



Constraints of Bean Consumption by the Base of Pyramid (BoP) Consumers in Urban and Peri-urban Nairobi, Kenya

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Introduction

- Malnutrition is one of the main public health challenges globally
- 795 million people globally are undernourished and the vast majority (98%), live in developing countries (FAO, 2015)
- In Kenya, 26% of children under five years are stunted:
- Prevalence is particularly high in urban slums at more than 40%.
- The world is urbanizing;
- Improving dietary quality of urban people and particularly BoP consumers is therefore vital in reducing malnutrition in developing countries

Introduction...

- Increased consumption of beans and bean-based products could play an important role in reducing malnutrition
- Beans are rich in protein, dietary fiber, calcium, iron and vitamins such as folate, and have a very low fat content
- Bean not highly consumed in urban/peri-urban of Kenya
- Understanding factors that limit bean consumption would assist stakeholders in bean sector and policy makers to address those constraints hence increasing bean consumption
- Limited studies exist regarding factors that limit bean consumption especially by the BoP consumers in urban and peri-urban areas
 - This study seeks to contribute to this literature

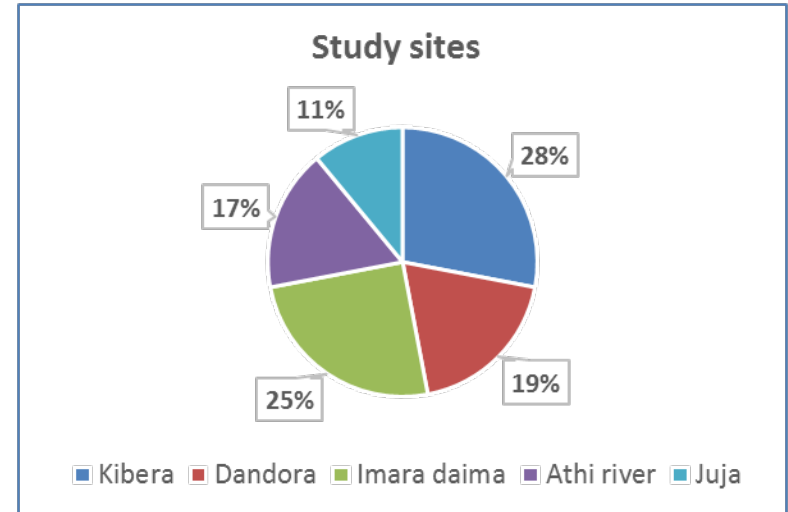
Study objectives

- **Main objective:**
 - Increase knowledge base on bean consumption by BoP consumers in urban and peri-urban of Nairobi
- **Specific objectives:**
 - Assess factors that limit consumption of beans in the study sites
 - Evaluate the association between household wealth status and the different factors limiting bean consumption



Study sites and data collection

- Consumer household survey was conducted in urban and peri-urban of Nairobi between Oct-Nov 2015
- Cross-sectional data were collected from 354 households of different social-economic status, in:
 - Kibera, Dandora, Imara daima, Athi river, and Juja

