4.0 CONCLUSIONS

The study shows that the main problem for local rice, as perceived by study respondents, is its poor quality as evidenced by poor visual appearance (colour), high foreign matter content and high levels of broken grains. Consumption of local rice by respondents is highest in Tamale (74%) followed by Accra (40%) and then Kumasi (38.1%). Consumers rated foreign matter, expansion ratio, aroma and colour as important criteria influencing their purchasing decisions whereas traders placed characteristics such as colour, foreign matter, milling degree and broken grains as most important in their perceptions of the ready salability of local rice as compared to imported brands.

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Annex 1 Consumer/end user survey

A. Consumption Patterns

1. What are the 3 most common staples consumed in your household?

    _____ 1st Major staple _____ 2nd Major staple _____ 3rd Major staple

    1 = Maize   2 = Cassava   3 = Rice   4 = Yam   5 = Plantain

    6 = Cocoyam   7 = Millet   8 = sorghum   9 = cowpea   10 = Other (specify)

2. How often do you or your family consume rice? _____

    1 = Daily   2 = 1 - 3 times/week   3 = 4 - 6 times/week

    4 = occasionally (state occasions)

3. If you eat rice frequently in your home why do you do so?

    _____

    1 = Because it is a staple   2 = Because of its availability

    3 = Ease of preparation   4 = Price/cost   5 = Special diet

    6 = Other specify)

4. If you do not consume rice frequently in your home why

    not?_____

    1 = Price/cost   2 = Poor quality   3 = Not a staple   4 = Too light

    5 = Non availability   6 = Other (state reason)

5. What type and quantity of rice do you usually consume at home ? (proportion out of 10)

Type of rice	Raw (locally produced)	Parboiled (locally produced)	Imported	Other (specify)
Proportion consumed				

B. Imported rice

6. Have you ever eaten imported rice?

   1 = Yes   2 = No   3 = Can't tell

7. Which of these types of imported rice have you ever eaten?

   1 = Yes   2 = No   3 = Can't tell

Name of imported rice	Response (Yes/No)	Rank (1 = Very important)
1 = Perfumed rice		
2 = US long grain		
3 = Thai rice		
4 = US No. 5		
5 = Vietnamese rice		
6 = Other(specify)		

C. Locally produced rice

8. Do you produce rice for home consumption ? _____

   1 = Yes   2 = No

9. If 8 is Yes, how many bags do you keep/store for home consumption? _____

   98 = N/A   99 = Can't tell

10. Have you/your family ever eaten locally produced rice? (See questions 8 & 9)

    1 = Yes   2 = No   3 = Can't tell

    If yes which type/variety?

    1 = Sativa (white rice - non parboiled)

    2 = Sativa (white rice - parboiled)

    3 = Glabberima (red rice - non parboiled)

    4 = Glabberima (red rice - parboiled)

11.　Please rank the following local varieties/types of rice in a descending order of preference. (Refer to 10)

Variety/ type	Rank (1 = most important)
1 = Sativa non-parboiled	
2 = Sativa parboiled	
3 = Glabberima non parboiled	
4 = Glabberima parboiled	

9 = NA

12.　In your choice of local varieties (refer to 10) for home consumption, what are the 3 most important characteristics you look out for?

1.

2.

3.

D. Seasonal variation in consumption

13.　At what period(s) of the year do you consume the highest amount of rice?_____

Period	Rank (1 = most important)
1 = Jan - March	
2 = April - June	
3 = July - Sept.	
4 = Oct. - Dec.	

Give reasons for your answer ._____

1 = when rice is being harvested　　2 = During peak rice milling periods

3 = Non availability of other staples (name staples)　4 = Festivals (name)

5 = Other (state)

14. At what period(s) of the year do you consume the lowest amount of rice?_____

Period	Rank (1 = most important)
1 = Jan - March	
2 = April - June	
3 = July - Sept.	
4 = Oct. - Dec.	

Give reasons for your answer

1 = Lean season   2 = No festival

3 = Other staples available (name staples)   4 = Other (state)

E. Source of Rice Purchased and Quality characteristics of Purchased Rice

15. Do you purchase rice for home consumption? _____
    1 = Yes   2 = No

16. If 15 is yes then proportion of rice consumed purchased (proportion out of 10)

    _____

    9 = N/A

17. Where do you usually buy your rice from?_____

Source	Response (Yes= 1, No = 2)	Rank (1= most important source)
1 = Local market (name)		
2 = Distant market (name)		
3 =Retail store		
4 = Super market		
5 = farm		
6 = Rice mill		
7 = Other (name)		

18. How important are the following quality attributes to you when you purchase rice for home consumption? (Please tick x)

1 = Very important   2 = somewhat important   3 = not important

Characteristics	1	2	3
Colour			
Milling degree			
Foreign matter			
Insects			
Yellow grains			
Broken grains			
Red rice			
Paddy grains			
Size/shape Long grain Bold grains			
Odour			
Cooking time			
Hardness			
Stickiness			
Expansion ratio			
Aroma			

