
**Facilitating the effective production and
marketing of processed food products by small-
scale producers in Zimbabwe**

Output 3.3 Report of consumer survey

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1. INTRODUCTION

1.1 Background to the study

Populations in developing countries are expanding at an average of 3% per year. Urban populations however, are expanding at about 4% (FAO, 1989). FAO (1989) suggests, that the number of people needing food is likely to double in the next 16 years. The supply of food in the towns and cities will need to double approximately every 10 to 14 years (Ibid.). The urban population in Zimbabwe, like many developing countries is growing rapidly. The population of Harare has grown by more than 6% per annum in the last two decades (CSO, 1994).

Urban population growth will undoubtedly impact upon consumption patterns and the type of foods produced. Demand for exotic products from foreign markets have encouraged the development of horticulture production in Zimbabwe, but other contributing factors include increasingly dynamic consumption patterns among the domestic population, due to an emerging domestic middle-class and related changes in consumer tastes (Sena, 1997; Poole *et al.*, 1999). Food habits and tastes are rapidly changing, and therefore producers have to change their cropping patterns. For example, some households have changed from the conventional fresh green produce to the consumption of non-traditional foods such as cauliflower, broccoli, squashes, mange tout, etc, (Sena, 1997).

Food preferences change as populations become more urbanised. Because of urban/rural differences in lifestyles, food availability and accessibility to disposable income, the diets of urban and rural residents generally differ significantly (CTA, 1999; Regmi and Gehlhar, 2001). Urban occupations are often associated with higher wages than rural areas—the latter residents of which are often highly dependent on low-paid agriculture. Increased wealth brings with it an increased demand for product diversity in the form of new products and off-season supplies (FAO, 2001). As society develops and becomes more affluent, the market for processed horticultural products is also likely to increase. Given that a high percentage of urban women are likely to be in full-time work outside the home, and will have correspondingly less time to spend preparing foodstuffs, convenience or processed foods are likely to increase in popularity (Wiggins, Otieno, Proctor and Upton, 2000). Urban population growth, higher incomes and changing lifestyle patterns are likely to lead to increased demand for high-value¹, horticultural processed products such as dried fruits and vegetables, canned produce, fruit preserves and fruit juices for example.

Growth in urbanisation, and concerns about food quality and food safety, are shaping demand as well as influencing future prospects for food marketing and consumption patterns (Regmi and Gehlhar, 2001). Regmi and Gehlhar (2001) point out that consumers in urban areas have better marketing facilities and a greater supply of food products from domestic and foreign producers than consumers in rural areas.

¹ "The term 'value-added' when applied to agricultural products represents the difference between raw commodity costs and the price of the finished output. Raw commodities that have undergone some form of processing adopt the term 'value-added' and the degree of processing significantly affects the consumer price" (Charlet and Rastegari Henneberry, Year unknown: 4)

The change in population distribution may create new or improved opportunities for both farmers and rural employment, particularly with improved transport systems. These changes may create opportunities for small-scale processors to supply products to urban consumers. However, information on the changing food requirements of urban consumers is vital if small-scale food processors are to increase their market share. It is important for the processor to know the types of products that satisfy the needs of urban consumers. This information is often lacking in developing countries due to weak databases (Wiggins, 2000). Statistics on marketing and consumption patterns may be underestimated, particularly for processed fruit and vegetables. Most of the data reported to the FAO by national ministries of agriculture are generally informed guesses since few countries have been able to conduct sample surveys regularly (Ibid.).

Information about the marketing and consumption patterns for processed fruit and vegetable products in Zimbabwe is limited. Data on the nature of consumer demand for these products are important to enable small-scale producer/processors to produce and supply potential markets, thereby enhancing their livelihoods through value-added activities, and at the same time providing consumers with safe and high quality foods.

Consumer preferences in food products are forever changing, driven by the fashions of the local urban market, different cultures and ethnic groups (CTA, 1999). Increased affluence and education are impacting upon consumer choice. "Farmers and food processors who are interested in expanding their businesses have to take customer choice into account, and follow the rule of law, and the rule of thumb as far as hygiene, quality and product image is concerned" (CTA, 1999:4). This is particularly important for the viability of the small-scale sector in view of competition from the large-scale sector and consumer demand. "There are, though, changes afoot in consumer tastes for food. Urban demand is growing, and food-processing enterprises are expanding their range of products, sometimes with the traditional being given a modern, processed presentation" (CTA, 1999:4). New products are being introduced in response to the needs of migrant communities who bring in new food habits (Ibid.). "The forefront of these changes is often at the level of street food stalls, popular for their practicality as well as their exotic side" (CTA, 1999:4). In developing countries, up to 40% of the urban consumers obtain their food products from street vendors (FAO, 2001).

In Zimbabwe, it is common to obtain products from street vendors at market stalls or along the streets, especially in low-income residential areas. However, with increasing urbanisation and changing consumer tastes, often such products are also available in middle- and high-income residential areas.

Products from the small-scale sector are marketed through various outlets such as large supermarkets, street vendors, general dealer shops, tourist shops, etc. For the processor, it is therefore important to understand how produce is distributed and sold (FAO, 1989). The price relationships between the different products in the marketing chain have to be studied (CTA, 1999). It is also desirable to gain knowledge about which companies in the distribution chain have reputations for their products, in terms of price, quality, packaging, and other relevant attributes.

The quality of processed horticultural products does not depend only on processors alone, but on improvements in both products and hygiene upstream, on the farm (CTA, 1999). However, these may be seen differently from one culture to another, embracing not only the actual hygiene of the product itself, but also its 'environment' (packaging). Hence the importance of a food code to protect consumer health (Ibid.). Many developing countries have established

bodies for control and standardisation, which seek to guarantee food safety and the quality of commercialised foods (Ibid.). In Zimbabwe, there are established food control and food standards bodies. It is a general requirement that food processors engaged in the production of food apply the required regulations and standards (Mutasa and Nyamandi, 1998).

Government efforts have been complemented by non-governmental organisations (NGOs) and other players involved in promoting small-scale food processing activities as a potential income enhancer, e.g. among communal area and peri-urban farmers. In the last few years, there has been a desire to increase the number of small-scale food processors, particularly for processed horticultural produce, given losses of such produce (Mathooko, Koaze, Beta and Zharare, 1999). Most of their support tends to focus on production and processing. Limited attention however, has been given to the marketing of products. Issues such as packaging, food labelling, use of food standards and hygiene regulations have not been given sufficient attention. Numerous small-scale enterprises are involved in the production and processing of horticultural products— both exotic and traditional, in Zimbabwe. At the same time, the small-scale sector competes with large-scale producers in the same products. Over 90 % of commercially marketed agro-industrial products in Zimbabwe are dominated by large-scale urban-based enterprises (Murphy, 1996). This dominance poses a major challenge both to government policy in promoting the small-scale food processing sector and the producers themselves in meeting consumer requirements.

Processed products must be packaged in suitable and acceptable packaging materials (CTA, 1999). "Packaging a product gives it appeal, keeps it in good condition, and seduces the customer" (Ibid:4). However, not all enterprises can afford good packaging. Many small food-processing enterprises tend to be put off by the complexity of modern packaging and the investment required (Ibid.). Small-scale horticultural processors in Zimbabwe use various packaging materials such as cans, plastic bottles and glass jars (often recycled) and polythene films. In some cases, the products are sold in vendor-provided containers or packages. This is common with dried products such as fruit and vegetables sold by street vendors and at market stalls. Packaged horticultural products with a trademark are increasing (Segrè, 1998). The appearance of this type of produce in the market place suggests that many developing countries will industrialise the mass production and processing of vegetables, leading to the establishment of a number of domestic and global name brands of their own.

As more and more people migrate to towns and cities, they become far removed from natural sources of fresh foods. Further, the economical production of the perishable commodities is generally limited to certain farming seasons and localities. In Zimbabwe, there is an abundant supply of fresh fruits and vegetables during the rainy season and the same commodities are scarce in the dry season (Mathooko *et al.* 1999). To meet the demand of the urban population during the entire year, commodities have to be preserved by processing, or fresh or processed products must be imported from elsewhere (CTA, 1999).

The supply of value-added products also contributes to food security and brings better economy to the producer. Value-added products tend to fetch better prices. Typical value-added horticultural (exotic) products processed by the small-scale sector in Zimbabwe include dried mango and paw-paw, and fruit preserves such as jams, jellies and marmalades. The sector also produces low-cost traditional products like dried vegetables (e.g. *mufushwa*). Most of these products find their way into the shopping baskets of low-, middle- and high-income households. There is however need to know consumer preferences, in terms of packaging and labelling, range of products, market outlets where sold, etc. for the provision of desirable food products to consumers.

For example, in Vietnam much of the increased urban demand for horticultural produce, particularly perishable crops, is being met by peri-urban production (Segrè, 1998). Segrè (1989) further reports that fresh vegetables provide about US\$650 value-added (returns to labour, land and management) per farm yearly for peri-urban vegetable farmers in Vietnam. Guatemala provides a similar example (Segrè, 1998).

FAO (1989) reported that the production-marketing chain is a two-way process, where produce flows from rural to urban areas. Meanwhile, money and information should flow back. The rural community can use the information to target production to meet consumer tastes in urban areas.

Due to new processing techniques, novel products can be developed from familiar local primary products. Many businesses and cooperatives have launched whole new product lines based on a narrow range of farm produce (CTA, 1999). The demand for novel foods is largely driven from emerging middle-class urban consumers who have higher disposable incomes and different tastes. Further, urban middle- and upper-income consumers tend to look for generally high quality products and this can create some kind of competition among the producers.

1.2 Objectives of the consumer survey research

The main objectives of the consumer survey research were:

- To obtain information on the consumption and purchasing patterns of urban households in relation to a range of processed horticultural products, i.e. dried fruit and vegetables, and fruit preserves;
- To consider any differences in consumption and purchase patterns across income groups;
- To obtain information on consumer perceptions of small-scale and large-scale food processors and their products (dried fruit and vegetables, and fruit preserves);
- To consider consumer preferences for products produced by the small- or large-scale sector, and the reasons for such preferences;
- To gain information on consumer preferences (for dried fruit and vegetables, and fruit preserves), which would be beneficial to small-scale food processors currently operating in Zimbabwe, or those thinking of entering the market for such products.

1.3 Organisation of the report

The methodology used to carry out the consumer survey research is described in Chapter 2. The selection and use of various research instruments are discussed. The income and ethnic groups considered in the research are described, and a list of the residential areas where the survey was conducted is included. The section also gives some reflection on the selected methodologies used. Chapter 3 highlights various characteristics (socio-economic group, ethnicity, education, employment, incomes and expenditures) of the households sampled.

The consumption and purchase patterns of the three study products—dried fruit, fruit preserves and dried vegetables are discussed in Chapters 4, 5 and 6 respectively. Each chapter commences with a definition of the products, followed by a discussion of the consumption and purchasing patterns observed. Consumer perceptions of the respective products produced by both the small- and large-scale sectors are discussed. Changes in the consumption levels of dried fruit, dried vegetables and fruit preserves are also included.

The main findings of the research are discussed in Chapter 7. Some contrasts and comparisons of the consumption and purchasing patterns of the three products are given. The comparisons focus on the role of the products in the local diet, consumer attitudes and preferences. An overview of the opportunities available to small- and large-scale processors is also given. The chapter concludes by highlighting the policy implications of the research findings and a series of recommendations.

2. METHODOLOGY

2.1 Introduction

The consumer survey was carried out with 500 households across various residential areas of Harare, characterised as high-, medium- and low-income suburbs. The characterisation of suburbs into high-, middle- and low-income areas was essentially based on policies of racial segregation of population into residential areas. "The political context in Harare has profoundly influenced the city's physical form and urban space, and the policies of segregation pursued by the settler community are imprinted on the urban fabric" (Brown, 2001:321). It is therefore important to note that most Zimbabwean cities (including Harare) still "reflect colonial planning traditions designed to promote racial segregation" of population (Ibid.319). "Modern planning has reinforced this historic polarisation, and the former racial divide has become an income divide in the post-independence city" (Ibid.321). There is almost complete segregation of high- and middle-income areas from low-income (indigenous) communities (See Figure 1). High-income (or low-density) suburbs dominate the area north of the Central Business District (CBD), and extend eastwards as far as Highlands. Middle-income settlements are located in the northwest and in the south. Low-income (or high-density) communities are found mainly in the southwestern segment of the city, extending west of Mbare. The other main suburbs with high-density housing are located in the east (Tafara, Mabvuku, and Ruwa) and the south (e.g. Epworth, which lies just beyond the city boundary). In fact, where possible, housing for the local indigenous population has been exported beyond the city limits, so that today a number of low-income areas are located along the peri-urban fringe (Brown, 2001).

2.2 Selection of suburbs

The survey was conducted across 13 suburbs: two high-income, four middle- and seven low-income suburbs (Table 2.1). The suburbs were randomly selected.² The sample of households was divided as follows: 11.2% of households sampled were from the high-income group, 28.8% from the middle- and 60% from the low-income group. It was particularly difficult to get accurate information on current income levels in Zimbabwe due to spiralling inflation. Data from the Central Statistics Office for the end of 2000, suggests that 6% of Harare's working population is in the high-income group, 30% in the middle- and 64% in the low-income group. Therefore the sample selected was not too far removed from the latter, apart from the survey having a slightly higher representation of high-income households. Although ethnicity was also considered, given the importance of cultural specificity in terms of household consumption patterns, socio-economic status was the key variable used to differentiate households.

² See Appendix 1 for a list of all residential suburbs in greater Harare area.

Table 2.1 Residential suburbs where survey conducted

Income Group	Suburb of Harare	No. households	% sample
High	Greendale	25	5.0
	Highlands	31	6.2
	<i>All</i>	<i>56</i>	<i>11.2</i>
Middle	Masasa Park	26	5.2
	Queensdale	47	9.4
	Greencroft	18	3.6
	Mabelreign	53	10.6
	<i>All</i>	<i>144</i>	<i>28.8</i>
Low	Mabvuku	48	9.6
	Tafara	30	6.0
	Mbare	65	13.0
	Hatcliffe	58	11.6
	Hatcliffe Extension	7	1.4
	Kuwadzana	59	11.8
	Kuwadzana Extension	33	6.6
	<i>All</i>	<i>300</i>	<i>60.0</i>

2.2.1 Selection of households

Once the suburbs were agreed, interviewers randomly selected households to participate in the survey. The survey was carried out 'door-to-door'. A systematic (1-in-k) sampling procedure was utilised whereby every fifth household was visited and invited to participate in the survey. Where a household declined to participate, the facilitator simply called on the next household.

2.2.2 Gender of respondents

The questionnaire targeted female heads of households in particular, given that they are essentially those responsible for the purchase and preparation of food products consumed at the household level. Where a female head of household was unavailable, the survey was carried out with another adult household member, preferably someone who was familiar with the food purchasing habits and consumption patterns of the household. The final sample was made up of 305 female heads of households. However, gender is not given explicit focus in the analysis, as the survey focused on household (and not individual) consumption patterns.

2.3 Research instrument

The consumer survey instrument was drawn up from the findings of a series of focus group discussions carried out with high-, middle- and low-income consumers in Harare (See Gadaga *et al.* 2001). Once drawn up, the survey was piloted with a sample of 25 households across nine suburbs of Harare.³ Refinements were made to the research instrument on the basis of the pilot study, before being applied to the full sample of 500 households.

³ The pilot study was also conducted in low- (Mbare, Kuwadzana and Mabvuku), middle- (Masasa Park/Queensdale, Parktown/Waterfalls and Greencroft) and high-income suburbs (Greendale, Mount Pleasant and Borrowdale).

Table 2.2 Profile of the study products

Section	Data collected
Consumption patterns	<ul style="list-style-type: none"> • Frequency of consumption • Source of product, most frequent source
Purchasing patterns	<ul style="list-style-type: none"> • Types of product purchased • Frequency of purchases • Quantity purchased • Place of purchase, most frequent place of purchase • Type of packaging, most frequent type of packaging
Consumer perceptions of small-scale (SS) processors	<ul style="list-style-type: none"> • Whether purchase from SS processors • Rating of SS, overall rating of SS, • Importance of factors for SS processors to better meet demand, • Purchase from particular SS processor, location, • Reasons why purchase from SS, No. years purchasing from SS, Connections (if any) with SS, Factors important for choosing which SS processor.
Consumer perceptions of large-scale (LS) processors	<ul style="list-style-type: none"> • Whether purchase from LS processors • Rating of LS, overall rating of LS • Importance of factors for LS processors to better meet demand, • Purchase particular brand of product, brand name(s), • Reasons why purchase particular brand, No. years purchasing particular brand, Factors important for choosing particular brand.
Preference	<ul style="list-style-type: none"> • Preference for SS or LS products, Reasons for preference
Changes in consumption levels	<ul style="list-style-type: none"> • Consume more/less product than 3 years ago • Reasons for consuming more/less of product • Reasons why can't/don't consume more of product

The consumer survey was divided into four sections, including a section on each of the three products chosen for detailed study: dried fruit products, dried vegetables and fruit conserves (including jams, jellies and marmalades). Questions focused on the consumption and purchase patterns of households with respect to each product (Table 2.2). The final section of the survey recorded socio-economic data relating to the household. Table 2.3 below summaries the data collected.⁴

Table 2.3 Socio-economic data collected

Section	Data collected
Respondent characteristics	<ul style="list-style-type: none"> • Gender • Age • Ethnicity • Education • Employment status (sole breadwinner)
Household characteristics	<ul style="list-style-type: none"> • Household structure (No. children, adults) • No. income earners (children/adults) • Years resident in particular suburb, previous residence • Income-level, most important source of income • Ownership of capital goods, access to media
Household expenditure	<ul style="list-style-type: none"> • Approx. expenditure on food • Approx. expenditure on processed fruit and vegetables

⁴ See Appendix 2 for a copy of the survey instrument.

2.4 Data collection and analysis

2.4.1 5-point Likert scales

Few of the questions in the survey were open-ended. Various sections of the survey involved the application of a 5-point Likert scale. Respondents were asked to indicate on the 5-point Likert scale, the importance of a number of attributes. Such linear rating scales list the attributes, and adjacent to each item, an importance scale of '1 to 5' is marked. Each respondent is then asked to rate the importance of each attribute using the rating definitions. A definition of what each importance rating value means is provided (e.g. 5 = Very good, 4 = Good, 3 = Neither good nor poor, 2 = Poor, 1 = Very poor). The average rating (mean score) and standard deviation are then computed for each attribute.

2.4.2 Data analysis

The pre-coded survey data was entered into the SPSS statistical package. Simple descriptive statistics such as means, percentages and frequency distributions were estimated to summarise responses for the entire sample. The second part of the analysis involved the application of a variety of multivariate methods.

2.5 Reflections on the methodology used

Despite making significant changes to the research instrument in response to the pilot study, the survey was still lengthy and heavily laden. Therefore the actual application of the survey was a lengthy process. Facilitators experienced difficulties, particularly in low-income areas, obtaining data on socio-economic status and ownership of capital goods, as respondents were often not willing to divulge such information. Therefore there are some instances in the presentation, where data are missing. Where necessary, the number of households that responded to a particular question is clarified ($n = x$).

3. CONSUMER PROFILE

3.1 Distribution of households

The consumer survey was carried out with 500 households in the Greater Harare area. Most households (96.0%) were of African ethnic origin (Table 3.1). Households of European, Asian and other ethnic origins accounted for the remaining 4% of the sample. The ethnic division of the sample was similar to the national picture (1992 census). However, given that the study focused on Zimbabwe's urban population, it is possible that the European population is not over-represented within the sample.

Table 3.1 Distribution of sample by ethnic origin

Ethnic Group	No. of households	% Sample	National figures* (1992) %	National figures (date unknown) %
Black African	480	96.0	98.8	96.0
White/European	14	2.8	0.8	3.5
Asian	1	0.2	0.1	
Other	5	1.0	0.3	0.5**
Total	500	100.0	100.0	

*Source: CSO, 1998:16

**The other group includes those of mixed African and European or Indian descent, and Asians or Indians. Source: <http://www.atlapedia.com/online/countries/zimbabwe.htm>

Of the sample, 11.2%, 28.8% and 60% of households were classified as high-, middle- and low-income respectively (Table 3.2). Note that income groups were based on residence in high-, medium- or low-density areas as explained in Chapter Two. The majority of households of European ethnic origin were among the high-income group—71% in all. In contrast, just 9% of households of African origin were among this socio-economic group and 62% were among the low-income group.

Table 3.2 Income group of household according to ethnicity

Ethnic Group	Income group									Total		
	High			Middle			Low					
	Count	% Ethnic Group	% Income Group	Count	% Ethnic Group	% Income Group	Count	% Ethnic Group	% Income Group	Count	% Ethnic Group	% Income Group
African	42	8.8	75.0	139	29.0	96.5	299	62.3	99.7	480	100.0	96.0
European	10	71.4	17.9	4	28.6	2.8				14	100.0	2.8
Asian	1	100.0	1.8							1	100.0	0.2
Other	3	60.0	5.4	1	20.0	0.7	1	20.0	0.3	5	100.0	1.0
All	56	11.2	100.0	144	28.8	100.0	300	60.0	100.0	500	100.0	100.0

Of the 500 households sampled, 204 households (40.8%) indicated that they had been living in their current suburbs for a period less than five years (Table 3.3). Of the latter group, 124 households had previously lived in other suburbs of Harare, and 42 households had resided in other provinces—ten in Mashonaland East province. However, approximately 35% of households had been residing in their current suburb for more than 10 years—55.3% of high-, 37.5% of middle- and 30% of low-income households had done so. Only 2.6% of households

had lived in their current suburb for a period of 31 years or more—all of whom were among the low-income group.

Table 3.3 Number of years household resident in suburb

No. of years	Income Group						Total	
	High		Middle		Low			
	Count	% Group	Count	% Group	Count	% Group	Count	% Group
Less than 5 years	14	25.0	53	36.8	137	45.7	204	40.8
6-10 years	11	19.6	37	25.7	73	24.3	121	24.2
11-20 years	25	44.6	37	25.7	58	19.3	120	24.0
21-30 years	6	10.7	17	11.8	19	6.3	42	8.4
31 years or more					13	4.3	13	2.6
All	56	100.0	144	100.0	300	100.0	500	100

3.2 Distribution of respondents

The questionnaire targeted female heads of households, given that they are essentially those responsible for the purchase of food products consumed within the home. In fact, 61% of respondents were female heads of households. Where the female head of household was not available, the survey was carried out with another adult (usually female) household member who was involved in the purchase of foodstuffs and/or preparation of meals within the home. Of the 500 respondents, 89.4% were females and 10.6% were males (Table 3.4).

Table 3.4 Gender of respondents

Position in household	Gender of respondent						Total		
	Male			Female					
	Count	% Group	Table %	Count	% Group	Table %	Count	% Group	Table %
Head of household	36	67.9	7.2	305	68.2	61.0	341	68.2	68.2
Other adult household member	17	32.1	3.4	142	31.8	28.4	159	31.8	31.8
All	53	100.0	10.6	447	100.0	89.4	500	100.0	100.0

The majority of respondents (87%) were between 20 and 49 years of age (Table 3.5). Just 6.8% of respondents were aged 50 years or more.

Table 3.5 Age of respondents

Cohort	Gender of respondent						Total		
	Male			Female					
	Count	% Cohort	% Group	Count	% Cohort	% Group	Count	% Cohort	% Group
18-19 years	2	6.5	3.8	29	93.5	6.5	31	100.0	6.2
20-29 years	29	14.2	54.7	175	85.8	39.2	204	100.0	40.9
30-39 years	9	7.4	17.0	112	92.6	25.1	121	100.0	24.2
40-49 years	9	8.3	17.0	100	91.7	22.4	109	100.0	21.8
50-59 years	4	13.3	7.5	26	86.7	5.8	30	100.0	6.0
60-69 years				3	100.0	0.7	3	100.0	0.6
70+ years				1	100.0	0.2	1	100.0	0.2
All	53	10.6	100.0	446	89.4	100.0	499	100.0	100.0

Note: Missing data for one respondent.

3.2.1 Education and employment

Table 3.6 suggests that just 1% of respondents had received no formal education—all of whom were females of African ethnic origin and among the low-income group. However, 80% of respondents had been educated to at least 'O'level grade, and 21% had received a postgraduate or professional qualification. However, education levels across ethnic groups differed. Only 19% of respondents of African ethnic origin had been educated to postgraduate/professional diploma level, compared to 12 of the 14 respondents of European origin.

Table 3.6 Education of respondent according to ethnicity

	Ethnic Group								Total	
	African		European		Asian		Other		Count	% Group
	Count	% Group	Count	% Group	Count	% Group	Count	% Group		
No education	5	1.0							5	1.0
Completed primary school	33	6.9							33	6.6
Up to form 2/ZJC	61	12.7							61	12.2
Up to O'level	246	51.3	1	7.1			3	60.0	250	50.0
Up to A'level	27	5.6	1	7.1	1	100.0	1	20.0	30	6.0
Undergraduate	15	3.1							15	3.0
Postgraduate/Professional Diploma	92	19.2	12	85.7			1	20.0	105	21.0
Other	1	0.2							1	0.2
All	480	100.0	14	100.0	1	100.0	5	100.0	500	100.0

Males of African ethnic origin tended to receive much higher levels of education than their female counterparts—only 23.6% of females were educated beyond 'O'level, whereas 64.6% of males were educated beyond this level (Table 3.7).

Table 3.7 Levels of education among male and female respondents of African ethnic origin

	Male		Female		Total	
	Count	% Group	Count	% Group	Count	% Group
No education			5	1.2	5	1.0
Completed primary school	2	3.9	31	7.2	33	6.9
Up to form 2/ZJC	4	7.8	57	13.3	61	12.7
Up to O'level	12	23.5	234	54.5	246	51.3
Up to A'level	9	17.6	18	4.2	27	5.6
Undergraduate	7	13.7	8	1.9	15	3.1
Postgraduate/Professional Diplomas	17	33.3	75	17.5	92	19.2
Other			1	0.2	1	0.2
All	51	100.0	429	100.0	480	100.0

Of the respondents, 35.3% were in employment at the time the survey was conducted and a further 28.5% were self-employed (Table 3.8). Employment levels across income groups differed somewhat—51.8% of high-income respondents, 46.5% of middle- and 26.8% of low-income respondents were in employment at the time the survey was carried out. Unemployment was more common among respondents in the low-income group. Furthermore, a higher share of respondents in the low-income group was self-employed (35.5%), compared to those in middle- and high-income households (16.7% and 21.4% respectively).

Table 3.8 Employment status of respondents

	Income group						Total	
	High		Middle		Low		Count	% Group
	Count	% Group	Count	% Group	Count	% Group		
Employed	29	51.8	67	46.5	80	26.8	176	35.3
Self-employed	12	21.4	24	16.7	106	35.5	142	28.5
Unemployed	15	26.8	53	36.8	113	37.8	181	36.3
All	56	100.0	144	100.0	299	100.0	499	100.0

Note: Data missing for one respondent.

3.3 Household membership

The majority of households (57.4%) had at least one child under the age of five years. Only 17.8% had two or more children less than five years of age. Most households (70%) also had at least one child between 6-17 years of age. Just 18.4% of households had three or more children within this age group. The median number of children (17 years or under) per household was 2.00, irrespective of income group (Table 3.9).

