

Household Food Security and Socio-demographic Dynamics at Twaloloka Unofficial Community, Walvis Bay, Namibia

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Abstract

The aim of this study was to assess household food security and coexisting socio-demographic factors at Twaloloka, also known as Otweya community in Walvis Bay, Namibia. Namibia, being perceived by the international communities as an upper middle-income country is one of the countries with high level of inequalities in the world, which experiences the alarming proliferation of unofficial suburbs with concomitant food challenges. The study adopts cross-sectional research design using structured self-administered questionnaire for data collection. Sampling technique followed random selection process as constrained by prevailing mistrust and skepticism expressed by a spectrum of members of the community. Social-demographic result revealed gender distribution of 72.8% female and 27.2% male, 85.2% of respondents were between the ages of 18 and 39, 91.4% were unmarried with a combined 79% attaining primary and secondary educational levels. About 40.7% were unemployed while 61.7% constitutes 5-8 inhabitants per dwelling. In terms of food security status, 19.1% were food secured while 68.9% experienced food insecurity with no significant association ($p = 0.22$; 95%CI) in relation to prevailing factors. The study revealed gross food insecurity within the community and reflected endemic socio-economic challenges as depicted by very low-income, educational and employment status. Provision of low cost and subsidized residential infrastructure by the government is highly recommended.

Keywords: Household, Food security, Socio-demographic, Community

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1. Introduction

Food has not only been described as one the necessities of life containing vital substances required for growth, energy to perform activities and for preservation and repair of body tissues, but it has also been regarded as fundamental to human existence, maintenance of life free from hunger, starvation, and food insecurities (Gil et al., 2018). An individual or group is regarded to be food secure when there is physical, social, and economical access to safe and nutritious food that meet dietary needs and food preferences, in order to live a healthy lifestyle (FAO, 2006). This security entails the presence of the four pillars of food security namely, availability, accessibility, stability, and utility. In the absence of these, a country, community, or individual is regarded to be food insecure.

Food insecurity has become a worldwide concern as the number of malnourished people continues to increase with 12% of the world's population estimated to be under malnourished, majority of which are from developing countries (Abdulla et al., 2019). Subsequent to Covid 19 pandemic, the United Nations (2020) argues that in the longer term, the combined effects of COVID-19 itself, as well as corresponding mitigation measures and the emerging global recession could, without large-scale coordinated action, disrupt the functioning of food systems. Such disruption can result in consequences for health and nutrition of a severity and scale unseen for more than half a century. In this connection Hassen and Bilali (2022), further opine that as a conflict between two major agricultural powers, the Russia-Ukraine war has various negative socioeconomic impacts that are now being felt internationally and might worsen, notably, for global food security. Simultaneously, as Hassen and Bilali (2022) argue, the war came at a bad time for global food markets because food prices were already high due to disruptions in the supply chain caused by the COVID-19 pandemic, strong global demand, and poor harvests in some countries.

The compounding challenge is not simply dearth of access to food but its availability and access to nutritional foods that will be beneficial to human sustenance, growth, and development. Hence, access to nutrient deficient foods will have negative impact on human health and wellbeing.

Consumption of unhealthy foods and poor diets have been linked to most of the health problems experienced

worldwide resulting in about 11 million deaths in 2017 (Afshin et al., 2019). Ingestion of food with high level of sodium and less of foods such as fruits, vegetables, nuts, and grain coupled with lack of exercise and other detrimental habits such as smoking, and alcohol abuse may lead to serious medium to long-term debilitating health problems. Poor and unhealthy foods may lead to shortening of lifespan and significantly reduce the quality of life. Poor diets may also impose substantial financial burden on the government since the number of people with health issues due to consumption of unhealthy food over a long period of time will increase. Similar economic burden resulting in high economic costs and related health care expenditures has been reported (OECD, 2019).

Absence of food security and access to nutrient-rich foods has been associated with socio-economic and demographic dispensation of households (Alkerwi et al., 2015). Socio-economic level has been known to influence the type and choice of food that are available to households. In terms of the options available to many food insecure households, preference will be given to quantity rather than quality of foods as dictated by the economic status which precipitate the risk of malnutrition (WFP, 2020; WHO, 2020). However, prevalence of health problems such as obesity in developed and middle to high income group of countries and across different age groups are mostly due to the consumption of unhealthy diets. In this case, the problem is not related to socio-economic factors but to lack of awareness of the health risks associated with these unhealthy foods.

One of the factors leading to rational and healthy choices of food include understanding the benefits and disadvantages associated with healthy and unhealthy foods respectively (Giner and Brooks, 2019). A range of literature also reported the relationship between socio-economic factors and the food choices made by individuals and households (Hernandez and Camardiel, 2021). Sometimes, however, it is widely assumed that households with higher socio-economic power and educational level would choose to eat more healthy foods such as vegetables, fruits and nuts compared to those in the opposite cadre that would rather choose fatty and high calorie laden foods (Kelly and Jewell, 2018).

In terms of the relationship between socio-demographic factors and household food security, Bedeke (2012) reported a negative association between food security and factors such as family size, gender, and head of household. Through the measurement and estimation of income elasticity across countries, it was discovered that consumers in the low-income countries apportion a major part of their income to the food (Regmi and Meade, 2013). The effect of household education attainment on food security in two informal urban settlements in Kenya where an association between these two factors was established (Mutisya et al., 2016).

