

Towards the Understanding and Demarcation of Informal Settlements

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Abstract: In the literature there is currently a problem of definition and demarcation of informal settlements. The goal of this communication is to suggest a best definition and demarcation for informal settlements. Through a review of literature, the study suggests that when a study intends focusing on all characters of informal settlements, including the overcrowding and extreme poverty aspects, the term ‘informal settlement’ or ‘informal settlements and ‘slum’s may suffice. However, if basic characters are the focus, an operational definition should be provided to avoid misunderstanding. Furthermore, the study suggests the proxy term ‘shacks not in a backyard’, a term adopted by the Housing Development Agency of South Africa, even though not a perfect one, is the closest criteria for the demarcation of informal settlements. This is believed to be potentially capable of reducing the strain of demarcation especially useful for policy and developmental purposes.

Key words: Informal settlements, slums, shacks not in a backyard, poverty, potentially capable, aspects

INTRODUCTION

Informal settlements are no doubt a reality (Sartori *et al.*, 2002). In 2001, in a major study titled “the challenge of slums”, it was estimated that 924 million people which is 31.6% of urban dwellers globally, lived in informal settlements (Anonymous, 2016a-c). According to Jones (2017), approximately one billion people live in informal settlements globally. The daunting reality is that if trends of informal settlements development are to be left un-curtailed, the current figure is expected to double (2 billion) by 2030 (Jones, 2017) and triple (3 billion) by 2050 (Anonymous, 2016a-c). Since, this phenomenon is a major problem of developing areas, it is said that in the developing world, close to one out of every 3 city-dwellers live in slum often located within an informal settlement (Jones, 2017). This increasing trend and development is said to be a humanitarian crisis faced globally (Hofmann *et al.*, 2015). In fact, slums continue to be one of the expressions of global poverty, inequality and deprivations in several cities of developing countries (Anonymous, 2016a-c).

Considering statistics across continents of the world, current figures regarding informal settlements are alarming. While informal settlement ratio of 61.7% and 30% still constitute urban population in Africa and Asia, 24% is the case in Latin America and the Caribbean (Anonymous, 2015). Similarly, while 67-94% is the case in some Arab countries, over 6% is the case in Western Europe (Anonymous, 2015). Trends from North America,

Australia and New Zealand show that there are significant proportions of people who are said to live in what may be classified as contextually poor neighborhoods (Anonymous, 2015).

In South Africa, a 2011 conservative estimates (which are likely to be under-represented) indicate that between 1.1 and 1.4 million households or between 2.9 and 3.6 million people in South Africa lived in informal settlements (Studies in Poverty and Inequality Institute, SPII 2017). Also, the Socio-Economic Rights Institute of South Africa (Anonymous, 2018) maintains that figures indicate that in 2016, about one in every seven households in South Africa lived in informal dwellings (estimate which is said to be higher in metropolitan areas where it is one in every five households).

Informal settlements are caused by a range of interconnected factors such as population growth and rural-urban and international migration, poverty, lack of basic services, failure in governance and policy frameworks, inadequate access to financial markets, land and property problems (Anonymous, 2016a-c). In Africa, factors such as high population growth rates, rapid rate of urbanization, slow economic growth rates, globalization, and inappropriate policies are said to be responsible for informal settlements development (Adegbehingbe, 2010).

World leaders were tasked to reduce the number, transform and improve significantly 100 million slum or informal community dwellers by 2020 (Anonymous, 2010). Reducing the number and transforming the lives of slum

dwellers requires more than wishful thinking and rhetoric. It requires skillful and constructive engagement which is what communities need for transformation, unlike previously used top-down approach. However, successful engagement with slum communities presents huge challenges. Among, the list is its phenomenal rate of development. Sartori *et al.* (2002) maintain that the growth rate of informal communities is one of the most challenging issues development agencies will face and have to face in the nearest future. Another challenge according to Hofmann *et al.* (2015) is that of the current little understanding regarding the mechanisms of informal settlement's origin and development. Similarly, there is the problem of definition: where no one single standard definition currently exists for informal settlements, neither, is there alignment across data sources with regards to how the settlement should be demarcated (Anonymous, 2012a-c). Furthermore, informal settlements are difficult to monitor and measure, due to the rapidness in their development (Anonymous, 2012a-c; Sartori *et al.*, 2002).

