Identification of Perceived Drivers of Food Choice in Abia State, Nigeria

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ABSTRACT

Background: Poor food choices are associated with all forms of malnutrition and diet-related non-communicable diseases. Hence, there is a need for a study that contextually appreciates urban influences on food choice to inform a basis for more targeted interventions in the promotion of healthier diets and lifestyles, particularly in low- and middle-income countries (LMICs).

Objective: This study aimed to identify the perceived drivers of food choices in selected zones/towns in Abia State.

Methods: *The study was a descriptive cross-sectional study and adopted a multi-stage sampling technique from which a total of 1200 respondents were used. Data on socio-demographic/economic characteristics, food purchasing and cooking practices, and perceived factors affecting food choice were collected using structured and validated questionnaires. The IBM SPSS version 25.0 software was used to analyze the data. A p-value of < 0.05 was considered significant.*

Results: *Key determinants of food choice as identified in this study include price (n=260), sensory appeal (n=225), natural content (n=206), familiarity (n=174), and health (n=172). However, the least important factors identified were ethical concern (n=144), mood (n=156) and weight control (n=134).*

Conclusion: *Therefore, different strategies and targeted interventions are necessary to create supportive food environments, promote sustainable food production, and improve and maintain healthy dietary intake. Agricultural extension and public health/sanitary extension services should be trained to deliver mutually reinforcing messages that promote sustainable food production, small-scale farming and gardening, improved dietary intakes, and improved health.*

Keywords: health, food choice, eating determinants, healthy diets, dietary pattern.

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INTRODUCTION

Globally, poor diet quality contributes to all forms of malnutrition (under nutrition, over nutrition, micronutrient deficiencies) and other diet-related chronic diseases (1). Household welfare depends on appropriate and adequate (quantity, quality, safety, socio-cultural acceptability) food choice and nutritional intake (2). Therefore, diets, nutrition and health outcomes are consequences of interrelated food choices which pose challenges for implementing interventions aimed at addressing malnutrition and dietary challenges (3). The interaction between consumers and food environment offers an entry point for understanding what, where, when, how and why food choices are made (4, 5, 6).

Food choice is defined as a process by which people select, acquire, prepare and consume foods, which results from the competing and interacting influences of a variety of factors (7). Household/individual food choice involves the processes by which households and individuals consider, select, prepare, distribute, and consume foods and beverages. Food choice behaviors are integral to social and economic expression of identities, preferences, and cultural meanings and ultimately influence nutrient intake and health (3).

Drivers of food choice include interconnected biological, psychological, economic, social,

cultural, environmental, and political factors (3). People are often faced with diverse food options and the importance of these factors may change in varying contexts and shift over an individual's lifecycle (8). These dynamics include spatial and seasonal availability of food (9,10) or the development of mass/social media marketing and advertising that can influence food choices (11).

Food choices are embedded in the pattern of food consumption which evolved according to changes in the natural environment, biological basis, physical need, lifestyle, and development of technology (12). It is an important determinant of dietary intake and behavior which includes what, how, when, and with whom people consume food, and have different food preferences and use different criteria to make daily food choices (13,14).

The influences of food choice vary from socioeconomic characteristics to sensory perception and individual personality. Also, lack of good knowledge of healthy food selection and cost can influence the feeding behavior and dietary intake of young adults (15).

Unhealthy food choices are one of the most important precursors of overweight, obesity and the development of Non-Communicable Diseases (16). The high prevalence of overweight and obesity can be related to a change in lifestyle, low levels of physical activity and unhealthy diets based on the interaction between individual and household characteristics on food choices (8).

There is a dearth of information on the drivers of food choices among individuals living in Abia State. Thus, to fill the knowledge gap, this study aimed to identify the perceived drivers of food choices in the selected study areas of Abia State.

Hence, it is on this basis that this research was carried out to identify the perceived drivers of food choices among households in Aba North and South, Ohafia; Umuahia North and South Local Government Areas in Abia State.

METHODOLOGY

Study Design and Technique

The study was descriptive, cross-sectional and adopted a four-stage sampling technique in selecting the respondents. The first stage involved the selection of the three (3) urban zones/towns (Aba, Umuahia, and Ohafia) in Abia State. The second stage involved the random selection of two Local Government Areas from Aba zone/town (Aba North and Aba South), Umuahia zone/town (Umuahia North and Umuahia South), and one Local Government Area from Ohafia zone/town. The third stage involved the selection of one community using balloting without replacement from the selected LGAs. In the final stage, 48 respondents were selected from each community to participate in the study using a simple random technique.

