BOGOTA
a Safety Analysis Report

BOGOTA

Introduction:

Safetipin, is a map-based mobile phone and online application, which works to make communities and cities safer by providing safety-related information collected by users and by trained auditors. At the core of the app is the Women's Safety Audit. A Women's Safety Audit (WSA) is a participatory tool for collecting and assessing information about perceptions of urban safety in public spaces. The audit is based on nine parameters – Lighting, Openness, Visibility, Crowd, Security, Walkpath, Availability of Public Transport, Gender Diversity and Feeling.

Safetipin in partnership with District Secretary for Women, Bogota conducted safety audits in Bogota supported by UN Habitat and Cities Alliance.

Methodology:

The safety audits were generated using two Safetipin apps i.e. *My Safetipin* and *Safetipin Nite*. The assessment was done post sunset till 10 pm. The manual audits were conducted by volunteers using the My Safetipin app. Secondly, local taxis were hired to capture night time photographs of the city's roads. This was done by mounting mobile phones on the car's windshield and capturing the photographs using Safetipin Nite app. These photographs were then assessed based on the audit parameters to generate audit pins at periodic intervals. In addition to taxis, smartphones were mounted on bicycles to capture the photographs of the cycle track and Walkpath.

A total of 19,351 audit pins have been generated over 1,927 km of road length. The Safety Score of Bogota was found to be 4 / 5 i.e. Good.

Safety Score
4.0/5
Good

19,351 Audit Pins

1,927 km covered
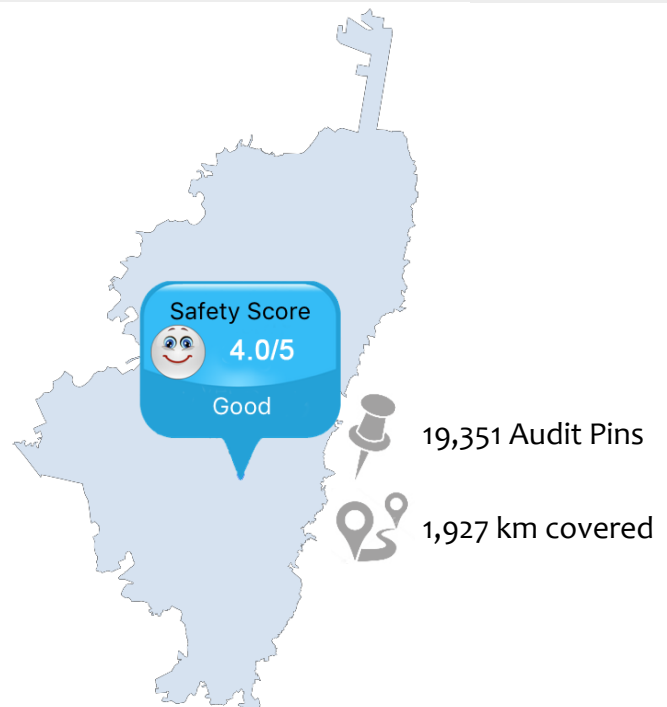
|	
Light(Night)	Lighting measures the amount of brightness/ illumination at a place and ranges from Dark to Bright. A place can be lit with street lighting or from other sources.
Openness	Openness refers to whether a person has a good line of sight in all directions.
Visibility	Visibility refers to how visible is one to others. It is based on the principle of 'eyes on the street'. This comprises windows-doors of shops, houses along with street vendors and hawkers.
People	People indicates the number of people around. This increases as a consequence of usage opportunities.
Security	Security refers to visible security offered either by the police or private security guards (for example along ATM/Bank).
Walk Path	Walkpath indicates whether a person can comfortably walk at a place. This could refer to the quality of a pavement or space along a road.
Public Transport	Transport refers to the ease of accessing any mode of public transport i.e. metro/bus/auto/taxi etc. and is measured in terms of the distance to the nearest mode.
Gender Usage	Gender is about diversity i.e. the percentage of women and children amongst the crowd. This increases as a consequence of safety perception.

