

# Citizen Science for a Healthy Living Environment in Suriname

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31 May 2023  
Caribbean Urban Forum  
Paramaribo, Suriname

UNIVERSITY  
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# Urbanization

Temperature rise  
of 0.3°C-1.3°C

Urban heat island:  
dry and wet season  
in tropics; air and  
surface  
temperatures do  
not have a constant  
relationship



Long working hours  
reduce outdoor  
recreational time  
thereby threatening  
residents' health and  
well-being

Economically leading to  
high work pressures on  
urban residents

Not just the quantity but also  
the quality of public urban  
green spaces impact residents  
'use of the public urban green  
spaces.

# Importance of data for urban planning



- Collecting data for long periods
- Data as evidence for reasoned dialogue
- Awareness of those involved and the rest of the society
- Filling data gaps to support management

# Citizen Science



- Engagement of general public in scientific projects
- To overcome challenges of time and resources

Bonney et al. 2014; Shirk et al. 2012; Silvertown 2009), (Miller-Rushing et al. 2012; Silvertown 2009)





# Paramaribo and the Caribbean



- Large and expanding geographic area
- Development of new residential areas at the outskirts of the city
- Ongoing horizontal density
- Disappearance of green space.

(Weidum, 2014)



Why should we care about Green Spaces?

# Where and How Our projects since 2019



Cooling effect  
of urban  
greenery



Condition and  
use of green  
locations

39 locations  
30 citizens  
15 green spaces  
29 drops





# Types of locations

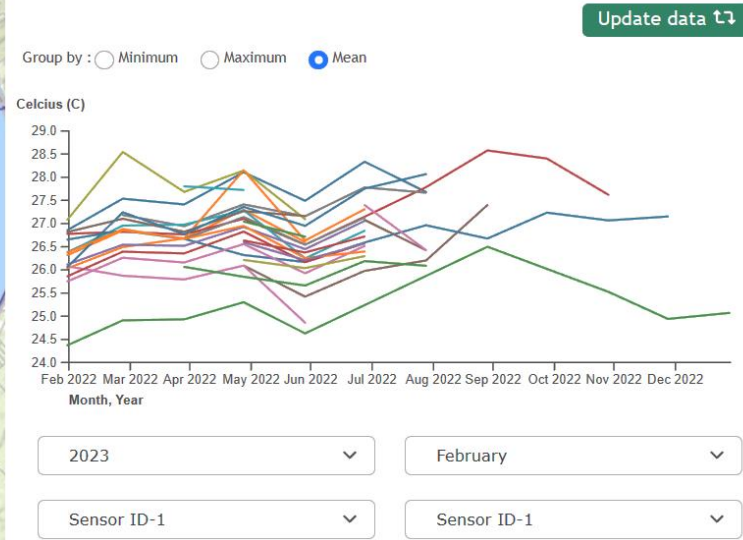
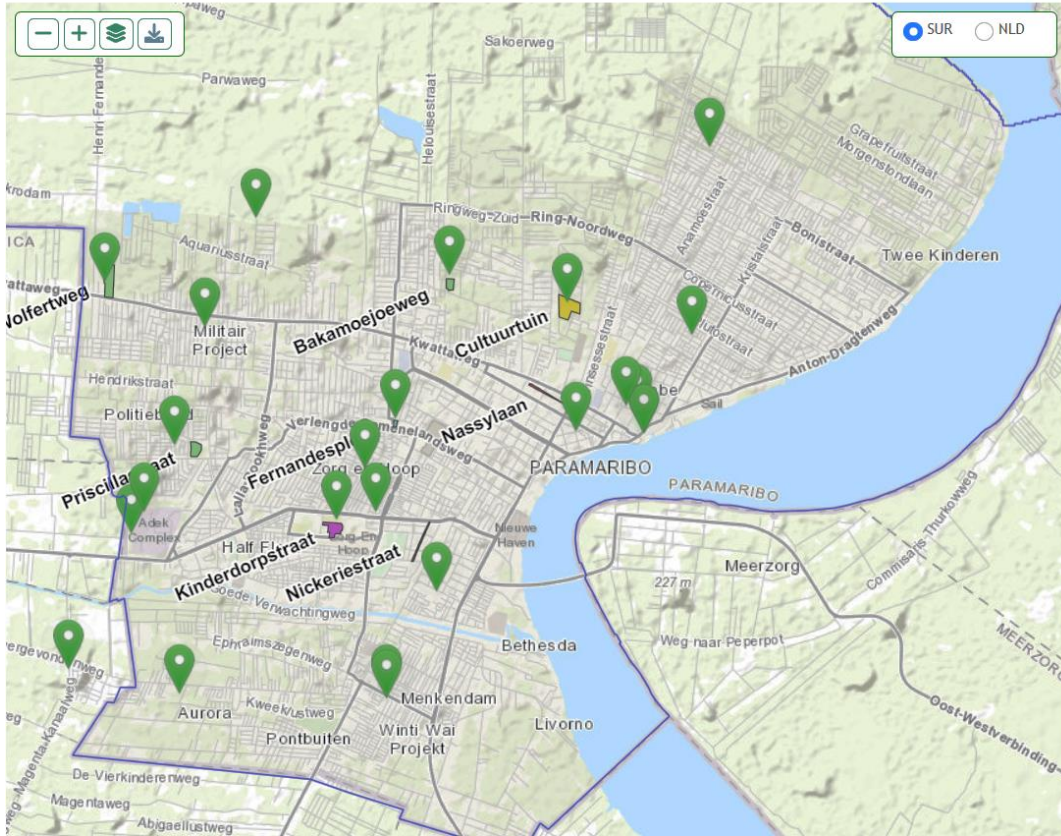


