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**INDUSTRIALISATION AND ENVIRONMENTAL MANAGEMENT. A CASE OF MBALE INDUSTRIAL DIVISION- EASTERN UGANDA.**

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**ABSTRACT**

Historically, industrialization has been associated with falling relative returns to skills. This fact is at odds with most unified theories of industrialization, which tend to imply rising skill premium as natural concomitants to economic growth. Assuming that human capital is both a consumption good and an investment good, the model demonstrates how gradually rising investments in human capital, non-monotonic fertility rates, and falling skill premium can all be explained within one theory. Mbale, Uganda's third largest city, has a population of millions and is an extremely important border city. Its location has many advantages such as well-developed transport network and complete infrastructure. The Ugandan government attaches great importance to its development. With its developed agriculture, Mbale is Uganda's agricultural trade center and is rich in rice, coffee, cotton, fruits, vegetables and grains, textiles, there are also coffee processing, wood processing and other industries, the development prospects are very impressive. Industrialization has brought economic prosperity, additionally it has resulted in more population, urbanization, obvious stress on the basic life supporting systems while pushing the environmental impacts closer to the threshold limits of tolerance. With booming industrial growth and relatively low land mass, environmental sustainability is now becoming a significant deciding factor in industrial development process. Accumulating evidences constantly indicate that the transition of the existing industries into eco-industrial network through successful implementation of green approaches provides a viable solution to preserve the natural resources of the region while concurrently enhances the regional economy on a sustainable basis.

**Key words: industries, development and environmental management**

**Background of the study**

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The world's economic history can be simply told over the past few hundred years, technological advances have enabled some societies to break out of time-based poverty (Faridah, Jacob, et al., 2023). One of the main challenges was to capture the effects of these technological changes. In particular, many features of today's growth were very different from those at the dawn of massive technological progress (Paul & Kazaara, 2023). The world's first foray into modernity two and a half centuries ago saw exploding populations, stagnant education levels, and only modest increases in incomes (Oromo et al., 2023). A century later, growth was associated with declining birth rates and rapid growth in both education and average incomes (Anthony et al., 2023). However, traditional growth theories, capable of capturing current growth, are only consistent with a small fraction of human history. A park developed and later commissioned by President Museveni to start construction as part of the industrialization agenda where a total of 22 industrial parks will be created. It is expected to create 15,000 jobs for the community in the Mbale region (Ntirandekura & Christopher, 2022). The park has a capacity of 20 factories and according to Mr. Paul Zhang, Chairman of Sino-Uganda Mbale industrial Park, efforts have been made to attract more investors. Twenty acres of the 619-acre park were earmarked for an SME incubation base with a total investment cost of \$80 million (Turyatamba et al., 2022). Uganda Investment

Authority (UIA) board member Morrison Rwakakamba commended the investors for creating jobs for Ugandans. "The Authority has also continuously improved services aimed at attracting more investors and providing them with first-class services," he said, adding that this was the reason why the Authority established the One Stop Center aimed at facilitating the registration and implementation of businesses in Uganda (Faridah, Kazaara et al., 2023).

The incorporation made the process of starting a business in Uganda easy. An even greater challenge was to connect different episodes of industrialization in different economies (Ivan & Kazaara, 2023). First the UK and then the US led the world in labor productivity from the mid-eighteenth to the mid-twentieth century (Broad berry 2014), yet few theories have reasonably captured the growth stories of either. In particular, the industrialization history of these and many other economies shows diminishing relative returns to skilled labor (at least until the second half of the 20th century). Yet most unified theories of industrialization suggest that technological transition tends to increase returns to human capital (Galor and Weil 2010, 2012, Jones 2011, Hansen and Prescott 2012, Lucas 2012). And theories that model an increase in human capital consistent with a declining skill prime have failed to explain other important features of historical industrialization (Ivan & Kazaara, 2023).