Existence of food insecurity among a particular group of the society can be inferred by the prevailing socio-economic and demographic factors which also influence the choice of foods and hence, nutritional status. Food security interventions by governments in many developing countries usually have minimal impact on the livelihood of people in these poor communities. Hence, non-governmental organizations, religious groups, and other aid agencies both locally and internationally tend to provide some assistance. This charitable activity is not likely to solve the problem of food insecurity in the long-term.

Hence, this study reports on the socio-demographic dynamics and household food security in an informal settlement in Walvis Bay of Namibia. This is with a view of assessing the challenges faced by urban area migratory settlers in the Walvis Bay area of Namibia.

2. Problem Statement

Food insecurity, hunger and malnutrition continue to be a challenge to a large population of the world, particularly the developing countries (Nzaburaha, and Nyiramugwera, 2017; Bozsik et al., 2022). This challenge is more magnified in communities and societies with low socio-economic status. Albeit technological advancements, economic growth, and advancement in food production in many countries across the globe, food insecurity and associated factors such as climate change, urbanization, level of education, and effects of geographical regions on food security continue to hinder efforts towards achieving the United Nations Sustainable Development Goal 2, targeting zero hunger by the year 2030.

According to joint reports from FAO, WFP, and UNICEF (2019), about 2 billion people worldwide suffer from either moderate or severe food insecurity, of which more than 820 million people experience hunger daily, putting them at a higher risk of suffering from malnutrition and poor health. Namibia is regarded as an arid country with incidences of drought and food shortages (Liu and Zhou, 2021). However, this problem has been exacerbated by the socio-economic inequalities in the population. Assessment report of the effect of drought in 2013 in the country revealed that an estimated 330, 925 people were food insecure, about 447, 577 are moderately food insecure, while 859, 898 are food secure (FAO, 2021). Currently, Namibia ranked 78th out 121 countries in terms of the Global Hunger Index (GHI, 2022).

By this a sizable portion of foods imported from neighbouring countries and other parts of the world, which makes the prices of food commodities to be high and unaffordable by low-income and poor members of the society. Hence, people from poor and vulnerable households may not have the resources to access adequate and nutritious foods. Food and nutrition insecurity in urban areas in Namibia is due to factors such as poverty because of inequalities, urbanisation, and large sizes of households in informal settlements and suburbs.

2.1 Objectives of the Study

The main objective was to assess the household food security of residents of the Twaloloka unofficial community in Walvis Bay of the Erongo region of Namibia. To accomplish this, the following specific intents were carried out.

2.1.1 Specific objectives

- i. To survey the socio-demographic characteristics of the community.
- ii. To evaluate the food sufficiency of households in the community
- iii. To examine food security challenges experienced by residents of the community.

2.1.2 Research Questions

- i. What are the socio-demographic characteristics of study participants at the study site.
- ii. What is the food sufficiency outlook of residents of the Twaloloka unofficial community.
- iii. What are the food security challenges experienced by residents of the Twaloloka unofficial community.

3. Methodology

3.1 Research Design and Research Instrument

Cross-sectional research design was adopted in the study using structured researcher-administered questionnaire for the data collection process. Structured enquiries that are aligned to research variables on socio-economic factors such as gender, age, educational level, employment status and others were included in the research tool.

3.2 Study site

Twaloloka is the name of an informal settlement within the coastal town of Walvis Bay in the Erongo region of Namibia. The town is the second largest city in Namibia after Windhoek, with about 52,058 inhabitants (NSA, 2013). The town is home to several commercial activities such as fishing, mining, and petrochemical and it is also the seat of the famous tourist center commonly referred to as Dune 7 and house the biggest harbour in the country. It has all features of an informal community in terms of unplanned or unstructured dwellings, absence of essential services such as clinics, infrastructures, and sanitation. Inhabitants of the informal settlement can be typified as very low-income group and are engaged in works such as security guards, cleaners, gardeners, food vendors and salon workers. Twaloloka is a new informal location in Walvis Bay where many people who were demanding better housing from the government moved. They named the location “Twaloloka” means we are tired because they believed the government took too long to address their demand. Since the name did not sound well to the government and due to political ramifications, the government proposed its own name “Otweya” meaning we have come. The settlement is infamous due to higher rates of cases of burning shacks and many people lost lives and belongings as a consequence. Therefore, this paper selects this settlement as a study site to interrogate issues of demography and food security in informal settlements in Namibia.

