

Rebuilding Communal Resilience in a Post Operational Social and Economic Impact Assessment of the Eastern Bulk Cement Company (Eagle Cement) in Rumuolumeni

Brown Ibama¹, Eyenghe Tari¹ and Wilson Chukwuka Isaac²

¹Department of Urban and Regional Planning, Rivers State University, Port Harcourt, Nigeria

²Department of Environmental Management, Rivers State University, Port Harcourt, Nigeria

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Corresponding Author: Brown, Ibama | E-Mail: brown.ibama@ust.edu.ng

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ABSTRACT

There is a phenomenal global retreat from the core industrial development period to modern information years propelled by artificial intelligence (AI). It is a conscious transformation process that has galvanised the global desertion of secondary production-related activities. This study examined the socio-economic impacts on the communities that hosted the Eastern Bulk Cement Company (Eagle Cement) when it was functioning. This study is a qualitative research that adopted the case study research approach. Positive and negative socio-economic impacts were found when the company was operational until it was deserted. These helpful benefits include well-maintained access roads in the community, jobs created, and improved residents' living conditions. Similarly, some of the adverse impacts include massive job losses, rising rival urban gangs leading to palpable insecurity, failed roads, insufficient healthcare services, and the formation of dilapidated and uninhabited properties. This study recommends that the government of Rivers State should revitalise the payback to community scheme, like the award of scholarships to indigent students in the community, to alleviate the difficulties most students face; the community should control the activities of the youth to minimise instances of vices; there should be an effective collaboration between the host community and government to enable the reinvigoration; and the government should make alternative arrangements to reassign the site to a new user.

Keywords: Resilience, Communal Resilience, Impact Assessment, Rebuilding, Operational

Introduction

There is a global paradigm shift from the industrial era to the information age. This shift has caused vestiges of its former industries to be abandoned and ageing. Every so often, ageing industrial structures become an embodiment of effluence discharge to the environment due to what used to be manufactured and the components around the confines of the industry. Over time, these industrial spots gradually get dilapidated and become unsuitable for other industries as they accumulate piles of dirt until stakeholders decide what to do with those structures. These uninhibited manufacturing sites have often outlived their usefulness as mines, factories and mills have now become whispered history [1].

Historically, the process of decommissioning industrial sites has its origin traced to the beginning of the 1970s when de-industrialisation became a popular lexicon at the emergence of the first global financial crisis. One fact remains unclear as government and industrialists have not considered the implications of the de-industrialisation and withdrawing process in the past fifty (50) years as varied stages of the process have been recognised. The decommissioning stages match the features that have caused a massive deterioration of industrial activities and phenomenal run down of industrial sites [2].

Industrialisation as a concept reflects a shared meaning of socio-economic progressions that are related to finding well-organised ways to create value. These well-organised value-conception procedures remain characterised as primary and secondary industries (primary industry activity denotes fishing, mining industry, hunting and agriculture.

The secondary industry implies converting raw materials into physical goods; the tertiary industry denotes services rendered [3]. Industrial development has engendered substantial changes in the quality of life of people, communal exchanges, political values, and commercial influence [4].

Similarly, producing cement is one noteworthy manufacturing activity that can change the physical appearance of their locations. Cement is a chalky substance derived from calcined lime and clay, which are the primary elements used as core components of construction elements [5]. Globally, it is in high demand because of the immense infrastructural expansion with a stable increase in cement usage [6]. [7] assert that there has been a remarkable increase in the quantity of cement produced and used in the African continent, from what used to be an annual tonnage of 1.5 bn in 2005 to an annual tonnage of 2 bn in 2010.

The building industry in Africa has an exhaustive request for cement that has caused a remarkable increase in the prices of building materials because the unceasing demand for imported cement has engendered the swift emergence of cement factories [8]. However, cement production has negatively impacted the environment and human health in developed and developing countries [9 10].

Human pecuniary existence and the environment have faced significant threats from industrial activities over the years [11]. Industrialisation challenges towns and villages' most recognised order of activities by dislocating prevailing occupations and shifting production from homes and villages to factories.

These dislocation activities stimulate urbanisation and migration, promote secular and rational perceptions, social deployment and limited pecuniary relationships. These changes predominantly alter role arrangements like status disintegration and class structure, encouraging the gradual corroding of established transformational traditional tastes [12].

