

# **Comparative Environmental Justice Among Dutsen Kura Hausa and Dutsen Kura Gwari Neighbourhoods of Minna, Nigeria**

**Maikudi Mohammed<sup>1</sup>, Chado Jiman<sup>2</sup>, Kawu Aliyu<sup>3</sup> and Mohammed J. K.<sup>4</sup>**

<sup>1,3,4</sup>Department of Urban and Regional Planning, Federal University of Technology, Minna, Nigeria

<sup>2</sup>Department of Urban and Regional Planning, Niger State Polytechnic, Zungeru, Nigeria

[mohammedmaikudi@futminna.edu.ng](mailto:mohammedmaikudi@futminna.edu.ng) 08036342228; [chadojiman@gmail.com](mailto:chadojiman@gmail.com) 08032297209; [aliyukawu@futminna.edu.ng](mailto:aliyukawu@futminna.edu.ng); 08028597919; [jibrinkatun@gmail.com](mailto:jibrinkatun@gmail.com) : 08068868547

## **Abstract**

This study compares the environmental justice of Dutsen Kura Hausa and Dutsen Kura Gwari in Minna, Nigeria by identifying and comparing levels and patterns of environmental justice and examining factors behind them. Using Random sampling method in administering 400 questionnaires, Relative Satisfaction Index (RSI) was used in analysing variables in each Environmental Justice dimensions while average RSI was calculated for each dimension. Chi-square test established the variations in the Environmental Justice dimension among the neighbourhoods, identifying cultural and ethnic differences as the highest environmental injustice recorded, where RSI value of 0.86 was obtained for Dutsen Kura Hausa and 0.37 for Dutsen Kura Gwari. P-value of 0.263 at >5% posits statistically significant difference in Environmental Justice dimensions among the neighbourhoods. The study concludes that there is high level of environmental injustice among the two neighbourhoods. Hence, the need to encourage environmental justice advocacy that protects the environment and wellbeing of residents and livelihood of Minna at large.

**Keywords:** *Comparative analysis, Environmental justice, Facilities, Pollution, Wellbeing*

## Introduction

Environmental justice is conceived to be a social cause that promotes fairness and equity for all people (Summers & Smith, 2014). To others, it is a set of federal and state policies that must be followed to ensure agency compliance with federal civil rights laws (Shrader-Frechette, 2002; Frank et al., 2011). Still others may view environmental injustice as a possible roadblock to planning and project development that must be overcome in situations when local activist groups use the planning process to promote a specific agenda (Cook & Swyngedouw, 2012). In reality, environmental justice involves each of these perspectives to a certain degree, hence, it is defined as “the fair treatment of all people in terms of the distribution of benefits and costs arising from planning projects, programs, and policies” (Khosravaninezhad & Akbari, 2014).

Environmental justice is based on the principle that all people have a right to be protected from environmental pollution and to live in and enjoy a clean and healthful environment. Environmental justice is equally protection and meaningful involvement of all people with respect to the development, implementation and enforcement of environmental laws,

regulations and policies and the equitable distribution of environmental benefits (Agyeman, 2002).

As the world experienced rapid urbanisation, land available for the urban poor are gradually reducing, and achieving the desired human health and well-being is becoming a process of consultation and agreement. This offers global examples of how communities located in areas where the most appalling environmental injustices are occurring often found in the low-income and least politically influential populations. Unfortunately, these injustices continue because these populations do not have a say in making policies that directly have impact on them (Agyeman, Bullard & Evans, 2002), leading to unfriendly use and disparity of environmental variables in most urban areas of the developing world.

