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SOCIO-ECONOMIC IMPACTS OF CEMENT PRODUCTION AT SINO-ZIMBABWE ON HOZHERI COMMUNITY, GWERU, ZIMBABWE

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ABSTRACT

The study assessed the socio-economic impacts of cement production at Sino on the nearby Hozheri community. Data was collected through questionnaires, observations and interviews. Questionnaires targeted sixty-five households selected through stratified random sampling. Research findings revealed that establishment of Sino-Zimbabwe cement manufacturing company presented socio-financial benefits to the surrounding community through creation of employment, establishment of a lucrative local market, retention of skilled teachers, construction of schools and healthcare facilities as well as provision of bursaries to excelling students. However, local people and the company blamed each other for the slow pace of development being realised. High dust emissions also remained a threat to human health, crops, livestock and indigenous forests. Therefore, the company must adopt effective environmental management tools to reduce dust emissions so as to enhance wholesome benefits accrued by the local people. This will significantly improve the quality of life for the surrounding households through poverty reduction which is a threat to sustainable development in developing countries, including Zimbabwe.

Keywords: Cement production; local community; poverty; income, infrastructure; dust emissions

INTRODUCTION

Cement is a basic construction ingredient. Its demand is high due to extensive infrastructural development taking place across the globe. Global consumption of cement has been increasing at an alarming rate. According to Hannah (2011) cement production in Africa rose from 1.5 billion tonnes per annum in 2005 to 2 billion tonnes per annum by end of 2010. In Africa, the persistent rise in the price of building material and constant importation of cement has led to the speedy development of cement factories (Busuyi et al. 2008). However, the production of cement is known to have multiple negative impacts on the environment and human health in both developed and developing countries (Ambasht, 1982; Harley 2007).

Akande and Idris (2005) revealed that cement manufacturing also have a myriad of socio-economic impacts on the surrounding communities. Studies by Hilson (2002), Samuel (2002) and Canter (1985) further observed some of the effects as pollution generation, land degradation, destruction of wildlife and crops, disruption of traditional values and even relocation of the local people. These adverse impacts in turn created social tension, disrupted family ties and community life and sometimes caused economic inequalities as evidenced in Bangladesh where villagers were displaced from their agricultural land which was their primary source of livelihood (Hilson, 2002).

Busuyi et al (2008) indicated that generally lifestyle of people around cement manufacturing plants was poor and characterized by poor education and subsequently high percentages of illiteracy. This clearly shows that establishment of lucrative cement manufacturing ventures in rural communities does not guarantee improvement in their living conditions. However, Harley (2007) noted that whilst cement manufacturing companies bring economic benefits in the form of employment and markets for local goods, local people normally failed to harness these opportunities due to limited experience, inadequate access to information and limited funding opportunities. Underdevelopment of local communities had in some instances generated conflicts between local communities and cement manufacturing companies (Canter 1985).

Simukanga et al (2003) and Akande and Idris (2005) maintained that if properly co-ordinated, mineral exploitation for cement manufacturing can transform development in surrounding communities. This can be achieved through employment creation and infrastructural development such as roads, schools, hospitals and housing as the case in Obajana district of Nigeria (Busuyi et al 2008). A wide range of business activities also sprouted in the same district; hence increasing disposable income for the local people. The aforementioned studies revealed that the socio-economic impacts of cement manufacturing varied from place to place which compelled the researchers to look at the Zimbabwean scenario where the national economy is recovering from a decade of economic meltdown.

Cement production is also a common activity in Zimbabwe. However, there is dearth of information on how it enhances livelihoods of people in surrounding communities as research mainly focused on its impacts on the biophysical environment. Sino-Zimbabwe was forced by Environmental Management Agency to suspend its operations in 2009 due to massive environmental pollution (EMA, 2010). Such incidences of high pollution might have effects on the social and economic wellbeing of the surrounding communities. Therefore this study explored the socio-economic impacts of Sino-Zimbabwe Cement Company on Hozheri community as well as to establish the efforts underway by Sino to build its corporate image.

