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MATERIAL PREREQUISITES FOR HUMAN WELLBEING: EMPIRICAL INSIGHTS FROM SPICES FORAGER-FARMERS IN THE RAINFOREST ZONE, NIGERIA

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Abstract

Spices are horticultural crops that are still largely gathered from the wild despite having potentials of influencing household wellbeing. As parts of efforts to promote latent potentials in spices enterprise, material living conditions of spices forager-farmers in the rainforest zone of Nigeria was assessed. Thirty percent of households that gathered spices from the wild and produced them as field crops were randomly selected from Imo state to give 78 respondents. Socio-economic characteristics of respondents, enterprise characteristics, benefits derived, material living conditions and level of material wellbeing of respondents were ascertained. African Black Pepper and Ethiopian pepper were gathered by majority 92.4% and 88.3% of respondents respectively while Chilli pepper was predominantly cultivated. Benefits derived from the enterprise included income generation ($\bar{x}= 2.30$) and revival of indigenous knowledge ($\bar{x}= 1.92$). Only 8.8% were always satisfied with the earnings, 12.5% considered the earnings as always sufficient for household expenses. Only 21.2% resided in bedroom flat and only 24.8% had bedroom to themselves while only 30.0 % had water system of toilet facility. Majority had low material wellbeing status. No significant relationship between benefits derived and material wellbeing ($r=-0.22, p>0.05$) was revealed. The study concluded that the benefits inherent in spices enterprise should be promoted as capabilities to enhance material wellbeing of rural households.

Keywords: NUCs, Material wellbeing, Capabilities, Producer-gatherers, Nigeria

Introduction

In tropical forests where the climatic features favour abundant production of diverse group of crops, rural families reside in forests or in areas close to the forests. These forest peoples engage in foraging of Non-Timber Forest Products (NTFPs) among their economic activities to maintain their livelihoods. While there is no widely accepted definition of NTFPs, they include all botanicals and natural products extracted from the forest other than timber (Ahenkan and Boon, 2011). Non-Timber Forest Products (NTFPs) consist of naturally grown forest resources which could be processed either for household utilization or for local and external trade by the forest users (Akanni, 2013). They include a wide range of edibles and non-edibles such as fruits, seeds, leaves, nuts, bush meat, roots, tubers, fibres, resins, latex, sticks, ropes, and construction materials like bamboos, rattans, herbs and spices. Spices are aromatic plant parts used in enhancing the appeal of foods. They are mostly collected from the wild but are included in cropping systems by some farmers. The primary function of spices is in enhancing the organoleptic properties of food

and beverage; however, they contain diverse nutritional, economic, socio-cultural, religious potentials that make them invaluable to man. They are usually collected from open-access territories where there are no restrictions to whom, what and when they are collected (Freeman, 2012). Intensive exploitation of wild resources is not only unsustainable in the long term, it is also not sufficient to ensure household sustenance. Foraging of spices when considered as an economic activity is only consistent with household utilization and for marginal trade only (Svizzero, 2016). Foraging as a production system is associated with diminishing marginal returns as gathering reduces the remaining stock of wild plant species leading to depletion or extinction of the resource (Freeman *et al.*, 2015). Another group of actors in spices enterprise are been identified, they are known as spices forager-farmers. These are households who engage in a persistent mix of spices foraging and deliberate low-level production for self-use or for trade. They consciously allocate their time and resources between foraging spices from the wild and deliberately produce on their farms or home stead. Rural households in Nigeria are generally viewed as having low wellbeing levels when compared with their urban counterparts (Adebo, 2010), this in part has been attributed to their predominantly agrarian livelihoods. Wellbeing is generally viewed as a description of the state of people's life situation, it simply relates to how satisfied individuals are with their own lives (McGillivray, 2007). It is a complex, multi-faceted construct that entails meeting various essential human needs such as being in good health, having the ability to pursue ones goals, thrive and feel satisfied with life. Wellbeing has multidimensional aspects which comprises of the material and non-material components. The material aspect of living is the focus of this research. The overarching concern is to identify and describe spices forage-farming as an enterprise, promote the enterprise as well as ascertain the material wellbeing of spices forager-farmers. Specifically, the study seeks to: identify socio-economic characteristics of spices forager-farmers in the study; ascertain their spices enterprise characteristics; identify benefits derived from the spices enterprise and ascertain the level of material wellbeing of respondents.

