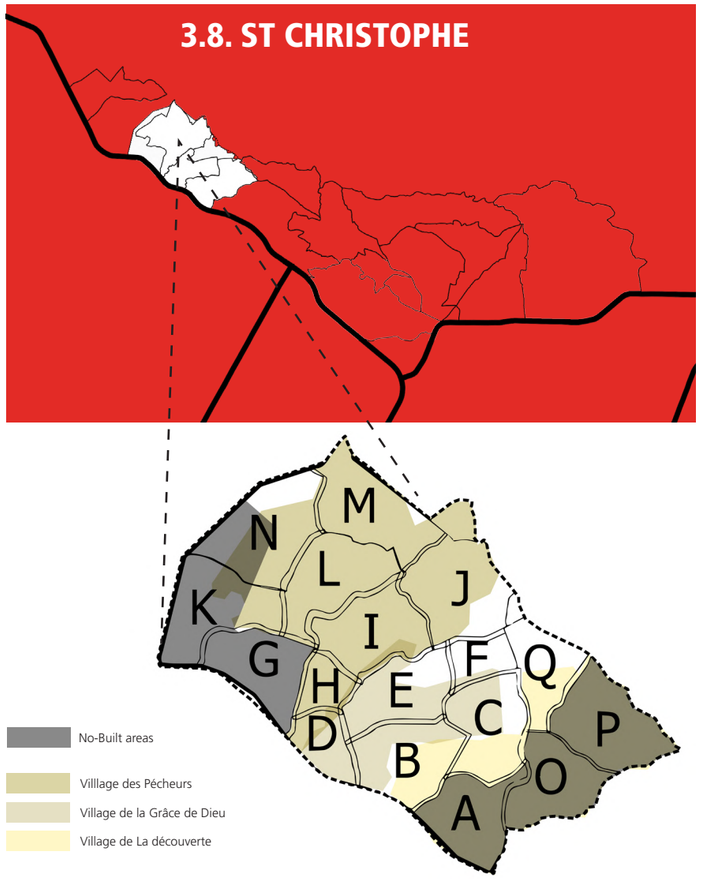
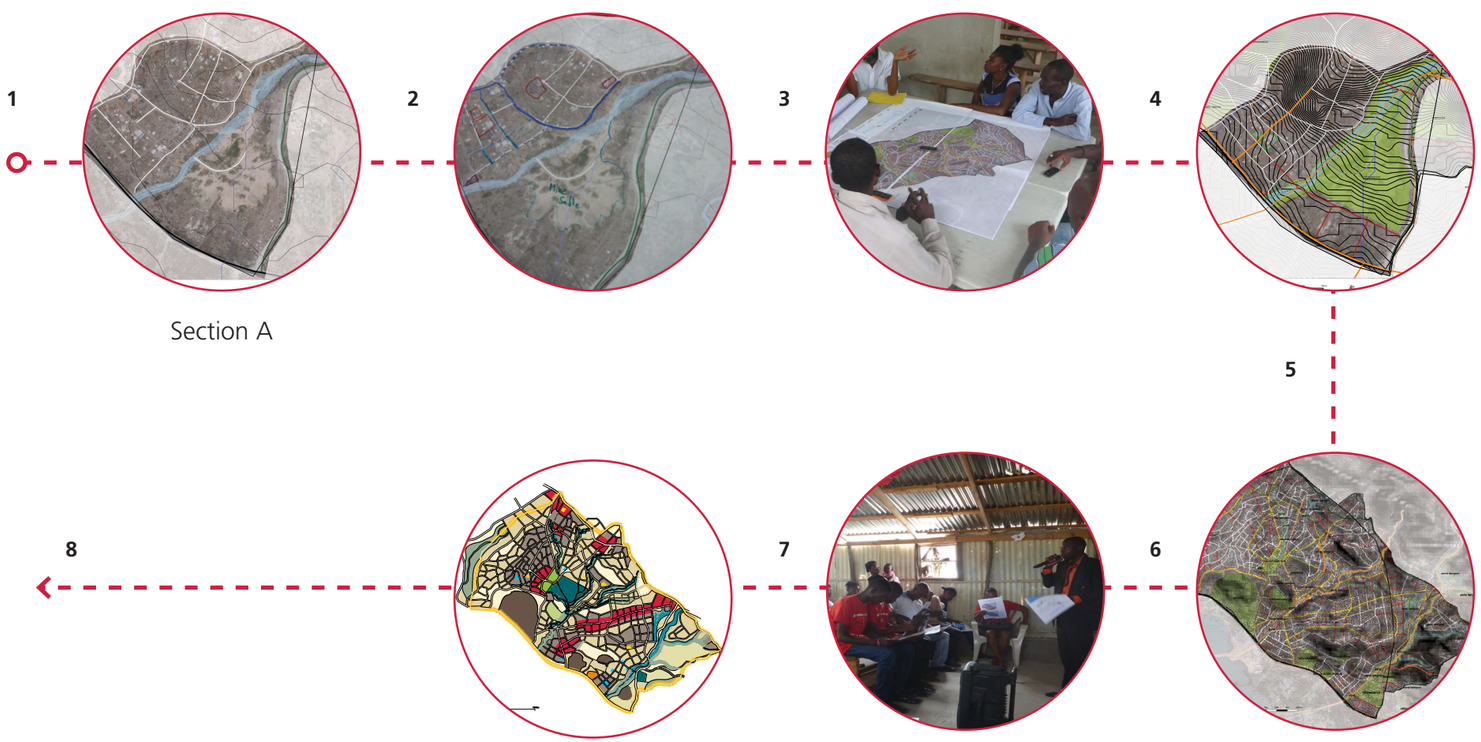


St Christophe is a neighbourhood located on the Western side and consists of the three villages; Village Des Pecheurs, Village de la Grâce de Dieu and Village a Decouverte. For the purpose of these studies, and since the neighbourhoods' assemblies were not separately done, the three villages will be considered under one neighbourhood with the name of St.Christophe.

The following land use proposals in this section are based on a participatory process within three months' time-frame. The UN-Habitat team maps the existing situation and the community validates and proposes ideas. The urban Lab rechecks the suggested interventions and modifies if necessary. After that, a neighbourhood assembly is organized to showcase the overall vision and a land use is later developed.