Based on the foregoing, this current study, seeks measures to address two of the above challenges. These are to suggest a more concise definitional term and better demarcation criteria that articulates the full meaning of informal settlements which could apply to all users.

DEFINING INFORMAL SETTLEMENTS

While, the responsibility to improve the plight of informal settlements and slums dwellers has been accepted by world leaders, Anonymous (2007) maintains that successful efforts to reduce slum dwellers must begin from being able to define the term. Literature has various versions that seek to define informal settlements. Some definitions are sometimes based on convenience while others as occasion demands. In this study a common thread is drawn through all definitions to assist better understanding and definition of the term. Literally speaking, the word informal denotes anything that is out of form, out of order or not in line with required standards. In this regard, informal settlement is defined as a settlement established, not according to the norm, plan or the order of settlement construction in the particular area where it exist.

Conceptual issues: In the literature, the term 'informal settlement's is sometimes used interchangeably as 'squatter settlement's (Oldewage-Theron and Slabbert, 2008; Nassar and Elsayed, 2017) and 'slum's (Adubofour *et al.*, 2013; Sartori *et al.*, 2002). But little wonder to what extent they are synonymous. Nguluma

(2003) in a study, reveals that different researchers have used different concepts in the attempt to define 'slum's and 'squatter settlement's and terms like informal, unplanned, squatters are arguable or debatable concepts used. Several concepts used in literature in an attempt to describe these types of settlements such as spontaneous settlements, shanty towns, squatter settlements, pirate towns, autonomous settlements and slums (Nguluma, 2003). Concurring, Anonymous (2016a-c) provides a list of terms used in different places for informal settlements. For example, it is said that in East Africa, people living in informal settlements are called slum-dwellers, informal settlers, squatters and maskwota; in Mexico, they are called paracaidistas or colonos; in Spain, Chile and Argentina, they known as okupas while they are known as favelados in Brazil. All of these are examples of terms used in different places and countries to capture what they might call informal settlements. It was however concluded that based on literature, it is difficult to have a generalized concept for informal settlements (Nguluma, 2003).

Agreeing with Nguluma (2003) conclusion, the Anonymous (2012) report for South Africa, maintains that "there is no single standard definitions of an informal settlement across data sources, nor is there alignment across data sources with regards to the demarcation of settlement area". References used to define informal settlements by different data sources are: status of the land (i.e., the illegality or the fact it is not sanctioned or documented), the dwelling (a makeshift dwelling), lack of municipal services, geographical dimension, minimum size threshold in some cases and varying local conditions, household survey of South Africa specifically used the term 'shacks not in a backyard' (i.e., dwelling-based proxy) for informal settlements (Anonymous, 2012a-c).

The use of some of the terms for informal settlements is somewhat derogatory and associated with a negative connotation (Anonymous, 2016; Adubofour *et al.*, 2013). An example is the use of the term 'slum's. The term usually has derogatory connotations and may suggest that a settlement requires replacement or can even legitimize the eviction of its dwellers but it is quite a difficult term to avoid nonetheless for at least three reasons (Adubofour *et al.*, 2013). One is, some networks of neighborhood organizations choose to identify themselves with a positive use of the term, partially to neutralize the negative connotations associated with its use, a very successful example is the National Slum Dwellers Federation in India (Adubofour *et al.*, 2013). Secondly, the only global estimates for housing deficiencies, gathered by the United Nations are for what they term 'slum's. Thirdly, in certain parts of the world,

there are advantages for people who live in informal settlements if their settlement is recognized officially as a 'slum' and indeed, the residents may be able to lobby to get their settlement classified as a 'notified slum' (Adubofour *et al.*, 2013).

In South Africa, there are a number of definitions for informal settlements, to the extent that various municipalities and local areas have their unique ways of identifying or defining it. While, there are some variations across these definitions, most of them emphasize the dwelling type, with 'shack's (structures built out of temporary or rudimentary materials) being the dominant feature (Anonymous, 2013). More so many of the definitions refer to ownership of the land the nature of land tenure and formal demarcation (Anonymous, 2013). The study that follows provides a list of some of these definitions, according to Anonymous (2013).