Materials and methods

The study employed a multistage sampling procedure in selecting respondents. The rainforest zone noted for abundance of spices and features that are amiable for agricultural production and foraging activities was purposively selected. Imo state was purposively selected for its array of spices that occur naturally in the wild and the large population of farmers who deliberately cultivate and utilize spices. Ten percent of the Local Government Areas (LGAs) were then randomly selected-Ikeduru, Isiala-Mbano and Okigwe. From each LGA, 2 communities with intensity of spices enterprise were purposively selected. Thirty percent of households whose livelihood is premised on spices gathering and production were randomly selected to give 78 respondents. Data were collected using well-structured questionnaire which were analyzed with descriptive and inferential statistics. The Core Welfare Indicator Questionnaire (CWIQ 2016) that assesses respondents' material wellbeing on domains of housing, job and employment, income and earnings was used for the study. While housing conditions were assessed on basis of availability, job and employment, income and earnings were assessed on basis of satisfaction and sufficiency respectively. Material wellbeing of respondents was therefore assessed as the composite of housing conditions, job and employment, income and earnings.

Results and discussion

Socio-economic characteristics of respondents

A large proportion (41.0 %) of respondents was within the age range of 51 – 60 years. This indicates an ageing workforce with a potential threat to spices enterprises as age negatively influences agricultural output (Guo *et al.*, 2015). A large proportion (51.3 %) of respondents was male indicating male-dominance in the enterprise. This might be attributed to the fact that society thrusts the bread-winning role on males and as such they usually like to live up to the role by engaging in diverse livelihood enhancing activities as opined by Kamwi *et al.*, 2018. A large proportion (59.0 %) of respondents were married, confirming the opinion of Sadiq, Kolo and Akerele 2015 that farmers assume marriage as an obligation that provides additional source of labour and reduce the cost of hiring manpower for agricultural activities. While only 21.8 % have no formal education, majority (74.4 %) have basic education. Also, majority 56.8 % have household size of between 6 and 10 persons signaling more hands for agricultural production as the size of a household could influence assistance and possibly output gained from their farming enterprise. All respondents participated in social groups such as religious, cooperative societies, age grade, town development association amongst others. This is an indication that social participation is considered necessary among respondents as it enhances farmers' interaction and assistance in activities that enhance their wellbeing. This corroborates the view of Banire *et al.*, 2002 that participation in group activities is a framework for farmers to defend as well as negotiate their interests. While only 21.7 % of respondents have no formal education, majority (78.3 %) of respondents are educated in one form or the other which is in conformity with the findings of Oladeji and Oyesola 2011 that rural farmers in Nigeria have varying literacy levels. This result however negates the position of Gurven *et al.*, 2012, who opined that forager-farmers are largely illiterate.

Enterprise Characteristics of Spices Forager-farmers

Spices foraging-farming enterprise in the study area involved the gathering and production of these spices- Alligator pepper (*Aframomum melegueta*), Black pepper (*Piper guineensis*), Ethiopian pepper (*Xylopiiiaethiopica*) and African nutmeg (*Monodoramylstrica*). Majority (68.5 %) of respondents engaged family labour for their enterprise while 24.1 % used self-labour and only 7.4 % used hired labour. This is an additional inkling into why the respondents had large household size. Majority (50.2 %) of respondents traded their spices in rural markets, 28.5 % sold their proceeds at the farm gate and only 3.3 % were able to get their produce to urban markets where they command higher earnings. This resonates the position of (Magesaet *al.*, 2014) that trading in rural markets limits farmers economic opportunities as their produce are marketed through channels offering low prices, the markets are not competitive and variety of produce is limited. Majority (70.5%) of respondents earned less than ₦99, 000 annually from their spices enterprise and only 29.5 % earned between ₦100,000 and ₦ 499,000. While spices are high value crops capable of generating substantial income for household subsistence, households in the study area are yet to fully benefit economically from the high value potentials of spices.

Benefits derived from spices enterprises

Table 3 revealed that economic considerations such as steady income source ($\bar{x}=2.30$) guaranteed multiple harvest ($\bar{x}=2.25$), significant contribution to household sustenance ($\bar{x}=2.22$), ability to grow under harsh conditions ($\bar{x}=2.06$) and prevention of disease in humans ($\bar{x}=1.94$) were revealed as benefits derived from spices gathering and production. If these benefits are promoted, they could be good incentives for engaging in spices enterprise. This reflects the opinion of Weinberger and

Lumpkin (2007) that spices are high-value, low volume crops that can enhance income generating potentials and improve rural livelihoods. The findings of this study further confirms the position of Mabhaudhi, O'Reilly, Walker *et al.*, 2016 that neglected, under-utilised crops have the ability to grow in harsh agro-ecologies with minimal inputs. The ability to revive indigenous knowledge ($\bar{x}=1.92$) was also revealed as a benefit of the enterprise. Indigenous knowledge according to Akinbile and Ladele 2011 is the basic component of any society's knowledge system which comprises skills, experiences and insights of her people, applied to maintain or improve their livelihoods. They further stressed that livelihood of rural households depends almost entirely on ethno-specific skills and knowledge that are essential for their survival. Additional source of employment for households via value addition of spices was also listed as a benefit derived from the enterprise ($\bar{x}=1.81$). The opportunity to process and convert spices into other forms that could generate higher incomes, future use as well as future income is also beneficial to respondents. This is in line with the position of Ja'afar-Furo *et al.*, 2011 who submitted that value addition is a suitable activity for rural households to pursue new products and markets that can improve their income generation.