METHODS AND MATERIALS

Description of the study area

Hozheri community is situated 29 degrees and 55 minutes latitude and 19 degrees 21 minutes longitude. The community is located to the north of Sino-Zimbabwe cement manufacturing company. Both Sino-Zimbabwe and Hozheri community are located to the east of the City of Gweru, which is the provincial capital of Midlands (Figure 1). The community is dominated by newly resettled A1 and A2 farmers. There were estimated 650 households in the community as absolute figures could not be ascertained since fast track land resettlement programme was still ongoing. There are two schools in the community which are Hozheri primary and Tangwena secondary school.

Hozheri community falls under natural farming region 3. The region is recommended for semi-intensive farming. The area receives moderate rainfall between 500-800mm per annum (Vincent and Thomas, 1960). Average maximum temperatures range from 22 degrees in winter to 29 degrees in summer. The area also experiences excessive mid-season dry spells which made it marginal for maize production (Thomas and Vincent, 1960). The dominant tree species in the predominantly grassland area were *brachystegia speciformis and julbernadia globiflora*. The company and community were located in the catchment area of Kwekwe River which traverses the Midlands province. The river is a source of

water for various economic activities downstream which include farming. Farming in the area was dominated by market gardening, maize cropping and cattle rearing for both subsistence and commercial purposes.