Inconclusive statement much of the attention initially given to environmental justice has adopted a consequential focus on inequality of outcomes that is of the distribution of environmental risks (Schlosberg, 2004). There are, however, concerns about a language of justice based on the premise of distributional equality. First, in relation to environmental risks, this logically could be addressed by the even

sharing of environmental burdens rather than by addressing any of the root causes of environmental problems (Dobson, 1998). Second, given that much of the environment, when broadly defined, is inherently and sometimes uniquely distributed into particular places and cannot sensibly be experienced equally or uniformly, thus becomes positively weak to be seeking for its 'even' distribution. In this sense, an unequal distribution of environmental goods by itself may not necessarily be unjust (Walker et al., 2005). It is rather the 'fairness' of the processes through which the distribution has occurred and the possibilities which individuals and communities have to avoid or modify risk, or to access environmental resources, which are important.

Subsequently, due to the aforementioned scenario on environmental injustice, the situation in Minna, Niger State has become critical. Physically, there is disparity in the distribution and efficiency of urban infrastructure in the study area. The victims of the affected areas continue to suffer high degree of injustice in the distribution and efficiency of urban infrastructure. This study investigates the magnitude of the impact of environmental justice with special reference to urban infrastructure in Dutsen Kura

Hausa and Dutsen Kura Gwari neighbourhoods in Minna, Nigeria.

### **Literature Review**

Cities throughout the developing world have entered into a period of dynamic spatial transformation, exemplified in the emergence of suburban housing developments with large numbers of single-family homes in locations that are physically segregated from the central city and squatter settlements. This condition, which is connected to larger processes of globalization and urban decentralization, poses an intensification of social and spatial inequality and heightened levels of resource consumption and environmental degradation (Leichenko & Solecki, 2008). This increase in the agglomeration has also been coupled with rise in the environmental injustices, the increasing demand for environmental justice, and, the demand for literatures that explore the peculiarities of issues in these areas.

The environmental justice movement has had several sites of origin both within the developed and developing worlds. Within the developing countries, social movements and environmental protests that take on environmental justice questions have often emerged from conflicts between indigenous

populations and transnational resource extraction interests, such as the case of the Ogoni people and Shell Oil in Nigeria and the Chipko women's movement in India. Within the United States and other developed countries, the contemporary environmental justice movement largely emerged out from tensions and struggles associated with limiting exposure to hazardous materials and hazardous wastes, and heightened pollution levels. The case of Love Canal in New York State and the ensuing pressure for hazardous waste sites clean-up through "Superfund" legislation has been a highly publicized incident. This element of environmental justice is being increasingly applied in an international context due to the global spread of polluting industries and cross border disposal of hazardous waste (Agyeman *et al.*, 2003).

Many of the more rapidly developing cities have adopted Fordist modes of capital production and rational urban planning strategies where progress is seen as the result of industrial production, commodification, and marketization of social reproduction (like the private housing industry) and creation of urban amenities such as medical facilities, parks, and cultural institutions. As a result of these changes, the residents of these cities are

simultaneously exposed to the pressure of environmental degradation and the desire for sustainability planning (Mitlin & Satterthwaite, 2013). This temporally collapsed environmental transition reveals several sites for environmental justice issues to emerge, including location, operation, and exposure (access) to both environmentally undesirable facilities and environmental amenities.

Increasing number of studies are beginning to link questions of environmental justice and human rights. In a study of Dehli, for example, Alley & Meadows (2004) highlighted the relationship between middle-class demands for the closure of polluting urban industrial facilities and the resulting loss of jobs for poorer workers (seen as a basic human right). An important insight from this literature is the emerging role of the new urban middle class in developing country cities as advocates for environmental quality. This type of activism, which has long been observed among the poor within developing countries (Boyd, 2012), is similar to that found among the middle classes in many advanced country cities.

Another international extension of the environmental justice movement has been

the focus on the unsustainability of the global patterns of resource extraction, use, and consumption. Connected with this is the actual or perceived displacement of unsustainable industry-focused resource practices from the developed world to the developing world. Incorporating elements of the "not in anyone's backyard" movement, there is an emerging concept of "just sustainabilities," which stresses a need to link efforts to achieve sustainable development with the enhancement of environmental justice within local, national, and international contexts. A related contribution from the international literature concerns the role of developed nations consumption habits in creating environmental burdens that are disproportionately borne by residents of the developing nations (Leichenko & Solecki, 2008).