Information	Jodenbreestraat (11)	Cultuurtuin (4)
Type	Build up area	Green space
Elevation above sea level	5/21 meter	15 meter
Surface cover beneath sensor	Wood	Humus above ground organic matter
Soil matter under surface cover	Concrete	Dark Soil rich in organic
Building	Yes, wood, concrete, sink	No
Urban Climate zone	2	7
Davenport roughness class (N,E,S,W)	8,8,8,8	6,6,6,6





# Online Dashboard



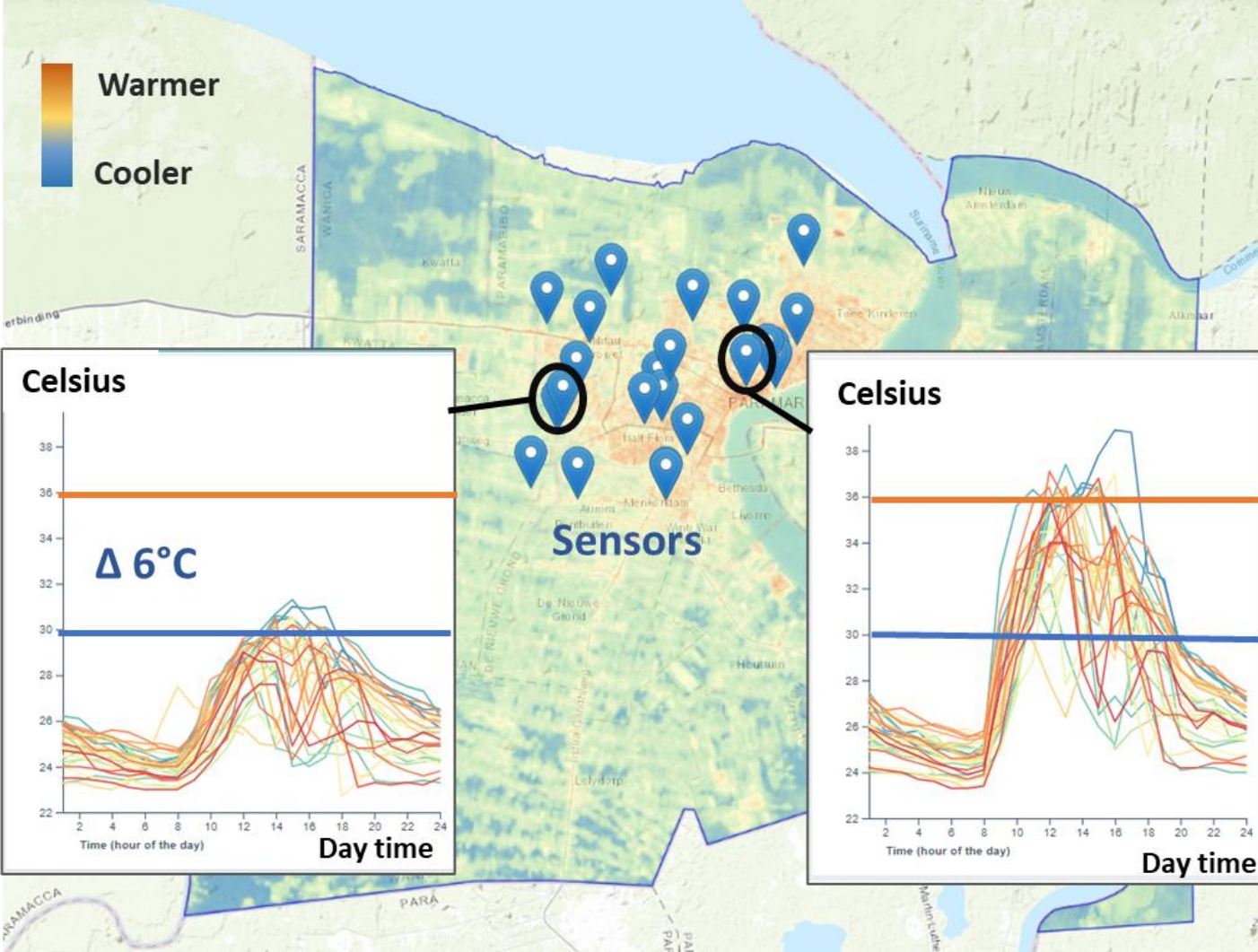
Interactive:  
online  
dashboard

Work in  
progress:  
feedback and  
improvement

Freely  
accessible:  
Download or  
on request

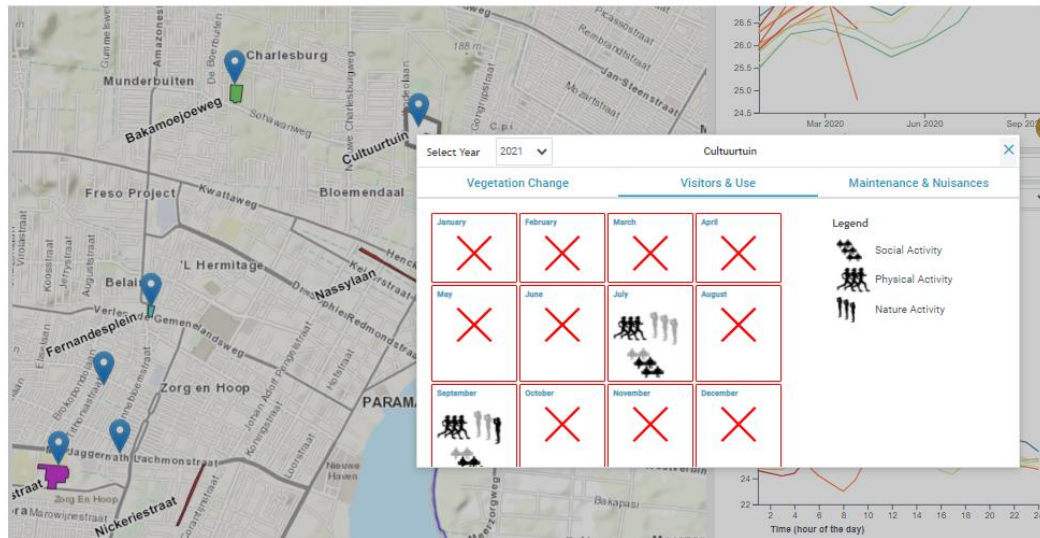