SAMPLE SIZE DETERMINATION

The sample size for the three study areas was determined using the Taro Yamane (1973) formula (19).

$$\text{Sample size (n)} = \frac{N}{1 + N(e)2}$$

Where,

n = sample size

N = Total population

e = sampling error or precision (0.05)2

Using 2006 National Population Census data, solving for Aba zone/town (534265)

$$n = \frac{534265}{1 + 534265(0.0025)}$$

$$n = \frac{534265}{1336.66}$$

$$n = 399.7 \approx 400$$

Umuahia zone/town (362,192)

$$n = \frac{362,192}{1 + 362,192(0.0025)}$$

$$n = \frac{362192}{906.48}$$

$$n = 399.56 \approx 400$$

Ohafia zone/town (245,987)

$$n = \frac{245987}{1 + 245987(0.0025)}$$

$$n = \frac{245987}{615.97}$$

$$n = 399.3$$

The total sample size for the three zones/towns (N) = 400+400+399 = 1199≈1200

Therefore, a total of 1200 respondents were surveyed for the study.

PRELIMINARY ACTIVITIES

Five research assistants were trained to administer the questionnaire. The purpose and objectives of the study were also communicated and clearly

explained to them, as well as the method of questionnaire administration.

Ethical Approval:
The Health Research Ethics Committee (HREC) of the Federal Medical Centre, Umuahia (reference number: FMC/QEH/G.596/VOL.10/612) granted ethical approval for the study on 9th May, 2023. All eligible respondents who agreed to participate gave their informed consent before the commencement of this study.

Data Collection
Instruments for Data Collection
The study used a validated self-administered questionnaire for the data collection. The validated questionnaire was used to gather information on socio-demographic, socio-economic, household food choice, food purchasing, cooking, dietary practices, and eating habits. The Food Choice Questionnaire (FCQ) by Steptoe et al. (20) was adopted, with responses ranging from 1 to 4 on a 4-point Likert scale.

Validation and Administration of the Questionnaire
The study's questionnaire was validated by lecturers in the Department of Human Nutrition and Dietetics, Michael Okpara University of Agriculture, Umudike (MOUAU) for content validity and English communication, and underwent pilot testing on 40 individuals residing in the university location to ensure clarity and ease of administration to respondents. Researchers and assistants administered a face-to-face questionnaire to willing, consenting respondents, using English (Igbo and Pidgin) to explain the information.

Data Analysis
The study used Statistical Package for Service Solution (SPSS), version 25.0 to analyze data on socio-demographic and socio-economic characteristics, household food choice, purchasing, cooking practice, and feeding behaviour. Inferential analysis was also carried out using Chi-square. A p-value of < 0.05 was considered significant.

RESULTS
Socio-Economic Characteristics of Respondents
Table 1 reveals that most respondents in Aba and Ohafia had household incomes between ₦51,000-70,000, with most having 3-5 family members. In Ohafia, most respondents were house owners, while in Aba North and South, most are tenants. This table shows a summary of the Socioeconomic attributes of the total respondents for this survey. It gives insights into their purchasing power, family type, properties (for example household ownership of functional TV) and related information.

Food Choices of Respondents
Table 2 presents the food choices of the respondents. Most respondents in Aba North and South, Ohafia, and Umuahia North and South consumed cereals 4-6 times weekly, while roots and tubers 4-6 times weekly. The result also showed that respondents consumed vegetables less than 3times weekly in all the zones/towns.

Feeding Behaviours of Respondents
The feeding behaviour of the respondents is presented in Table 3. A majority (83%) of the respondents in Umuahia North and South and more than half (53.75%) of the respondents in Aba North and South affirmed that they skipped meals while a majority (76.50%) of the respondents were in dissentient that they skipped meals. More than half (88.00% and 83.00%) of the respondents in Aba North and South; and Umuahia North and South affirmed that food advertisements had influenced their household food choices.