3.3 Target Population and Sampling technique

Head of households within the community are the targeted participants in the study. In sub-Saharan Africa, males are usually expected to be heads of households, however, this may not necessarily be the case in recent times. The study adopted convenient random sampling technique in view of the unavailability and skepticism expressed by some head of households towards the purpose of the study. There is no official population figure of people residing at the informal settlement since it is informal, and the number would have been subsumed in the regional population figure of the region. However, an approximate population figure of about one-thousand inhabitants was provided (Louw, 2020). From this, the size of respondents was determined using the sample size estimation

technique usually employed for small population size. This size is usually considered based on peculiar and observed characteristics of a population set. In this case, the peculiarities are very low-income and high unemployment. Hence, the formula for the estimation of non-binary data as described (Sauro and Lewis, 2016) is given as:

$$n = t^2 \cdot s^2 / d^2$$

where: n = sample size

$$t^2 = z\text{-score at } 95\% \text{ CI} = 1.96$$

$$s^2 = \text{Standard deviation (variance)} = 0.5$$

$$d^2 = \text{smallest accuracy difference (10\%; 0.1)}$$

Hence, n = 96

For uniformity in terms the sampling technique adopted as well as coverage of the community, a total of one-hundred and twenty (120) questionnaires was administered. This was also applied in order to cater for inapplicable questionnaires.

3.4 Data Collection

Data in the study was collected from three categories of participants. These include community leaders and local area counsellor through focused interview and head of households through administration of structured questionnaires. The questionnaire reflected standard enquires as described in the Household Food Insecurity Access Scale (HFIAS) (Coates et al., 2007). This was however, modified and adapted for relevance to local situation. Enquiries such as eating of undesired food and any kind of food on the HFIAS were not included in the survey based on the prevailing access to food challenges in the local environment. Hence, the five (5) HFIAS enquiries considered relevant and applicable in this study include skipping of food, access to limited food, insufficient food, whole day without food and going to bed without eating. Related study reported the use of similar socio-economic variables in assessing food security among community members (Tarasuk et al., 2019). Thirty (30) questionnaires were administered at each of the four sections to which the area had been divided using random sampling technique. This method was used due to the unwillingness and skepticism expressed by some residents in participating in the study even after explanation that the research was solely for academic purpose. Hence, a total of one hundred and twenty (120) questionnaire was distributed. Out of this, only eighty-one (81) questionnaires were received. Therefore, extracted data and interpretation therefrom was based on the final number of questionnaires received.

3.4.1 Research Tool

The main research tool employed in this study for data collection was the questionnaire. This was supplemented by focused group interview with two (2) community heads who were considered as leaders in the settlement and were part of the earlier residents. The focused interview was based on selected enquires on issues concerning knowledge about food security by residents of the community. The questionnaire was administered to participants with enquires on socio-demographic characteristics such as sex, age, marital status, educational and employment levels, ownership of the residence and number of occupants. This was validated by an expert in questionnaire design at the institution. Other sections of the questionnaire reflected enquiries such as affordability and access to food within the food security nexus as presented in Table 1.

Responses of “yes” to food security enquires 1-5 in Table 2 were represented as “affirmative” and “often”, “no” responses represent not at all while the third group are those that did not respond to the enquiries. The total number of affirmative and often responses to enquiries 1-5 were regarded as food insecure while those that responded with not at all were considered as food secure.

3.4.2 Statistical Analysis

Statistical analysis of collected data was based on MS Excel version 27. Descriptive statistical expression was applied to socio-demographic characteristics and presented as number (N) and in percentage (%). Comparative analysis of food security and key socio-demographic data was by Chi-square while the relationship between food

security and socio-demographic data was established using logistic regression analysis at the significance level of 0.05.

3.4.3 Focused interview

As with most informal settlements, there are individuals that are recognized as leaders of the community. These are people who in most cases are one of the early settlers in the community or those that have exerted some form of influence in terms of social and economic well-being of the community. Upon enquiry from members of the community by the researcher, two individuals were identified as community leaders. They were approached for focused interview on food security issues in the community and the two leaders consented.

4. Results

4.1 Socio-demographic characteristics

The Socio-demographic attributes of respondents are as presented in Table 1. The number of female respondents (72.8%) were more than the male counterpart. This signified that higher number of females are head of households. This might be due to the death of male head of household or being incapacitated by debilitating illness. This situation may result in the switch of role of household headship to the female. About 85.2% of the respondents were between the ages of 18 and 39 while those between the range of 40 – 65+ constitute only 14.8%. This finding shows that there were more younger head of households compared to older people. The younger people tend to be more energetic and are likely to be income earner of the household. Sometimes, the younger members of households might be more literate than the older ones and thus, delegated to play this role.

An overwhelming 91.4% of respondents are unmarried. It is not uncommon for many couples to be living together without solemnizing the relationship. About 79% of the respondents attained primary and secondary levels of education, 4.9% had tertiary education while 16% indicated no level of education. Due to the high costs of living including accommodation, most people that migrate from the rural areas and other less economically developed areas of the country in search of better conditions of living are unable to afford rental cost in the urban areas and hence, end up in unofficial residential settlements. About 40.7% of respondents are unemployed while 42% indicated either being employed or self-employed. The high level of unemployment in informal or unofficial communities are not surprising. Firstly, it reflects the unemployment level in the country and possibly non-possession of other skills that could serve as source of income by many of the unemployed group.

Since the settlement is largely unofficial, there is however no formal ownership of the piece of land the dwellings were built. About 25.9% of respondents indicated “ownership” of the dwelling, 44.4% were renting while 7.4% were staying in makeshift tents. In terms of the number of inhabitants within households, 61.7% constitutes 5-8 inhabitants per dwelling. Average dimension of many of the dwellings is mostly 3 x 3-4 meters which can be considered inadequate for a population of 5-8 inhabitants. Hence, the propensity of spread of communicable diseases is high in such dwellings.