# Collected temperature data

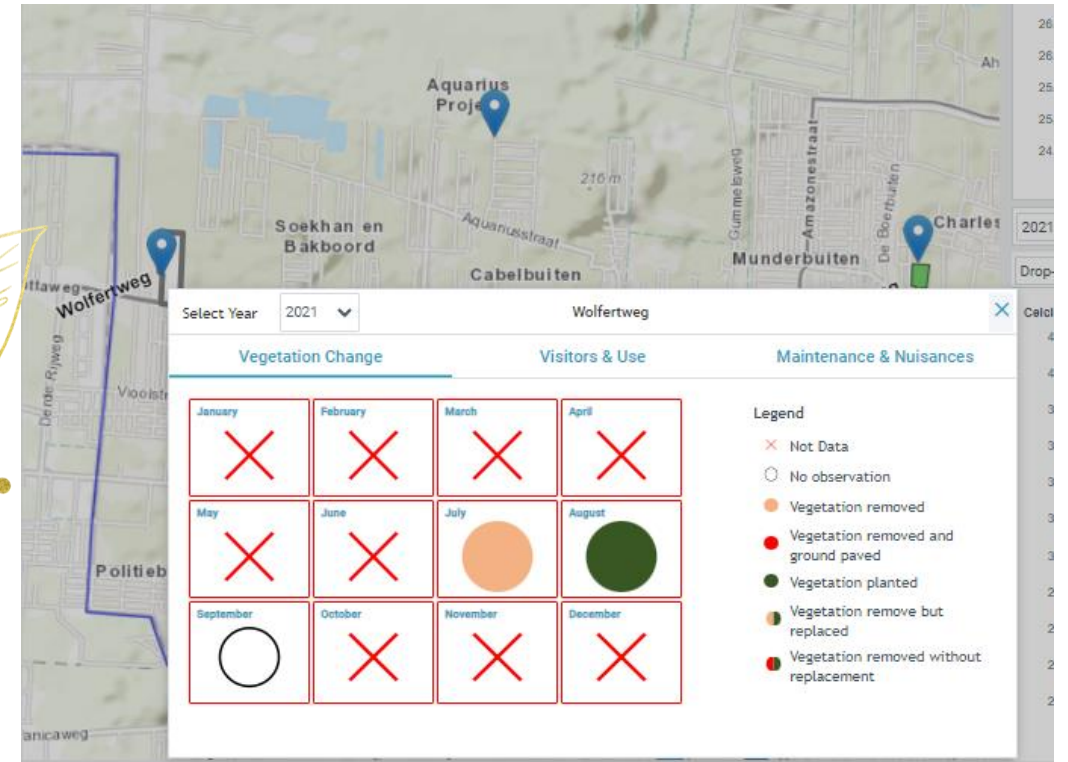
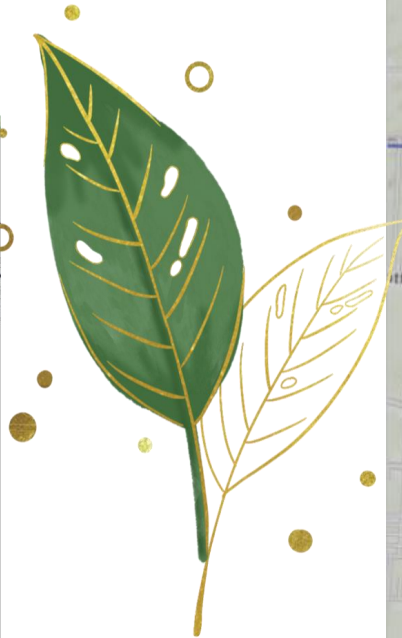


# Collected Urban Green data

- Vegetation change
- Number of visitors and use
- Maintenance and nuisance



Number of visitors and use of Urban Green Spaces (Cultuurtuin)