The first category of definitions according to Anonymous (2013) focused on the legal context of informal settlements. A first one is that by Anonymous (2012a-c). In its views, an informal settlement is an unplanned settlement on land which has not been surveyed or proclaimed as residential, consisting mainly of informal dwellings (shacks). In this context, an informal dwelling is defined as "A makeshift structure not approved by a local authority and not intended as a permanent dwelling" (Anonymous, 2011). The second is by Mangaung Metropolitan Municipality Integrated Development Plan Review 2013/2014. It states that an informal settlement is an area that has no formal plan and dwellers occupy the area illegally.

The third is by the Anonymous (2009). It refers to the 2009 National Housing Code's Informal Settlement Upgrading Program. Based on its conception, it views informal settlements on the basis of characteristics such as illegality and informality, inappropriate locations, restricted public and private sector investment, poverty and vulnerability and social stress. Similarly, the Nelson Mandela Bay, Municipality (2017) defines an informal settlement as one or more shacks built on land with or without the consent of the land owner or care taker. In some cases, formal sites have been approved but in others there is no formal layout and the nature of services in the settlement is usually communal.

Based still on the legal context, the Buffalo city Metropolitan Municipality Draft Integrated Development Plan 2016-2021 views an informal settlement as an area where groups of housing units have been built on land that the occupants have no legal right to. Also, the settlements are unplanned and housing units are not in compliance with existing planning and building regulations. Finally, under this category, the KwaZulu-Natal Province, KwaZulu-Natal defines an informal

settlement in accordance with the 2009 National Housing Code's Informal Settlement Upgrading Program as presented by Anonymous (2009).

In order to avoid ambiguity which is inherent in some of the terms used for informal settlement, Anonymous (2012a-c) adopted a proxy term used by household survey for South Africa, i.e., shacks not in a backyard. It was however argued that the use of this term is indicative but given that there is no standard definition for informal settlement, it is still not clear whether or how this proxy term can be improved upon (Anonymous, 2012).

Shacks not in a backyard: As indicated, though not completely true, most definitions in South Africa seem to rely on the use of the 'dwelling type' characteristics to define informal settlements, hence, the use of 'shack's (structures built out of temporary or rudimentary materials) (Anonymous, 2013). As such, though not precise, this is what informed the HDA notion for informal settlements as 'shacks not in backyard' (Anonymous, 2013). Shacks not in a backyard here is differentiated from 'shacks in a backyard'. In this sense, the latter are informal structures built in the backyard of a building in a formal settlement. To a large extent with specific reference to South Africa, effort here is to, at least solve the problem of demarcation which makes study on informal settlement difficult. In many developing communities, informal structures are found located at the back of formal structures in many urban areas. This is especially true of South Africa.

Informal settlement and slums: Apart from the term 'shacks not in a backyard', a concept most frequently used alongside or interchangeably with informal settlements in many literature discussions, especially, the United Nation's reports, is slums. Though both terms seem somewhat similar and have been used interchangeably by many, there are some slight differences between them. According to Anonymous (2007), slums in its traditional meaning refers to areas that once were respectable and even desirable but is now deteriorated because the original dwellers moved on to new and better areas of the city. As such, the condition of settlement declined as they are progressively rented out to low income earners. Over time the term has now lost its original meaning, especially, in developing countries where it is now even used synonymously as informal settlements. Both terms were however, differentiated according to the UN-Habitat definition as indicated by Hofmann *et al.* (2015). According to this definition, a slum is any environment where at least one or more of the five following conditions exist:

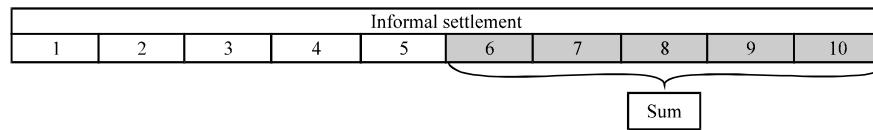


Fig. 1: A pictorial hypothetical representation of informal settlement and slums

- There is a lack of tenure
- There is lack of access to safe water
- There is also a lack of access to improved sanitation
- There is non-durable housing
- There is the problem of overcrowding