Legend

Bogota Audits
- Poor
- Fair
- Good
- Very Good
- Excellent
- Bogota City

1%   3%

15%

81%
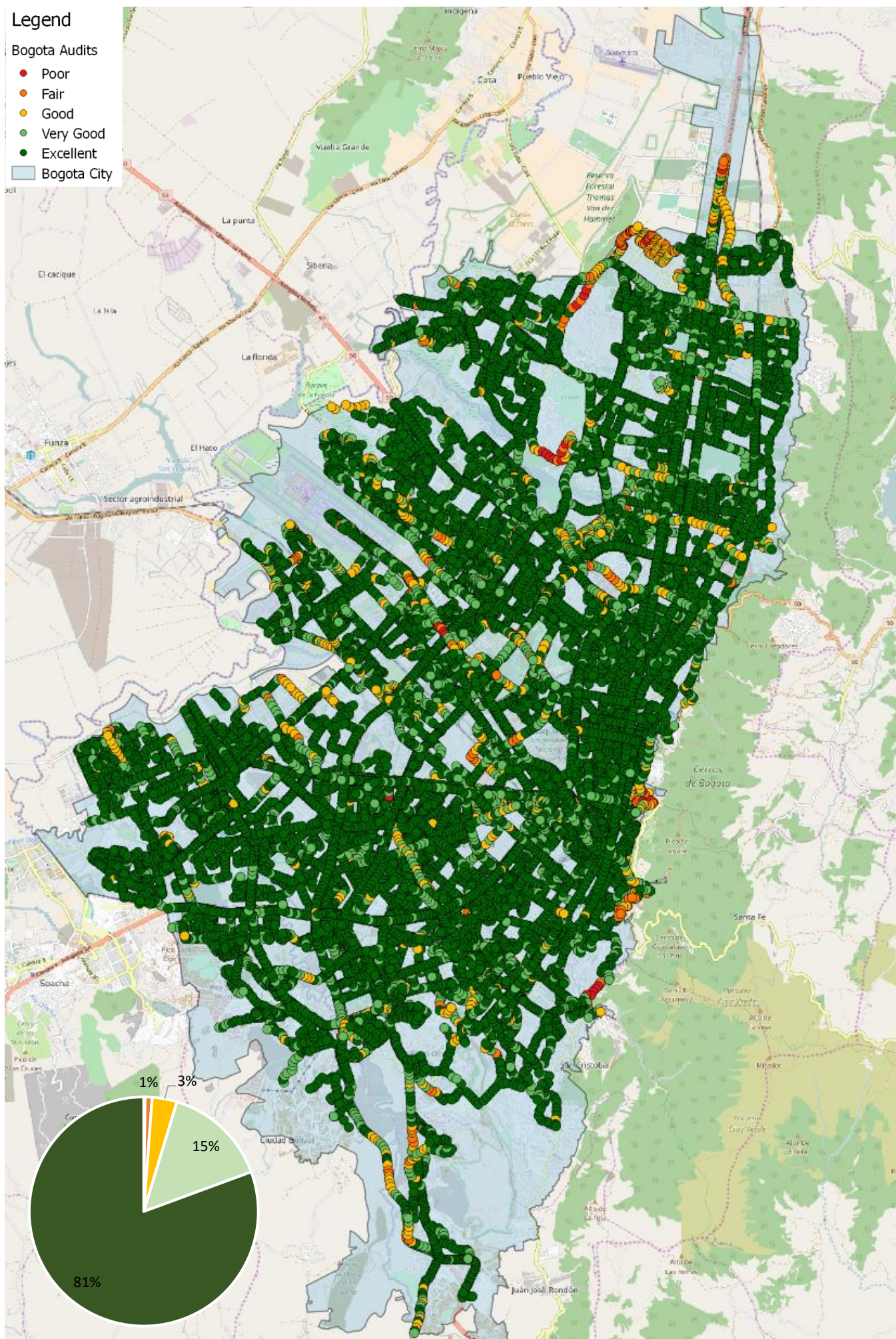
Map indicating Safety Score

Parameter Ratings:
Each of the nine parameters is rated 0/1/2/3, 0 being the poorest and 3 good. The average parameter ratings graph indicates the overall average rating for each parameter. Walkpath and Lighting parameters have been rated the highest i.e. Good followed by Public Transport, Openness and Visibility. Security and Gender Usage are the least rated parameter i.e. Poor. The overall feeling of Safety for the city of Bogota is rated Average.
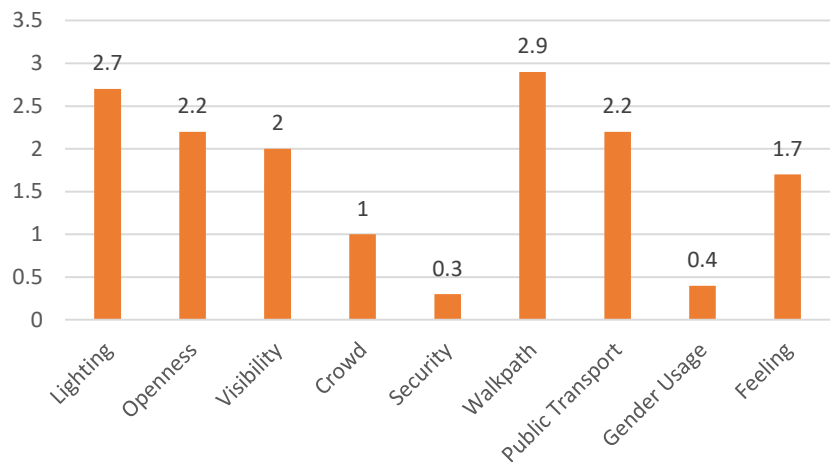
Parameter-wise Pin Distribution:
The Parameter wise pin distribution graph indicates the number of points rated 0/1/2/3 i.e. the good points as positive and poor ratings as negative. The parameter of Crowd, Security and Gender Usage have been rated poorly for the most parts of the city. Visibility and Public Transport needs to be improved in some parts of the city.
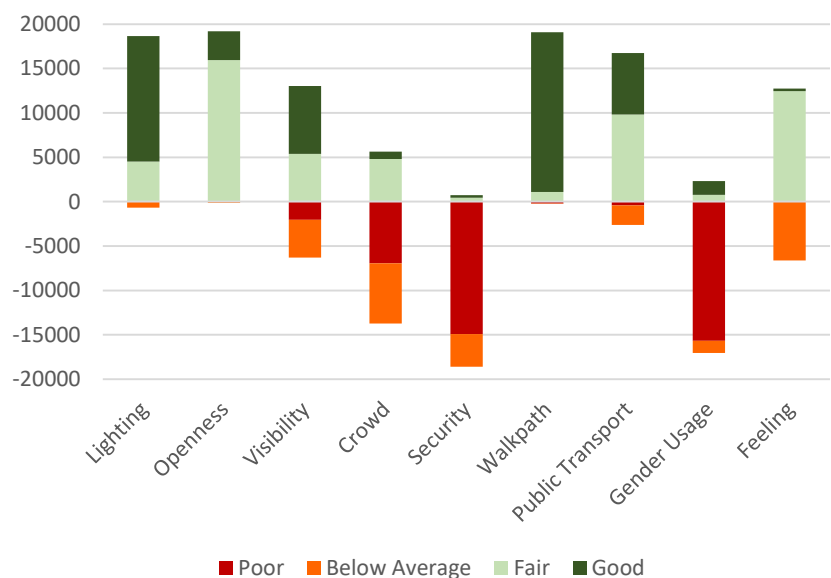
Gap Impact Analysis:
All parameters do not have an equal impact on the perception of safety. It is therefore useful to know how an improvement in each parameter will impact the Safety Score of the area. The Impact Bar shown indicates the extent of influence and the relative impact that each parameter has on the perception of safety. The combined length indicates the impact potential of the parameter. The parameters with the maximum combined length have the highest impact on the perception of safety and vice versa i.e. Lighting has the maximum impact and Transportation the least. The positive length (in green) indicates the extent of provision that has already been made on ground. The negative length (in red) indicates the (remaining) amount of improvement needed to increase the Safety Score. Since, increase in Crowd and Gender Usage is dependent on other parameters, improving Visibility and Security on the streets of Bogota will result in safer public spaces.
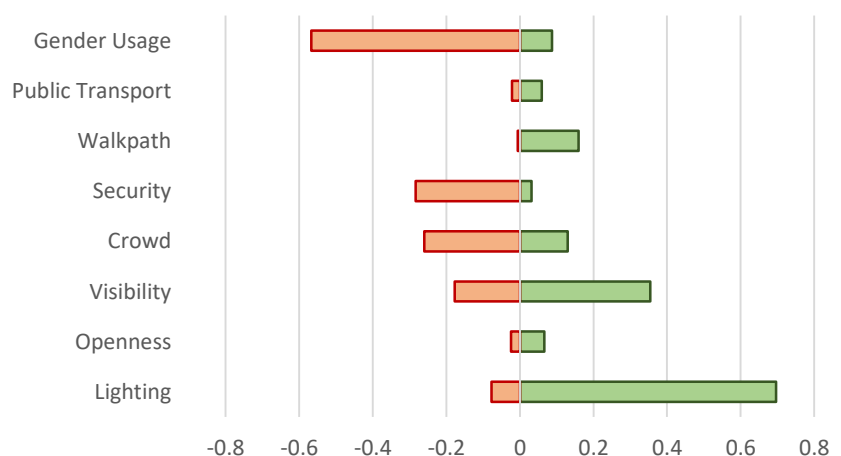
Average Parameter Rating

Parameter	Rating
Lighting	2.7
Openness	2.2
Visibility	2
Crowd	1
Security	0.3
Walkpath	2.9
Public Transport	2.2
Gender Usage	0.4
Feeling	1.7

Pin Distribution Graph

Legend: Poor, Below Average, Fair, Good

Gap Impact Graph

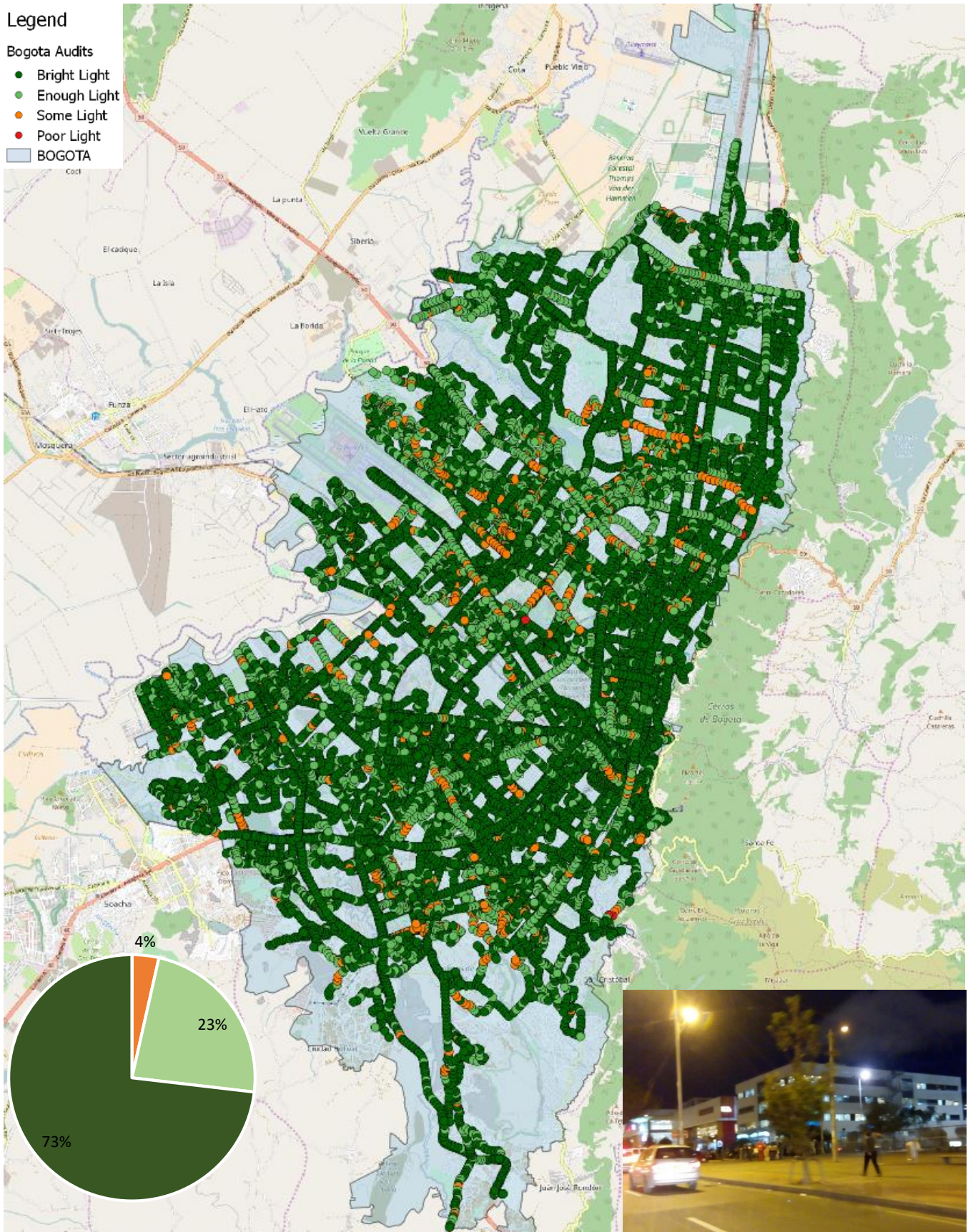(Gender Usage, Public Transport, Walkpath, Security, Crowd, Visibility, Openness, Lighting)

