

Assessing the Impacts of Rico Gado Feed Mill on its Surrounding Communities – A Sustainable Development Approach

*Abdul-Azeez, A.I. and Informant, J.
Department of Urban & Regional Planning
School of Environmental Sciences
Modibbo Adama University of Technology, Yola, Nigeria
*Correspondence email: azeezabu@yahoo.com

Abstract

Uncontrolled expansion of agro-allied factories on agricultural farmlands usually impact on the socio economic and environmental quality thereby threatening the livelihoods of inhabitants of such communities. Rico Gado feed mill was established to produce feeds for livestock that could help diffuse the conflicts between farmers and herdsmen that compete over land. This research assesses the impact of the physical and socio-economic characteristics of Hosere and Wuro Jauro Bappa communities affected by Rico Gado, with a view to identify existing problems and proffer solutions. The study observed that about 60% of respondents from Hosere and 57% from Wuro Jauro Bappa engage in farming. Despite the acquisition of the land upon which the communities farm and rear livestock, only about 6% - 7% of the people are employed in the factory. The factory has not impacted positively on the income of residents and low income is evident as 25% of respondents earn between N5,000- N10,000 monthly in Wuro Jauro Bappa, while 50% earn N10000 – N20000 in both communities, and about 50% in Hosere and only 25% in Wuro Jauro Bappa earn above N20000. The resulting unemployment rate coined with inadequate infrastructural facilities led to increasing poverty, forcing other residents to relocate elsewhere. The study therefore recommend sustainable development strategies to promote development that impact positively on environmental quality, and encourage desirable physical, economic and socio-economic conditions, in intergenerational manner to circumvent consequent dislodgment of the communities.

Keywords: Factory Farming, Physical and Socio-Economic Impact, Sustainable Development

INTRODUCTION

Factories process raw materials and the manufacturing processes are carried out in buildings where large amounts of goods are made using machines. They are manufacturing of goods such as textile, cosmetics or automobile are produced. Associated with these developments are improved transportation networks, expansion of domestic markets, high increase in the level of production in domestic manufacturing and commercial agriculture (Japhetlois, 2017). However, factories may constitute serious threat to the physical, social, economic conditions as well as affect environmental quality of a given area. This can affect the local economics; induce health problems through noise / air pollution and contamination of local water bodies.

Rico Gado feed Mill is an agro-allied factory situated at about 140km from Jimeta along Yola – Nguore road in Demsa Local Government, Adamawa State of Nigeria (Figure 1). The feed mill factory was established to meet the needs of livestock agriculture with various animal feeds products. The 20 metric tons per hour factory aims to produce carefully balanced and locally

sourced quality feed for a wide range of livestock like poultry, cattle, sheep and goats among others.

There are basically two communities directly affected by Rico Gado Feed Mill, namely; Hosere and Wuro Jauro Bappa which have been in existence for more than 25 years depending on the fertile land of the area for farming activities and livelihood. The common tribes within the communities include Fulani, Bali, Yadan, and Mbula among others involved mainly in farming and livestock rearing, where the crops cultivated include corn, bean, millet etc. while cattle, goat, sheep are among the animals reared.