F. Prices

19. Which one(s) sell for higher price?_____

   1 = Locally produced rice   2 = imported rice   3 = Can't tell

20. What do you think accounts for the price difference in (19)?

Quality attribute	Response (Yes = 1, No = 2)	Rank (1 = most important factor)
1 = Milling degree		
2 = Broken grains		
3 = Paddy grains		
4 = Foreign matter		
5 = Colour		
6 = Odour		
7 = Other (specify)		

21. From your experience, is the price of locally produced rice generally;

   1 = Lower

   2 = Same

   3 = Higher

   than that of imported rice?_____

G. Types of rice in relation to special local dishes and ceremonies

22. What are the most common forms of consuming rice in your

   household?_____

   1st major form   2nd major form   3rd major form

   1 = Plain rice with stew   2 = Rice and beans   3 = Jollof rice

   4 = Rice balls with soup   5 = Rice TZ   6 = Rice porridge

   7 = Other (specify)

23. For the 3 most important forms mentioned in 22 above, which types/varieties and colour of raw rice are most appropriate/preferred for their preparation?

	Forms	*Type of rice	**Colour of rice most preferred
1			
2			
3			

* 1 = Sativa (white rice - non parboiled)   ** 1 = White

   2 = Sativa (white rice - parboiled)   2 = Red

   3 = Glabberima (red rice - non parboiled)   3 = Brown

   4 = Glabberima (red rice - parboiled)   4 = Other (Specify)

   5 = Imported (white – non-parboiled)

   6 = Imported (parboiled)

   7 = Other (specify)

24. Is rice associated with any traditional ceremonies or functions?_____

   1 = Yes   2 = No   3 = Can't tell

25. If 24 is Yes, then fill in the table below

*Type of ceremony or function	**Type of rice used

*   1 = Puberty rites

2 = Funeral rites

3 = Marriage rites

4 = Birth rites/Naming ceremonies

5 = Festival (Name of festival)

6 = Other (specify)

** 1 = Sativa (white rice - parboiled)

2 = Sativa (white rice non parboiled)

3 = Glabberima (red rice - parboiled)

4 = Glabberima (red rice –non- parboiled)

5 = imported (white – non- parboiled)

6 = Imported (parboiled)

7 = Other (Specify)

H. Distinguishing between locally produced rice and imported rice

26.   How do you distinguish locally produced rice from imported rice?

Factor	Response (Yes = 1, No = 2)	Rank (1=most important f actor)
1 = Milling degree		
2 = Broken grains		
3 = Paddy grains		
4 = Foreign matter (Stones)		
5 = Colour		
6 = Price/Cost		
7 = Brand/ Label		
8 = Size		
9 = Other (Specify)		

SOCIAL - DEMOGRAPHIC CHARACTERISTICS

1. Age-----------

2. Gender   1 = Male   2 = Female

3. Occupation main:

    Others:

4. Religion   1 = Christian 2 = Moslem   3 = Traditionalist   4 = Other (Specify)

5. Ethnic origin   1 = Ewe   2 = Northern 3 = Akan   4 = Ga
                        5 = Other tribes (Name)

6. Number of persons in household_____

7. Number of children under 15 years_____

8. Highest educational level 1 = Primary education   2 = Middle/JSS
                        3 = SSS/ O-level   4 = Other (Specify)

9. Marital status   1 = Married   2 = Single   3 = Divorced

Annex 2. Trader survey

1.   Type of trader _____

      1 = wholesaler 2 = retailer   3 = wholesaler/retailer

      4 = commission agent   5 = Other (Specify)

A. Major sources of supply

2   What type of producer or trader sells rice to you? (Rank in order of importance)

Source of rice sold	Response (Yes = 1, No = 2)	Rank (1 = most important source)
1 = Your own production		
2 = Individual farmer		
3 = Farmer groups/co-operative		
4 = Other traders		
5 = GNPA		
6 = Rice mill		
7 = Other (specify)		

B. Quality attributes affecting the purchase of rice

3. Which of the following quality attributes do you look for when buying rice?(Tick x)

   1 = Very important   2 = somewhat important   3 = not important

Quality attributes	1	2	3
Colour			
Milling degree			
Foreign matter (stones)			
Insects			
Yellow grains			
Broken grains			
Red rice			
Paddy grains			
Size/ shape			
a. Long grains			
b. Bold grains			
Odour			
Cooking time			
Hardness			
Chalky grains			
Stickiness			
Expansion ratio			
Aroma			

C. Market information and membership of trade associations

4.   Do you know the price of the rice you sell in other market outside this
     city/Town?_____
     1 = Yes   2 = No
     If yes which town/cities.