1. Mapping the existing situation
2. Mapping proposed interventions
3. Community workshops
4. New proposals draft
5. Selected interventions map
6. Neighbourhood assemblies
7. Draft of land use plan
8. Charrette and implementation

Fig.183: St.Christophe: participatory planning process

A. STREET NETWORK

Currently, the street network in St.Christophe occupies only 8%. The neighbourhood borders the national road 1 from the south and has only secondary streets inside. The lack of street hierarchy leads to congested areas. For that, it is necessary to preserve enough spaces for roads in order to have a good connectivity and prevent any traffic. The majority of the roads lead to a dead-end. It is thus fundamental to think of a road grid while providing an interconnected set of roads that are safe.

Existing situation

Streets percentage

UN-Habitat: 30%

8%

Streets km/sq.km

UN-Habitat: 18 km/sq.km

14 km/sq.km

Fig.184: St.Christophe: Existing street network

The new plan proposes a new arterial road that connects the national road 2 with the northern part of the neighbourhood. Where the topography is moderate, main roads are suggested to improve the connectivity. Appropriate measures were elaborated in the mobility report giving a guidance on how to build roads in steep areas. Different widths are defined for the different types of roads (Option A and B, see below). The plan does not only propose new roads, but also looks into ways to improve and upgrade the current situation. The new St.Christophe's road network plan shows an increase of 3.5% which is still insufficient.

Proposed street network

Streets percentage

11.5%-Option A

Arterial road: 24m
Main roads: 18m
Secondary streets: 12m

- Option B

Arterial road: 18m
Main roads: 12m
Secondary streets: 9m

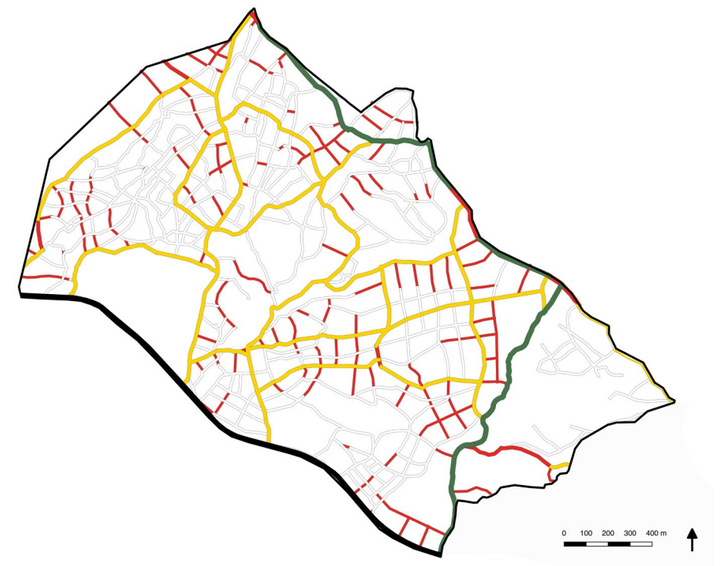
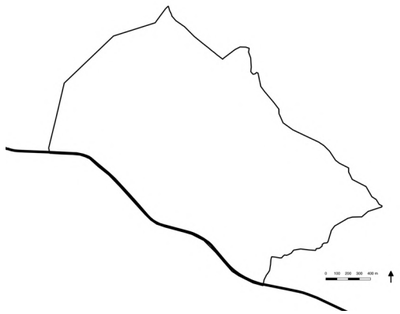
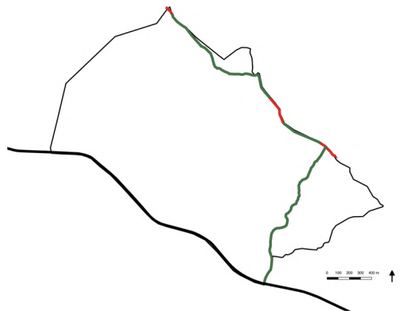


Fig.185: St.Christophe: Proposed street network

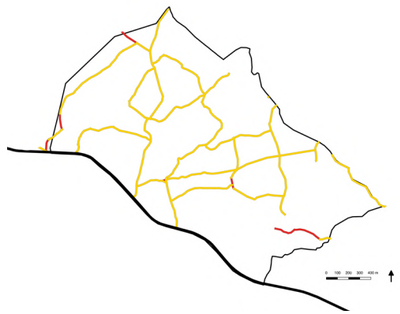
Layers of the proposed street network



National road



Arterial road



Main roads

Secondary streets

Fig.186: St.Christophe: Layers of the proposed street network

B. PUBLIC SPACES

Existing Public Spaces

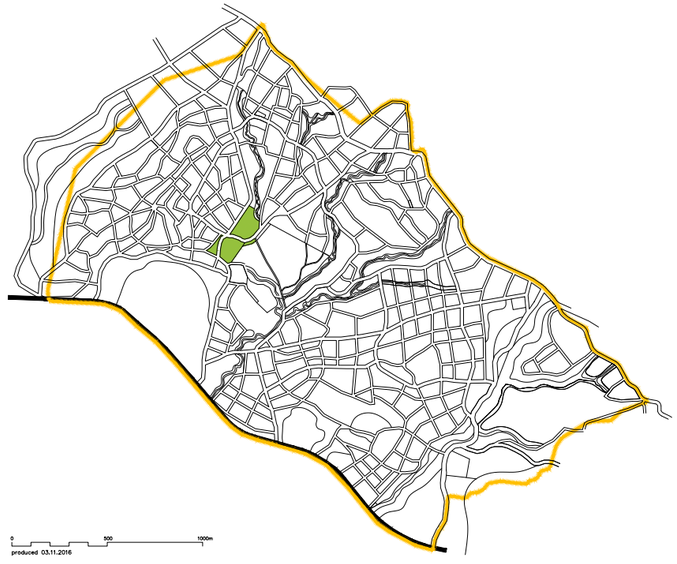


Fig.187: St.Christophe: Existing Public spaces

There are only two public spaces in St.Christophe; one market and one park. The total area of the existing public spaces is 0.68%. They are mostly located in the centre in proximity of the main road. To reach the recommendation of Habitat, it is essential to consider vacant lands for the development of new public spaces.