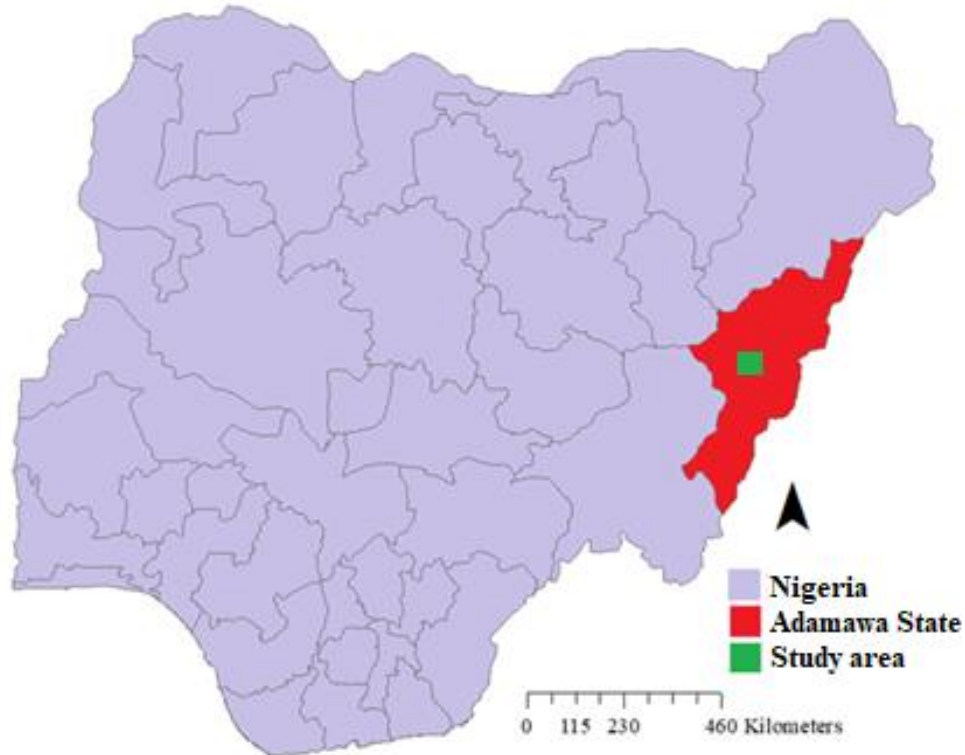


Figure 1: The study area comprises the location of Rico Gado Farm Factory and the surrounding communities.

A major challenge faced is unemployment where some community members who depended on farming or agriculture as means of livelihood have been displaced or rendered jobless due to loss of farm lands to the factory location. In addition, the factory attracted only skilled labor, while the unskilled jobs are not enough to go round the communities; thus, most of the youth remain unemployed resulting in increasing poverty, high crime rate and other social vices in the neighborhoods. Environmental pollution may be another challenge in the near future as increase in production may result in emission of CO₂, which can have effects on human health, natural flora, air, soil, water sources, climate conditions and reduce agricultural production in the surrounding communities.

Furthermore, industries usually bring some changes in the community and should influence the social and economic effect of the community in development with respect to the provision of

employment opportunities along with the formation of infrastructure that shapes the environment. However, despite the new productive activities in the study area, Rico Gado has not changed the state of the natural environment of the communities, or influences the infrastructural facilities and manpower development. The influence of the factory has not helped in improving the living conditions of the resident or shaped a new set of social positions in the community. These among other challenges make the study of assessment of Rico Gado feed Mill, Yola, very significant.

Industrial economy and sustainable development become two important issues of consideration. The integration of sustainability into industrial activities entails the reconfiguration of production processes with a view to reducing their impact on the natural system. This may involve a redesign of new eco-sustainable development pattern and a paradigm shift that requires participation and commitment of different stakeholder groups aimed at resource efficiency and the integration of sustainability into industrial activities (Garcia-Muiña *et al.*, 2018).

Environment, ecology, economy and development are interrelated and the problems of population growth, poverty, and unemployment, fear and insecurity among others are fundamental causes of environmental degradation that can be resolved through strategic sustainable development approach (Jänicke, 2012). As a measure to protect and improve the physical environment, and prevent deterioration in the quality of life arising from rapid economic development, the United Nations Conference on Human Settlement held in Stockholm 1972 initiated certain actions to be taken to achieve sustainable development (Japhetlois, 2017). This could assist in understanding the context out of which complaints, criticism and legal challenges are arising as well as offer useful steps in learning how to prevent and resolve conflicts (Ritz, 2005).