     _____

     _____

     _____

5.   What is your source of information about the prices in these markets?
     (Rank in order of importance)

Source of information	Response (1 = Yes, 2 = No)	Rank (1 = most important source)
1 = You or your employees travel to the market		
2 = Other traders		
3 = Transporters		
4 = Radio or newspaper		
5 = Farmers		
6 = Other specify		

6. Do you belong to associations of rice traders?_____

    1 = Yes   2 = No

7. If yes, what services do these associations provide to their members?

Services	Response (1 = Yes, 2 = No)
1 = Loans or Credit	
2 = Information on prices	
3 = Cooperative buying of rice	
4 = Transport	
5 = Rules on weight and measures	
6 = Agreement on selling prices	
7 = Other (specify)	

D. Seasonal variations in the Supply and Price of rice

8. For rice traded in this market in which month(s) are the prices highest or lowest?_____

    J   F   M   A   M   J   J   A   S   O   N   D

    L = Lowest   H = Highest

9. In which months are volumes traded highest and lowest? Same as above?_____

    J   F   M   A   M   J   J   A   S   O   N   D

10. Are there seasonal variations in the supply of

    a= locally produced rice?_____

    b= imported rice?_____

    1 = Yes   2 = No   3 = Can't tell

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11. If either a or b in 10 is Yes, at what time(s) of the year

(i) do you have a lot on the market?

a._____

b._____

(ii) do you have shortages on the market (indicate months)

a._____

b._____

(Indicate months)

12. If 10 is yes, then what causes these variations?

a._____

b._____

E. Factors affecting volume of rice traded

13. What are some of the factors that affect the volume of rice that you trade?
(Rank in order of importance.)

Factors affecting volume of rice traded	Response (1 = Yes, 2 = No)	Rank (1 = most important)
1 = Transport difficulties		
2 = Limited supply of rice		
3 = Too many other traders		
4 = Lack of finance or credit		
5 = Not enough customers		
6 = Risk of quality deterioration		
7 = Risk of price changes		
8 = Not enough capital		
9 = Other (Specify)		

F. Destination of Rice sold / Major customers of the Trader

14. Who buys your rice in this market?_____

    (Rank = 1 = most important)

Name of buyer	Response (1 = Yes, 2 = No)	Rank (1 = most important)
1 = Final consumer		
2 = Retailer		
3 = Food seller		
4 = Trader who sells in another market		
5 = Commission agents		
6 = Other (specify)		

15. If more than one type of buyer, how many parts out of 10 of your total sales are sold to the most usual buyer?_____

G. Mode of Price Determination

16. How do you determine the price of the rice you sell? (Rank in order of importance)

Mode price is determined	Response (1 = Yes, 2 = No)	Rank (1 = most important)
1 = A price negotiated by a broker/commission agent		
2 = A price you negotiated with a buyer		
3 = A certain mark-up on your buying price		
4 = The current price at which rice is traded in the market		
5 = A price set by a trader association/union /syndicate		
6 = A price set by government marketing authority		
7 = A price fixed by the owner		
8. = Other (specify)		

H. Type of rice sold, origin, proportions and price sold.

17.   Please fill in the table below:

*Type of rice sold	**Proportion sold	***Source (Origin of rice)	Price sold
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			

*1 = Perfumed rice

2 = US long grain (uncle Bens)

3 = Thai rice

4 = Vietnamese rice

5 = Pakistani rice

6 = Mexican rice

7 = U.S No. 5

8 =   Lucky rice

9 =   Other imported (specify)

10 = Sativa (white rice - parboiled)

11 = Sativa (white rice - non-parboiled)

12 = Glabberima red rice parboiled

13 = Glabberima red rice non-boiled

** Proportion out of 10

  98 = Can't tell

***   1 = Local distributor (Specify)   2 = Imported directly (Name country of origin

         3 = Supermarket 4 = Rice mill   5 = Other (Specify)

18.   Of the types of rice listed in 17 above which of them have the highest rate of turnover.

_____1st highest   _____2nd highest   _____3rd highest

Use same codes as 17.

19.   For the 3 most important types listed above, why are they most preferred?

1=

2=

3=

List of Figures
(see following pages)

Fig. 1 Common staples consumed in main urban centres in Ghana

Major staples

Percentage of respondents consuming the major staples

Maize ▪ Rice ▪ Cassava ▪ Yam ▪ Pantain ▪ Millet ▪ Cowpea ▪ Cocoyam ▪ Sorghum ▪ Other

Bar 3: 11.2, 30.9, 13.8, 30.9, 8.9, 4.6, 0.7

Bar 2: 17.8, 12.9, 18.4, 18.4, 5.9, 1.3, 0

Bar 1: 46.1, 29, 9.2, 2.6, 10.5, 0

Fig. 2. Percentage Consumption of major staples by respondents in three Ghanaian cities

