



Assessment of a SWM System: Social Impacts on Former Waste Pickers. Case Study: San Carlos City, Philippines

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Editor' Note: This paper has been targeted for a broad audience. The level of scientific detail provided is therefore not as high as would be normally be required in technical paper subject to peer review by environment industry professionals.

Solid waste represents a major problem in developing countries due to the lack of regulations and inappropriate management among others, thus calling for integrated Solid Waste Management (SWM) systems as a possible solution. San Carlos, a small city in the Philippines, implemented a SWM system to improve the environmental and health situation in the commune. However, the overall beneficial closure of the open dumpsite also meant the loss of the livelihood activities of many informal waste pickers. The government has recognized the skills of these people and hired some of them as workers in the new waste processing center, but the remainder was left without a source of income and employment perspectives. This research analyses the impact of the project implementation on the two groups through the Sustainable Livelihood Approach, in presenting the measures applied, the reaction of the affected groups, and the changes in their respective livelihood assets.

Introduction

San Carlos City, located in Northern Negros Island with a population of approximately 130,000 inhabitants (Census 2007), has recently (2003) developed and implemented a new SWM system. Replacing an unregulated system and dump, it aimed at economically viable technologies and positive environmental impacts. However, in the first planning phase, waste pickers who had previously based their livelihoods on the open dumpsite were not considered. During the further development of the system, the city decided to integrate some members of the informal sector, specifically the waste pickers, into the formal work system, mainly to take advantage of their knowledge and skills in the waste segregation and recuperation. They were hired as municipal workers in the Eco Center, the newly established waste processing and final disposal facility [5]. This marked a significant change in the city's strategy and exerted a major impact on the informal sector, thus raising the necessity to analyze the strengths and weaknesses of this integration process. In doing so, this research proposes that starting from the initial planning stage through all phases of development, socio-economic aspects – particularly with regard to the livelihoods of the affected poor – must be a central concern.

Methodology

The research was developed following the Sustainable Livelihood Approach (Figure 1). The work was designed to understand, explain and analyze the social impacts of the new SWM system on a group of former waste pickers due to changes in their livelihood activity.

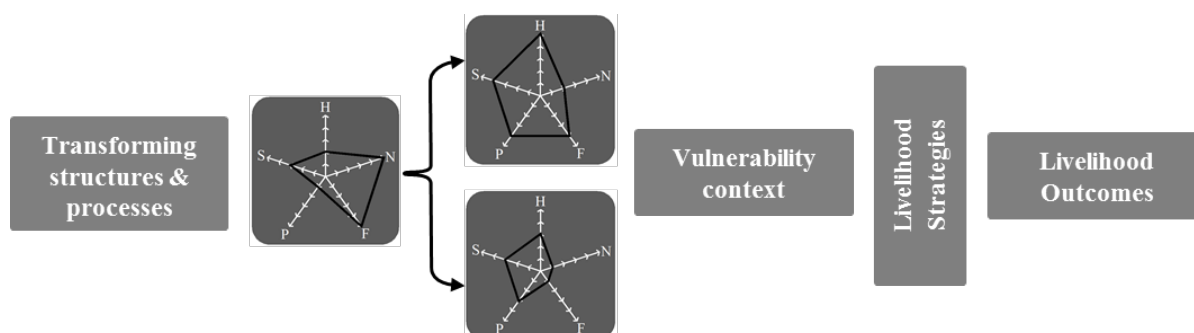


Figure 1. General analytical framework (DFID, 2005, adapted by Author)

The first step was to set a baseline, describing the structures and processes. The evolution of the system could be systematically recognized as it split the group of informal waste pickers into two new ones: formal workers and people rendered unemployed. These two represent the target groups of the analysis. The consequences of the interventions were described based on their respective livelihood assets profiles; their comparison will render the most important alterations due to the project implementation. In operationalization for each capital, assets parameters were defined (Table 1). The livelihood assets were visualized in pentagon form, with the length of each axis depicting the level of assets gain or loss. After the analysis of the livelihood assets the vulnerability context was determined, and the livelihood strategies and outcomes signified. With only a small sample available (i.e. six people from the first and twenty from the second group) qualitative methods are used.