In the light of the above, this study aims to assess the physical, social and economic consequences of the factory's activities on surrounding communities by investigating how Rico Gado feed Mill has impacted on physical, economic, social cultural, health and environmental quality of the region. This is to identify and determine the negative and positive impacts with a view to suggesting actionable strategies to shape a new set of social positions and also to help in improve living condition of residents in the community.

Consequently, the objectives of the study is to introduce sustainable development strategies through participation and commitment of different stakeholder aimed at resource efficiency with the integration of sustainability into industrial activities (Garcia-Muiña *et al.*, 2018). Integration of sustainability into industrial activities may involve the reconfiguration of production processes with a view to reducing their impact on the natural system. This is an important approach to make choices about alternatives and improvements, to encourage inclusiveness and prevent environmental health hazards, economics degradation and promote education, health, social and economic development as well as sound environmental quality in a sustainable manner in the region.

Therefore this paper examines existing conditions of occupation characteristics, educational background, monthly earning/ income levels, as well as physical and socio-economic impact of the factory on surrounding communities. It also assess possible sustainable strategies that can be adopted by the factory management and make recommendations to integrate sustainability

principles into company operations while recommending planning proposal that will improve physical and socio-economic wellbeing of the communities around Rico Gado feed Mill.

Concept of Sustainable Development

The concept of Sustainable Development was expanded by the World Summit on Sustainable Development (WSSD) in Johannesburg (2002) as an integration of three closely linked dimensions: environment, economy and society (Garcia-Muiña *et al.*, 2018). Sustainability and development meet to integrate each other. The concept gives a clear understanding of sustainability as a benefit for both people and ecosystems. There cannot be development without availability of natural resources (Hackett *et al.*, 2014). Environmental Sustainability requires an awareness of natural resources, the vulnerability of the environment and the impact that human activities and decisions have on it. Economic Sustainability requires knowledge of the limits with potentials of economic growth, knowledge of their impact on society and the environment. Social Sustainability should guarantee conditions of human well-being through security, health, education, democracy, participation, justice and equity (Vallance *et al.* 2011).

It is necessary to generate sustainable income and employment for the livelihood of the population, through the rational efficient use of resources to decrease the use of non-renewable resources. Economic and environmental sustainability can hardly be achieved with increasing inequalities where social cohesion is lost (Garcia-Muiña *et al.*, 2018). World Summit in Rio de Janeiro (1992) marked a historic step in the awareness of the global environmental problem, by reorienting the way of producing and consuming, towards environmental and social quality. Therefore, investments in industrial farming are also called upon to participate in the basic principles of the concept of sustainability through respect for fundamental human rights, protection of the environment and protection of natural resources to attain successful model of performance.

Social and environmental impacts integrated with local economic and social issues are necessary choices to ensure long-term stability and development of Rico Gado. The factory would be considered “socially sustainable” when it respects the principles of economic ethics and pursues long-term growth, as well as contributes to sustainability, so as not to compromise the ability of future generations to meet their needs (Epstein, 2018). Industries must respond to social awareness and assess the effects of their policies on workers’ health and welfare, on the economic and social structures of the community where they operate, on the physical environment and the environmental sustainability of development (Bateh *et al.* 2015).

The efficiency of the factory depends on the surrounding environment and the community in which it is located (Barzotto *et al.* 2016), just as the well-being of the people depends on the possibility of having a thriving factory in its territory that can create wealth and quality employment. There is a long-term synergy between environmental, economic and social objectives; to maximize this synergy, strategies on public policies must be adopted on the basis of the principle of shared value, by ensuring that both enterprise and social conditions benefit at the same time (Wolf *et al.* 2016). Financial benefit will not only be the concern but also integrating social and environmental factors. It is imperative to understand sustainable development not only in terms of respect for the environment but as a guide to economic, social and cultural growth (Garcia-Muiña *et al.*, 2018) The new concept therefore becomes the cornerstone of the change that implies a natural transition from an individualistic approach to a participatory and shared one (Santos *et al.* 2018), whose

objectives are no longer the advantage for the individual investments in industrial farming, but for the community and the entire region.