(Accra, Kumasi, Tamale)
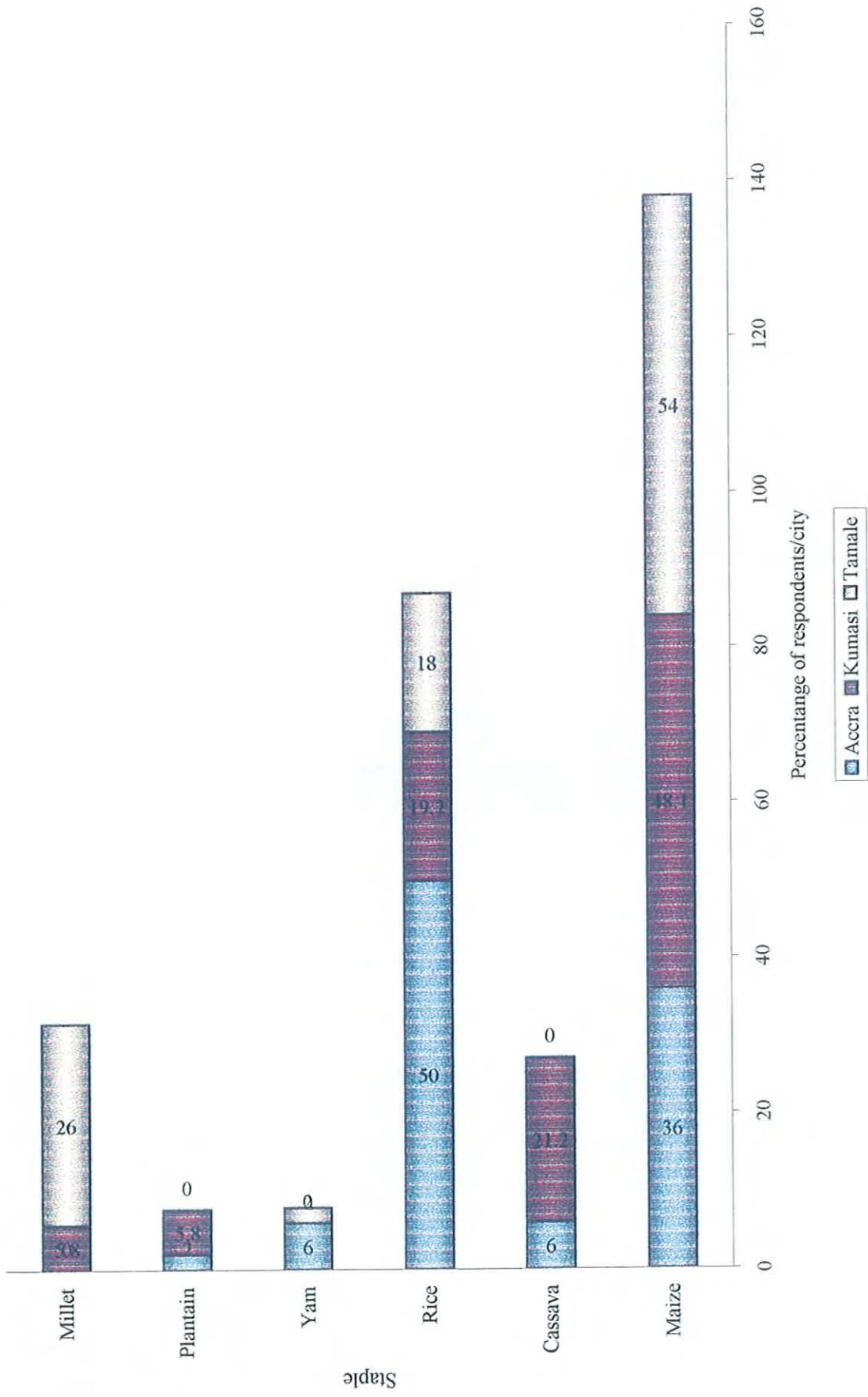
Fig. 3 Percentage consumption of local rice in three Ghanaian cities (Accra, Kumasi, Tamale)
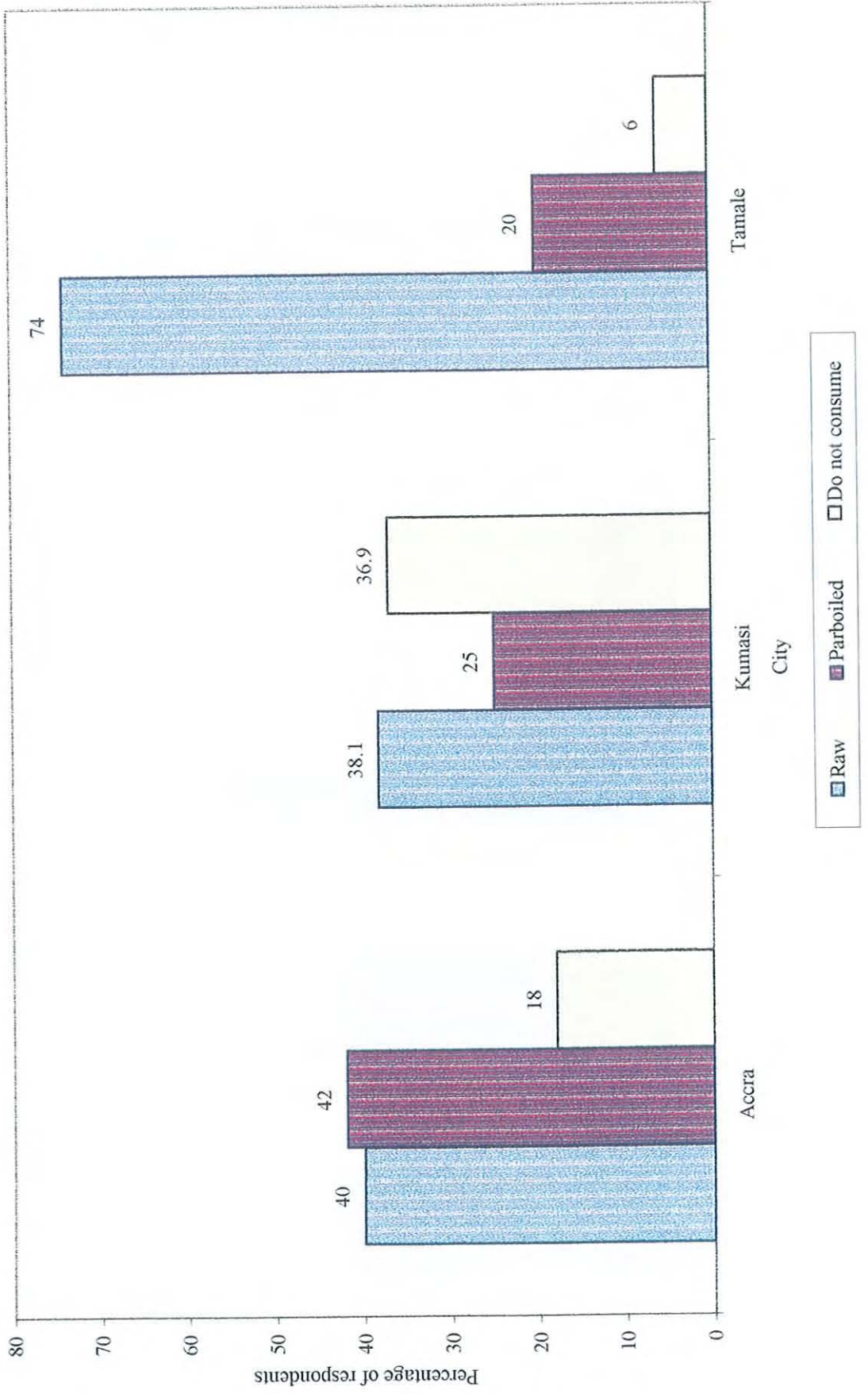