Material Wellbeing of Spices Forager-farmers

A range of assets are necessary for satisfactory material wellbeing which consequently enhances household wellbeing (Campbell, 2006). Respondents' Material wellbeing was assessed on the basis of respondents, housing conditions, income and earnings; job and employment which are important indices of economic status of households. Adequate housing is a key aspect of people's lives and a major element of material wellbeing of households. It is essential to meet basic needs of shelter, from extreme weather conditions, privacy and personal space (Streimikiene, 2015). The housing condition of respondents is shown on Table 4. It showed that majority (68.5 %) of respondents occupied face-to-face unit type of housing; only 21.2 % occupied bedroom flat and 10.3 % self-contained unit. Majority 52.1 % slept in bedrooms with more than one (1) resident while only 24.8 % had bedrooms to themselves. Majority 85.9 % had aluminium roof type of housing and only 14.1 % had thatched roof houses. Also, 85.9 % had brick type of wall while 10.3 % had mud walls and 3.8 % had thatch walls. Also, 67.9 % had cemented floors and only 17.9 % had tiled floors, 71.8 % sourced drinking water from boreholes and only 15.4 % had access to tap water. Furthermore, 68.7 % had pit latrines in their residence and only 30.1 % had water system toilet facility. The findings revealed inadequate housing quality among the households which confirms the position of Adeoye (2016) that a large proportion of Nigerians reside in substandard, deplorable and unsanitary residential environments in spite of decent housing being a right of every citizen. Income and earnings are essential components of human wellbeing. The ability to command resources allows people satisfy basic needs and pursue goals that are important to them (OECD, 2015). Table 5 shows respondents sufficiency with their income and earnings. It shows areas where respondents expressed low and high sufficiency with the income and earnings from the spices enterprise. Majority (59.0%) revealed that income from the enterprise is sometimes sufficient to pay house rent. Majority (56.4%) indicated that their income is sometimes sufficient for household food supplies and 12.8 % indicated their income is always sufficient to pay children school fees and 12.5% indicated the income is always sufficient for household expense. Also, only 34.6% indicated the income is sometimes sufficient for their own expense. The availability of jobs and being employed is essential to wellbeing as good jobs increase peoples command over resources; provides people with the chance to fulfill their ambitions, develop skills and abilities that make them useful in the society as well as build their self-esteem (OECD, 2015). Table 6

shows respondents satisfaction with their job and employment. It shows areas where respondents expressed high as well as low satisfaction with their spices enterprise. Majority (79.5%) revealed that they were sometimes satisfied with the enterprise. Majority (86.1%) indicated that they were sometimes satisfied with earnings from the spices enterprise. Only 14.1 % of respondents indicated that they were always satisfied with the number of hours spent in their enterprise while 12.8 % indicated they were always satisfied with the conditions of their enterprise.

Spices Forager-Farmers Level of Material Wellbeing

A benchmark of 1.02 ± 0.43 was determined as the mean of standardized scores of housing conditions, income and earnings, job and employment. The score was used to categorize spices forager-farmers' material wellbeing as either high or low (Table 7). The scores were computed and used as benchmark, such that respondents whose scores are below the mean score were categorized as having low material wellbeing, while respondents with scores equal to or greater than the mean score were categorized as having high material wellbeing. The level of material wellbeing of spices forager-farmers in Imo state revealed that majority (65.5 %) of respondents had low material wellbeing while only 34.5 % had high material wellbeing.

Conclusion

The benefits derived from spices foraging-farming range from economic benefits such as steady source of income to social benefit such as revival of indigenous knowledge amongst others. Majority of respondents however had low level of material wellbeing which might be attributed to the low level of deliberate production of spices in the enterprise mix with rural markets being the dominant channel of trade of spices which offer uncompetitive and low prices in return. Only very few forager-farmers in the study were able to get their proceeds to urban markets where they command high earnings. This reveals the substantial influence of job and employment, income and earnings and housing conditions on material wellbeing of households. Therefore, biodiversity conservation and intensive deliberate cultivation should be encouraged by promotional campaigns and advocacy of the potentialities inherent in spices enterprise. This would enhance the material wellbeing of households as good jobs increase peoples command of resources while earnings therefrom provide adequate housing that meet basic needs of shelter, protection, personal space and privacy as well as provide the ability to satisfy basic needs and fulfill ambitions and aspirations.

