DATA GATHERING AND ANALYSIS AT HOUSEHOLD LEVEL KIGALI/RWANDA: SOCIO-ECONOMIC HOUSEHOLD SURVEY

## ■ Methodical approach and its use for empirical data gathering

Planning of supply and disposal infrastructure in a city requires a reliable data basis. Specific per capita data on the energy and water consumption as well as on the wastewater and waste generation are mostly not available in sufficient quality or quantity. Therefore IUWA developed a methodological approach for a fast and easy collection of socio-economic data and information on the household level. These data indicated different living standards of surveyed households. Regarding different living standards, it is possible to group several households into different lifestyle classes (LC). The different LCs represent typical patterns in the consumption of water, energy and food as well as in the generation of waste and wastewater. By now recording the inhabited building of the single household, and the classification of all buildings, one can link a specific building type (BT) to the related LC and its residents. The different building types are determined in a manner that they are also identifiable by using remote sensing methods. As a result, reliable data on the consumption of water, energy and food and the generation of waste and wastewater for a specific area can be generated in a rapid way.

### Structure and content of the developed questionnaire

- Housing and infrastructure
- Specific information on the household
- Specific items, devices and features of the household
- Expenditures of the household
- Food and buying habits
- Earnings of the household
- Assessment given by the interviewer

Figure 1: Extract from the digital questionnaire for Kigali (Android Tablet with GeoODK)
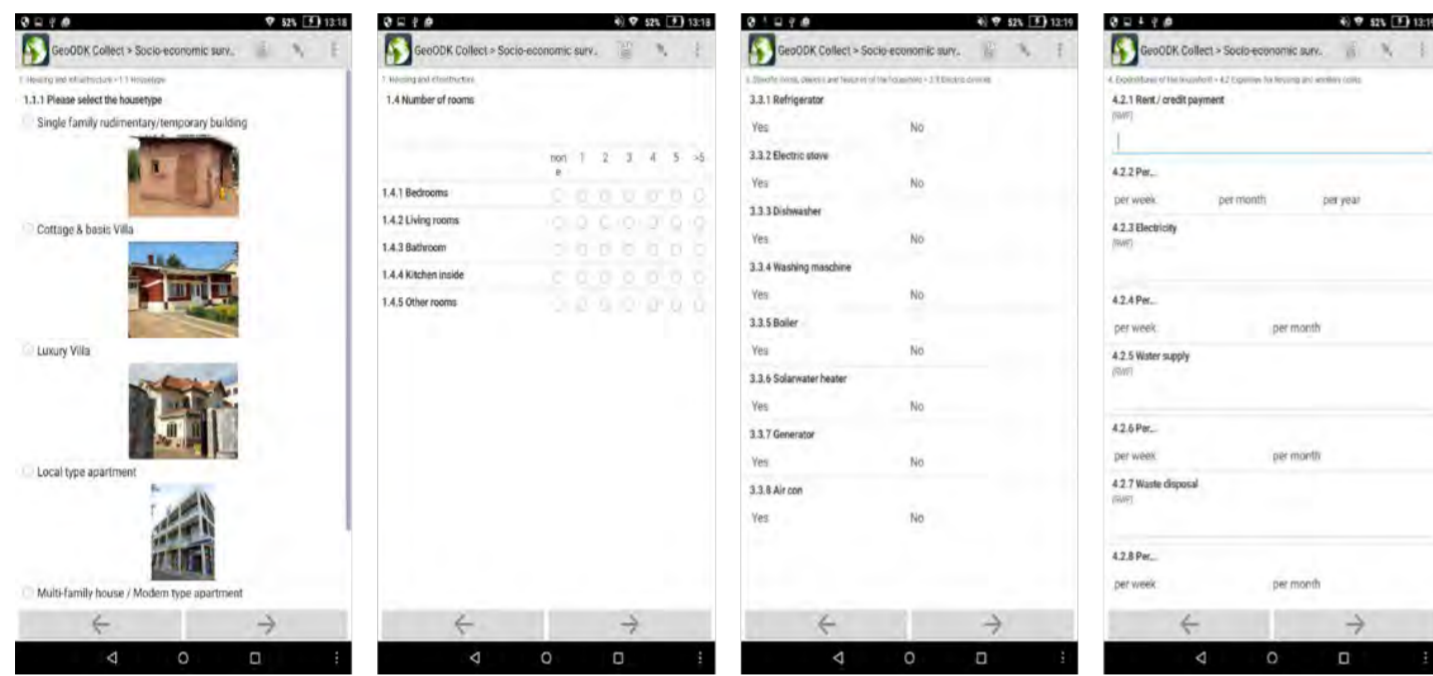
### Method for generating lifestyle classes of households