Table 3.9 Number of children per household

	Mean	Median
Number of children under 5 years		
High (n=56)	0.39	.00
Middle (n=144)	0.69	.00
Low (n=300)	0.94	1.00
All (n=500)	0.81	1.00
Number of children between 6-17 years		
High	1.54	2.00
Middle	1.56	1.50
Low	1.42	1.00
All	1.47	1.00
Total number of children		
High	1.93	2.00
Middle	2.25	2.00
Low	2.36	2.00
All	2.28	2.00

Most households (80.2%) had between two and four adults within the 18-64 year cohort. Few households sampled (6.2%) had only one adult member within this age group. Only 4.8% of households had an adult over 65 years of age.⁵ This low frequency of adults over 65 years may be due to the tendency for elderly urban dwellers to relocate to rural areas to spend their later years of life. The median number of adult members per household was 3.00, except among the low-income group, which had slightly fewer adults, with a median of 2.00 (Table 3.10).

Table 3.10 Number of adults per household

	Mean	Median
Income Group		
High	3.36	3.00
Middle	3.28	3.00
Low	2.92	2.00
All	3.07	3.00

3.4 Household incomes and expenditures

For the majority of households (70.3%), their most important source of income was a salary or wage—irrespective of the income group to which they belonged (Table 3.11). However, a greater share of high-income households depended on income from self-employment in a business than middle- or low-income households—35.7%, 18.2% and 27.0% respectively.

⁵ Figures (1990) from the Central Statistical Office suggest that life expectancy at birth is 61 years (CSO, 1998:19). That of males is 58 years and females 62 years (Ibid.).

Table 3.11 Most important source of household income

Source of income	Income group						Total	
	High		Middle		Low			
	Count	% Group	Count	% Group	Count	% Group	Count	% Group
Salary/wage	35	62.5	106	74.1	210	70.0	351	70.3
Own business	20	35.7	26	18.2	81	27.0	127	25.5
Farming			1	0.7	1	0.3	2	0.4
Pension	1	1.8	7	4.9	3	1.0	11	2.2
Other			3	2.1	5	1.7	8	1.6
All	56	100.0	143	100.0	300	100.0	499	100.0

Note: Missing data for one household.

Of the households sampled, 44.3% had only one breadwinner within the home (Table 3.12).⁶ Low-income households were much more likely to rely on a sole breadwinner than households in other income groups—54.5% compared to 29.5% of middle- and 28.6% of high-income households. In fact, the median number of adult income earners per household was 2.00, with the exception of the low-income group, which had a median of 1.00 per household. Across the entire sample, only eight households had an income earner that was a minor—all of which were low-income households of African ethnic origin.

Table 3.12 Share of households with sole breadwinner

Income Group	Sample* (No. households)	Households with sole breadwinner		Mean	Median
		No.	% Group		
High	56	16	28.6	2.38	2.00
Middle	139	41	29.5	2.19	2.00
Low	288	157	54.5	1.70	1.00
All	483	214	44.3	1.92	2.00

Note: *Insufficient data for 17 households in the sample.

Of the 449 households that gave estimates of their net monthly incomes, 29.4% of households indicated their income was greater than Z\$100,000 per month (Table 3.13). The high-income group had incomes in excess of Z\$50,001 per month, compared to the low-income group, of which 68.9% of households had incomes below Z\$50,000 per month.⁷

⁶ 94% of households had between one and three adult income earners.

⁷ Note that at the time the consumer survey was carried out (November 2002), the official exchange rate was ZW\$80 to GBP1 and the parallel rate (i.e. rate on the black market) was ZW\$1000 to GBP1.

Table 3.13 Approximate monthly household income

Approximate total monthly income	Income group						Total	
	High		Middle		Low			
	Count	% Group	Count	% Group	Count	% Group	Count	% Group
<Z\$ 10,000			2	1.5	21	8.2	23	5.1
Z\$ 10,001-20,000			9	6.6	48	18.7	57	12.7
Z\$ 20,001-30,000			3	2.2	47	18.3	50	11.1
Z\$ 30,001-50,000			13	9.5	61	23.7	74	16.5
Z\$ 50,001-70,000	3	5.5	26	19.0	32	12.5	61	13.6
Z\$ 70,001-100,000	9	16.4	22	16.1	21	8.2	52	11.6
>Z\$ 100,001	43	78.2	62	45.3	27	10.5	132	29.4
All	55	100.0	137	100.0	257	100.0	449	100.0

Note: Missing data for households that declined to respond to question.

Table 3.14 suggests that 98% of high-income households spend in excess of Z\$20,000 per month on their food bill. This contrasts with the low-income group, 73% of whom spend less than Z\$20,000 per month on food.

Table 3.14 Approximate monthly household expenditure on food

	Income Group						Total	
	High		Middle		Low			
	Count	% Group	Count	% Group	Count	% Group	Count	% Group
<Z\$ 1,500					6	2.2	6	1.3
Z\$ 1,501-5,000					31	11.5	31	6.8
Z\$ 5,001-10,000			10	7.4	53	19.6	63	13.8
Z\$ 10,001-15,000			11	8.1	59	21.9	70	15.4
Z\$ 15,001-20,000	1	2.0	16	11.8	48	17.8	65	14.3
Z\$ 20,001-25,000	11	22.4	22	16.2	19	7.0	52	11.4
Z\$ 25,001-30,000	10	20.4	24	17.6	24	8.9	58	12.7
>Z\$ 30,001	27	55.1	53	39.0	30	11.1	110	24.2
All	49	100.0	136	100.0	270	100.0	455	100.0

Note: Missing data for households that declined to respond to question.

Across the entire sample, 86.9% of households spent Z\$5,000 or less per month on processed fruits and vegetables. However, expenditures on processed fruits and vegetables differed across income groups—a quarter of high-income households spent more than Z\$5,000 per month on such products, compared to 13% of middle- and 11% of low-income households (Table 3.15). Almost half the low-income group (49.3% of households) spent less than Z\$1,500 per month on such products, compared to 32.9% of middle- and 21% of high-income households.

Table 3.15 Approximate monthly household expenditure on processed fruits and vegetables

	Income Group						Total	
	High		Middle		Low			
	Count	% Group	Count	% Group	Count	% Group	Count	% Group
<Z\$ 1,500	11	21.2	46	32.9	134	49.3	191	41.2
Z\$ 1,501-3,000	28	53.8	76	54.3	108	39.7	212	45.7
Z\$ 5,001-10,000	11	21.2	15	10.7	19	7.0	45	9.7
Z\$ 10,001-15,000	1	1.9			6	2.2	7	1.5
Z\$ 15,001-20,000			1	0.7	3	1.1	4	0.9
Z\$ 20,001-25,000	1	1.9	1	0.7	1	0.4	3	0.6
Z\$ 25,001-30,000								
>Z\$ 30,001			1	0.7	1	0.4	2	0.6
All	52	100.0	140	100.0	272	100.0	464	100.0

Note: Missing data for households that declined to respond to question.

3.5 Ownership of capital goods

The ownership of capital goods differed considerably among the income groups (Table 3.16). For example, the ownership of consumer durables such as a VCR, microwave, and an automobile was heavily skewed towards the middle- and higher-income groups. The majority of households however, owned a radio, television and an electric stove—irrespective of income group.

Table 3.16 Ownership of capital goods

	Income group						Total	
	High		Middle		Low			
	Count	% Group	Count	% Group	Count	% Group	Count	% Total
Radio	54	96.4	139	97.2	231	81.1	424	87.6
TV	55	98.2	135	94.4	203	71.2	393	81.2
VCR	52	92.9	110	76.9	75	26.3	237	49.0
Refrigerator	56	100.0	136	95.1	140	49.1	332	68.6
Electric stove	56	100.0	142	99.3	251	88.1	449	92.8
Paraffin stove	27	48.2	48	33.6	181	63.5	256	52.9
Microwave	34	60.7	45	31.5	22	7.7	101	20.9
Bicycle	26	46.4	52	36.4	81	28.4	159	32.9
Automobile	56	100.0	97	67.8	38	13.3	191	39.5
Total	56	11.6	144	29.8	284	58.7	484	100.0

Note: Missing data for 16 low-income households.

Of the 484 interviewees, only 12.5%, 8.3% and 1% of households from the high-, middle- and low-income groups respectively, owned all of the capital goods listed above, representing merely 4.5% of the sample (Table 3.17).

Table 3.17 Degree of ownership of consumer durables

	Income Group						Total	
	High		Middle		Low			
	Count	% Group	Count	% Group	Count	% Group	Count	% Group
Ownership of all capital goods	7	12.5	12	8.3	3	1.0	22	4.5
Ownership of all goods except microwave	12	21.4	16	11.1	7	2.5	35	7.2
All	56	100.0	144	100.0	284	100.0	484	100.0

The majority (92.4%) of households had access to printed media (Table 3.18). A higher share of low-income households did not enjoy access to printed media, than those in other income groups, but the difference was just about 10 percentage points.

Table 3.18 Access to printed media

	Income group						Total	
	High		Middle		Low			
	Count	% Group	Count	% Group	Count	% Group	Count	% Total
Access to printed media	55	98.2	141	97.9	266	88.7	462	92.4
All	56	100.0	144	100.0	300	100.0	500	100.0

4. DRIED FRUIT

4.1 Introduction

Drying is probably the oldest method of food preservation (Dauthy, 1995), and involves reducing the water content of fruits (and vegetables), and therefore extending their shelf-life, increasing their convenience and value (Fellows, 1997). Furthermore, drying brings about a substantial reduction in the weight and volume of produce making transportation easier and more cost effective (Fellows, 1997; Dauthy, 1995). Many fruits however, become fragile upon drying and therefore require suitable packing to prevent damage during transportation.

Dehydration may be defined as the "removal of moisture by artificial means and in some cases in combination with sun-drying" (CAC, 1971:1). By reducing the water content of fruits, this prevents the growth of micro-organisms that lead to the deterioration of the product, and also minimises some of the moisture-mediated deterioration reactions. Given the low moisture content of the finished product, dehydrated fruits can be stored at ambient temperatures without significant deterioration by decay, mould, enzymatic changes or other causes (CAC, 1969; Dauthy, 1995). The methods of preservation or treatment of the finished product should protect the product against contamination, deterioration or development of a public health hazard (Ibid.).

In addition to applicable drying, the finished product may be treated with approved chemicals to allow the product to remain safe and not spoil under normal non-refrigerated storage conditions (CAC, 1969). Fruits may be preserved with sulphur dioxide, usually in the form of sodium metabisulphite, which may be added to help maintain a fresh and natural colour and inhibit mould growth during drying (Fellows, 1997:6). Sulphur dioxide can also be generated from burning sulphur (Ibid.).

Dried fruits are classified as low-volume, higher-value foods⁸ (along with vegetables, herbs and spices), and offer good opportunities for profitable production by small-scale processors (Fellows, 1997). Due to their high sugar content however, fruits tend to dry slowly. Therefore the use of artificial dryers is preferred in order to reduce drying times. Under suitable climatic conditions, solar dryers can perform well. However, air-dried products are the most common type of dried fruits. Other more expensive dehydration methods (e.g. freeze-drying) may be used, although such techniques are usually beyond the scope of small-scale processors given the capital investment required (Dauthy, 1995, Fellows, 1997).

Crystallised fruits and fruit leathers, peels for marmalade and cake production, and osmotically dried fruits (known as 'osmasol' products when dried in a solar dryer) are fruit pieces that are soaked in hot concentrated sugar syrups to extract some of the water before drying (Fellows, 1997).⁹ The shelf-life of dried and crystallised fruit depends mostly on the 'equilibrium relative humidity' (ERM) of the product under the expected storage conditions. This refers to the amount of water available within the product, which would support the growth of contaminating micro-organisms (Fellows, 1997).

⁸ In contrast, cereals are defined as high-volume, lower-value crops (Fellows, 1997).

⁹ Some fruits (e.g. limes) may be salted before drying. The high salt concentration preserves the product by drawing out water by osmosis and by the anti-bacterial properties of the salt itself (Fellows, 1997).

The Codex Alimentarius Commission (CAC), (1969, 1971) has prepared hygienic codes for the production of dried fruits. The codes of practice apply to all fruits produced by natural or artificial means, or a combination of the two techniques. No local Zimbabwean standards for dried fruits were available at the time the study was conducted.

The following section discusses the purchasing and consumption patterns of dried fruit in the Greater Harare Area.

4.2 Consumption and purchasing profile

Of the 500 households surveyed in Harare, 346 suggested they consume dried fruit products (Table 4.1). As regards frequency of consumption, 34%, 20.2% and 17.9% of low, middle and high-incomes households consume dried fruits at least once a month; 17.8%, 7.7% and 5.4% of households (respectively) consume dried fruits at least once a week. Meanwhile, about 30.8% households indicated that they never consumed dried fruits. Dried fruit consumption was found to be less pronounced among high-income households—50%, 43% and 31% of high-, middle- and low-income households (respectively) suggested they do not normally consume dried fruit. Dried fruit products are largely consumed as snacks throughout the day, and infrequently form part of any particular meal.

Table 4.1 Frequency of consumption

Frequency	Income group						Total	
	High		Middle		Low			
	Count	% Group	Count	% Group	Count	% Group	Count	% Total
Never	28	50.0	62	43.1	64	30.8	154	30.8
A few times a year	18	32.1	51	35.4	97	33.2	166	33.2
Once a month	6	10.7	11	7.6	22	7.8	39	7.8
2-3 times a month	1	1.8	7	4.9	34	8.4	42	8.4
Once a week	3	5.4	5	3.5	18	5.2	26	5.2
2-3 times a week			2	1.4	30	6.4	32	6.4
4-5 times a week			4	2.8	13	3.4	17	3.4
Every day					14	2.8	14	2.8
Other			2	1.4	8	2.7	10	2.0
All	56	100.0	144	100.0	300	100	500	100.0

Of the 346 households that consume dried fruits, 87.6% indicated that their most frequent source of the product was by purchasing it. About 9.5% of households relied on obtaining dried fruit products as gifts, while 2.9% processed products at home (Table 4.2).

Table 4.2 Most frequent source of dried fruit

	Income group						Group Total	
	High		Middle		Low			
Source	Count	% Group	Count	% Group	Count	% Group	Count	% Group
Process at home	1	3.6%	2	2.4%	7	3.0%	10	2.9%
Gift	1	3.6%	13	15.9%	19	8.1%	33	9.5%
Purchase	26	92.9%	67	81.7%	210	89.0%	303	87.6%
All	28	100.0%	82	100.0%	236	100.0%	346	100.0%

Nearly half the household sample (46.4%) purchase dried fruit products just a few times a year (Table 4.3). About 51% of households purchase dried fruit at least once a month—59% of low-income households, compared to 38% of middle- and 29% of high-income households, respectively. Low-income households are more frequent purchasers of dried fruit than other income groups—34.8% of low-income households purchase dried fruit at least once a week compared to 18.1% of middle- and 3.6% of high-income households, respectively. However, with respect to purchasing, it is reasonable to suggest that given their greater degree of disposable income, high-income households are more likely to purchase in bulk than other income groups, which may explain a lowered frequency of purchase.

Table 4.3 Frequency of purchase

Frequency	Income Group						Total	
	High		Middle		Low			
	Count	% Group	Count	% Group	Count	% Group	Count	% Total
A few times a year	19	67.9	45	62.5	85	38.5	149	46.4
Once a month	6	21.4	7	9.7	22	10.0	35	10.9
2-3 times a month	1	3.6	7	9.7	32	14.5	40	12.5
Once a week			7	9.7	28	12.7	35	10.9
2-3 times a week	1	3.6	4	5.6	27	12.2	32	10
4-5 times a week			1	1.4	10	4.5	11	3.4
Every day			1	1.4	12	5.4	13	3.4
Other	1	3.6			5	2.3	6	1.9
All	28	100	72	100	221	100	321	100.0

Most households procure dried fruit at local markets, from street traders or at supermarkets. When households were asked to state their most frequent place of purchase (Table 4.4), local markets (53.6%) and street traders (26.5%) proved to be the most important outlets where products are obtained. Just under a fifth of households stated that they were more likely to make purchases at supermarkets. However, when observations are made across each income group, interesting comparisons can be made. The majority of low-income households (65.2%) rely on making purchases of dried fruit at local markets. In contrast, the overwhelming majority of high-income households (almost 90%) prefer to buy products at supermarkets. Local markets, street traders and supermarkets were all popular outlets frequented by the middle-income group. Less than 2% of households frequent grocer/general store or dealers, specialty shops/tourist outlets, or go to processors directly, in order to make purchases.

Table 4.4 Most frequent place of purchase

Outlet	Income group						Total	
	High		Middle		Low			
	Count	% Group	Count	% Group	Count	% Group	Count	% Total
Supermarket	25	89.3	20	27.8	13	5.9	58	18.1
Grocer/general store or dealers			1	1.4			1	0.3
Specialty shop/tourist outlet	1	3.6					1	0.3
Local market	2	7.1	26	36.1	144	65.2	172	53.6
Street trader			24	33.3	61	27.6	85	26.5
Direct from processor			1	1.4	3	1.4	4	1.2
All	28	100	72	100	221	100	321	100

4.3 Type and quantity of dried fruits purchased

The findings suggest that households purchase a wide range of exotic and indigenous dried fruits. Generally, the main fruits purchased were masau¹⁰ (by 83% of households), mawuyu¹¹ (69.8%), matohwe¹² (54.2%), raisins (19.3%), currants (12.8%) and mazhanje¹³ (10.9%). Indigenous varieties of dried fruit appear to be more popular than exotic varieties (Figure 4.1).

¹⁰ *Ziziphus Mauritiana* - Indigenous wild fruit of Zimbabwe.

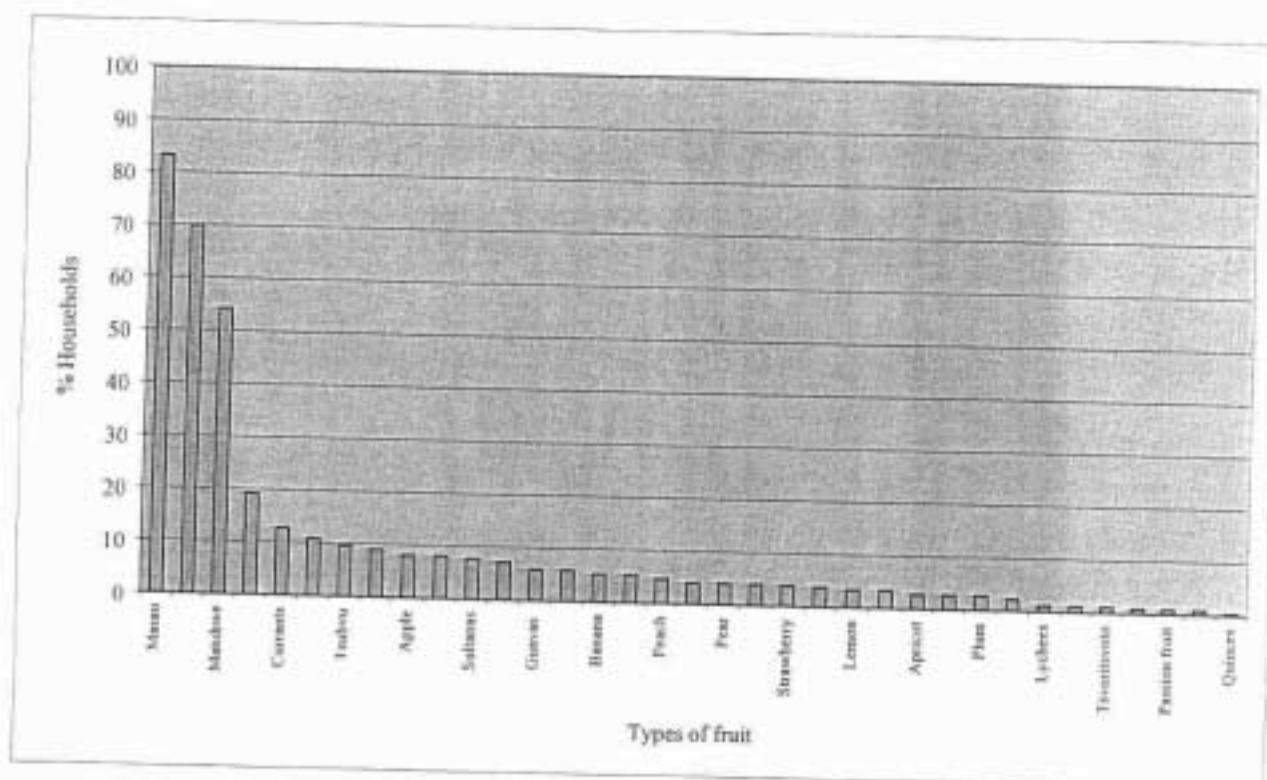
¹¹ *Adansonia Digitata* (Baobab Fruit) - Indigenous wild fruit of Zimbabwe.

¹² *Azanza Garckeana*. This is the only species of *Azanza* found wild in Africa (Tredgold, 1986:84).

¹³ *Uapaca Kirkiana* - Indigenous wild fruit of Zimbabwe. The fruits are among the most popular in Zimbabwe.

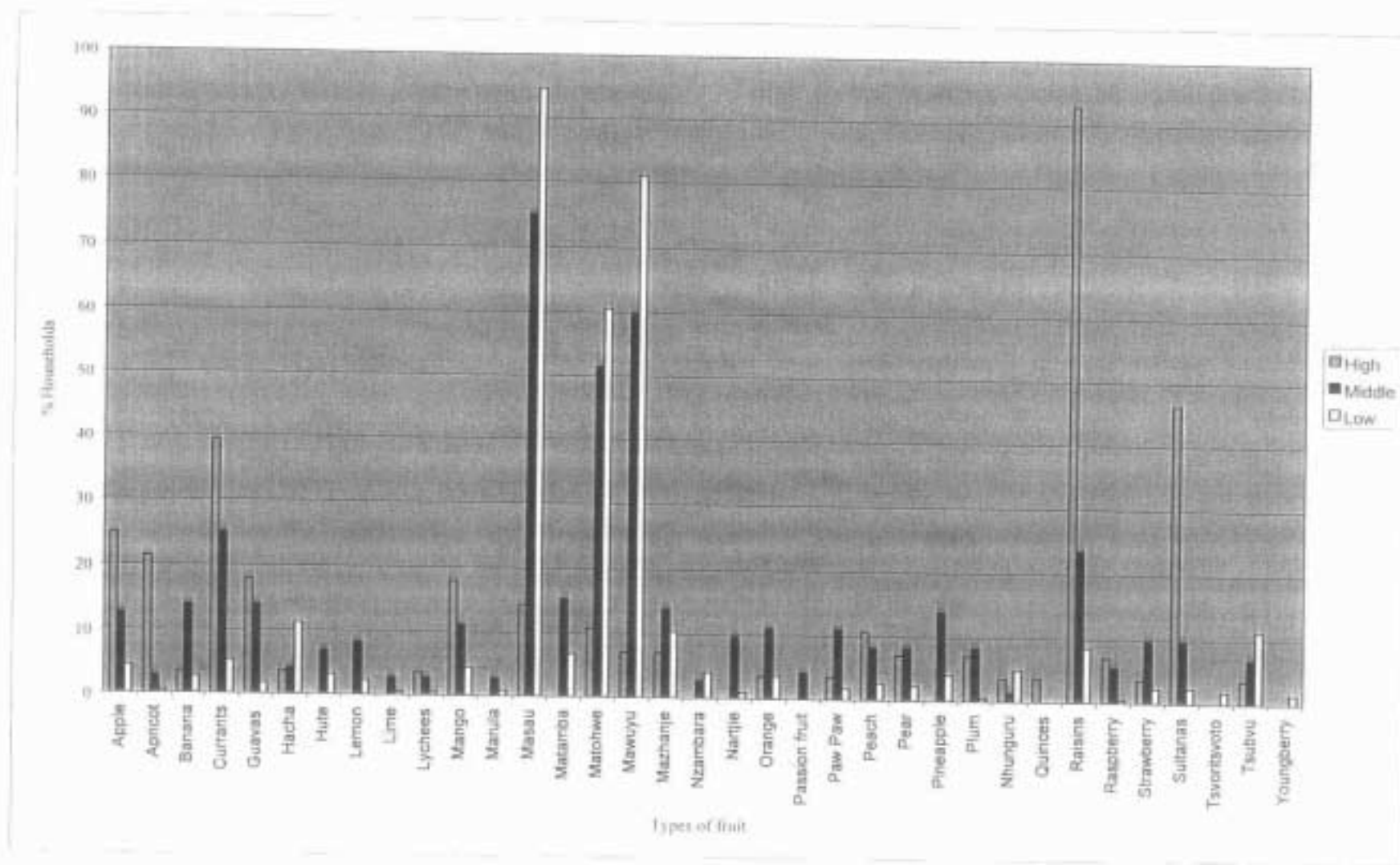
"Karanga women pound the fruits and the seeds together, letting the resultant product dry in front of the fire. A second layer is placed over the first and dried as before, several layers being added, a day at a time, until a thick cake of dried fruits results. It is cut into pieces with a knife and eaten as a sweetmeat, tasting like toffee" (Tredgold, 1986:132).

Figure 4.1 Most popular types of dried fruit purchased



However, there was some differentiation in the types of dried fruit purchased by households in different income groups (Figure 4.2). For example, high-income households were much more selective about the types of dried fruit purchased, buying only 24 of the 35 types of fruits listed, compared to the middle- and low-income groups which purchased 32 and 33 types of fruit, respectively. Among the high-income group, raisins, sultanas and currants were the most popular products, purchased by 92.9%, 46.4% and 39.3% of households, respectively. Such dried fruits are likely to be used as ingredients in baking breads, cakes and similar products. Dried exotic fruits such as apple, apricot and guava were also popular among this income group.

Figure 4.2 Most popular types of dried fruit purchased by each income group



Among middle-income households, masau (purchased by 75% of households), mawuyu (59.7%) and matohwe (51.4%) were the most popular products. Currants, raisins and matamba¹⁴ were also popular. Among the low-income group, masau, mawuyu and matohwe were also the most popular products, followed by hacha¹⁵, tsubvu¹⁶ and mazhanje. Therefore, indigenous fruits (other varieties include hute¹⁷, nhunguru, nzambara¹⁸ and tsubvu) were more popular among lower- and middle-income households. After all these are traditional fruits which Zimbabwe's indigenous population is likely to be more familiar with. Note that less than 15% of high-income households consumed masau, mawuyu or matowhe, the most popular varieties.¹⁹

Of the 321 households, 174 gave estimates of how much dried fruit they purchased per month (Table 4.5). While the quantity purchased varied little among the high-income group (ranging from 0.25-1.00 kg), among middle- and low-income households, the quantity purchased ranged from 0.50-24.00 kg and 0.13-20.00 kg in each group respectively. In terms of the average quantities, the middle-income group purchased 3.77 kg/month, while the low- and high-income group purchased 2.70 kg and 0.77 kg, respectively. Middle-income households were found to purchase larger quantities of dried fruit (median of 2.00 kg) than other income groups.

Table 4.5 Quantity of dried fruit purchased per month (Kg)

	Income Group			Total
	High	Middle	Low	
No. Households	9	27	138	174
Minimum	0.25	0.50	0.13	0.13
Maximum	1.00	24.00	20.00	24.00
Mean	0.77	3.77	2.70	2.77
Median	1.00	2.00	1.00	1.00

Note: For those households that gave quantities per week, the values were multiplied by a factor of '4' to give estimated quantity purchased per month.