Rumuolumeni is a town in Obio/Akpor Local Government Area of Rivers State, Nigeria. It has undergone several abandonment scenarios in private and government-owned industries. One notable case is the uninhibited industrial site where the Eagle Cement brand of Cement in Nigeria once existed. The industrial site had a land coverage of 24 hectares, which came with massive socio-economic benefits to the communities proximate to the industrial site.

The closeness to river sources was why Eagle Cement was located in Rumuolumeni town, due to its access to the New Calabar River and easy access to other port facilities and services. When the Eastern Bulkcem Company was operational, most residents benefited socially and economically with some challenges. It was such that there was an increased demand for accommodation, traditional livelihood systems were lost, crime and prostitution increased, and environmental pollution from cement dust. Manufacturing cement entails raw materials and other additives conveyed to the site. This conveyance of goods and services increased the volume of vehicular and human traffic in the area, including haulage trucks, which led to traffic congestion and gradual dilapidation of the primary access road traversing the community.

Study Area

Rumuolumeni Community is the study area, and it is located on the South-Western fringes of Obio/Akpor Local Government Area of Rivers State, Nigeria; it is located on the Eastings of 272929 and Northings of 532003 (WGS 1984 UTM Zone 32N). The *Eagle Cement* site stands on the Eastings of 272000 and Northings of 530500. The boundaries of the study area include Aveon Offshore Company on its North, the Ignatius Ajuru University of Education on its North-Eastern flank, the New Calabar River on the Western end, and the Nigeria Navy Ship Pathfinder (NNS Pathfinder) on the South-Eastern flank (See Figure 1).

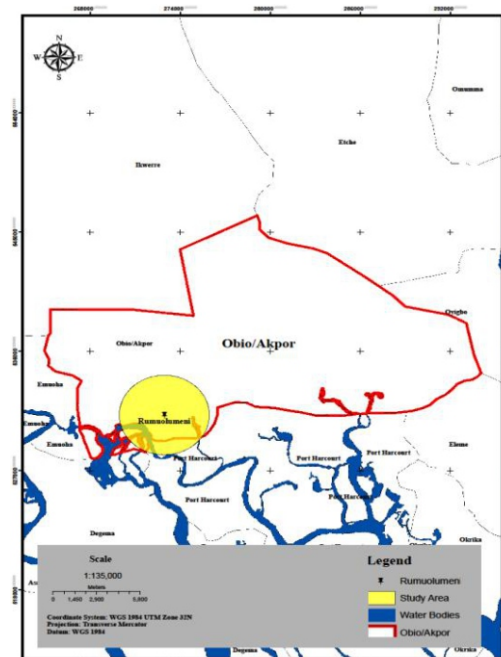


Fig. 1: Map Showing Rumuolumeni Town in Obio/Akpor Local Government Area.
Source: GIS Lab, Urban and Regional Planning Department, Rivers State University, 2024

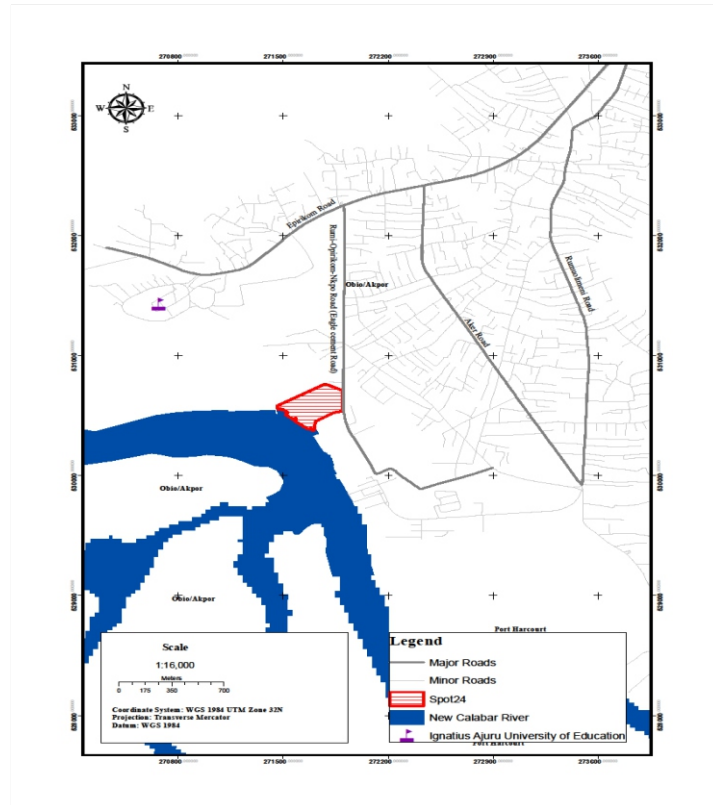


Fig. 2: Showing the study area Eagle Cement in Rumuolumeni Town
Source: GIS lab, Urban and Regional Planning Department, Rivers State University, 2024