LIGHTING

Lighting Parameter has been rated 2.7/3 i.e. Good. As seen in the map, most of the area i.e. 73% is brightly lit with only 4% of audit locations have inadequate illumination. At some points, streetlights were found to be non- functional at the time of audits. Maintenance checks should be carried out at these locations. Tree leaves' should be pruned wherever they are obstructing the streetlights. Maps indicating these locations are on the following page.
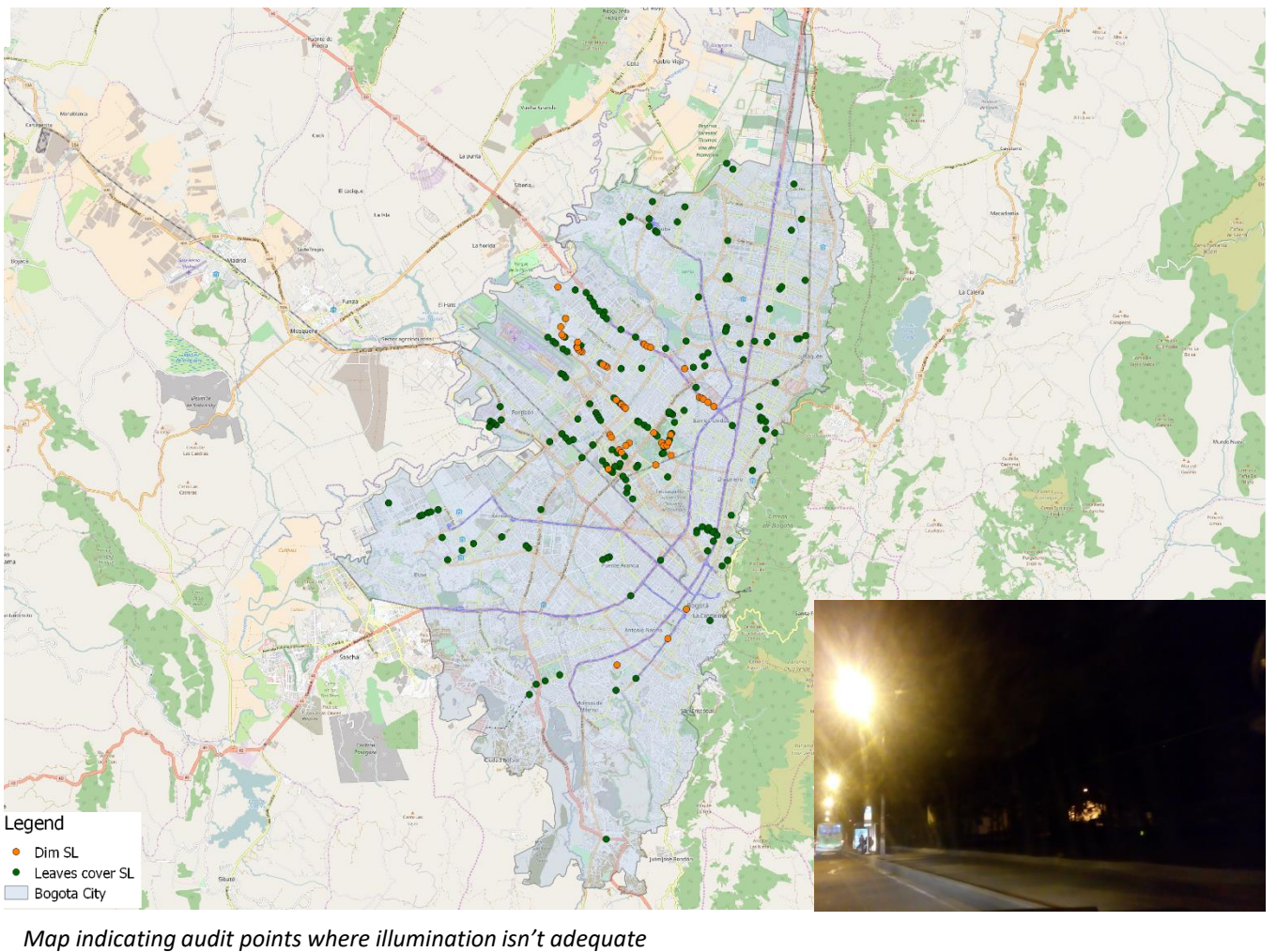

Map indicating Lighting rating

Map indicating points where streetlights were found non - functional

Map indicating audit points where illumination isn't adequate
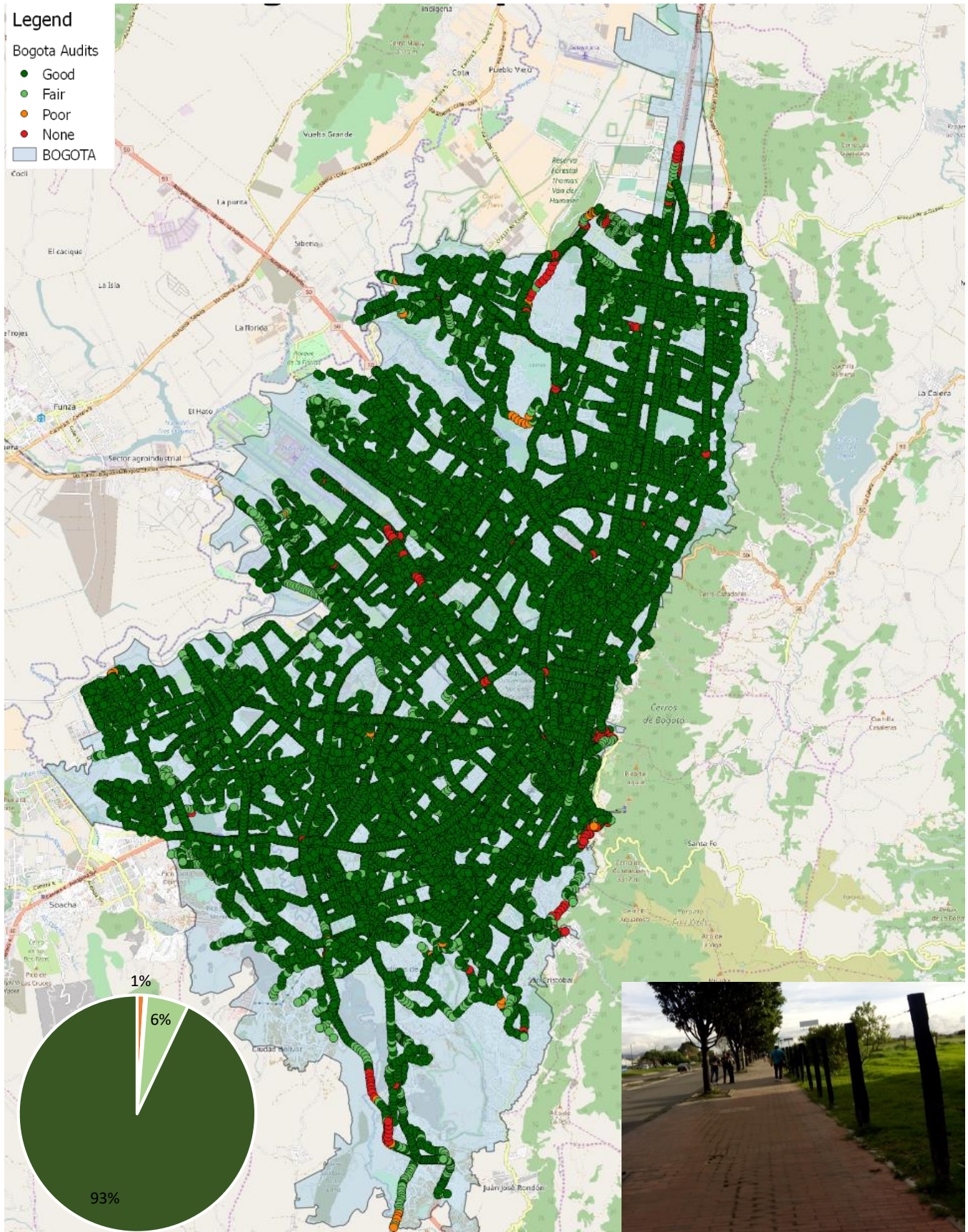
WALKPATH

Walkpath Parameter has been rated 2.9/3 i.e. Good. Footpath exists throughout the city and is mostly in good condition. This is clearly shown in the map with 93% of the audit points are rated good in terms of walkpath. Only 1% of audit points were rated poor. At these points, footpath was found to be broken and damaged in parts. Maps indicating these locations are on the following page.