Proposed by the community

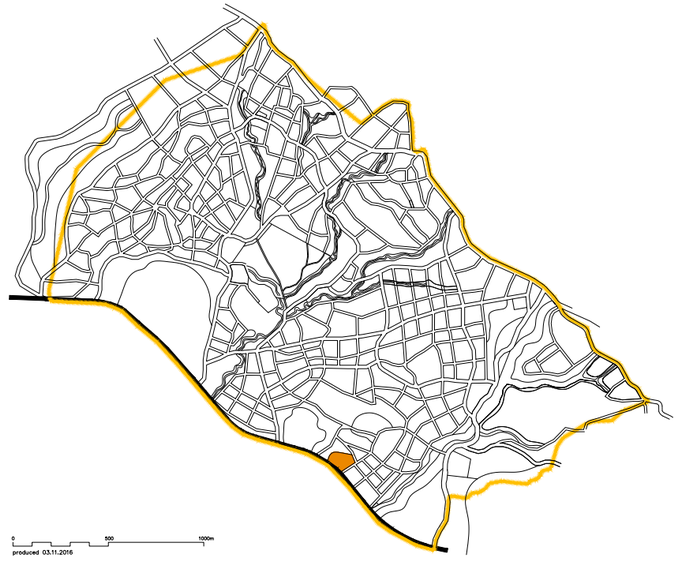


Fig.188: St.Christophe: Public spaces proposed by the community

Following the neighbourhood's assembly, a new park next to the national road 1 in the South was proposed. Adding this to the existing situation, the percentage is still not sufficient.

Proposed by UN-Habitat LAB

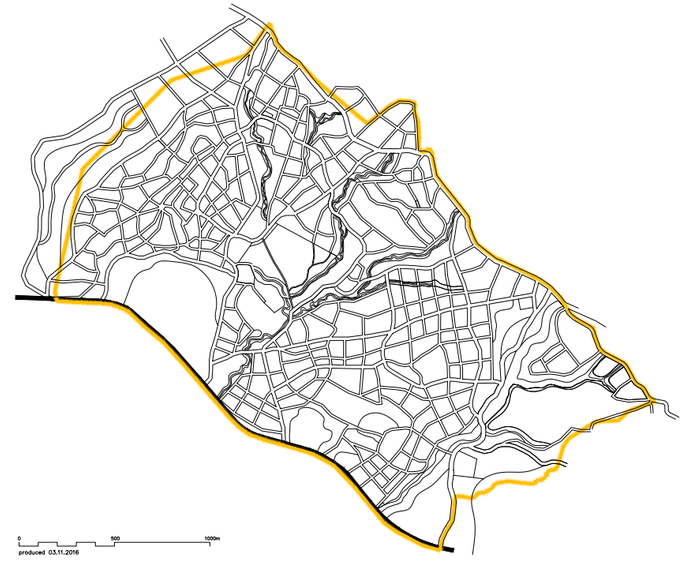


Fig.189: St.Christophe: Public spaces proposed by UN-Habitat LAB

Abandoned quarries which occupy large spaces are found in the neighbourhood. The Lab has found a great potential in them by converting these dead spaces into public ones.

In St.Christophe, some ravines crosses the neighbourhood and induce as such a high flooding risk. For that, a buffer area of 50 metres from both side is to be defined as a protection zone. The riparian zones were designed with the opportunity of becoming of public usages during no-rain season. If the proposals are put into place, the public spaces will reach 21.8 m2/inhabitant. The no-built areas are not seen only as functional public spaces, but also as urban open spaces providing respiration areas for the inhabitants.

#	PUBLIC SPACE IN ST.CHRISTOPHE	STATUS	NAME	m²	Ha	%
	Neighbourhood area			4,270,862	427	100%
1	Public space	Existing	marché	26,420	2.642	
2	Public space	Existing	parc	2,541	0.2541	
				28,961	**2.90**	**0.68%**
3	Public space	Proposed by the community	parc	10,015	1	
				10,015	**1**	**0,23%**
Total:				**38,976**	**3.90**	**0,91%**

Table 36. St.Christophe: Percentage of public spaces

#	OPEN PUBLIC SPACE IN ST.CHRISTOPHE	STATUS	m²	Ha	%
	Neighbourhood area		4,270,862	427	100%
	Public spaces		**38,976**	**3.91**	**0,91%**
4	Reforestation	Proposed by the community	26,700	2.67	
5	Quarry > Reforestation or open public project	Proposed by the community	186,800	18.68	
6	Quarry > Reforestation or open public project	Proposed by the community	36,200	3.62	
7	Quarry > Reforestation or open public project	Proposed by the community	15,263	1.5263	
8	Quarry > Reforestation or open public project	Proposed by the community	19,787	1.9787	
9	Buffer areas next to ravine	Proposed by the LAB	120,291	12.0291	
10	Buffer areas next to ravine	Proposed by the LAB	26,076	2.6076	
11	Buffer areas next to ravine	Proposed by the LAB	125,922	12.5922	
12	Buffer areas next to ravine	Proposed by the LAB	72,600	7.26	
13	Buffer areas next to ravine	Proposed by the LAB	8,800	0.88	
14	Buffer areas next to ravine	Proposed by the LAB	14,200	1.42	
			652.639	**65.82**	**15,28%**
Total open public spaces:			**691.615**	**69.1**	**16.20%**

Table 37. St.Christophe: Total percentage of public spaces

The World Health Organization (WHO) recommends 9m²/inhabitant

Existing	Proposed public space	Proposed P.S + non-aedificandi
28,961 m²	38,976 m²	691.615 m²
17.596 inhabitants	31.670 inhabitants	31.670 inhabitants
1.27 m²/inhabitant	**1.23 m²/inhabitant**	**21.8 m²/inhabitant**