4.4 Packaging characteristics

Various forms of packaging materials are used for dried fruit (Table 4.6). Some differences in the types of packaged products purchased were observed across income groups. Unsealed plastic bags were the most popular type of packaging material used, although the share of high-income households using this form of packaging was much lower than among the middle- and low-income groups (11.1%, 65.3% and 61.1% respectively). The available data suggests that high-income households are more likely to purchase products in sealed plastic bags or packs (88.9%), while the majority of low- and middle-income households obtain

¹⁴ *Strychnos Spinosa*. Eleven species of *Strychnos* grow wild in Zimbabwe. A deciduous fruit, the sweet ripe pulp of which may be scraped from the seeds and sundried as a food reserve (Tredgold, 1986:123).

¹⁵ *Parinari Curatellifolia* - One of the most important wild fruits of the Shona diet (Tredgold, 1986). The fruits, which are harvested in great quantities, may be sundried as a reserve food (Ibid.).

¹⁶ *Vangueriopsis Lanciflora* - Indigenous wild fruit of Zimbabwe.

¹⁷ *Syzgium Cordatum* - Indigenous wild fruit of Zimbabwe.

¹⁸ *Carissa Edulis* - Indigenous wild fruit of Zimbabwe. The fruit also makes a good jam or jelly (Tredgold, 1986).

¹⁹ Very popular wild fruits such as masau are now as precious as exotic fruits, mainly due to their nutritional value and the fact that such products fetch good prices on the market (Kadzere and Jackson, 1997).

products in unsealed plastic bags. Although 39% of low-income households suggested they bought unpackaged products, i.e. products which were sold loose, only 13.1% of low-income households cited this as their most frequent type of packaged product purchased. This may be attributed to the type of market outlet frequented, for example Mbare Musika²⁰, where customers are often expected to provide packaging materials. Some households also purchased dried fruit products wrapped in newspaper, again more likely to be prevalent among local markets or street traders.

Table 4.6 Most frequent type of packaging

Type of packaging	Income group						Total	
	High		Middle		Low			
	Count	% Group	Count	% Group	Count	% Group	Count	% Total
No packaging/sold loose			1	1.4	29	13.1	30	9.4
Wrapped in newspaper			1	1.4	14	6.3	15	4.7
Plastic bag (not sealed)	3	11.1	47	65.3	135	61.1	185	57.8
Sealed plastic pack/bag	24	88.9	22	30.6	43	19.5	89	27.8
Plastic tray covered in cellophane/cling film etc.			1	1.4			1	0.3
Total	27	100	72	100	221	100	320	100

4.5 Consumer perceptions of dried fruits processed by small-scale enterprises

Data from the survey show that approximately 65% of households that buy dried fruit, had purchased a product processed by the small-scale sector (Table 4.7). A significantly higher share of low-income households (83.3%) had purchased a product from the small-scale sector, compared to middle- (26.4%) and high-income households (14.3%).

Table 4.7 Purchase of dried fruit products from small-scale processors

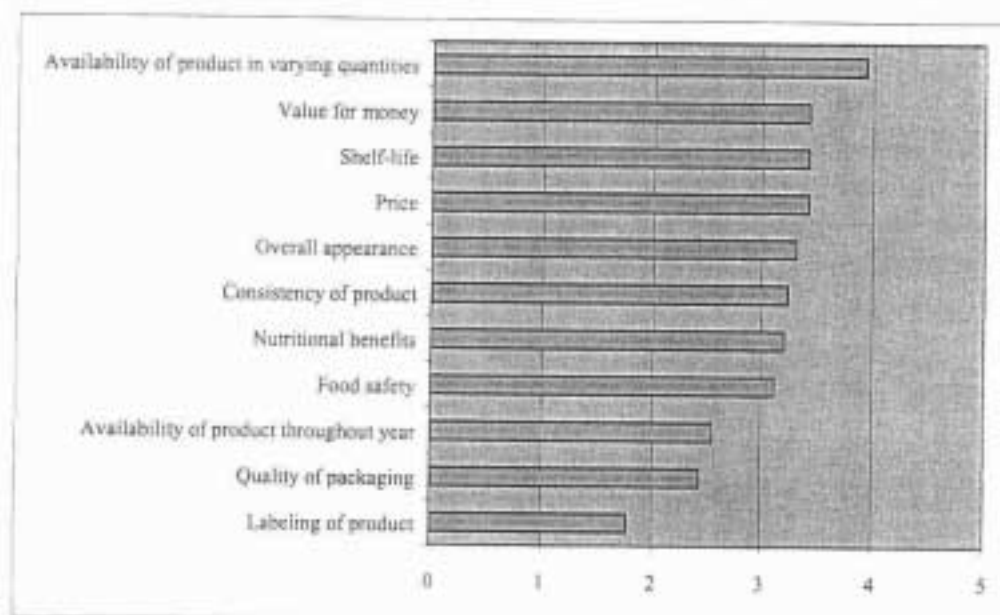
Income Group	Total sample		Households that purchase dried fruits from small-scale sector	
	No. households	Number households purchase dried fruits	No. households	% Income Group*
High	56	28	4	14.3
Middle	144	72	19	26.4
Low	300	221	184	83.3
All	500	321	207	64.5

*Note: % group that purchase dried fruits.

Consumers (n=207) rated dried fruit products processed by the small-scale sector poorly on all attributes, i.e. all attributes were given mean scores less than 4.00 (Figure 4.3). Those attributes rated poorest were 'labelling of product' (1.77), 'quality of packaging' (2.43) and 'availability of product throughout the year' (2.55).

²⁰ Mbare Musika is the biggest fruit and vegetable market in Harare. Many locals buy fruit and vegetable products in bulk there, at prices equivalent to wholesale prices.

Figure 4.3 Mean performance of dried fruit products processed by small-scale sector



Note: Mean performance relates to 5-point scale where 1 = very poor and 5 = very good.

Generally, small-scale processors performed poorly, with the exception of attributes such as 'price' and 'availability of the product in varying quantities', which were rated good by high-income households (mean scores of 4.00 and 4.25 respectively) (Table 4.8). The latter attribute was also rated highly (4.05) by the middle-income group. Among the low-income group, none of the attributes received a mean score of 4.00 or more. Although low-income households are the main purchasers of dried fruits processed by small-scale enterprises, they do not seem to be satisfied with such products, even on price (3.43).

Table 4.8 Mean performance of dried fruit products processed by small-scale sector, as rated by income groups

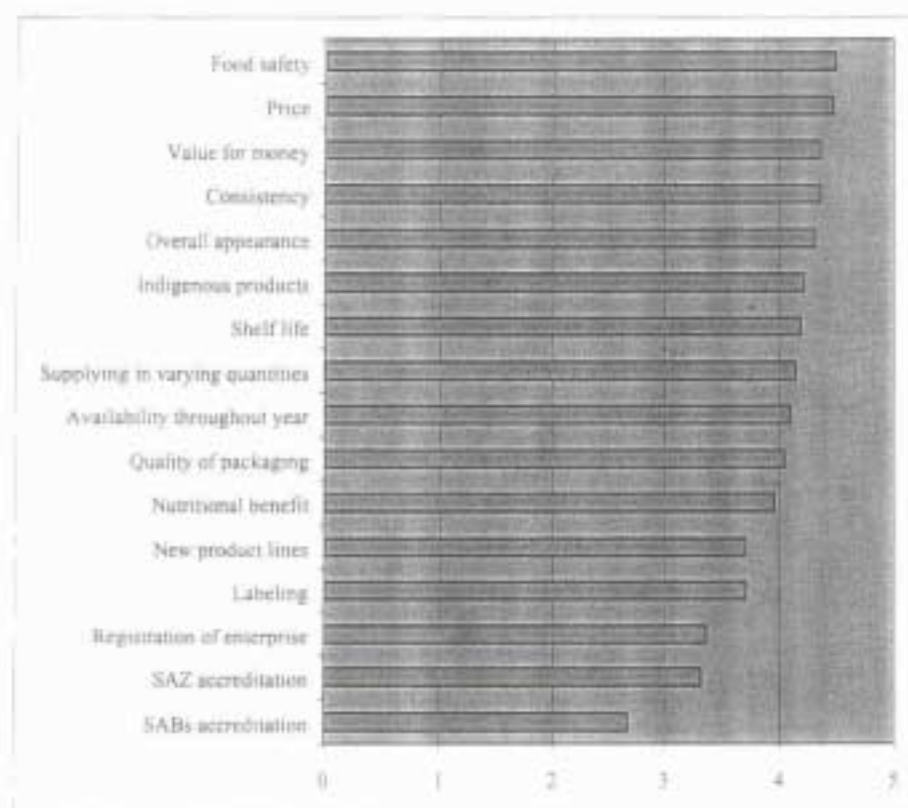
Attribute	Income Group			Total (n=207)
	High (n=4)	Middle (n=19)	Low (n=184)	
Price	4.00	3.21	3.43	3.43
Shelf-life	3.50	3.16	3.46	3.43
Consistency of product	3.25	3.63	3.20	3.24
Food safety	3.00	3.05	3.13	3.12
Quality of packaging	2.50	3.47	2.32	2.43
Labeling of product	1.25	2.47	1.71	1.77
Overall appearance	3.00	3.42	3.32	3.32
Value for money	3.25	3.68	3.41	3.43
Availability of product in varying quantities	4.25	4.05	3.92	3.94
Availability of product throughout year	2.25	3.26	2.48	2.55
Nutritional benefits	3.00	3.79	3.15	3.21

Note: Mean performance score relates to 5-point scale where 1 = very poor and 5 = very good.

4.5.1 Meeting consumer demand

The factors that households considered most important in order for small-scale processors to better meet consumer demand for dried fruit products were 'food safety' (4.49), 'price' (4.47) and 'value for money' (4.36) (Figure 4.4). Among high-income households, 'overall appearance' (5.00), 'value for money', 'availability throughout the year' and 'nutritional benefit' (latter three had scores of 4.75) were the most important factors (Table 4.9).²¹ The middle-income group rated price (4.53), 'food safety' (4.47) and 'nutritional benefit' (4.47) highly. Among low-income households, 'food safety' (4.49) and price (4.46) were the most important factors.

Figure 4.4 Mean importance scores for factors if small-scale processors are to better meet consumer demand for dried fruits



Note: Mean importance score relates to 5-point scale where 1 = very unimportant and 5 = very important.

Meanwhile, the use of food standards (accreditation to SABS and SAZ) and 'registration of enterprise' were rated of least importance—with mean scores of 2.67, 3.32 and 3.37 respectively (Figure 4.4). 'SAB accreditation' was the least important factor across all income groups (Table 4.9). 'SAZ accreditation' was considered of low priority by low-income households (3.21), but important among middle- (4.21) and high-income households (4.25). This raises the question whether low-income consumers are familiar with SAZ accreditation, given that they rated food safety as important.

²¹ But note that the sample here is small, consisting of just four households.

Table 4.9 Mean importance scores for factors if small-scale processors are to better meet consumer demand for dried fruits, as rated by income groups

Attribute	Income Group			Total (n=207)
	High (n=4)	Middle (n=19)	Low (n=184)	
Price	4.50	4.53	4.46	4.47
Shelf life	4.50	4.26	4.17	4.18
Consistency	4.50	4.37	4.35	4.36
Food safety	4.50	4.47	4.49	4.49
Quality of packaging	4.25	4.05	4.03	4.04
Labeling	4.50	3.58	3.70	3.71
Overall appearance	5.00	4.42	4.28	4.31
Value for money	4.75	4.26	4.36	4.36
Supplying in varying quantities	4.50	3.95	4.15	4.14
Availability throughout year	4.75	3.79	4.10	4.09
Nutritional benefit	4.75	4.47	3.87	3.95
New product lines	4.00	3.84	3.68	3.71
Indigenous products	4.25	4.32	4.20	4.21
Registration of enterprise	4.25	3.95	3.29	3.37
SAZ accreditation	4.25	4.21	3.21	3.32
SABs accreditation	2.00	2.26	2.72	2.67

Note: Mean importance score relates to 5-point scale where 1 = very unimportant and 5 = very important.

4.5.2 Purchasing products from a particular small-scale processor

Of those households that purchase products from the small-scale sector (n=207), about 16% buy products direct from processors (Table 4.10). The majority of processors frequented were located in high-density suburbs of Harare, particularly in Kuwadzana and Mbare. Mbare Musika—the largest fruit and vegetable market in Zimbabwe, is located in the latter suburb. Only five households purchased products from processors outside Harare, i.e. in the provinces of Mashonaland East (Mutoko and Murehwa) and Mashonaland Central (Mount Darwin).

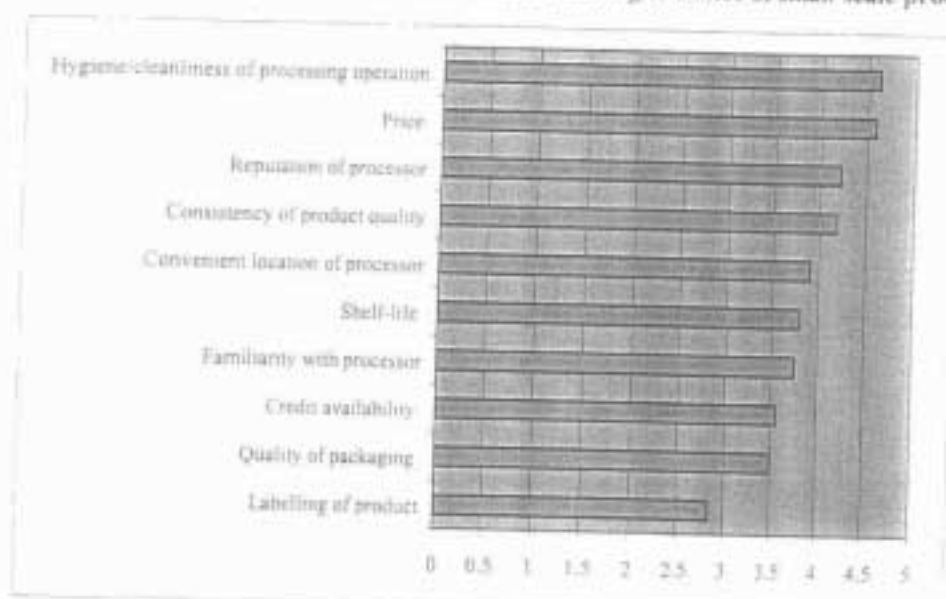
Table 4.10 Purchase of dried fruit direct from particular small-scale processor

Income Group	Purchase from small-scale sector	Purchase from particular small-scale processor	
	No. households	No. households	% Group
High	4	1	25.0
Middle	19	3	15.8
Low	184	28	15.2
All	207	32	15.5

Twelve of these households (all low-income) had been purchasing products direct from the processor for at least a 5-year period. Half the sample was not affiliated to the processors, but 11 households either knew the processor personally or were a relative, and nine households were located in the same area as the processor—suggesting that convenience was a factor. Of those households purchasing products direct from a particular small-scale processor (n=32), ‘hygiene/cleanliness of processor’ (4.62) and ‘price’ (4.59) were the most important factors

cited for doing so (Figure 4.5). This was true of all income groups²², except that middle-income households also indicated the importance of 'convenient location of processor' (4.33) (Table 4.11).

Figure 4.5 Mean importance scores for factors relating to choice of small-scale processor



Note: Mean importance score relates to 5-point scale where 1 = very unimportant and 5 = very important.

The 'labelling of the product' (2.84) and 'quality of packaging' (3.50) were rated the least important factors for influencing the choice of processor. There was however some differentiation across income groups between those factors considered least important. High-income households rated 'familiarity with processor' (2.00) as the least important factor when choosing which small-scale processor to buy products from. The middle-income group rated 'credit availability' least important (1.67), but also considered 'familiarity with processor' to be unimportant (2.33). Low-income households rated 'labelling of product' as the least important factor (2.75).

Table 4.11 Mean importance score for factors relating to choice of small-scale processor, as rated by income groups

Attribute	Income Group			Total (n=32)
	High (n=1)	Middle (n=3)	Low (n=28)	
Price	5.00	4.33	4.61	4.59
Shelf-life	4.00	3.67	3.82	3.81
Consistency of product quality	4.00	4.00	4.21	4.19
Quality of packaging	4.00	3.67	3.46	3.50
Labelling of product	4.00	3.33	2.75	2.84
Familiarity with processor	2.00	2.33	3.96	3.75
Convenient location of processor	4.00	4.33	3.86	3.91
Reputation of processor	4.00	4.00	4.25	4.22
Hygiene/cleanliness of processing operation	5.00	4.33	4.64	4.62
Credit availability	4.00	1.67	3.75	3.56

Note: Mean importance score relates to 5-point scale where 1 = very unimportant and 5 = very important.

²² But note that there was only one high-income household in the sample.

4.6 Consumer perceptions of dried fruits processed by large-scale enterprises

A much smaller share of households had purchased dried fruit products processed by the large- (17.4%) than the small-scale sector (64.5%). While low-income households were more likely to buy products processed by small-scale enterprises (83.3%, See Table 4.7), high-income households were more likely to purchase products processed by the large-scale sector—71.4% of high-income households, compared with only 29.2% of middle- and 6.8% of low-income households (Table 4.12). This can be explained in terms of the types of products being consumed by the different households. For example, indigenous fruits such as masau, mawuyu and matohwe in the case of the low-income group, and currants, raisins and sultanas in the case of the high-income group. The former products are almost entirely processed by small-scale enterprises, and the latter tend to be processed on a commercial scale by large-scale food manufacturers.²³

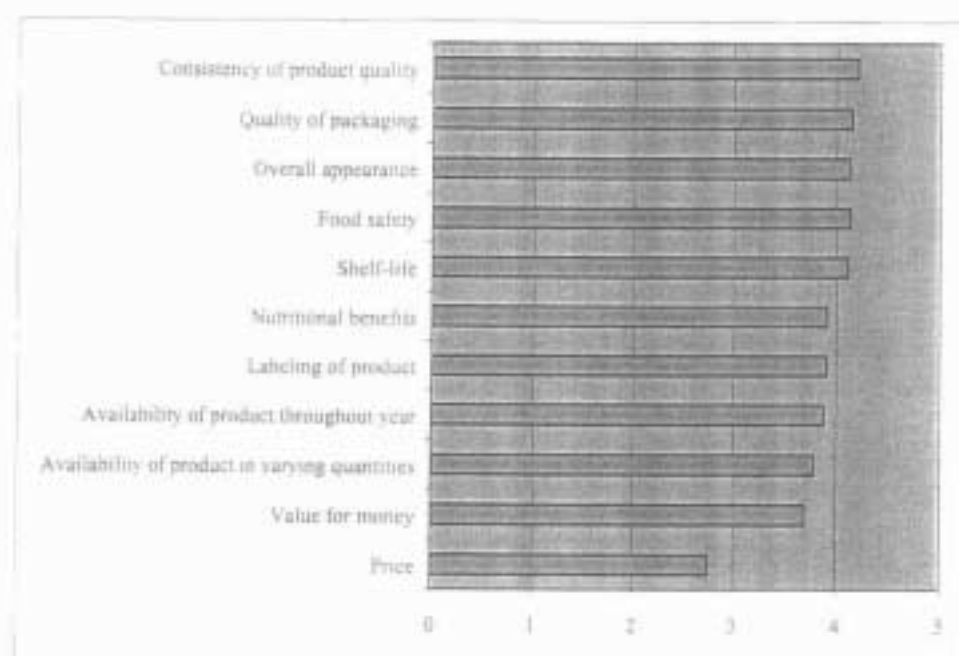
Table 4.12 Purchase of dried fruit products from large-scale processors

Income Group	Total sample	Purchase dried fruits	Purchase dried fruits from large-scale sector	
	No. households	No. households	No. households	% Group
High	56	28	20	71.4
Middle	144	72	21	29.2
Low	300	221	15	6.8
All	500	321	56	17.4

Large-scale dried fruit processors performed best on 'consistency of product quality' (4.20), 'quality of packing' (4.14), 'food safety' and 'overall appearance' (both had scores of 4.13) (Figure 4.6). Those criteria rated lowest were 'price' (2.75) and 'value for money' (3.70). In fact, 'price' received the lowest mean rating across all the income groups (Table 4.13).

²³ Often such products are imported from South Africa.

Figure 4.6 Mean performance of dried fruit products processed by large-scale sector



Note: Mean performance score relates to 5-point scale where 1 = very poor and 5 = very good.

High-income households rated the large-scale sector best on 'consistency of product quality' (4.20), followed by 'quality of packaging' (4.10) and 'food safety' (4.10) (Table 4.13). Middle-income households rated large-scale processors best on 'availability of product throughout the year' (4.14), followed by 'consistency of product quality', 'quality of packaging' and 'overall appearance' (all 4.10). Low-income households considered large-scale food manufacturers to perform best in terms of 'overall appearance' (4.47), 'shelf life' and 'consistency of product quality' (both 4.33).

Table 4.13 Mean performance of dried fruit products processed by large-scale sector, as rated by income groups

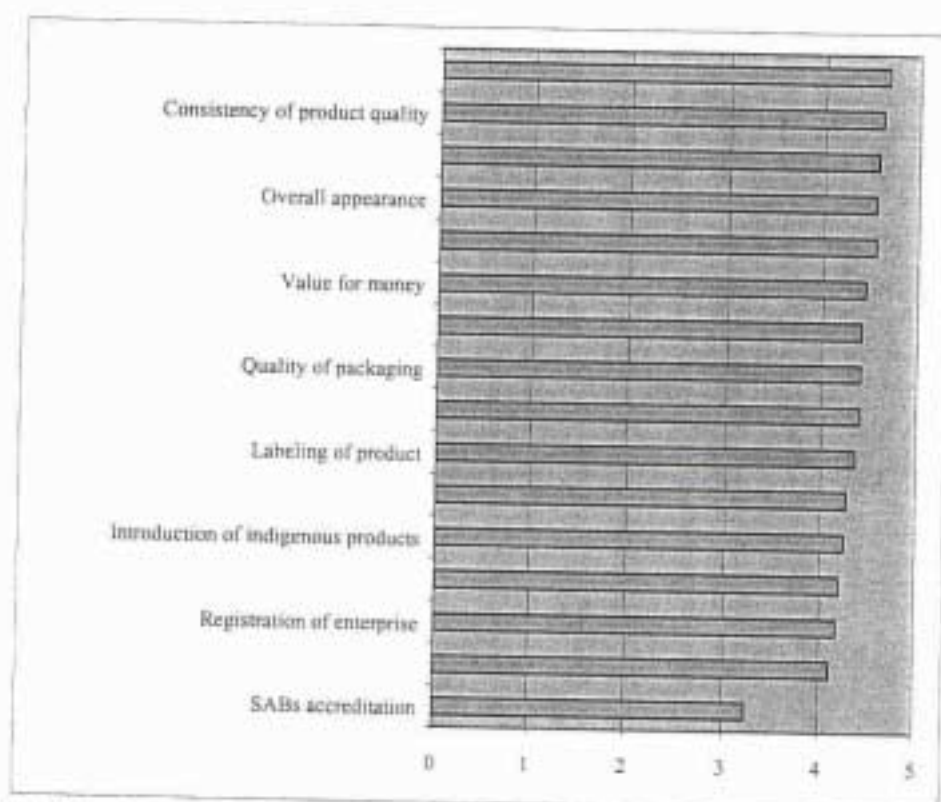
Attribute	Income Group			Total
	High	Middle	Low	
	(n=20)	(n=21)	(n=15)	(n=56)
Price	2.85	2.76	2.60	2.75
Shelf-life	4.00	4.05	4.33	4.11
Consistency of product quality	4.20	4.10	4.33	4.20
Food safety	4.10	4.05	4.27	4.13
Quality of packaging	4.10	4.10	4.27	4.14
Labeling of product	3.60	4.00	4.20	3.91
Overall appearance	3.90	4.10	4.47	4.13
Value for money	3.65	3.67	3.80	3.70
Availability of product in varying quantities	3.70	4.00	3.66	3.79
Availability of product throughout year	3.65	4.14	3.80	3.88
Nutritional benefits	3.85	3.90	4.00	3.91

Note: Mean performance relates to 5-point scale where 1 = very poor and 5 = very good.

4.6.1 Meeting consumer demand

Large-scale food processors are encouraged to consider all factors except the use of food standards from SABS (3.23) in an effort to better meet consumer demand (Figure 4.7). The most important factors however, were product 'price' (4.68), 'consistency of product quality' (4.61), 'nutritional benefits' (4.57), 'overall appearance' and 'food safety' (both 4.55). In terms of importance scores across income groups, both high- and middle-income households rated all attributes except 'SABS accreditation' as significantly important, i.e. with a rating of 4.00 or more (Table 4.14). High-income households rated 'consistency of product quality' most important (4.95), followed by 'food safety' and 'quality of packaging' (both scores of 4.85). Middle-income households considered 'overall appearance' (4.48), 'price' (4.43), 'consistency of product quality' and 'value for money' (both 4.38) as the most important attributes. Meanwhile, product 'price' (4.87) and 'nutritional benefit' (4.73) were rated highest among the low-income group, in order for the large-scale sector to better meet demand. Along with 'SABs accreditation', the 'introduction of new product lines', 'enterprise registration' and 'SAZ accreditation' were considered 'neither important nor unimportant' among the low-income group.

Figure 4.7 Mean importance scores for factors if large-scale processors are to better meet consumer demand for dried fruits



Note: Mean importance score relates to 5-point scale where 1 = very unimportant and 5 = very important.

Table 4.14 Mean importance score for factors if large-scale processors are to better meet consumer demand for dried fruits, as rated by income groups

Attribute	Income Group			Total (n=56)
	High (n=20)	Middle (n=21)	Low (n=15)	
Price	4.80	4.43	4.87	4.68
Shelf-life	4.65	4.24	4.33	4.41
Consistency of product quality	4.95	4.38	4.47	4.61
Food safety	4.85	4.33	4.47	4.55
Quality of packaging	4.85	4.19	4.13	4.41
Labeling of product	4.65	4.14	4.27	4.36
Overall appearance	4.80	4.48	4.33	4.55
Value for money	4.70	4.38	4.20	4.45
Availability of product in varying quantities	4.40	4.10	4.07	4.20
Availability of product throughout year	4.50	4.33	4.40	4.41
Nutritional benefits	4.75	4.29	4.73	4.57
Introduction of new product lines	4.30	4.10	3.87	4.11
Introduction of indigenous products	4.30	4.19	4.27	4.25
Registration of enterprise	4.50	4.05	3.93	4.18
SAZ accreditation	4.75	4.05	3.93	4.27
SABs accreditation	3.35	2.95	3.47	3.23

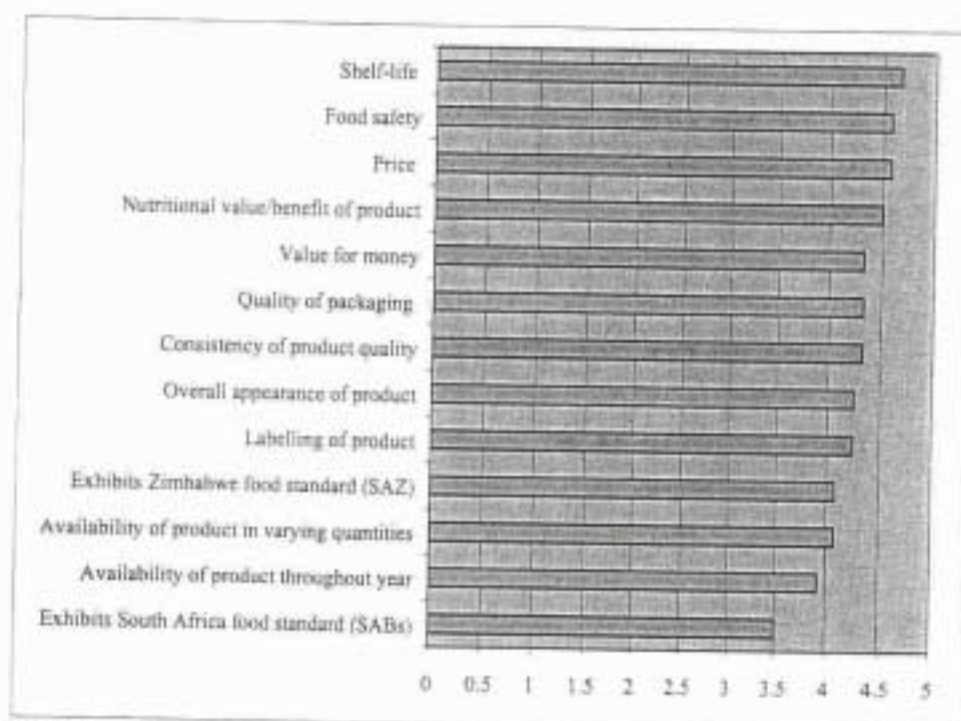
Note: Mean importance score relates to 5-point scale where 1 = very unimportant and 5 = very important.

