

GATHERING AND ANALYSIS ON INDUSTRY LEVEL - KIGALI

Introduction

The task focuses on the collection of related data for each industry type based on information on typology of major industries. The data collection for water, energy consumption, quantity and quality of waste water and waste will be linked to a method based on employee-specific amounts of industrial waste. It is a possibility for rapid data collection for the industry level.

Methodology and questionnaire

The work is based on a comprehensive collection of data, information on industry from statistical yearbooks, and other local sources. The most important industrial key actors were interviewed on basis of a questionnaire, centerpiece of the industrial survey. The questionnaire was developed by IUWA, with ideas and remarks from the partners Ostfalia (sector water), IER (sector energy), IZES and AT-Verband. It was only translated into English. A paper-based survey was carried out.

Table 1: Preliminary investigation on existing industrial branches in Kigali

Economic activity	Size based on workers				
	Total	Micro(1-3)	Small(4-30)	Medium(31-100)	Large(100+)
Total	154.236	138.894	13.385	1.628	329
Agriculture, forestry and fishing	751	329	304	72	46
Mining and quarrying	282	50	136	60	36
Manufacturing	10.742	9.178	1.445	69	50
Electricity, gas, steam and air conditioning supply	25	4	15	3	3
Water supply, sewage, waste management and remediation activities	64	29	30	2	3
Construction	157	72	70	7	8
Whole sale and retail trade; repair of motor vehicles and motor cycles	78.464	76.465	1.905	78	16
Transportation and storage	288	133	118	28	9
Accommodation and food service activities	44.626	41.727	2.816	70	13
Information and communication	404	348	45	9	2
Financial and insurance activities	1.150	276	848	15	11
Real estate activities	4	3	1	0	0
Professional, scientific and technical activities	962	733	224	5	0
Administrative and support services activities	929	770	131	20	8
Public administration and defence; compulsory social security	104	0	22	32	50
Education	3.483	180	2.358	923	22
Human health and social work activities	1.245	296	723	185	41
Arts, entertainment and recreation	156	85	61	7	3
Other services activities	10.400	8.216	2.133	43	8

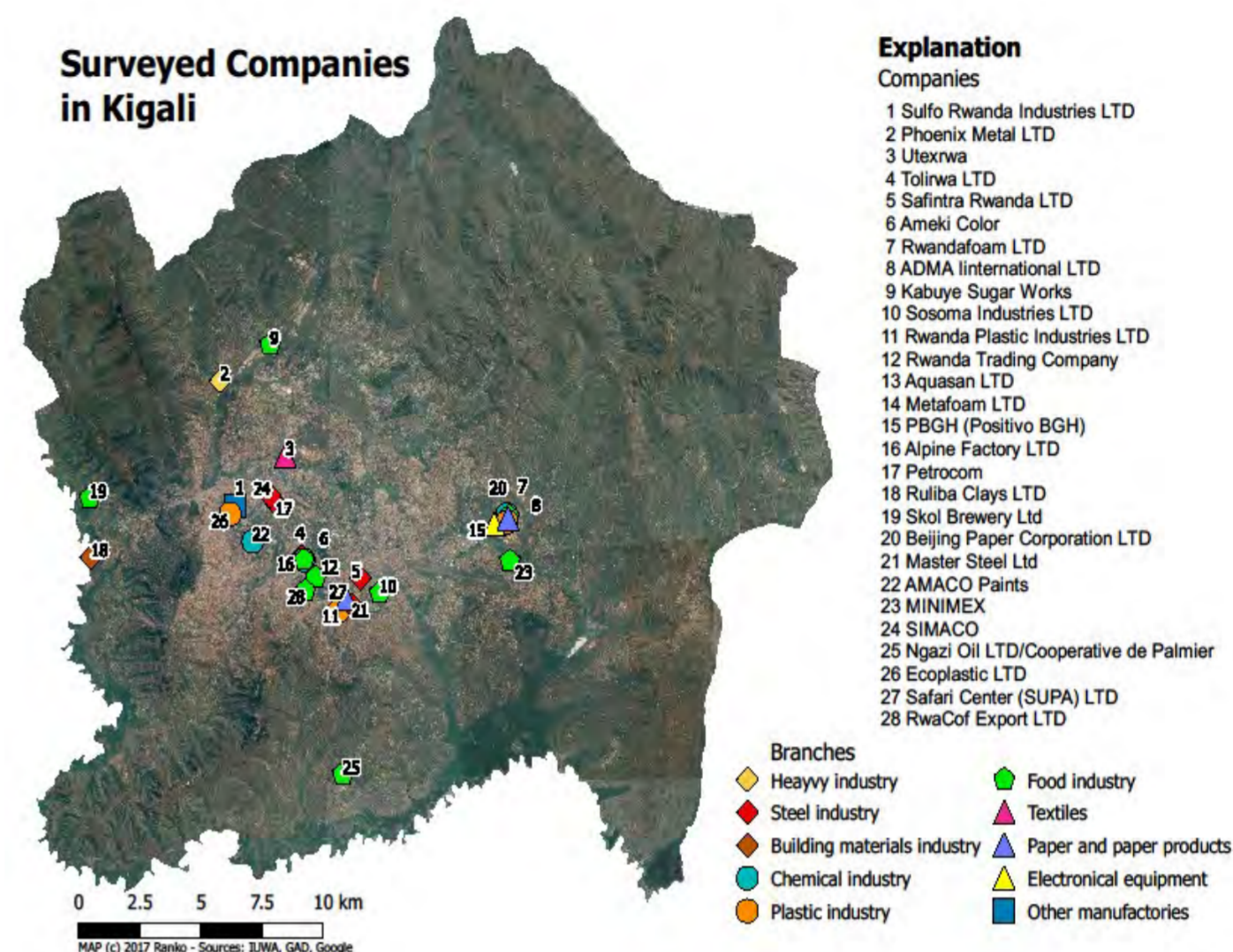
The investigation targeted at companies of the manufacturing sector with more than 100 employees. In Rwanda, there are altogether 69 companies with 31-100 employees and another 50 beyond that scope in the manufacturing sector, as a result of the analyses of the table 4.20 from the latest statistics "Establishment Census 2014", published in June 2015 by the National Institute of Statistics of Rwanda.

