canal and the shops could be brought together with cobbles.

[Return to previous screen](#)

[Finish](#) [Reset](#)
[View Comments Map](#)



Greenmap.org



QUARRY FALLS
HAS BEEN REGISTERED AS A LEED ND PILOT PROJECT

WALKING TRAILS

NATURAL OPEN SPACE

FINGER PARKS

FROM GRAVEL TO GREEN

— Our Concept for Quarry Falls —

🌿 DENOTES A "GREEN" FEATURE

COMMUNITY GARDEN

A WALKABLE COMMUNITY

Quarry Falls is designed to reduce dependency on cars, with a shuttle system, a hybrid-car sharing program, and a network of biking and hiking trails close to the trolley stop.

CLASSIC INFILL SITE

By creating a sustainable community in place of an urban quarry with homes on all sides, we are saving rural, green spaces that would otherwise be developed.

DROUGHT TOLERANT AND NATIVE LANDSCAPING

THE VILLAGE CORE

In addition to new amenities for Mission Valley residents, Quarry Falls will provide everything new residents need to live, work, and play without leaving its drive. A "Walkable street" will help facilitate interactive and active.

NATURAL STORMWATER FILTRATION

SOLAR ORIENTATION AND HIGH EFFICIENCY ENERGY MANAGEMENT

PEDESTRIAN BRIDGE

RETAIL

RECLAIMED WATER/HIGH EFFICIENCY IRRIGATION

CONSTRUCTION WASTE RECYCLING

NEW RIVER PARK

Upon approval of Quarry Falls, this land - currently zoned for a high-rise office building that would generate more than 10,000 new daily traffic trips - will be donated to the San Diego River Park Foundation for the creation of a public river park. The River Park Foundation's mission is to establish a park along the length of the river while restoring and enhancing the river, providing greatly needed community facilities and opportunities to learn about our region's rich history, encouraging stewardship of the riparian environment, and improving the lives of those that live, work and play in the area.

OFFICES

MISSION VALLEY

HIGH DENSITY RESIDENTIAL

MEDIUM DENSITY RESIDENTIAL

TROLLEY BRIDGE

TROLLEY STOP

Less than a 15-minute walk from all new homes.

Legend tells, Colrest the pirate hid his treasure map on a rock at Pool's Beach.

Birds to watch for: Puerto Rican Tody, Hispanola Parrot, Warbler, Thrasher and many hummingbird varieties.

Although the word Rincon means "Corner" or "Niche" and boasts the Municipality's geographic location, the area's name originates from Don Gonzalo Rincon, a 16th century Landowner who allowed various poor families to reside on his Land.

Events

atwatching ale Festival	January - April
Patricks Day Feast	March
Inflation	June
Ironclads Festival	August
ing Season	October - April
vest Moon	November
Weekend	December

Rinconans celebrate all US holidays along with Three in January & Puerto Rico Independence Day (Spain) on July 25

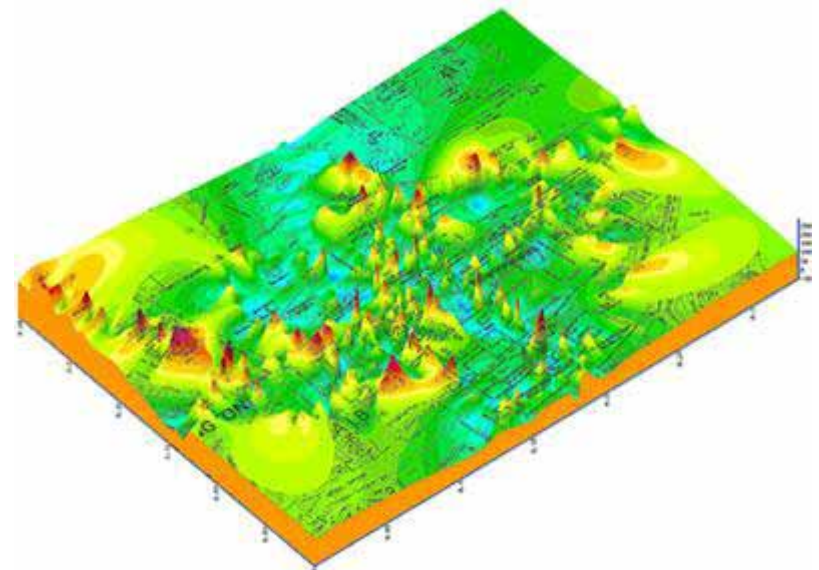
A special "Thank You" to Surf Rider for all their work on the Marine Preserve.

to ARF Volunteers for helping the stray animals in Rincon.

Monsters, dolphins, humpback whales, turtles and octopus are often seen in our waters.

Turtle nesting grounds can be found at Sandy Beach, Pool's Beach and Steps Beach.

BioMapping.net



Gawker's New York City Subway Smell Map



New York City Subway Smell Map

Introducing **Gawker's New York City Subway Smell Map**. Created from reports sent in by Gawker readers, the map displays particular smells – horrific and sublime – encountered throughout New York's subway stations. Mouse over any station to see the station name, subway lines, and types of smells to be found there. Click on any station for a popup with actual reader smell reports.

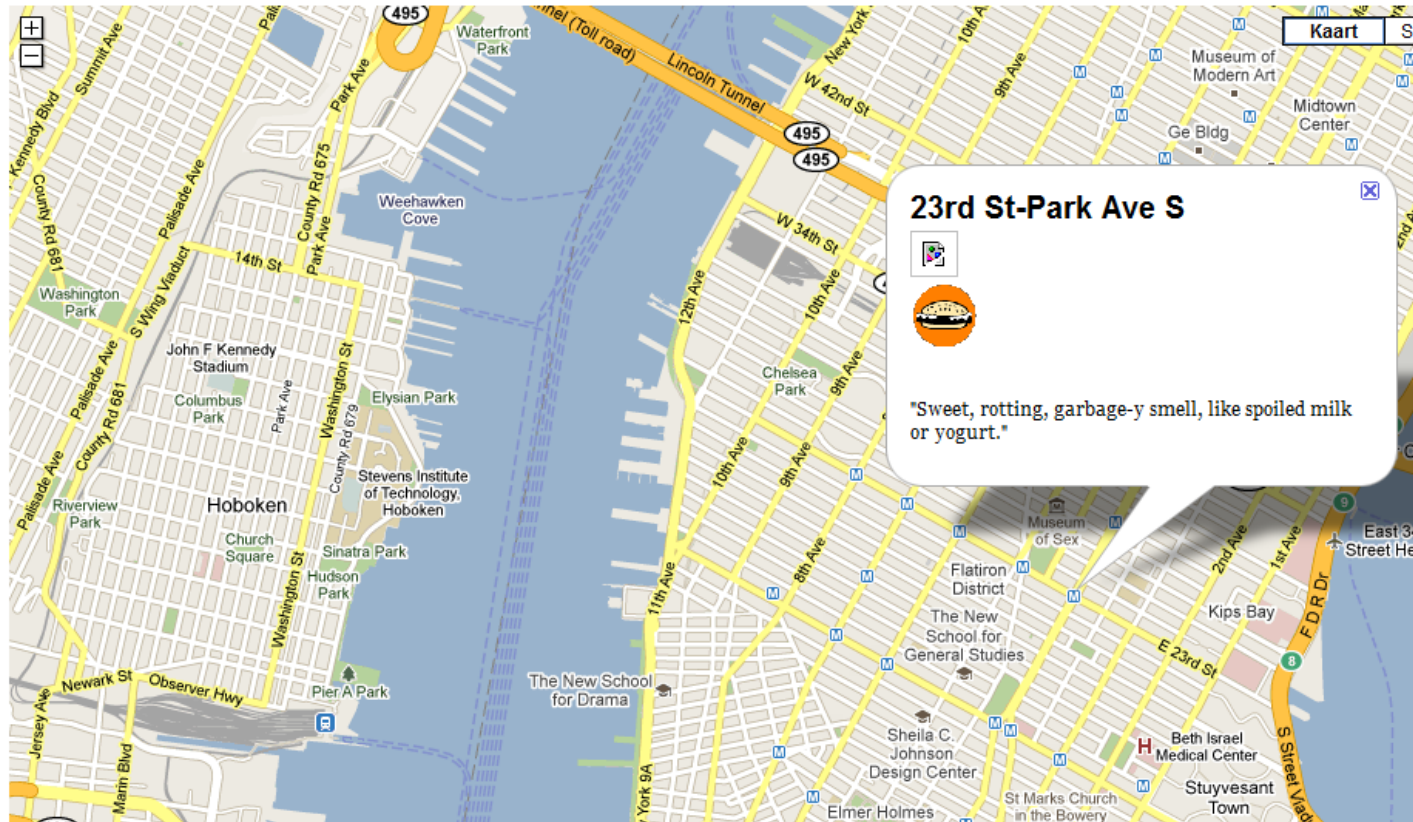
Smell something? Say something to subwaystink@gmail.com. Give us the station, subway line, and the smell you detected, and we'll incorporate your report into the map.

For more Gawker goodness, be sure to check out the [Gawker Stalker Map](#).

Smells of the City

- Alcohol
- Body Odor
- Chemicals
- Feces
- Food
- Mold & Wet
- Perfumes
- Sewage
- Urine
- Vomit

Subway map imagery provided by onnyturf.com. Visit the full-featured Subway Map at onnyturf.com/subway.



<http://gawker.com/maps/smell/>

Web 2.0 as a planning tool?



- § Web 2.0 is known for it's communication add-ons to the www.
- § Opportunity to interact live, including voice and image.
- § web-based communities such as social-networking sites, video sharing sites, wikis and blogs.

Web 2.0



- § Two way information access for the public
- § Feedback for decision makers
- § Assists transparency
- § Enables communities to **promote** their own plans

See Google Earth Communities

Opportunity knocks for PGIS



- § Community mapping provides inclusive graphic framework for people to affirm and pool their experiences & knowledge about home place.
- § Community Mapping relies on active engagement of participants.

see Google Earth Communities

Opening Discussion



- § what are the typical issues you are faced with when it comes to targeting vulnerability and inequality at city level?
- § Which are the typical areas where the most disadvantaged and vulnerable are located in the city?
- § Which tools do you use to identify these areas?

(Spatial) data availability



- § “Top-Down”
- § Mostly highly aggregated
- § Census data
- § Administrative data with geo reference
- § Sometimes available online

- § A few examples:

UrbanInfo / DevInfo

DevInfo 6.0 - DI6 - UrbanInfo v2

Database: DI6 - UrbanInfo v2 | mexico

Sector: [Dropdown]

Sector Tree:

- Demography
- Disaster
- Economy
- Education
- Environment
- Health
- Housing
 - Communication
 - Durability
 - Energy
 - Living area
 - Sanitation
 - Water
- Migration
- Nutrition
- Safe Cities
- Transport

Indicator Search: [Search Box]

Available (6)		Selected (1)		
Indicator	Unit	Indicator	Unit	Subgroup
<input type="checkbox"/> Proportion of households with access to electricity	Percent	<input checked="" type="checkbox"/> Proportion of population ...	Percent	Total
<input type="checkbox"/> Proportion of households with access to telephone	Percent			
<input type="checkbox"/> Proportion of population with access to improved sanitation	Percent			
<input type="checkbox"/> Proportion of population with sustainable access to an improve...	Percent			
<input type="checkbox"/> Proportion of urban population with durable housing	Percent			
<input type="checkbox"/> Proportion of urban population with sufficient living area	Percent			

UrbanInfo / DevInfo

di Data Wizard

di **Data Wizard** Facts. You decide.