Table 1 . Assets’ parameters chosen for the research based on the Sustainable Livelihood Approach (compiled by Author)

Human	Social	Physical	Financial	Natural
<ul style="list-style-type: none"> • Awareness • Access to education • Skills • Access to trainings • Health 	<ul style="list-style-type: none"> • Relationship of trust/reciprocity • Access to social support mechanisms • Networks 	<ul style="list-style-type: none"> • Housing/ security of tenure • Access to public infrastructure and services • Access to information 	<ul style="list-style-type: none"> • Major Source of income • Other sources of income • Access to credits 	<ul style="list-style-type: none"> • Living and working environment • Resources needed • Access to resources

Transforming Structures

Due to a new national legislation regarding SWM, the Republic Act 9003 of 2000. San Carlos city designed a plan to develop an integral SWM system. The main objectives were: the establishment of a local regulatory entity, population involvement, implementation of reuse, recycling and composting programs, efficient collection, and management of residuals at final disposal sites, and the closure of open dumpsites. After one year already, the new system was functioning. Population’s response was good, the percentage of waste segregation at household level rose to 85%, the

percentage of deviate garbage reached 70%, more than the 30% stipulated by law [4, 5]. Material recovery facilities (MRF) were constructed in all neighborhoods (barangays) and a new recycling, treatment and disposal unit called Eco Center was built and operating.

Besides all the positive impacts one group of people directly involved was strongly affected: the informal waste sector. This group was comprised of collectors at source and collectors at the disposal site (open dump). The closure of the site left the latter group strongly affected, without their habitual working place and livelihood activity. The first group can still collect in public spaces. Thus, for the analysis, three different groups can be differentiated:

a) Waste pickers before the closure: Approximately 35 families that lived next to the open dump site in an informal settlement. The place was lacking of all basic services and due to high contamination levels it was a risky environment to work and live. Inhabitants showed high incidence of skin problems and respiratory diseases. Workload was high, with an average of 13 hours per day. The income varied according to the working hours and family members involved.

b) Unemployed people, who lost their livelihood activity due to the closure: they are still living in the settlement. Despite other casual and informal works, their income is considerably lower than before.

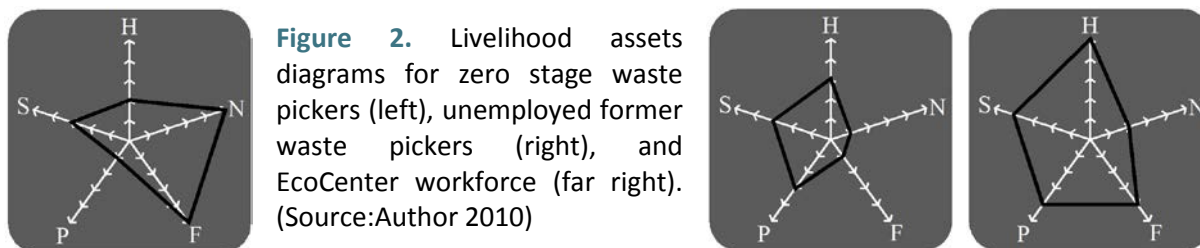
c) Eco Center workers: the Eco Center offers a safe, clean and well-developed working environment. Therefore working conditions for this group have improved. They have a fixed schedule and salary. They are now part of the formal sector.

Livelihoods assets profile

The assets parameters (Table 1) were used to evaluate the changes and are represented in the pentagon's (Figure 2) as a summary of the changes in the people's livelihood assets.

Human capital. For the waste pickers, their bodily strength, the competence to segregate the wastes and their capacity to negotiate with the medium traders were the aspects that determined the level of profits. However, their weak health status, high exposure to risks, and adverse work environment reduced their human capital assets [6]. Also, their levels of education are low, with most of them having attended primary school or being without any formal education. Thus their expertise and skills in the segregation activities proved their most important asset. This situation has improved for both emerging groups: due to the dumpsite closure the living conditions and subsequently the health status ameliorated. Unfortunately the conditions in the new work environments cannot be comparably measured or classified due to the big differences in activities, schedules and locations. For the Eco Center workers, a main advantage is their access to trainings offered by the local government, which may increase their assets and thus their human capital continuously.