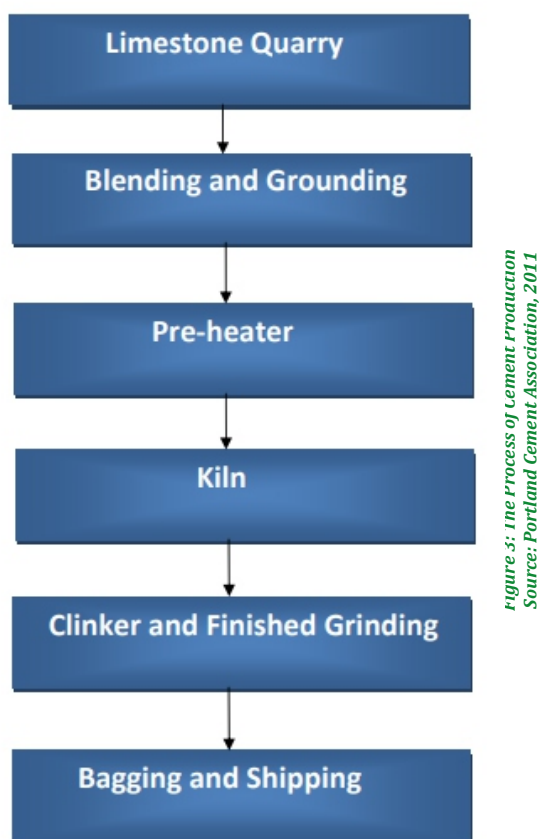
Review of Literature

Concept of Industrialisation

Industrial development comprises the process of economic and social changes that transform any human society from a pre-industrialised to a fully industrialised state. [13] asserts that industrialisation as a concept entails the drive of an economy from an agro-based system to a mixed industrial system with complementary growth in input and output. [14] assert that industrial development implies the progression of a society from an agriculture-dependent system to an urban-based industrial system. Similarly, [15] categorised four industry sectors based on their operation mode. Their mode of operations ranges from service, processing, extractive, and assembling industries. This study focuses on the processing of Limestone, which falls into the processing industry sector and is distinct from other industrialisation processes [16].

Cement Production in Nigeria

The process of producing cement in Nigeria has a history traceable to the Pre-independence and Post-independence epochs that heralded the advent of import substitution policies and development plans. These dual development phases significantly affected the cement requirements in developing civil infrastructure in Nigeria. Some essential components in cement manufacture include red alluvium, Limestone, shale, and gypsum (see Figure 3). In Nigeria, gypsum exists in layers with other inputs in the cement production process. However, Limestone occurs in Nigeria's six geopolitical zones alongside fuel, which is the other primary requirement for cement production since Nigeria has enough oil, gas, and coal as an alternate source of fuel [17].



Effects of Abandoned Industrial Sites in Nigeria

In project abandonment, adverse consequences may come with such relinquishment. Notwithstanding the causal factors leading to such abandonment, its overall impact on a country's construction industry and economic growth is destructive. One of the apparent impacts of the relinquishment of a project is the colossal loss of human and material resources [18].

Some of the wastages accompanying the relinquishment of industrial sites are loss of human, economic capital and material resources. In addition to the losses incurred due to the relinquishment of any industrial buildings and sites, there are incidences of unlawful activities carried out by miscreants that impinge on the safety and well-being of residents. Generally, uninhabited industrial sites are unappealing and distort the beauty of the environment. Moreover, the social and economic domains of the locality become devastating because of the colossal loss of invested capital workforce, time and money by the investor.