**Problem statement.**

Mbale is one of the growing industrial cities in Uganda. Rodrick 2016 examines that there are various industries that exist in Mbale such as Bugisu Cooperative Union, coffee industry limited, SINO Uganda limited, Bidco industry, Ugandan mills and they are categorized by manufacturing industries, agricultural industries among others (Alex & Kazaara, 2023 ). However, the existence of industries in the city of Mbale contributed to the development of the city, Nauda and Szirmani (2012) won, industrialization led to the expansion of power, the development of infrastructure such as roads created employment opportunities. In addition to the above, Raj (2017) also insists that industrialization led to a reduction in income equally. Improving people's standard of living (Kazaara & Christopher, 2023). Despite the positive factors that introduction in Mbale town has contributed, it has also contributed negatively to the environment and surrounding communities (Nicholas et al., 2023). by Andiiy Blokin on May 17, 2021 urges that indoctrination has led to air pollution, immortality, traffic congestion, income inequality, among others, Micheal J Boyler (2021) urges that due to the increasing challenges of industrialization, there is a need to deal with to deal with more care, therefore it prompted the researcher's interest to conduct research on the effect of industrialization on environmental management in Mbale Industrial Division (John et al., 2023).

**Specific Objectives**

- To assess the relationship between industrialisation and environment.
- To investigate the impact of industrialisation on environmental management.
- To analysis the challenges faced by the people living around Mbale industrial area.

**Methodology**

This research was descriptive as it sought to analyze the influence of industrialisation on environmental management in Mbale industrial division. The researcher used both qualitative and quantitative research methods so as to enrich the content of the findings. The qualitative approach was used to collect data from Mbale industrial division among the leaders of industrial area, and from key informant interviews with industrial area leaders and opinion leaders. Quantitative methods were used to collect information from beneficiaries around Mbale industrial area, their spouses and children in different households. Secondary data from the Mbale industrial division's documents and records supplemented the findings. Sino-Uganda Mbale Industrial Park was one of 22 state-level industrial parks in Uganda, which were proposed by Ugandan President Museveni and China's Foreign Minister Wang Yi, approved by Uganda's Ministry of Finance, organized and constructed by the Tian Tang Group. Since its launch, the project has won great attention and support from the governments of China and Uganda. A total of 120 respondents was studied and they were included among others like beneficiaries of the industrialisation, their spouses and children, respondents were selected from the groups that were participating in investigating the influence of industrialisation

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in three randomly selected areas of Bugema, Wanale, Busamaga, and Nkoma where industrialisation is predominantly practiced. The respondents comprised of men and women in balanced numbers to have equal gender representation. Sixty (60) beneficiaries, (30) women and (30) men were interviewed using a questionnaire, twenty (20) beneficiaries, 10 (women) and 10 (men) participated in the focus group discussions and Twenty (20) spouses of the beneficiaries, 10 (women) and 10 (men) participated in the focus group discussions. Ten (10) Sino Uganda Limited leaders were interviewed as key informants as well as Five (5) opinion leaders and five (5) community leaders. Focus Group Discussions were held with the Community on the influence of industrialisation on environmental management in Mbale industrial area with the help of interview Guides to get general views on the benefits, the challenges and limitations of industrialisation both within and the surrounding area, and to collect their views on the influence of industrialisation on environmental management. The respondents were both male and female and they were varying in numbers. FGDs also facilitated the researcher to get information from the people on their perception of how industrialisation was influenced environmental management in Mbale industrial area. Twenty (20) spouses, both men and women were interviewed as well as twenty (20) other group of individuals living around the industrial area. Key informant interviews were used to hold the Sino Uganda Limited leaders using the Key Informant Interview Guide, to get information on the influence of industrialisation on environmental management. Key informant interviews were also conducted with community leaders and opinion leaders to get information on their perception on how industrialisation has influenced the environmental management have improved the standards of living among the households living in Mbale division and how these have benefited the community as a whole. Ten (10) Sino Uganda Ltd leaders, 15 opinion leaders and 15 community leaders were interviewed. Data analysis and spatial modeling were done by integrating spatial layers and non-spatial attribute captured from FGDs and KIIs to generate final HRV maps at divisions. Spatial analysis was done using ArcGIS to generate specific hazard, risk and vulnerability profile for the industrial division. Focus group discussions, key informant interviews were transcribed and analyzed continuously during and after fieldwork each day. The analysis was done around sub-themes of the study and where possible code categories was identified, written in the margin of the transcript, was added together to get the general trends and significant differences between transcripts and conclusion drawn. Each interview schedule was edited before leaving each respondent, there was crosschecking for uniformity, accuracy, completeness and consistency of information. The data was coded and tabulated using the Statistical Package for social scientists (SPSS) (Nelson et al., 2022). Tables, pie charts and bar charts were used to describe the findings