Perceived Factors Influencing Food Choice of the Respondents
Table 4 presents the factors respondents perceived to influence food choice of the respondents. The study revealed that the most important perceived factors influencing food choice in the selected local government areas are price, sensory appeal, natural content, health, and convenience. Ethical concern, mood, and weight control were the least important perceived factors.

Relationship between perceived factors influencing food choice and socio-economic characteristics of the respondents
Table 5 shows the relationship between perceived factors influencing food choice and socio-economic characteristics of the respondents.
In Ohafia, the results revealed a significant relationship (p-value < 0.05) between the perceived factors influencing food choice (health, natural content, ethical concern, mood, price, weight control, convenience, familiarity and sensory appeal) and the socio-economic characteristics (household income and family size) analyzed.
Result findings in Aba North and South revealed a significant relationship (p-value < 0.05) between the perceived factors (namely: health, natural

Table 1: Socio-economic characteristics of the respondents

Variable	Aba North and South		Umuahia North and Umuahia South		Ohafia	
	Frequency (F)	Percentage (%)	Frequency (F)	Percentage (%)	Frequency (F)	Percentage (%)
Income						
<N30,000	19.00	4.75	79.00	19.75	117.00	29.25
N30,000-N50,000	106.00	26.5	65.00	16.25	135.00	33.75
N51,000-N70,000	134.00	33.50	83.00	20.75	89.00	22.25
N71,000-N90,000	67.00	16.75	90.00	22.50	39.00	9.75
N91,000-N100,00	19.00	4.75	27.00	6.75	12.00	3.00
>N100,000	55.00	13.75	52.00	13.00	8.00	2.00
Family size						
10 or more	11.00	2.75	10.00	2.50	46.00	11.50
9 or 8	40.00	10.00	30.00	7.50	62.00	15.50
7 or 6	73.00	18.25	47.00	11.75	87.00	21.75
5, 4, 3	253.00	63.25	224.00	56.00	173.00	43.25
2 or 1	23.00	5.75	89.00	22.25	32.00	8.00
Position in the family						
Husband	94.00	23.50	105.00	26.25	116.00	29.00
Wife	99.0	24.75	133.00	33.25	162.00	40.50
Child	185.0	46.25	140.00	35.00	88.00	22.00
Relative	22.00	5.50	22.00	5.50	34.00	8.50
Type of House						
Owner	92	23.00	131	32.75	243	60.75
Tenants	197	49.25	269	67.25	157	39.25
Others	111	27.75	-	-	-	-
Source of cooking fuel						
Gas cooker	189.00	47.25	307	76.75	217.00	54.25
Stove/Electric/Gas	173.00	43.25	40	10.0	116.00	29.00
Table/Kerosene	12.00	3.0	-	-	-	-
Charcoal/Firewood	2.00	0.5	51	12.75	67	16.75
Gas Cooker and Stove	18.00	4.5	2	0.50	-	-
Gas and Charcoal	6.00	1.5	-	-	-	-
Household ownership of functional TV						
Yes	323.00	80.75	350.00	87.30	307.00	76.75
No	77.00	19.25	50.00	12.50	93.00	23.25
Ownership of any of the listed						
Motor bike	44.00	11.00	125.00	31.25	105.00	26.25
Car	114.00	28.50	271.00	67.75	203.00	50.75
None	242.00	60.50	4.00	1.00	2.00	
Practice agriculture such as crop, livestock or fish farming						
Yes	138	34.50	228.00	57.00	338	84.50
No	262	65.50	172.00	43.00	62	15.50
If yes, which of the following						
Crop farming	84.00	21.00	180.00	27.00	227.00	56.75
Livestock farm	23.00	5.75	107.00	26.75	100.00	25.00
Crop, fish farming and livestock	20.00	5.00	13.00	3.25	9.00	2.25
Livestock and Fish Farming	2.00	0.50	-	-	64.00	16.00
None	262.00	65.50	72.00	18.00		

Table 2: Food Choices of Respondents (weekly)