In the face of the recognized and acceptable efficacy of environmental justice principles and practices across communities, societies and nations, particularly in the third world, there is still massive environmental degradation such that the rural, urban and generally neglected areas have experienced large scale erosion and water-quality deterioration, deforestation, declining soil productivity and socio-economic

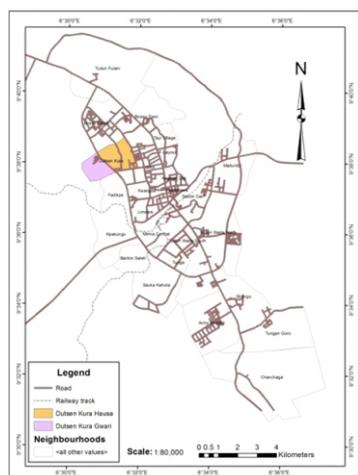
dislocation in Nigeria "(Mabogunje, 2005, 2008). Worse still, majority of the people, especially the youths have little or no access to the benefits derivable from production activities that should expectedly mitigate the negative effects and costs of the environmental degradation and emerging crisis to which they have been somewhat perpetually subjected. As a consequence, they cannot lead a life that they value and cherish, and their potentials are hardly actualisable and realizable (Ejumudo, 2014).

In Nigeria, writer often draw attention to the costs of environmental pollution and degradation borne by the marginalized, as well as the benefits that should flow to them in the form of employment, skill acquisition, educational scholarship schemes, and other pro-poor life-enhancing programmes. More need to be documented especially of issues with close proximity to livelihood events emanating from justice regarding the environment. Lack of such explanation, often lead to the conclusion that the principles of fairness and equity that underlie environmental justice are impaired with one likely hazardous consequence and environmental crisis as pronounced in the Niger Delta region of the country (Ejumudo, 2014).

## Methodology

### The Study Area

Minna, the state capital of Niger State in Nigeria is a famous railway town that lies on Latitude  $9^{\circ}71^1$  North and Longitude  $6^{\circ}33^1$  East. The town has transformed from a small traditional settlement to an urban centre with modern facilities and services between 1980 and 2000 '(Banki, Nizam, Ismail, & Danladi, 2016). Minna is blessed with abundant industrial and agricultural resources which are potential raw materials for mining and agro-allied industries. Root crops like yam, cassava and sorghum can be grown in the surrounding regions of the city making it home for civil servants and farmers alike. The neighbourhoods of Dutsen Kura Hausa and Dutsen Kuran Gwari are located along the western bypass of the city (Figure 1).



**Figure 1:** Minna showing the study areas  
**Source:** Ministry of Lands and Housing, Minna (2017)

### Methods and Data

Data for this study was obtained from primary sources with self-administered questionnaires. Simple Random Sampling method was adopted in administering 400 questionnaires in the study area through uniformly phrased questionnaire items on Environmental Justice dimensions identify by U.S. EPA (1998) with a little modification, which are demographic, geographic, economic and infrastructure, human health and risk, cultural and ethnic differences, historical and policy issues. Relative Satisfaction Index (RSI) was used in analysing the Environmental Justice variables in each Environmental Justice dimensions while average RSI was calculated for each dimension. Chi-square test was conducted for Environmental Justice Dimension in order to test the hypothesis so as to establish the variation in the Environmental Justice dimension among the neighbourhoods. The null hypothesis state that: there is no statistically significant difference in Environmental Justice dimensions among the neighbourhoods.