A close observation of this definition presents a huge problem, the definition is loose. As it is currently, the indication is that there seems to be virtually no developing area that does not fall into this category. This is because a lack of tenure, lack of access to safe water, lack of access to improved sanitation and et-cetera are characteristic features of many developing communities. Seemingly alluding to the same, it was suggested that the reason those characters were proposed is because they are largely quantifiable and can easily be used as indicators to measure the extent of progress towards the millennium development goal to significantly improve the lives of at least 100 million slum dwellers by the year 2020 (Anonymous, 2007).

On the other hand informal settlement is defined as urbanization originating outside of municipal planning efforts (Hofmann *et al.*, 2015). Based on this, Hofmann *et al.* (2015) contend that informal settlements do not have the same meaning as 'slum's, even though majority of them fulfill at least one of the UN-Habitat's conditions for slum. The Organization for Economic Co-operation and Development (Anonymous, 2001), defines informal settlements in two folds. Firstly, it is an area where housing units have been built on land where occupants have no legal right to. Secondly, it is an unplanned settlement and an area where housing structures are not in compliance with existing planning and building regulations.

Further, informal settlements according to the Anonymous (2015), is defined as residential areas where the following exist:

- Inhabitants have no secure tenure with regards to land or the dwellings they live with majorities ranging from squatting to informal rental housing
- The neighborhoods usually lack access or are cut off from, basic amenities and city infrastructures
- The housing pattern may not comply with existing planning and building regulations and is mostly situated in geographically and environmentally hazardous sites

Insight on qualities that define informal settlements as suggested by the National Housing Code Part 3: Upgrading of Informal Settlements (2009), of the Department of Human Settlements, Republic of South Africa, the department responsible for informal settlement upgrading, seems all-encompassing. The first quality suggested is that of illegality and informality. It is said that informal settlements lack legal recognition because they are sited on unlawful and/or unauthorized land as well as with illegal or unapproved houses. The second relates to location and environmental factors. It is also said that informal settlements are sited on a variety of locations mostly on land not suitable for development purposes. The third character similarly is that it is associated with restricted public sector investment. Due to its illegality, informal settlements lack access to basic municipal engineering facilities like water, sanitation, electricity, roads and walkways and lighting. The fourth is that the area is poverty-stricken and vulnerable. Most members of informal settlements have only basic educational qualifications and are often dislocated from the formal labor market. Residents also have high risk of disease due to the added effects of household poverty and their poor living environment. The last aspect has to do with social stress. Due to the poor living conditions of informal settlement, there is high levels of interpersonal crime including domestic violence, child abuse and various forms of social ills.

Emphasizing further on the definition of slums, Anonymous (2015), maintains that slums are the most deprived and excluded form of informal settlements, characterized by poverty and large agglomerations of dilapidated housing often located in the most hazardous urban land. Based on this, conventionally a slum could be referred to as a type of informal settlement where deprivations are at a very high level. In another sense, if informal settlements could be graded, let's say in a scale of 1-10 (this is hypothetical, not real situation), slums may be referred as the highest form of informal settlements as represented pictorially in Fig. 1. This to some extent justify researchers (Oldewage-Theron and Slabbert, 2008; Adubofour *et al.*, 2013) who prefer to use informal settlements interchangeably for 'slum's or 'squatter settlement's as the case may be. This differs from the contention of Hofmann *et al.* (2015) that informal settlement do not mean the same as slums.

DEMARCATING AND CATEGORIZING INFORMAL SETTLEMENT

Although, the difficulty of demarcation and measure of informal settlements has been alluded to in literature due to the rapidity in its growth, for developmental purposes, Anonymous (2016a-c) suggests three demarcation criteria grouped into categories a-c, respectively. Category a, represents settlements for which housing subsidies and infrastructure funding have already been approved and are either already scheduled for full upgrading or relocation with a suitable destination already or imminently available. Similarly, category b, settlements are those that do not require instant relocation but for which there is not yet any approved or imminent funding for full scale upgrading or relocation. Category c, are settlements where residents are in immediate danger, for example, the area may be subject to regular flooding or toxic waste exposure or land in the area may be urgently required for other reasons.