Change in vegetation

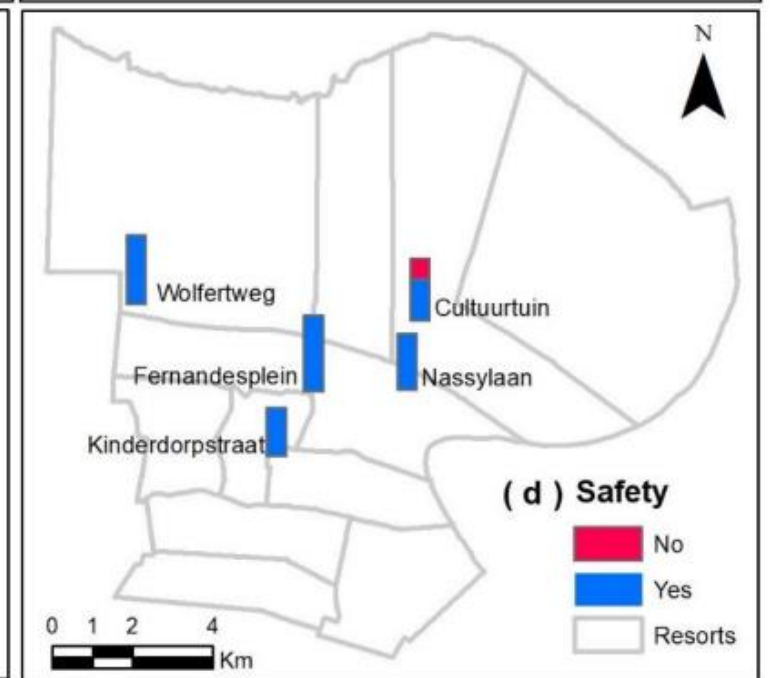
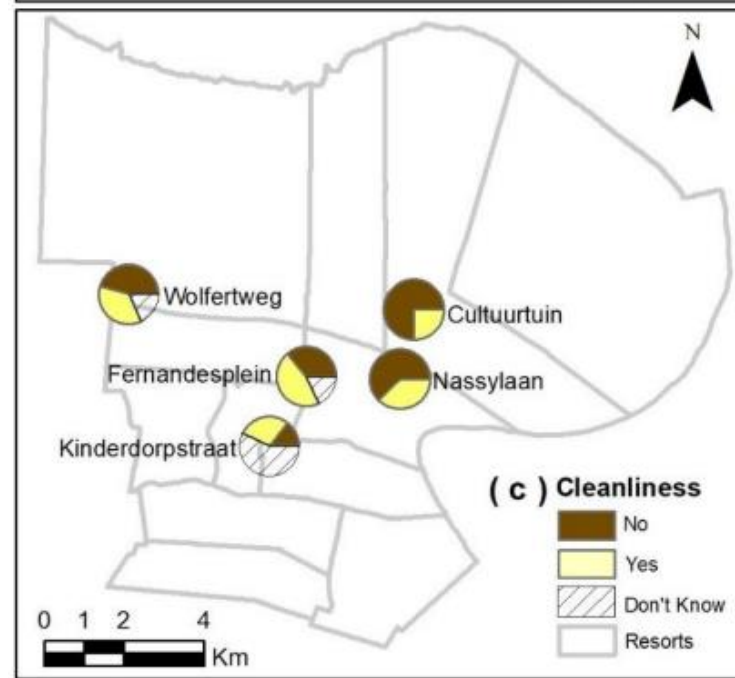
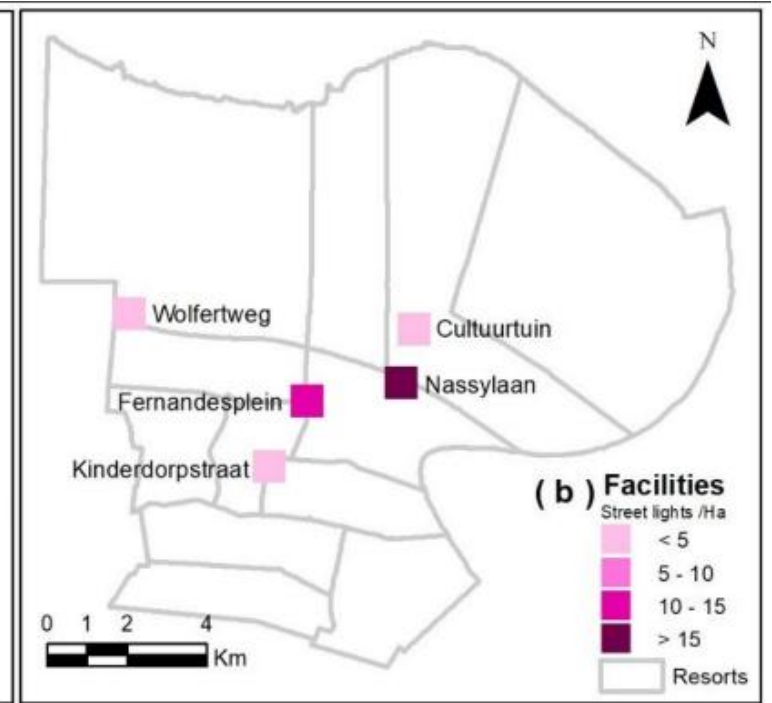
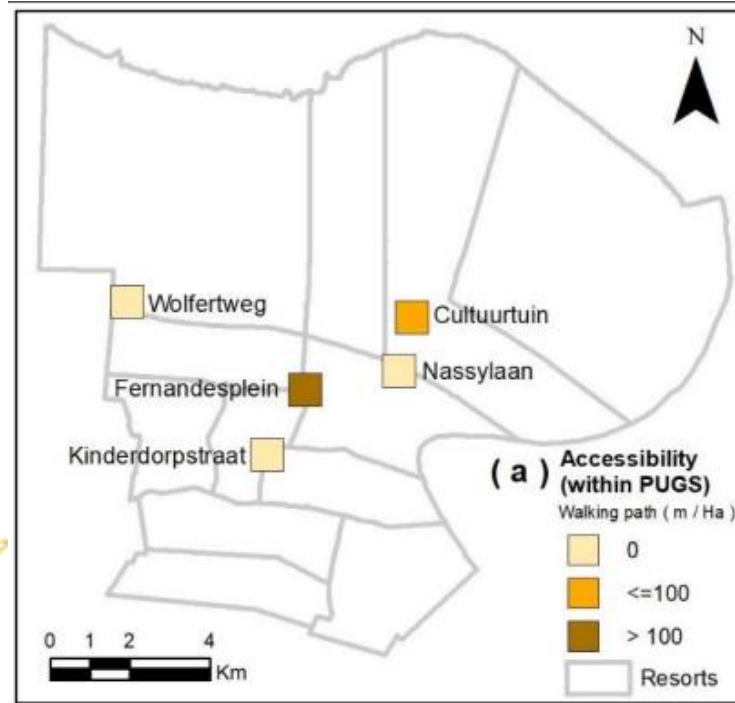
**Quality characteristics of public urban green spaces are not uniformly distributed across Paramaribo**



# Quality Characteristics of urban green spaces



(Gangwar, 2022)





# Citizen science research for



01

Argue and integrate the benefits of improving the status of activities within strategic plannings

02

Information about the perceived safety of visitors and their health

03

Additional data for developments for upcoming spatial planning laws and land use standards

## Gained experience



- Citizen science monitoring strategy
- Challenges recruitment call, gaining volunteers
- Challenges with software of temperature meters
- Continue guidance needed
- Continuously check of received data
- No specific knowledge needed to be part of network
- Free online dashboard
- Information for decisionmakers

Much appreciated

**A special thanks  
to all the Citizen  
scientists**





# THANK YOU

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