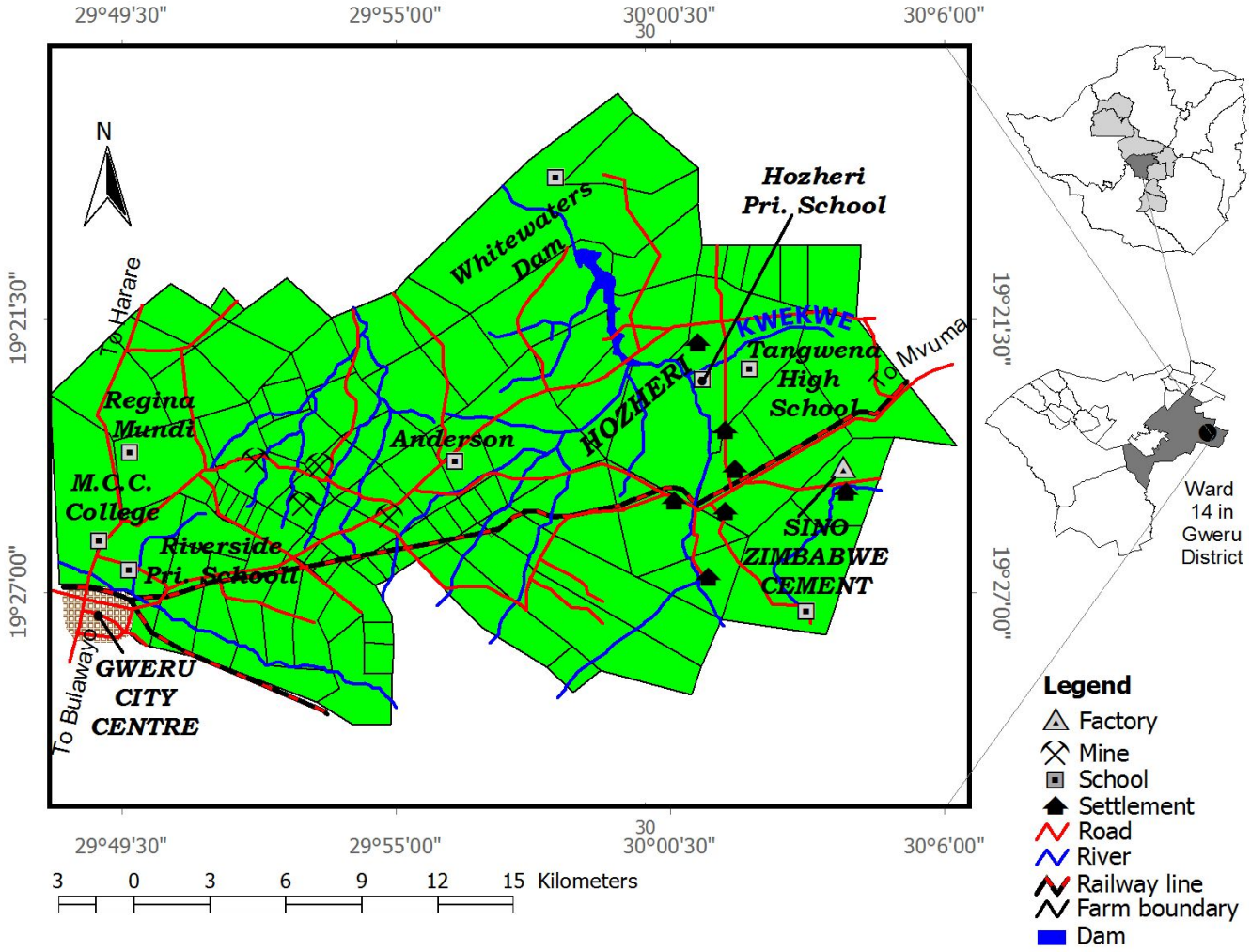

Figure 1: Location of Hozheri community and Sino-Zimbabwe Cement Company

Methods of data collection and analysis

The research adopted a detailed descriptive survey design in order to have an in-depth understanding of the socio-economic impacts of cement manufacturing at Sino-Zimbabwe on the nearby Hozheri community. The research targeted household heads or their proxy. These were key elements of the study area since their views were being solicited on the benefits and problems being presented by the company. In order to minimize costs due to wide distribution of the population, 10% of the households, that is 65, were selected through stratified random sampling for questionnaire administration. Walford (1995) asserted that a sample of at least 10% of the target population was ideal to generalize trends within a given community.

Stratification was based on age of household heads. Three strata were established as follows; below 21 years, 21-49 years and above 50 years. This categorization was meant to capture variations in perceptions among people of different age groups which would influence policy formulation in future. Respondents were later randomly selected from each stratum. Questionnaires were self administered so as to enhance return rate and clarify questions which were written in English which was not the local language in use.

Semi-structured interviews were used to gather data from purposively selected key informants. These include the Safety, Health and Environment (SHE) officer for the company, Environmental Management Agency (EMA) officer, councilor for the area, sister-in-charge at Sino-Zimbabwe clinic and heads of the two local schools. The SHE officer provided information on how the company was affecting the surrounding environment, local community's views on the prevailing situation and remedial actions which were put in place. EMA officer was selected representing the authority responsible for monitoring the biophysical and socio-economic impacts of organizations to the surrounding communities. The EMA officer was supposed to reveal information on the environmental performance of the company as well as how it was relating with the local community.

The councilor's mandate was to co-ordinate development in the area; hence was included in order to gather information on the level of development being spearheaded by the company in their locality as well as problems and challenges being encountered. The sister-in-charge at Sino-Zimbabwe clinic was interviewed on trends and prevalence of diseases in the surrounding communities related to operations at their company and how they were assisting the local people to have healthy lives. School heads were interviewed in order to understand efforts made by the company to enhance the quality of education in the predominantly farming area. Direct observations were made on indicators of development attributed to the company. Quantitative data was processed and presented with the aid of Microsoft excel. Qualitative data from all instruments was summarized under logical subheadings for easy interpretation and discussion.

RESULTS AND DISCUSSION

Socio-Demographic data of households

Most of the respondents were men (65%) compared to women who constituted the remaining 35%. Men's dominance was due to the fact that this community was a new resettlement area; hence most of the people had dual homes. Men were responsible for clearing land and establishing new settlements whilst most women were left in communal areas where they emigrated from. The other reason for men's domination was that most families were skeptical about security of land tenure in the resettlement areas. Some respondents claimed that they were not allowed to build permanent home structures. Therefore in order to minimize risk of losing out, most households adopted a win-win situation by not abandoning their original homes. Moreover, men generally speak on behalf of the family hence overshadowing women. This scenario augments Decker's (1993) view that in African culture, men normally communicate on behalf of their families.