Table 38. St.Christophe: Public space area per inhabitant diagram

Proposed public spaces with 400 metres buffer

Existing public spaces

Proposed by the community

Proposed by UN-Habitat LAB

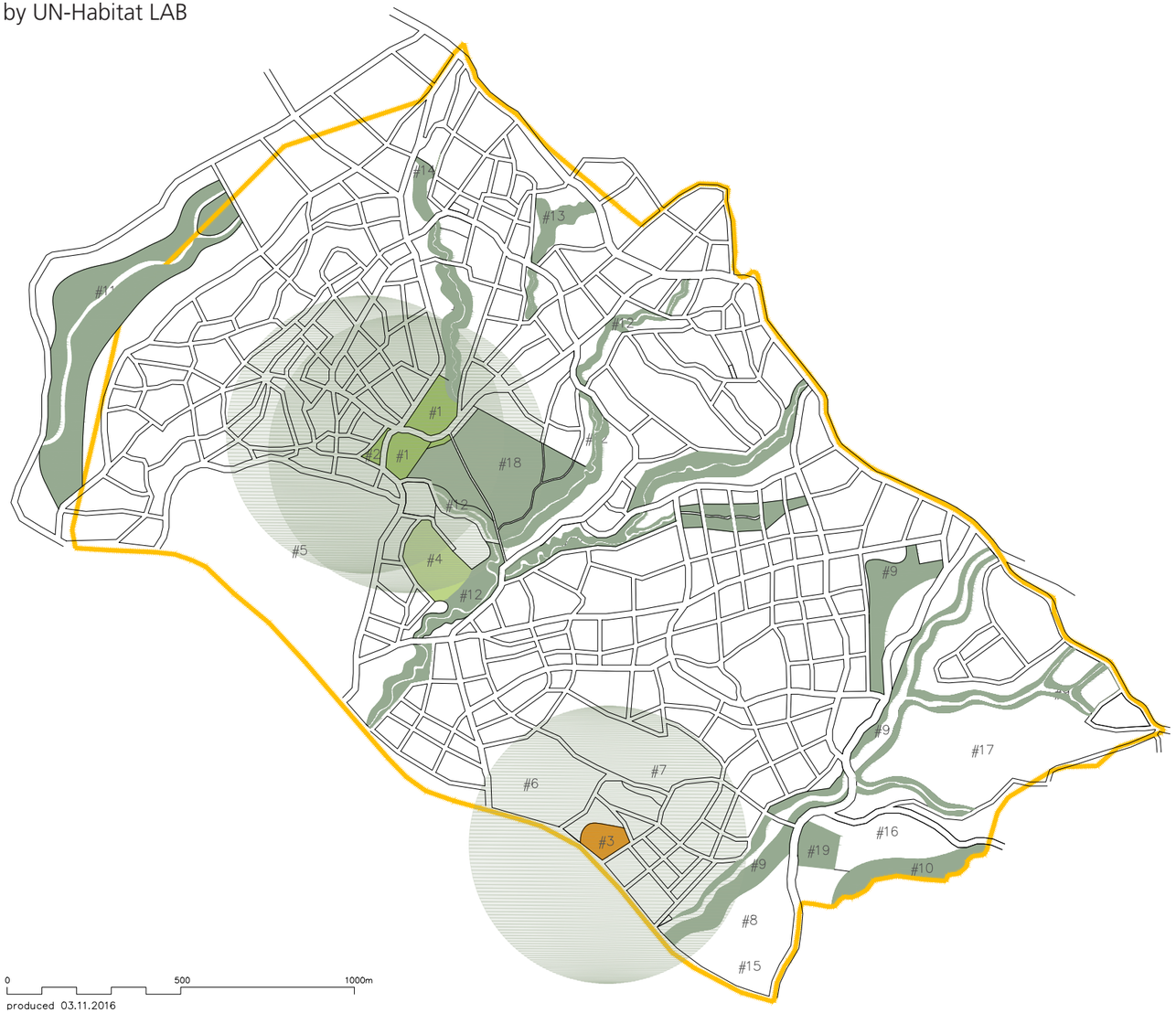


Fig.190: St.Christophe: Overall public spaces' land use and buffer area (400m)

C. RESIDENTIAL AREAS

4.27 km²
Neighbourhood area

17,600 Inhabitants
(source ARC household survey 2016)

4,120 people/km²

Existing residential areas

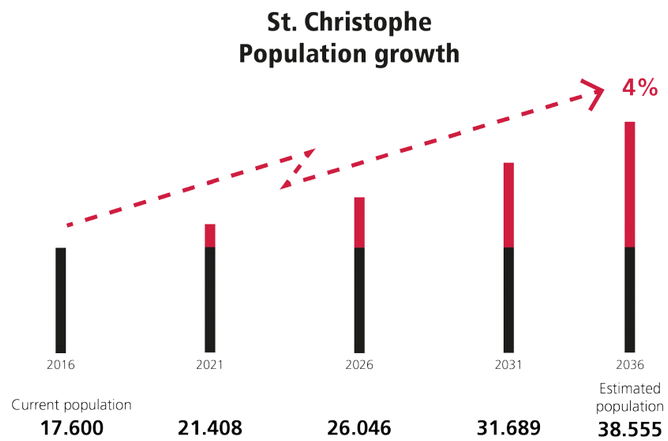


Fig.192: St.Christophe: Projected population increase

Fig.191: St.Christophe: Existing settlements

St.Christophe is considered as a low density neighbourhood with 4,120 inhabitant per km2. The concentration of the settlements is mostly in the north of Village des pécheurs where there are more road connections and where the topography is moderate.

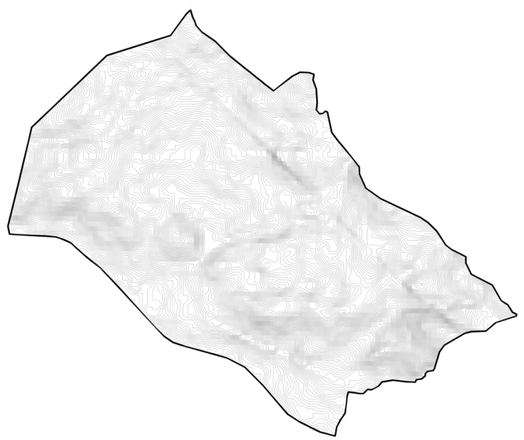


Fig.193: St.Christophe: Contours

In the south, the houses are dispersed with access to secondary streets. The neighbourhood could be further densified so it can accommodate the population growth.

Proposed densities

Low density

The new proposal for the distribution of the densities in St.Christophe suggests in having the low density areas where the morphology of the site is challenging. Adopting a density of 8,000 inhabitants per km2 for this category, St.Christophe will be able to host 3,200 inhabitants. The houses in this classification are often connected to secondary streets. It is possible to have small commerce provided their connection to pedestrian paths.

Medium density

The medium density settlements in the new plan are located all over the neighbourhood but mostly in the centre. The slope in the area are not steep and therefore densification strategies to existing low density area can be feasible. Respecting the proposed density, 16,000 people can live in St.Christophe under the density of 12,000 inhab./km2.

High density

For the high density areas, UN-Habitat recommends to have 15,000 people per km2. This means a study on plots modifications and resizing must be well conducted. Following the study of the terrain, the high density areas will be located near the main roads where the topography is almost flat. The houses will be in proximity of commercial areas which will reinforce the compactness and improve walkability. The new plan can host 12,000 people.

