Erasmus+

LaWEEEda

Latin American-European network on waste electrical and electronic equipment research, development and analyses

D1.3
Report on social, gender, ethical, regional, and national aspects

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Project Coordination:

University of Natural Resources and Life Sciences, Vienna

European Partners:

Hamburg University of Technology

University of Northampton

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Local Coordination in Brazil:

UFRJ

Local Coordination in Nicaragua:

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NICAMBIENTAL

Hanter Metals, Ltd.
Desde Nicaragua, para el resto del Mundo!!!

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Introduction

Due to the economic crisis, the continuing growth of cities and increasing market prices for secondary raw materials it can be expected that the number of people involved in informal waste collection and recycling activities tends to further increase. Therefore, it is time to rethink potential future developments in the context of low-income countries like Brazil and Nicaragua. When new systems to improve solid waste management are introduced and investment decisions are made, a key question often asked is where and how to make those investments to maximize the intended outcomes. The question is whether to use the knowledge and experience of the existing systems where informal actors play a key role or to strive for modernisation excluding this knowledge and to focus more on technology-based solutions. The contribution of informal activities is difficult to estimate as informal waste claimers have no inherent reason, obligations or simply not the capabilities to keep records regarding their work. As "formal" (official) performance data are usually not covering informal systems, official statistics (if even available) do not reflect the complete picture of waste management in low-income countries. As WEEE contains high concentrations of valuable materials, in comparison to other types of waste, the activity of the informal sector in this sector is high.

The activities of the informal WEEE sector in Brazil and Nicaragua are very high as well as the related infrastructure in both countries is still underdeveloped; in Nicaragua worse than in Brazil. To identify proper starting points to train people and to improve the infrastructure regarding the treatment of WEEE on the long-term it is important to collect data about the informal sector in both countries and involve their actors in the planned training products.

Additional data based on social, gender and ethical aspects will be provided within this report as well if not already included in the country- respectively city profiles created in D1.1 “Comprehensive inventory of available capacities in Brazil and Nicaragua in terms of WEEE management”.

Situation of the informal sector in Brazil

Due to a lack of incentives and monitoring instruments related to the compliance of existing laws, the informal WEEE sector is strongly represented in Brazil, especially in the poorer regions. Lundgren (2012) visualized basic WEEE routes in Brazil as you can see in the following Figure 1 and underlines the strong activities of the informal sector.

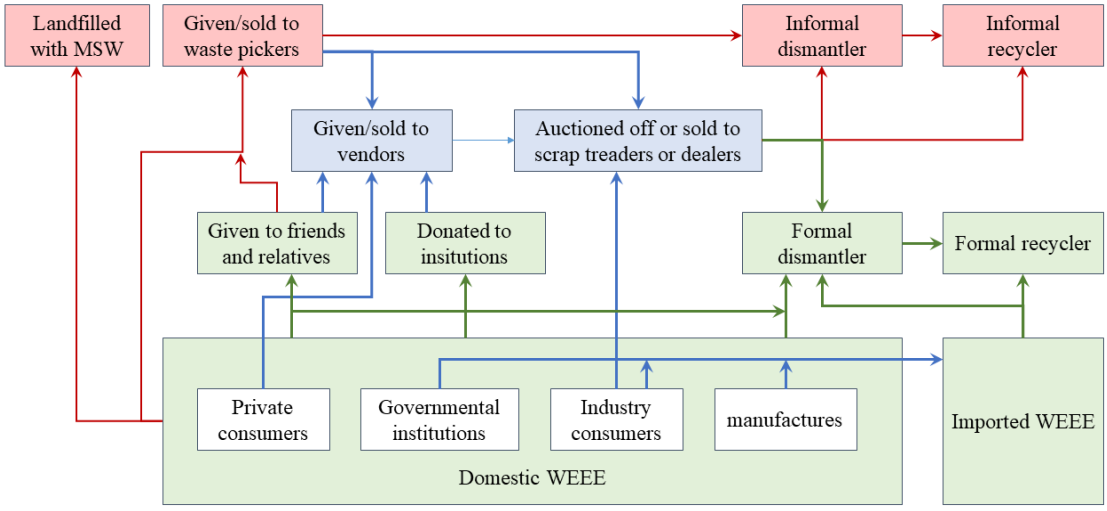

Figure 1 – WEEE routes in Brazil, adapted from Lundgren (2012)