Finally a major challenge for Rico Gado is how to follow the trajectory of sustainability and generate local economic impacts that contribute to local income and employment, without encountering high levels of complexity and difficulties of both technological and cultural nature. Attempt has been made by the research to address this issue in the application of sustainability measure to Rico Gado as explained below.

METHODOLOGY

The assessment of the existing condition of the study area is central to this study. This is with a view to critically examine the performance of the agro-allied factory development in relation to surrounding communities. This involves the investigations of likely impact of Rico Gado Feed Mill on the environment considering major factors such as physical, environmental, economic, infrastructure and social impacts to determine: a) Nature and character of impact, b) Magnitude /level of negative impact, c) Measures to be taken to mitigate the anticipated negative impact, and, d) How the positive impact can be measured and enhanced.

Questionnaires were designed and administered on the residents of the communities and staff of the factory to consider physical, environmental, economic, infrastructure and social impacts. A reviewed of existing practices through secondary data obtained from relevant published articles like journals, government publications as well as from the internet also assisted the study. In view of the location of the factory, sampling was centered on the two existing communities Hosere and Wuro Jauro Bappa, where questionnaires were used for data collection.

Based on the sizes of the communities, 60 persons were sampled from each of the communities constituting about 50% of the total households. Oral interviews were also held with a cross section of the resident farmers in the study area as potential beneficiaries. In addition, interviews were held with a cross section of the management and production staff of Rico Gado. Reconnaissance Survey was conducted to determine the physical and geographical boundaries of the study area. The data collected from primary source of interview of informed opinion leaders were considered for the research to assess the likely impact of the project on the environment. Finally, statistical analysis was performed using descriptive analytical tools, such as frequency table and charts so as to draw conclusions and recommendations for policy formulation.

As a measure to mitigate anticipated negative impact of Rico Gado Feed Mill on surrounding communities, the study considered the application of sustainability approaches such as fostering participation, encouraging partnership, building a sustainable lifestyle and encouraging continual improvement through monitoring and evaluation.

RESULTS AND DISCUSSION

The most obvious finding that emerge from the study is that majority of the residents in the communities were farmers. About 60% of respondents from Hosere community and 57% from Wuro Jauro Bappa engage in farming activity. Traders and businessmen constitute about 33% in Hosere community and 37% from Wuro Jauro Bappa.

The factory employment rate in the communities is very low with only 6% and 7% of people engaged as factory workers from Hosere and Wuro Jauro Bappa respectively. This may have been as a result of poor educational background in the two communities. For instance, educational background of the respondent at the two communities' residents is poor in view of the absence of a school within the communities. In Hosere community about 32% of the respondents have no formal education compared to 37% in Wuro Jauro Bappa. Also, about 33% attended secondary school in Hosere community and 30% in Wuro Jauro Bappa, while 27% of the residents in both communities have primary education. Consequently, majority of the school going age children do not attend any school or commute to nearby communities for health and education.

The monthly income earning data shows that no resident in Hosere earn N5000- N10,000 and only 25% of the people in Wuro Jauro Bappa earn between such amounts. However, 50% of residents in both communities earn between N10000 – N20000, while 50% also earn N20000 in Hosere and only 25% in Wuro Jauro Bappa earn N20000 and above. In view of the low income, it is evident that the factory does not impact much positively on the residents of the communities. The undesirable poverty-led income inequity may explain the observation of factory staff who complained that crime and vice is very common in the area, having negative repercussions on the factory.

Among the benefits of Factory farms to the community are the provision of infrastructure facilities like roads, schools, health facilities, water and electricity among others. It was observed from the study that Hosere and Wuro Jauro Bappa communities lack most of these facilities. A ranking of the Physical and Socio-Economic impact of the factory shows that Electricity is not extended to either of the communities, and the people of Hosere depend on well water which is not adequate and healthy. Children from the community often go for potable drinking water from the factory, a situation that poses inconvenience and danger to lives.