Take a Tour

Learn your way around in just a few minutes

Database: DI6 - UrbanInfo v2.mdb

Data

di Database DI6 - UrbanInfo v2

I-U-S 400 Indicator 94 Area 17,426 Area Level 5 Time Period 54 Source 13 Data 36,696
Last updated 2/15/2010

Select Indicator

Select Area

di Gallery

Tables, Graphs and Maps

This gallery contains a collection of pre-designed tables, graphs and maps that can be copied and pasted into documents and presentations.

About Us Powered by DevInfo



UrbanInfo / DevInfo > Google Earth

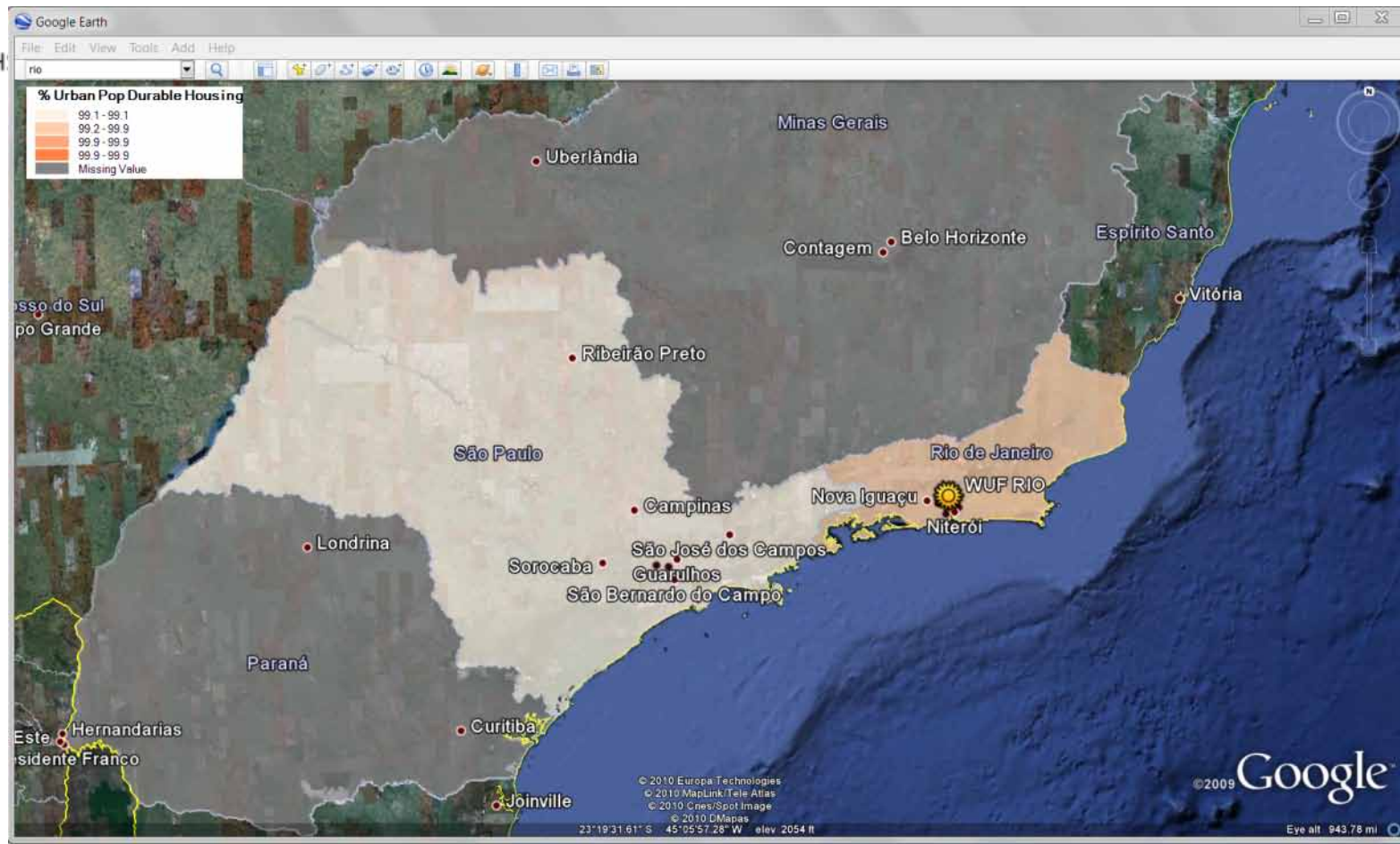


UrbanInfo / DevInfo > Google Earth

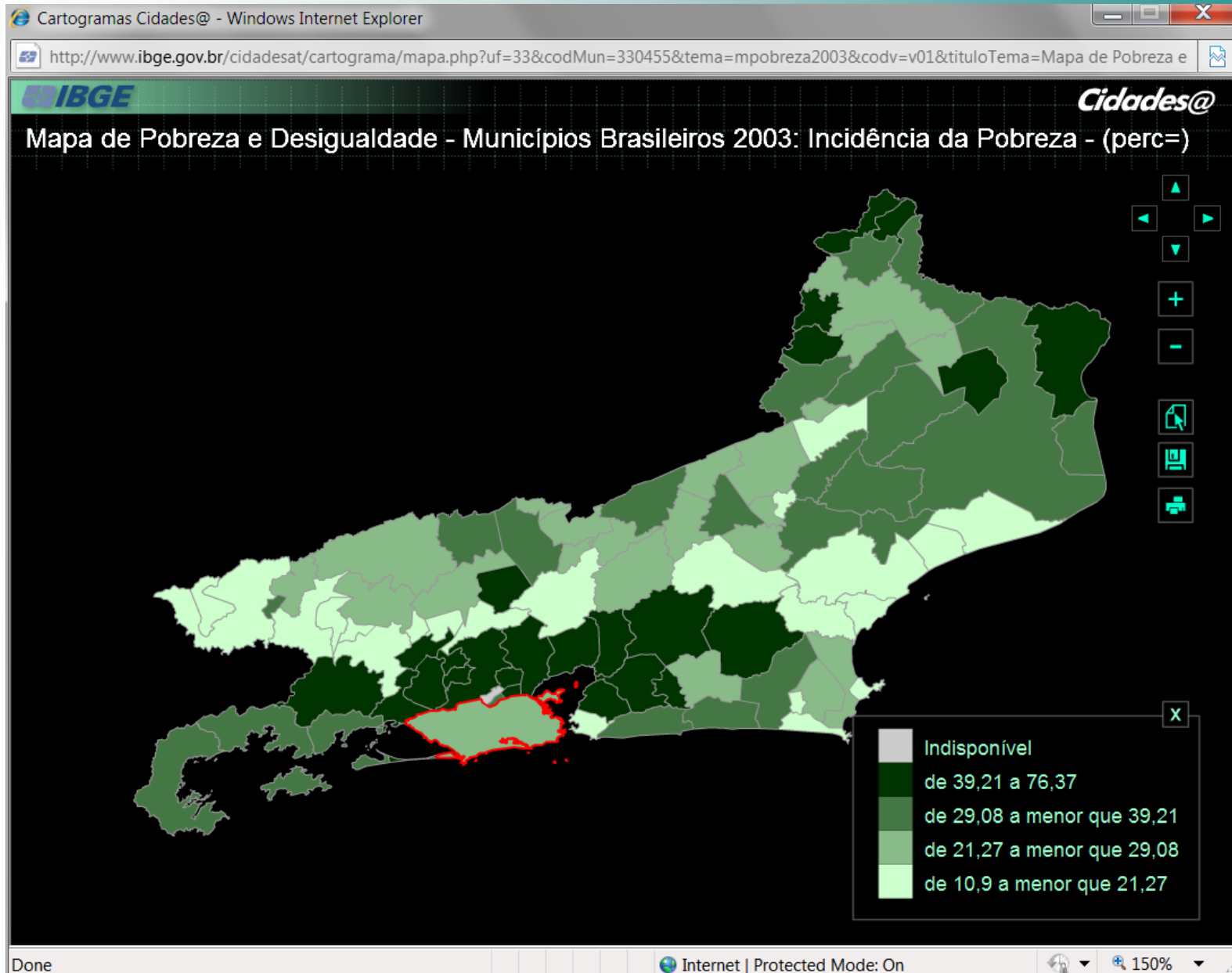
Area Name	Proportion of households with access to electricity	Proportion of population with access to improved sanitation	Proportion of population with sustainable access to an improved water source	Proportion of urban population with durable housing	Proportion of urban population with sufficient living area
	Total	Total	Total	Total	City
Rio De Janeiro	99.60	83.50	89.40	99.90	89.70

Source

UN-Habitat_DH



Web applications (IBGE)



Web applications (www.cidades.gov.br)



DÉFICIT HABITACIONAL
MUNICÍPIOS SELECIONADOS EM MICROREGIÕES GEOGRÁFICAS

DÉFICIT HABITACIONAL

- Estoque de Domicílios
 - Domicílios Particulares Permanentes e Domicílios Vagos - 2000
 - Domicílios Particulares Permanentes em Aglomerados Subnormais - 2000
 - Domicílios Urbanos, por Faixas de Renda Mensal Familiar - 2000
- Déficit Habitacional Básico
 - Estimativas do Déficit Habitacional Básico (1) - 2000
 - Estimativas dos Componentes do Déficit Habitacional Básico (1)
 - Participação dos Componentes no Déficit Habitacional Básico (1)
 - Participação dos Componentes no Déficit Habitacional Básico (1)
 - Coabitação Familiar e Domicílios Improvisados Urbanos, por Faixas de Renda Mensal Familiar - 2000
 - Componentes do Déficit Habitacional Urbano Básico (1) em Aglomerados Subnormais - 2000
- Domicílios Improvisados
 - Domicílios Improvisados, por Situação do Domicílio - 2000
 - Domicílios Urbanos Improvisados, por Faixas de Renda - 2000
- Coabitação Familiar
 - Famílias Conviventes, por Situação do Domicílio - 2000
 - Famílias Conviventes Urbanas, por Faixas de Renda - 2000
 - Cômodos (1), por Situação do Domicílio - 2000
 - Cômodos (1) Urbanos, por Faixas de Renda - 2000
- Domicílios Rústicos
 - Estimativas dos Domicílios Rústicos, por Situação do Domicílio - 2000
- Domicílios Alugados
- INADEQUAÇÃO DOS DOMICÍLIOS
 - Totais da Inadequação
 - Inadequação dos Domicílios Urbanos - 2000
 - Inadequação dos Domicílios em Aglomerados Subnormais - 2000
 - Inadequação Fundiária Urbana
 - Características da Inadequação Fundiária Urbana (1) - 2000
 - Inadequação Fundiária Urbana (1), por Faixas de Renda - 2000
 - Adensamento Urbano Excessivo
 - Características do Adensamento Urbano Excessivo (1) - 2000
 - Adensamento Urbano Excessivo (1), por Faixas de Renda - 2000
 - Domicílios Urbanos Sem Banheiro
 - Carência de Infra-Estrutura Urbana
 - Domicílios Urbanos Adequados
- DIVISÃO POLÍTICO-ADMINISTRATIVA EM 2000