On a similar note, in a presentation at the Strategies for Sustainable Energy Transitions in Urban Sub-Saharan Africa (SETUSA) conference 2017 where the use of solar electrification for informal settlements was advocated by Lemaire and Kerr (2017), three categories of informal settlements were also advocated, of categories 1-3, seemingly looking like that of Anonymous (2016a-c). According to them, category 1 settlements are those sited on suitable land (i.e., they complied with set criteria and is likely to go through in situ upgrading). Also, category 2 are settlements which do not require immediate relocation and thus go through the process of regularization or formalization (i.e., putting basic services but planning to relocate in future). Category 3 are settlements sited on unsuitable land (i.e., they do not comply with set criteria, areas such as on dolomite land in toxic areas or in a dangerous area) and surely need a relocation.

Anonymous (2005), however, suggests some useful criteria in the process of defining and identifying informal settlements for incorporation and recognition. Two main steps were suggested. These are assessment and clarifying key factors. What to look for under assessment are boundary location (aerial photographs will assist here), surveying and numbering, engineering characteristics such as nature of the ground, created features (e.g., overhead power line, old farmhouses, etc.), other features like underground services (e.g., water, sewer and telephone), land usage/ zoning and other planning documents, environmental characteristics and its impact on surroundings. In terms of clarifying key factors, the following are suggested: size of the settlement; approximate number of structures and population in the area, approximate density of the

population, non-residential land uses, description of surrounding areas and the use of negative and positive factors. Negative factors are natural factors such as ground and environmental factors, man-made factors such as power lines, airport noise zone, planning factors such as zoning, planned road, surrounding objectors such as developed suburb with strong objections. Positive factors in this case are factors that will reinforce permanence such as length of existence, ownership of land, relative ease of making site suitable, major de-densifying is not needed, community relatively stable and unified and broad acceptance by nearby communities.

Informal settlement based on physical condition: Physical condition here speaks of two issues. The first has to do with the state and/quality of materials the buildings are made of whether with acceptable standards or not. The second aspect relates with where the building is sited. This is often the aspect not easily reflected by most definitions. A structure may be of acceptable standard, but sited in an unauthorized or illegal space. In this case, the physical condition of the structure is still unacceptable.

Most definitions in literature, consciously or unconsciously, only focus on the legal status and the first part of the concept of physical condition in the definition of informal settlement. Few have asked the question, ‘what do we call structures made of acceptable materials but built on an unauthorized or illegal space?’ The definition of Abdelhalim (2010) brings to the fore this often neglected aspect. According to Abdelhalim (2010), informal settlements refer to a wide range of residential areas consisting of communities living in self-constructed houses perceived informal on the basis of their legal status, physical conditions or even both. Based on this, Abdelhalim came up with four categories of housing structures of which three are informal. The first category are legal structures but now deteriorated. Examples are old inner-city dilapidated houses, usually, subdivided and rented out to low-income earners. The second group are illegally built structures which are in acceptable physical conditions but lack access to requisite basic social amenities. The last category are illegal and deteriorated (unacceptable) structures. Examples are simple shacks made of impermanent building materials which form pockets of shanty towns and are considered unsafe to live. In more simple terms, the three categories according to Abdelhalim are.

Legally built but deteriorated structures. In this case, the structures are sited on legal space. The only problem is that they are now deteriorated. This according to Anonymous (2016a-c) is what originally (historically) is referred to as slum.

Illegally built structures (those on illegal space) but in acceptable physical condition. These are structures built with acceptable materials but sited on illegal space. These are the ones often neglected in most definitions. Even though, the structures are built with acceptable building materials for the fact it is sited on an unauthorized space, it is still regarded as informal.

Illegally built (those on illegal space) and deteriorated (unacceptable) structures. These are structures built with unacceptable standard building materials, sited on illegal or unauthorized space. These are the ones most frequent in many developing urban areas of the world.