### Results

The aggregate values for each of the Environmental Justice variables are shown in Table 1. With respect to equity in terms of

ethnicity RSI value of 0.679 is obtained in Dutsen Kura Hausa while RSI value of 0.552 was obtained in Dutsen Kura Gwari. This implied that ethnicity equity is higher in Dutsen Kura Hausa while ethnic related issues are more pronounced in Dutsen Kura Hausa. In terms of managing spatial growth, RSI of 0.785 is obtained in Dutsen Kura Hausa while only 0.26 RSI value is obtained in Dutsen Kura Gwari. Also, in terms of development control, Dutsen Kura Hausa obtained 0.921 RSI value while 0.302 RSI value is obtained in Dutsen Kura Gwari. This is an indication of high disparity in the two neighbourhoods in terms spatial growth and development control.

This result confirms the deteriorating development pattern in Dutsen Kura Hausa. Condition of water facilities also shows a

wide variation in these neighbourhoods. In Dutsen Kura Hausa RSI of 0.83 is obtained while 0.343 RSI is obtained in Dutsen Kura Gwari. The study also revealed that RSI of 0.721 and 0.374 is obtained for Dutsen Kura Hausa and Dutsen Kura Gwari in terms of water pollution. This can be attributed to low topography and indiscriminate dumping of refuse into water sources. Dutsen Kura Hausa is connected to main water pipe line from Niger State Water Board while Dutsen Kura Gwari is not connected. This is similar to work of Chukwu (2008) who found that the analyses of the sampled water wells in Minna when compared with World Health organisation (WHO) standards for drinking water were higher than recommended limits, implying that the portability of the tested ground water is unacceptable.

**Table 1:** Environmental Justice Dimension, Variables and RSI of the Study Area

| Environmental Justice Dimension | Variables                                     | Dutsen Kura Hausa | Dutsen Kura Gwari |
|---------------------------------|---|-------------------|-------------------|
|                                 |   | RSI               | RSI               |
| Demographic                     | Equity in terms of ethnicity                  | 0.679             | 0.552             |
|                                 | Age inclusiveness                             | 0.517             | 0.464             |
|                                 | Gender and disability equity                  | 0.664             | 0.392             |
|                                 | Literacy level                                | 0.891             | 0.309             |
| Geographic                      | Managing climatic issues                      | 0.479             | 0.351             |
|                                 | Managing spatial growth                       | 0.785             | 0.26              |
|                                 | Topography                                    | 0.551             | 0.596             |
| Economic and Infrastructure     | Income level                                  | 0.86              | 0.332             |
|                                 | Condition of housing                          | 0.86              | 0.347             |
|                                 | Condition of water facilities                 | 0.83              | 0.343             |
|                                 | Condition of education facilities             | 0.679             | 0.325             |
|                                 | Condition of electricity facilities           | 0.547             | 0.547             |
|                                 | Condition of health facilities                | 0.657             | 0.494             |
|                                 | Waste disposal facilities                     | 0.796             | 0.313             |
|                                 | Road condition                                | 0.675             | 0.287             |
| Human health and risk           | Proximity to environmentally risky facilities | 0.853             | 0.381             |
|                                 | Control of air pollution                      | 0.555             | 0.419             |
|                                 | Control of water pollution                    | 0.721             | 0.374             |
|                                 | Control of noise pollution                    | 0.592             | 0.434             |
| Cultural and ethnic differences | Control of diseases                           | 0.638             | 0.404             |
|                                 | Public access to the decision-making process  | 0.86              | 0.453             |
|                                 | Job security                                  | 0.834             | 0.374             |
| Historical and policy issues    | Community representation                      | 0.898             | 0.275             |
|                                 | Development control                           | 0.921             | 0.302             |
|                                 | Public programmes                             | 0.713             | 0.54              |
|                                 | Cultural diversity                            | 0.811             | 0.608             |

**Source:** Authors' field Survey, 2018

The aggregate values for each of the six Environmental Justice dimensions are shown in Table 2. The result reveals that all Environmental Justice dimensions have a high difference between the two neighbourhoods. For example, in Dutsen Kura Hausa RSI value of 0.69 is obtained for demographic dimension while in Dutsen Kura Gwari RSI value of 0.43 is obtained. In terms of economic and infrastructure dimension of Environmental Justice, RSI

value of 0.74 and 0.37 is obtained for Dutsen Kura Hausa and Dutsen Kura Gwari respectively. Cultural and ethnic differences is the highest environmental injustice recorded in the study where RSI value of 0.86 is obtained in Dutsen Kura Hausa while RSI value of 0.37 is obtained in Dutsen Kura Gwari. This result implies that there is high level of environmental injustice in the study area considering all the Environmental Justice dimensions.