However, the communities have no benefits from the factory other components such as Housing Accommodation, Water Supply, Revenue Generation, Roads, and Schools among others. Although an interview with the factory management revealed that Rico Gado has in its development plans, to provide Electricity and Bore holes to the communities. Another problem encountered from the communities is the increasing crime rate. This may be as a result of unemployment arising from inadequate farmland for farming and rearing of livestock. The study revealed that the acquisition of community farmlands by Rico Gado feed mill did not attract payment of revenue or any corporate social responsibility to the communities.

As a result, there is serious effect on the income of these communities which practiced farming, majority of the residents interviewed in the communities are married and their major occupation is farming and trading. The inequity in income led many members of the community to venture into other sources of income while others are completely displaced and relocated.

The study shows that the feed mill occupies an area of land previously occupied by the community and upon which they depend for livelihood and source of income. This has forced some of the farmers to resettle elsewhere or make do with and benefit from farmlands rented out by the factory in view of lands taken away from local residents. The restricted farmland sizes allocated by factory authority have also reduced the level of output of the farmers in terms of crops production and

income. Consequently, since local farmers cannot afford the feed produced in the factory, some of the farmers were forced to relocate in search of adequate farmlands and grazing land for their crops and animals.

The study also revealed that in view of the technical nature of the factory operation, mainly knowledgeable expatriates are employed, however, some unskilled members from the communities are also employed as contract workers, securities and cleaners to reduce the rate of unemployment.

Examining the physical and socio-economic impact of Rico Gado feed mill on the communities, certain components were ranked and the result of the physical components shows that provision of residential accommodation, roads or transport, schools and health facilities are not beneficial to the communities. However, the effect of waste disposal components has minimal negative impact. The socio-economic factor components such as water supply, electricity, security, employment, trading/ market activities and revenue, the impact of employment is fair as 7% and 6% of residents were employed from both communities. Trading / market activities are also considered fair as the communities benefit from petty shops owned by residents. Respondents believed that the impact of the factory on security is moderately good for the communities, while the impact of the factory on electricity and revenue is not beneficial to the communities. Finally, the impact of water supply is fair because residents have access to water supply within the factory.

The low employment rate led significant members of the community to venture into other sources of income while others are completely displaced or relocated. The study shows that there are no civil servants or teachers resident in either of the communities. However, educational levels should not be hindrance to awareness and inclusiveness in partnering and participatory development. Notwithstanding, the residents may constitute themselves in to civil society, family and corporate foundations, interest or politically active groups to canvass for infrastructure and other facilities and welfare that will improve condition in the region, similar to Kampung Improvement Program (KIP) initiative in Jakarta (Minnery *et al.*, 2013) or the slum upgrading approach in the Philippines (Isabelle, 2006; Jadnanansing *et al.*, 2009; Mwelu and Anderson, 2013).

The benefits of Factory farms are the provision of infrastructure facilities like roads, schools, health facilities, water and electricity among others. These facilities are lacking in the communities around the feed mill. Electricity is not extended to either of the communities and the people of Hosere depend on well water which is inadequate. Children often cross the busy expressway to obtain potable drinking water from the factory, a situation that poses a lot of danger to their lives. In addition, the absence of school in both communities, the school' going age members commute to nearby communities for education and health.