[19] assert that the abandonment of industrial sites in Nigeria comes with the following negative consequences:

1. Employment opportunities have become smaller.
2. Lowered standard of living
3. People become disillusioned regarding the project.
4. Depletion of treasured resources.
5. Decline in socio-economic activities around the site.
6. Decreased inflow of government revenue
7. It is a colossal waste of resources due to the deployment of equipment to the site.
8. Vandalization of project materials because of abandonment of the project.
9. Proliferation of criminal activities at such sites.

Socio-Economic Impact Assessment (SEIA)

According to [20], socio-economic impact assessment (SEIA) entails the advanced assessment of the socio-economic

outcomes of the residents within the proposed industrial area. SEIA is a core component of the obligatory environmental impact assessment (EIA) report necessary for some categories of industrial projects to commence in Nigeria. Conducting a SEIA for massive industrial projects is highly important because of the likely socio-economic impact on the people. These people are known as the project-affected people (PAP).

Besides, social and economic impact phases include:

1. Planning and policy development phase (Pre-construction)
2. Implementation phase (Construction proper)
3. Maintenance Phase (Operations).
4. Mothballing phase (Decommissioning)

Social and Economic Impact of Industrialisation

Industrial development leads to social diversity and inequality among residents in the locality. This disparity highlights the benefits and challenges of the socio-economic impacts caused by industrialisation. Implementing the functionalist perception encourages the evaluation of the benefits and disadvantages of industrialisation as it proffers solutions through the enactment of social policies aimed at ameliorating the situation and fostering sustainability. The study recommends that the government should create and enforce environmentally friendly policies that will protect the interest and enhance the living conditions of the host communities; industries should continuously provide social amenities like schools, health facilities and boreholes to boost their social and economic progress. These industries are expected to implement purposeful corporate social responsibility (CSR) with the host society by employing indigenes. The government should ensure that industries compensate the community for the damages done by paying the medical bills of those affected [4].

Concept of Resilience

Resilience is rooted in the ecological field of study and has gradually gained prominence in nearly every field. It is the key driver in social science discourses due to its consistency in usage in geography, environmental planning, psychology and disaster studies [21]. Using the connotation of resilience across diverse research areas has made its definition vague [22-23]. Resilience in the broader context focuses on minimising the impact of any damage after every anthropogenic or unexpected natural distortion in the physical environment [24 - 25].

According to [26] p225, resilience entails thus:

The context of exposure to significant adversity, whether psychological, environmental, or both, resilience is both the capacity of individuals to navigate their way to health-sustaining resources, including opportunities to experience feelings of well-being, and a condition of the individual family community and culture to provide these health resources and experiences in culturally meaningful ways.

Resilience reinforces the capability of any affected susceptible person(s) to recover after any changes in circumstances, especially in the social environment. The social environment comprises personal characteristics, family, and culture, indicating its significant contribution to building resilience [26]. However, researchers have established communal approaches in building resilience capacities, given any disaster scenario involving setting up human adaptation structures and mobilising resources, reflecting the ability to endure and recuperate from any stressful situation in the environment [27 28].

Progressively, resilience has garnered global significance because it encompasses the collection of human and material resources and, in some circumstances, provides focused strategies to survive internal and external environmental stressors. These stressors often alter existing social and environmental systems to assess the ability to manage expected and recurrent environmental instabilities [29].

Concept of Community

Before exploring community resilience, having a passing glimpse of the historical viewpoints of respective schools of thought held by diverse researchers on characterising a community will be appropriate. Researchers have branded four phases of conversion and evolution regarding the notion of a community. Nevertheless, these phases are contingent on the predispositions of researchers, which span periods of vitality and consistent communications, and the progress of the early twentieth-century traditional concepts of the community [30]. It was preceded by developments in the middle-twentieth century that opposed the traditional notion of what connotes a community [31-32-33-34]. It also has the administrative and theoretical perception of community descriptions in the concluding phases of the twentieth century [35-36]. Lastly, the twenty-first-century organisations of the notion of community [37-38-39].

Community Resilience

Community resilience discourse in most disaster scenarios resonates with the persons within the community; thereafter, it develops into shared actions amongst the vulnerable persons and spontaneously deciphers to community resilience [40-41]. Some of the underpinning layers of specific individual actions terminate in community resilience as a direct outcome of shared specific resilience capabilities in the locality [42-41]. Such sustaining layers of resilience activities orbit about unifying the actual and potential resources and possessing robust social capital [43]. Social capital in this context enhances the resilience capabilities of vulnerable people at risk in a disaster scenario owing to the collective exertions of the vulnerable people. Given the circumstances, communal resilience signifies the ability of the community to bounce forward after the catastrophe [44].