Most questionnaire respondents (63%) were aged between 21 and 49 years. This group was composed of economically productive people who were married. Their presence in the resettlement area was to expand their livelihood options as they were relocated from semi-arid and arid areas with low agricultural potential. Moreover, most of these people reported that they failed to secure employment; hence adopted farming as a survival strategy. This concurs with statistics of unemployment currently above 70% in the Zimbabwe. Meanwhile, respondents below the age of 20 constituted 32% of the sampled population. This category was characterized by household proxies or young couples. Only 5% of the

sampled households were headed by people above the age of 50. This showed that as people become old, they did not want to be resettled from their ancestral land where they could have made massive investments over the years. According to the ward councilor, elderly people declined to be resettled as they were not longer energetic or had limited labour at their disposal to clear land for agriculture and settlement.

Socio-economic benefits from cement production to the surrounding community

About 72% of the respondents from the questionnaire survey acknowledged that Sino-Zimbabwe has been assisting the local community to develop. This was evidenced by improvement in infrastructure, health and sanitation as well as education. These respondents were optimistic that the company was likely to transform their livelihoods by broadening their social safety nets. Prior to establishment of the cement company, most local people confirmed that hope for development was gloomy as no substantial development was being spearheaded by the local and central government. However, 28% of the respondents thought that the company was prejudicing the local people as their community investments were not commensurate with the profits they were making and the damage inflicted to the ambient environment. This contradicts with the company official who attributed slow pace of investment to limited fiscal space.

Education development

All respondents revealed that the company was instrumental in the construction of ideal learning facilities in the community. To date the company had completed a school block with two classrooms at Tangwena secondary school. The SHE officer also indicated that the company was already supplying cement for the construction of the second block whilst local residents were moulding bricks for the project. The construction was meant to assist children from the nearby primary school to pursue their studies locally as most secondary schools were located faraway. Other than curtailing distance travelled to secondary schools, school drop-outs were likely to be reduced after primary education. Prior to the assistance by the cement company, Tangwena secondary school was operating from a farmhouse which could not accommodate all students as some were learning under trees. Therefore the cement company was working hard towards installation and completion of ideal modern learning infrastructure for the local community.

Questionnaire survey results also revealed that the company was financially assisting underprivileged students at the local schools and outstanding students to pursue higher education. The Councilor, the SHE officer and the school head at Tangwena secondary school concurred that six students had been offered scholarships by the company to pursue their education. Two of the six students were already pursuing degree programmes at Midlands State University in Gweru, Zimbabwe. In order to ensure that students were properly nurtured academically, the school heads and SHE officer indicated that incentives were availed to retain skilled teachers. Teachers were offered free transport by the company to commute from Gweru urban, which is about 25km away. Moreover, Sino-Zimbabwe provided transport for educational tours and sports to the two schools, hence lessening burden on students' parents with limited disposable income. Therefore the company was fostering effective learning in the schools which will inherently improve the standard of living of the people.

Health and sanitation

The company improved water supply and sanitation in the community. According to the councilor and SHE officer, the company had supplied each household with twelve bags of cement to construct protected wells and toilets. This was confirmed by 75% of the households which had already benefited. Provision of clean water sources and toilets was meant

to curtail spread of disease causing pathogens since households were resorting to bush system to relieve them and using unprotected wells which were frequented by wild and domestic animals as well. However, some households were blamed by the SHE officer for selling the allocated cement for wells and toilets. This shows that some community members were not reciprocating efforts by the cement company to improve their health and quality of life.