4.6.2 Brand loyalty

Only 12 of the 56 households that had purchased dried fruits processed by the large-scale sector, tended to purchase a particular brand of product. The high-income group showed the least concern for brand loyalty in terms of dried fruit products.²⁴ Brands mentioned included Cairns, Cashel Valley, Charhons, Heinz, Katope, Nature's Choice, Sunbird, Valley Fresh and Marlon. However, none of these brands stood out as particularly popular. The most important reasons cited for preferring particular brands of dried fruit products included product quality and their availability in marketing outlets. Although some households showed considerable degrees of brand loyalty (five households had been purchasing particular brands of dried fruit for a period of 16 years or more), but the sample is very small. In general terms, 'shelf-life' (4.67), 'food safety' and 'price' (both 4.58), and 'nutritional benefit of product' (4.50) were the most important factors influencing the choice of brand (Figure 4.8).

²⁴ Only one high-income household tended to purchase a particular brand of product from the large-scale sector, compared to seven middle- and four low-income households.

Figure 4.8 Mean importance scores for factors relating to brand choice



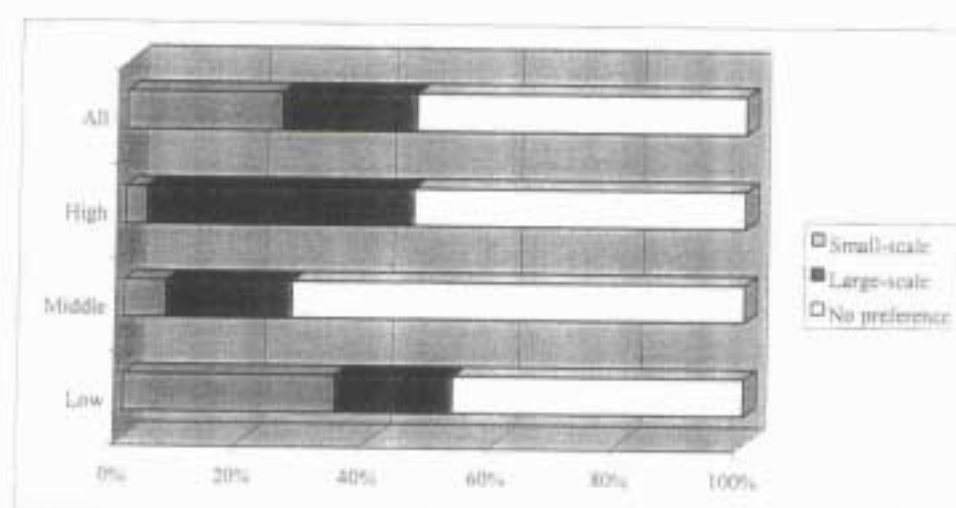
Note: Mean importance score relates to 5-point scale where 1 = very unimportant and 5 = very important.

4.7 Preference for products processed by small- or large-scale sector

Slightly more households expressed a preference for products processed by the small- than the large-scale sector (25.9% and 20.9% of households respectively) (Figure 4.9). However, over half the sample ($n=321$) suggested they had no preference. This questions the perceived superiority of (dried fruit) products processed by large-scale food manufacturers. Although the high- and middle-income group showed a greater preference for products processed by the large-scale sector, the numbers involved were relatively small (42.9% and 20.8% of households respectively).²⁵ In contrast, low-income households showed a greater preference for products from the small- (34.8% of households) than the large-scale sector (18.1%).

²⁵ Note that 72.2% of the middle-income group suggested they had no preference, and 53.6% of the high-income group.

Figure 4.9 Preference for products processed by small- or large-scale sector



Among those households that suggested a preference for products processed by the small-scale sector, 'price' was overwhelmingly the most important reason cited to explain this preference (Table 4.15). However, 'availability of the product' was also considered to be important. This suggests that some products are not readily available on the open market, for example, indigenous varieties of dried fruits. As discussed previously, small-scale processors may potentially control the supply of some types of dried fruits, e.g. indigenous dried fruits. Whether demand for these products can be developed into niche markets remains to be seen.

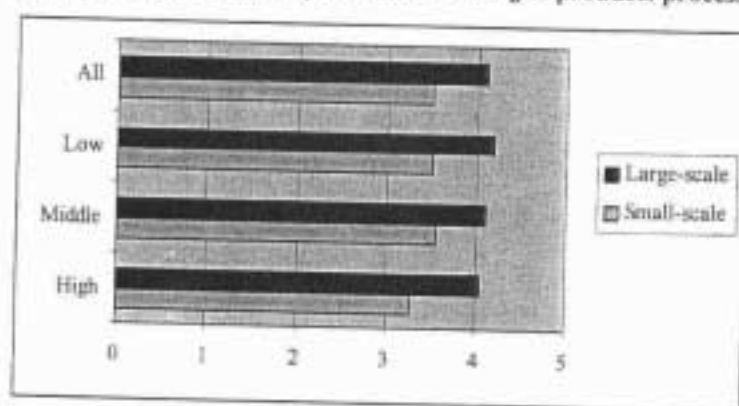
Table 4.15 Reasons for preference of products processed by small- or large-scale sector

Small-scale food processor		Large-scale food manufacturer	
	Frequency		Frequency
Price	55	Hygiene	27
Availability	11	Quality	23
Variety	7	Food safety	20
Hygiene	7	Packaging	9
Credit availability	6	Availability	5
Convenience	6	Price	4
Familiarity	3	Shelf-life	2
Food safety	3	Variety	2
Varying quantities available	3	Familiarity	2
Accessibility	3	Value for money	2
Taste	2	Convenience	1
Quality	2	Reputation	1
Affordability	1	Consistency	1
Promote indigenisation	2	Favourite	1
Discount	1	Labelling	1
Shelf-life	1	Taste	1
		Nutritious	1
		Varying quantities available	1

Although products from the large-scale sector are generally regarded to be more expensive, they are favoured because of good hygiene practices, product quality and food safety concerns. Packaging was also an important reason for preferring dried fruit products processed by the large-scale sector, but much less important than the above factors.

In terms of their overall mean performance rating, large-scale processors of dried fruit performed better than small-scale processors (scores of 4.11 and 3.49 respectively) (Figure 4.10). In fact, the large-scale sector received a mean score of 4.00 or more by all income groups, in comparison to the small-scale sector, which received a score of less than 4.00 by all groups. Large-scale food manufacturers received the highest rating from the low-income group (4.20). This may be attributed to the general opinion by low-income households that large-scale processors are better equipped to deliver safer and high quality products, as portrayed in the local media through advertising. However, low-income households may aspire to consume products processed by the large-scale food manufacturing sector (e.g. status associated with particular consumption patterns) and therefore may have an overly positive opinion of products produced by this sector.

Figure 4.10 Overall mean performance rating of products processed by small- and large-scale sector



Note: Mean performance relates to 5-point scale where 1 = very poor and 5 = very good.

4.8 Changes in consumption levels

Nearly half the sample (n=321) now consumes less dried fruit than they did three years ago (Table 4.16). Meanwhile, consumption of dried fruit had increased among 11% of households over the same three-year period.

Table 4.16 Current consumption levels of dried fruit compared to that of three years ago

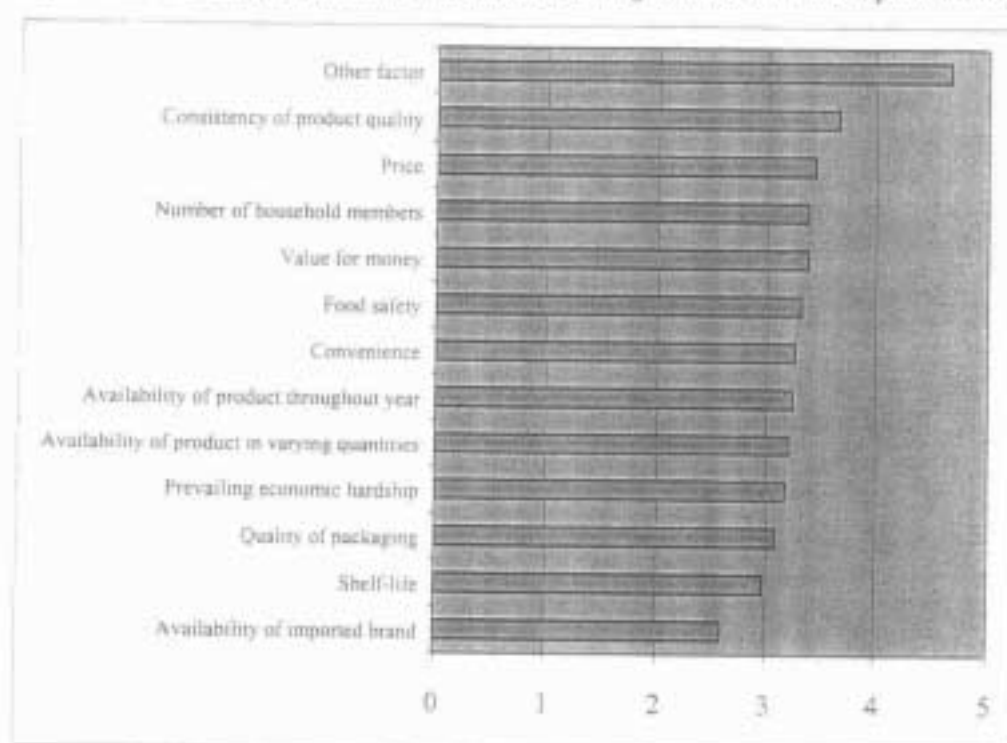
	Income Group						Group Total	
	High		Middle		Low		Count	% Total
	Count	% Group	Count	% Group	Count	% Group		
More	5	17.9%	9	12.5%	20	9.0%	34	10.6%
Less	9	32.1%	19	26.4%	116	52.5%	144	44.9%
Same	14	50.0%	44	61.1%	85	38.5%	143	44.5%
All	28	100.0%	72	100.0%	221	100.0%	321	100.0%

In terms of suggesting which factors influenced this increase in consumption, the only attribute to receive a mean score of 4.00 or more was 'other factors' (4.67) (Figure 4.11). However, only three (high-income) households indicated the importance of 'other factors', and therefore they cannot be said to be significant. These other factors included 'enjoy dried

fruit,' 'increased nutritional knowledge' and 'taste'. In terms of significant factors within particular income groups, among the high- and middle-income group, the only significant attribute was 'consistency of product quality' (4.80 and 4.11 respectively). No significant reasons were given for the observed increase among low-income households, i.e. none of the attributes received a mean score of 4.00 or more.

The factor of least importance was the 'availability of imported brand' of product (2.59). This was true of both the middle- and low-income group. Among the high-income group, the 'number of household members' was the least significant factor (1.80) to explain any increase in the consumption of dried fruit.

Figure 4.11 Mean importance scores for factors relating to increased consumption of dried fruit

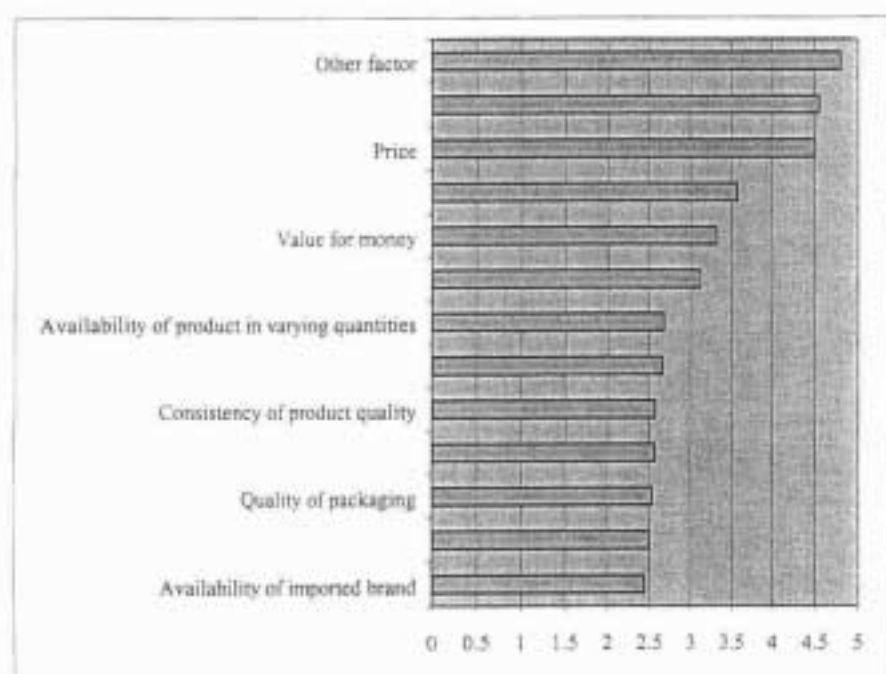


Note: Mean importance score relates to 5-point scale where 1 = very unimportant and 5 = very important.

The most significant attributes contributing to a decrease in the consumption of dried fruit were 'other factors' (4.80), 'prevailing economic hardship' (4.55) and 'price' (4.51) (Figure 4.12). However, only five households cited 'other factors' (including 'drought', 'health reasons' and a 'preference for doing so'), and therefore they cannot be said to be particularly significant.²⁶ The above pattern was witnessed across all income groups, except that the high-income group rated 'price' more important than 'prevailing economic hardship'. The factor of least importance was associated with the 'availability of imported brands'. This was also true for the middle- and low-income group. Among the high-income group, 'shelf-life' and the 'availability of product in varying quantities' were considered least important.

²⁶ Three of which were in the low-income group, and one in both the middle- and high-income groups.

Figure 4.12 Mean importance scores for factors relating to decreased consumption of dried fruit



Note: Mean importance score relates to 5-point scale where 1 = very unimportant and 5 = very important.

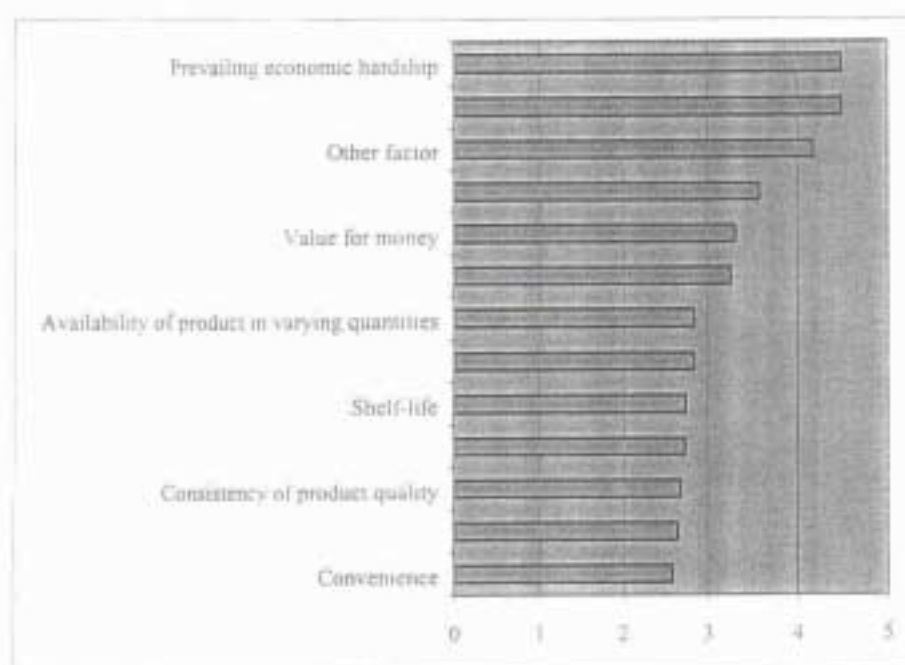
Of the 321 households that purchase dried fruits, nearly two-thirds (60.6%) suggested they would like to consume more of the product than they currently do.²⁷ The main factors inhibiting their ability to do so include product 'price' (4.49), 'prevailing economic hardship' (4.49) and 'other factors' (4.17) (Figure 4.13). The same general trend was found across each income group. However, only six households cited 'other factors' (including 'drought' and 'taste') as being important.²⁸

Among the low- and middle-income groups, 'convenience' was not an important attribute inhibiting an increase in dried fruit consumption (scores of 2.56 and 2.40 respectively). Among the high-income group however, the 'availability of product in varying quantities' was the least important attribute (2.29).

²⁷ Across income groups, the figures were 63% of high-, 41.7% of middle- and 66.5% of low-income households.

²⁸ Three high-income, one middle- and two low-income households.

Figure 4.13 Mean importance scores for factors inhibiting increase in dried fruit consumption



Note: Mean importance score relates to 5-point scale where 1 = very unimportant and 5 = very important.

4.9 Summary

The consumption of dried fruit products was much more pronounced among low- and middle-income households, than the high-income group. This observation was true for both the frequency of consumption and the average quantity of products consumed per household. Households purchased both indigenous and exotic varieties of dried fruit products. However, the former products were much more popular among low- and middle-income households, especially fruits such as masau, mawuyu and matchwe.²⁹ High-income households preferred dried exotic fruits, such as raisins, sultanas and currants.

Whilst high-income households tended to frequent supermarkets to purchase dried fruits, low- and middle-income households made purchases with street traders and at local markets. Again this relates to the types of products purchased. Indigenous dried fruits (preferred by the middle- and low-income groups) are largely unavailable in supermarkets. Furthermore, street traders and local markets tend to offer relatively lower prices than other outlets and hence are preferred by the low- and middle-income groups. Packaging can also be related to the types of products purchased and the place of purchase. Dried fruit products packaged in unsealed plastic bags were more likely to be purchased by low- and middle-income groups, while high-income households preferred products in sealed packages. Therefore one questions whether a niche market exists for dried indigenous fruit products, which are well packaged, sold through formal supermarkets in Zimbabwe, if the key issue constraining the consumption of such products among the high-income group, is actually their availability in formal outlets.

Of those households that purchase dried fruits, it seems that many more purchase products processed by small- than large-scale enterprises. However, particular income groups show

²⁹ Less than 15% of the high-income group consumed these products.

allegiance to particular food sectors. High-income households overwhelmingly buy products produced by large-scale food manufacturers, and low-income households buy products processed by the small-scale sector. However, consumers showed little loyalty to either sector—either by frequenting a particular small-scale processor to make purchases of dried fruits, or by buying particular brands of products processed by large-scale food manufacturers.

Although the large-scale sector performed better than small-scale processors in terms of their overall mean performance rating, slightly more households expressed a preference for products processed by the latter sector. Small-scale producers seem to have a price advantage over their counterparts in the large-scale sector, and hence the greater preference for products processed by them. On the other hand, large-scale manufacturers were preferred due to their attention to hygiene, product quality and food safety issues.

Low-income households rated products processed by the small-scale sector just as poorly as the middle- and high-income group, and were particularly complimentary of large-scale food manufacturers. This could be due to the general opinion by low-income households that large-scale processors are better equipped to deliver quality products, as generally perceived in the local media through advertising campaigns.

The ability to supply products in varying quantities was one of the attributes for which small-scale processors were particularly noted. Product labelling, packaging and the consistent supply of products throughout the entire year appear to be constraints facing the small-scale sector. However, consumers felt that food safety, price and value for money were the most important attributes which small-scale processors needed to give attention if they are to make an impact upon the market for dried fruit. Large-scale food manufacturers were particularly noted for their attention to the consistency of product quality, quality of the packaging materials used, compliance to food safety measures, and the overall appearance of their products. The main constraints facing large-scale food manufacturers however, were the need to reduce the price of their products, to be more consistent with product quality, and to improve the nutritional benefit of their products.

The findings would seem to suggest that there is potential for small-scale processors to increase their share of the market for dried fruit products, given that product price is undeniably one of the most important factors influencing purchasing patterns, and a particular constraint facing the large-scale sector. The small-scale sector seems to have a price advantage and potential to increase production of indigenous fruit varieties (in particular) that are rarely, if at all processed by the large-scale sector. Appropriate technologies adopted by the small-scale sector are suitable for processing indigenous fruits, which are generally not available in large quantities. Hence, substantial investment in more capital-intensive equipment may not be warranted. However, food safety and hygiene are important consumer concerns, which the small-scale food processing sector will have to meet in order to realise greater opportunities in the market for (indigenous or other) dried fruit products. Middle-income households in particular represent a potential consumer group to be targeted by small-scale processors, given that nearly three quarters of them did not state a preference for products from either sector.

5. FRUIT PRESERVES

5.1 Introduction

'Fruit preserves' is a collective term for jams, jellies, marmalades and fruit paste, which are sweet spreads made from whole fruit, fruit pulp or juice (Dauthy, 1995). The products differ in firmness, clarity and ingredients. Jam is a solid gel made from fruit pulp/puree or fruit juice from a single fruit or from a combination of fruits (Fellows, 1997). Jellies are crystal-clear jams made from filtered fruit juice or aqueous extracts. Marmalades are produced mainly from the aqueous extract or clear citrus juices (e.g. orange, lemon, lime and grapefruit), and have fine shreds of citrus fruit peel suspended in the gel (EU, 1982; CAC, 2002; Fellows, 1997). Fruit paste is produced in the same way as non-jellified fruit marmalade but has a lower water content. The concentration of solids in the paste is normally about 36%. The high solids content and natural acidity are sufficient to preserve the product for several days but pasteurisation in bottle or cans is needed for a longer shelf life. The most common type of fruit paste is tomato.

Fruit preserves may also be referred to as 'fruit sugar preserves' because of their high sugar content (about 60%), which is responsible for preservation. Fruit preserves may contain up to 60% total soluble solids in the form of either added sugar or the inherent fructose concentrated by boiling. Because of their high total soluble solids, fruit preserves have good keeping quality even at ambient temperatures. However, preservation is not only dependent on the osmotic pressure of sugar solutions, but also by water activity in the liquid phase, which may be reduced by the addition of sugar or by evaporation, to 0.848 (Ibid.). At this level of water activity, the products are not protected from spoilage by moulds and ascomycetous yeasts.

Depending on consumer tastes and legal standards, sugar and other additives such as colour, gelling agents and acids may be added to commercial products. However, the additives may be omitted when following traditional home-based methods of preservation, especially when output is low. For example, pectin is a constituent of nearly all fruits and vegetables and can be extracted and used in food processing to form the characteristic gel in jams and marmalades. The richest sources of pectin are the peels of citrus fruits such as lime, lemon, orange and passion fruit or apple pulp—known as 'pomace' after the juice has been extracted (Fellows, 1997). Where commercial sources of pectin are used, it is usually in the form of a light brown powder, or as a dark liquid concentrate (Ibid.).

Fruit preserves can be prepared from exotic or indigenous varieties of fruit. Fruit preserves made from indigenous fruits (e.g. marula, masau) are often produced for niche markets such as tourist centres. Exotic fruit preserves include those based on strawberries, apricot, apple, peach and guava. However, some 'exotic' fruits (e.g. lemon³⁰) have been successfully domesticated because of their tolerance to local environmental conditions, and are now abundant in Zimbabwe (Kadzere and Jackson, 1997).

³⁰ For example, the mazoe lemon (*Citrus Limon*), named so because it was found along the Mazoe River, was established in southern and central Africa over 500 years ago. The species has adapted and gone wild, though it is not widespread. The fruit resembles a cultivated lemon but is smaller, dryer and rougher, with a thick wrinkled skin (Tredgold, 1986:95).

The indigenous category includes gooseberry, masau, mawuyu and matowhe. It is interesting to mention that fruit preserves based on gooseberry may be considered premium products because the fruit is not abundant. *Physalis Angulata* (wild gooseberry) is commonly found growing wild in Zimbabwe. This may be cooked as jam or other preserves, and stewed as a dessert. *Physalis Pruviana* (cape gooseberry) is a similar plant, but less commonly found growing wild, but they are sometimes cultivated for sale, canning or jam making (Tredgold, 1986). Indigenous fruits have generally been collected from the wild for household consumption, until recently as small-scale enterprises have become involved in the commercial processing of such products (Kadzere and Jackson, 1997).

The production of fruit preserves is controlled by food standards and regulations laid down by the government and the Standards Association of Zimbabwe (SACA, 1968). Two grades exist for fruit preserves—the first grade and standard, which are based on fruit content of the product. Products are packaged in approved cans, glass and plastic bottles according to national food standards and regulations (SACA, 1968).

5.2 Consumption and purchasing profile

Of the three study products, fruit preserves were more commonly consumed by households—91.6% of households sampled consumed fruit preserves (Table 5.1). The consumption of fruit preserves was more pronounced among the high-income group—all households in the group consume fruit preserves, compared with 89.6% of the middle- and 91% of the low-income group. High-income households are also more frequent consumers of fruit preserves, 82.1% of households consume the product at least once a week compared to 67.4% of middle- and 42.7% of low-income households.³¹

Table 5.1 Frequency of consumption

Frequency	Income group						Total	
	High		Middle		Low			
	Count	% Group	Count	% Group	Count	% Group	Count	% Total
Never			15	10.4	27	9.0	42	8.4
A few times a year	6	10.7	10	6.9	86	28.7	102	20.4
Once a month	1	1.8	10	6.9	31	10.3	31	8.4
2-3 times a month	3	5.4	12	8.3	29	9.7	44	8.8
Once a week	4	7.1	8	5.6	23	7.7	35	7.0
2-3 times a week	22	39.3	31	21.5	34	11.3	87	17.4
4-5 times a week	11	19.6	13	9.0	21	7.0	45	9.0
Every day	9	16.1	45	31.3	49	16.3	103	20.6
Group Total	56	100.0	144	100.0	300	100.0	500	100.0

The research findings suggest that most households (98%) consume fruit preserves at breakfast or with other food products as snacks (22.5%). In both cases, fruit preserves are likely to be consumed with bread or other derivatives. In the past, wheat bread was described as a luxury food item catering only to high-income consumer groups (FAO/WFP Crop and food supply assessment mission to Zimbabwe, 2001). However, since independence, the

³¹ 89.3%, 82.6% and 62.7% of high-, middle- and low-income households (respectively) consume fruit preserves at least once a month.

consumption of wheat has increased considerably, especially among low-income urban consumers, and it is now considered as Zimbabwe's second staple food (Ibid.). With increasing consumption of bread, so has the consumption of fruit preserves increased.

5.2.1 Purchasing patterns

Consumers source jams, jellies and marmalades in varying ways. Generally speaking 96.7% of households (or 443) purchase products, 18.6% make fruit conserves at home, and 5.9% receive gifts of fruit preserves from family and friends. When households indicated their most frequent source of fruit preserves (Table 5.2), the findings were similar—95% depended on purchasing products, 3.3% processed fruit preserves at home, and 1.3% relied on receiving products as gifts. Regardless of income group, the majority of households purchase fruit preserves—96.4%, 98.4% and 93.8% of high-, middle- and low-income households respectively.