Variable/Food Groups (per week)	Aba North and South		Umuahia North and Umuahia South		Ohafia	
	Frequency (F)	Percentage (%)	Frequency (F)	Percentage (%)	Frequency (F)	Percentage (%)
Cereals						
Does not	3	0.75	16	4.00	16.00	4.00
<3 times	22	5.50	214	53.50	110.00	27.50
4-6 times	242	60.50	158	39.50	149.00	37.30
7 or more	133	33.25	12	3.00	125.00	31.30
White roots and tubers						
Does not	4	1.00	20	5.0	14.00	3.50
<3 times	16	4.00	237	59.25	94.00	23.50
4-6 times	220	55.00	133	33.25	171.00	42.80
7 or more	160	40.00	10	2.50	121.00	30.30
Vegetables						
Does not	69	17.25	16	4.00	46.00	11.50
<3 times	271	67.75	237	59.25	156.00	39.00
4-6 times)	49	12.25	145	36.25	73.00	18.30
7 or more	11	2.75	2	0.50	125.00	31.30
Fruits						
Does not	18	4.50	32	8.00	15.00	3.8
<3 times	172	43.00	173	43.25	138.00	34.50
4-6 times)	139	34.75	180	45.00	116.00	29.00
7 or more	71	17.75	15	3.75	131.00	32.80
Flesh meats						
Does not	25	6.25	30	7.50	18.00	4.50
<3 times	93	23.25	208	52.00	124.00	31.00
4-6 times)	251	62.75	156	39.00	173.00	43.20
7 or more	31	7.75	6	1.50	85.00	21.30
Eggs (from chicken, duck, guinea fowl)						
Does not	36	9.00	28	7.00	30.00	7.50
<3 times	256	64.00	203	50.75	67.00	16.8
4-6 times)	94	23.50	159	39.75	116.00	29.00
7 or more	14	3.50	10	2.50	187.00	46.80
Fish and sea food (fresh, dried fish or shell fish)						
Does not	3	0.75	43	10.75	16.00	4.00
<3 times	115	28.75	234	58.50	137.00	34.30
4-6 times)	198	49.50	109	27.25	117.00	29.30
7 or more	84	21.00	14	3.50	130.00	32.50
Legumes, nuts and seeds						
Does not	28	7.00	12	3.00	12.00	3.00
<3 times	199	49.75	185	46.25	136.00	34.00
4-6 times)	145	36.25	136	34.00	111.00	27.80
7 or more	28	7.00	67	16.75	141.00	35.30
Milk and milk products						
Does not	21	5.25	59	14.75	32.00	8.00
<3 times	248	62.00	192	48.00	110.00	27.50
4-6 times)	94	23.50	128	32.00	121.00	30.30
7 or more	37	9.25	21	5.25	137.00	34.30
Oils and fats						
Does not	-	-	79	19.75	10.00	2.50
<3 times	94	23.50	240	60.00	144.00	36.00
4-6 times)	276	69.00	79	19.75	112.00	28.00
7 or more	30	7.50	2	0.50	141.00	35.30
Spices						
Does not	19	4.75	47	11.75	16.00	4.00
<3 times	292	73.00	204	51.00	161.00	40.30
4-6 times)	82	20.50	107	26.75	124.00	31.00
7 or more	7	1.75	42	10.50	99.00	24.80

Table 3: Feeding Behaviours of Respondents

	Aba North and South		Umuahia North and Umuahia South		Ohafia	
Variable	**Frequency (F)**	**Percentage (%)**	**Frequency (F)**	**Percentage (%)**	**Frequency (F)**	**Percentage (%)**
I skip meals						
Yes	215.00	53.75	332	83.00	94	23.50
No	185.00	46.25	68	17.00	306	76.50
Total	**400.0**	**100.0**	**400.0**	**100.0**	**400.0**	**100.0**
Reasons for skipping meal						
Limited time to cook	142.00	35.50	180	45.00	48.00	12.00
Limited time to eat	30.00	7.50	95	23.75	33.00	8.25
Cannot afford it	67.00	16.75	56	14.00	17	4.25
Fasting/religious reasons	4.00	1.00	13	3.25	17	4.25
No appetite	43.00	10.75	6	1.50	125	31.00
Busy	77.00	19.25	10	2.50	42	10.5
Only on farm days	5.00	1.25	15	3.75	40	10.00
I eat fruits	5.00	1.25	10	2.50	35	8.75
Saving up	8.00	2.00	5	1.25	20	5.00
Weight loss journey	10.00	2.50	5	1.25	15	3.75
Only junk is available	9.00	2.25	5	1.25	8	2.00
Total	**400**	**100.0**	**400.0**	**100.0**	**400.0**	**100.0**
Advertisements influence my food choice						
Yes	352.00	88.00	332	83.00	94.00	23.50
No	48.00	12.00	68	17.00	306.00	76.50
Total	**400.0**	**100.0**	**400**	**100.0**	**400.0**	**100.0**
Categorises of food seen on adverts for the past week						
Starches(grains/tubers/legumes)	5.00	1.25	154	38.50	181	45.25
Meat/fish/poultry/beef/egg/diary	27.00	6.75	186	46.50	124	31.00
Fruits	47.00	11.75	5	1.25	21	5.25
Vegetables	3.00	0.75	5	1.25	55	13.75
Chips, cakes, biscuits, candies, sugary beverages	49.00	12.25	20	5.00	19	4.75
Noodles	74.00	19.75	30	7.50	-	-
None	195.00	48.75	-	-	-	-
Total	**400.0**	**100.0**	**400**	**100.0**	**400.0**	**100.0**