The study revealed through interviews with the sister-in-charge that Hozheri community was accessing free medication from Sino-Zimbabwe clinic. Some of the diagnosed ailments confirmed by the sister-in-charge and some local people are listed in Figure 2. However, most households indicated that they were not aware of the free medical facility. Only a quarter of the respondents acknowledged receipt of the service. This showed that the company must publicise its efforts for them to be appreciated by the local community. The SHE officer and the councilor also confirmed that in an endeavor to improve the health of the local community, the company was planning to construct a hospital. The company official reported that cement was already supplied for the proposed state of the art hospital. The hospital was expected to offer free medical care to the local community as part of the company's social responsibility. The company also envisaged to reduce pressure on its local clinic by constructing the hospital. Since the cement industry is associated with high dust emissions causing lung cancer and respiratory diseases (Sultan, 2004), provision of medical facilities showed that the company cared for the local community.

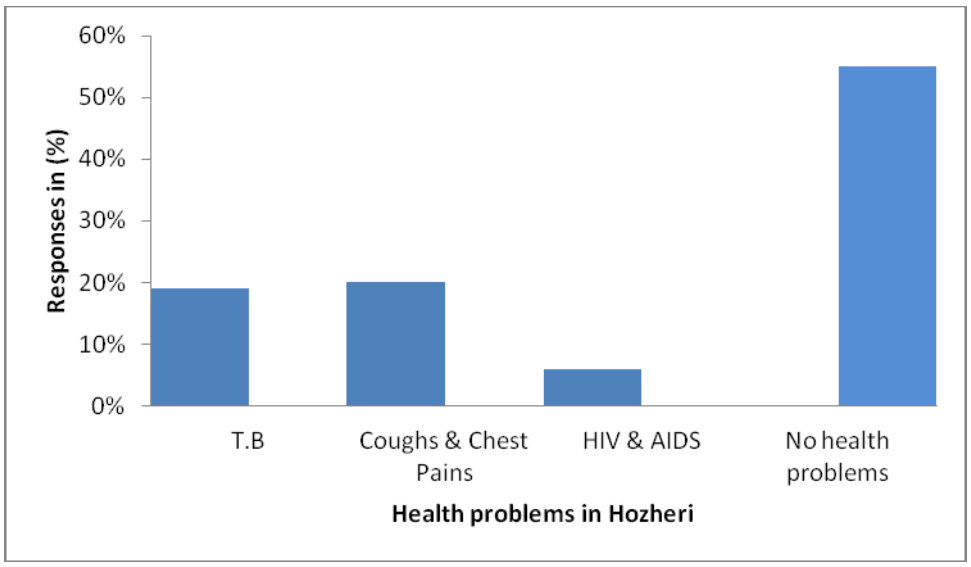

Figure 2: Health problems experienced in Hozheri community

Evidence from field observations showed cement dust deposited on the ground from the company's operations (Plate 1). This signifies a health hazard which needed attention in order to protect the local people. About 20% of the respondents indicated that they were experiencing coughs and chest pains, ailments which were rare before the establishment of Sino-Zimbabwe. They blamed the company for their new illnesses. This situation concurs with Ambasht (1982)'s findings that cement production had serious detrimental impacts on community health. Moreover, truck drivers who transported cement from the company were blamed for spreading HIV/AIDS. However, low percentages of reported illnesses suggested that the company's efforts to improve health of local people through medical attention were reaping positive gains.

Plate 2: Cement dust emissions on the ground and vegetation

Moreover, 55% of the population had not yet experienced any health problems related to cement production, especially respiratory illnesses. Most of these households were not located in proximity of the company; hence dust was dispersed before it reached their homesteads.

Employment creation

The survey showed that only 3% of the local population was permanently employed by the company. The majority of local people were engaged on contract basis for menial jobs such as loading cement trucks. Responding to interview questions, the SHE officer from Sino-Zimbabwe pointed out that most of the locals were not skilled for jobs offered by the company; hence they resorted to recruitment of qualified external personnel. This corresponds with Samuel (2002)'s findings that most jobs generated by cement manufacturing companies were for skilled persons. This left menial and disagreeable jobs to unqualified people. However, 44% of the households refuted claims by company official. They noted that most semi-skilled and unskilled jobs in the company were occupied by people from the nearby city of Gweru. The households felt that nepotism was the major factor driving selection of new recruits as they competed with externals even for menial jobs. Lack of employment creation for locals contradicts with Modak and Biswas (1999) contention that employment must favour local population, especially those affected by company operations instead of importing labour.