Characteristics of Community Resilience

Community resilience is not an objective concept; it has physical and societal elements that underpin it. The physical elements comprise actions aimed at recognising the capability of the physical constructions inside the community to survive the effect of both natural and anthropogenic distortions. Similarly, the societal component encompasses the understanding and consideration of the capability of persons and the whole community to survive any distortion. It further encompasses the capability of the people to understand better the nature, history, and extent of previous catastrophes that have befallen the community, in addition to all available communal systems, customs, and types of capital [45]. Some of these features intrinsic to making a community resilient are peculiar and

central to such a community since they herald the commencement of the shared will to sacrifice and survive in any event of a change in circumstances.

Similarly, vulnerable communities exhibit specific attributes during any challenging scenario that are firmly entrenched components of resilience due to the changing aspects of these community's social and economic circumstances. These characteristics stimulate sustainable lifestyles within the community and further provoke collective resilience capacities during and after any distortion [46]. [47] have also compiled relevant literature regarding these key indicators that create community resilience in vulnerable communities over the years. These indicators that foster community resilience during any environmentally significant scenario include collective efficacy [48], social capital [49-50-51], social trust [46] [52], social support [53], and leadership [54 -55] emergency preparedness [56 -53].

Methodology

This is a qualitative study layered with the in-depth case study method. This approach was chosen to enable the researchers to comprehend the social and economic dynamics related to abandoned manufacturing sites in Rumuolumeni town. According to [57], applying a case study in this research enabled the generation of contextually contingent information towards developing a distinct comprehension of the crafted reality of the participants. Participants in this study are actors from miscellaneous backgrounds ranging from diverse economic, social, educational, religious and political status.

To get the primary data for this research, the researchers applied semi-structured interviews with all the principal actors to further understand the socio-economic benefits that accrued during and after the operations of Eagle Cement Company. These principal actors comprise workers who worked onsite, ranging from community liaison officers (CLOs), leaders of the Community Development Committees (CDCs), and heads of youth and women groups. These interviews shaped the path to discovering complex details that respondents might not say or discuss in a group [58]. The semi-structured interview in this study was done with the aid of pre-set open-ended questions relating to the aim and objectives of the study, in addition to the themes that would emerge at the end of the interview session [59].

The application of semi-structured interviews aided:

1. Unhindered access to the participants to clarify details facts that would not have been mentioned in a questionnaire,
2. The researchers recognise and comprehend the shared opinions of the interviewees.
3. The researchers focus on the specific areas of the research interest (social and economic benefits of Eagle Cement) and
4. The researchers efficiently cover relevant areas of the research interest from the participants.

Fourteen (14) participants were interviewed as shown in the Table.

Table1: Categories of interviewees

s/n	Categories of interviewees	Interviewees During Operation	Interviewees After Decommissioning
1	Community Development Committee (Chairman)	1	1
2	Youth Leaders	1	1
3	Women Leaders	1	1
4	Community Liaison Officers (CLO)	1	1
5	Employed Workers	2	2
6	Business people	1	1
	Total	7	7

Source: Authors (2024)

Most of the participants insisted on being anonymous for safety reasons. Deductive thematic analysis (top-bottom) was used to analyse the field data, which underwent several coding and recoding stages. It involves the reduction (coding) in line with the study's objectives.

Findings and Discussions

Findings from the study indicate that Eagle Cement Company was a significant benefactor to the residents of the community when it was operational. Most residents benefitted significantly, especially socially and economically, in addition to the consequential social and economic happenstances associated with the boom.

Social impacts of Eastern Bulkcem Company during operation

There were tangible social benefits the community got directly from Eagle Cement when it was at optimal functionality as corroborated by several interviewees

'I still remember when Eagle Cement was still working; as a young man, I used to work there, and the company provided us with many things, especially scholarships for our children. That was a great relief for us as young parents because even our relatives benefitted' Interviewee 1, Former Employee.

Another participant stated that the company maintained the roads because of the number of heavy-duty vehicles accessing the premises.

'You see that road leading to the company? Eagle Cement did not joke with it at all. They ensured it was always in a good state because trucks came around from nearly every part of the country to buy and carry cement from there. So, they always ensure that trucks moving in and out of their premises move on a good road....' Interviewee 2, Former Youth Leader.