Fig. 4 Types of imported rice consumed in three Ghanaian cities
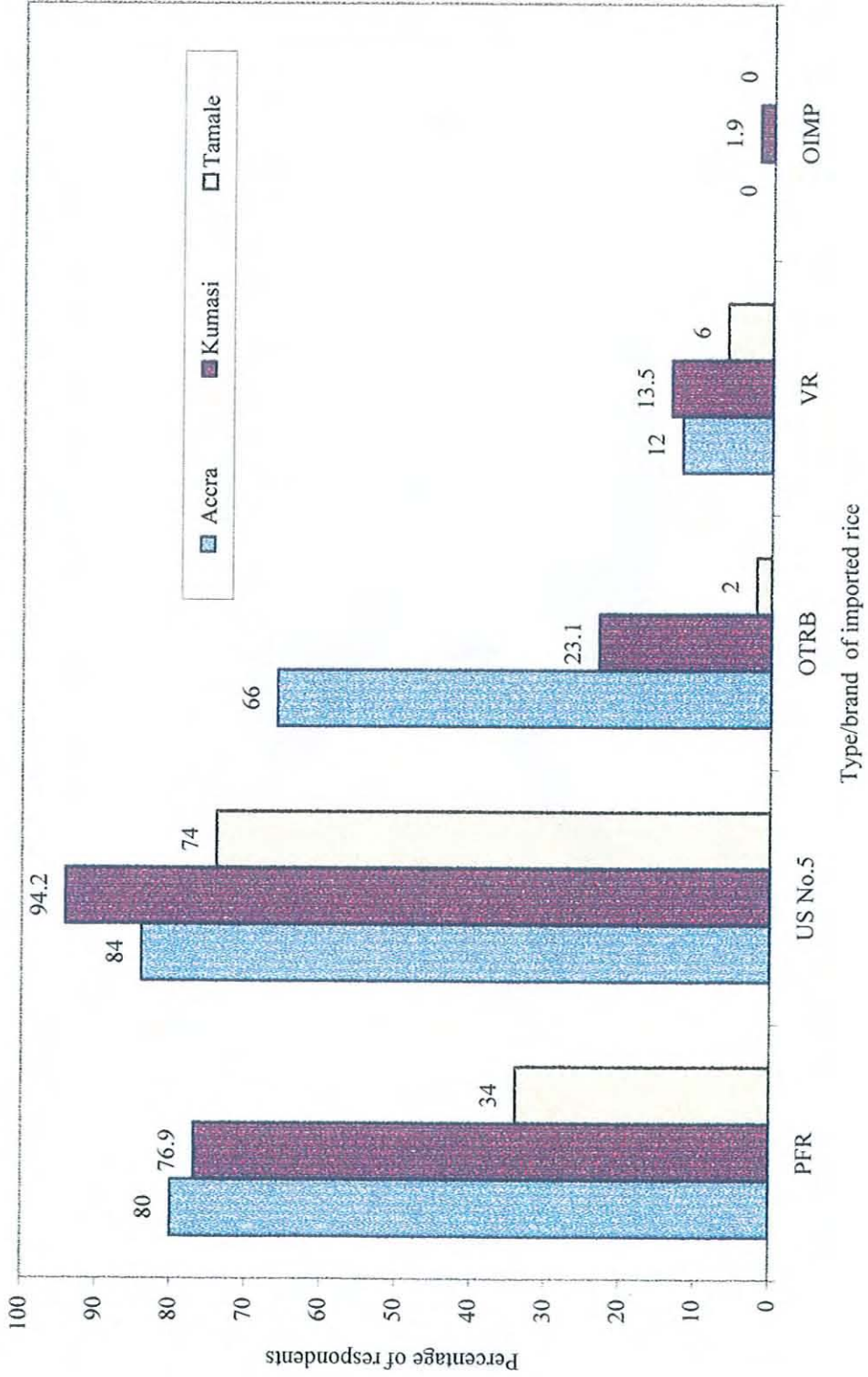
Fig. 5 Frequency of rice consumption in three Ghanaian cities (Accra, Kumasi, Tamale)