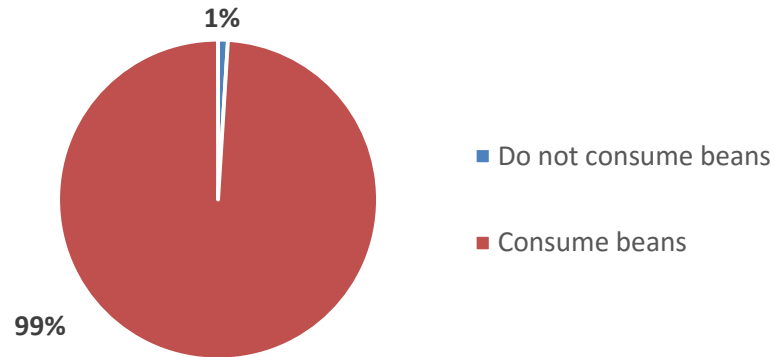




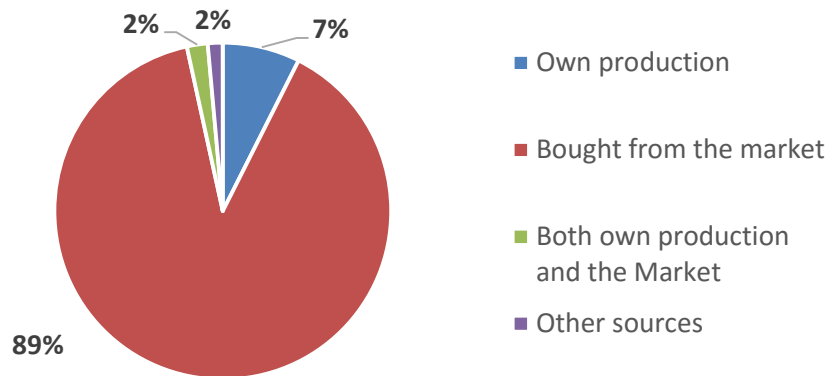
Results

Bean consumption and sources

Bean consumption in the study sites

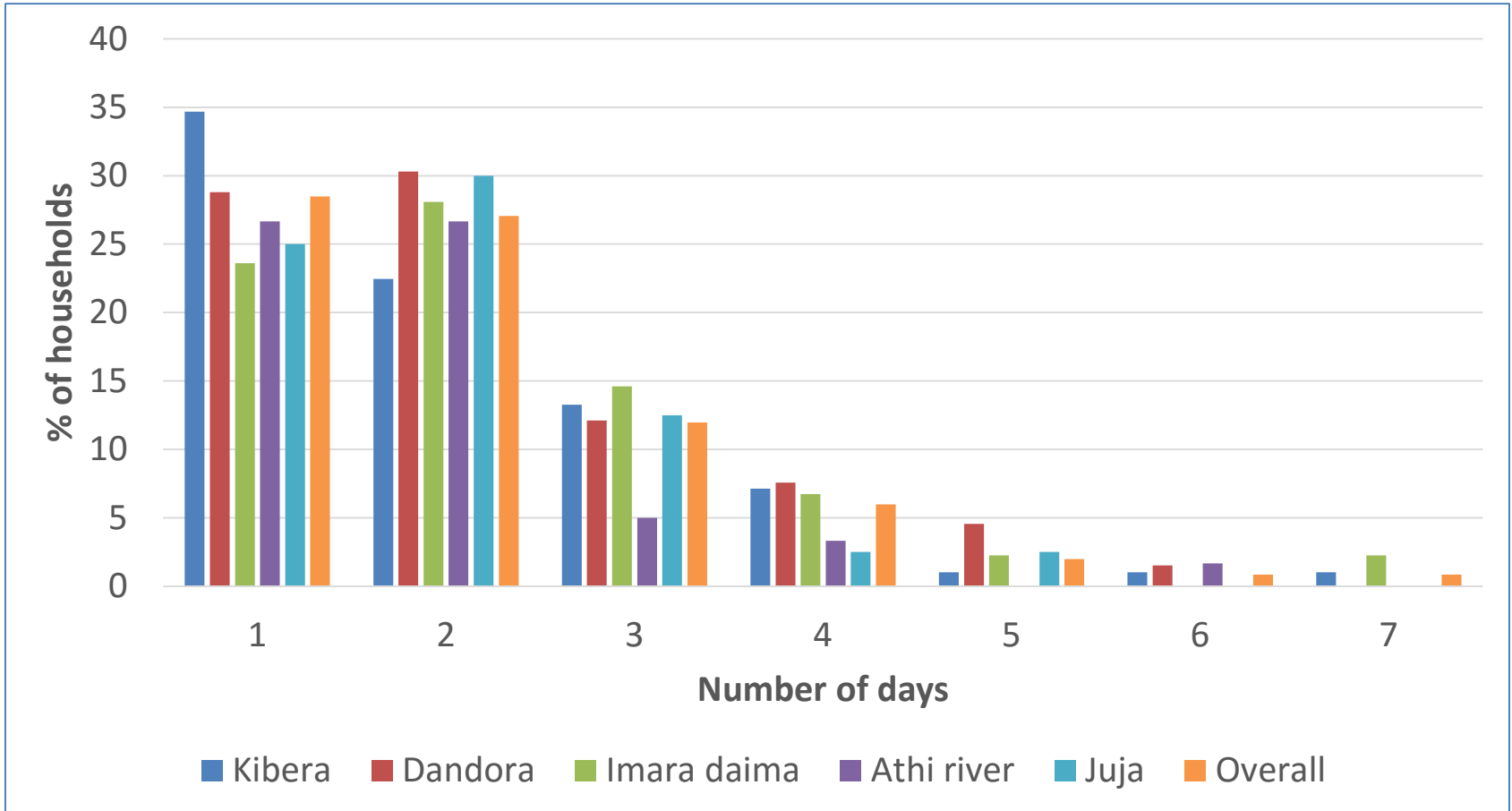