Inadequação dos Domicílios em Aglomerados Subnormais - 2000
DOMICÍLIO SEM BANHEIRO (1) - percentual

Região Metropolitana:
R.M. Rio de Janeiro

Mapa de:
Município

Legenda:

Cor/De	Ate
0.00	a 0.30
0.31	a 0.59
0.60	a 1.18

DÉFICIT HABITACIONAL
MUNICÍPIOS SELECIONADOS EM MICROREGIÕES GEOGRÁFICAS

DÉFICIT HABITACIONAL

- Estoque de Domicílios
 - Déficit Habitacional Básico
 - Domicílios Improvisados
 - Coabitação Familiar
 - Domicílios Rústicos
 - Estimativas dos Domicílios Rústicos
 - Domicílios Alugados
- INADEQUAÇÃO DOS DOMICÍLIOS
 - Totais da Inadequação
 - Inadequação dos Domicílios Urbanos - 2000
 - Inadequação dos Domicílios em Aglomerados Subnormais - 2000
 - Inadequação Fundiária Urbana
 - Adensamento Urbano Excessivo
 - Domicílios Urbanos Sem Banheiro
 - Carência de Infra-Estrutura Urbana
 - Domicílios Urbanos Adequados
- DIVISÃO POLÍTICO-ADMINISTRATIVA EM 2000

Inadequação dos Domicílios Urbanos - 2000
ADENSAMENTO EXCESSIVO (1) - % dos domic. urbanos

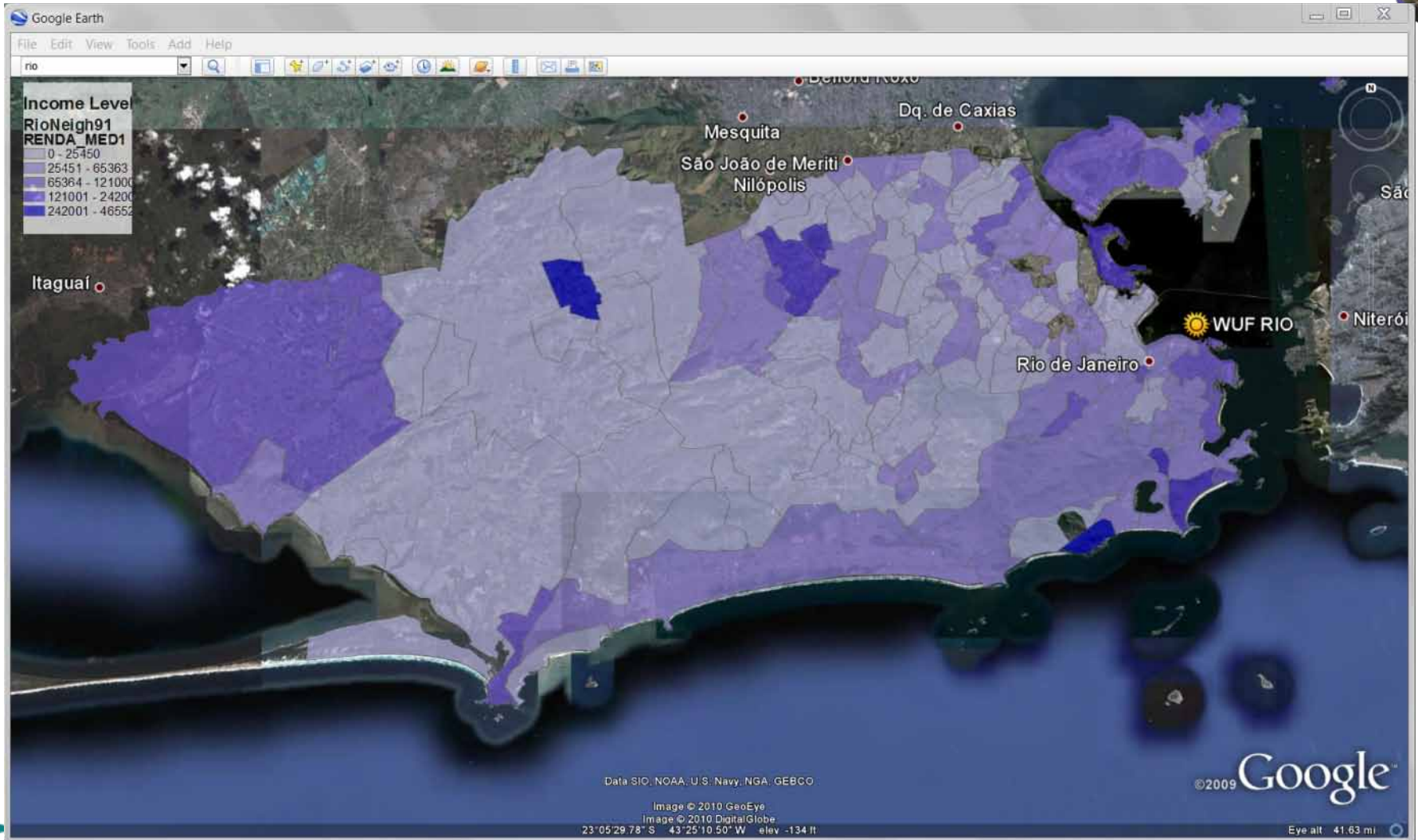
Mapa de:
Região

Legenda:

Cor/De	Ate
0.00	a 0.20
0.21	a 0.40
0.41	a 0.80
0.81	a 1.60
1.61	a 3.21
3.22	a 5.88
5.89	a 10.78
10.79	a 19.76

Atualizar Mapa

Census data (source: IBGE)



Participatory mapping and Information Technology:

Using free ware to support spatial mapping of Inequity and Vulnerability



Basic data can be collected at local level using friendly IT tools and community-based approaches



CyberTracker Software Features

CyberTracker Screen Designs

CyberTracker is the most efficient way to gather large quantities of geo-referenced data for field observations at a speed and level of detail not possible before. Observations can be entered with a simple Radio List or a Check List.



Type of Survey	
Start	
Population Survey	
Medical Survey	
Camp Reports	
Township Survey	
Social Survey	
Stop	

Navigation icons: a black circle, a yellow triangle, two yellow arrows pointing down, and a yellow right-pointing arrow.



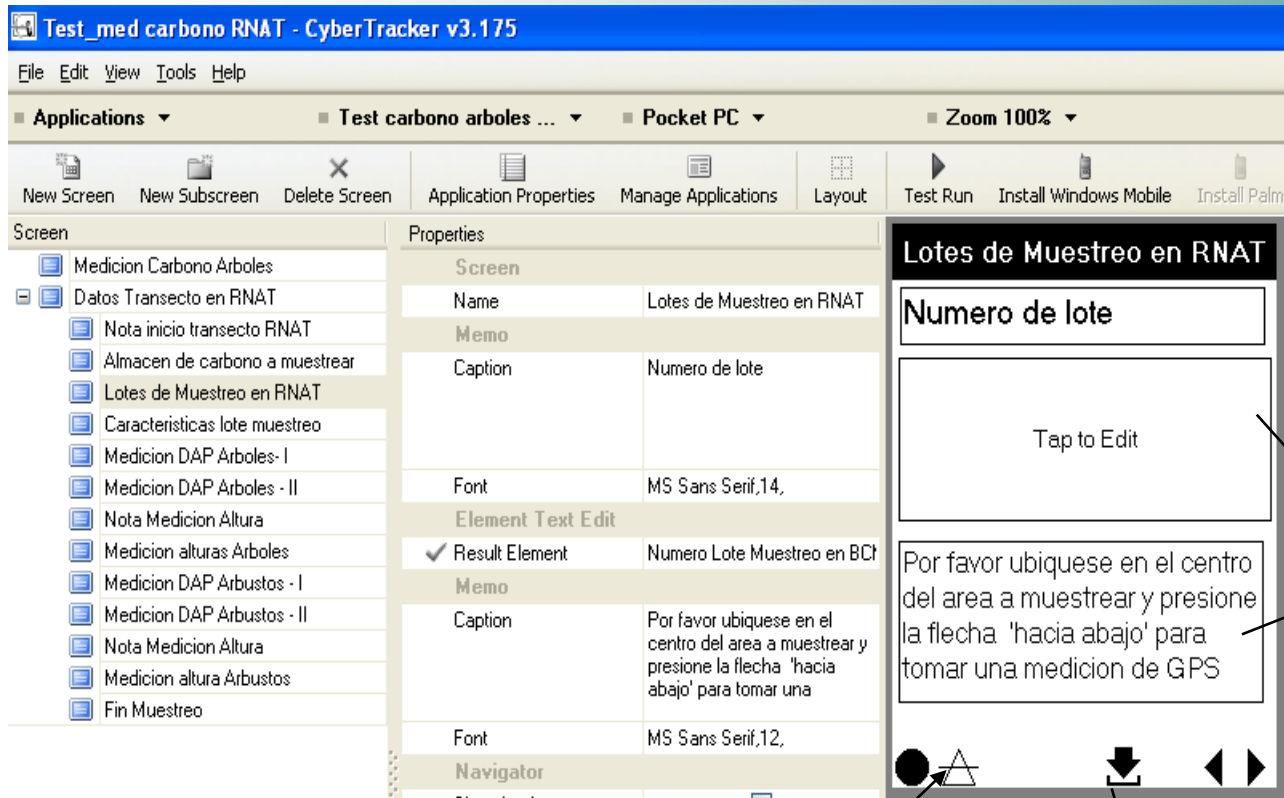
Check List	
<input type="checkbox"/>	Well nourished
<input type="checkbox"/>	Under nourished
<input type="checkbox"/>	Malnourished
<input type="checkbox"/>	Disabled
<input checked="" type="checkbox"/>	Injured
<input type="checkbox"/>	Diseased
<input type="checkbox"/>	Malaria
<input type="checkbox"/>	Other

Navigation icons: a black circle, a yellow triangle, two yellow arrows pointing down, and a yellow right-pointing arrow.