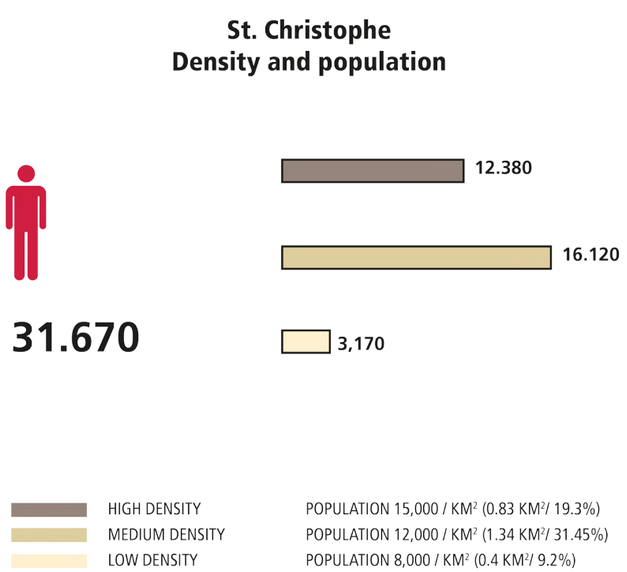


Fig.194: St.Christophe: Diagram of population in the new proposed residential areas.

It is expected that the current population of 17,600 will increase to reach 38,555 people in the next 20 years; if the growth remains of 4%. Following the densification of certain areas, St.Christophe is able to host 31,670 inhabitants. This means that the plan, as it is, is eligible for the upcoming 16 years. After that, medium and low density areas will need to be further densified in order to respond to the growing demand.

The presence of economic activities in the residential areas is highly encouraged on condition to have a direct access to the roads. The size of commercial activities depends on the types of roads and the density of the area; the higher the density, the bigger the commerce and vice versa. The compactness of the city is induced by the integration of different usages into the urban fabric.

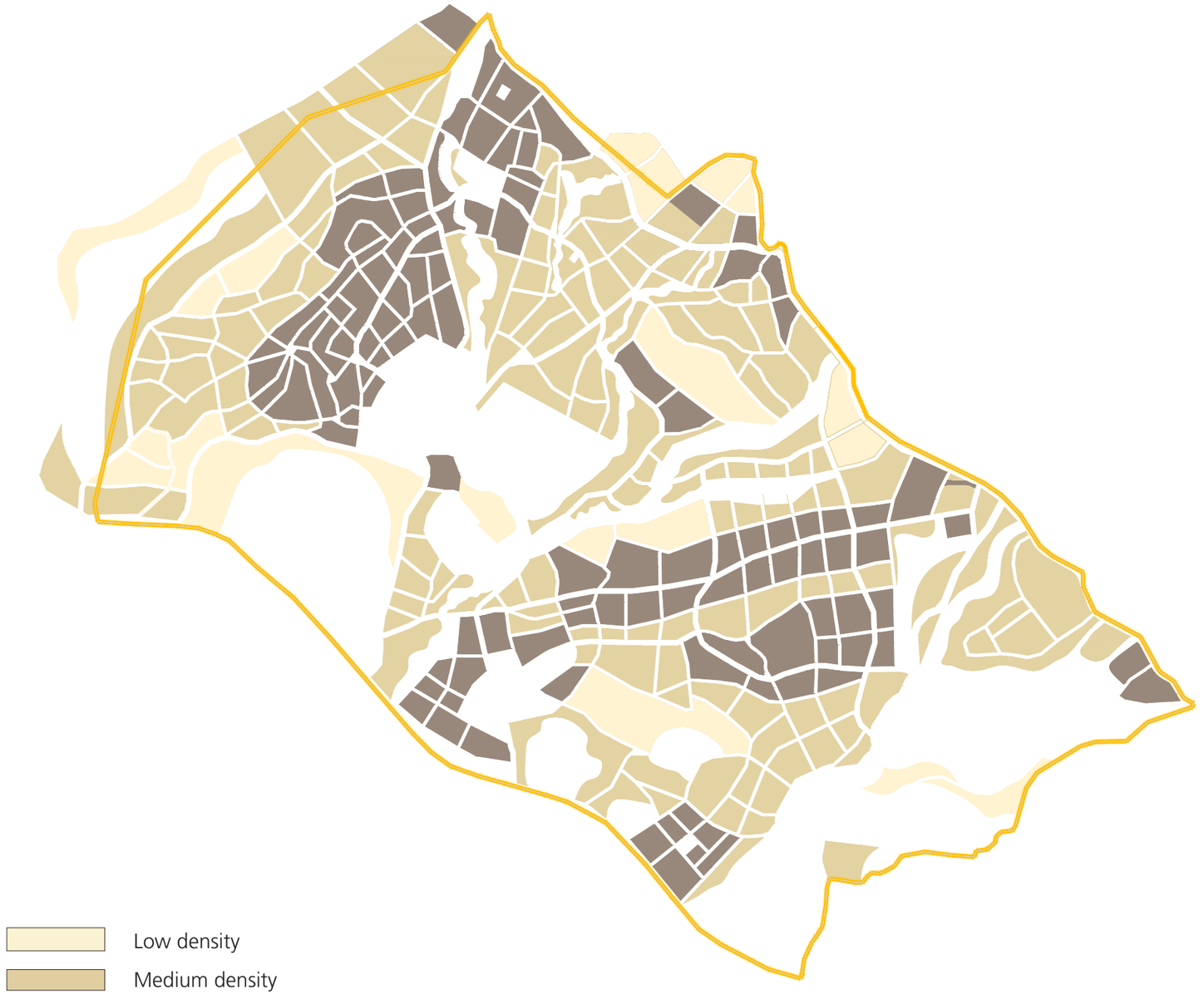
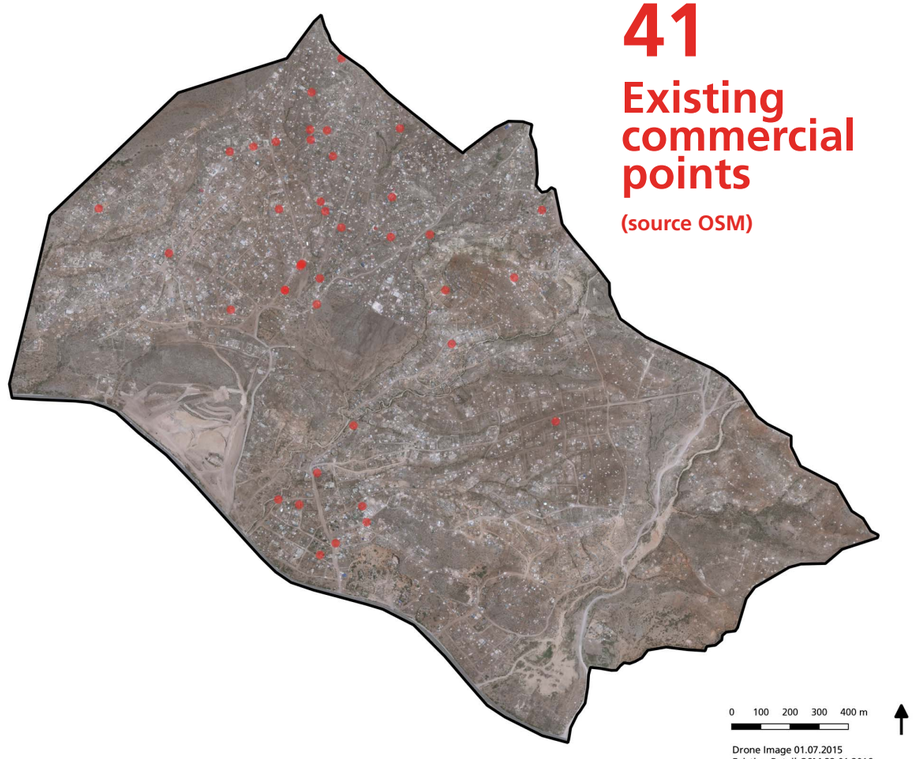