Main sources of beans consumed



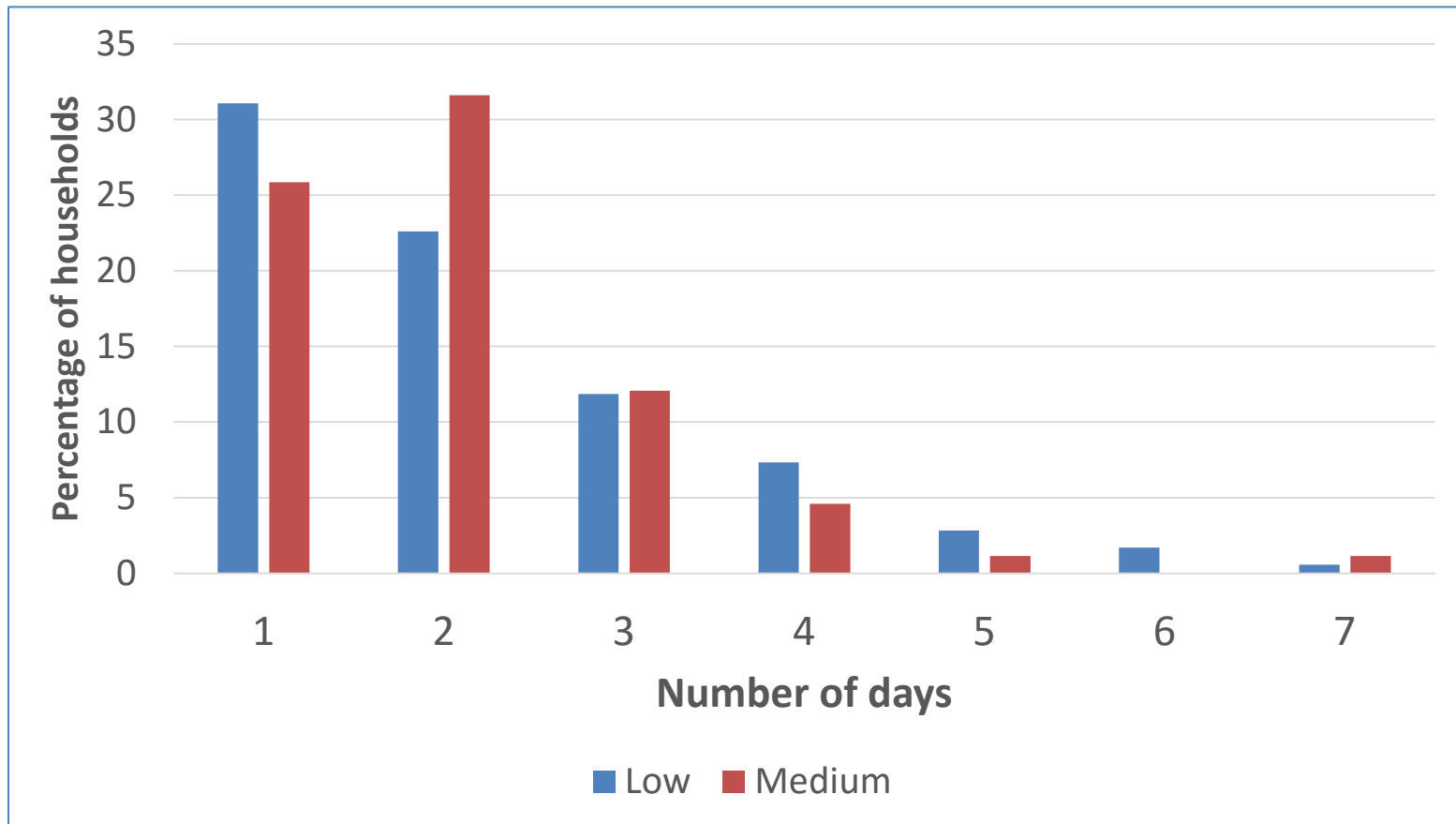
- Beans are highly consumed in the study sites
- The beans consumed are mainly sourced from markets