Free Software that can be used in an IPAQ or smart phones for collecting several types of data

CyberTracker enables to conduct **geo-referenced (rapid) surveys** to identify diverse phenomena and its location

Some screen features that support (geo-referenced) data capture



Panels to post information/reminders useful for the data capture process

GPS

Saving geo-referenced information for point location (i.e plot central trees)

Reports: Tables and views to assist displaying and manipulation of data



safety_RNAT_SJB - CyberTracker v3.175 - [Query Editor]

File Edit View Tools Help

Reports Report 1 Query 1 Query Editor

New Query Delete Query Delete Sighting(s) Add Photo New View Delete View View Properties Export View Manage Reports Applications

Query 1

Properties

Name Query 1

Date range All

Date from 1/1/1980

Date to 8/13/2009

Inspector

4 of 9

Double-click below to create column

Date	5/8/2009
Time	11:04:40
Latitude	19.4438883333333
Longitude	-102.056198333333
Altitude	1859.4
Accuracy	1.1
Estrato arboreo	<input checked="" type="checkbox"/>
RNATL1_Arbol	14
RNATL1_Arbol	11
RNATL1_Arbol	11
RNATL1_Arbol	14
RNATL1_Arbol	14
RNATL1_Arbol	15
RNATL1_Arbol	15
RNATL1_Arbol	16
RNATL1_Arbol	11

No Filter

Date	Time	Latit
5/8/2009	10:36:21	
5/8/2009	10:44:11	19.4
5/8/2009	10:46:02	19.4
5/8/2009	11:04:40	19.4
5/8/2009	11:23:01	19.4
5/8/2009	12:10:18	19.4
5/8/2009	12:18:59	19.4
5/8/2009	12:23:36	19.4
5/8/2009	12:25:03	19.4

localiza_SJB - CyberTracker v3.175 - [Map 8]

File Edit View Tools Help

Reports Report 1 Query 1 Map 8

New Query Delete Query Delete Sighting(s) Add Photo New View Delete View View Properties Export View Manage Reports Applications

Move point Field map Clean paths

Render

Point Path Grid

All queries

Timer points

Legend

Query 1 ● Point

Inspector

8 of 29

Date	4/27/2009
Time	10:38:04
Latitude	19.4474083333333
Longitude	-102.054595
Altitude	1953
Accuracy	0.9
Nota limite	
Accion de mapeo	Nota de campo
Nota de campo	fin brecha cortafuego

Record 8 of 29

Community Mapping & Profiling: Perception of hazards, vulnerabilities and capacities from different groups (Colombia)



Mapping of hazards: Transects with IPAQS & Cybertracker for identifying coastal erosion, hazardous infrastructure and environmental threats (Colombia)

Hazards

Coastal Erosion



Contamination by Coal Dust



Waste Dumping



Exposed Gas Pipe



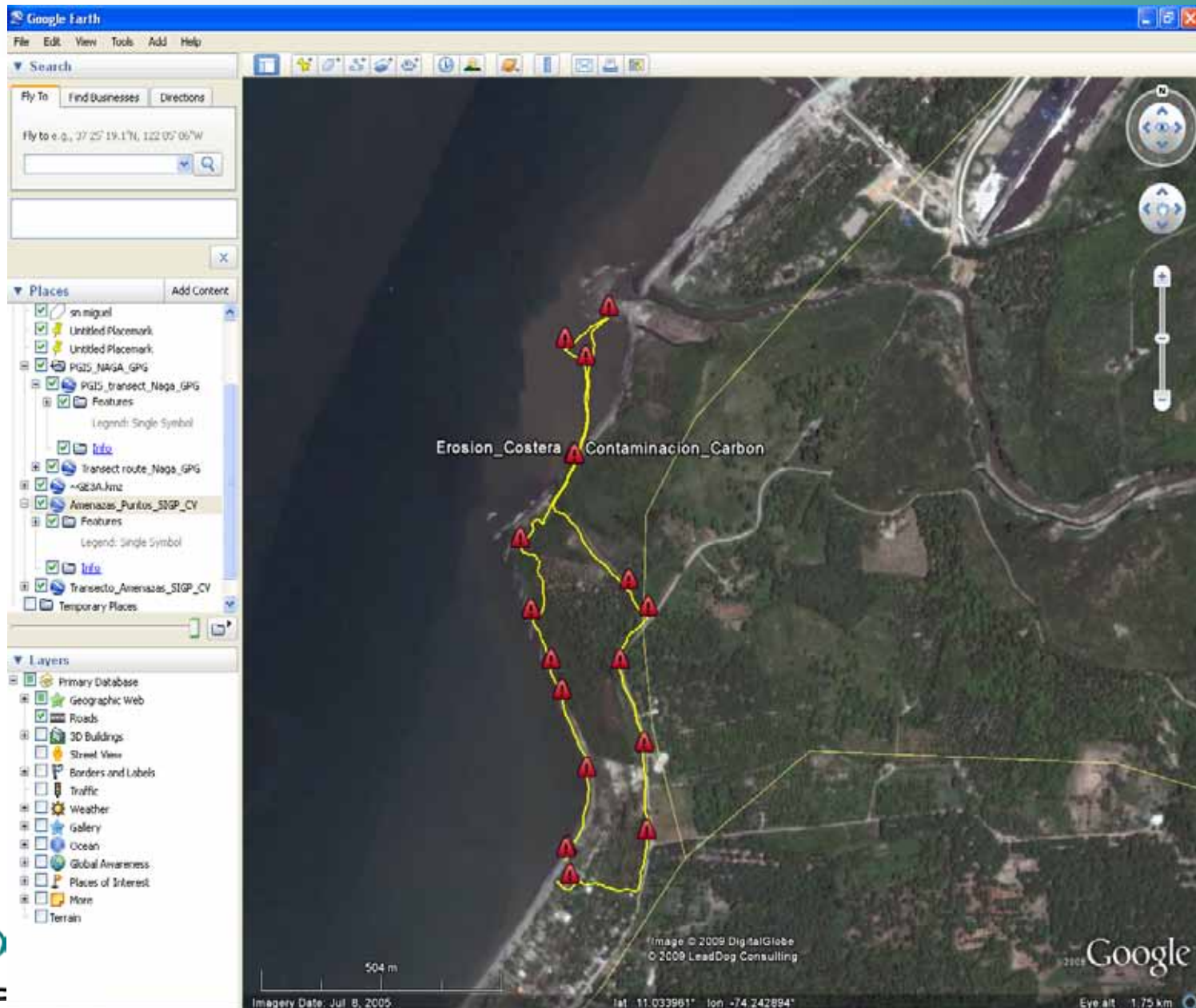
Flooding



Other



Mapping of hazards: Hazard-prone areas identified while transecting and discussing with local people displayed in Google Earth



Practical Exercise: Transecting & Mapping Perception of Urban Quality at local level using Cybertracker



Indicators of Urban Public and Environmental Quality

- Quality of the Building Environment
 - Quality of Public Open Space
 - Perception of Pedestrian Safety
- Environmental Quality of Open Space

Practical Exercise: Transecting & Mapping Perception of Urban Quality at local level using Cybertracker

Step 1. Screens for general data

Mapping Environmental Quality of Open Space

This sequence is aimed at identifying elements of the urban environment that may indicate equal access to quality of life and safe environment in the city

please press the arrow ('next') to continue with the data capture.

● ▲ ▶



Identification

Please enter the name of the person capturing the data, the name of the community/ neighborhood/ street and any other geographic data you find relevant for the exercise.

Tap to Edit

● ▲ ▶



Step 2. Screens for setting a timer for geo-referenced track









The image shows two screenshots from a mobile application. The left screenshot is titled 'Mapping Actions' and lists several options: 'Mapping by car' (with a car icon), 'Transect by walking' (with a person icon), 'Pause' (with a pause icon), 'Indicators' (with a magnifying glass icon), 'End of mapping' (with a black circle icon), and 'Field Note' (with a notepad icon). A red arrow points from the 'Mapping by car' option to the right screenshot. The right screenshot is titled 'Inicio de mapeo' and shows a list of timer options: 'Off', '1 second', '5 seconds', '10 seconds', '30 seconds', '1 minute', '2 minutes', '3 minutes', and '5 minutes'. Each option is accompanied by a small triangle icon with the corresponding time or unit. At the bottom of the right screenshot, there is a navigation bar with a black circle, a triangle, and left and right arrow icons.

Option 1: The user defines the time span



Option 2: using a pre-defined time span





Mapping Actions


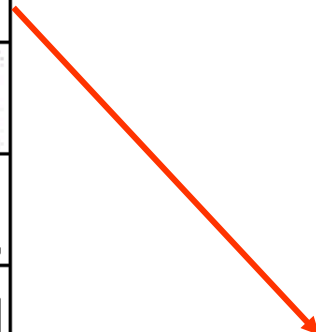
- Mapping by car 
- Transect by walking 
- Pause 
- Indicators 
- End of mapping 
- Field Note 