The four red-framed actors in Figure 1 show the activities in which the valuable materials get lost in the formal WEEE route, whereby three of them belong to waste pickers, informal dismantlers respectively informal recyclers. The informal WEEE sector in Brazil is supported by several open access homemade videos about e.g. a recipe for the leaching of PCBs (https://www.youtube.com/watch?v=9zOqq-o5i0I). Those videos include whether safety instructions nor standards and are thereby very risky for people striving for selling valuable WEEE materials like copper and gold, especially from PCBs, but do not reflect the accompanying risks. This leads to fundamental risks regarding human health and environmental pollution.

The following Figure 2 and Figure 3 from Ricardo Gabbay de Souza, local organizer of Brazil in LaWEEEda, show two examples of WEEE in the Brazilian environment after the informal dismantling processes.

Figure 2 - WEEE in the Brazilian environment 01 (source: Gabbay de Souza)

Figure 3 - WEEE in the Brazilian environment 02 (source: Gabbay de Souza)

Perception of the informal WEEE sector of COOPAMA within their cooperative

To get further insight on the activities of the informal WEEE sector in Brazil, COOPAMA contributed their perception of this sector. The statement is document in the following paragraphs.

Yesterday's meeting COOPAMA's considerations on the informal electro-electronic waste market Waste source and input at the Cooperative:

Most of the waste that arrives at the cooperative is already destined in the "informality", considering that they are not accompanied by legal documentation (Manifesto de Resíduos) or papers that allow the control by the environmental Agency.

Currently, only one important customer delivers WEEE with the right documentation papers.

Cooperative and commercial output:

Currently, 90% of the WEEE that arrive at the Cooperative is formally sold to a large company called LORENE. Around 5% of the waste received is destined for persons (informal sector) who come looking for some item that is still working and can be used again. In addition, out of five current buyers of COOPAMA three are characterized as informal intermediaries, since they act by buying, stocking and re-selling WEEE. At first these two buyers also do not process or dismantle such waste, they only stock and sell larger quantities. Many individual and even cooperatives thats work with this waste are not observed, due to the lack of knowledge of the value and the difficulty of processing them.

Nowadays, the biggest challenge related to informality is the lack of control over the traceability of this waste and the difficulty of implementing environmentally adequate methodologies. Assuming there are now specific laws for WEEE in Rio De Janeiro, the informality relies basically in discharging the material, somehow somewhere.

Regional and national issues in Brazil

All important regional and national issues in Brazil are already covered in Deliverable 1.1 "Comprehensive inventory of available capacities in Brazil and Nicaragua in terms of WEEE management" of the LaWEEEda project.

Gender issues in Brazil

All important gender issues in Brazil are already covered in Deliverable 1.1 "Comprehensive inventory of available capacities in Brazil and Nicaragua in terms of WEEE management" of the LaWEEEda project.

Ethical issues in Brazil

All important ethical issues in Brazil are already covered in Deliverable 1.1 "Comprehensive inventory of available capacities in Brazil and Nicaragua in terms of WEEE management" of the LaWEEEda project.

Situation in Nicaragua

Situation of the informal sector in Nicaragua

The activities concerning the collection and recycling of WEEE are as of now in Nicaragua all informal and mostly illegal (concerning the law about the treatment of potentially dangerous waste). Metal scraps are on high demand as well as other materials associated with metals. Thus the informal collectors (in groups or as individuals) search the garbage to recover them to extract the valuable substances and components in order to sell them.