Table 1 Socio-demographic characteristics of respondents from the study area (n=81)

**No formal education*

Parameters	Category	Frequency (N)	Percentage (%)
Gender	Male	22	27.2
	Female	59	72.8
Age group	18-24	15	18.3
	25-29	16	19.5
	30-34	20	24.4
	45-49	7	8.5
	35-39	11	13.4
	40-44	6	7.3
	50-54	2	2.4
	61-64	3	3.7
	65+	1	1.2
Marital status	Single	74	91.4
	Married	7	8.6
Educational level	*Uneducated	13	15.9
	Primary	13	15.9
	Secondary	51	62.2
	Tertiary	4	4.9
Employment status	Unemployed	33	40.2
	Employed	10	12.2
	Self-employed	24	29.3
	Others	12	14.6
Home ownership	Tenant/ rental	36	43.9
	With my parents	18	22.0
	In my house	21	25.6
	In a tent	6	7.3
Size of households (persons)	2	6	7.4
	3	9	11.1
	4	8	9.9
	5	15	18.5
	6	11	13.6
	7	14	17.3
	8	10	12.3
	9	3	3.7
	10+	5	6.2

4.2 Food sufficiency of households

In terms of household food sufficiency as presented in Table 2, about of 60.7%, 61% and 68.3% affirmed having skipped at least a meal per day within a period of one-month, sometime go to bed without a meal and having no access to food in a day respectively. Above average of respondents (56.1%) confirmed having experienced insufficiency of food for the entire household in a daily. Similar number of respondents (57.3%) confirmed accessing food by soliciting from neighbours. Respondents that relatively have access to foods across the enquiries

ranged from 14.6-25.6%, those that sometimes do have access but frequently experience no access ranged from 6.1-13.4%. An average of 5.1% of the participants did not respond to the enquiries.

Table 2: Food security status of participants in relation to prevailing factors (n = 81)

Factors [^]	Food security perspective					P-Value*
	Affirmative	Often	FIS	Not at all FS	No response	
1 Skipped > 1meal/day	60.7	13.4	(74.1)	[14.6]	4.9	0.22
2 Insufficient meal/day	56.1	8.5	(64.4)	[22.0]	7.3	
3 Slept with no meal in a day	61.0	7.3	(68.3)	[18.3]	6.1	
4 No access to food/day	68.3	6.1	(74.4)	[15.0]	3.7	
5 Access food from neighbours	57.3	6.1	(63.4)	[25.6]	3.8	
X			(68.9)	[19.1]		

Affirmative and Often = Yes = (FIS); No = Not at all = [FS]; FIS = Food Insecurity; FS = Food security
 X= Mean; *P-value of chi-square; P-value > 0.05 is considered insignificant

[^]Access to food in the past 4 weeks by respondent or any household members

4.3 Provision of food by charity organizations

Figure 1 revealed the different level of the provision of food support from charity organizations to members of the community. About 88% of respondent affirmed receiving support from charity organizations in the provision of food while 6% were unaware of support from charity organizations with no response from the rest.

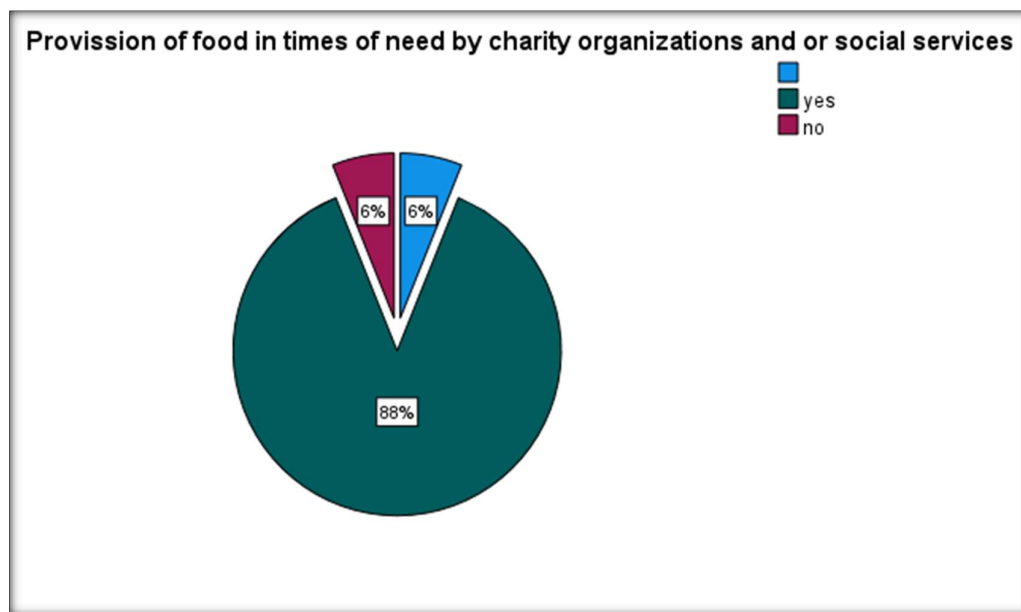


Figure 1 Level of food support provided by charity organizations

4.4 Spectrum of charity organizations involved in food support

Figure 2 revealed the roles of charity organizations towards provision of food support to members of the unofficial community. The religious group (63%) represents the largest charity organization involved in the provision of food support to the community members. This was followed by the food relief programme (11%) with the soup kitchen (2%) and school feeding programme (2%) having the same frequency. Schanbacher and Gray (2021), narrated the role played by religious organizations during the COVID-19 pandemic in terms of provision of food support to people affected based on several circumstances.