Table 4: Perceived factors affecting food choices of respondents.

	Aba North and South		Umuahia North and South		Umuahia Ohafia	
Variable/Food Groups	**Frequency (F)**	**Percentage (%)**	**Frequency (F)**	**Percentage (%)**	**Frequency (F)**	**Percentage (%)**
Convenience						
Not important at all	7.00	1.80	256.00	64.00	46.00	11.58
A little important	77.00	19.30	67.00	16.80	112.00	28.06
Moderately important	238.00	59.60	57.00	14.30	151.00	37.81
Very important	71.00	17.80	20.00	5.00	77.00	20.00
Health						
Not important at all	6.00	2.00	356.00	89.00	30.00	7.54
A little important	146.00	37.00	39.00	9.80	107.00	26.83
Moderately important	196.00	49.00	4.00	1.00	140.00	35.04
Very important	51.00	12.80	-	-	121.00	31.00
Mood						
Not important at all	111.00	27.79	283.00	70.80	29.00	8.00
A little important	217.00	54.29	63.00	15.80	97.00	25.00
Moderately important	63.00	16.00	39.00	9.80	145.00	36.25
Very important	8.00	1.88	15.00	3.80	130.00	32.50
Natural Content						
Not important at all	14.00	3.50	261.00	65.30	32.00	8.08
A little important	109.00	27.31	116.00	29.00	93.00	23.25
Moderately important	217.00	54.31	7.00	1.80	125.00	31.17
Very important	51.00	13.00	7.00	1.80	148.00	37.00
Weight Control						
Not important at all	51.00	13.00	272.00	68.00	24.00	6.08
A little important	177.00	45.00	75.00	18.80	114.00	28.50
Moderately important	131.00	32.75	36.00	8.80	140.00	35.00
Very important	40.00	10.00	30.00	7.50	65.00	16.25
Familiarity						
Not important at all	12.00	3.00	274.00	68.50	40.00	10.00
A little important	165.00	41.33	75.00	18.80	94.00	24.00
Moderately important	194.00	48.50	32.00	8.00	151.00	37.83
Very important	40.00	10.00	19.00	4.80	115.00	28.83
Ethical Concern						
Not important at all	160.00	40.00	247.00	61.80	40.00	10.08
A little important	203.00	50.75	78.00	19.50	92.00	23.00
Moderately important	31.00	7.75	47.00	11.80	147.00	36.75
Very important	5.00	1.25	18.00	4.50	121.00	31.00
Price						
Not important at all	6.00	2.00	263.00	65.80	36.00	9.00
A little important	66.00	41.33	59.00	14.80	97.00	25.00
Moderately important	222.00	56.00	35.00	8.80	141.00	35.25
Very important	104.00	26.00	30.00	7.5	126.00	31.58
Sensory Appeal						
Not important at all	13.00	4.00	272.00	68.00	27.00	7.00
A little important	148.00	37.00	58.00	14.50	93.50	23.38
Moderately important	191.00	48.00	42.00	10.50	124.00	31.00
Very important	49.00	13.00	19.00	4.80	157.00	39.25

content, ethical concern, price, convenience, familiarity and sensory appeal) and the respondents' household income. There was also a significant relationship between Familiarity (p=0.002), Price (p=0.000) and Health (p=0.036) and respondents' family size. The findings also showed that there was no significant relationship between (Family Size) and (Natural content, Ethical concern, Convenience and Sensory appeal).