It is quite disturbing that the extraction methods the collectors apply are harmful to human health and also contaminate the ecosystems. As they acquire the WEEE materials informally, none of them has ever received any training nor information about the proper procedures to apply in order to avoid dangers to themselves and others nor do they have knowledge about the proper disposal of agents causing environmental hazards.

The department of Managua has a population of 1.316.981. Among the commercial activities in the department there are also activities in the waste sector consisting among others, of illegal waste collection centers. They are mainly involved with the collection of different metals and aluminum as well as electric and electronic items, the last ones being among the goods considered to produce “dangerous solid waste”. According to the “Basil Agreement” which has as its main objective the protection of the human well-being as well as of the environment against the effects of hazardous waste which needs to be treated and disposed of accordingly.

The illegal waste collection centers operating in Managua and the communities of Nicaragua do operate without the authorization of the ministries in charge of waste collection and the potential risks associated with it as for example the Ministry for Environment and the Ministry for Natural Resources (MARENA), the Ministry of Health, and of the Municipalities where they operate. Consequently, the informal sector does not comply with the established technical criteria and does not comply with internationally in agreement with the set rules and procedures. Thus, the informal WEEE-sector is a potential danger especially for a city as big as Managua as their

activities involve environmental risks during disassembly and in discarding toxic components which cause soil, water and air contamination. As mentioned before, the personal of the collection centers is generally working without any protection gear, is not insured by the Nicaraguan social security system and work under suboptimal conditions.

The lack of environmental awareness and education of the population concerning the potential risks of handling WEEE materials contributes to a bad management of WEEE materials in the country. It's worthwhile mentioning that the informal waste collectors gather all types of waste and belong to the poorest economical sector who desperately depend on this income for their subsistence.

The informal waste collectors can be considered one of the least educated groups in Nicaragua. Many cannot read and write. Many have severe social problems (drugs, drinking, homeless). The metal scrap collectors are likely to be in general more well-off and somewhat more educated than other waste collectors and own some type of vehicle for transport of the collected goods.
To educate the informal sector on the topic of waste is likely to be difficult and bares a number of risks. We propose training the cooperatives, members of "Carenic" (Chamber of Recycling) and the NGOs that we can identify being involved in the sector. Hantermetal and Nicambiental, business partners within the project LaWEEEda, will support identifying NGOs and cooperatives involved.

Perception of the informal WEEE sector of NICAMBIENTAL

To get further insight on the activities of the informal WEEE sector in Nicaragua, NICAMBIENTAL contributed their perception of this sector. The statement is document in the following paragraphs.

1) ***General situation of the informal sector in Nicaragua:***

In Nicaragua there are about 13500 families living in poverty. They execute one of the toughest duties in the integral solid waste management in their work as collectors and recyclers. It has been estimated that only in the capital alone, the city of Managua,

there exist at least 3,000 families involved in garbage collection and recycling, most of them having very little or no academic background at all.

As a result of the earthquake of 1972 in Managua, the garbage dump site "La Chureca" was created. "La Chureca" is a historical landfill having once started as a dump site for the rubbles of the earthquake. Since then all the solid waste of the capital city has been brought to this site which has meanwhile (with international help) turned into a landfill which is the biggest one in Nicaragua.

The landfill is located in the "Acahualinca" neighborhood in the district II of Managua at the north-west of the city and very close to the Xolotlán lake. Actually what is now denominated as "Acahualinca" neighborhood is a progressively growing settlement of older settlements (El Aserrío, Alemania Democrática, Rafael Ríos, Alfredo Silva) that are now being consolidated containing also some recently established settlements such as Las Brisas annex, Linda Vista Norte annex, Rafael Ríos, Bajos de Acahualinca1, Bajos de Acahualinca2, COPRENIC, Alfredo Silva east, Los Martínez west side and El Pantanal 1.