Map indicating Walkpath rating

WALKPATH: Issues

The map indicates the locations where intervention is required. A proper footpath should be constructed at the points with no pavement, and points where space has been left for footpath i.e. unpaved pavement. At some points, footpath was found to be blocked due to cars. Therefore, the footpath should be raised at a level from the road to prevent the vehicles from accessing it. Points with broken pavement requires a maintenance check.

Legend

- ⚫ No Pavement
- 🟠 Broken Pavement
- 🟢 Unpaved Pavement
- ⬜ Bogota City
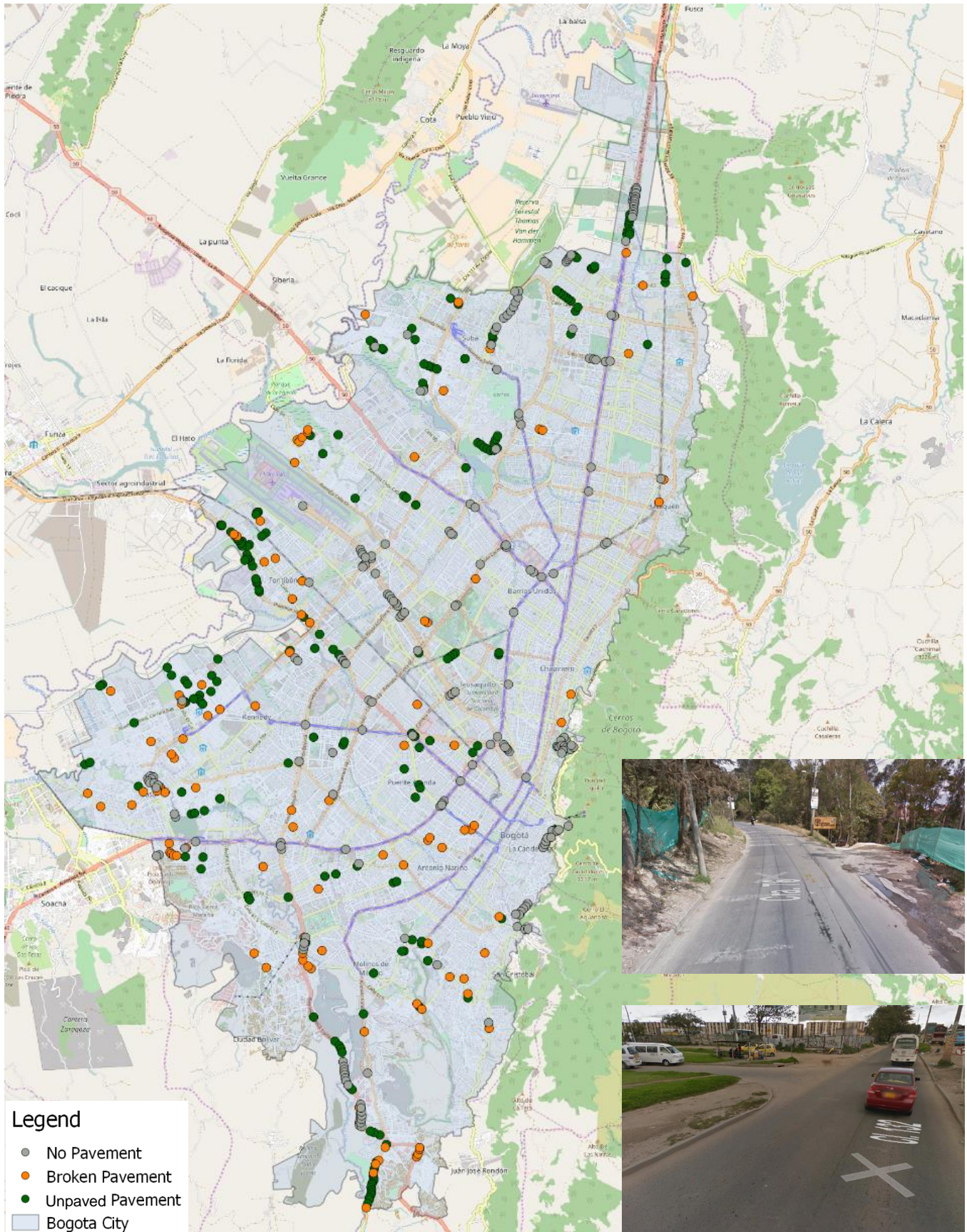
*Map indicating condition of the footpath*

VISIBILITY

Visibility Parameter has been rated 2.0/3 i.e. Above Average. 40% of the audit points were found to have high visibility and 32% audit locations have no or few 'eyes on the street'. At places where roadside vendors and temporary stalls are present, designated spaces should be created for them. Provisions like street furniture, public toilet etc. should also be provided.

Legend

Bogota Audits
- ● Highly Visible
- ● More Eyes
- ● Few Eyes
- ● No Eyes
- ▢ BOGOTA
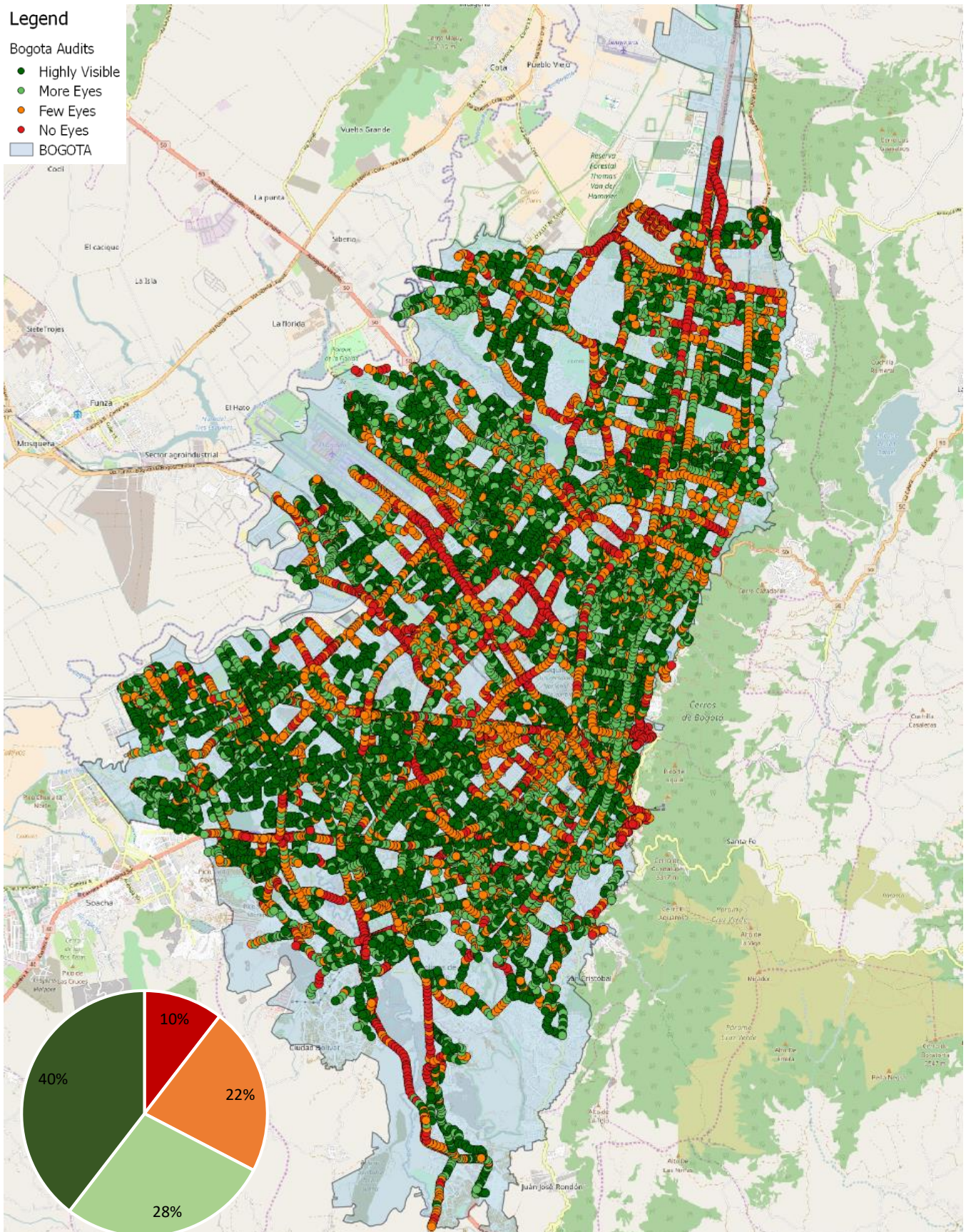