Figure 2: Method for generating LCs of households
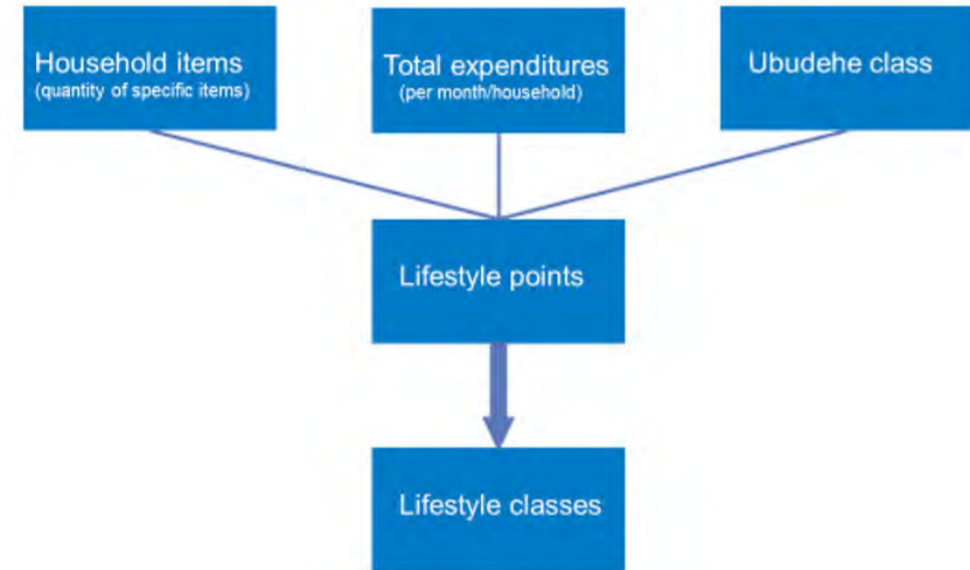
For the analysis, 28 binary questions from the block household item: electronic items, household items and mobility (answered with yes) were counted and divided into four equal categories. As the second block, the 38 questions about total expenditures of the household were standardised and divided into four quartiles. The third block Ubudehe class delivered four categories. In total, every block provided 1-4 lifestyle points (LPs); all blocks together made 3-12 LPs. The LCs were generated from theses LPs.

Results

Figure 3: Number of average LPs in the different test areas
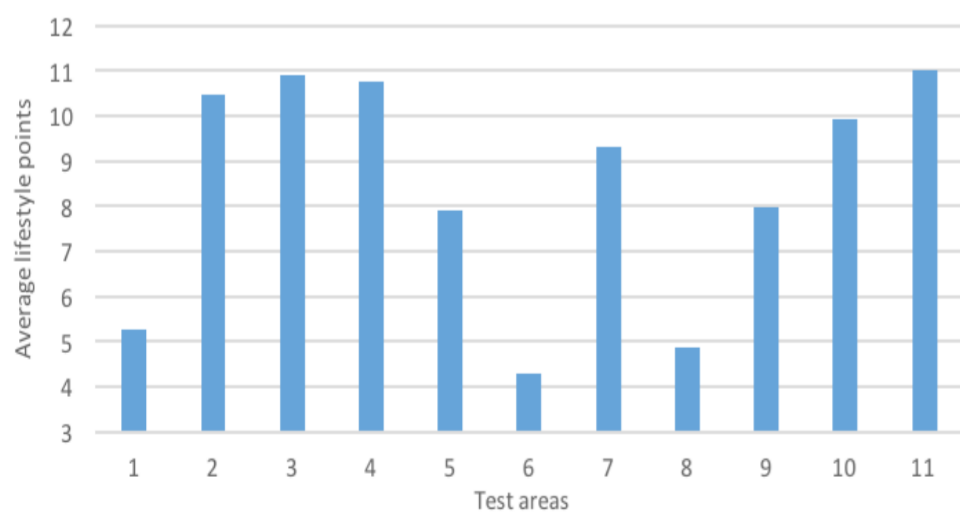
Lifestyle classes

The addition of LPs delivered the following LCs:

LC 1 = average LP < 6, LC 2 = average LP < 8, LC 3 = average LP < 10, LC 4 = average LP > 10.

■ Linking lifestyle classes to building types

Test areas

11 pre-selected test areas (A1 - A11), with a homogeneous building type, were surveyed. In total 609 questionnaires were gathered and analysed in the following areas: A1 Agatare/Biryogo/Rwampara (132), A2 Kimihurura (48), A3 Kiyovu (35), A4 Gacuriro (40), A5 Rwezamenyo II (83), A6 Nyabikenke (46), A7 Kanserege (39), A8 Nyamabuye (79), A9 Kibagabaga A/B (47), A10 Kibagabaga C (54), A11 Kiyovu (Apartments) (6).

Building types

The different test areas showed three (4) different BTs; the BT is homogeneous in the single areas.

Figure 4: Most representative BTs

BT 1: Rudimentary   BT 2: Bungalow   BT 3: Villa

■ Urban structures types (UST) and further location parameter

Buildings of one single BT do not represent always the same LC. The surveyed areas varied in the value of their locations. That is why some buildings must be specified by further information. Beside the UST, further location parameters should be defined.