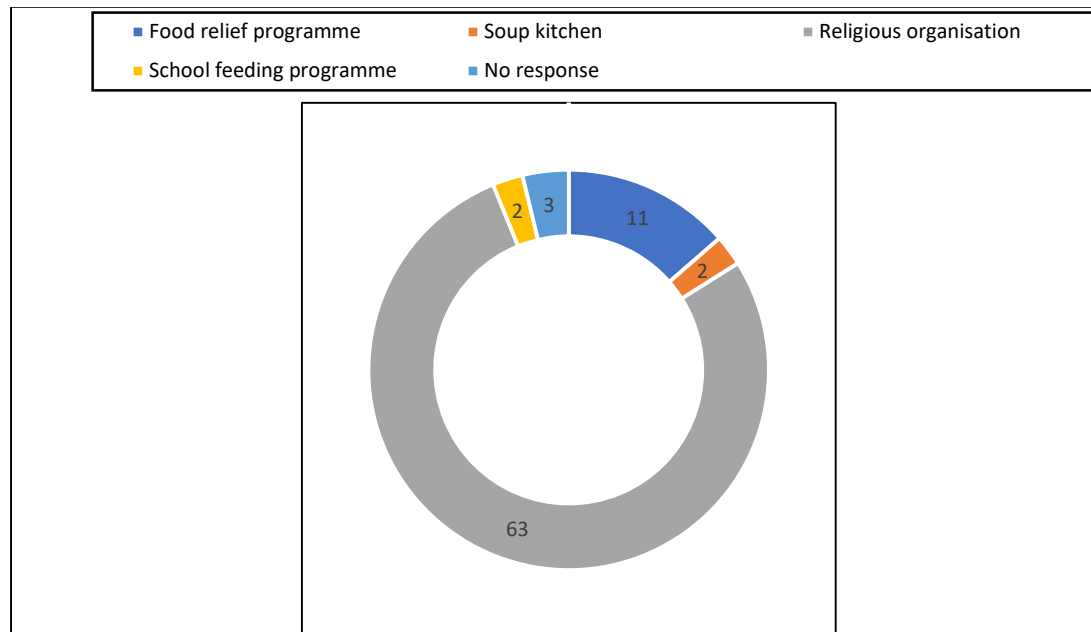


Figure 2: Charity organizations involved in provision of food support.

4.5 Food security challenges experienced by residents

Many reported studies on food security appear to be focused more on people living in the rural areas (Bashir et al., 2013; Bijani et al., 2021) with limited studies on informal communities within urban settings. The traditional conception was that only rural dwellers are those that are mostly susceptible to food insecurity. On the contrary however, conditions of overpopulation, unemployment, high cost of living standards including accommodation, shelter, and food result in unrealized hope and expectation by rural-urban migrators. The insecure condition of living is exacerbated by lack of jobs to earn income. Hence, most resort to seeking shelter in informal settlements around urban areas where they do not have to pay house rent. A study reported that many people living in urban informal settlements suffer from severe food insecurity, non-communicable diseases, higher levels of unemployment, and extreme hunger (Berlie, 2020). In addition, due to financial incapacity, people in unofficial settlements tend to choose quantity rather than quality of food. Hence, they consume food with high caloric values rather than nutritious ones, hence are potentially vulnerable to health conditions such as hypertension, obesity, and malnutrition because they are deprived of certain nutrients. All those factors do not meet the four pillars of food security (Smith, 2016).

In this study, food security challenges by residents were further revealed by 41.5% of respondents not having access to regular and nutritious food. This was evident by 61% of respondents experiencing unavailability of at least one meal in a day (Table 2) while 68.3% indicated not having access to food sometimes for the whole day. In all these cases, children are deemed to be more vulnerable especially those below the age of 18 years of age. Dependence of residents on access to food for sustenance through provision by charity organizations is also evidence of vulnerability.

4.6 Excerpts from focused interview on food security status with leaders at the Twaloloka community

Food security has been associated with availability, accessibility, and utilisation of foods for healthy living. However, a more comprehensive description of the term referred to food security as a situation in which people always do have physical and economic access to sufficient, safe, and nutritious food that will meet their dietary needs and food preferences for a healthy and active life (FAO, 1996). Result revealed that 41.5% of respondents do not have the financial means of accessing nutritious food with 51.2% affirming access to nutritious foods. About 87.8% rely on nutritious food supplied by charity organizations while 6.1% were non-affirmative. In terms physical access to nutritious foods, 87.7% of respondents affirmed having physical access while the contrary was with 6.2% of the respondents.