**Table 2:** Relative Satisfaction Index for Environmental Justice Dimensions

| Environmental Justice Dimension | Dutsen Kura Hausa | Dutsen Kura Gwari |
|---------------------------------|-------------------|-------------------|
|                                 | RSI               | RSI               |
| Demographic                     | 0.69              | 0.43              |
| Geographic                      | 0.61              | 0.40              |
| Economic and Infrastructure     | 0.74              | 0.37              |
| Human health and risk           | 0.67              | 0.40              |
| Cultural and ethnic differences | 0.86              | 0.37              |
| Historical and policy issues    | 0.82              | 0.48              |

**Source:** Authors' field Survey, 2018

### Test statistics

The outcomes of the RSI of the Environmental Justice dimensions were tested to ascertain the validity of the respondents' claims through the chi-square test and the result shown in Table 3. The chi-square calculated value of 18.00 and  $p$  value of 0.263 were obtained. Considering 95 percent confidence interval and 5 percent

significance, the chi-square  $p$  value is greater than the 5 percent and posits that the null hypothesis is rejected while the alternative hypothesis is accepted and therefore indicates that there is statistically significant difference in Environmental Justice dimensions among the neighbourhoods. It can therefore be inferred that there is high level of environmental

injustice among these neighbourhoods (i.e. Dutsen Kura Hausa and Dutsen Kura Gwari).

**Table 3:** Chi-Squared Tests

|                | Value | Df | P     |
|----------------|-------|----|-------|
| X <sup>2</sup> | 18.00 | 15 | 0.263 |
| N              | 6     |    |       |

**Source:** Authors' field Survey, 2018

### Conclusion

As a measure of wellbeing and its sustainability, environmental justice is examined by this study to indicate avoidable inequalities in terms of environment, life and living conditions in the two selected neighbourhoods of Minna. Strong disparity between Dutsen Kura Hausa and Dutsen Kura Gwari in terms of economic and infrastructure dimension, demographic, geographic, human health and risk, cultural and ethnic differences, historical and policy issues dimensions.

Quality of domestic water supply, variations in terms of road provision and other unimpressive but clear distinctions have been analysed to show that most residents of Dutsen Kura Gwari have been deprived from optimum access and use of livelihood amenities including potable water supply. Test statistic indicates high level of environmental injustice among the two neighbourhoods.

This work is an emphasis on the existence of mounting environmental injustice in the study area in terms of pollution (air, water and sound), and infrastructure provision. There is the need to enforce environmental laws that will prevent indiscriminate waste disposal and effective land use control that would check this menace. Road facilities are unequally distributed among the neighbourhoods, hence, the need to provide these in neighbourhoods lacking them with proper street layout supported with other road facilities that would improve transport system in neighbourhoods of Nigerian cities.

There is the need to encourage environmental justice advocacy to educate and raise awareness level on the need to fight for the protection of the environment, the wellbeing and the livelihood of city residents anywhere. There is the need for providing adequate water supply by

extending major water mains to all neighbourhoods in cities; develop efficient database for infrastructure provision in order to keep records, aid effective decision-making and to improve the quality of services provided.

### Acknowledgment

We are grateful to Mohammed Jibrin Katun, Abdullahi Muhammad Bashir and Ohia Kenneth Chukwudi students of the department of Urban and Regional Planning, Federal University of Technology, Minna, Niger State for providing technical assistance during this research. We also thank the members of Dutsen Kura Hausa And Dutsen Kura Gwari Neighbourhoods In Minna for their cooperation and information during the research.