Rico Gado is capable of contributing to the physical growth and socioeconomic conditions of the communities through employment opportunities among others to reduce the rate of poverty. However, poverty is evident in both communities, income levels in Wuro Jauro Bappa and Hosere community falls between N5000 and N20000. Therefore it is evident that the factory has not impact positively on the physical, social and socio-economic conditions of the communities. For agriculture to be sustainable and feed the country's large population there is a need for policy adjustments that favors farmers and encourages people to embrace farming. This could eliminate

the problems that farmers usually experienced in developing nations where factory farms in view of accessibility to finance and technology dominate and suffocate the existing traditional method and incapacitates the local farmers (Nierenberg, 2003). Hence, the need for planning intervention to encourage and promote positive impact on the surrounding community for the benefit of all parties.

There are considerable overlap and inter linkages among components and related issues of development that cannot be taken in isolation for implementation. The challenge is to design a methodology that will convert the components into specific procedures towards achieving desirable result and sustainability in the locality, in order to understand the implications of the concept of sustainability. What is to be sustained, who is to be held accountable for what? Why should sustainability be ensured? What problems will be encountered? What happens when sustainability is not ensured? These and other issues must be defined, understood and accepted by all the stakeholders.

Application of Sustainability Measure to Rico Gado

As a measure to mitigate anticipated negative impact of Rico Gado Feed Mill on surrounding communities, the application of sustainability approach become necessary. The need for sustainability in Rico Gado is not only economic and environmental, but also social, which translates into the need to develop a new way of working, to offer more and better opportunities. The primary purpose of promoting sustainable development in Rico Gado is to reduce disparities in income, well-being, education and opportunity among all people without depriving future generations of similar levels of well-being with adequate security.

Effective method is to foster participation through dialogue, cooperation and communication to promote solidarity among the community members through the creation of a broad based, non-governmental organization, directly involved in voluntary effort which could promote wide spread environmental and civic awareness in the communities (Srinivas, 2015). Another approach to apply sustainability measure in Rico Gado is to encourage partnership among the stakeholders. This approach is characterized by mutual assistance and responsibility for the achievement of agreed, specified goal where members bring to the table different resources, skills and knowledge needed to take action, offering opportunities for the communities to participate in decision making to partner with environmental groups, in fighting against development issues that threaten the communities natural resources of the region.

Another measure is building a sustainable lifestyle around Rico Gado feed mill to promote lifestyle choices for individual members of the community to become aware of the importance of protecting the physical and natural resources in preserving socio-cultural values, as well as develop lifestyle changes that impact on physical, natural, and cultural resources of the community. The final approach towards ensuring sustainable development of Rico Gado Feed Mill is continual improvement through monitoring and evaluation, feedback, need assessment system that enables setting up goals against which progress can be measured and monitored (Srinivas, H. (2015).

Finally, it is the believe of this study that applying the above measures would assist to mitigate the anticipated negative impact of Rico Gado feed mill on surrounding communities. However,

success will be intrinsically linked to the behaviour patterns, ethics and value systems adopted by individual members of the community with the ability of Rico Gado authority to practice good governance and inclusiveness that give recognition to all stake holders.

CONCLUSION

The most obvious impacts of Rico Gado feed mill on its surrounding is that majority of the residents are farmers whose land for farming and rearing of livestock has been taken over by the factory. Without adequate provision of alternative employment opportunities or development of infrastructural facilities, the new productive activity in the area has a significant adverse effect not only on environment but also on the living conditions of the resident. This variability has resulted in enormous displacement of residents, high rate of crime and deplorable environmental conditions. These therefore emphasize the need for effective physical, social and economic adaptive measures via sustainable development strategies that will circumvent the negative impact and consequent dislocation of the communities and help to produce immediate visible results by improving the living conditions of residents in the communities.

Rico Gado Feed Mill and the communities stand to benefit greatly by adopting the aforementioned sustainable development strategies through a synergy between the factory and the residents to encourage inclusiveness and partnership to enable participatory and sustainable development. This study therefore makes specific recommendations that: a) The proposed pillars of sustainability should be implemented to encouraged and allow inclusiveness, b) The capacities to understand and analyze problems through consensus, c) use of external resources, d) support in cash and kind be encouraged.