Mapping by car

- Off 
- 1 second 

Transect by walking

- Off 
- 5 seconds 

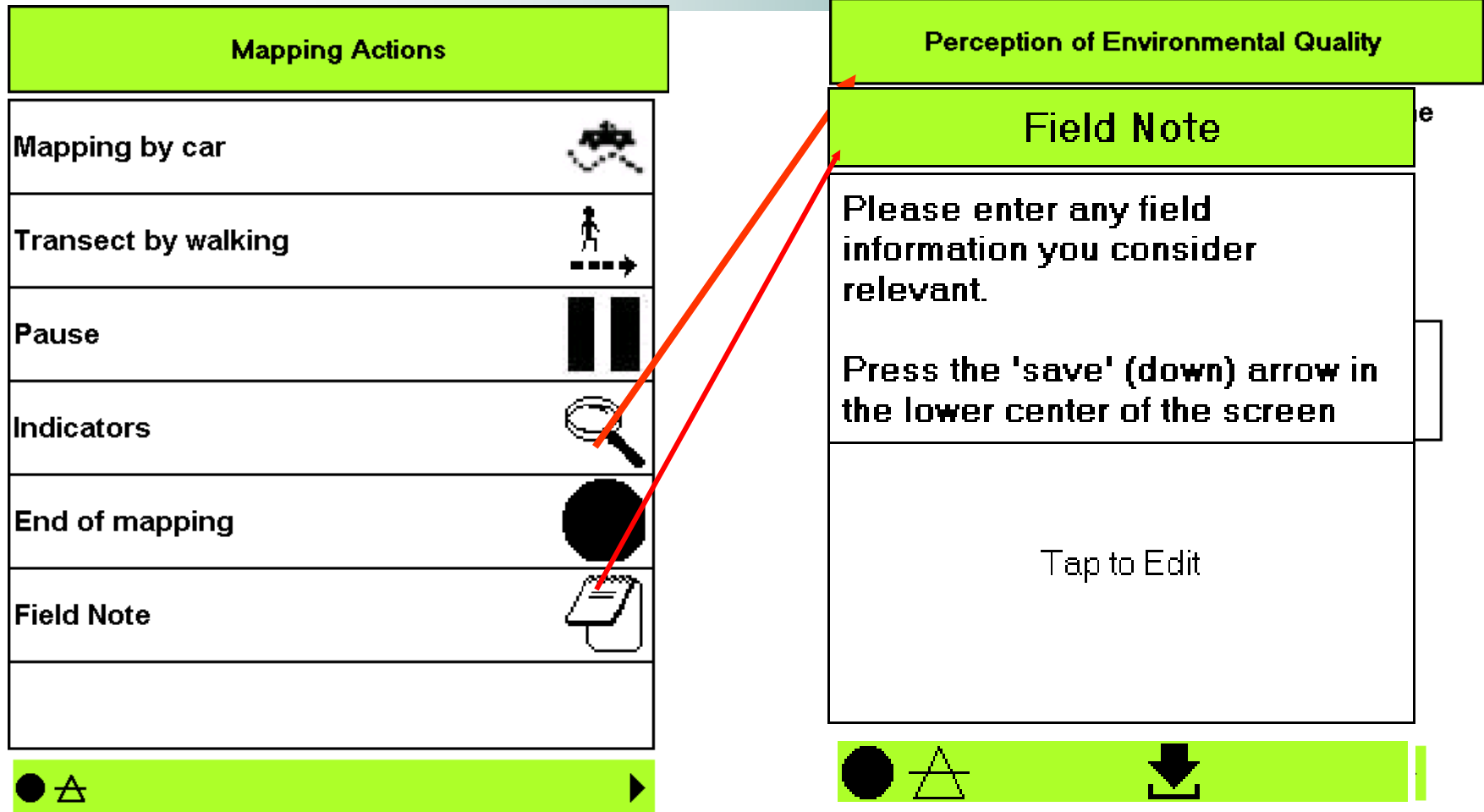





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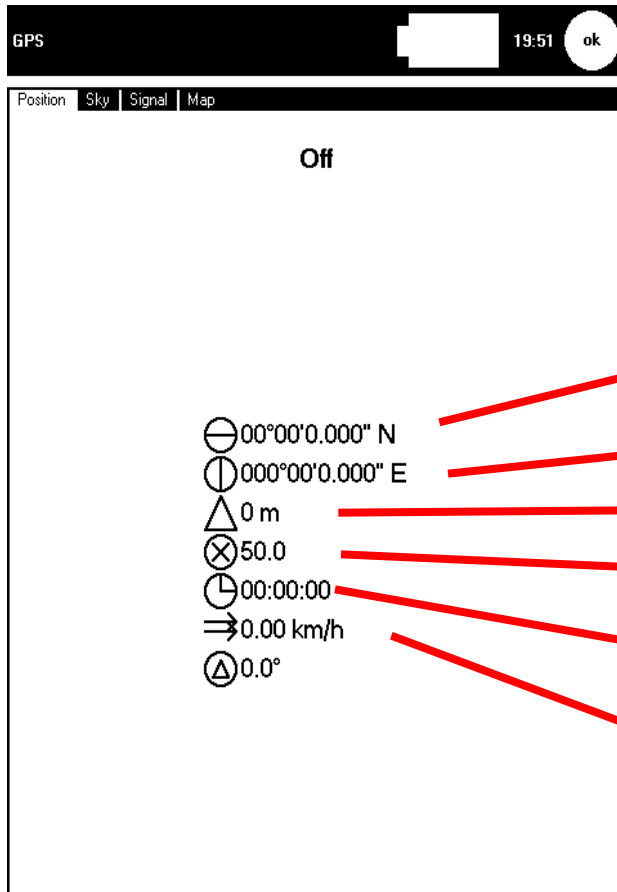
● ▲ ▶

Step 3: Mapping of perception status at community level



Save geo-referenced field notes for point location

Step 4A: Verification of Geo-referenced data Acquisition while transecting



Latitude

Longitude

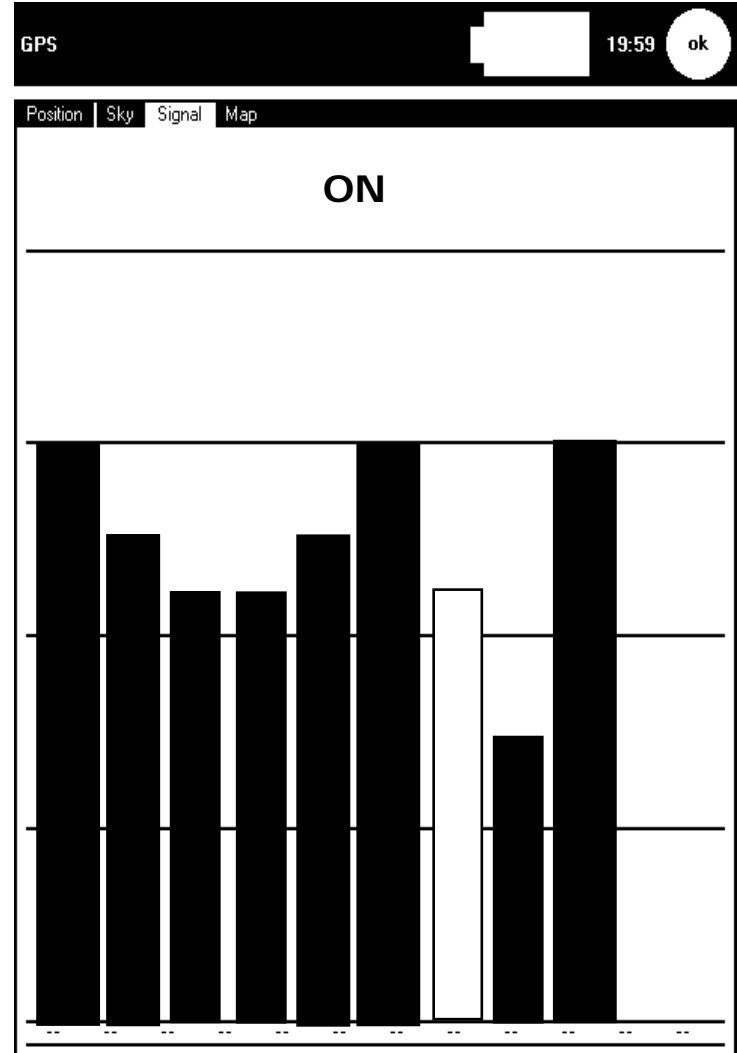
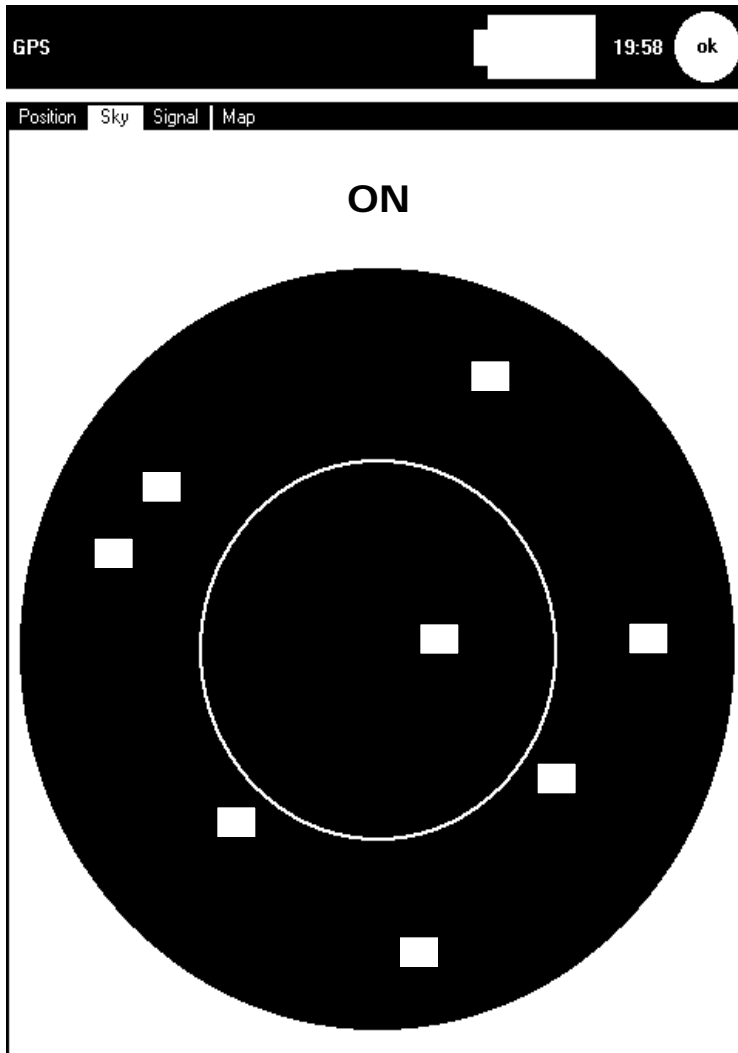
Altitude a.s.l.

GPS Precision

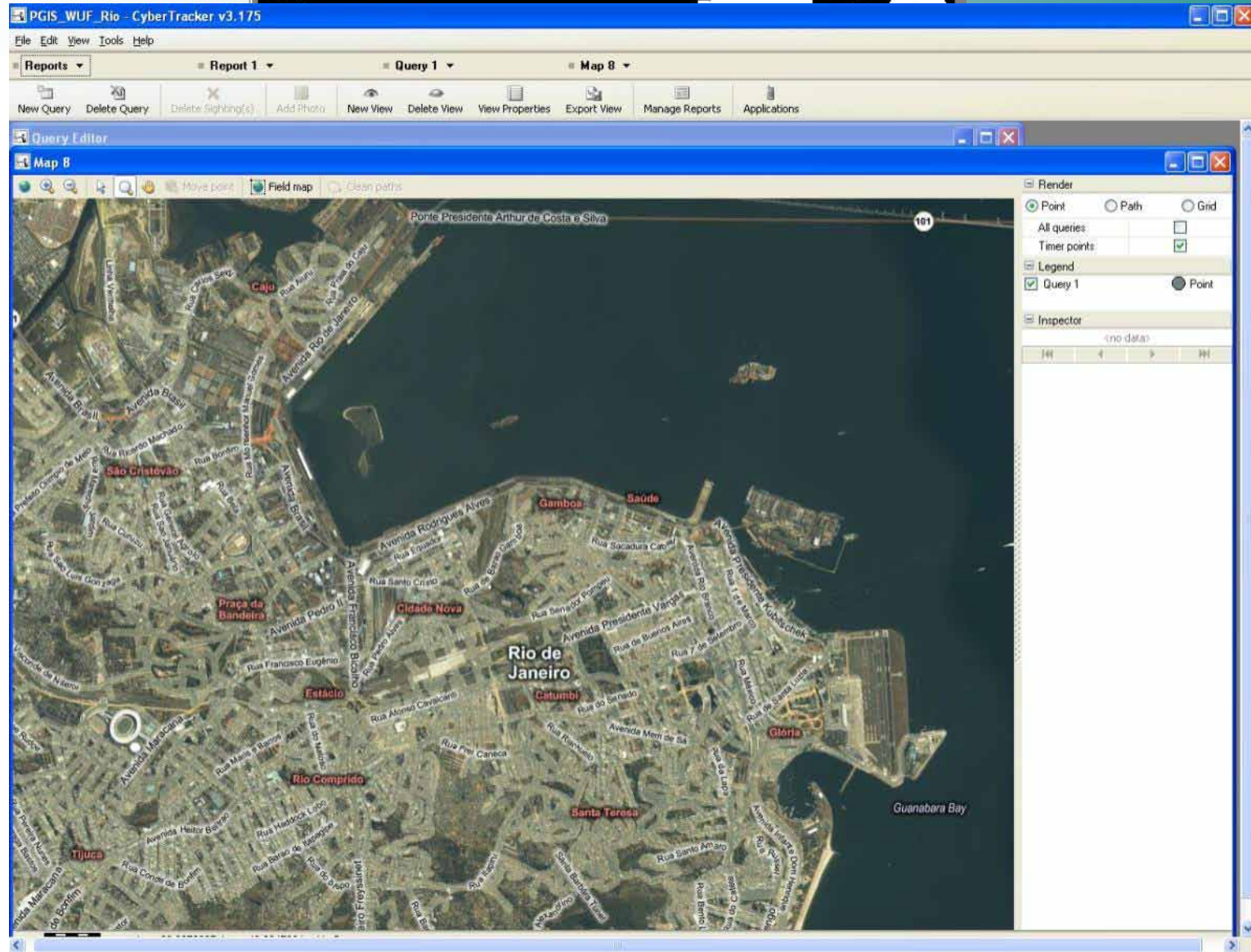
Local Time (user must set it before synchronising PC with PA).