CONCLUSION

As far as the definition of informal settlements is concerned, historically slums, a more often used word for/with informal settlement, slightly differs from informal settlements in meaning. However, due to contemporary understanding and usage especially in developing countries, a slum is a deprived form of informal settlement. In other words, it is an informal settlement where there is higher levels of poverty and deprivations. Therefore in both ways, researchers who argue that both terms should not be used synonymously and those who claim they both mean the same are justified. Similarly, in terms of how best to demarcate informal settlements, three criteria are observed. These are the proxy term 'shacks not in a backyard' as used by Anonymous (2012a, b); the advocacy for developmental purposes, presented by Anonymous (2016), Lemaire and Kerr (2017) and the emphasis on physical conditions of structures as conceived by Abdelhalim (2010). The advocacies of Anonymous (2016a-c), Lemaire and Kerr (2017) are almost the same as both unfortunately do not seem relevant in terms of assisting in the demarcation of informal settlement. This is because both seem only useful for an area that has already been defined and demarcated for development. Also, the concept of Abdelhalim (2010) also, though considerable, is more academic than practice. This is because the general notion is that informal settlements consist of structures made of rudimentary materials, even though, there are occasions of structures made of more permanent and acceptable materials among known shacks. In other words, such ideal case of structures made of acceptable materials but built in unauthorized space hardly exist alone, except pockets among formal or informal environments as the case may be. In all, the proxy term 'shacks not in a backyard' still seems closest in helping to address the on-going problem of demarcation which is one of the main challenges associated with informal settlements as a subject.

In this regard, the following observations based on literatures and suggestions would assist a common understanding on a most applicable term that defines informal settlements and how best to demarcate it.

All definitions of informal settlements only emphasize one or more aspects which characterize the settlement.

Main characters which seem obvious in all definitions of informal settlements are: problem of tenure or insecure tenure, lack of access or a cut of from basic amenities and city infrastructures and housing patterns and structures may not be according to existing planning and building regulations, dwellings made of rudimentary materials, settlements sited in marginalized lands (or lands less suited for settlement), consisting also of poverty, vulnerability and social stress which also characterizes slums.

All slums are types of informal settlements, in what may be regarded as the worst types of informal settlements. While, researchers who use informal settlements interchangeably for slums may be justified, significant differences, according to, general notion (not according literature) are the overcrowded nature and higher levels of poverty usually characteristic of slums. Perhaps this is one reason why in virtually all United Nation's report, the two terms are used together or alongside.

Although, the difficulty of demarcation of informal settlements is alluded to in the literature, a most closest criteria is the proxy term used by the Housing Development Agency (Anonymous, 2012a, b) of South Africa, 'shacks not in a backyard'. In other words, these are informal structures outside of formal environments.

RECOMMENDATIONS

Based on the foregoing, the recommendation therefore is that when a study intends focusing on all characters of informal settlements including the overcrowding and extreme poverty aspects, the term 'informal settlement' or 'informal settlements and 'slums' may suffice. However, if basic characters are the focus, like the overcrowding and extreme poverty situation, an operational definition should be provided to avoid misunderstanding, due to the many terms associated with its use.

REFERENCES

- Abdelhalim, K., 2010. Participatory upgrading of informal areas: A decision-makers' guide for action. Participatory Development Programme, Egypt.