Table 3: Access and affordability to nutritious foods (n = 82)

	Enquiries	Responses			P-value*
		Affirmative	Non-Affirmative	No response	
1	Possess financial mean of access to nutritious foods	34 (41.5%)	42 (51.2%)	6 (%)	0.199
2	Provision of foods by charity organization when in need	72 (87.8%)	5 (6.1%)	5 (6.1%)	
3	Possess physical mean of access to nutritious foods	71 (87.7%)	6.0 (6.2%)	6.0 (6.2%)	

*P-value of chi-square; P-value > 0.05 is considered insignificant

4.7 Excerpts from focused interview on food security status with leaders at the Twaloloka community

To complement the data obtained from respondents through the administration of questionnaire, focused interview was held with the two leaders in the community as presented in Table 4. Knowledge and awareness of the concept of food security was firstly posed to the two candidates to verify their basic comprehension of the point of discussion. Results revealed that both community leaders do understand what food security entail. Both leaders affirmed the unavailability and prevalence of food insecurity in the community, which was linked to unemployment (enquiries 3 and 4). In addition, they affirmed that there were no specific strategies of mitigating the effect of food insecurity which was again associated with unemployment. Consumption of locally brewed liquor was rife among community members as a consequence of joblessness which served as one of the major concerns by the leaders. Some people adapt to the problem of food security through scavenging and selling recovered items from unsanitary landfill site. Their wish was for government to assist the community by providing capacity and skill training towards ensuring food security and are currently mostly dependent on food donors from charity organizations.

Table 4: Responses on food security issues from interview with community leaders

No.	Enquires	Interviewee 1	Interviewee 2
1.	Do you know what food security is?	No, but I think it has to do with having food as an individual	Yes. I understand food security as the availability of food.
2.	Are foods readily available, accessible, and affordable in the community?	No there is no such in this place. Lack of money is the issue. We do not have it.	No. Food is very scarce, some residents are assisted by extended family members, some send children to beg for money along roadside to buy food.
3.	Is the problem of food security widespread in the community?	Yes, many people are without food even for days because they cannot afford foods in stores.	Yes, it is widespread and very concerning.
4.	What do you think are the causes to this problem?	Many people are jobless, recent fire incident worsen living condition, hence living in tents, COVID-19 further made it worse.	We do not have jobs, and food prices are too high.
5.	How are community members dealing with the problem?	Some people brew and sell locally liquor called "Tombo", some sell barbeque meat called "Kapana", many depend on food rations from donors etc.	No specific coping strategies. Many engage in constant drinking of alcohol, some are assisted with money and food stuff by other family members, some engage in selling of wood and scrap materials for income.
6.	What are the main community-level concerns linked to food security?	"As indicated earlier, lack of jobs, foods and children not going to school.	Excessive consumption of locally brewed alcohol, which start as early as 6am, neglect of hungry children at home are some major concerns.
7.	How is the community coping/ adapting with food insecurity?	Very little, many people scavenge at open dumpsite for saleable wastes.	As said, those that cannot afford go to bed hungry, those that have some food consume bit-by-bit, other borrow money for food.
8.	What can the government do to boost food security?	Skills training, empower people with jobs.	Government or good Samaritan should help, especially with the children. They suffer more from hunger and malnutrition than their parents/ guardians."
9.	Are there any alternative food sources available to community members?	None, except for foods from donor agencies.	Yes, a soup kitchen provides food 3 time/week which help the children a lot, but they recently stopped coming.

4.7 Excerpts from focused interview on food security status with local area counsellor of the community

Result also showed that the local counsellor understood the concept of food security which was crucial to the

investigation. High level of unemployment in the community was also confirmed. Being informal, the settlement accommodates all categories of people, both migrants from rural areas as well as unemployed urban dwellers. Notwithstanding the unofficial status of the community, it was asserted that the government has been providing aid to residents through subsistence gardening project and provision of plant seeds and other materials to support their livelihood. That this was intended to encourage small-scale backyard gardening to achieve some level of food security as well as income for the household. High level of unemployment was identified as the main cause of the problem of food insecurity with high dependence on food donation as coping strategy. Furthermore, it was emphasized that will be difficult to formalize the settlement since the occupied land was not owned by the government.

Table 5: Responses on food security issues from interview with area Counsellor

No	Enquiries	Responses
1.	What do you understand by household food security?	It is an indication that a person or household is food sufficient.
2.	How will you describe the living condition at the Twaloloka community?	Majority of people are not working, prefer less tedious work and depend heavily on food handouts.
3.	How would you describe the socio-economic demography of the community?	On economic term, it is very low and poor community, residents consist of all the tribes, maybe more of some tribes than the other. They rely mostly on food donors.
4.	As a government official, has enough been done to assist people in the community with respect to food security?	“Yes, the government is trying by encouraging small-scale farming/gardening through donation of seeds. However, willingness of people is the issue.
5.	Are there any government projects in place to ensure food security in and around the Twaloloka?	As mentioned, there is the small-scale vegetable planting programme behind their unofficial residents. The community is located within urban area and there is no land for large-scale farming.
6.	What factors do you think are hampering with food security?	“Unemployment, lack of skills and unavailability of land for proper housing and agricultural practices.
7.	What are the coping strategies of the residents in terms of food security?	Do not know of any, however, it is known generally that many prefer waiting patiently for food handouts.
8.	Is it possible for the Government to formally allocate land to residents?	The land is in urban area and is not owned by the local Government.