Daily
12%

Occasionally
9%

1-3 times/week
47%

4-6 times/week
32%
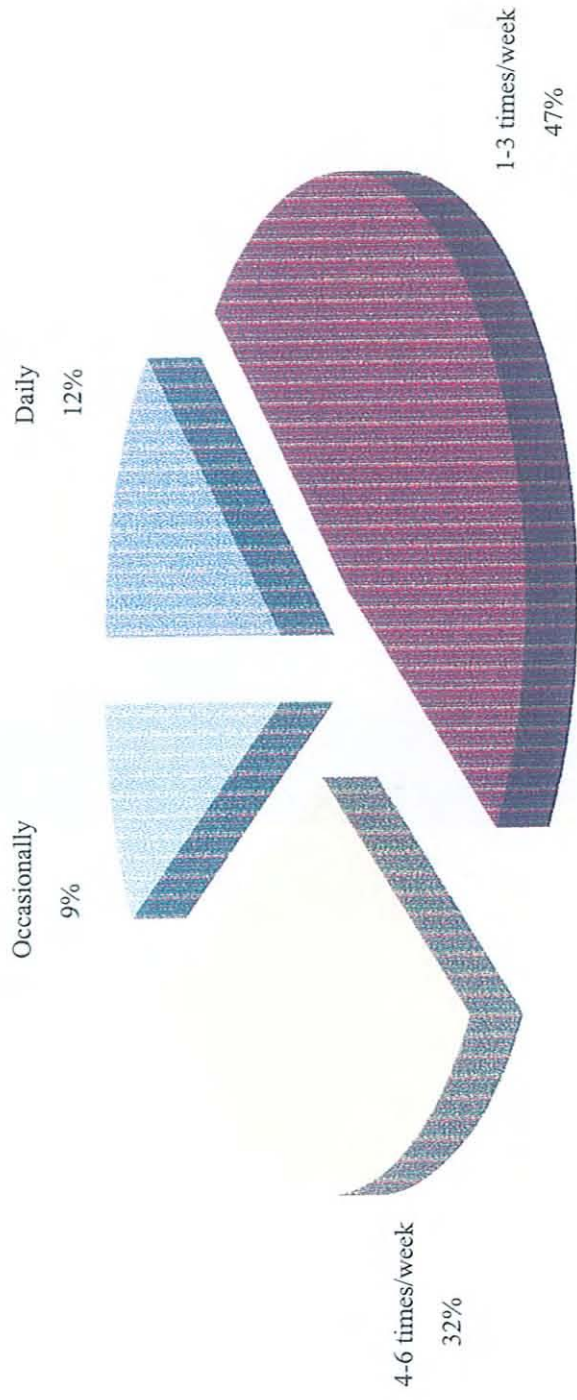
Fig. 6 Percentage of respondents consuming least amounts of rice during certain periods of the year