The last settlements just appeared recently so they took up the lands illegally thus not having any urban services. Another new area is now being populated with approximately 18,000 habitants. Most of them survive by collecting classified solid waste which they sell to intermediaries or to so-called "stockpile centers" to earn some money for their subsistence.

Through the implementation of a social impact campaign "Donate your electronic waste and save our precious wood" since 2013, NICAMBIENTAL gained general insight in these areas. In most of the cases these groups of people work on their own behalf without security measures or organizational structures which generally contribute to working in decent conditions neither do they have access to training or strengthen their case by forming associations or groups of interest.

From the collected information by NICAMBIENTAL they been classified the following aspects:

a) *The simple collectors/recyclers (known as "pepenadores", "churequeros", "picacheros") represent the base of the recycling pyramid in Nicaragua which are of strategic interest for the project.*
b) *Another sector is the one known as "stockpile centers" which are usually small family enterprises and play the role of intermediaries between base recyclers and exporting enterprises of ferrous and non-ferrous metals. Its function is to accumulate medium and huge amounts of solid waste, as paper, paperboard, plastic, ferrous and non-ferrous metals which then are sold to exporting companies.*

c) *On the top of the pyramid are the exporting enterprises of ferrous and non-ferrous metals, plastic and paper. In Nicaragua they are classified as medium enterprises with less than 100 workers who focus in organizing the shipping of recycling materials to China and other Asian destinies where the quality control standards do not ask for the traceability of the exported/imported products.*
They also export ferrous scrap by land to El Salvador where the industry transforms it and re-exports it to the Central American area.

NICAMBIENTAL has researched the transformation process of some solid waste and raw materials inside the country (Nicaragua): aluminum cans from beer and other beverages which are actually transformed to kitchen tools like pots, pans, and so on which is executed in very poor conditions concerning occupational safety with low technology standards as well as in poor hygienic conditions. We also know about the usage of ferrous scrap material for the reuse in large doors, wrought-iron gate and other products used in housing building.

In the plastic recycling segment there are a number of small enterprises which elaborate a variety of domestic products such as hangers, clothes pins and so forth.

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In the segment of WEEE there are as of now few entrepreneurial initiatives for the collection, disassembly and commercialization of these materials. The most demanded products are electronic cards which are commercialized by kilogram, depending on the material category. There are some repair workshops for electronic devices and electrical appliances which reuse some pieces that are still functional as spare parts when repairing broken equipment.

2) Main challenges in dealing with and in involvement within the project LaWEEEda

NICAMBIENTAL considers that the attention of the LaWEEEda Project towards the informal sector it is an important issue for the success of the project. This sector works under harmful conditions not only concerning their own health but also harming the environment. Many of them dismantle electronic equipment in streets and parks where the public has access to exposing the population to the release of dangerous pieces; Frequently leave less valuable pieces or scrap materials in public areas or river banks such as cathode rays from TVs and monitors. In Nicaragua there is a lack of industry focusing on processing these materials neither exists a legislation that regulate the handling and use of these materials.

This sector could potentially receive training through the courses taught by NICAMBIENTAL to create awareness concerning organization, integration and social acknowledgement towards the formal waste system. Plans have to be established towards the social inclusion of informal recyclers which will contribute to the efficient recovery of the material for the recycling chain thus contributing to the preservation of the environment.

Regional and national issues in Nicaragua

There is a big gap between “rich” and “poor” in Nicaragua. There are few family dynasties that monopolize the economy.