5. Conclusion

This study typical revealed the socio-demographic characteristics of residents in at the Twaloloka unofficial community in Walvis Bay, within the Erongo region of Namibia. Residents were found to be food insecure since they did not meet the pillars of food security in terms of availability, accessibility, utilization, and stability. Unemployment was the major factor responsible for food insecurity and most of the residents were heavily reliant on soup kitchen to meet their daily nutritional needs. It is important that the local municipality intensify efforts towards skills development and capacity building to ensure self-reliant and less dependent on food donation by charity organizations.

References

- Abdullah, Z. D., Shah, T., Ali, S., Ahmad, W., Din, I. U., & Ilyas, A. (2019). Factors Affecting Household Food Security in Rural Northern Hinterland of Pakistan. *Journal of the Saudi Society of Agricultural Sciences*, **18**, 201-210.
- ADB, A. (2017). *Namibia Agricultural Mechanisation and Seed (NAMSIP). Environmental and Social Management Summary*, 1-3.
- Alkerwi, A., Vernier C., Sauvageot N., Crichton, G.E, Elias & M.F. (2015). Demographic and socioeconomic disparity in nutrition: application of a novel Correlated Component Regression approach. *BMJ*, *11*, (5), doi: 10.1136/bmjopen-2014-006814.
- Bashir, M.K., Schilizzi, S., & Pandit, R. (2013). The determinants of rural household food security in the Punjab, Pakistan: an econometric analysis. Working Paper 1203. School of agricultural and resource economics.

- University of Western Australia. Crawley. Australia.
- Bedeke, B. (2012). Food insecurity and coping strategies: a perspective from Kersa district, East Hararghe Ethiopia. *Food Science Quality Management*, **5**(3), 19–27.
- Berlie, A.B. (2020). The Invisible Crisis of Urban Food Security in Amhara Regional State, Ethiopia. *J. Hunger, Environ. Nutr.* 1-20; doi: 10.1080/19320248.2020.1838983.
- Bijani, M., Dehrashid, A.A., Valizadeh, N., Dehrashid, H.A., Nasrollahizadeh, B. & Mohammadi, A. (2021). Food security assessment in rural areas: evidence from Iran. *Agric & Food Secur.* **10**, 17, <https://doi.org/10.1186/s40066-021-00291-z>
- Bizikova, L., Jungcurt, S., McDougal, K., & Smaller, C. (2017). Effective Public Investments to Improve Food Security. *JSTOR*, 3-10.
- Bozsik, N., Cubillos, J.P., Stalbek, B., Vasa, L., & Magda, R. (2022). Food security management in developing countries: Influence of economic factors on their food availability and access. *PLoS One*, **25**, 17: e0271696. doi: 10.1371/journal.pone.0271696.
- Brears, R.C. (2017). *Urban Water Security*. In R. C. Brears, *Urban Water Security*. Chichester: John Wiley and Sons.
- Coates, J., Swindale, A. and Bilinsky, P. (2007). Household Food Insecurity Access Scale (HFIAS) for Measurement of Food Access: Indicator Guide Ver. 3, p.4
- De Klerk, E. (2020). Inferno Devastates Twaloloka... Display of Solidarity To Help Fire Victims. Walvis Bay: New Era Newspaper.
- Etana, D. & Dolossa, D. (2017). Unemployment and Food Security in Urban Ethiopia. *African Development Review*, 56-68.
- FAO, (1996). Food and Agriculture Organization of the United Nations. Report of the World Food Summit. Rome, Italy.
- FAO, (2006). Food and Agriculture Organization of the United Nations. The State of Food Insecurity in the World. Rome: United Nations.
- FAO, (2021). Food and Agriculture Organization of the United Nations. FAO in Namibia, Namibia at a glance, <https://www.fao.org/namibia/fao-in-namibia-at-a-glance>.
- GHI, (2022). Global Hunger Index, Namibia. www.globalhungerindex.org/pdf/en/2022/Namibia
- Gil, J.D.B., Reidsma, P., Giller, K., Todman, L., Whitmore, A. and van Ittersum, M. (2019). Sustainable development goal 2: Improved targets and indicators for agriculture and food security. *Ambio* **48**, 685–698, <https://doi.org/10.1007/s13280-018-1101-4>
- Hassen, T. B. and Bilali, H. El. (2022). Impacts of the Russia-Ukraine War on Global Food Security: Towards More Sustainable and Resilient Food Systems? Retrieved from: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9368568/>.
- Hernandez, P and Camardiel, A (2021). Association between socioeconomic status, food security and dietary diversity among sociology students at the central university of Venezuela. *Front. Sustain. Food Syst.*, **5**, doi.org/10.3389/fsufs.2021.623158
- Iileka, S. (2020). Windhoek Promises 3500 Plots This Year. The Namibian Newspaper, 1, <https://www.namibian.com.na/198487/archive-read/Windhoek>
- Joshi, N., & Raghuvanshi, R. S. (2020). Determinants of Household Food Insecurity in Rural Areas of the Hilly Region of Kumaun, Uttarakhand, India: A Pilot Study. *Ecology of Food and Nutrition*. **60**, (3), 351-376, doi: 10.1080/03670244.2020.1852228.
- Katoole, S.K. (2018). An investigation of affordable housing provision in the high-density location of Havana in Windhoek, Namibia. Unpublished Thesis, <http://hdl.handle.net/11070/2824>
- Kazembe, L.N., Nickanor, N., & Crush, J. (2019). Informalized Containment: Food Markets and the Governance of the Informal Food Sector in Windhoek, Namibia. *Environmental and Urbanization*, 461-480.
- Kpaki, K., Galibois, I., Sall, M., & Blaney, S. (2020). Assessing the Food Availability and Food Insecurity Situation among Communities of Matam Region, Senegal. *Ecology of food and Nutrition*. **59**, (4), 367-386, doi: 10.1080/03670244.2020.1733993.