During the interview session, a participant itemised the social benefits the community got from the company.

'As the CLO then, I was a witness to the numerous benefits the community got from the company. Some of these benefits include providing security within the community and rehabilitating schools within the community. Provision of potable water to the community. Provision of electricity supply within the community. Initiation of health care outreach programme. Engagement of our youths in sports activities and several other things I cannot remember to mention....' Interviewee 3, Former Community Liaison Officer (CLO).

As a former Community Development Committee (CDC) Chairman narrated, the community experienced some social vices exhibited when Eagle Cement operated optimally.

'I was the CDC Chairman when Eagle Cement was functioning well. I saw many things happen around here in the community. Come around the company premises on a good day when they are operating. You will see people from nearly every tribe in Nigeria, especially trailer drivers and their motor boys (conductors). They came with their troubles as well... shanties were built around the

community, especially along the major road to the company where women of all ages, shapes and sizes come around to do their businesses (prostitution). You will also see youngsters buying and selling hard drugs and pockets of criminals around trying to steal from innocent people. I could go on and on....' Interviewee 4- Former Chairman of the Community Development Committee (CDC).

Economic impacts of Eastern Bulkcem Company during operation

According to an interviewee, in addition to the social benefits, some economic benefits positively impacted their lives as a community, which they got from the company.

'I can tell you for free that most of us, young and old, benefitted from Eagle Cement when they were working. Then, we (my friends and I) oversaw several small businesses such as secretarial services, food vending, stevedoring services, and large haulage companies. Most of us prospered, acquired properties, and changed the circumstances of our families....' Interviewee 6- Businesswoman in the community.

A community member who was interviewed stated that several people had employment with sufficient disposable income and lower cement prices while the company was functional.

'... back then, the cement price was very low for us because we had access to the company as indigenes of the Rumuolumeni Community. They gave the youth employment chances, and they made good money every month....' Interviewee 9- Former women representative.

Post Operational Social and Economic Impacts of Eastern Bulkcem Company

As Eagle Cement became dilapidated after the decommissioning phase, residents' collective and individual prosperities diminished in value over time as most of the population that made the location flourish progressively went extinct. The population eventually gravitated to other places of interest as pull factors to eke out their living to satisfy their needs. These tangible changes in the waning population have caused a significant decline in every facet of anthropological enterprise within and around the host community.

Some of these challenges have continued to linger on as residents grapple with growing crime rates, and unemployment figures have risen since the company went moribund. They have also observed increased poverty rate, failed health services and surges in insecurity in the community with the emergence of rival gang lords contended to enlarge their grounds. It has also brought about a low quality of life for most residents. Besides, after the winding down of the company, most of the students who were beneficiaries lost their scholarships. Even though there were some compelling negative consequences after the decommissioning and subsequent abdication of the operations of Eagle Cement, it was evident that most community members who once benefitted from the company have built their

resilience capacities and bounced forward.

Conclusion

The outcome of this study revealed the enormous economic and communal reimbursements community members had amassed in the lifespan of Eagle Cement. After its operational life span ended, the factory was mothballed and subsequently abandoned, leaving host community members to face adverse economic and social moments. These challenges were significant as they included the emergence of rival urban gangs with an expansionist agenda fuelling insecurity; there were also massive job losses leading to a high unemployment rate, poorly maintained roads leading to road mishaps, inadequate healthcare services and facilities, and dilapidated properties trailing the absence of the company. The phenomenal litany of benefits that had once positively changed the host community's narrative has also changed as the community now experiences the adverse effects of the absence of the company. However, the participant observation records indicated that residents of the Rumuolumeni community have learnt to build their resilience capacities through social capital that enabled them to bounce forward through self-help approaches after the lifespan of Eagle Cement.

Recommendations

After the findings, this study made the following recommendations:

1. The government of Rivers State should revitalise the benefits scheme such as the scholarships for indigent students in the community to alleviate their plights.
2. The community should control youth's activity to curtail brutal actions.
3. The government and the community should adopt a two-prong collaborative approach to enable the reinvigoration of all the missed-out benefits.
4. There should be alternative arrangements between the community and the government to address issues of the reacquisition of abandoned industrial site to avoid the menace of youthful anti-social behaviours.

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