Fig.195: St.Christophe: Residential areas and proposed densities

D. COMMERCIAL AREAS

Existing commercial



41

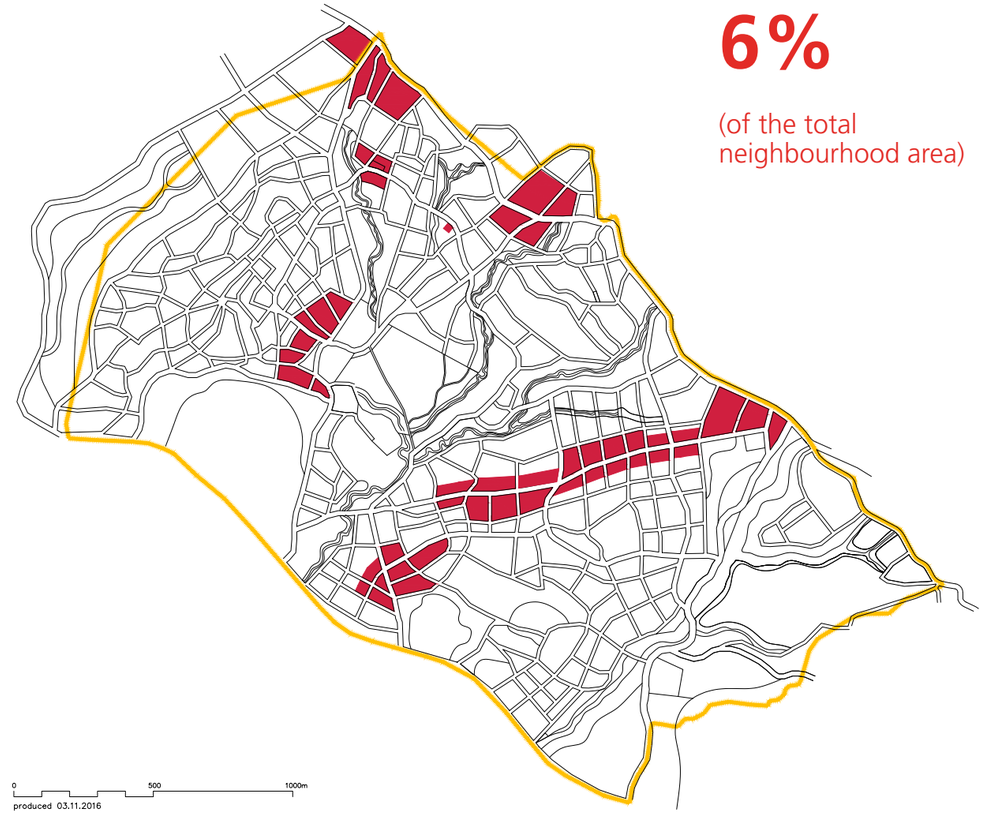
Existing commercial points

(source OSM)

Fig.196: St.Christophe: Existing commercial points (Source: OSM)

According to the OpenStreetMap data, there are 41 commerce shops in the neighbourhood. They are more abundant in the north in the Village des Pecheurs rather than in the south. The information on the types of these retails is absent. To reinforce the local economy, new commercial activities should be considered and strategically located.

Proposed commercial areas (mixed-use)



6%

(of the total neighbourhood area)

Fig.197: St.Christophe: Proposed commercial areas

The area facing the arterial road is proposed to be converted into a commercial street. The commerce will take place on the ground floor with a direct access to pedestrian path and public transport.

These activities have the potential to generate a new, highly diverse sector within the local economy, with opportunities for job creation. They therefore act as catalysts for initiating a structural transformation. The proposed commercial areas in the new land use plan will occupy 10%.