Table 5.2 Most frequent source of fruit preserves

	Income group						Total	
	High		Middle		Low			
	Count	% Group	Count	% Group	Count	% Group	Count	% Total
Purchase	54	96.4	127	98.4	256	93.8	437	95.4
Process at home			1	0.8	14	5.1	15	3.3
Gift	2	3.6	1	0.8	3	1.1	6	1.3
All	56	100.0	129	100.0	273	100.0	458	100.0

About a quarter of the households that purchase fruit preserves ($n=443$), only purchase products a few times a year (Table 5.3). In fact, a third of low-income households purchase products only a few times a year, suggesting that for a section of the population, fruit preserves may be regarded as luxury products. The majority of households purchase products at least once a month—80.4% of high-, 89.8% of middle- and 66.3% of low-income households respectively. Just 1.8% of the high-income group purchase fruit preserves at least once a week, compared to 7.8% of the middle- and 5.7% of the low-income group.

Table 5.3 Frequency of purchase

Frequency	Income group						Total	
	High		Middle		Low			
	Count	% Group	Count	% Group	Count	% Group	Count	% Total
A few times a year	10	17.9	13	10.2	87	33.6	110	24.8
Once a month	41	73.2	86	67.2	142	54.8	269	60.7
2-3 times a month	3	5.4	19	14.8	15	5.8	37	8.4
Once a week	1	1.8	4	3.1	11	4.2	16	3.6
2-3 times a week			5	3.9	4	1.5	9	2.0
4-5 times a week			1	0.8			1	0.2
Other	1	1.8					1	0.2
Total	56	100.0	128	100.0	259	100.0	443	100.0

Fruit preserves are mainly sourced through supermarkets and grocers or general dealer shops—98.9% and 20.5% of households make purchases at these outlets respectively. When households were asked to indicate the outlet where they most frequently make purchases, 96.8% indicated supermarkets (Table 5.4). Over 95% of households—irrespective of income group, were more likely to purchase fruit preserves at supermarkets. A few low-income households made purchases directly with processors, but the numbers involved were very small.

Table 5.4 Most frequent place of purchase

	Income group						Total	
	High		Middle		Low			
	Count	% Group	Count	% Group	Count	% Group	Count	% Group
Supermarket	55	98.2	125	97.7	249	96.1	429	96.8
Grocer/general store or dealers			1	0.8	3	1.2	4	0.9
Local market					1	0.4	1	0.2
From street trader								
Direct from processor			1	0.8	6	2.3	7	1.6
Other	1	1.8	1	0.8			2	0.5
All	56	100.0	128	100.0	259	100.0	443	100.0

5.3 Type and quantity of fruit preserves purchased

In general, mixed fruit, orange, lemon, and strawberry were the most popular types of fruit preserves purchased by households (Figure 5.1). The findings suggest that fruit preserves made from indigenous fruits such as hacha³², hute³³, mazhanje³⁴, matamba³⁵ and tsubvu³⁶ are not popular among consumers. Alternatively such products may not be readily available on the market, and hence the low numbers recorded. There was little difference in the types of fruit preserves purchased by the three income groups (Figure 5.2). Preserves based on mixed fruit, orange and lemon, were the most popular products among the middle-, high- and low-income groups respectively. Fruit preserves made from exotic fruits such as apple, apricot, lime, peach, plum, raspberry, mulberry and figs, were more popular among the high- and middle-income group than low-income households. The price of fruit preserves made from exotic fruits may inhibit their consumption among the latter group.

³² *Parinari Curatellifolia*.

³³ *Syzygium Cordatum*. Tredgold (1986) suggests that by using equal quantities of white sugar to the cooked fruit pulp or strained juice a good jam or jelly can be made.

³⁴ *Uapaca Kirkiana*.

³⁵ *Strychnos Spinosa*.

³⁶ *Vangueriopsis Lanciflora*.

Figure 5.1 Most popular types of fruit preserves purchased

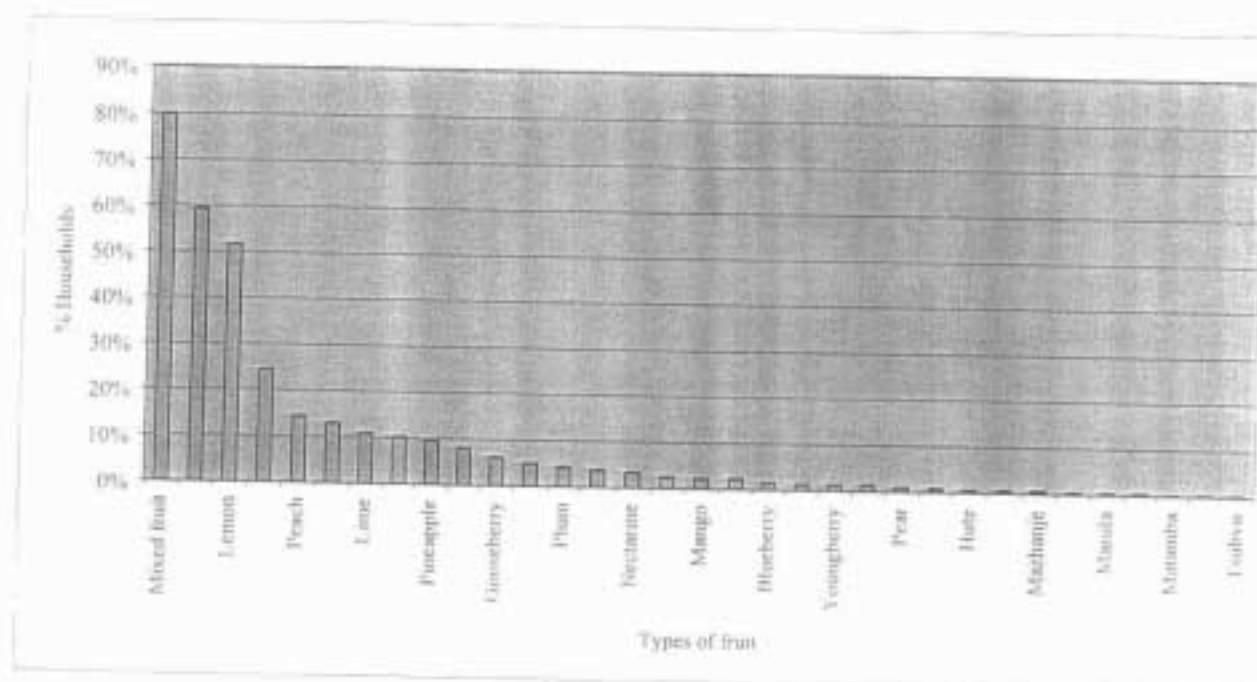
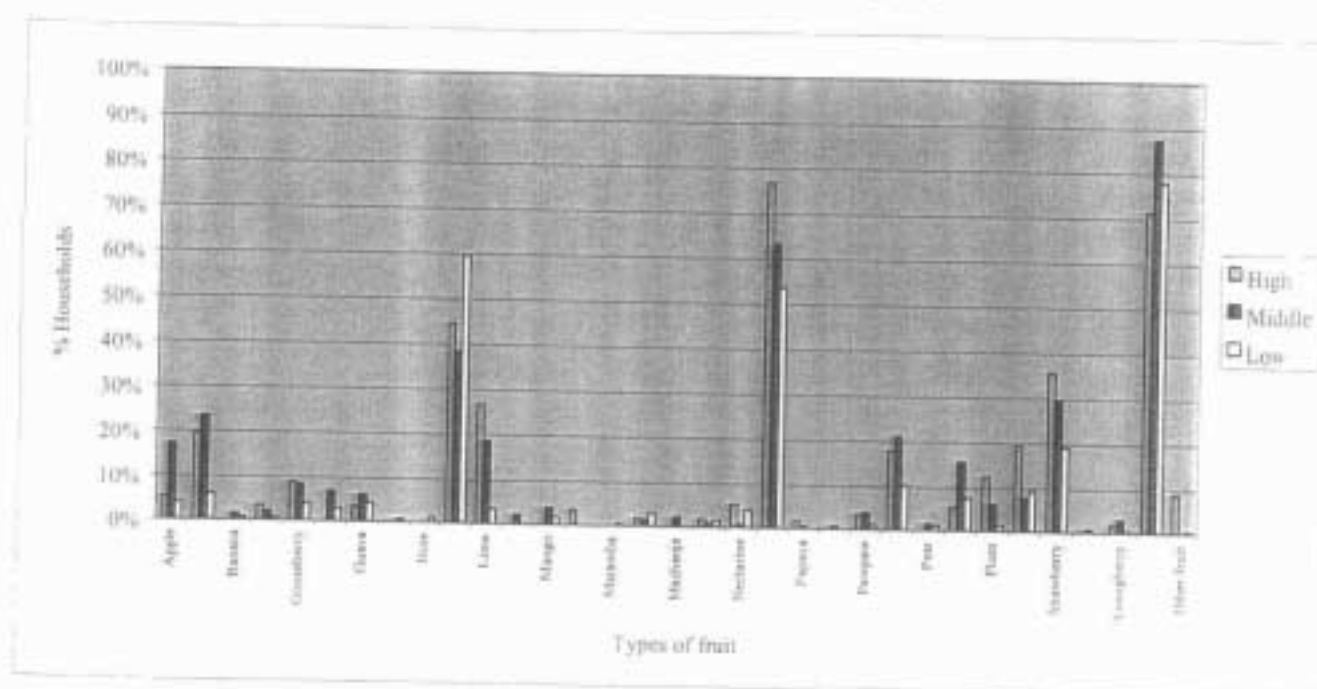


Figure 5.2 Most popular types of fruit preserves purchased by each income group



Note: Other fruits include mulberry and figs.

Of the 332 households that estimated their consumption levels of fruit preserves, the median quantity consumed was 0.90 kg per month (Table 5.5). The findings suggest little difference in the mean and median quantities of fruit preserves purchased across income groups.

Table 5.5 Quantity of fruit preserves purchased per month (Kg)

	Income Group			Total
	High	Middle	Low	
No. Households	46	115	171	332
Minimum	0.11	0.25	0.25	0.11
Maximum	2.50	5.40	6.00	6.00
Mean	1.02	1.33	1.06	1.15
Median	0.95	1.00	0.90	0.90

Note: For those households that gave quantities purchased per week, this was multiplied by a factor of '4' to give estimated quantity per month. One can/glass jar of product was converted to 0.45 kg.

5.4 Packaging characteristics

Glass jars and bottles are commonly used to pack fruit preserves but other cheaper containers such as plastic pots and plastic bags are becoming increasingly common (Fellows, 1997). Canned fruit preserves were found to be more popular than products presented in other packaging materials. When households indicated the type of packaged product they most frequently purchased, canned fruit preserves were the most popular—particularly among the low-income group with 82.6% indicating their preference for this form of packaging, compared with 55.5% of middle- and 58.9% of high-income households (Table 5.6). Glass bottles or jars were much more popular among high- and middle-income households. Although fruit preserves packaged in glass containers may be seen as superior to products presented in other forms of packaging, they are not the most popular, even among the high-income group.

Table 5.6 Most frequent type of packaging

	Income group						Total	
	High		Middle		Low			
	Count	% Group	Count	% Group	Count	% Group	Count	% Group
Sealed plastic pack					1	0.4	1	0.2
Plastic bottle/jar	3	5.4	4	3.1	4	1.5	11	2.5
Canned/tinned	33	58.9	71	55.5	214	82.6	318	71.8
Glass bottle/jar	20	35.7	53	41.4	40	15.4	113	25.5

5.5 Consumer perceptions of fruit preserves processed by small-scale enterprises

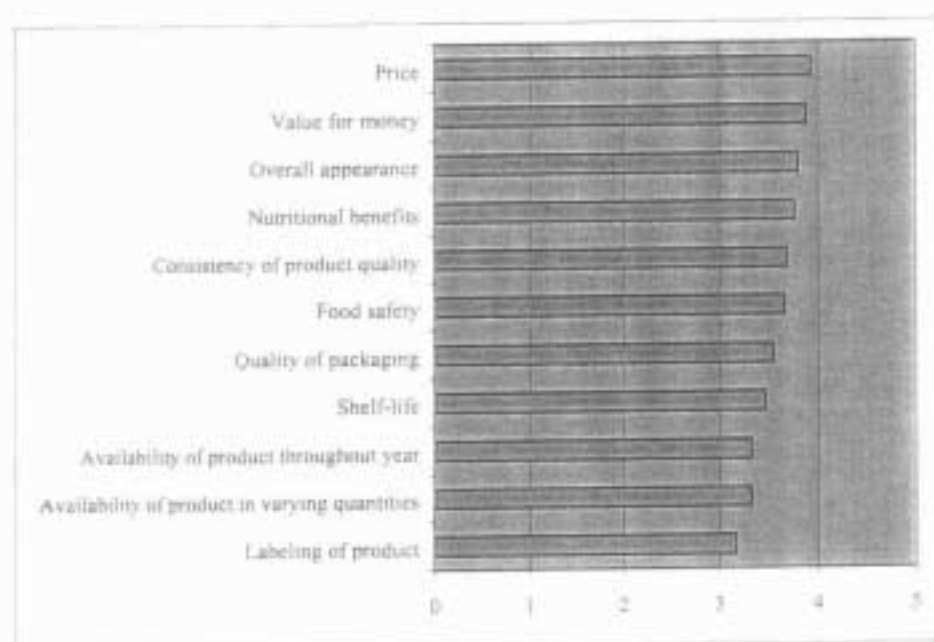
Of the 443 households that buy fruit preserves, fewer than 10% had purchased a product processed by a small-scale enterprise (Table 5.7). Perhaps surprising, but high-income households (19.6%) were more likely to have done so, than middle- (7.0%) or low-income households (8.1%).

Table 5.7 Purchase of fruit preserves from small-scale processors

Income Group	Total sample No. households	Number households purchase fruit preserves	Purchase fruit preserves from small-scale sector	
			No. households	% Group
High	56	56	11	19.6
Middle	144	128	9	7.0
Low	300	259	21	8.1
All	500	443	41	9.3

Small-scale processors of fruit preserves performed 'neither poor nor good' for all of the attributes listed (Figure 5.3). 'Price' received the highest mean score, but this was still below 4.00, the score which reflected 'good' performance. 'Price' was rated highly by high- and low-income households (4.18 and 4.00 respectively), and the high-income group also rated them highly on 'value for money' (4.09) (Table 5.8). Middle-income households rated none of the attributes with a mean score of 4.00 or more.

Figure 5.3 Mean performances of fruit preserves processed by small-scale sector



Note: Mean performance score relates to 5-point scale where 1 = very poor and 5 = very good.

Small-scale processors were rated poorest on 'product labelling' (Figure 5.3). However, there was some differentiation across income groups (Table 5.8). High-income households rated the small-scale sector poorest on the consistent supply or 'availability of products throughout year' and 'availability of product in varying quantities' (both with 2.73). The middle-income group also rated them poorest on the latter attribute, along with 'price' and 'shelf-life' (all 3.44). Low-income households rated them lowest on 'product labelling' (2.71) and 'shelf-life' (3.24).

Table 5.8 Mean performance of fruit preserves processed by small-scale sector, as rated by income groups

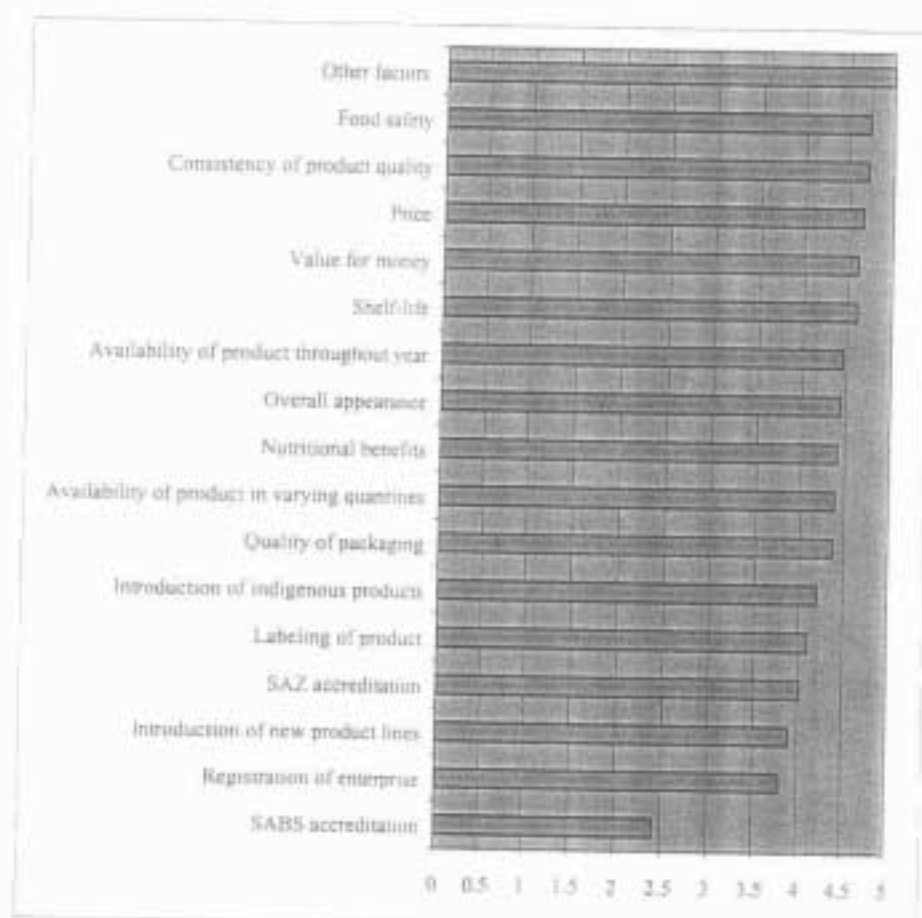
Attribute	Income Group			Total (n=41)
	High (n=11)	Middle (n=9)	Low (n=21)	
Price	4.18	3.44	4.00	3.93
Shelf-life	3.91	3.44	3.24	3.46
Consistency of product quality	3.82	3.78	3.57	3.68
Food safety	3.55	3.78	3.67	3.66
Quality of packaging	3.64	3.67	3.43	3.54
Labelling of product	3.64	3.67	2.71	3.17
Overall appearance	3.91	3.67	3.81	3.80
Value for money	4.09	3.89	3.76	3.88
Availability of product in varying quantities	2.73	3.44	3.57	3.32
Availability of product throughout year	2.73	3.56	3.52	3.32
Nutritional benefits	3.91	3.67	3.71	3.76

Note: Mean performance score relates to 5-point scale where 1 = very poor and 5 = very good.

5.5.1 Meeting consumer demand

Households were asked to consider the importance of various attributes if small-scale processors were to strive to better meet consumer demand for such products (Figure 5.4 and Table 5.9). 'Other factors', 'food safety' (4.73), 'consistency of product quality' (4.71) and 'price' (4.66) were considered to be the issues requiring most attention (Figure 5.4). However, only one household cited 'other factors' (in this case 'export quality') and therefore cannot be considered to be significant.

Figure 5.4 Mean importance scores for factors if small-scale processors are to better meet consumer demand for fruit preserves



Note: Mean importance score relates to 5-point scale where 1 = very unimportant and 5 = very important.

Across income groups, the most important factors were as follows: food safety (high), 'value for money' and 'overall appearance of product' (middle) and 'consistency of product quality' (low-income group) (Table 5.9). The accreditation of products by the South African Bureau of Standards was considered to be the least important factor (2.41), regardless of income group. Two factors, 'enterprise registration' (3.80) and the 'introduction of new product lines' (3.90) were considered to be 'neither important nor unimportant'. The use of local food standards (as in compliance with the Standards Association of Zimbabwe) was considered important by the high- and middle-income group (4.91 and 4.56 respectively), but not by the low-income group (3.33). It is not clear from the results whether the latter group fully understood the function and role of such standards, given that this attribute received a much lower rating than 'food safety' (4.67), even though the two are inextricably linked.

Table 5.9 Mean importance scores for factors if small-scale processors are to better meet consumer demand for fruit preserves, as rated by income groups

Attribute	Income Group			Total
	High (n=11)	Middle (n=9)	Low (n=21)	
Price	4.82	4.44	4.67	4.66
Shelf-life	4.64	4.56	4.62	4.61
Consistency of product quality	4.91	4.44	4.71	4.71
Food safety	5.00	4.56	4.67	4.73
Quality of packaging	4.82	4.33	4.14	4.37
Labeling of product	4.64	4.33	3.71	4.10
Overall appearance	4.91	4.67	4.10	4.44
Value for money	4.82	4.67	4.48	4.61
Availability of product in varying quantities	4.55	4.44	4.29	4.39
Availability of product throughout year	4.64	4.56	4.33	4.46
Nutritional benefits	4.91	4.56	4.10	4.41
Introduction of new product lines	4.55	4.44	3.33	3.90
Introduction of indigenous products	4.55	4.56	3.86	4.20
Registration of enterprise	4.55	4.22	3.24	3.80
SAZ accreditation	4.91	4.56	3.33	4.02
SABs accreditation	2.45	2.56	2.33	2.41
Other factors		5.00		5.00

Note: Mean importance score relates to 5-point scale where 1 = very unimportant and 5 = very important.

5.5.2 Purchasing products from a particular small-scale processor

Of the 41 households that had purchased products from small-scale enterprises, 30 households purchased fruit preserves from a particular processor (Table 5.10). Higher income households were more likely to make purchases with a particular processor than households in other income groups. The large majority of these small-scale processors were located in or around Harare—Greenadale, Kuwadzana, Chitungwiza and Mbare were the locations most frequently mentioned. Only two households made purchases with processors located beyond Harare, i.e. at Juliasdale and Nyanga in Manicland Province

Table 5.10 Purchase of fruit preserves direct from particular small-scale processor

Income Group	Purchase from small-scale sector	Purchase from particular small-scale processor	
	No. households	No. households	% Group
High	11	10	90.9
Middle	9	6	66.7
Low	21	14	66.7
All	41	30	73.2

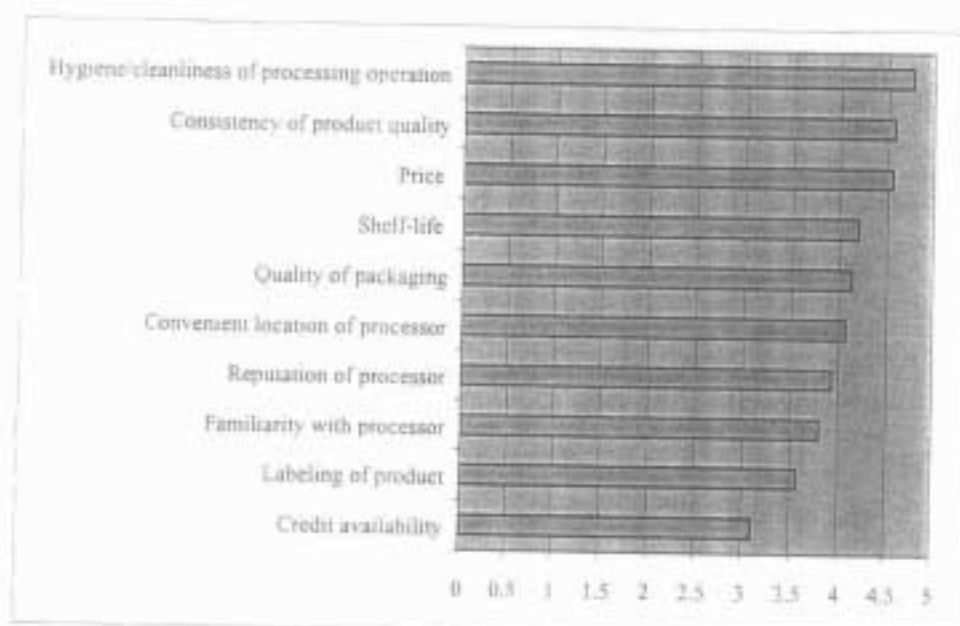
Price, product quality and taste, the convenient location of the processor, and familiarity with the processor were the most important reasons given for purchasing fruit preserves from a particular processor.³⁷ In fact 22 households were connected in one way or another with the processor involved—14 of whom lived in the same locality as the processor and 12 knew the processor personally.

³⁷ Credit availability was also mentioned by a small number of households.

The majority of households that purchase products from particular processors, have been doing so for less than a five-year period—11 had been making purchases from them for a period of 2-5 years, and eight have been buying their products for less than 12 months. The high-income group showed the greatest loyalty to small-scale processors—eight of the ten households in this group have been purchasing products direct from a particular processor for a period of six years or more.

Consumers suggested that the level of 'hygiene of the processing operation' as well as 'consistency of product quality' and 'price' were the most important factors for choosing to buy fruit preserves from a particular processor (Figure 5.5). Similar findings were found across each income group. The same three attributes were considered to be the most important by all households, the only exception being the high-income group which considered 'quality of product packaging' more important than 'price' (Table 5.11).

Figure 5.5 Mean importance scores for factors relating to choice of small-scale processor



Note: Mean importance score relates to 5-point scale where 1 = very unimportant and 5 = very important.

Credit availability was considered the least important factor influencing the choice of processor (Figure 5.5). Although 'familiarity with the processor' was considered to be neither unimportant nor important in the choice of processor, as we have already seen, of those households that made purchases with a particular small-scale enterprise, 12 knew the processor personally.

Table 5.11 Mean importance scores for factors relating to choice of small-scale processor, as rated by income groups

Attribute	Income Group			Total (n=30)
	High (n=10)	Middle (n=6)	Low (n=14)	
Price	4.36	4.50	4.71	4.55
Shelf-life	4.50	4.17	4.00	4.20
Consistency of product quality	4.80	4.33	4.50	4.57
Quality of packaging	4.70	4.17	3.71	4.13
Labeling of product	4.00	3.83	3.14	3.57
Familiarity with processor	4.20	4.00	3.43	3.80
Convenient location of processor	4.50	3.83	3.86	4.07
Reputation of processor	4.00	3.50	4.07	3.93
Hygiene/cleanliness of processing operation	4.90	4.83	4.64	4.77
Credit availability	2.50	3.00	3.57	3.10

Note: Mean importance score relates to 5-point scale where 1 = very unimportant and 5 = very important.