Map indicating Visibility rating

CROWD

Crowd Parameter has been rated 1.0/3 i.e. Below Average. 36% of the city area was found to be deserted after dark. Also, over 80% of the city has been rated as Not Diverse in terms of Gender Usage. However as mentioned earlier, Crowd and Gender Usage are derived parameters i.e. improving the other parameters will result in a location being safer and hence more people, especially women would start using it at night.
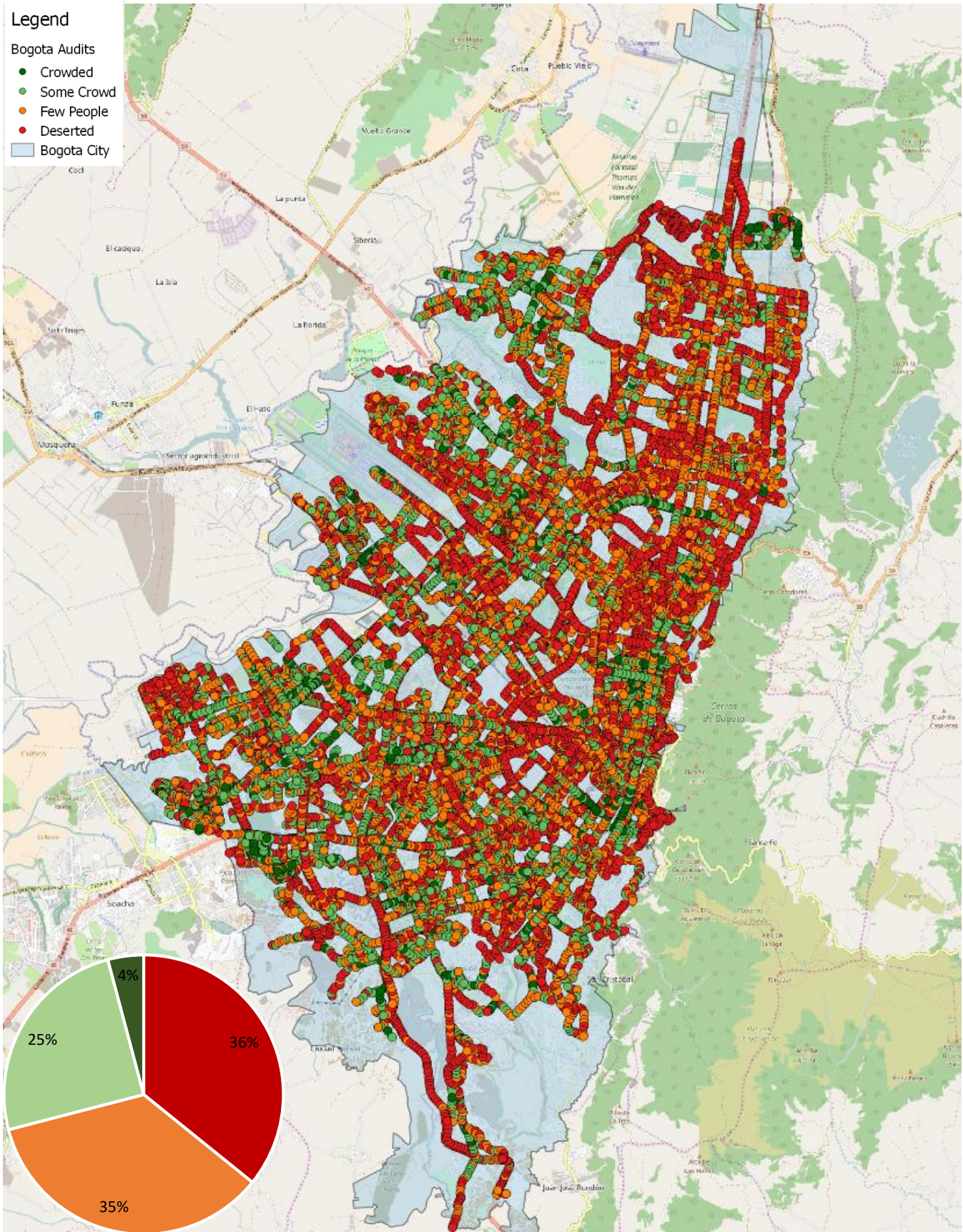

Map indicating Visibility rating

VISIBILITY + CROWD

The map below indicates the locations of street vendors, hawkers and temporary stalls where crowd rating is high. These areas need to be developed as active public spaces with designated space for street vendors equipped with well-planned street furniture and public convenience for people. These areas can also be taken up for organizing public events and campaigns to raise awareness.