E. PUBLIC FACILITIES

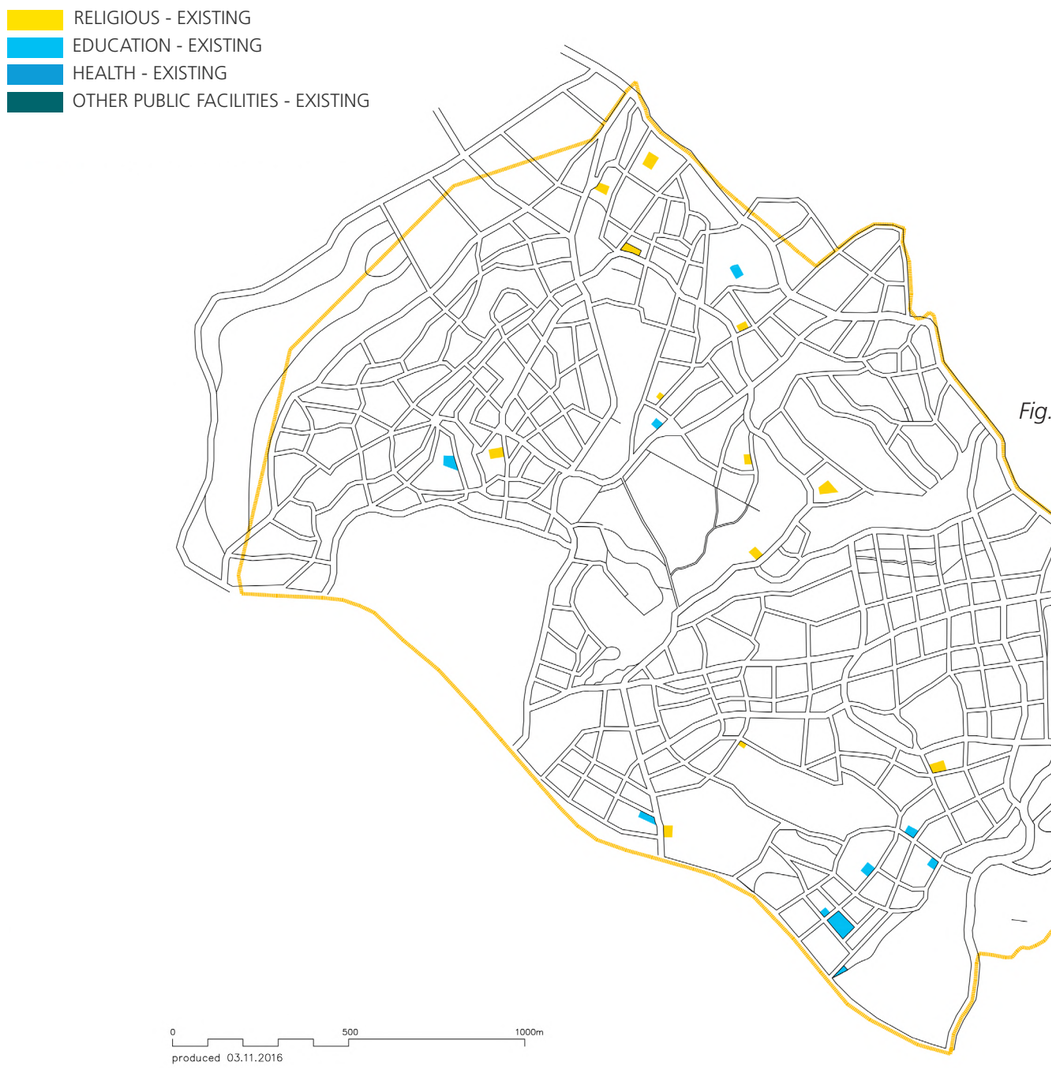


Fig.199: St.Christophe: Existing public facilities

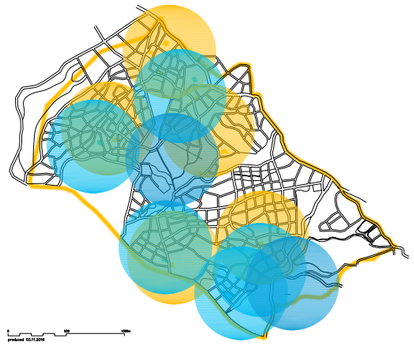


Fig.198: St.Christophe: Existing public facilities and a 500m buffer catchment area.

There are many educational facilities in the southern part of village de la decouverte. According to OSM, the number of schools is seven, however there are no further information of their type (primary, secondary, etc.). It was a challenge to predict the required number of facilities for the population. Education plays a major role in reducing poverty and inequality. For that, it is always advisable to reserve certain land for the extension of existing facilities and/or for the provision of new schools.

18%	Less than 10 years
6%	Illiterate
29%	Primary school (not finished)
10%	Primary school (finished)
27%	Secondary school (not finished)
5%	Secondary school (finished)
2%	Professional school
3%	University

Table 39. St.Christophe: Participation level (Croix Rouge Americaine, Juillet 2016)

St.Christophe has fifteen religious services however, there are no information available about health services, community centres, security stations and others. For planning purposes, and in order to have a long-term sustainable city, it is essential to consider the services mentioned in the new design of the neighbourhood. Generally, these services require good accessibility and therefore their location must be well studied. Normally, it is recommended to locate them within 500 metres from the settlements so that they are easily accessible

The public facilities occupy 0.45% which really poor. Once more information are provided, the plan must reconsider the allocation of these services in the land use plan.

F. NATURAL RESOURCES AND ENVIRONMENT

Given the topography, the presence of quarries and ravines, certain areas are to be considered as no-built areas for environment protection reasons. The buffer areas of 50 metres on both side of the ravines are highly encouraged to prevent flooding risks. These zones were designed with the potential of becoming public spaces. Also, the abandoned quarries are advised to be converted into recreational projects in order to benefit from dead spaces. Three spaces in the south will be allocated for livestock.

The no-built areas occupy 20.8% of the total neighbourhood area.

#	No-built areas	m2	Ha	%
	Neighbourhood area	4.270.862	427	100%
4	Reforestation	26.700	2,67	
5	Quarry > Reforestation or open public project	186.800	18,68	
6	Quarry > Reforestation or open public project	36.200	3,62	
7	Quarry > Reforestation or open public project	15.263	1,52	
8	Quarry > Reforestation or open public project	19.787	1,97	
9	Buffer areas next to ravine	120.291	12,02	
10	Buffer areas next to ravine	26.076	2,60	
11	Buffer areas next to ravine	125.922	12,59	
12	Buffer areas next to ravine	72.600	7,26	
13	Buffer areas next to ravine	8.800	0,88	
14	Buffer areas next to ravine	14.200	1,42	
15	Livestock	48.100	4,81	
16	Livestock	48.500	4,85	
17	Livestock	139.600	13,96	
	Total:	**888.839**	**89**	**20,81%**

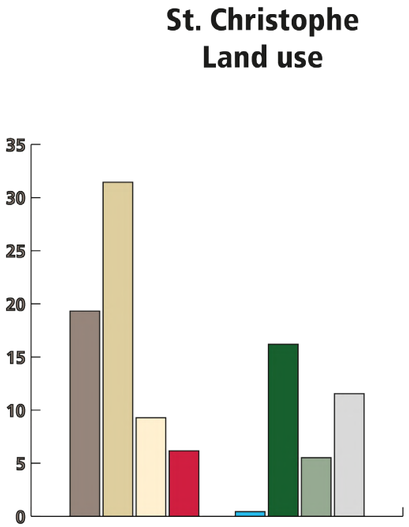
Table 40. St.Christophe: Total percentage of no-built areas