Tracking Velocity (km/h)

Step 4B: Verification of satellite status

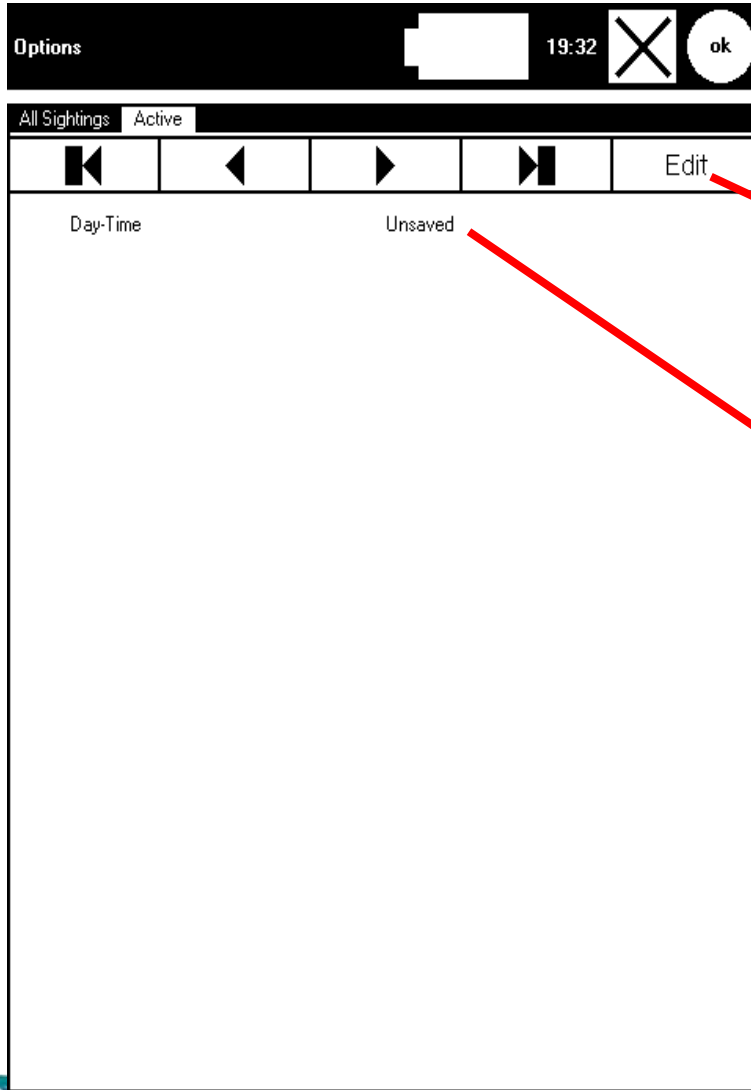


Step 4C: Verification of location



Fieldwork map of WUF Venue
Fieldwork map at different scales

Step 5: Checking and editing data during fieldwork



Editing of data input

verification of data input

Introduction to transect walk



- § 10 groups of max. 4 participants
 - § Group 1 + 2 / Building quality
 - § Group 3 + 4 / Public space quality
 - § Group 5 + 6 / Perception of pedestrian safety
 - § Group 7 + 8 / Environmental-open space quality
 - § Group 9 + 10 / Perception of pedestrian safety (gender)

- § 1 facilitator per 3/4 groups

- § Duration: 30 minutes

- § Instruments for the transect:
 - § PDAs / GPS (Digital Camera optional)

Participatory transect walk area





WUF entrance

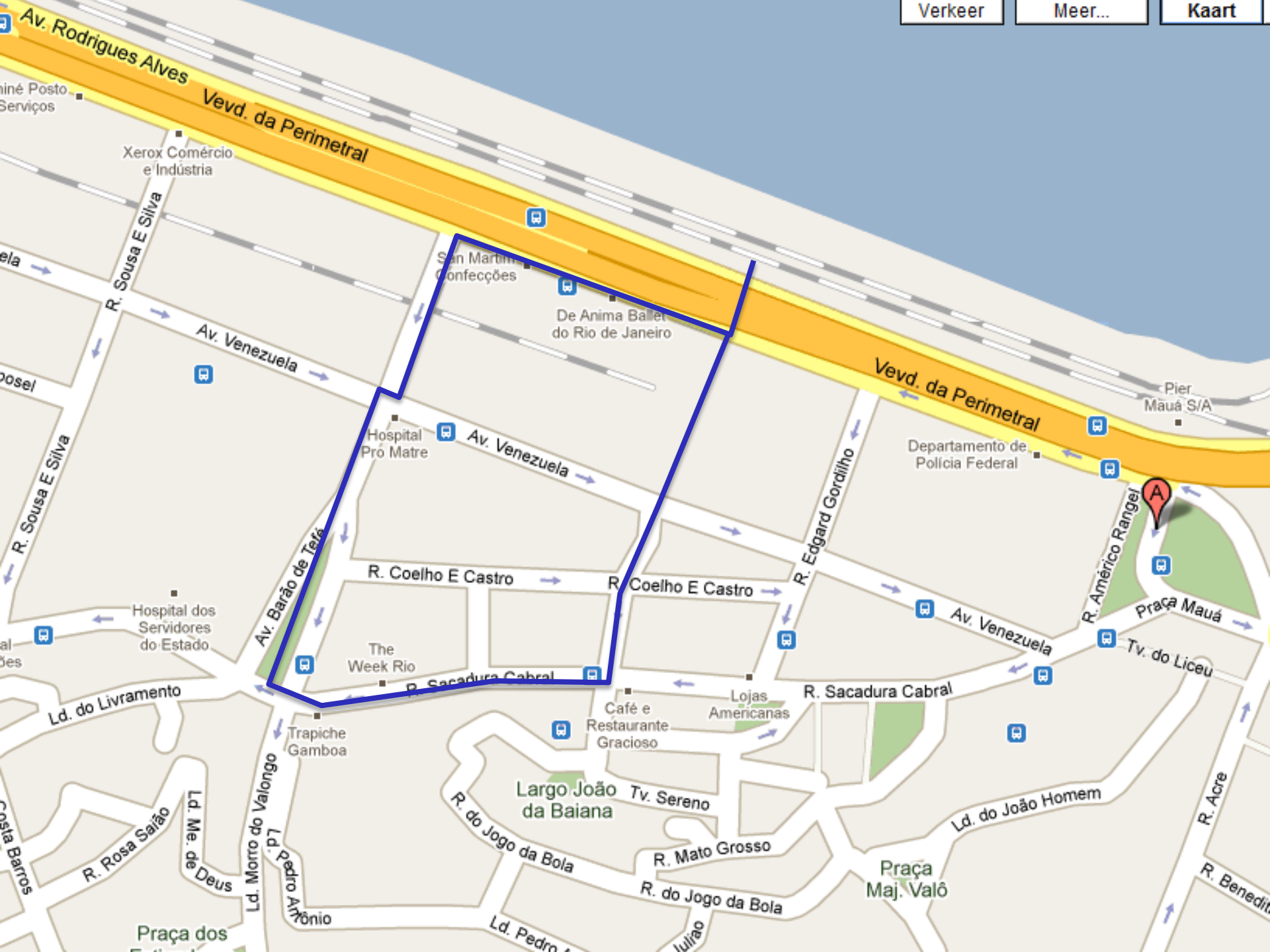


Participatory transect walk area



Participatory transect walk area





Tips for transect walk



Dynamic of the transect

§ Walk > Observe > Stop > Input Data > Walk

When to stop?

- § Distance: regularly (at least every 200 meters)
- § Time: regularly (at least every 5 minutes)
- § Object: change in conditions (natural breaks)
collect 4 to 5 points in total

What to observe?

- § Mostly concentrate on the issues related to the group topic and indicators

Download data from Cybertracker



- § Steps for downloading the transect data:
1. Connect PDA to your computer
 2. Open cybertracker software
 3. Go to reports and export to Shapefile format
 4. Export Shapefile to Google Earth format (KML)
 5. View file in Google Earth

Results from transect walk



Demo Google Earth / Street View



- § Visualize in Google Earth the Data downloaded from Cybertracker
- § Possibilities to overlay more info
 - § Compare multi-temporal images
 - § Census data
 - § How to create new data: polygons and point
 - § No time?

Virtual Transect using Street View ...



Exercise / Hands On Google Earth



Virtual Transect Walk

- § Open Google Earth
- § Fly to Iztapalapa, Mexico DF
- § Which indicators from the transect walk can work with Google Earth and StreetView?

Exercise / Hands On Google Earth



Social and economic conditions

- § Total population
- § Population younger than 24 yrs
- § Population not born in D.F.
- § Education level of population above 15 years old
- § Unemployment level
- § Income level in minimum monthly wage

Physical conditions

- § Quality of wall and roof
- § Access to infrastructure (water, sewage, electricity)
- § Toilet within the dwelling unit
- § environmental quality and public space quality

Exercise / Hands On Google Earth



Virtual Transect Walk

- § Open the “Indicators” folder (under Places)
these contain official census data
- § Have a look at these 12 layers and zoom in to the different classes
- § Try to find indicators in Google Earth (using StreetView) that are evidence of the class differences in the map overlays

Exercise / Hands On Google Earth



- § Do you think that both sources of information complete each other?
- § What are reasons for discrepancy?

Group and plenary discussion



- § How will you apply the skills obtained to bridge the gap between different inequality and vulnerability aspects?
- § Which decision-making processes would benefit most from the methods you learned?
- § What are the limitations of these methodologies?

Closing / further resources



§ Next steps

www.itc.nl

www.iapad.org

www.devinfo.org

www.cybertracker.org

Please fill in the evaluation form!