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Table 1: Personal profile of spices forager-farmers

Variable	Category	Percent
Age <i>Mean=47.9±10.8</i>	30 & below	2.6
	31 – 40	26.9
	41 – 50	29.5
	51 – 60	41.0
Sex	Male	51.3
	Female	48.7
Marital status	Single	17.9
	Married	59.0
	Widowed	23.1
Edu. Attainment	No formal Edu.	21.8
	Primary Edu.	44.9
	Secondary Edu.	29.5
	Adult Literacy	1.2
	Voc. Edu.	2.6
Household size <i>Mean=9.2±5.4</i>	1 – 5	43.2
	6 – 10	56.8
Social Network*	Religious group	84.4
	Coop. society	61.8
	Age grade	55.0
	Women group	44.3
	Town Devt. Union	41.5

Source: Field survey, 2016 *Multiple response

Table 2: Enterprise Characteristics of spices forager-farmers

Variable	Category	Percent
Spices gathered and cultivated*	Alligator pepper	88.7
	Black pepper	86.5
	Ethiopian pepper	85.8
	African nutmeg	69.0
Source of labour	Family	68.5
	Self	24.1
	Hired	7.4
Marketing channels	Rural market	50.2
	Farm gate	28.5
	Road side	9.8
	Family/Friends	8.2
	Urban market	3.3
Income from gathering & producing	< 99,000	70.5
	100,000 – 499,000	29.5

Source: Field survey, 2016

Table 3: Distribution of benefits derived from spice foraging-farming in Imo state (n=78)

	Benefits derived	Mean	Rank
1	Income source	2.30	1 st
2	Short production cycles/guaranteed multiple harvests	2.25	2 nd
3	Significant contribution to household sustenance	2.22	3 rd
4	Ability to grow in marginal/harsh conditions	2.06	4 th
5	Disease prevention in humans	1.94	5 th
6	Revival of indigenous knowledge	1.92	6 th
7	Value addition presents source of employment opportunity	1.81	7 th
8	Enhanced social participation in communal activities	1.45	8 th
9	Available healthcare resource	1.39	9 th
10	Ability to resist disease/pest infestation	1.04	10 th

Source: Field survey, 2016

Table 4: Housing Condition of spices Forager-farmers in Imo state

Indicators		Percent	Mean
Unit type	Bedroom flat	21.2	1.48±0.62
	Self-contained	10.3	
	Face-to-face	68.5	
Space	Bedroom to self	24.8	1.72±0.78
	Bedroom shared with one person	23.1	
	Bedroom shared with more than 1 person	52.1	
Roof type	Aluminum	85.9	1.89±0.31
	Thatch	14.1	
Wall type	Brick	85.9	2.62±0.53
	Mud	10.3	
	Thatch	3.8	
Floor type	Tile	17.9	1.88±0.68
	Cement	67.9	
	Mud	14.1	
Source of drinking water	Tap water	15.4	3.38±1.09
	Borehole	71.8	
	Well with pump	1.3	
	Well	1.3	
	River/stream	10.3	
	Water system	30.0	
Toilet facility	Pit latrine	68.7	0.98±0.78
	No toilet	1.3	

Source: Field survey, 2016

Table 5: Income and Earnings of Spices Forager-farmers

Income & Earnings	Never	Sometimes	Always	Mean
Sufficient to pay house rent	26.9	59.0	24.1	0.96±0.72
Sufficient for food supplies	6.4	56.4	37.2	1.22±0.60

Sufficient to pay children's school fees	9.0	78.2	12.8	0.94±0.51
Sufficient for household expenses	1.3	86.2	12.5	0.95±0.45
Sufficient for own expense	3.8	61.5	34.6	1.02±0.41

Source: Field survey, 2016

Table 6: Job and Employment of Spices Forager-farmers

Job & Employment	Never	Sometimes	Always	Mean
Satisfied with gathering and cultivating spices	9.0	79.5	11.5	0.95±0.45
Satisfied with the earnings from gathering and cultivating spices	5.1	86.1	8.8	0.98±0.44
Satisfied with the number of hours I spend working (gathering & cultivating spices)	5.1	80.8	14.1	1.04±0.43
Satisfied with the conditions of my spices enterprise	5.1	82.1	12.8	1.02±0.43

Source: Field survey, 2016

Table 7: Categorization of spices forager-farmers material wellbeing

Material Wellbeing level	Percent	Mean	Minimum	Maximum	Std. deviation
Low	65.5	36.23	0.0	56.23	9.89
High	34.5				

Source: Computation from field work, 2016