- Adegbeyehbe, V.O., 2010. An evaluation of physical transformation of residential buildings in government estates in South Western, Nigeria. Proceedings of the Conference on West Africa Built Environment Research (WABER), July 27-28, 2010, WABER, Accra, Ghana, ISBN: 978-0-9566060-0-6, pp: 127-140.
- Adubofour, K., K. Obiri-Danso and C. Quansah, 2013. Sanitation survey of two urban slum Muslim communities in the Kumasi metropolis, Ghana. *Environ. Urbanization*, 25: 189-207.
- Anonymous, 2001. Glossary of statistical terms: Informal settlements. Organisation for Economic Co-operation and Development, Paris, France.
- Anonymous, 2005. A quick guide to dealing with common informal settlement problems. Western Cape, South Africa. https://www.westerncape.gov.za/text/2005/1/informal_settlements_handbook_compressed.pdf
- Anonymous, 2007. What are slums and why do they exist? Nairobi, Twenty-first Session of the Governing Council. United Nations Human Settlements Programme, Nairobi, Kenya.
- Anonymous, 2009. The national housing coed part 3: Upgrading of informal settlements. Department of Human Settlements, South Africa.
- Anonymous, 2010. State of the world's cities 2010/2011: Bridging the urban divide. Earthscan, London, UK.
- Anonymous, 2012a. Census 2011 statistical release-P0301.4. Statistics South Africa, Pretoria, South Africa.
- Anonymous, 2012b. KwaZulu-Natal: Informal settlements status. The Housing Development Agency, Johannesburg, South Africa. http://thehda.co.za/pdf/uploads/multimedia/HDA_Informal_settlements_status_KwaZulu-Natal_1.pdf
- Anonymous, 2012c. South Africa: Informal settlements status. Housing Development Agency (HAD), Johannesburg, South Africa. http://thehda.co.za/pdf/uploads/multimedia/HDA_Informal_settlements_status_South_Africa.pdf
- Anonymous, 2013. South Africa: Informal settlements status 2013. The Housing Development Agency (HDA), Johannesburg, South Africa. http://www.thehda.co.za/uploads/files/HDA_South_Africa_Report_lr.pdf
- Anonymous, 2015. Habitat III issue papers 8: Urban and spatial planning and design. United Nations Task Team on Habitat III. UN-Habitat, New York, USA. <https://www.alnap.org/help-library/habitat-iii-issue-papers-8-urban-and-spatial-planning-and-design>
- Anonymous, 2016a. A new response to informal settlements. SANGONeT, South African. <http://www.ngopulse.org/article/new-response-informal-settlements>
- Anonymous, 2016b. Pretoria declaration for Habitat III: Informal settlements. United Nations, New York, USA.
- Anonymous, 2016c. Urbanization and development emerging futures. United Nations Human Settlements Programme, Nairobi, Kenya. <https://www.unhabitat.org/wp-content/uploads/2014/03/WCR-%20Full-Report-2016.pdf>
- Anonymous, 2018. Informal settlements and human rights in South Africa. Socio-Economic Rights Institute of South Africa (SERI), Johannesburg, South Africa. <https://www.ohchr.org/Documents/Issues/Housing/InformalSettlements/SERI.pdf>
- Hofmann, P., H. Taubenbock and C. Werthmann, 2015. Monitoring and modelling of informal settlements-A review on recent developments and challenges. Proceedings of the 2015 Joint Conference on Urban Remote Sensing Event (JURSE), March 30-April 1, 2015, IEEE, Lausanne, Switzerland, ISBN:978-1-4799-6652-3, pp: 1-4.
- Jones, P., 2017. Formalizing the informal: Understanding the position of informal settlements and slums in sustainable urbanization policies and strategies in Bandung, Indonesia. *Sustainability*, 9: 1-27.
- Lemaire, X. and D. Kerr, 2017. The use of solar electricity in informal settlements. Proceedings of the Conference on Strategies for Sustainable Energy Transitions in Urban Sub-Saharan Africa (SETUSA), June 19-20, 2017, UCL Energy Institute, Accra, Ghana, pp: 1-15.
- Nassar, D.M. and H.G. Elsayed, 2017. From informal settlements to sustainable communities. *Alexandria Eng. J.*, 2017: 1-10.
- Nguluma, H.M., 2003. Housing themselves: Transformation, modernization and spatial qualities in informal settlements in Dar es Salaam, Tanzania. Ph.D Thesis, KTH Royal Institute of Technology, Stockholm, Sweden.
- Oldewage-Theron, W.H. and T.J. Slabbert, 2008. Impact of food and nutrition interventions on poverty in an informal settlement in the Vaal Region of South Africa. *Proc. Nutr. Soc.*, 67: 91-97.
- Sartori, G., G. Nembrini and F. Stauffer, 2002. Motoring of urban growth of Informal Settlements (IS) and population estimation from aerial photography and satellite imaging. MBA Thesis, Geneva Foundation, Geneva, Switzerland.