- Leuschner, E. (2020). Food Insecurity on the Increase. Swakopmund, Erongo, Namibia. Retrieved from <https://www.erongo.com.na/news/food-insecurity-on-the-increase2020-10-15/>
- Liu, X & Zhou, J. (2021). "Assessment of the Continuous Extreme Drought Events in Namibia during the Last Decade" *Water* 13, no. 20: 2942. <https://doi.org/10.3390/w13202942>
- Louw, L (2020). Walvis fire exposes deeper realities; www.namibiansun.com/news/walvis-fire, accessed 03 March 2023.
- Musaki, M.M., & Hendriks, S.L. (2014). Measuring Household Food Security Using Food Intake Indicators in Rural Kwazulu Natal, South Africa. *Ecology of Food and Nutrition*. **53**, (2), 193-213. doi: 10.1080/03670244.2013.811386.
- Mutisya, M., Ngware, M.W., Kabiru, C.W. et al. The effect of education on household food security in two informal urban settlements in Kenya: a longitudinal analysis. *Food Sec.* 8, 743–756 (2016). <https://doi.org/10.1007/s12571-016-0589-3>
- Nazia, A.B., Tazeen, T., Hoque, D.E., Hasan, M.M., Iqbal, A., & Huda, T.M. (2019). Association of food security and other socio-economic factors with dietary diversity and nutritional statuses of children aged 6-59 months in rural Bangladesh. *Plos One*. **14**, (8), e022 1929. doi: 10.1371/journal.pone.0221929.
- Nickanor, N.M. (2013). Food Deserts and Household Food Insecurities In: the Informal Settlements of Windhoek, Namibia. Cape Town: University of Cape Town.
- NSA, (2013). 2011 Population and Housing census Thematic Reports. Windhoek: Namibia Statistics Agency.
- Nzabuheraheza, F.D & Nyiramugwera, A.N (2017). Food security status in developing countries: a case study of Burera and Musanze districts of Rwanda. *Afr. J of Agric. Nutr. Dev.*, **17** (3), 12413-12426.
- Onyutha, C. (2018). African food insecurity in a changing climate: The roles of Science and Policy. WILEY, 1-15.
- Regmi, A, & Meade, B (2013). Demand side drivers of global food security. *Global Food Security*, **2**, (3):166–71. <https://doi.org/10.1016/j.gfs.2013.08.001>.
- Roelf, W. (2020). Namibia Reports First Two Cases of Coronavirus, Imposes Travel Ban. Reuters, Retrieved from: <https://www.reuters.com/article/us-health-coronavirus-namibia-idUSKBN2110CX>.
- Schanbacher, W & Gray, H.L (2021), Religion and Food Insecurity in the Time of COVID-19: Food Sovereignty for a Healthier Future, *Ecology of Food and Nutrition*, **60**, (5), 612-631, DOI: 10.1080/03670244.2021.1946689.
- Smith, W. (2016). Urban governance and urban food systems in Africa: Examining the linkages. Elsevier, 80-86.
- Stiadi, R., Artiningsih, A., Sophianingr, M., & Satriani, T. (2020). The dimension of rural-urban linkage of food security assessment: an Indonesian case. *Asian Geographer*, 2-4.
- UNWFP (2020). Global Report of Food Crises. United Nations World Food Programme.
- United Nations. (2020). Policy Brief: The Impact of COVID-19 on Food Security and Nutrition. Retrieved from: <https://namibia.un.org/en/48917-policy-brief-impact-covid-19-food-security-and-nutrition>.
- Vaitla, B., Coates, J., Glaeser, L., Hillbruner, C., Biswal, P., & Maxwell, D. (2017). The Measurement of Household Food Security: Correlation and latent variable analysis of alternative indicators in a large multi-country dataset, *Food Policy*, Elsevier, 68(C), 193-205.
- Wenban-Smith, H., Fabe, A., & Grote, U. (2016). Food security in Tanzania: the challenge of rapid urbanisation. Springer, *The Int. Soc. for Plant Pathology*, vol. **8**, (5), 973-984
- WHO, (2018). The state of food security and nutrition in the world 2018 . Building climate resilience for food security and nutrition. Rome: FAO. FAO.