Income generation projects

In a bid to enhance disposable income at household level, Sino-Zimbabwe had initiated poultry projects for the local people. This was confirmed by 34% of the households. The income generated through the projects was expected to diversify household survival options. Most of the beneficiaries envisaged the success of this relatively new effort by the local company as they think that the nearby city of Gweru was likely to boost their market. The community also indicated that the company was providing a large market for local farmers through their employees. Community development projects funding was not a new phenomenon as Caspi cement plant in the Republic of Kazakhstan had projects aimed to improve the standards of living of the local communities (Abdul-Wahab, 2006). According to the councilor, community projects were meant to reduce conflicts with disgruntled unemployed local people.

Infrastructural development

Prior to the establishment of Sino-Zimbabwe, surrounding communities were hardly accessible. The study showed that Sino-Zimbabwe constructed an all weather road which made the area accessible. Therefore households indicated that they could easily access markets in Gweru and Mvuma for their agricultural produce. Most of the local farmers (82%) were earning a living through selling agricultural produce such as maize and perishable horticultural products (vegetables). According to Akande and Idris (2005), infrastructural developments such as roads would ultimately trigger wide range of business activities as the area become accessible.

Cultural impact of Sino on Hozheri Community

The cement company interfered with the cultural norms of the local community. The local councilor mentioned that quarrying of limestone from Mount Gwambi was disturbing the graveyard of local people's ancestors. In this case, the sacredness of the place was being diminished. However, in order to minimize conflicts with the local people, the company in conjunction with local people annually performed traditional rituals to appease the ancestral spirits. Hilson (2002) also observed that in Deo Badeyogi, the operations of Lafarge Cement Company were interfering with the traditional temple located on the ridge where traditional rituals were carried out.

Moreover, the social fabric of the local community was weakened by increasing cases of immorality as cases of prostitution involving cement transporters and even married people were increasing. This had resulted in breaking down of families, exposing children to inadequate parental care. Two cases of impregnated school children who ultimately dropped from school were also noted. Furthermore, 25% of the respondents revealed that they were relocated as the company extent its operations. This disrupted their community ties.

Sino-Zimbabwe and community relations

Whilst the local councilor indicated that cordial relations existed, he was not impressed by the slow pace of investment done by the company in their community. The Councilor strongly refuted the information availed by the company that they were facing liquidity problems. He further noted that the company relied more on exports to China and their operations were not affected by a decade of economic crisis in the country. This was evidenced by continuation of their operations during the time when even companies owned by multinational corporations were closing. Moreover, the community has been witnessing several tonnes of finished products ferried on daily basis.

However, 65% of households were pleased with the investments which were made by the company. These include aforementioned efforts such as toilet constructions, road construction, free medical services and education development. The remaining households felt shortchanged by the company, as the anticipated jobs were not created. The company was concerned with the level of absenteeism by locals during the rainy season, which sometimes crippled operations. Workers absconded to attend to their fields which give them another source of income since they complained about unsustainably low wages offered by the company. This sometimes strained the relations between the company and community members as local people expected full salaries at the end of the day.

CONCLUSION

Sino-Zimbabwe cement manufacturing company transformed the social wellbeing and economic situation of the local community although at a very slow pace. Generally, the company improved health and sanitation, education, infrastructure and income for the local people. The cement company's initiatives partially reduced poverty in the community thereby contributing towards sustainable livelihoods. Although most of the households were impressed by efforts of the company, poor co-ordination and selective implementation of its initiatives undermined equitable development in the area. The company's operations also disturbed socio-cultural norms of the society as their operations interfered with sacred places, enhanced immorality and introduced new ailments. The research recommended that the company must increase employment opportunities for local people, especially for semi-skilled and unskilled work. The company must also make their local investments commensurate to their profits if they want to change the perceptions of some community members. The local people must as well effectively implement projects initiated by the company so as to reduce dependency syndrome and ultimately enhance development.

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