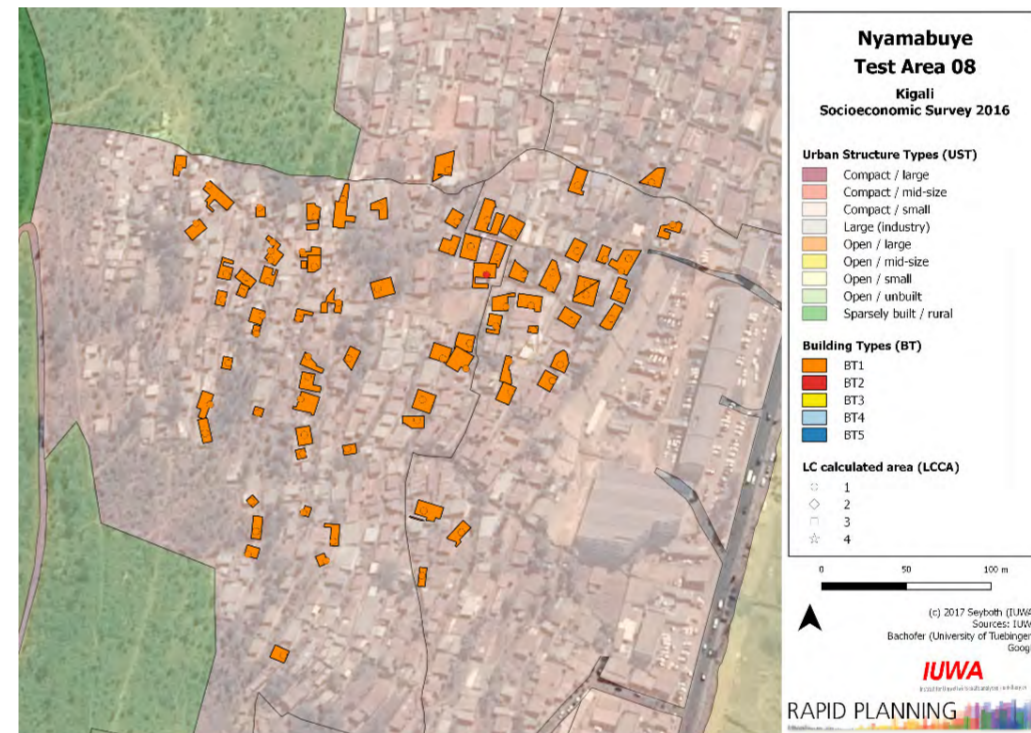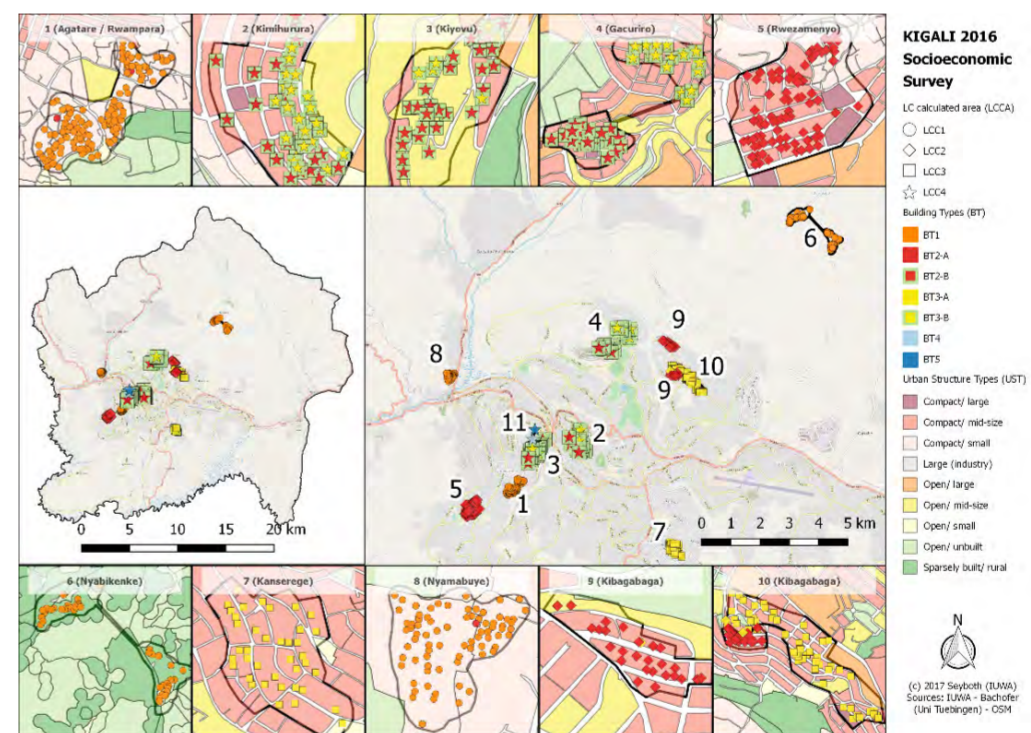### Figure 5: Intersection of LCs of test area with BTs and UST

Figure 6: Surveyed test areas with LCs with BTs and UST

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