This research serve as a guide for Rico Gado and similar industrial developments for future farm factories so that they function efficiently in a sensible inter-generational manner within the contiguous communities.

References

- Barzotto, M., Corò, G. and Volpe, M. (2016) Territorial Capital as a Company Intangible: Exploratory Evidence from Ten Italian Multinational Corporations. *Journal of Intellectual Capital* 17: 148–67.
- Bateh, J., Thornton, B., Arbogast, G. W. and Farah, J. E. (2015) Social Awareness and Global Concern for Sustainability Initiatives in the Financial Sector. *Journal of Business Studies Quarterly* 7: 71.
- Epstein, M. J. (2018) Making Sustainability Work: Best Practices in Managing and Measuring Corporate Social, Environmental and Economic Impacts. Abington: Routledge.
- Garcia-Muiña, F. E., González-Sánchez, R., Ferrari, A. M. and Settembre-Blundo, D. (2018) The Paradigms of Industry 4.0 and Circular Economy as Enabling Drivers for the Competitiveness of Businesses and Territories: The Case of an Italian Ceramic Tiles Manufacturing Company, *Social Sciences*. Vol 7, 255.
- Hackett, S., and Sahan, T. M. D. (2014) Environmental and Natural Resources Economics: Theory Policy, and the Sustainable Society. Abington: Routledge.
- Srinivas, H. (2015). The Seven Triads of Sustainability Concept Note Series E-007. <http://www.gdrc.org/sustdev/triads/triad7.html>

- Isabelle, M. (2006) Slums, Slum Dwellers and Multilevel Governance, *The European Journal of Development Research*, 18:2, 299-318.
- Jadnanansing, J. N., Dirks, W. & Berendsen, T. (2009) Governance and slum development. *An Issue Dossier*.
- Jänicke, M. (2012) “Green Growth”: From a Growing Eco-Industry to Economic Sustainability. *Energy Policy* 48: 13–21.
- Informant, J. (2017) Assessing the Physical and Socio- Economic Impacts of the Rico Gado Feed Mill on Its Surrounding Communities. B.Tech. Project. School of Environmental Science, Modibbo Adama University of Technology, Yola, Nigeria.
- Minnery, J., Argo, T., Winarso H., Hau, D., Veneracion, C. C., Forbes, D., Childs, I. (2013) Slum upgrading and urban governance: Case studies in three South East Asian cities. *Habitat International*, Vol. 39, pp 162-169
- Mwelu, K. & Anderson, M. (2013) Governance and Participation in Slum Upgrading Programs. <http://healthycities.berkeley.edu/uploads/1/2/6/1/12619988/>
- Nierenberg, D. (2003) Factory Farming in the Developing World. In some critical respects, this is not progress at all. *WORLD WATCH* May/June 2003.
- Ritz, C. W. (2005) Coexisting with neighbors: A poultry farmer guide. University of Georgia; College of Agriculture and Environmental Sciences, Cooperative Extension Services.
- Santos, A. C., Mendes, P. and Teixeira, M. R. (2018) Social Life Cycle Analysis as a Tool For Sustainable Management of Illegal Waste Dumping In Municipal Services. *Journal of Cleaner Production* 2010:1141–49.
- United Nations Industrial Development Organization (2017) *Industrial Development Report 2018. Demand for Manufacturing: Driving Inclusive and Sustainable Industrial Development*. Vienna.
- Vallance, S., Harvey, C. P. and Dixon, J. E. (2011). What is Social Sustainability? A Clarification of Concepts. *Geoforum* 42: 342–48.
- Wolf, S., Franziska, S., and Jaeger, C. C. (2016) Balance or Synergies between Environment and Economy-A Note on Model Structures. *Sustainability* 8: 761.



© 2020 by the authors. License FUTY Journal of the Environment, Yola, Nigeria. This article is an open access distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (<http://creativecommons.org/licenses/by/4.0/>).