Table 2: Content of the developed questionnaire

Questionnaire Part 1		
General information		
<ul style="list-style-type: none"> Contact information Specification of industrial sector Number of staff Size of company and growth rate Main products Total amount of wastes and waste separation Water consumption, wastewater and its treatment Energy consumption Generation of own energy Main materials consumption 		
Questionnaire Part 2		
Waste	Energy	Water
<ul style="list-style-type: none"> Types, quantities of hazardous wastes Types, quantities of normal wastes and the separation Separation of hazardous wastes in different fractions Internal recycling of wastes Types, quantities of waste gas 	<ul style="list-style-type: none"> Further energy consumption Restriction of energy (how often you have blackouts) In case of power blackout Energy production Use of energy Use of combined heat and power 	<ul style="list-style-type: none"> General operational details of water management Water supply Water consumption Required water quality Onsite water treatment (no wastewater) Wastewater treatment Wastewater discharge Water Reuse Activities
Certifications		
Constraints in the development of the company		
The biggest problems of the company		

In general, large sized firms are geographically located all over Kigali. Some of them, however, have already moved into the new "Kigali Special Economic Zone" in the sector Masuro, which is still under construction at the moment.

Figure 1: Map of the surveyed companies in Kigali



The data collection was very time consuming. Quality checks were carried out at and after the transfer of the data to excel format.

Table 3: Results of the questionnaire sorted by branches

Industrial sector (number of surveyed companies)	Total staff [Pers.]	Annual turnover [million EUR*]	Total waste [t/a]	Fresh water [m3/a]	Waste water [m3/a]	Electricity [MWh/a]	Fuel oil [t/a]
Heavy industry (1)	102	13	3	800,000	-	234	-
Paper and paper products (2)	130	8	-	-	-	185	-
Food products and beverages (9)	3,228	34	11,509	3,006,980	105,720	2,911,639	987
Textiles and wearing apparel (1)	360	-	-	13,452	-	673	-
Electronical equipment (1)	23	-	4	3,204	3	39	-
Building materials industry (1)	194	-	183	71,449	-	1,021	-
Chemicals and chemical products (4)	600	10	2	5,485,015	15	770	33
Rubber and plastic products (3)	256	6	48	4,048	1,095	105,172	-
Metal processing (5)	822	7	67	33,960	-	77	-
Other manufacturing (1)	663	16	54	37,465	3,650	1,008	240

Together with the local interviewer team, IUWA planned and conducted the survey. For this purpose, each company to be investigated was visited, during which the project was introduced to the management and the questionnaire was discussed. In quite a few cases, a guided tour on the site was also organised.



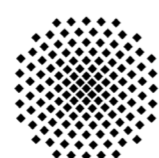
Figure 2: Survey team



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