Frequency of beans consumption: By Sites



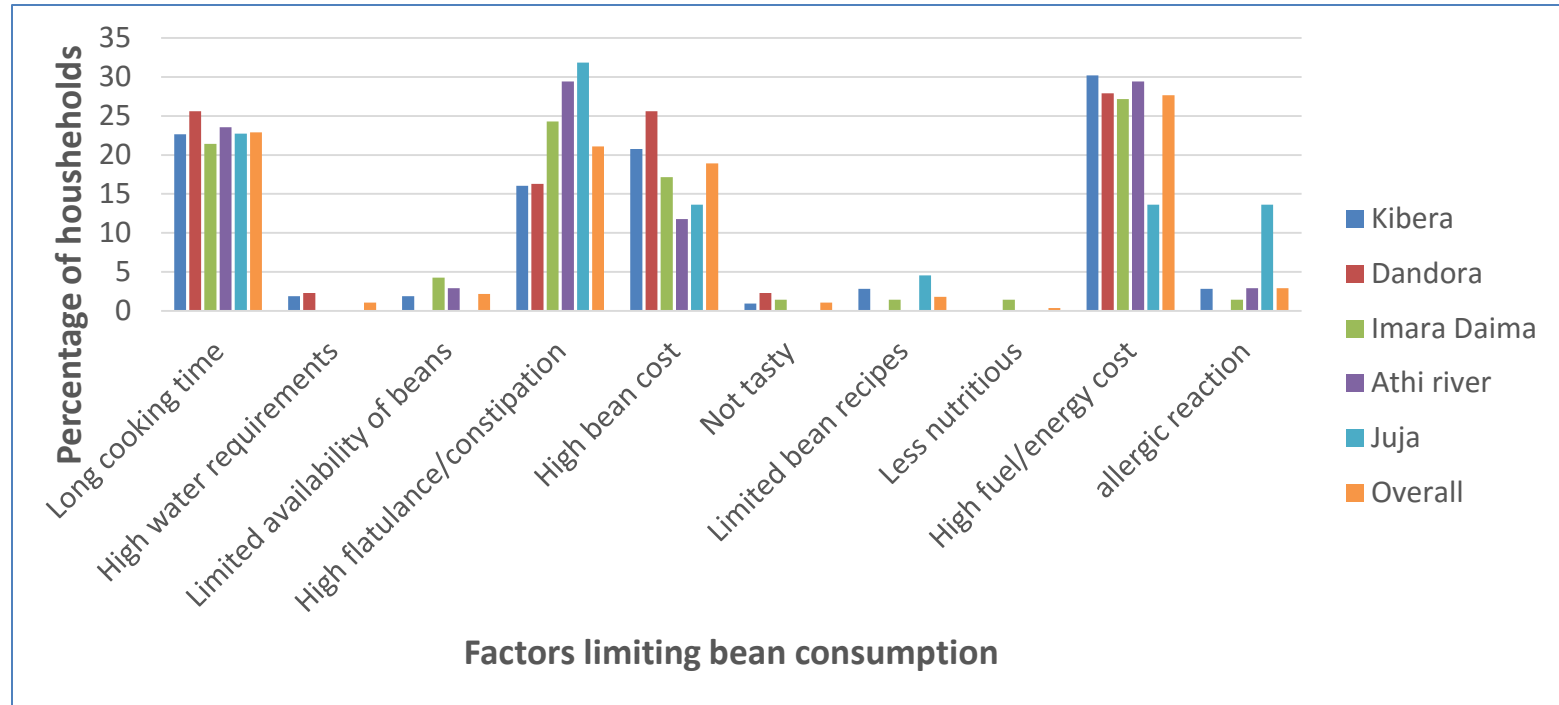
- Beans are mainly consumed one or two days a week