5.6 Consumer perceptions of fruit preserves processed by large-scale enterprises

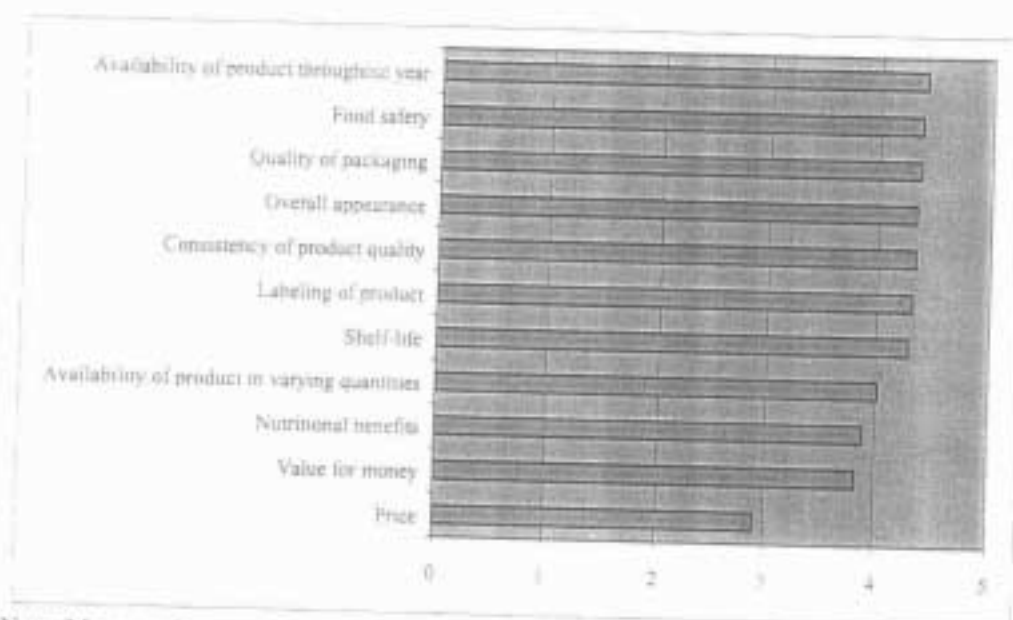
Of the 443 households that buy fruit preserves, 91% have at some time or another purchased a product processed by the large-scale sector (Table 5.12). A slightly larger share of high- than middle- or low-income households have purchased products from this sector.

Table 5.12 Purchase of fruit preserves from large-scale processors

Income Group	Total sample (No. households)	No. of households purchasing fruit preserves	Purchase fruit preserves from large-scale sector	
			No. households	% Group
High	56	56	53	94.6
Middle	144	128	112	87.5
Low	300	259	238	91.9
All	500	443	403	91.0

Large-scale processors performed best on the consistent supply of products ('availability of product throughout year' = 4.41) and 'food safety' (4.38) and on attributes related to the visual appeal of their products—'quality of packaging' (4.37) and the 'overall appearance of the product' (4.34) (Figure 5.6). However, consumers consider fruit preserves processed by large-scale food manufacturers to be highly priced, and therefore do not offer value for money, given that such attributes received the lowest ratings. Although consumers rated products processed by the small-scale sector highest on these same two attributes ('price' and 'value for money'), both received scores less than 4.00, which suggests they performed 'neither good nor poor' (Section 5.3, Figure 5.3).

Figure 5.6 Mean performance of fruit preserves processed by large-scale sector



Note: Mean performance score relates to 5-point scale where 1 = very poor and 5 = very good.

Across income groups, there was little differentiation in terms of which attributes received the highest scores (Table 5.13). The consistent supply or 'availability of products throughout the year', 'quality of packaging', 'food safety' and the 'overall appearance of products', tended to receive higher ratings within each income group. Low-income households rated products processed by the large-scale sector much higher than the middle- and high-income group in terms of 'food safety' (4.57, 4.13 and 4.06 respectively).

Table 5.13 Mean performance of fruit preserves processed by large-scale sector, as rated by income groups

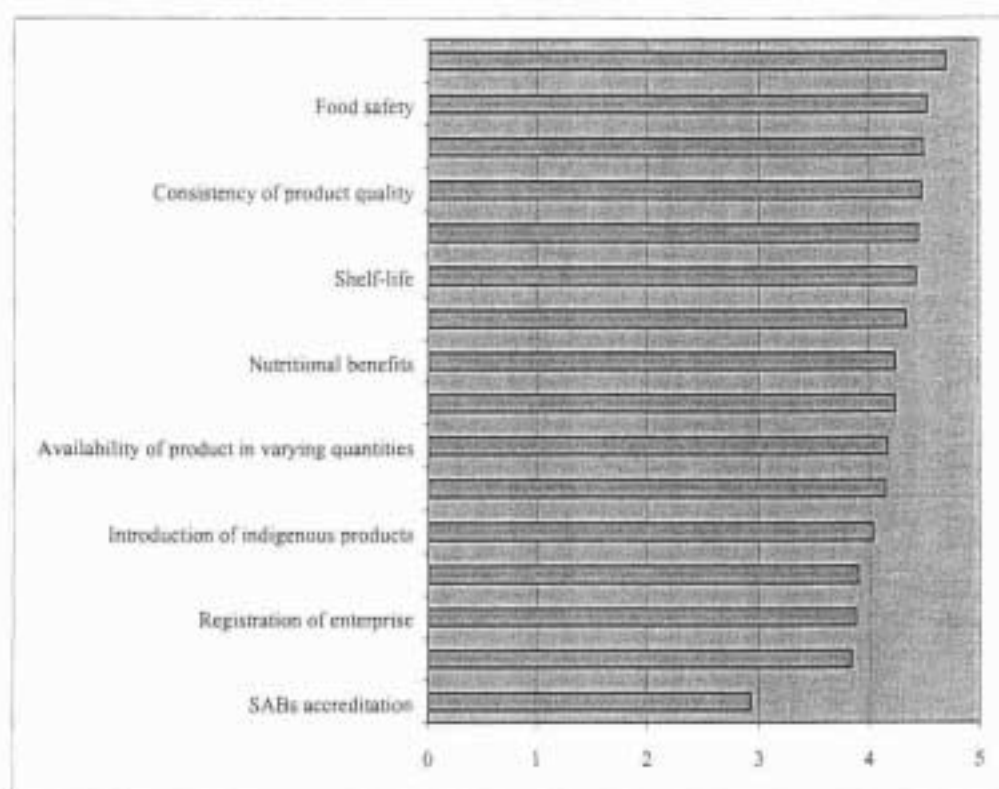
Attribute	Income Group			Total (n=403)
	High (n=53)	Middle (n=112)	Low (n=238)	
Price	3.09	2.74	2.93	2.90
Shelf-life	4.13	4.13	4.38	4.28
Consistency of product quality	4.11	4.10	4.50	4.33
Food safety	4.06	4.13	4.57	4.38
Quality of packaging	4.25	4.04	4.56	4.37
Labelling of product	4.11	3.99	4.50	4.31
Overall appearance	4.28	4.05	4.51	4.34
Value for money	3.62	3.60	3.99	3.83
Availability of product in varying quantities	4.06	3.95	4.04	4.02
Availability of product throughout year	4.23	4.19	4.56	4.41
Nutritional benefits	3.77	3.82	3.95	3.89

Note: Mean performance score relates to 5-point scale where 1 = very poor and 5 = very good.

5.6.1 Meeting consumer demand

Among other factors, consumers suggested that large-scale processors need to consider 'product price' (4.70), 'food safety' (4.53) and 'value for money' (4.50), if they are to better meet consumer demand for fruit preserves (Figure 5.7).³⁸ Middle- and low-income households considered product 'price' to be the most important factor if the large-scale sector is to improve its performance. However, the high-income group considered the 'consistency of product quality' to be more important than 'price' (Table 5.14).

Figure 5.7 Mean importance scores for factors if large-scale processors are to better meet consumer demand for fruit preserves



Note: Mean importance score relates to 5-point scale where 1 = very unimportant and 5 = very important.

Although food safety was rated as a very important factor in terms of improving the sector's ability to meet consumer demand, the use of local food standards was deemed to be neither important nor unimportant (SAZ accreditation received mean score of 3.91), and the use of standards certified by the South African Bureau of Standards (SABS) was considered to be the least important factor (2.92) (Figure 5.7). However, by differentiating between income groups, we can see that the high- and middle-income households rated 'SAZ accreditation' as significantly important (mean scores of 4.72 and 4.26 respectively). The high number of households in the low-income group however, which gave a mean score of 3.56, brought the overall score down considerably (Table 5.14). The findings therefore suggest a lack of consumer knowledge and understanding surrounding the use of food standards—among low-

³⁸ 'Other factors' (i.e. meeting international food standards) were also considered to be important (mean score 5.00), but only by one middle-income household, and therefore is not significant here.

income households. This causes concern given that this sector constitutes the largest consumer group in Zimbabwe.

Additionally, households did not consider the introduction of new product lines to be 'neither important nor unimportant' in order to better meet consumer demand. However, there was some differentiation across income groups—from 3.66 among the low-income group to 4.26 among the high-income group (Table 5.14). Let us now forget the risk involved in trying new products, particularly by the low-income group, which are more sensitive to price and thus experience a narrower choice of products due to income constraints! High-income households are in a much stronger position to experiment with new and different products and are more likely to exhibit hedonistic behaviour in terms of their consumption patterns.

Table 5.14 Mean importance scores for factors if large-scale processors are to better meet consumer demand for fruit preserves, as rated by income groups

Attribute	Income Group			Total (n=403)
	High (n=53)	Middle (n=112)	Low (n=238)	
Price	4.85	4.64	4.70	4.70
Shelf-life	4.68	4.45	4.37	4.43
Consistency of product quality	4.87	4.44	4.42	4.48
Food safety	4.75	4.44	4.53	4.53
Quality of packaging	4.62	4.16	4.19	4.24
Labeling of product	4.58	4.14	4.06	4.15
Overall appearance	4.77	4.33	4.44	4.45
Value for money	4.81	4.41	4.47	4.50
Availability of product in varying quantities	4.42	4.10	4.15	4.17
Availability of product throughout year	4.58	4.27	4.32	4.34
Nutritional benefits	4.75	4.34	4.08	4.24
Introduction of new product lines	4.26	4.03	3.66	3.84
Introduction of indigenous products	4.06	3.98	4.04	4.03
Registration of enterprise	4.58	4.07	3.63	3.88
SAZ accreditation	4.72	4.26	3.56	3.91
SABs accreditation	2.77	2.88	2.97	2.92
Other factor (n=1)		5.00		5.00

Note: Mean importance score relates to 5-point scale where 1 = very unimportant and 5 = very important.

5.6.2 Brand loyalty

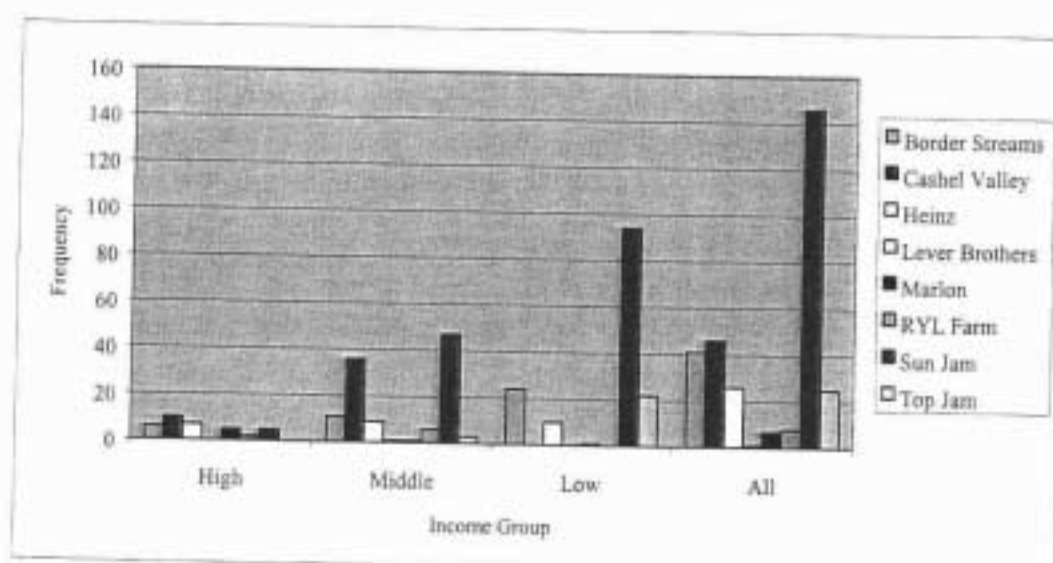
Of those households that buy fruit preserves manufactured by large-scale firms, 60% tend to buy particular brands of products (Table 5.15). Middle-income households were more likely to show allegiance to a particular brand than other income groups—75% of middle-income households tended to purchase a particular brand of fruit preserve, compared to 49.1% of high- and 54.8% of low-income households.

Table 5.15 Purchase of particular brand of product processed by large-scale sector

Income Group	Purchase from large-scale sector	Purchase particular brand of product	
	No. households	No. households	% Group
High	53	26	49.1
Middle	112	84	75.0
Low	238	131	54.8
All	403	241	59.7

Consumers exhibited significant brand awareness with respect to the fruit preserve sector. The most popular brands of products purchased by consumers were Sun Jam™, Cashel Valley™ and Border Streams™ (Figure 5.8). Low-income households overwhelmingly preferred Sun Jam products. However, Border Streams and Top Jam were also popular among this income group. Again Sun Jam products were preferred by the middle-income group, but Cashel Valley products were also highly popular. Among the high-income group, no particular brand dominated, although Cashel Valley was the most popular—but marginally so. The most important reason given for choosing the particular brand of product mentioned was taste. However, other important reasons given included familiarity with the brand, price, product quality, and 'the particular brand is a favourite of the household'. The findings were similar across income groups.

Figure 5.8 Brands of fruit preserves purchased



Note: Frequency refers to the number of times these brands were mentioned by the 241 households that suggested they purchased particular brands. All 241 households suggested at least one brand. Up to three brands were recorded for each household.

A large share of households have shown considerable degrees of allegiance to particular brands of fruit preserves, by continuing to buy particular brands of products over significant periods of time (Table 5.16). In fact, only 3% of households had been purchasing the particular brand they mentioned for less than a 12-month period. About 57% of households

however, have been purchasing a particular brand for a period of 16 years or more—31% of high-, 68% of middle- and 55% of low-income households have done so.

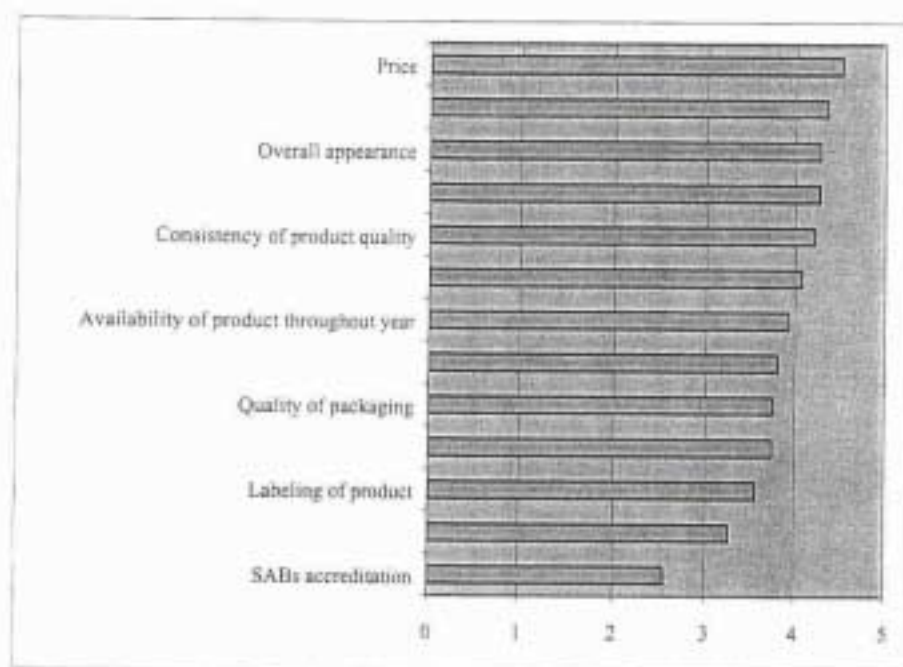
Table 5.16 Number of years purchasing particular brand of fruit preserve

Number of years	Income Group						Total	
	High		Middle		Low			
	Count	% Group	Count	% Group	Count	% Group	Count	% Total
Less than 1 year	3	11.5	1	1.2	3	2.3	7	2.9
2-5 years	8	30.8	11	13.1	21	16.0	40	16.6
6-10 years	4	15.4	9	10.7	19	14.5	32	13.3
11-15 years	3	11.5	6	7.1	16	12.2	25	10.4
16 years or more	8	30.8	57	67.9	72	55.0	137	56.8
All	26	100.0	84	100.0	131	100.0	241	100.0

As theory would dictate, the high-income group showed lesser degrees of allegiance to a particular brand— 57.7% of high-income households have been purchasing a particular brand for a period of at least six years, compared to 85.7% of middle- and 81.7% of low-income households. Given their higher incomes, the upper-income group experiences greater choice in the market. Furthermore, this group is usually more willing to try new products, given the reduced risk they experience in comparison to low-income households for example. “Brands usually have consistent quality and consumers may be able to obtain particular benefits by selecting particular brands. Routine buying of a familiar brand can reduce risk and sometimes ensure quality or value for money” (East, 1997:43). Additionally, high-income households are likely to desire greater variety in their consumption patterns. Hedonistic, or pleasure seeking attributes are also of significance. High-income consumers may experiment with different brands in the quest of fulfilling such behaviour.

Product ‘price’ (4.51) was considered to be the most important factor generally influencing brand choice among products manufactured by the large-scale food sector (Figure 5.9). ‘Food safety’ (4.35), the ‘overall appearance of the product’ (4.27), ‘value for money’ (4.26), ‘consistency of product quality’ (4.21) and ‘shelf life’ (4.07) were also considered to be important. Although ‘price’ was the most important factor among the low- and middle-income groups (mean scores of 4.69 and 4.29 respectively), ‘consistency of product quality’ (4.73) was considered to be more important than ‘price’ (4.27) among high-income households (Table 5.17).

Figure 5.9 Mean importance scores for factors relating to brand choice



Note: Two high-income households also mentioned 'Other factors' of importance (i.e. taste, with a mean score 5.00). However, given the numbers involved are very small, they are not significant in overall terms.

Note: Mean importance score relates to 5-point scale where 1 = very unimportant and 5 = very important.

Meanwhile, the use of local ('SAZ accreditation') and other food standards (SABS accreditation) was considered to be 'unimportant' or 'neither important nor unimportant' respectively. This was regardless of the income group to which the household belonged. This somewhat contradicts the mean scores for food safety—which received a mean score of 4.00 or more by all income groups. Again the degree of understanding about the role of food standards, on the part of consumers, is questionable. Packaging and labelling were considered to be 'neither important nor unimportant' in the choice of brand, regardless of income group.

Table 5.17 Mean importance scores for factors relating to brand choice, as rated by income groups

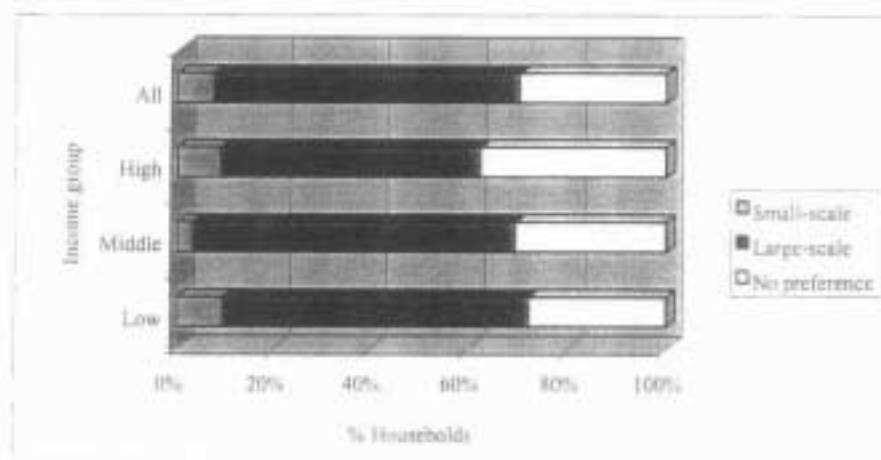
Attribute	Income Group			Total (n=241)
	High (n=26)	Middle (n=84)	Low (n=131)	
Price	4.27	4.29	4.69	4.51
Shelf-life	3.81	3.95	4.21	4.07
Consistency of product quality	4.73	4.23	4.1	4.21
Food safety	4.23	4.12	4.53	4.35
Quality of packaging	3.88	3.71	3.76	3.76
Labeling of product	3.54	3.61	3.53	3.56
Overall appearance	4.31	3.95	4.47	4.27
Value for money	4.23	4.1	4.37	4.26
Availability of product in varying quantities	3.5	3.68	3.95	3.81
Availability of product throughout year	3.96	3.86	3.98	3.93
Nutritional benefits	4.08	3.85	3.63	3.75
SAZ accreditation	3.92	3.44	3.01	3.26
SABS accreditation	2.08	2.49	2.66	2.54
Other factor	5.00			5.00

Note: Mean importance score relates to 5-point scale where 1 = very unimportant and 5 = very important.

5.7 Preference for products processed by small- or large-scale sector

Of the households that purchase fruit preserves ($n=443$), the majority (63%) suggested a preference for products manufactured by the large-scale sector (Figure 5.10). Only 7% of households indicated a preference for products processed by small-scale enterprises. Much the same findings were true irrespective of the income group—62.9% of low-, 66.4% of middle- and 53.6% of high-income households stated a preference for fruit preserves processed by large-scale food manufacturers. Just 8.9% of high-, 3.1% of middle- and 9.3% of low-income households preferred fruit preserves produced by small-scale processors.

Figure 5.10 Preference for products processed by small or large-scale sector



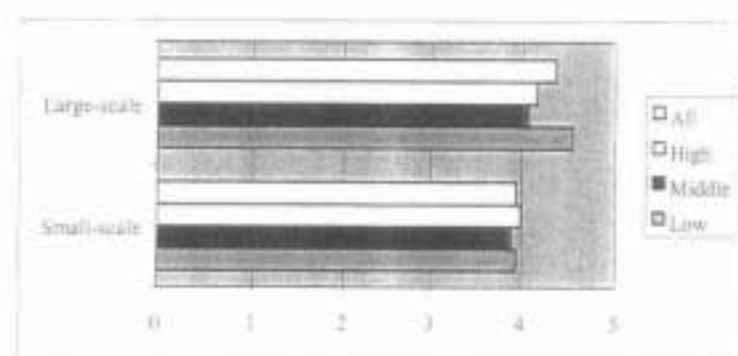
Preferences for fruit preserves produced by either the large- or small-scale sector were based on several factors (Table 5.18). However, price was the single most important factor to explain a preference for products processed by small-scale enterprises. Hygiene, product quality, food safety, availability of product and packaging were the most important reasons given to explain a preference for products processed by the large-scale sector.

Table 5.18 Reasons for preference of products processed by small- or large-scale sector

Small-scale processor	Frequency	Large-scale processor	Frequency
Price	17	Hygiene	34
Taste	6	Product quality	29
Promote indigenisation	5	Food safety	20
Quality	5	Availability	17
Value for money	3	Packaging	11
Familiarity	2	Consistency	9
Convenience	2	Familiarity	6
Credit availability	2	Shelf-life	4
Availability	1	Taste	4
Varying quantities	1	Variety of products on sale	4
Flavour	1	Convenience	3
Packaging	1	Value for money	2
Accessibility	1	Appearance	1
		Favourite	1
		Shelf-life	1
		Handle consumer complaints	1
		Large-scale sector use better equipment	1
		Affordable	1
		Exhibit SAZ	1
		No knowledge of small-scale	1
		Registered enterprise	1
		Well established	1
		Nutritional Value	1
		Satisfy Quality Standards	1
		Reputation	1
		Fortification of nutrients	1

All households—regardless of the income group, rated fruit preserves manufactured by the large-scale sector better than products processed by small-scale enterprises (Figure 5.11). Of the three income groups, low-income households rated products processed by the large-scale sector highest (4.55), whereas high-income households gave the small-scale sector the highest rating (4.00) of all. The large-scale sector received a rating of 4.00 or more by all income groups. This suggests that fruit preserves processed by the large-scale sector are popular across all income groups compared to products from the small-scale sector. This observation is perhaps not unexpected given the dominance of large-scale food manufacturers in the market. Products from the large-scale sector are well established on the market and are therefore well known.

Figure 5.11 Overall mean performance rating of products processed by small- and large-scale sector



Note: Mean performance relates to a 5-point scale where 1 = very poor and 5 = very good.

5.8 Changes in consumption levels

Of the sample, just 10% of households suggested they were consuming more fruit preserves than three years ago. However, 47.0% of households have reduced their consumption of fruit preserves over the same period (25.0% of high, 35.9% of middle- and 57.1% of the low-income group). The high-income group was more likely to have increased consumption of fruit preserves, compared to middle- and low-income households (17.9%, 14.1% and 6.6% respectively).

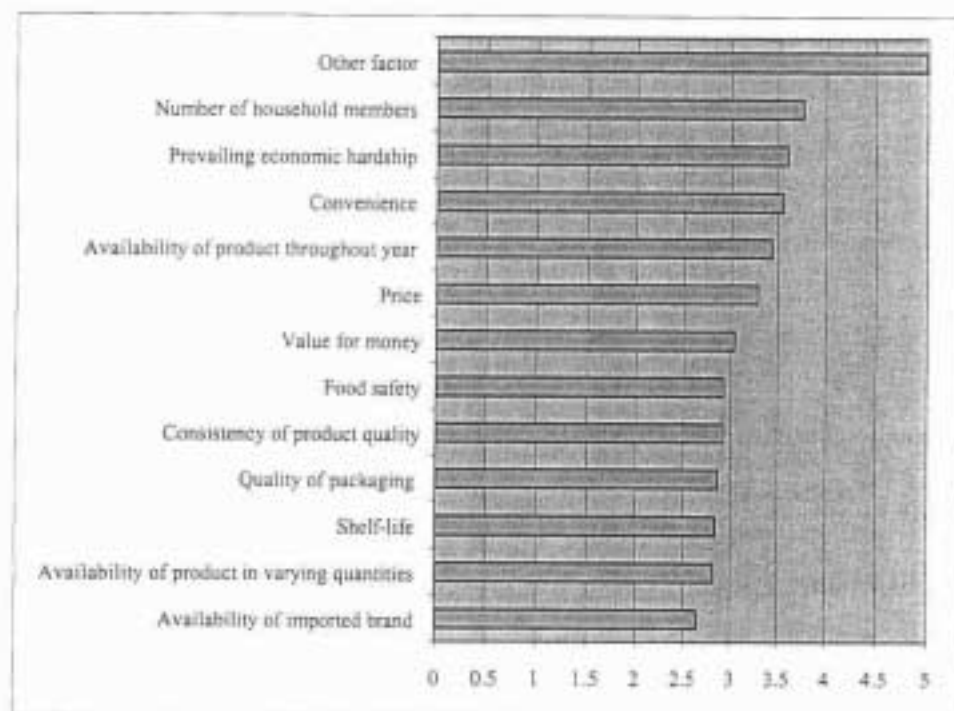
Table 5.19 Current consumption levels of fruit preserves compared to that of three years ago

	Income Group						Group Total	
	High		Middle		Low		Count	% Group
	Count	% Group	Count	% Group	Count	% Group		
More	10	17.9%	18	14.1%	17	6.6%	45	10.2%
Less	14	25.0%	46	35.9%	148	57.1%	208	47.0%
Same	32	57.1%	64	50.0%	94	36.3%	190	42.9%
All	56	100.0%	128	100.0%	259	100.0%	443	100.0%

Several factors contributed to changes in the quantity of fruit preserves consumed by households. Across the entire sample, the only attribute to receive a mean score of 4.00 or more was 'other' factors, i.e. 'higher incomes' and 'enjoy eating fruit preserves' (Figure 5.12). However, this refers to only two cases, and therefore is not significant. Within the income groups however, 'convenience' (4.10) was considered important among the high-income group and the 'number of household members' (4.11) was considered important among the middle-income group.³⁰ Within the low-income group, none of the factors were deemed important.

³⁰ Again these were the only attributes to receive mean scores of 4.00 or more within income groups.