While in Umuahia North and South, the result

Table 5:Relationship between perceived factors influencing food choice and socio-economic characteristics of the respondents

Ohafia	Household Income		Family Size	
Variables	X-value	p-value	X-value	p-value
Health	64.809	0.000	56.057	0.000
Natural content	157.977	0.000	54.664	0.000
Ethical concern	106.622	0.000	106.334	0.000
Mood	148.426	0.000	58.261	0.000
Price	59.639	0.000	26.367	0.010
Weight control	79.012	0.000	81.803	0.000
Convenience	110.576	0.000	133.816	0.000
Familiarity	114.519	0.000	103.357	0.000
Sensory appeal	70.094	0.000	45.215	0.000
Aba North and South				
Health	23.917	0.008	19.354	0.036
Natural content	43.393	0.000	21.105	0.134
Ethical concern	29.739	0.013	17.694	0.060
Mood	-	-	-	-
Price	75.918	0.000	60.593	0.000
Weight control	-	-	-	-
Convenience	20.944	0.021	17.694	0.060
Familiarity	27.91	0.022	27.862	0.002
Sensory appeal	29.001	0.012	18.463	0.239
Umuahia North and South				
Health	34.283	0.003	37.974	0.000
Natural content	43.158	0.000	36.479	0.000
Ethical concern	41.512	0.000	35.722	0.000
Mood	57.418	0.000	74.504	0.000
Price	30.123	0.011	30.256	0.003
Weight control	51.318	0.000	61.247	0.000
Convenience	44.781	0.000	30.598	0.002
Familiarity	51.795	0.000	30.598	0.002
Sensory appeal	21.744	0.115	32.884	0.001

revealed a significant relationship (p-value < 0.05) between the perceived factors influencing food choice and the socio-economic characteristics analyzed (household income and family size). However, Sensory Appeal (p=0.115) does not have a significant relationship with Household Income.

DISCUSSION

In Aba, the primary perceived drivers of food choice were identified as price, convenience, natural content, health, and sensory appeal. This suggests that consumers in this area prioritize economic considerations, convenience, and health-related aspects when making food choices. This also corresponds with global trends where economic considerations consistently influence consumer behavior in the food market (21, 22, 26). Interestingly, factors like ethical concern and mood were perceived as less important, indicating a pragmatic and health-conscious approach to food selection.

Umuahia exhibited a different pattern, with ethical concern, price, sensory appeal, and weight control being the most influential perceived factors. This highlights a distinct emphasis on ethical considerations and weight management in these regions, suggesting a more socially conscious and health-focused approach to food choices. This corresponds with studies highlighting the importance of cultural values, ethics, and concerns regarding food origins in influencing consumer preferences (23, 24, 25).

In Ohafia, sensory appeal, natural content, mood, price, and ethical concern emerged as the most significant perceived factors. Here, the emphasis on sensory aspects and mood suggests that taste,

texture, and emotional satisfaction play a crucial role in food decisions. The significance of sensory appeal and natural content in influencing food choices is consistent with literature emphasizing the sensory and nutritional aspects of food in consumer decision-making (27, 28). Meanwhile, perceived factors such as convenience, weight control, and health were considered less important, indicating a unique set of priorities in Ohafia.

Upon merging and compiling the data it became apparent that the six most important perceived factors influencing food choice across Abia state were price, sensory appeal, natural content, familiarity, health, and convenience. Conversely, ethical concern, mood, and weight control were consistently identified as the least important perceived factors. Consumers across the three areas demonstrated a preference for food that appeals to their senses and is perceived as natural. This aligns with the growing interest in organic and minimally processed foods, reflecting a broader shift toward healthier dietary choices (23). Ethical Concerns emerging as a crucial perceived factor in Umuahia and Ohafia, emphasize cultural and ethical considerations in food choices.

CONCLUSION

The findings from this study showed that the most selected perceived drivers of food choices among individuals in Abia state are the price of food items; convenience in food purchasing and preparation, natural content of the food, and health concerns. Therefore, different strategies and targeted interventions are necessary to create supportive food environments, promote sustainable food production, and improve and maintain healthy dietary intake. Agricultural extension and public health/sanitary extension services should be trained to deliver mutually reinforcing messages that promote sustainable food production, small-scale farming and gardening, improved dietary intake and improved health.

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