Frequency of beans consumption: Wealth



- Beans are mainly consumed one or two days a week

Factors limiting beans consumption: By study site and overall



- **Overall:** top limiting factors across sites are
 - High fuel/energy cost (28%); Long cooking time (23%); High flatulence (21%); High bean cost (19%)

Factors limiting beans consumption: by wealth status

Table 2: Pairwise comparison of bean consumption constraints by wealth status

	Wealth status	
	Low	Middle
Long cooking time	0.22**	0.14
High water requirement	0.02*	0.00
Limited bean availability	0.02	0.01
High flatulence	0.17	0.16
High bean cost	0.21***	0.07
Not tasty	0.01	0.01
High cost of cooking fuel	0.15***	0.02
Limited bean recipes	0.02	0.01
Short supply from garden	0.01	0.00
Allergic reactions	0.02	0.02

- Low wealth status households are keen on cooking time, water use, cost of beans and cost of fuel used to cook beans

Notes: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Constraints of bean consumption: Multinomial logit regression

Table 3: Regression analysis of factors limiting quantity of beans consumed

	Quantity of beans consumption		
	Low	Medium	High
Cost of beans/kg	0.021** (0.001)	0.001 (0.001)	-0.003** (0.001)
Long cooking time	0.017 (0.074)	0.162* (0.099)	-0.179* (0.098)
Gender	-0.058 (0.045)	0.141* (0.081)	-0.083 (0.073)
Low wealth status	0.101* (0.056)	-0.066 (0.091)	-0.035 (0.090)
Kibera	-1.589*** (0.196)	0.873*** (0.203)	0.715*** (0.196)
Low wealth x Kibera	1.470*** (0.201)	-0.991*** (0.209)	-0.479** (0.198)
Dandora	0.036 (0.065)	-0.237* (0.124)	0.201 (0.128)
Imara_daima	-0.066 (0.067)	-0.051 (0.118)	0.117 (0.127)
Athi-river	-0.167** (0.080)	-0.164 (0.124)	0.332*** (0.127)
Observations	318	318	318

Notes: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$; Dependent variable is quantity of beans consumed (grams) per meal per capita; Other factors were controlled for in this model, e.g. Cost of fuel, complaint on flatulence, age of the head,

- If cost of beans is high, households will consume low quantity of beans, and less likely to consume high quantity of beans
- Long cooking time: Households will consume medium bean quantities

Conclusion and recommendations

- Beans are widely consumed, but there is need to increase frequency and /or quantity of beans consumed in the households
- To increase consumption of beans by the BoP consumers, it will be vital to address the following:
 - Time it takes to cook beans,
 - Cost of beans
 - Flatulence after bean consumption
- Having affordable bean or bean product that take a short time to cook hence saving on fuel cost and time would possibly increase consumption of beans by BoP consumers
- This would contribute in fighting malnutrition in developing countries, especially amongst the BoP consumers

CultiAF and VCN projects in Kenya & Uganda

- Linking with private sector to develop **Precooked beans** (CultiAf project)
- Linking with private sector to develop quick-to-cook nutritious **porridge** (VCN)

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Thank you

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