Figure 5.12 Mean importance scores for factors relating to increased consumption of fruit preserves

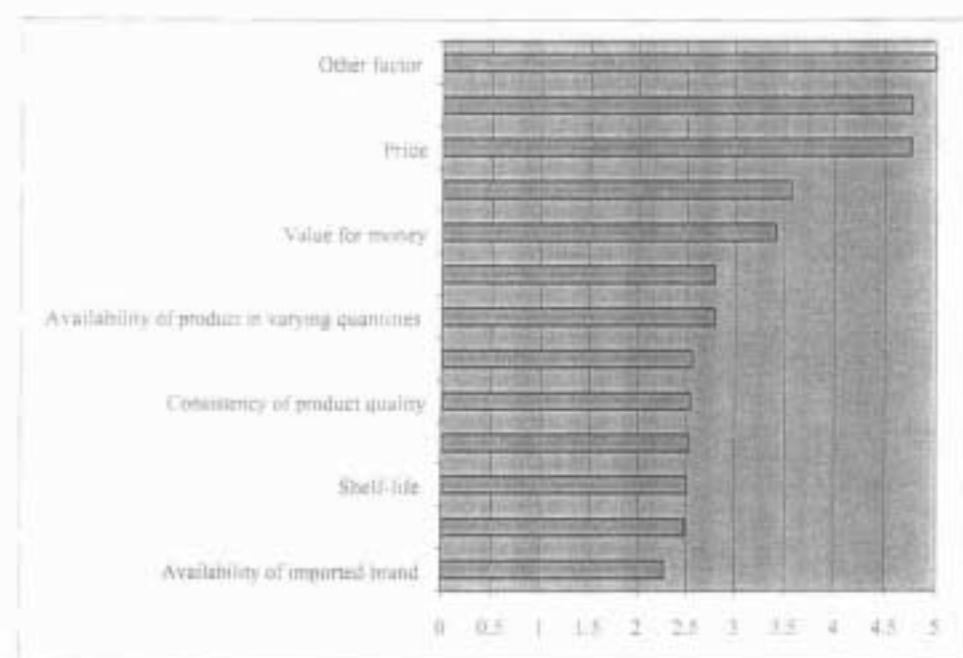


Note: Mean importance score relates to 5-point scale where 1 = very unimportant and 5 = very important.

'Prevailing economic hardship' (4.77) and product 'price' (4.76) were the only attributes considered significant in terms of explaining a decrease in the consumption of fruit preserves, (Figure 5.13). This same relationship was also found true within the high- (4.50 and 4.43 respectively) and middle-income groups (4.83 and 4.70 respectively). Within the low-income group product 'price' (4.81) was considered to be more significant than 'prevailing economic hardship' (4.78) in terms of explaining the decreased consumption of fruit preserves among the group. Four households considered 'other factors' (5.00) to be important in terms of explaining their decreased consumption of fruit preserves—'taste', 'health reasons' and the fact that 'fruit preserves can be processed at home'.⁴⁰ However, in overall terms, 'other factors' cannot be said to be significant.

⁴⁰ Two middle-income households, and one high- and one low-income household.

Figure 5.13 Mean importance scores for factors relating to decreased consumption of fruit preserves



Note: Mean importance score relates to 5-point scale where 1 = very unimportant and 5 = very important.

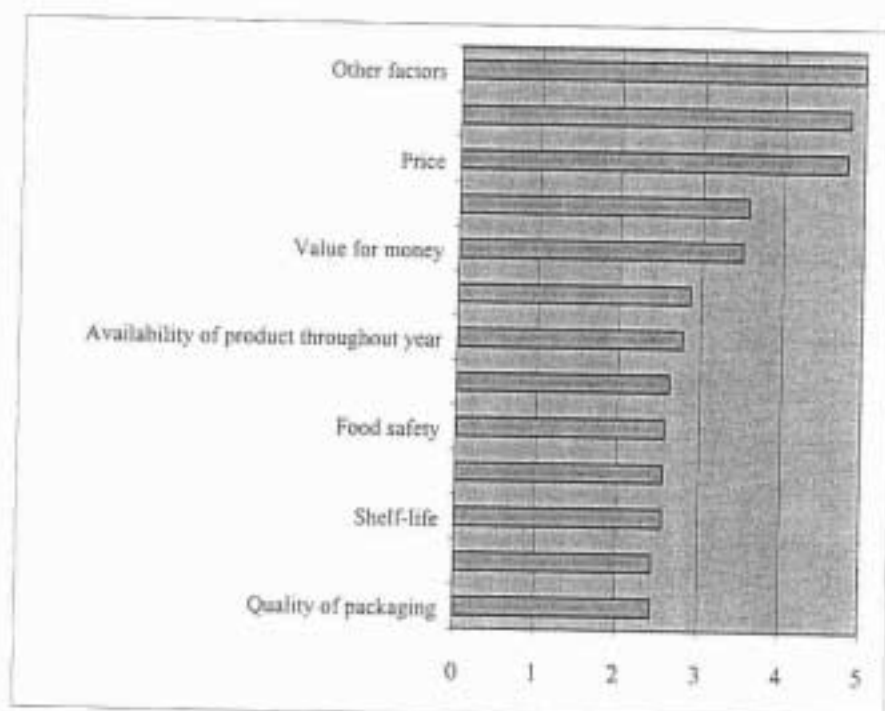
Nonetheless, nearly 50% of households that consumed fruit preserves indicated a desire to actually increase their consumption of such products (Table 5.20). In fact, 63% of low-, 36% of middle- and 23% of the high-income group indicated so.

Table 5.20 Desire to increase consumption of fruit preserves

	Income Group						Total	
	High		Middle		Low		Count	% Total
Yes	Count	% Group	Count	% Group	Count	% Group	221	49.9
No	43	76.8	82	64.1	97	37.5	222	50.1
Total	36	100.0	128	100.0	259	100.0	443	100.0

It is perhaps not surprising to observe that the main factors prohibiting an increase in the consumption of fruit preserves were 'prevailing economic hardship' (4.83) and product 'price' (4.79) (Figure 5.14). Both these factors were cited by all income groups as the most important in terms of explaining the constraints they faced in terms of increasing their consumption of fruit preserves. These same factors—prevailing economic hardship and product price, had contributed significantly to a reduction in fruit preserve consumption during the last three years. Only one low-income household mentioned 'other factors' (5.00) as being of importance, so it is of little significance here.

Figure 5.14 Mean importance scores for factors hindering increase in fruit preserve consumption



Note: Mean importance score relates to 5-point scale where 1 = very unimportant and 5 = very important.

5.9 Summary

Fruit preserves (e.g. jams, jellies, marmalades) are sweet spreads made from components of exotic or indigenous fruits. Most households consume fruit preserves, regardless of their income status. Products are mainly consumed at breakfast with wheat bread and other derivatives. The findings suggest little difference in the quantity of fruit preserves consumed among the different income groups. Most households consume about 1 kg of the product per month, with the average family consuming approximately two pots of jam, marmalade or fruit jelly per month. Therefore such products appear to be accessible to the large majority of consumers, regardless of the fact that most purchases of such products are made at supermarkets. Despite this however, almost half the household sample that purchase fruit preserves ($n=443$) have actually reduced the quantity of product consumed during the last three years, mainly due to adverse economic conditions. This is no doubt related to diminishing household purchasing power⁴¹ associated with high inflation, growing unemployment, and declining real wages, which have taken their toll on local food demand. Zimbabwe has been witnessing a steep rise in the price of basic commodities in the last few years. For example, staple foods such as maize meal, bread and milk have gone beyond the reach of many families. During 2001, the cost of bread more than doubled. The price of a standard loaf of white bread rose to 50 Zimbabwean dollars (US \$0.90) in August 2001, up from 23 Zimbabwean dollars (US \$0.42) in January of the same year (IRIN, Johannesburg, 7 August 2001). The price of bread went up by almost 64% between January 2000 and April 2001 (Table 5.21). All this has had a spiralling effect on local demand for processed food

⁴¹ The yearly Consumer Price Index (CPI) has been increasing significantly since the beginning of 2001 and reached an all-time peak of 97.9% in October of that year. Consequently, the purchasing power of urban households in particular (given that they rely on purchasing more foods than rural households) was further eroded. The price of food items went up by 85%.

products such as jam. Jam sales are closely linked to sales of bread. Given the harsh economic climate, households have reduced their purchases, prioritising on the purchase of basic foodstuffs and cutting back on more luxurious products such as jam.

Table 5.21. Percentage increases in price of basic commodities during Jan 2000-Apr 2001

Commodity	Quantity	Price (\$) this week	Price (\$) last week	Change since last week (%)	Change since Jan 2000 (%)
Sugar	1kg	27.60	27.60	Nil	75.6
Cooking Oil	750 ml	57.20	55.90	2.3	28.1
Mealie-meal	10 kg	169.5	185.00	15.5	47.7
Bread	Loaf	22.30	22.30	Nil	63.6
Meat	1kg	114.8	114.8	Nil	37.1
Tomatoes	1kg	46.20	46.20	Nil	259.6
Tea Leaves	250g	42.30	42.30	Nil	63.4
Margarine	1kg	76.95	76.95	Nil	47.1
Milk	500 ml	18.10	18.10	Nil	58.3
Vegetables	Bundle (Rape)	15.60	15.60	Nil	110.8
Vegetables	Head (Cabbage)	27.80	27.80	Nil	135.8
Bath Soap	Tablet	30.55	30.55	Nil	75.2
Washing Soap	Bar	36.15	36.15	Nil	43.6
Petroleum Jelly	200g	33.20	33.20	Nil	135

Source: The Financial Gazette, 12 April 2001.

Exotic fruit preserves (e.g. raspberry, apricot, mulberry and figs) were more popular among high- and middle-income households, given their higher price in comparison to mixed fruit jam, lemon and orange fruit preserves, which are much more accessible to low-income households. Fruit preserves made from indigenous fruits are not popular among consumers, irrespective of their income status. The question remains whether niche markets exist for such products within the domestic market.

Products from the large-scale sector are much more popular than those produced by small-scale enterprises, although they are considered to be expensive. Fruit preserves produced by the large-scale sector are considered safe, well packaged and labelled. The sector is also noted for consistent product quality and the fact that their products are available throughout the year, in comparison to products from the small-scale sector. Few households (less than 10%) actually purchase fruit preserves processed by the latter sector. Of these however, the majority show allegiance to particular processors—particularly the high-income group. The findings also suggest significant evidence of allegiance to particular brands of fruit preserves processed by the large-scale sector. In fact, 60% of households that purchase fruit preserves manufactured by this sector, purchase a particular brand of product. Aaker (1991a: 7) defines a brand as “a distinguishing name and/or symbol (such as a logo, trademark or package design) intended to identify the goods or services of either one seller or a group of sellers, and to differentiate those goods or services from those of competitors” (cited in East, 1997:30). Households have shown a considerable level of allegiance to branded products, given the longevity of purchase (in excess of 16 years) of particular brands of fruit preserves by a significant share of households. When households were asked to explain their brand preference, i.e. why they buy one particular brand more than other brands in the same category (East, 1997), product price appeared to be the most important factor influencing choice, followed by food safety and the overall appearance of the product.

The price of products seems to be the most important factor influencing purchasing decisions—the main reason for preferring fruit preserves processed by the small-scale sector, or choosing between brands offered by large-scale food manufacturers. The findings seem to suggest however, that products from the small-scale sector have a price advantage compared to those from the large-scale sector. Therefore, there is some potential for small-scale processors to enjoy a share of the market for fruit preserves based on their price advantage. However, in order to increase their competitiveness in the market, small-scale processors need to give further consideration to food safety, and the consistency of product quality, if they are to gain greater consumer confidence for their products. These same attributes were considered most important when choosing which small-scale processor to purchase products from. Whether such improvements in fruit preserves from the small-scale sector would be accompanied by a corresponding increase in purchases largely depends on production factors since they mainly affect price. Fruit preserves processed by the small-scale sector must continue to offer price incentives to consumers, as this largely affects purchasing decisions, as mentioned previously. It is also vital that such products are available throughout the year, as the consistent supply of products processed by large-scale firms is no doubt an advantage, which the latter group shares.

The findings in relation to food safety and the use of food safety standards were incongruent. Although food safety is perceived important, the use of food standards often received a rating on the border of 4.00, suggesting that the function of domestic food standards is not well understood among consumers, particularly among the low-income group, the largest consumer group in Zimbabwe. There is therefore a need to encourage greater awareness of the function of food safety standards and the use of various logos. Such initiatives may improve how products are perceived by households and could lead to an increase in purchases.

Surprisingly enough, canned fruit preserves were more popular among consumers than other forms of packaging (e.g. glass jars), regardless of their income group. Therefore although glass may be perceived as superior over other forms of packaging materials, such products are less popular even among high-income households. Canned fruit preserves usually fetch a lower price on the market than products packaged in glass jars. This presents a potential constraint, as glass (or plastic) packaging is likely to be preferred among small-scale processors, given that the technology involved in canning products (on a small-scale) is more capital intensive than that involved in packaging products in glass (or plastic) jars which can be carried out manually. However, the use of recycled glass jars potentially enables small-scale enterprises to reduce costs and therefore permit their products to compete with canned products for example. Food safety issues surrounding the use of recycled packaging however, remain problematic.

6. DRIED VEGETABLES

6.1 Introduction

The chapter begins with a brief look at how dried vegetable products are defined. This is somewhat problematic given the apparent lack of formal standards for dried vegetable products in Zimbabwe. The discussion therefore focuses on processing methods and techniques for such products. The chapter then focuses on consumption and purchase patterns of dried vegetables among households in the greater Harare area. The discussion focuses on the frequency of consumption, types of products purchased and their packaging characteristics, outlets where products are purchased and typical quantities procured. Where possible the findings are presented by income group, in order to highlight the differentiated nature of dried vegetable consumption among urban households. Emphasis is then placed on consumer perceptions of small-scale dried vegetable processors and their products. Contrasts are then provided from the large-scale sector. Issues such as brand loyalty are discussed in detail. The section concludes by considering whether consumers prefer dried vegetable products from the small- or large-scale sector. The chapter concludes by highlighting the key findings of the research, and what this may potentially mean for small-scale processors trying to enter the market for dried vegetables.

The process of drying involves removing moisture from fruits or vegetables in order to provide a product that can be stored safely for long periods. Properly dried and packed vegetables can be stored for about one year (CTA, 1997). Once dried, the product has a low moisture content, which significantly reduces the processes of deterioration which otherwise occur rapidly in fresh produce (Brett, Cox, Trim, Simmons and Anstee, 1996).

Vegetables and fruit consist mainly of water, as much as 80-90% by weight. Drying lowers this to about 10% water, giving a considerable loss of weight and volume (CTA, 1997).

Drying is a very common method of preserving vegetables in Zimbabwe. Most vegetables in contrast to fruits should be blanched (UNIFEM, 1993). Blanching involves immersion of the prepared produce into very hot water (above 90°C) or exposure to steam for one or more minutes, depending upon temperature, size of the pieces and quantities (Brett *et al.* 1996; CTA, 1997). Steam-blanching is often preferred to water-blanching because there is a small loss of nutrients by leaching with the latter method (UNIFEM, 1993).

Blanching can accelerate the drying time (by increasing water permeability), improve storage (by deactivating enzymes and destroying bacteria) and improve colour retention. The treatment also reduces rehydration and subsequent cooking times (Brett *et al.* 1996). Blanching prevents undesirable colour and odour changes and avoids excessive vitamin losses, by deactivating the enzymes that cause these undesirable changes (CTA, 1997). The treatment also helps to allow the dried product to easily take up water again and to retain a good structure after boiling (Ibid.).

Fruit is sometimes treated with the smoke from burning sulphur or dipped in a sulphite or bisulphite-salt solution to prevent brown colouration. Taste and vitamin content are also better preserved after these treatments. The residual sulphite in the product can however, be dangerous in high concentrations and can also affect the taste (CTA, 1997).

After blanching, sulphiting may be useful prior to drying (UNIFEM, 1993). This means that the products have been exposed to sulphur dioxide as a treatment. This helps to significantly improve both the colour of the product and storage life (Brett *et al.* 1996).

The quality of sun-dried products can be improved by exercising care over hygiene and control over the drying speed and temperature, which has a direct influence on the presentation of the final product.

The mechanisms of drying are complex and involve two basic phenomena: evaporation of moisture from the surface of the product and migration of moisture from the interior to the surface. The rate of evaporation of moisture depends upon the flow of air over the surface of the product, and on the temperature and relative humidity (percentage saturation) of the surrounding air. It increases with higher airflow, with higher temperature and with lower air relative humidity. The rate of migration of internal moisture to the surface increases with the increased temperature of the product. In drying the aim is to achieve an optimum balance between the two phenomena whilst ensuring product quality. Too high an air flow can overdry the surface and considerably inhibit further migration of moisture to the surface. Excessive temperature and insufficient airflow can cause the product to sweat and discolour thereby causing deterioration in quality (Brett *et al.* 1996).

Indirect drying methods, involving shielding the raw material from the sun, are the most suitable for vegetables. Choices include drying in the shade, indirect solar driers or artificial/mechanical drying (UNIFEM, 1993). Compared with drying in the sun, solar driers can generate higher air temperatures and lower relative humidity. This results in shorter drying times and lower product moisture contents, and reduced spoilage during the drying process and in subsequent storage. The higher temperatures attained in solar drying also act as a deterrent to insect and microbial infestation. Protection of the drying fruit against rain, dust, insects and other pests is also improved when drying in an enclosed structure. All of these factors contribute to improving quality and providing a more consistent product (Brett *et al.* 1996). Compared to artificial or mechanical drying, solar drying is not capable of such high throughput rates or such consistent product quality. The market value of the end product will tend to suggest which drying system to choose (Ibid.).

6.2 Consumption and purchasing profile

6.2.1 Consumption patterns

Consumption of dried vegetables was high among the sample, given that 87.4% of households consume these products. Dried vegetables appear to be more popular than dried fruits for example, given that only 69.2% of households consume the latter.⁴² Dried vegetables are a traditional food in Zimbabwe, particularly indigenous varieties, which are commonly consumed in rural areas during the dry season. Given high rates of rural-urban migration in Zimbabwe in recent decades, such tastes are also evidenced among the urban population.

The research findings suggest that most households consume dried vegetables with their main evening meal (or to a lesser extent with their midday meal), the basis of which is usually

⁴² Of the three study products, the consumption of fruit preserves was highest, with 91.6% of households sampled consuming such products.

sadza. Sadza and nyama (meat) with relish (a vegetable dish), remains the national dish of most Zimbabweans (Bonzo, Kitson and Wardrop, 2000; Belk, 2000). This is true whether they are factory or office workers and live in high-density areas, or live on-site as cooks, gardeners or drivers for the bourgeoisie (both Shona and of European ethnic origin). It is even true of those who remain in rural areas, working as labourers on commercial farms or on their own plots of land as subsistence farmers (Ibid.). Green vegetables are the main source of the relish part of the traditional meal, although additives like peanut butter, cooking oil, beans and occasionally meat are added to the relish to form a sort of stew (Tagwira, 1998). Often the vegetables have been dried during the rainy season, and are reconstituted to make the relish (Bonzo *et al.* 2000). That sadza, nyama and relish have not been rejected by a growing black urban middle-class is evident, since they continue to be consumed both at home and in restaurants (Ibid.).

Dried vegetable consumption was found to be less pronounced among the high-income group—32% never consume dried vegetables compared to 18% of middle- and 6% of low-income households (Table 6.1). As regards frequency of consumption, 65.6% of low-income households consume dried vegetables at least once a month, compared to 47.9% and 44.5% of middle- and high-income households respectively. Just 25% of the middle and high-income group consume dried vegetables at least once a week compared to 32.6% of low-income households.

Table 6.1 Frequency of consumption

Frequency	Income Group						Total	
	High		Middle		Low		Count	% Total
	Count	% Group	Count	% Group	Count	% Group		
Never	18	32.1	26	18.1	19	6.3	63	12.6
A few times a year	13	23.2	49	34.0	84	28.0	146	29.2
Once a month	4	7.1	20	13.9	41	13.7	65	13.0
2-3 times a month	7	12.5	13	9.0	58	19.3	78	15.6
Once a week	4	7.1	20	13.9	48	16.0	72	14.4
2-3 times a week	4	7.1	11	7.6	34	11.3	49	9.8
4-5 times a week	4	7.1	2	1.4	6	2.0	12	2.4
Every day	2	3.6	3	2.1	10	3.3	15	3.0
Group Total	56	100.0	144	100.0	300	100.0	500	100.0

6.2.2 Purchasing patterns

The findings suggest that a greater share of households process dried vegetables at home than actually purchase them—65.9% and 58.4% of households respectively. While this may not have been a surprising finding among rural households, it is here, given that the study focuses exclusively on urban households. Again this highlights the tradition of preparing dried vegetables at home—even among urban households. However, the trend was not witnessed across all income groups. While the majority of the low-income group process dried vegetables at home (77.6%, compared to 44.9% of middle- and 44.7% of high-income households), the majority of the high-income households purchase the product (76.3%, compared to 63.6% of middle- and 53.7% of low-income households). About a third of

households—irrespective of income group, receive gifts of dried vegetables from family members, usually relatives living in rural areas.⁴³

When consumers were asked to indicate their most frequent source of dried vegetables (Table 6.2), 73.7% of high-, 54.2% of middle- and 31.1% of low-income households suggested purchasing the product. In the case of the latter group however, 55.7% of households cited the processing of vegetables at home as their most frequent source (28.0% of middle- and 21.1% of high-income households did so). Whether the price and availability of dried vegetables is a constraint, or that low-income households exhibit a preference for homemade dried vegetables, remains to be seen.

Table 6.2 Most frequent source of dried vegetables

Source	Income Group						Total	
	High		Middle		Low			
	Count	% Group	Count	% Group	Count	% Group	Count	% Total
Purchase	28	73.7	64	54.2	87	31.1	179	41.1
Process at home	8	21.1	33	28.0	156	55.7	197	45.2
Gift	2	5.3	21	17.8	37	13.2	60	13.8
All	38	100.0	118	100.0	280	100.0	436	100.0

Note: Missing data for one household in high-income group.

Of the households that buy dried vegetables (n=255), approximately a third make purchases only a few times a year (Table 6.3). 75.9% of the high-income group purchase dried vegetables at least once a month compared to 72% of the middle- and 67.5% of the low-income group. However, only 4% of middle-income households purchase dried vegetables at least once a week compared to 20.5% of low-income households. The findings suggest that high-income households make purchases less frequently, but this may be due to the fact they purchase dried vegetable products in bulk. Low-income households are likely to make more frequent purchases of dried vegetables, but this does not necessarily mean they consume larger quantities of the product.

Table 6.3 Frequency of purchase

Frequency	Income Group						Total	
	High		Middle		Low			
	Count	% Group	Count	% Group	Count	% Group	Count	% Total
A few times a year	7	24.1	21	28.0	49	32.5	77	30.2
Once a month	20	69.0	42	56.0	51	33.8	113	44.3
2-3 times a month	2	6.9	9	12.0	20	13.2	31	12.2
Once a week			1	1.3	20	13.2	21	8.2
2-3 times a week			2	2.7	7	4.6	9	3.5
4-5 times a week					1	0.7	1	0.4
Every day					3	2.0	3	1.2
All	29	100.0	75	100.0	151	100.0	255	100.0

⁴³ Foodstuffs are often exchanged between urban and rural kin. For example, stores of sugar, salt, tea and oil are brought from Harare when family visits are made to rural areas. Upon return, visitors are given gifts of mealies, fresh fruit and vegetables, and homemade products such as peanut butter, honey and dried vegetables for example.

The overwhelming majority of households (70.2%) make purchases of dried vegetables at supermarkets. Less than half the sample made purchases at local markets (43.1%), and just one fifth of households bought dried vegetables from street traders (21.6%). The overwhelming majority of upper- and middle-income groups made purchases at supermarkets (89.7% and 84.0% respectively) compared to 59.6% of low-income households. The latter group were more likely to buy products from street traders than upper- or middle-income households (31.8%, 10.3% and 5.3% respectively). Grocers, general stores, speciality shops and tourist outlets are not much frequented, even by the high-income group.

When consumers were asked to indicate their most frequent place of purchase, the supermarket proved the most popular outlet (Table 6.4). The majority of high- (89.7%) and middle-income households (80.0%) made purchases of dried vegetables in supermarkets. Slightly more low-income households cited the local market as their most frequent place of purchase than supermarkets (47.7% and 45.7% of households respectively).

Table 6.4 Most frequent place of purchase

Outlet	Income Group						Total	
	High		Middle		Low		Count	% Total
	Count	% Group	Count	% Group	Count	% Group		
Supermarket	26	89.7	60	80.0	69	45.7	155	60.8
Local market	3	10.3	7	9.3	72	47.7	82	32.2
Street trader			3	4.0	8	5.3	11	4.3
Direct from processor			5	6.7	2	1.3	7	2.7
All	29	100	75	100	151	100	255	100

6.3 Type and quantity of dried vegetables purchased

The findings suggest that different socio-economic groups exhibit particular preferences in terms of the types of dried vegetables they purchase. Generally speaking, the most popular dried vegetables were beans, tomatoes, covo, okra, rape⁴⁴, nyevhe⁴⁵, cabbage, tsunga⁴⁶, chillies and rugare, in that order (Figure 6.1).

The most popular vegetables purchased by the high-income group were beans (86.2%), chillies (48.3%), tomatoes (41.4%), butter beans (24.3%), okra (24.1%), onion (24.1%) and cabbage (24.1%) (Figure 6.2). Beans (90.7%), covo (27.8%), rape (26.5%), tomatoes (26.5%), nyevhe (23.2%), and okra (21.2%) were the types of vegetables most likely to be purchased by low-income households. Traditional or indigenous dried vegetables (e.g. rape, tsunga, rugare, cowpea leaves⁴⁷ and nyevhe) were more popular among middle- and lower-income households.

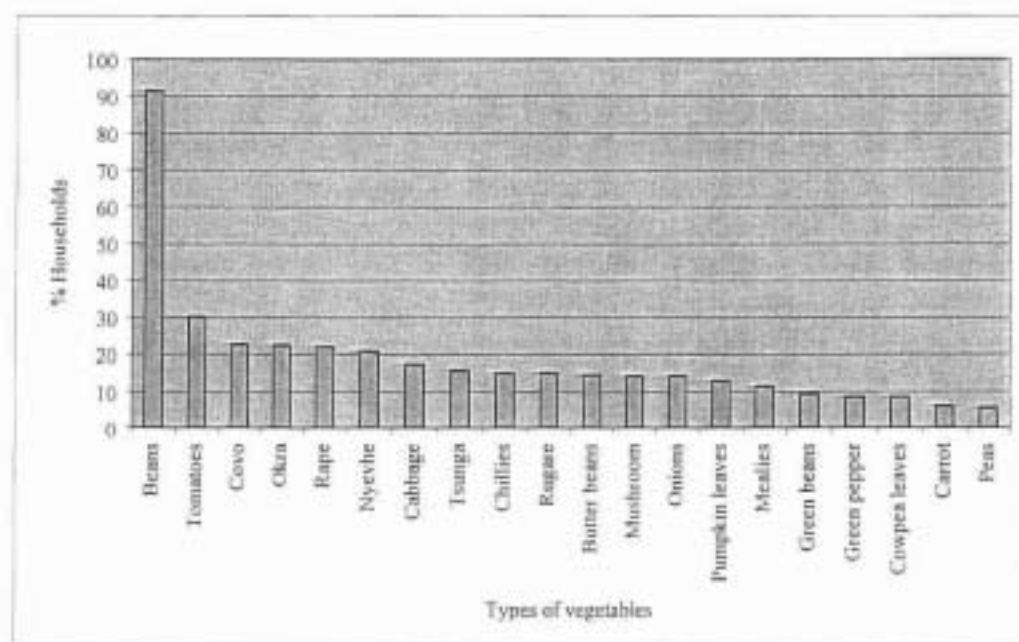
⁴⁴ *Brassica Napus* (Tredgold, 1986).