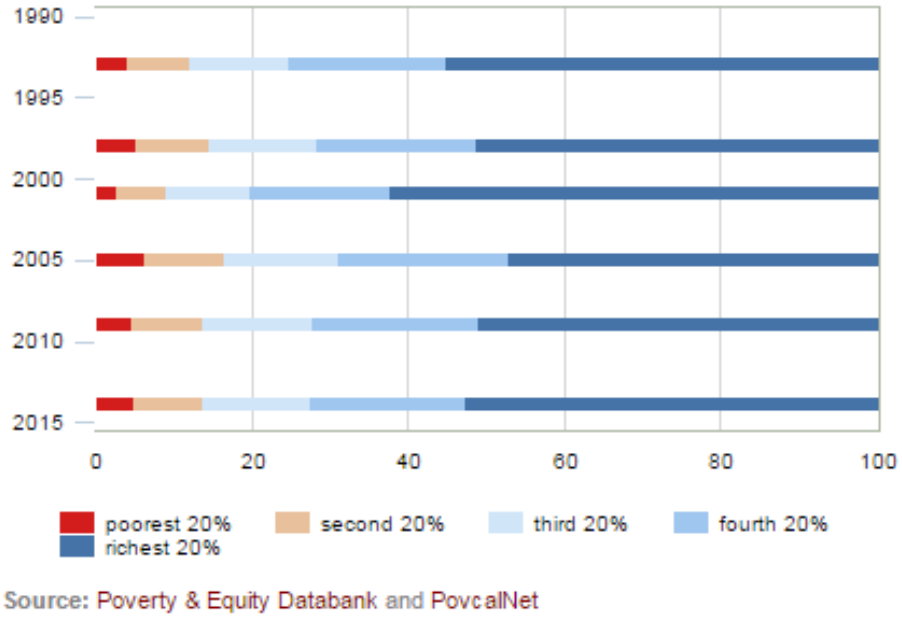

Figure 4 - Country inequality trend. Distribution of income or consumption by quintile

In general, the official unemployment rate is low (7.1 %). However, everyone who has any kind of income (formal or informal) counts as employed. The rate of formal employment is 48.5 % (statistics by INIDE, 2014), whereby 42.3 % of woman are formally employed and 54.9 % of males are formally employed. Most likely, due to childcare more woman work informally as maids or in sales. The informal sector generally earns less than minimum wage.

Gender issues in Nicaragua

In the informal sector there are no visible differences between genders. Frequently woman hold jobs longer than males. When women and men are working together (especially husband-wife) in sales which is very common, it’s the women who are handling the money.

Ethnical aspects in Nicaragua

In the study area there is neither racial nor religious discrimination to speak of. The pacific coast, having most of the infrastructure and industry has basically no truly indigenous groups – a lot of ethnical mixing has taken place probably because of lack of discrimination. However, there is a big difference between the Pacific and Atlantic Coast, whereby due to historical reasons the people in the Autonomous Atlantic Regions don´t feel Nicaraguan in the first place, they feel „costeños“. The Atlantic Region makes up about half of the Nicaraguan territory, however it is less densely populated and has an ethnically much diverse population. The lack of a good road connection between the Atlantic Coast and the Pacific Region further hints at the division between these two regions. People of central Nicaragua and the Pacific Coast don't share customs and culture with the costeños and do not feel they "share" a country with the autonomous regions of the East or the Caribbean, a huge area that lacks infrastructure and many regions are not connected to the electric grid.

Conclusion

Owing to the economic recession, the continuing urban growth and increasing market prices for secondary raw materials in both Brazil and Nicaragua it can be expected that the number of people involved in informal waste activities will further increase. Of course issues of reliability and efficiency of the informal sector have to be discussed, but what matters is a step-by-step process where, for example, the technology-based waste industry takes over certain parts of the system or enters at certain stages of the recycling process. One thing is important: changes in behaviour and in practices need an added value, especially for informal actors, and this cannot always be expressed in terms of profits.

Based on this knowledge the Erasmus+ project LaWEEEda has the great opportunity to support transforming the activities of the informal sector on the long-term into formal ones by involving them in their training programs and teach their actors how to treat WEEE properly and with significantly reduced risks.

References

Lundgren (2012) The global impact of e-waste addressing the challenge. International Labour Office, Programme on Safety and Health at Work and the Environment (SafeWork), Sectoral Activities Department (SECTOR), Geneva.