Legend
- Temporary Stalls
- Street Vendors
- Bogota City

OpenStreetMap
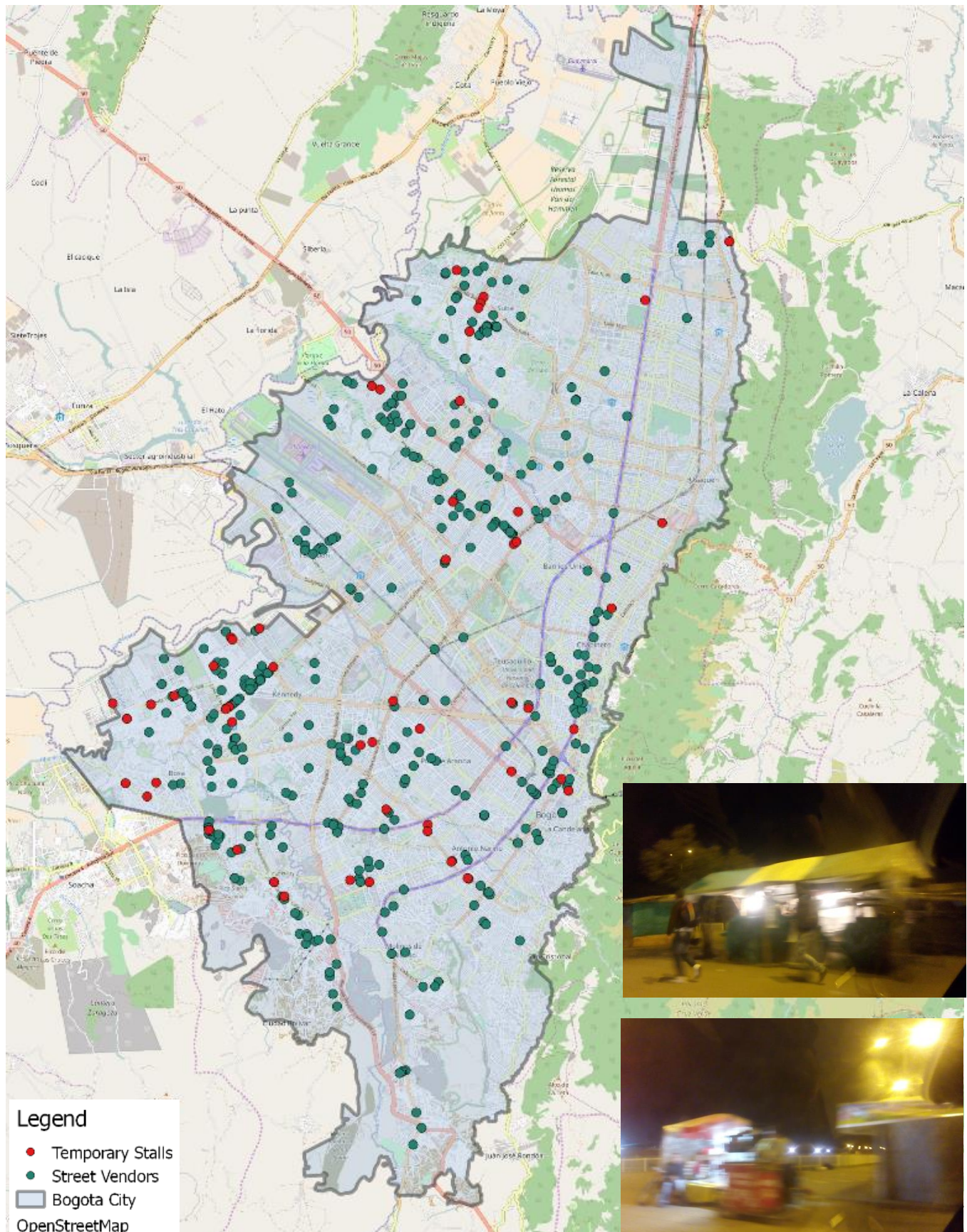
PUBLIC TRANSPORT

Public Transport Parameter has been rated 2.2/3 i.e. Above Average. 51% of the city has accessible public transport i.e. within five mins walk. Only 2% of the audit points have no means of public transport within 400m radius. To improve last mile connectivity throughout the city, Bogota city government has laid down a wide network of cycle routes, called 'Ciclorutas.'
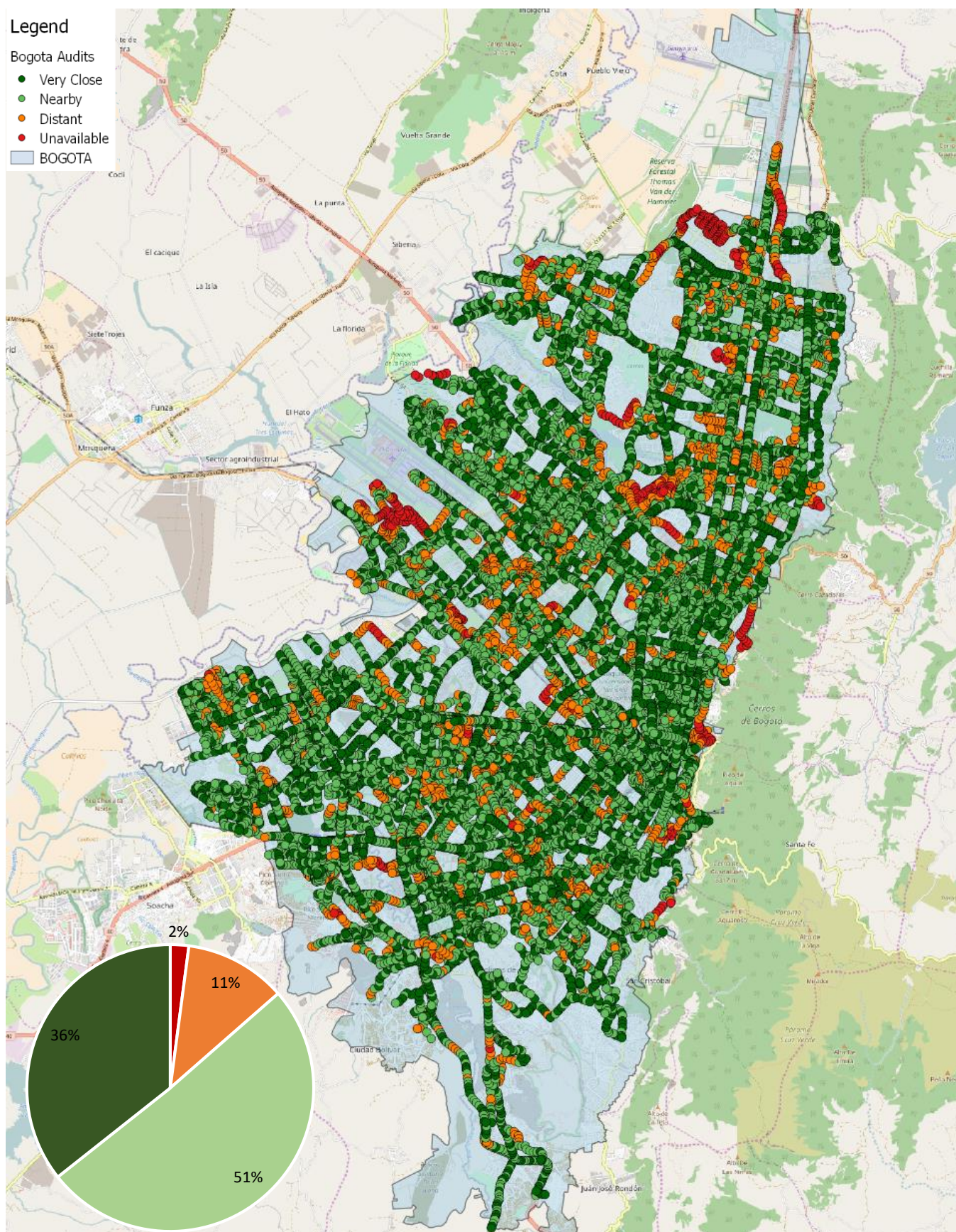
Map indicating Public Transport rating

BYCYCLE ROUTE AUDITS

In a first, phones were mounted on the bicycles and photographs were captured along the cycle tracks of the city. A total of 2939 audits pins were generated and the safety score was calculated as 3.9/5 i.e. Good.
70% of the cycle track has been rated excellent in terms of overall safety. This 294 km long bicycle track is well – integrated with TransMilenio BRTS thus making it the most extensive and comprehensive network in Colombia.
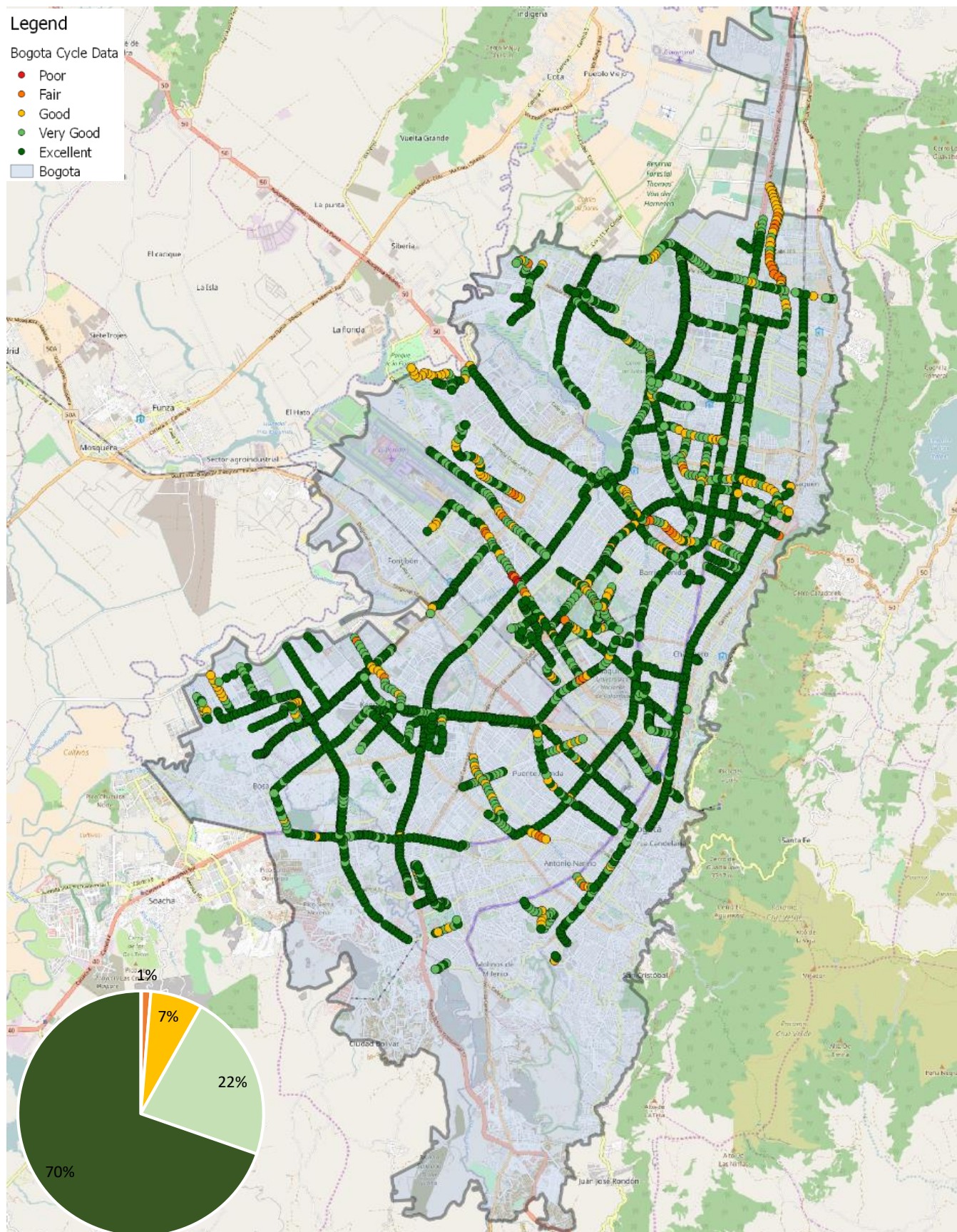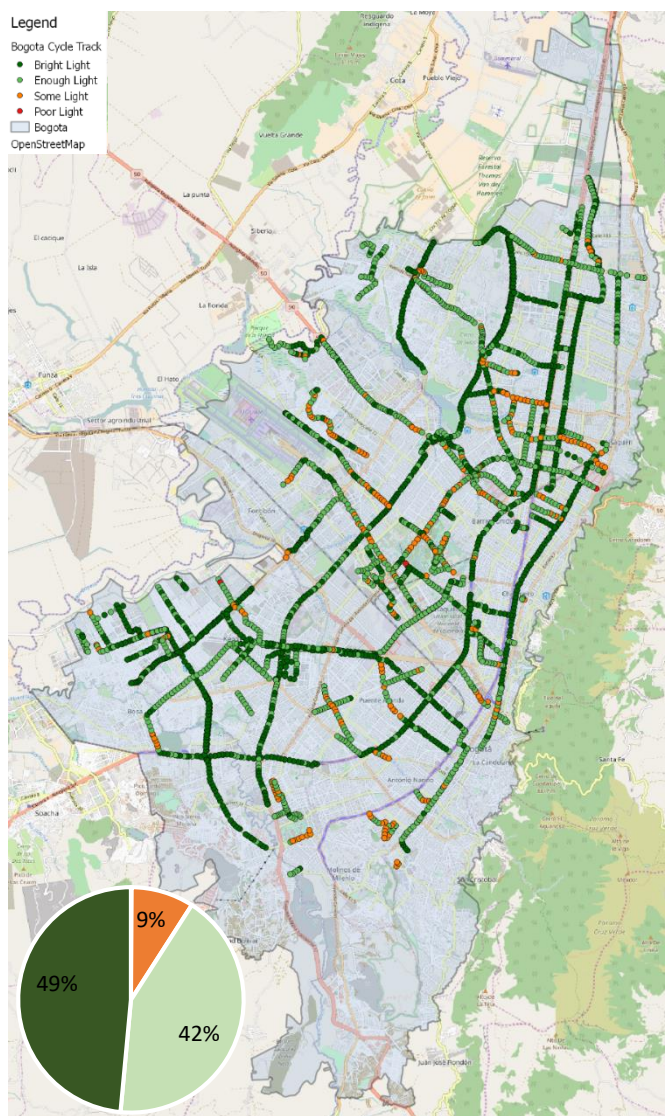