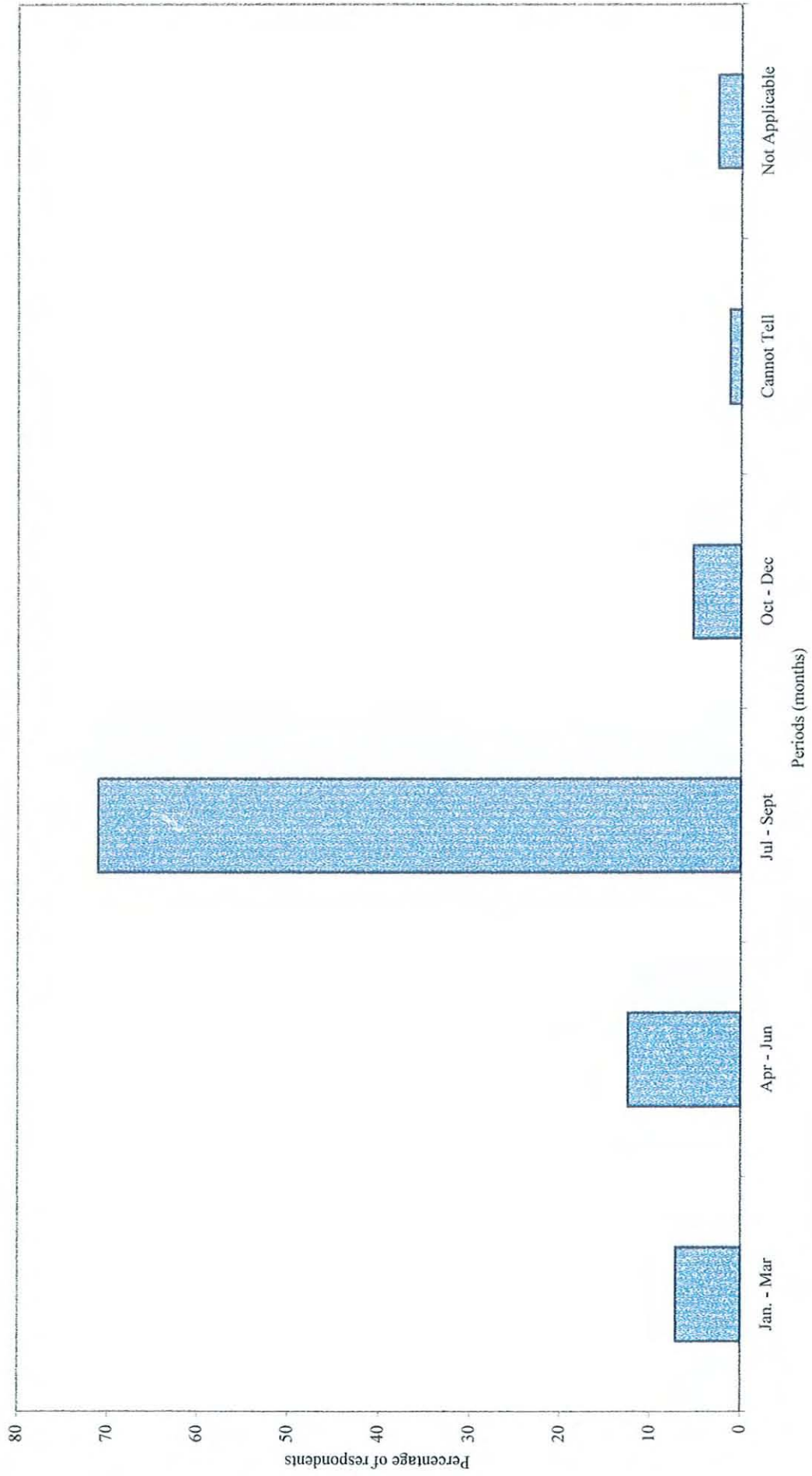
Fig. 7 Reasons for low demand for rice at certain periods of the year in the study areas.
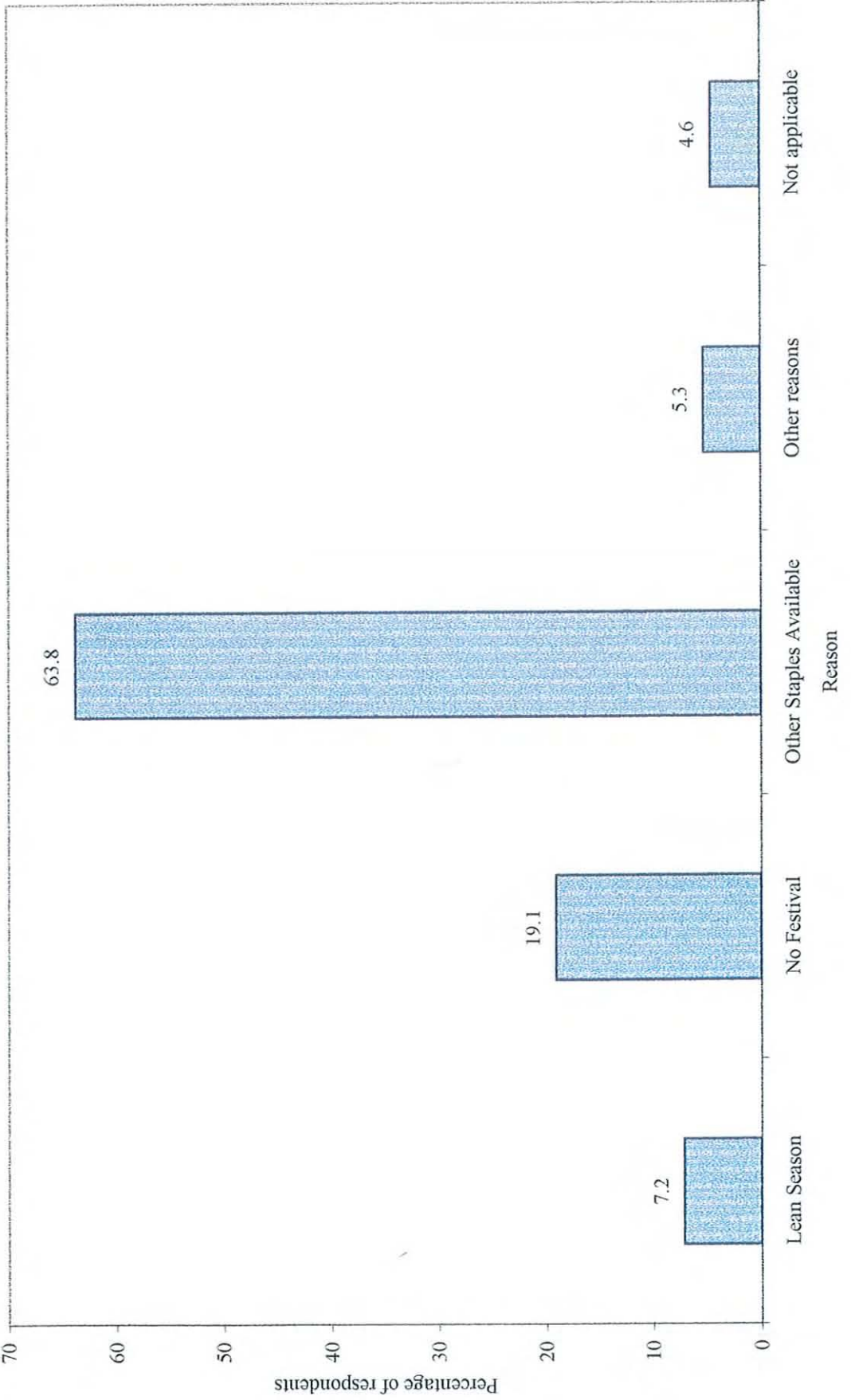
Fig. 8 Average price changes with time (months) of locally produced