Legend

- Proposed buffer zone along the rivers and ravines
- Proposed area for livestock grazing
- Proposed area for reforestation
- High environmental risk areas
- Existing rivers and ravines
- Quarries

Fig.200: St.Christophe: No-built areas

G. ST.CHRISTOPHE LAND USE



Residential - High density	19,3%
Residential - Medium density	31,45%
Residential - Low density	9,29%
Commercial	6,18%
Industrial	0%
Public facilities	0,45%
Public spaces	16.20%
No-built areas	5.53%
Road network	11.56%

The assemblies, facilitated by the UN-Habitat team in Haiti, identified the main needs of the residents of St.Christophe. The proposed land-use plan is the result of the ongoing participatory process with the community. It responds as much as possible to their needs and proposes new ideas that can induce prosperity and sustainability. Even though the plan addressed the issues of land uses and increase the street network, the public spaces and commerce, public facilities however remain insufficient. An elaboration of the plan is essential once all the information are provided. To ensure St.Christophe' sustainability, it is recommended not to further densify it.

The plan was reviewed as a whole, taking into account the neighbourhoods nearby and how they connect. It is mandatory to situate each of the individual neighbourhood plans in the whole Canaan area to achieve a coherent and rich structure.

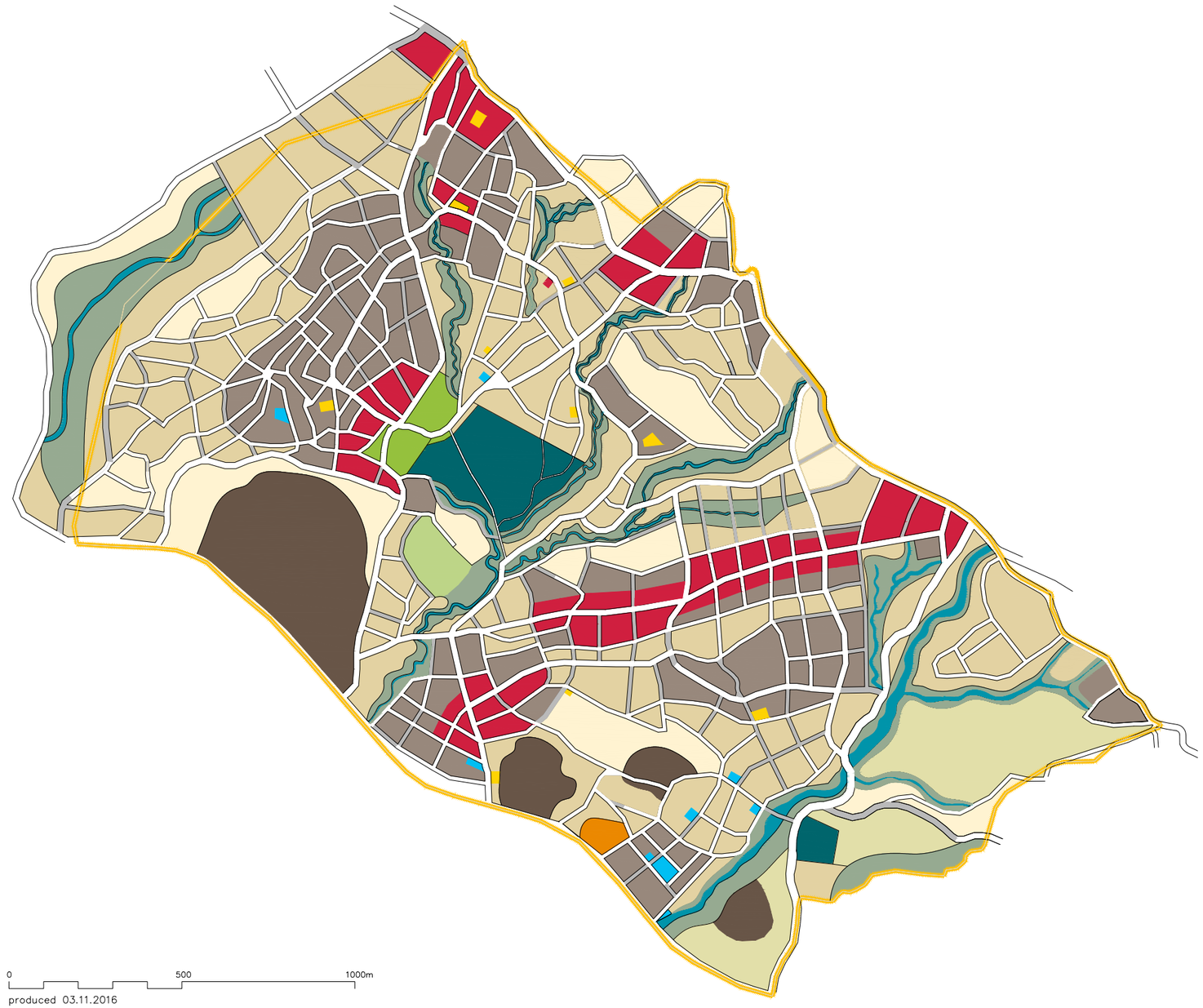


Fig.201: St.Christophe: Proposed land use plan

THE URBAN DEVELOPMENT INITIATIVE

The urban development initiative is a holistic approach that uncovers different strata of studies on many levels. It has been developed as a collaborative effort between international and local stakeholders under the supervision and guidance of the Unité de Construction de Logements et de Bâtiments Publics (UCLBP). Financial and human resources provided by the American Red Cross, USAID, Haitian Red Cross and the UN-Habitat country team office in Haiti, have been instrumental in the development of the project as well as in the mobilization of different community groups engaged in the planning exercise.

The project has brought together, through a series of charrettes, participants from the national government, municipal government, international and local organizations, academia, community groups and planning experts to discuss these three key components of sustainable urbanization in the reconstruction of Haiti.

The current report "Urban Structure Plan" falls under the city-wide scale where a precedent analysis and diagnostic were delivered in the comprehensive analysis and diagnostic report. A set of recommendations and propositions are delivered in this documents to shape up and provide a new structure for the Canaan area of Port-au-Prince.

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CROIX-ROUGE HAITIENNE

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