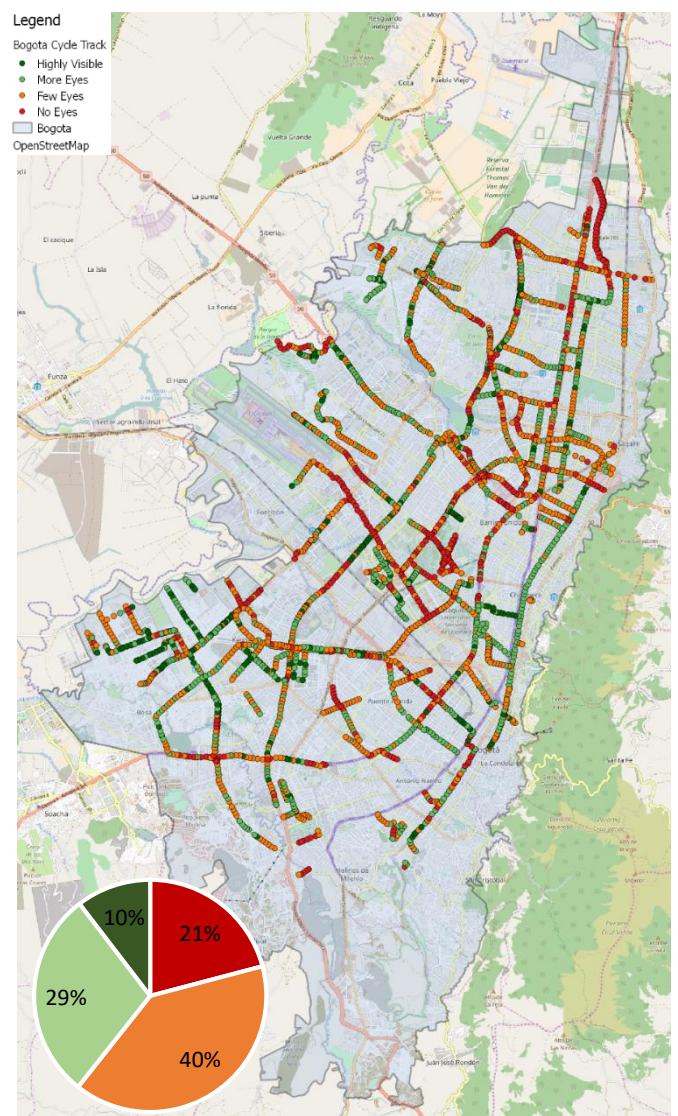*Map indicating Safety Score rating along the cycle track*

BYCYCLE ROUTE: Lighting and Visibility

Lighting Parameter has been rated 2.4/3 i.e. Above Average. As seen in the map, most of the area i.e. 49% is brightly lit with only 9% of audit locations have inadequate illumination.

Visibility Parameter has been rated 1./3 i.e. Average. Only 10% of the audit points were found to have high visibility. 21% audit locations have no form of visibility and around 40% have few 'eyes on the street'.

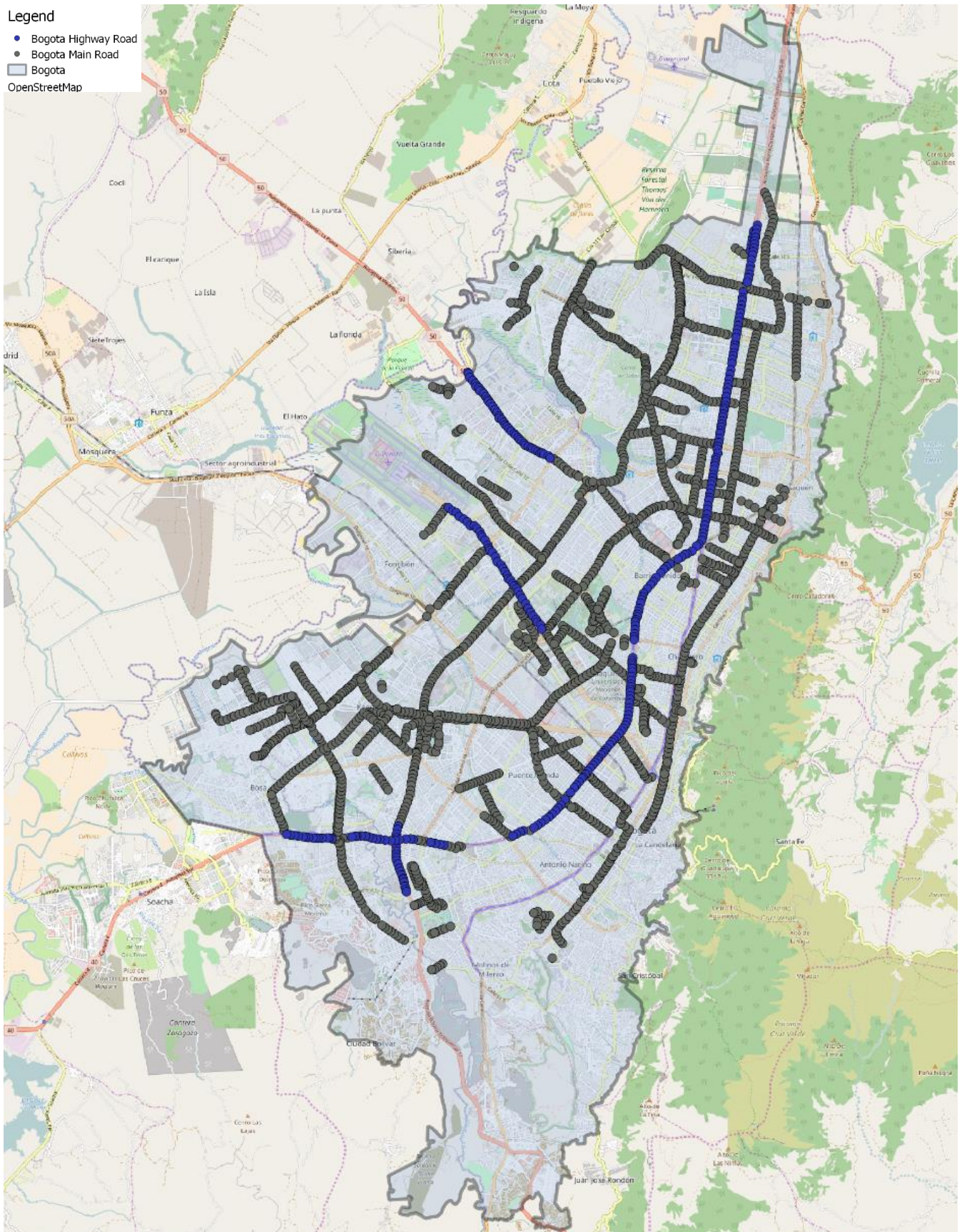*Map indicating Lighting rating along the Cycle track*