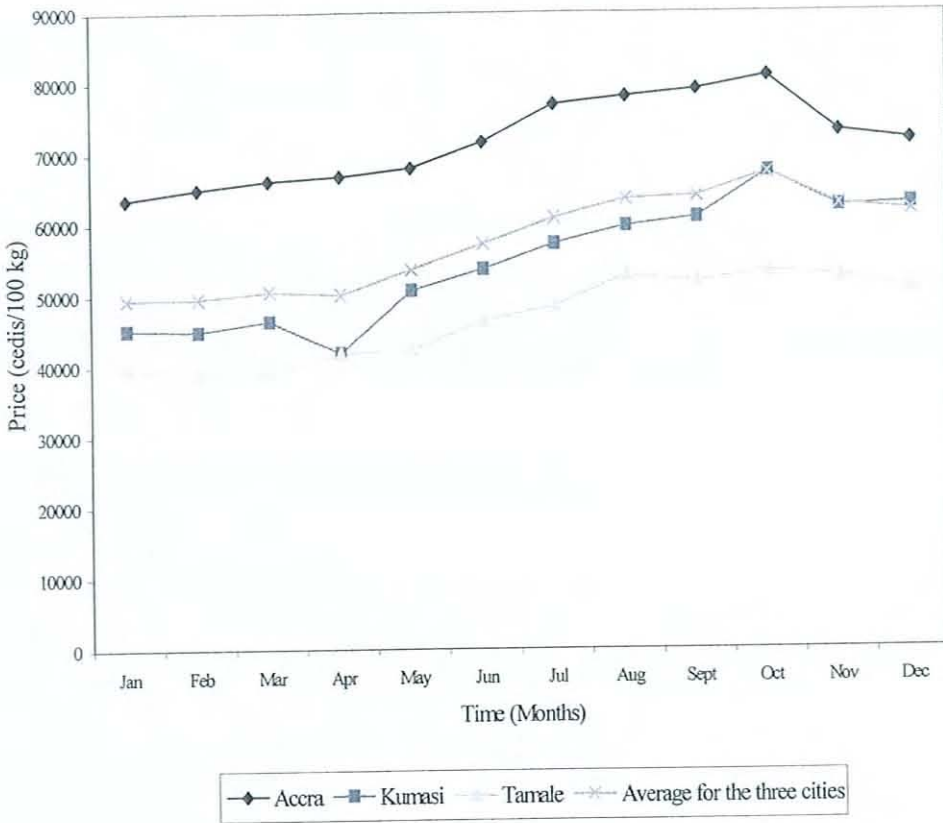rice in Accra, Kumasi and Tamale, and for the 3 cities combined

Fig. 9 Average price changes with time (months) of imported rice in Accra,
Kumasi and Tamale, and for the 3 cities combined