## **RESULTS**

The research was made and respondents were asked on how they feel about investigating the influence of industrialisation on environment management in Mbale industrial division. Industrialisation has led to environmental degradation in terms of industrial pollution. With industries operating, a 100 per cent pollution-free environment is a myth. It is neither possible nor necessary. However, it is imperative to ensure that industrial units cause the least pollution. Adequate and effective pollution control measures are required so that adverse effects on the environment

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are minimized. Necessary technological know-how and institutional back up support are available in this regard. Dust, smoke, fumes and toxic gas emissions occur as a result of highly-polluting industries such as thermal power plants, coal mines, cement, sponge iron, steel & ferroalloys, petroleum and chemicals. In industry-specific clusters, these have not only become hazardous, but also cause irreparable damage to our ecology and environment, often breaching the environment's carrying capacity. The following questions were asked ie; Kind, Cruel and Well.

**Table 1: How delivery method affects the learners academic basically during the period of Covid-19.**

| Variable     | Frequency | Percentage |
|--------------|-----------|------------|
| Kind         | 20        | 21.1       |
| Cruel        | 75        | 78.9       |
| Well         | 0         | 0.00       |
| <b>Total</b> | <b>95</b> | <b>100</b> |

Source: Primary source (2022).

### **Awareness about impact of industrialisation on environmental management**

The effects of industrialization included a significant population growth, the urbanization or expansion of the cities, improved access to food, a growing demand for raw materials and the development of new social classes formed by capitalists, a working class, and eventually a middle class. The social environment at an industrial area is perfect to build a child's character and personality.

**Table 2 workers housed by the school**

| HOUSES                       | FREQUENCY | PERCENTAGE |
|------------------------------|-----------|------------|
| Subsidized                   | 2         | 20%        |
| Free                         | 1         | 10%        |
| Stay outside industrial park | 7         | 70%        |
| Total                        | 10        | 100%       |

Majority of the workers were housed by school this shown by 70%. Majority of the teachers were not house by the school this shown by 70%.

Achievement was received a big number of teachers as it is shown by 30%. At least every teacher received an award for the good performance depending on the category of the award being offered. Categories awarded present include, best workers, most involved tasks, best friendship, bet humanities, best performed sector, best supervisors and the number of outputs got. These formed the basics for awarding performance and was different awards for every category.

### **Conclusions**

It is clear that there are many challenges that the LAC region will face with the implementation of the 2030 Agenda. The 17 goals are quite ambitious to achieve as an inclusive matter throughout the world, especially for low-income countries. Hopefully with the support of middle-income and industrialized countries they will eradicate poverty in all its dimensions. It is going to be fifteen years full of challenges for the countries that are part of this project, but if they are aware of most of these challenges, they will be able to overcome them with the support of one another.

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Nowadays, we have enough resources to eradicate poverty in all its dimensions without leaving anyone behind, but the only way to achieve these ambitious goals is by the UN strengthening partnerships with governments and the private sector McDade, 2015, as well as the support from each country. Moreover, society is aware of the risks of climate change and the impacts that it has already affected people and ecosystems; safeguarding the environment is a true challenge since it requires a considerable amount change and the use of new technologies to avoid pollution, over-exploitation of natural resources, habitat destruction and climate change. The true challenge will be to achieve an inclusive industrialization with a sustainable development approach in order to have a positive social, economic and environmental impact. This paper suggests the following recommendations

### **Recommendation**

Strategic planning is necessary to address the environmental impacts of economic development to an acceptable level. In this scenario of degrading environment and pressure for constant industrialization, Eco industrial network development provides viable solutions to move towards sustainable industrialization. However, it will require a supportive infrastructure base to make it happen. Industry will need a perfect combination of incentives, regulations, management mechanisms, information and other infrastructure facilities to provide the conditions in which industrial symbiosis (IS) can thrive.

The researcher reached on two fundamental conclusions that cultural changes must be made in the nation's environmental research programs, regardless of how these programs are organized, and that organizational changes would facilitate the implementation of the cultural changes. The committee uses the term culture to refer to the institutionalized beliefs, values, policies, and practices that characterize the administration of an agency's environmental research program and the nation's overall effort. For example, it refers to an agency's use of intramural research versus extramural research and to an agency's focus on mission-oriented research, rather than on research with potentially broader applications. With respect to a national environmental research program, it refers to the development of agency research programs with minimal reference to the cognate work in other agencies and with minimal consideration of the fit of the research in a coordinated national effort to address environmental problems.

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