Photo: © Gerard Kuster



Photo: © Bart krol

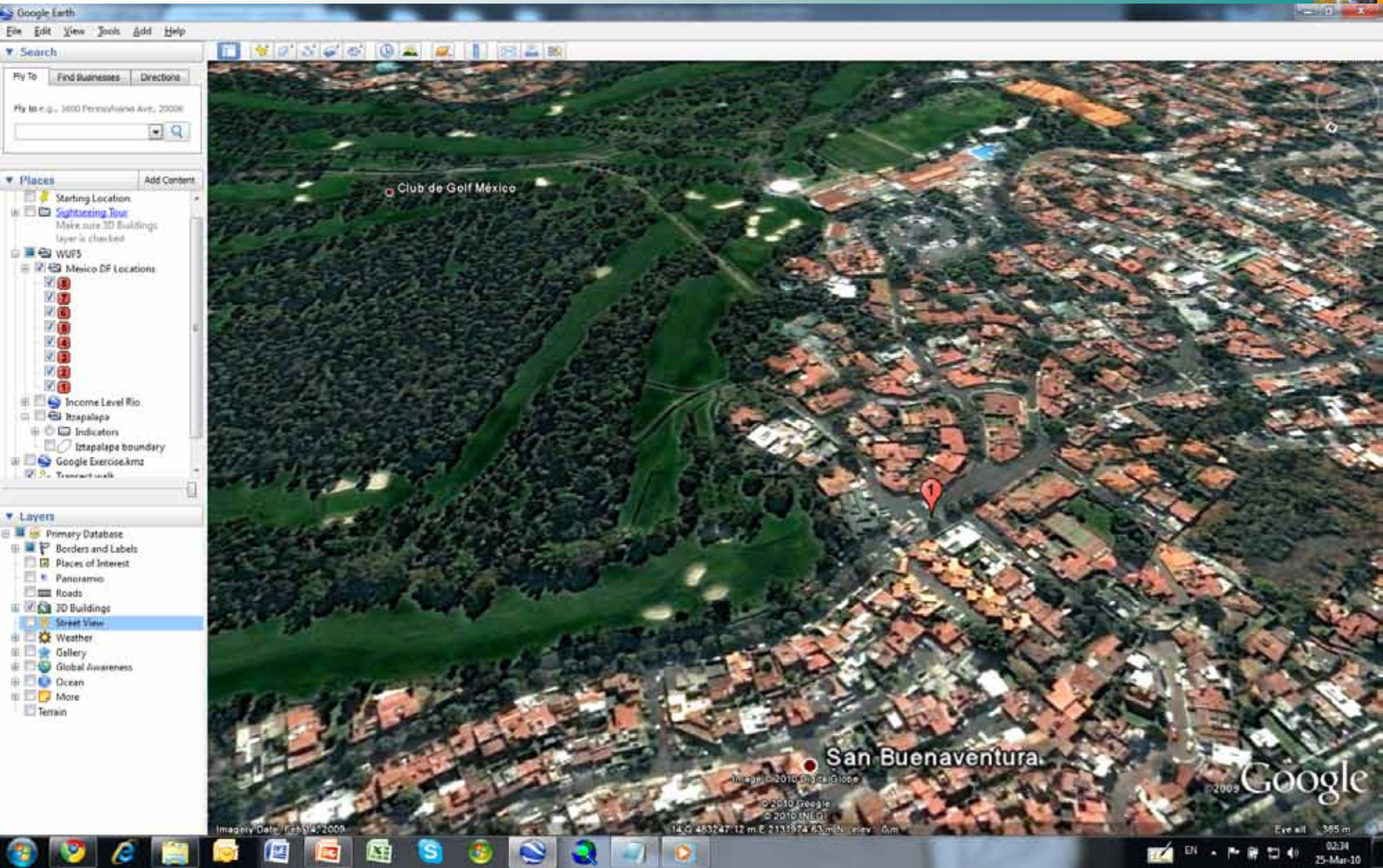
The end
Thank you!