Map indicating Visibility rating along the Cycle track

BYCYCLE ROUTE: Road Type

This map shows the distribution of the existing cycle track along the highways having more than 6 lanes and the main road having 4 or 6 lanes. Using this data, a smooth and unobstructed cycle trails could be planned around the city.

Map indicating distribution of Cycle track

Using Data to Build Safer Cities

The information gathered in the first phase of Safetipin in Bogota has been used as a source of information for the prioritization of local and municipal investments in infrastructure, specifically, lighting in parks, installing CCTV cameras and rebuilding pathways for better access. The Secretary of Women of the city has provided information that comes from various parameters of safety audits to the respective authorities in charge of city's development.

The 19 urban localities that compose the city of Bogota have the obligation of developing a Local Plan for the Security of Women. The information gathered by Safetipin's audits has been used in gender mainstreaming in the city's public policy, specifically in public space decisions, in land use planning and in the city's overall security plans.

One of the greatest challenges of public policy in general, and of public policy for women's and gender issues is the lack of information for decision making. The data based on the audits gathered by Safetipin in its initial phase (photographic analysis) has allowed the city of Bogota to co-relate with other types of information, for example points having low security with locations having high rate of crimes. For the same, the city's cadastral authority has included a layer based on the safety audits in the official cartography of the city that can be contrasted with all the cadastral and cartographic information of the city.

This can be seen in this map that shows correlation between the low rating in terms of security parameter (red points) and the location of Police stations (blue points) and CAI (green points). It was found that while Ciudad Bolivar has the least percentage of security presence, La Candelaria have the highest percentage of police presence on the street or nearby police stations. La Candelaria is an administrative as well as popular locality visited by national and foreign tourists, that explains the greater visibility of the agents of the public force.

Thus, Safetipin data has allowed the Secretary of Women to generate a more qualified impact in public opinion. There has been keen interest from Colombia's mayor papers in this information and it has been able to start a national debate regarding safety for women in public space based on data.
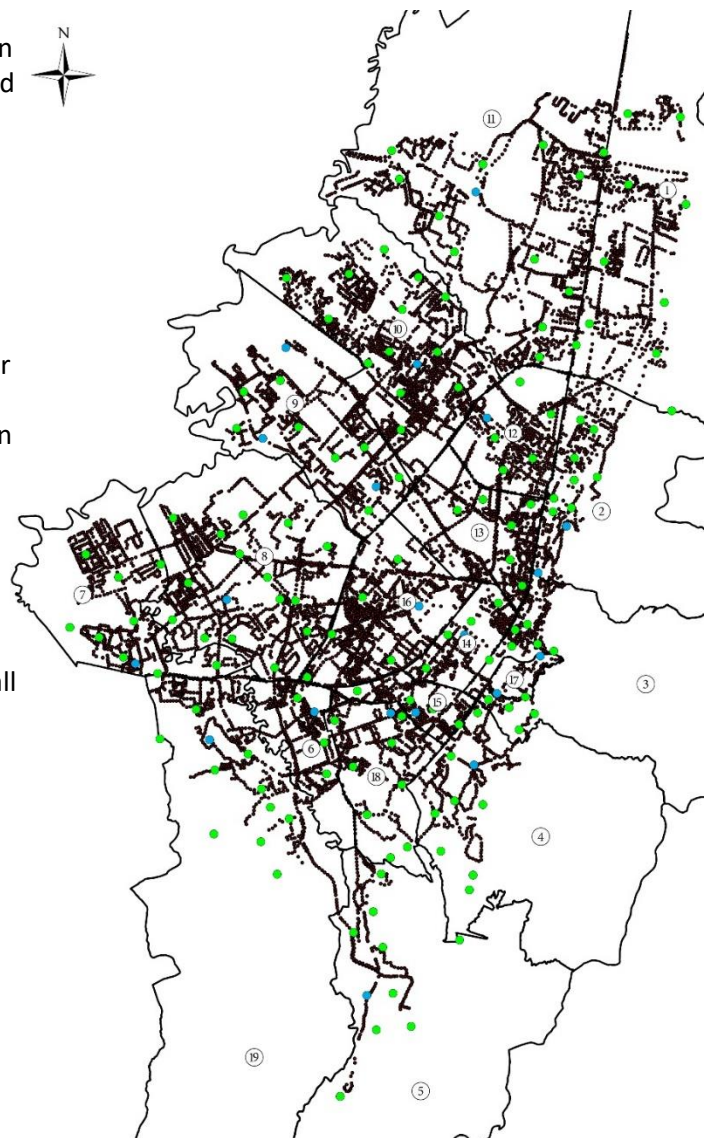
Map indicating the security parameter rating and the location of police stations

Convenciones

Localidades					
① Usaquén	⑦ Bosa	⑭ Los Mártires	•	Puntos ninguna presencia de seguridad	
② Chapinero	⑧ Kennedy	⑮ Antonio Nariño	●	CAI	
③ Santa Fe	⑨ Fontibón	⑯ Puente Aranda	●	Estación de policía	
④ San Cristóbal	⑩ Engativá	⑰ La Candelaria			
⑤ Usme	⑪ Suba	⑱ Rafael Uribe Uribe			
⑥ Tunjuelito	⑫ Barrios Unidos	⑲ Ciudad Bolívar			
	⑬ Teusaquillo				

Source: District Secretary of Women, Safetipin research. OMEG-SDMujer calculations

Women taking the night

Through the analysis of this georeferenced information, and with the support of the territorial team of the SOFIA strategy, that belongs to the Elimination of Violence and Access to Justice Department of the Secretary for Women, five points of the city were identified to prioritize and intervene. These localities are Tunjuelito-Ciudad Bolívar, San Cristóbal-Usme, Chapinero, Kennedy and Bosa.

Map indicating the five identified locations for the campaign

Women's District Secretariat under the slogan "Women taking the night" carried out five night sessions at sites (as shown in the map) that are closest to the areas identified as unsafe for women in the use of public night spaces. These included the participation of citizens and Local Operative Councils for Women and Gender, and local women's organizations.

These "symbolic takes" had as objective to re-significate those spaces prioritized by the Secretary and make the night safe for women as well as to take them through art, music and dance. Particularly the purpose was to impact on two of the socio-cultural parameters investigated by Safetipin audits i.e. absence of women in the public night space and absence of people in general in the public night space.

The selected area was set up with tents, platforms and communicative elements. The participants were asked to participate in a cultural events, that also communicated about the situation regarding the rights of women to have a live free of violence. The event also focused on generating awareness on the advances of the Public Policy of Women and Gender Equity of the Capital District.

The events were held in evening and a total of 1978 men and women participated in this campaign. Pla. Tintal, Kennedy registered the maximum number of participants.

	Event Location	Women	Men	TOTAL
	PARTICIPANTS			
1	P. el Tunal. Tunjuelito	197	219	416
2	P. Ayacucho. San Cristóbal	264	196	460
3	P. hippies. Chapinero	112	142	254
4	Pla. Tintal. Kennedy	300	332	632
5	P. Fun Bosa, Bosa	125	91	216
	TOTAL	998	980	1978

Source: Distrist Secretary of Women. (Bogotá, D.C. 2016)