Natural capital. The most significant resource of the informal waste pickers was waste itself and their non-restrictive access to it endowed them with significant capital. This is not true anymore for the unemployed people who have completely lost access to that resource with the closure of the dumpsite and due to a new state law which defines scavenging in the (new) dump as an illegal activity. For the Eco Center workers waste has lost significance as capital for as it has transformed into a mere raw material for their work.



Financial capital. It is considered one of the most relevant in urban areas due to a highly monetary economy [2]. Currently the two groups have less monetary income but the Eco Center workers now receive a fixed and reliable salary while the other group is still involved in informal activities with intermittent incomes. The relative security of the Eco Center workers allows them to save and invest money for hard times, while the unemployed have to live more than ever in uncertainty.

Physical capital. Housing ownership status determines the quality of services available which is related with the health status and the security and the capacity to save money[2]. Both emergent groups still live in an informal settlement close to the former dumpsite and lacking of basic services. This keeps affecting their health and also requires expenditures in money and time. In these conditions, housing only represents minor physical capital value. Even if the closure brought positive changes for the settlement, reducing contamination levels and eliminating the risk of accidents, injuries and animal attacks, there are still many uncertain environmental impacts. The Eco Center workers received the most significant improvement due to a safe working place with basic services and free transportation. For the people now relying other sources of income the new working conditions cannot be valued or compared, as they are highly diverse.

Social capital. Typically, waste pickers maintain strong organizations that represent and claim rights for them, thus achieving benefits or improvements for this sector. However, in San Carlos, the group was not organized. The strongest social linkages are families and friends. The reorganization of the SWM system has forced former waster pickers to include more family members into generating income, some have moved abroad to send remittances. For the Eco Center workers the social assets have strongly increased due to the representation and inclusion, in becoming part of the formal workers. They are now recognized and receive benefits and representation from the local government.

Vulnerability Context

With the changes in the assets profile the vulnerability context has also changed, because vulnerability is not a steady state but an evolving process created by cumulative conditions [1]. These changes can improve or aggravate with time. Despite the positive impacts in their living environment, both groups remain vulnerable regarding their informal housing conditions, absence of tenure rights and lack of basic services. This affects their health status, reduces their work capability and requires considerable expenditures. Even not paying rents, the main part of their income goes in purchasing water and fuel reducing available funds for children's education or savings. Their low education levels and short range of skills (more in the case of the unemployed people who did not have access to training programs) represent an obstacle in the search of better job opportunities, mostly in the formal sector, or other livelihood enhancing occupations. The unemployed people's

risk related to their informal work status has not fundamentally improved: they are still being affected by all drawbacks of informal work like low salaries, uncertainty of unemployment, unreliable income and lack of institutional protection or representation.

Livelihood Strategies and Outputs

A wider set of assets augments the coping capacity and provides opportunities and alternatives for livelihood strategies, thus enabling to fulfill needs and achieve objectives. Many of the strategies implemented by low income groups with limited access to assets are short term or just emergency response. However, long-term strategies better enhance resilience and sustainable livelihoods. In the study region several livelihood strategies could be observed, partly in response to the system shift: Asset substitution: As an answer to losing their main resource, waste, unemployed people replaced it with social capital, in that more family members and in particular children have to contribute to family incomes. Asset diversification: undertaking more than one activity stabilized incomes and both groups use it as a protective measure against uncertainty. Disposing or selling some assets: in particular savings in the form of goods such as jewelry or animals that had to be sold to get cash. Expected outcomes for part of the city were different as the one expected by the directly affected people. The city wanted improvement in the living and environmental conditions. The informal sector expected a secure income and inclusion. These different perceptions of the same project demonstrate the need for consultative and participatory programs.

Conclusions and Recommendations

The lack of stakeholder's participation in the early planning process resulted in the exclusion of certain sectors such as the informal waste pickers, leaving aside their knowledge as well as their needs. Later incorporation triggered benefits for both, public sector and former informal workers: on the one hand the SWM system benefits from their work and skills, on the other hand their range of livelihood assets and their coping capacity have strongly improved. Yet, in the same process a large group has been further excluded and suffered from additional deterioration of their livelihoods. In order to mitigate the impact of substantially reducing the workforce in waste picking, the proper distribution of advantages among the families in stage zero groups should be considered.

Finally, it is the right moment for starting the adoption and implementation of extended producer responsibility measures as a method for increasing the solid waste recycling, in a feasible and sustainable way.

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