Photo: © Gerard Kuster



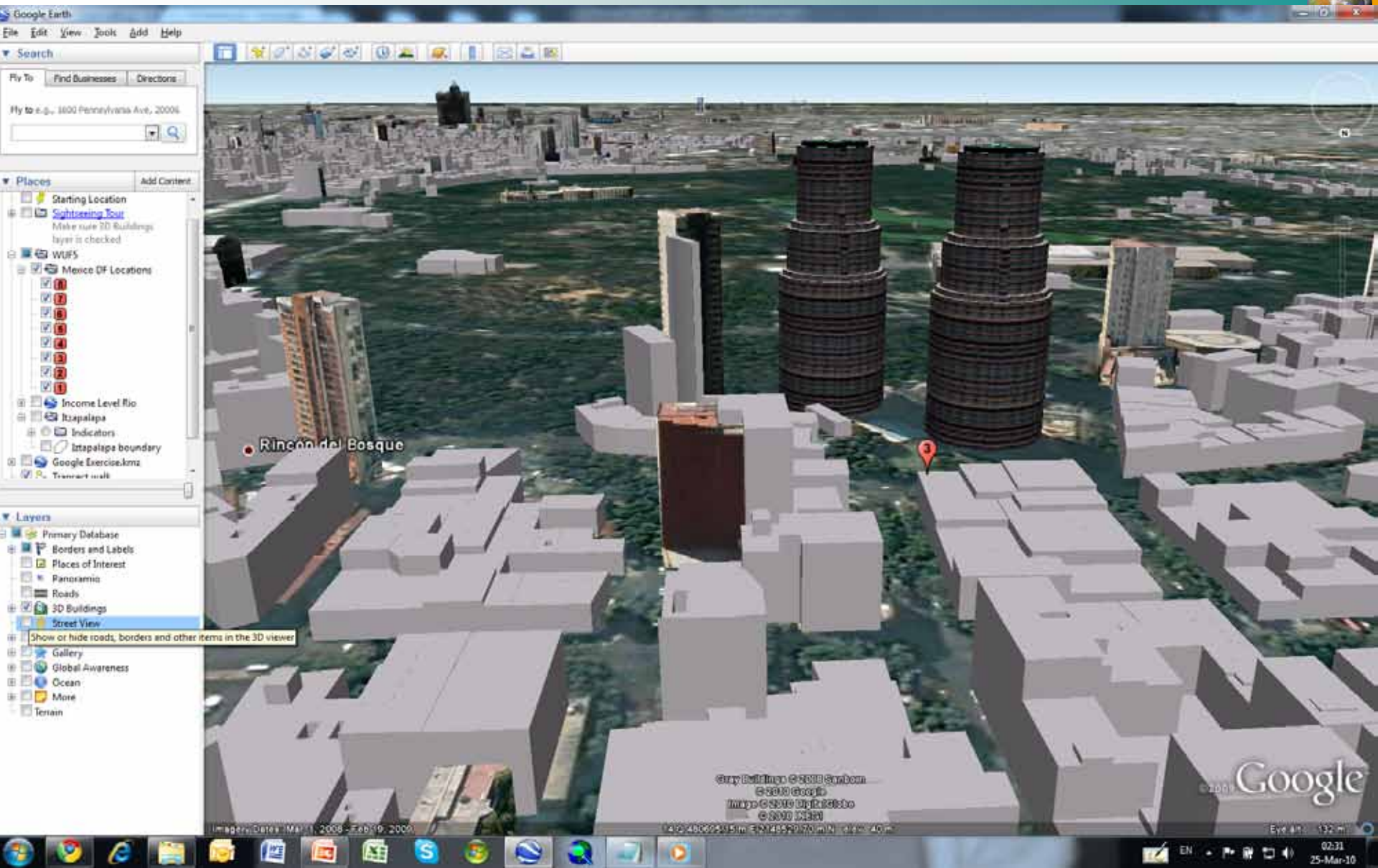
Google Earth Demo



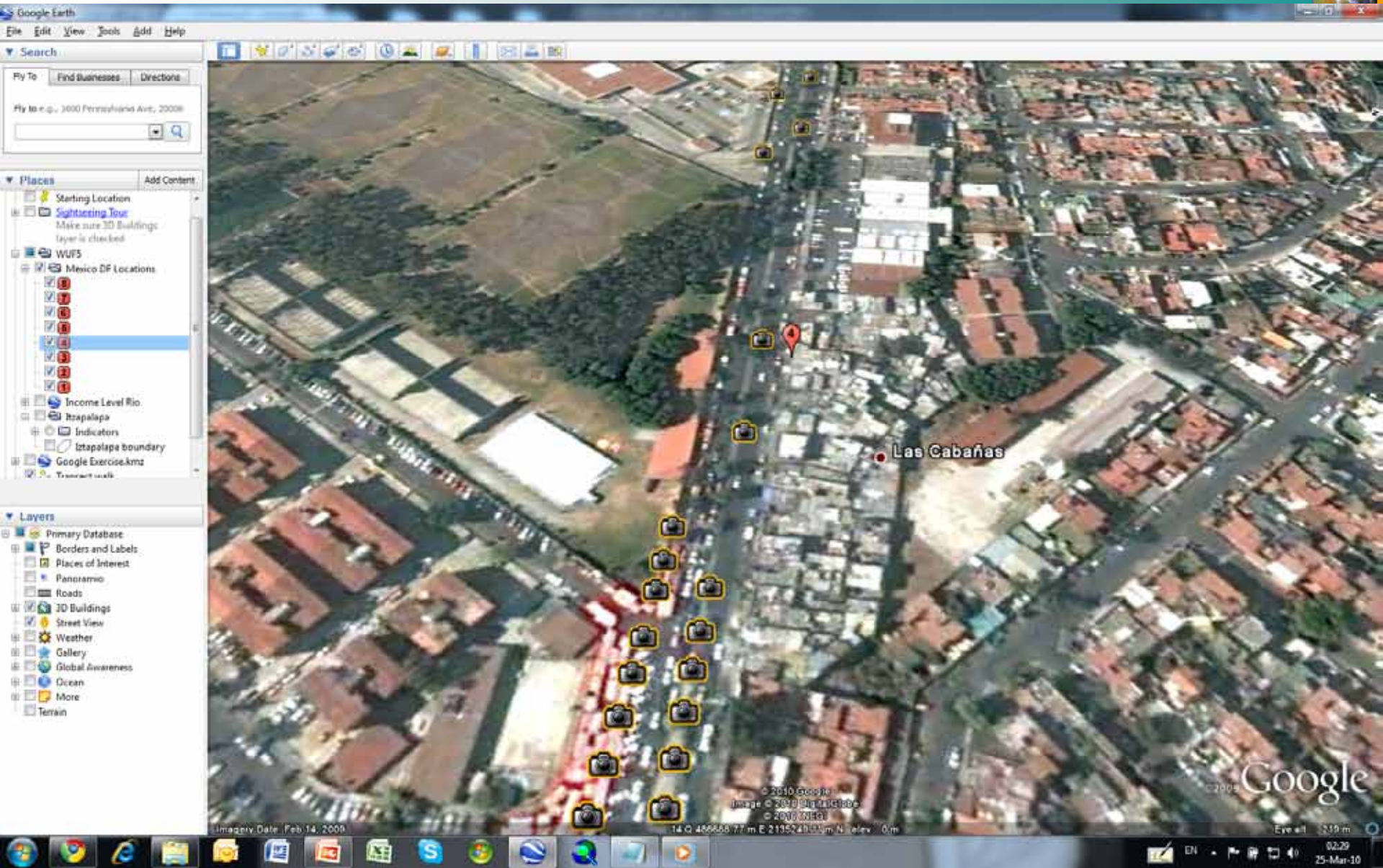
Google Earth Demo



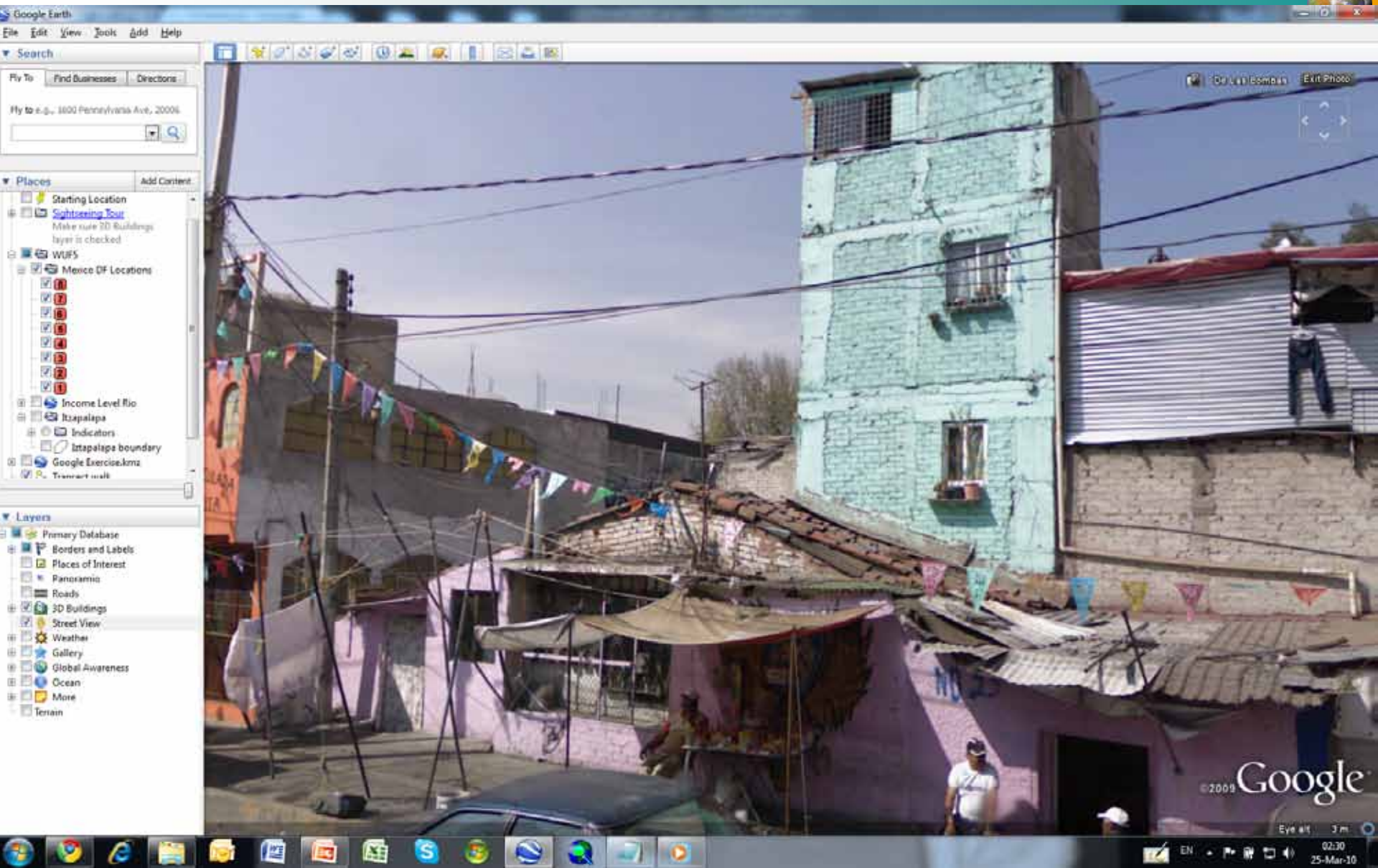
Google Earth Demo



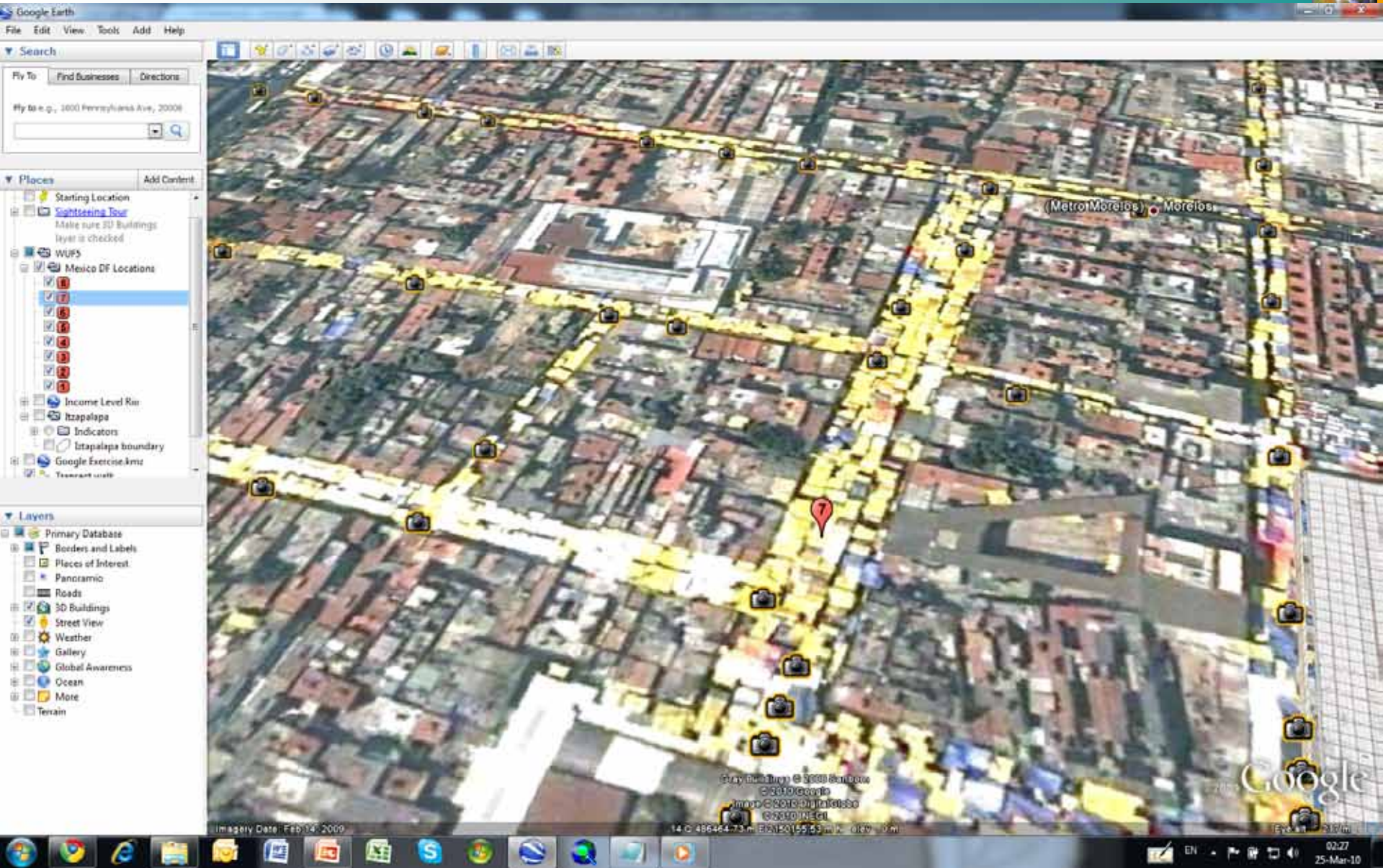
Google Earth Demo



Google Earth Demo



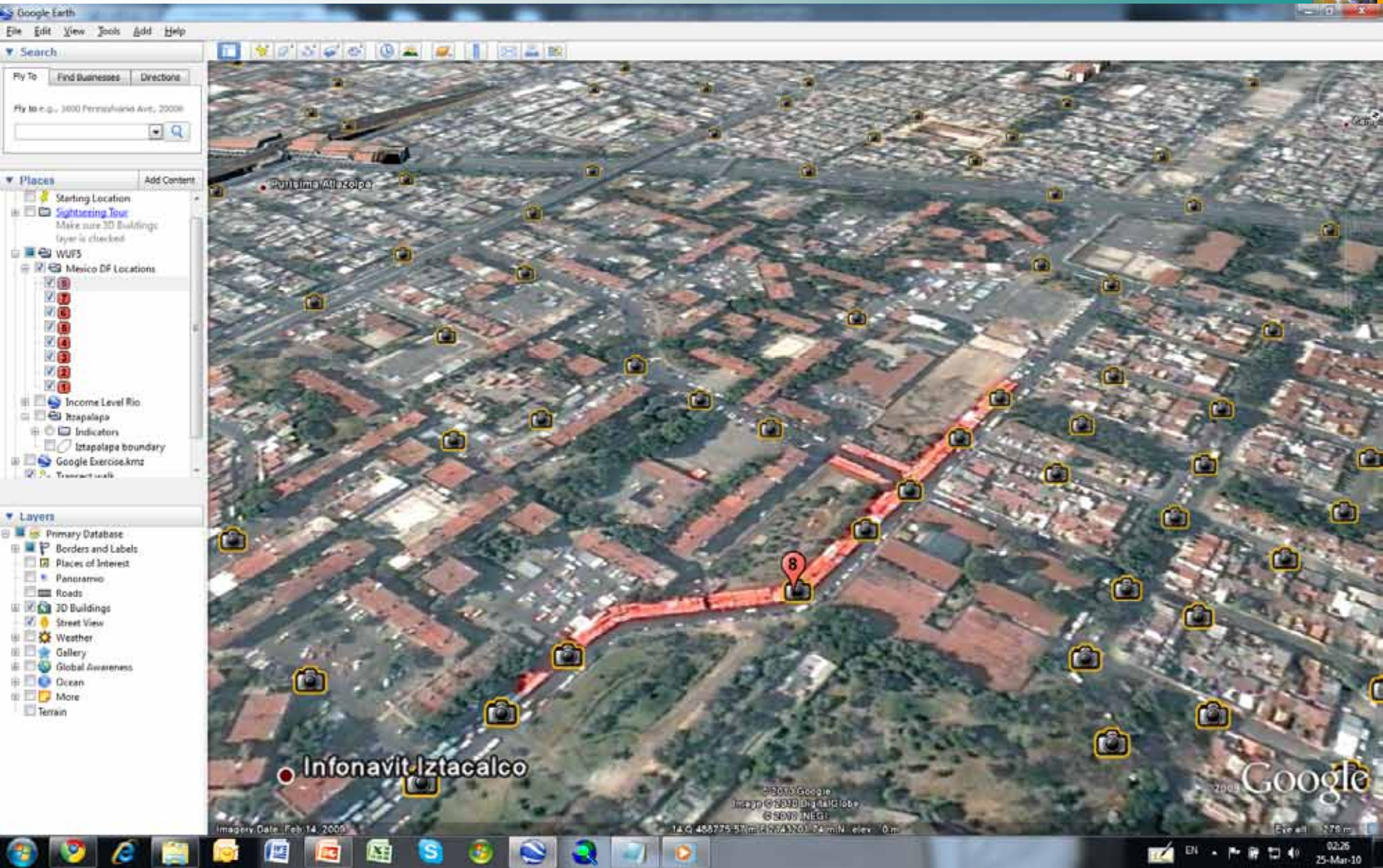
Google Earth Demo



Google Earth Demo



Google Earth Demo



Google Earth Demo