### References

Agyeman, J. (2002). Constructing environmental (in) justice: transatlantic tales. *Environmental Politics*, 11(3): 31-53.

Agyeman, J., Bullard, R. D. & Evans, B. (2002). Exploring the Nexus: Bringing Together Sustainability, Environmental Justice and Equity. *Space & Polity*, 6(1), 77-90.

Agyeman, J., Bullard, R. D., & Evans, B. (Eds.). (2003). *Just sustainabilities: Development in an Unequal World*. MIT press.

Alley, K. D., & Meadows, D. (2004).

Workers' rights and pollution control in Delhi. *Human Rights Dialogue*, 2(11), 15-17.

Banki, M. B., Nizam, H., Ismail, B., & Danladi, M. H. (2016). Measuring Hotels Service Quality in Nigeria: A Case Study of Minna Township. *Journal of Quality Assurance in Hospitality & Tourism*, 17(1): 71-88 <https://doi.org/10.1080/1528008X.2016.1099997>

Boyd, D. R. (2012). The constitutional right to a healthy environment. *Environment: Science and Policy for Sustainable Development*, 54(4), 3-15.

Chukwu, O. (2008). Analysis of groundwater pollution from abattoir waste in Minna, Nigeria. *Research Journal of Dairy Science*, 2(4), 74-77.

Cook, I. R., & Swyngedouw, E. (2012). Cities, social cohesion and the environment: towards a future research agenda. *Urban Studies*, 49(9), 1959-1979.

Dobson, A. (1998). *Justice and the environment: conceptions of environmental sustainability and dimensions of social justice*. Oxford: Oxford University Press.

Ejumudo, K. O. (2014). The Democracy/Environmental Justice Challenge in Nigeria's Niger Delta and the Developmental Leadership and Governance Culture Imperative. *Journal of Economics and Sustainable Development*, 5(15), 113-123.

Frank, H., Campanella, L., Dondi, F., Mehlich, J., Leitner, E., Rossi, G., & Bringmann, G. (2011). Ethics, chemistry, and education for sustainability. *Angewandte Chemie*

- International Edition*, 50(37), 8482-8490.
- Khosravaninezhad, S., & Akbari, R. (2014). Application of environmental justice concept in urban planning, the peri-urban environment of Tehran as the case study. *International Journal of Architectural Engineering and Urban Planning*, (1), 56-64.
- Leichenko, R. M., & Solecki, W. D. (2008). Consumption, inequity, and environmental justice: The making of new metropolitan landscapes in developing countries. *Society and Natural Resources*, 21(7), 611-624.
- Mabogunje, A. L. (2005). *Global Urban Poverty Research Agenda: The African Case*. In *Global Urban Poverty: Setting the Research Agenda*. Washington, D. C.: Comparative Urban Studies Project of the Woodrow Wilson International Center for Scholars.
- Mabogunje, A. L. (2008). *The Challenges of Mobility within Nigeria's Emerging Megacities*. In *Integrated Transport System in Nigeria's Emerging Megacities: Issues, Challenges and Options*. Lagos: Lagos Megacity Development Authority.
- Mitlin, D. & Satterthwaite, D. (2013). *Urban Poverty in the Global South: Scale and nature*. Routledge, Abingdon, Oxon, UK.
- Scholsberg, D. (2004). Reconceiving environmental justice: global movements and political theories. *Environmental Politics*, 13 (3): 517-540.
- Shrader-Frechette, K. (2002). *Environmental justice: Creating equality, reclaiming democracy*. Oxford University Press.
- Summers, J. K., & Smith, L. M. (2014). The role of social and intergenerational equity in making changes in human well-being sustainable. *Ambio*, 43(6), 718-728.
- Walker, B., Holling, C. S., Carpenter, S. R., & Kinzig, A. (2005). Resilience, adaptability and transformability in social-ecological systems. *Ecology and society*, 9(2).