⁴⁵ *Cleome Gynandra*. This is one of the most popular wild green vegetables; the leaves are often dried and stored for use during the dry season (Tredgold, 1986:41).

⁴⁶ *Brassica Juncea* (Indian mustard or Chinese mustard). Originally introduced from the East, this plant is now cultivated or found growing wild on disturbed soil (Tredgold, 1986:38).

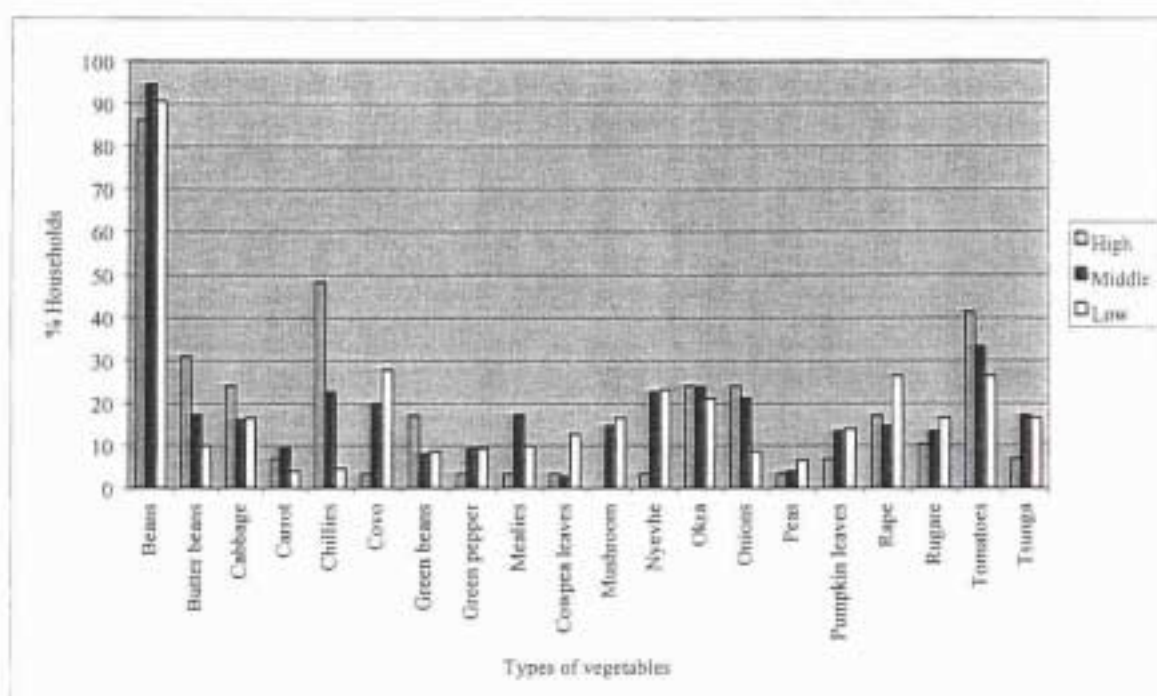
⁴⁷ *Vigna Unguiculata* (Shona = muriwo wenyemba).

Figure 6.1 Most popular types of dried vegetables purchased



Note: The table refers to the percentage of households that purchase each type of dried vegetable.

Figure 6.2 Most popular types of dried vegetables purchased by each income group



Note: The table refers to the percentage of households in each income group that purchase a particular type of dried vegetable.

The minimum and maximum quantities of dried vegetables purchased varied significantly among households in the middle- (0.25-22kg) and low-income groups (0.25-20kg), but little so among high-income households (0.5-2.5kg) (Table 6.5). In general, the average quantity

purchased per month by households was 2.05kg. The median suggests however, that high- and middle-income households purchase larger quantities of dried vegetables (2kg) than the low-income group (1kg). It is important to remember however, that the latter group supplement purchases of dried vegetables with homemade products. Hence, the data does not indicate that the low-income group necessarily consumes lower quantities of dried vegetables.

Table 6.5 Quantity of dried vegetables purchased per month (Kg)

	Income Group			Total
	High	Middle	Low	
No. Households	22	54	104	178
Minimum	0.50	0.25	0.25	0.25
Maximum	2.50	22.00	20.00	22.00
Mean	1.70	2.52	1.87	2.05
Median	2.00	2.00	1.00	1.50

Note: For those households that gave quantities per week, this was multiplied by a factor of '4' to give an estimated quantity purchased per month.

The low-income group represents the largest market for dried vegetables in terms of actual numbers of consumers. Although a larger share of the low-income group consume dried vegetables, a higher percentage of high- and middle-income households purchase the product. Low-income households are much more likely to supplement purchased dried vegetable products with homemade substitutes. Small-scale processors would do well to also target products to middle- and high-income consumers, given that these consumers tend to purchase larger quantities of products than the low-income group. This may also potentially influence the types of products which small-scale processors make available to the market, given that the findings suggest some variation in purchasing patterns across income groups. Beans, butter beans, cabbage, chillies, nyevhe, okra, onions and tomatoes are among the most popular products purchased by high- and middle-income households.

6.4 Packaging characteristics

Packaging characteristics of products appear to be important for some groups of consumers. Although consumers buy dried vegetable in a variety of packaging materials, the majority (74.9%) tend to buy products in sealed plastic packs. Low-income households are the least likely to purchase products in sealed plastic packs—64.2% of households compared to 89.3% and 93.1% of middle and high-income households respectively. Half of the low-income group also buy products in unsealed plastic bags (51% of households) and a quarter buy products that are sold loose—usually at local markets where customers often provide their own packaging materials.

As regards the most common type of packaged product purchased, again the majority (68.6%) of consumers purchase products in sealed plastic packs (Table 6.6). High- and middle-income households are more likely to buy products in sophisticated packaging materials than lower-income households. Unpacked products (i.e. products which are sold loose) and products sold in unconventional forms of packaging (e.g. newspaper and unsealed packs) are more likely to be purchased by the low-income group.

If high- and middle-income consumers are more likely to purchase products in sophisticated packaging materials, then small-scale processors must act on this if they are to enter such markets. Products processed by small-scale enterprises must be sealed appropriately to reduce the possibility of contamination from foreign bodies, and ensure consumers of the safety of their products. The following section considers consumer perceptions of small-scale (dried vegetable) processors and their products.

Table 6.6 Most frequent type of packaging

Type of packaging	Income Group						Total	
	High		Middle		Low		Count	% Group
	Count	% Group	Count	% Group	Count	% Group		
No packaging/sold loose	2	6.9			23	15.2	25	9.8
Wrapped in newspaper			1	1.3	4	2.6	5	2.0
Plastic bag (not sealed)	1	3.4	7	9.3	42	27.8	50	19.6
Sealed plastic pack/bag	26	89.7	67	89.3	82	54.3	175	68.6
Plastic tray covered in cellophane/cling film etc.								
Group Total	29	100.0	75	100.0	151	100.0	255	100.0

6.5 Consumer perceptions of dried vegetables processed by small-scale enterprises

Just under a third of households (32.5%) that purchase dried vegetables ($n=255$) had at some time (to their knowledge) purchased a product processed by a small-scale processor.⁴⁸ In the context of the study, 'small-scale food processors' were defined as individuals, families, co-operatives or groups of individuals who process dried vegetables within their own home, in their back yard or within small premises. Such cottage, micro- or small-scale enterprises are often not registered as formal businesses. The enterprises are characterized by the use of basic equipment or machinery to process dried vegetables. Sales of products are largely made on local informal markets.

Table 6.7 suggests that low-income households are much more likely to purchase dried vegetables produced by the small-scale sector than middle- or high-income households (43.7%, 13.3% and 24.1% respectively).

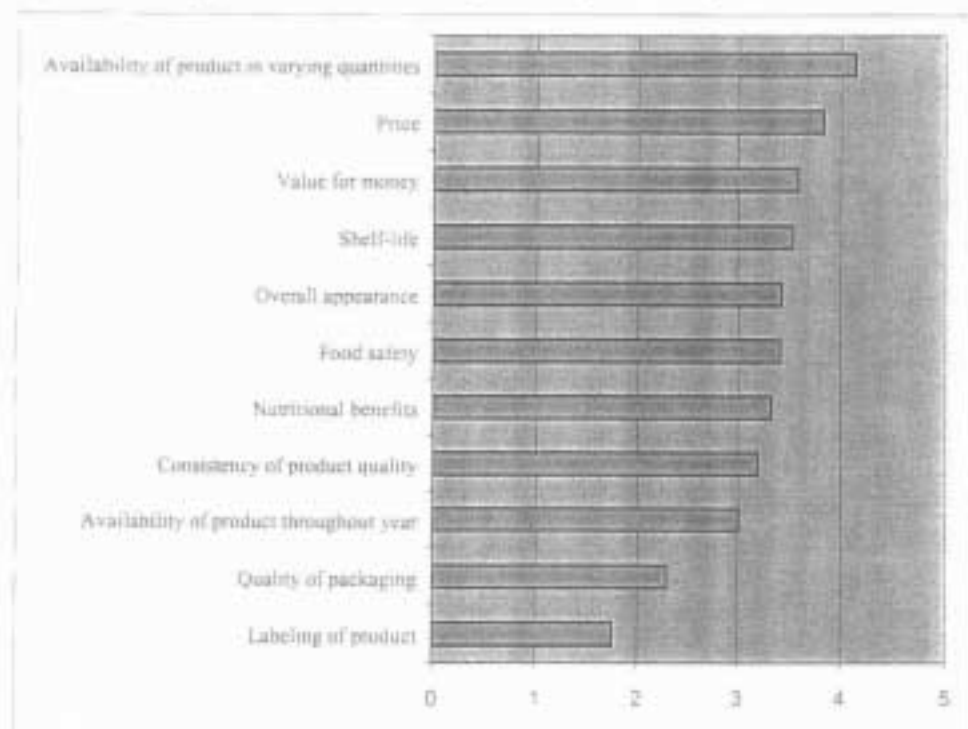
Table 6.7 Purchase of dried vegetables from small-scale processors

Income Group	Total sample (No. households)	Number households purchase dried vegetables	Purchase dried vegetables from small-scale sector	
			No. households	% Group
High	56	29	7	24.1
Middle	144	75	10	13.3
Low	300	151	66	43.7
All	500	255	83	32.5

⁴⁸ 36.9% of households stated that they had not purchased a product processed by a small-scale enterprise, and 30.6% of households said they were unsure.

The criterion that small-scale processors performed best on was the 'availability of product in varying quantities' (mean score of 4.13), when ranked by the 83 households that had purchased dried vegetables from this sector (Figure 6.3). Note that this was the only attribute to receive a mean score of 4.00 or more. This suggests that small-scale processors performed poorly, or neither poorly nor well, on all other attributes listed, including price. The availability of lower priced goods is often considered to be a great advantage offered by the small-scale sector. This does not appear to be the case in terms of small-scale processors of dried vegetable products.

Figure 6.3 Mean performance of dried vegetables processed by small-scale sector



Note: Mean performance score relates to 5-point scale where 1 = very poor and 5 = very good.

Those criteria rated lowest were 'labelling of product' (1.75) and 'quality of packaging' (2.29) (Figure 6.3). Packaging and labelling pose a significant constraint to the small-scale sector given that all income groups rated these attributes poorly (Table 6.8). Poorly packaged and labelled products are not necessarily acceptable to low-income consumers. The 'availability of the product throughout the year' also received a low mean score (3.01), suggesting that consumers are concerned with the consistent supply of products by small-scale food processing enterprises. Hence, the seasonality of fresh produce is something that the small-scale sector needs to overcome. Cold storage facilities for fresh produce, maintenance of shelf life and the appropriate storage of finished goods are challenges that the small-scale sector faces.

Among high- and middle-income households, 'price' received the highest rating (4.29). Low-income households rated 'price' (with a low mean score of 3.73) after the 'availability of products in varying quantities' (4.18). The latter is important given that lower-income households often purchase foodstuffs in small quantities, often on a daily basis, to suit their pocket. Ironically, this may potentially mean that such households end up paying higher

prices for goods compared to high-income households for example, which are able to make bulk purchases.

Table 6.8 Mean performance of dried vegetable products processed by small-scale sector, as rated by income groups

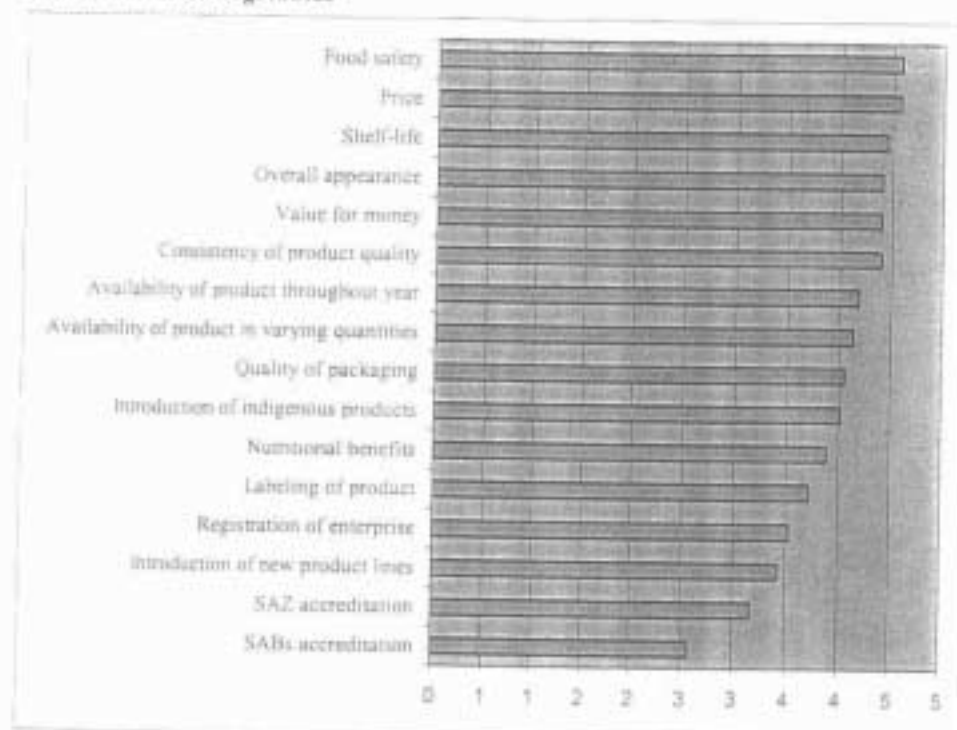
Attribute	Income Group			Total
	High	Middle	Low	
	Mean scores			
Price	4.29	4.29	3.73	3.83
Shelf-life	4.00	3.50	3.50	3.54
Consistency of product quality	4.00	3.60	3.06	3.20
Food safety	3.57	3.90	3.33	3.42
Quality of packaging	2.29	3.40	2.12	2.29
Labelling of product	1.71	3.10	1.55	1.75
Overall appearance	2.86	3.80	3.44	3.43
Value for money	4.14	3.80	3.50	3.59
Availability of product in varying quantities	4.14	3.80	4.18	4.13
Availability of product throughout year	3.29	3.60	2.89	3.01
Nutritional benefits	3.57	4.00	3.20	3.33

Note: Mean performance relates to 5-point scale where 1 = very poor and 5 = very good.

6.5.1 Meeting consumer demand

Households considered 'food safety' (4.59) and 'price' (4.58) as the most important factors, if small-scale processors are to better meet consumer demand for dried vegetable products (Figure 6.4). Those criteria rated of least importance were 'SABS accreditation' (2.57) and 'SAZ accreditation' (3.16). The findings would seem to indicate that consumers are not aware of the significance of SAZ (and SABS) accreditation for assuring food safety in Zimbabwe, or that they do not accept that products which meet SAZ (or SABS) accreditation are necessarily safe. The apparent lack of standards in Zimbabwe for dried vegetable products does not help this situation. Households across all income groups agreed that 'SABS accreditation' was the least important factor for small-scale processors to better meet consumer demand for dried vegetable products. This questions the idea that some groups of consumers perceive imported products to be of superior quality than domestic products, in this case those displaying the South Africa standard, which the high-income group are suggested to prefer.

Figure 6.4 Mean importance scores for factors if small-scale processors are to better meet consumer demand for dried vegetables



Note: Mean importance score relates to 5-point scale where 1 = very unimportant and 5 = very important.

Among the high-income group, the 'consistency of product quality' was paramount (4.86), followed by 'food safety', 'price' and 'shelf-life' (all had mean scores of 4.71) (Table 6.9). Among the middle-income group, 'food safety' received the highest mean importance score (4.50). For low-income households 'price' was considered to be the most important factor (4.64), followed by 'food safety' (4.59).

Table 6.9 Mean importance scores for factors if small-scale processors are to better meet consumer demand for dried vegetables, as rated by income groups

Attribute	Income Group			Total
	High	Middle	Low	
	Mean scores			
Price	4.71	4.10	4.64	4.58
Shelf-life	4.71	4.40	4.42	4.45
Consistency of product quality	4.86	4.20	4.36	4.39
Food safety	4.71	4.50	4.59	4.59
Quality of packaging	4.43	4.20	3.98	4.05
Labelling of product	4.14	4.20	3.61	3.72
Overall appearance	4.43	4.20	4.42	4.40
Value for money	4.57	4.10	4.41	4.39
Availability of product in varying quantities	3.71	4.30	4.15	4.13
Availability of product throughout year	4.00	4.40	4.17	4.18
Nutritional benefits	4.43	4.40	3.74	3.88
Introduction of new product lines	3.29	3.90	3.38	3.43
Introduction of indigenous products	3.86	4.40	3.97	4.01
Registration of enterprise	3.71	3.90	3.45	3.53
SAZ accreditation	3.71	4.40	2.91	3.16
SABS accreditation	2.29	2.90	2.55	2.57
Other factor		5.00	4.00	4.50

Note: Mean importance score relates to 5-point scale where 1 = very unimportant and 5 = very important.

6.5.2 Purchasing products from a particular small-scale processor

Of those households that had purchased products processed by the small-scale sector ($n=83$), only 16 tended to buy products from a particular processor (Table 6.10). Of these, 12 frequented small-scale processors in and around Harare. Four households made purchases with processors in Kuwadzana, and two made purchases with processors in Mbare, Tafara and Mabelreign suburbs. One household made purchases with a processor in Mabvuku and another with a processor in Greendale. Four households frequented small-scale processors located beyond Harare. Two frequented processors in Murewha in Mashonaland East province. One household made purchases with a processor in Mashonaland West (Kintyre Estates) and another with a processor in Manicaland Province.

Table 6.10 Purchase of dried vegetables direct from particular small-scale processor

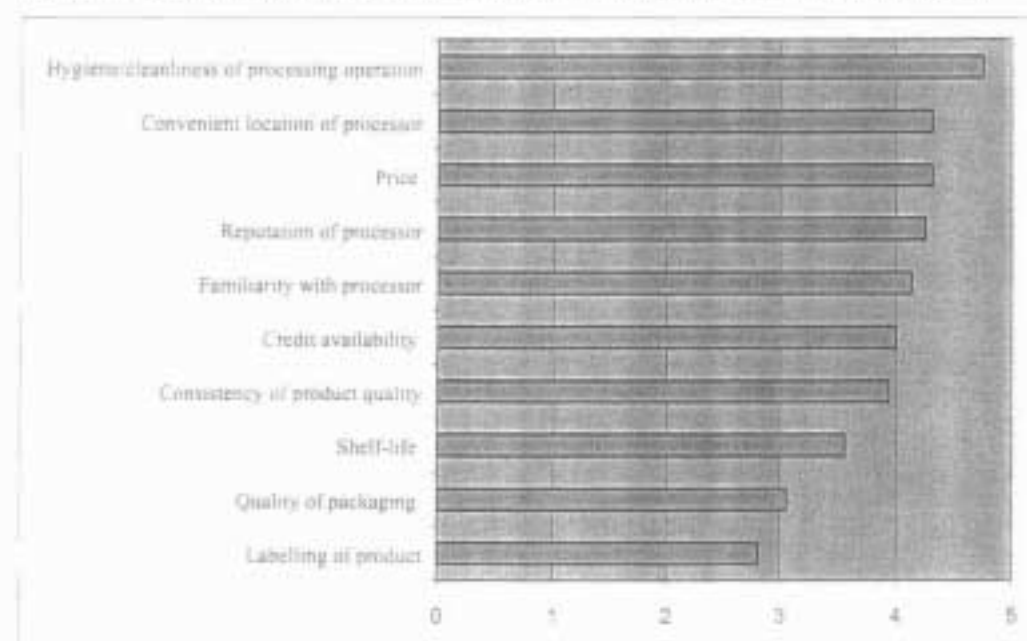
Income Group	Purchase from small-scale sector	Purchase from particular small-scale processor	
	No. households	No. households	% Group
High	7	1	14.3%
Middle	10	4	40.0%
Low	66	11	16.7%
All	83	16	19.3%

Hygiene, familiarity with the processor (including kin relationship) and price were the main reasons cited by households to explain why they chose to purchase products direct from a particular processor. Other factors mentioned included: quality of the product, availability of the product, convenience, promotion of small-scale processor, food safety, ability to purchase product in varying quantities, and variety of products on sale.

Six households showed considerable loyalty to these processors having purchased products from them for a period of six years or more. Eight of the 16 households suggested they had known the processor personally or that he or she was a relative of theirs. The location of the processor was also important, given that six households stated that the processor lived in the same locality as them.

When households were asked what criteria were important for choosing which small-scale processor to purchase products from, the criteria that households considered most important were 'hygiene of processing operation' (4.75), 'convenient location of processor' (4.31) and 'price' (4.31) (Figure 6.5). Those criteria rated of least importance were 'labelling of the product' (2.81) and 'quality of packaging' (3.06).

Figure 6.5 Mean importance scores for factors relating to choice of small-scale processor



Note: Mean importance score relates to 5-point scale where 1 = very unimportant and 5 = very important.

Across income groups, there was some differentiation of mean importance scores. For the sole high-income household, 'price', 'consistency of product quality' and 'cleanliness of processing operation' were the most important factors (all ranked 5.00) (Table 6.11). Among middle-income households, 'price', 'familiarity with processor' and 'convenient location of the processor', received the highest mean importance scores (all ranked 4.75). For low-income households, the 'hygiene of processing operation' (4.82), 'reputation of the processor' (4.36) and 'convenient location of the processor' (4.27) were considered to be the most important factors.

The least important factors ranged from 'familiarity with the processor' (for the sole high-income household), 'shelf-life' (middle-income group) and 'quality of product packaging' (middle- and low income group) and 'labelling of the product' (low-income group).

Table 6.11 Mean importance scores for factors relating to choice of small-scale processor, as rated by income groups

Attribute	Income Group			Total
	High	Middle	Low	
	Mean scores			
Price	5.00	4.75	4.09	4.31
Shelf-life	4.00	3.00	3.73	3.56
Consistency of product quality	5.00	3.75	3.91	3.94
Quality of packaging	4.00	3.00	3.00	3.06
Labelling of product	4.00	3.25	2.55	2.81
Familiarity with processor	2.00	4.75	4.09	4.13
Convenient location of processor	3.00	4.75	4.27	4.31
Reputation of processor	4.00	4.00	4.36	4.25
Hygiene/cleanliness of processing operation	5.00	4.50	4.82	4.75
Credit availability	4.00	4.00	4.00	4.00

Note: Mean importance score relates to 5-point scale where 1 = very unimportant and 5 = very important.

6.6 Consumer perceptions of dried vegetables processed by large-scale enterprises

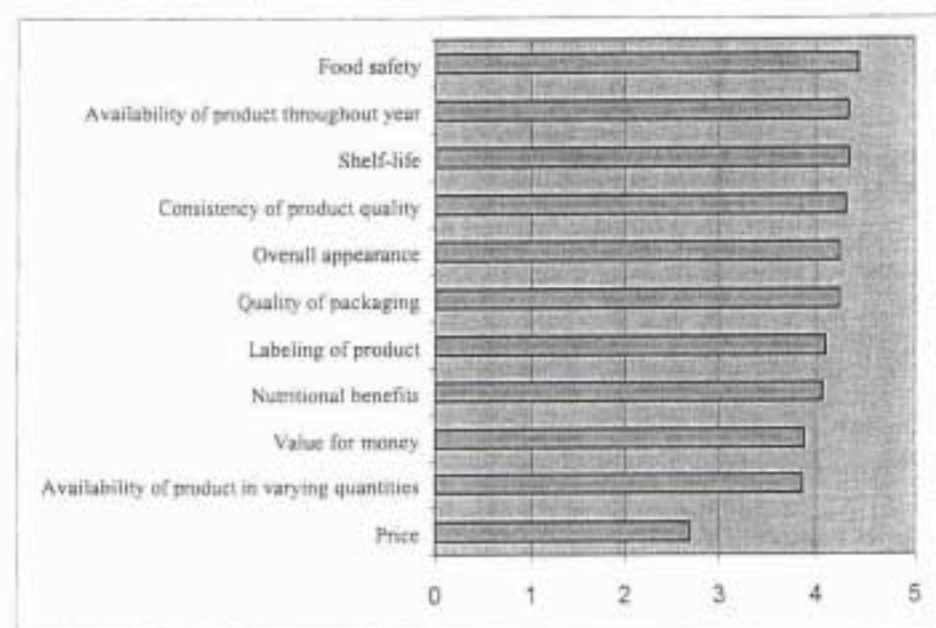
Of the 255 households that buy dried vegetables, 52.2% had at some time (to their knowledge) purchased a dried vegetable product processed by a large-scale food manufacturer (Table 6.12).⁴⁹ In the context of the study, 'large-scale food processors' were considered to be an agro-industrial food manufacturing company that processes dried vegetables on a large-scale. Examples include Lever Brothers (whose brands include Royco) and Nestle Zimbabwe (e.g. Maggi), etc. Such enterprises tend to use industrial production lines to process dried vegetables and are registered as formal businesses. While 62.7% of middle-income households had purchased a product processed by a large-scale enterprise, 55.2% of high- and 46.4% of low-income households had done so.

Table 6.12 Purchase of dried vegetables from large-scale processors

Income Group	Total sample (No. households)	Number households purchase dried vegetables	Purchase dried vegetables from large-scale sector	
			No. households	% Group
High	56	29	16	55.2
Middle	144	75	47	62.7
Low	300	151	70	46.4
All	500	255	133	52.2

The criteria that large-scale processors performed best on were 'food safety' (4.43), 'shelf-life' and 'availability of product throughout the year' (both had scores of 4.33), when ranked by the 133 households that had purchased products processed by them (Figure 6.6). Those criteria rated lowest were 'price' (2.69), 'availability of product in varying quantities' (3.86) and 'value for money' (3.88). Price was the lowest rated attribute by all income groups (Table 6.13). 'Food safety' was rated highly by all income groups.

Figure 6.6 Mean performance of dried vegetable products processed by large-scale sector



Note: Mean performance relates to 5-point scale where 1 = very poor and 5 = very good.

⁴⁹ 23.1% of households stated that they had not purchased a product processed by a large-scale food manufacturer, and 24.7% of households said they were unsure.

Table 6.13 Mean performance of dried vegetables processed by large-scale sector, as rated by income groups

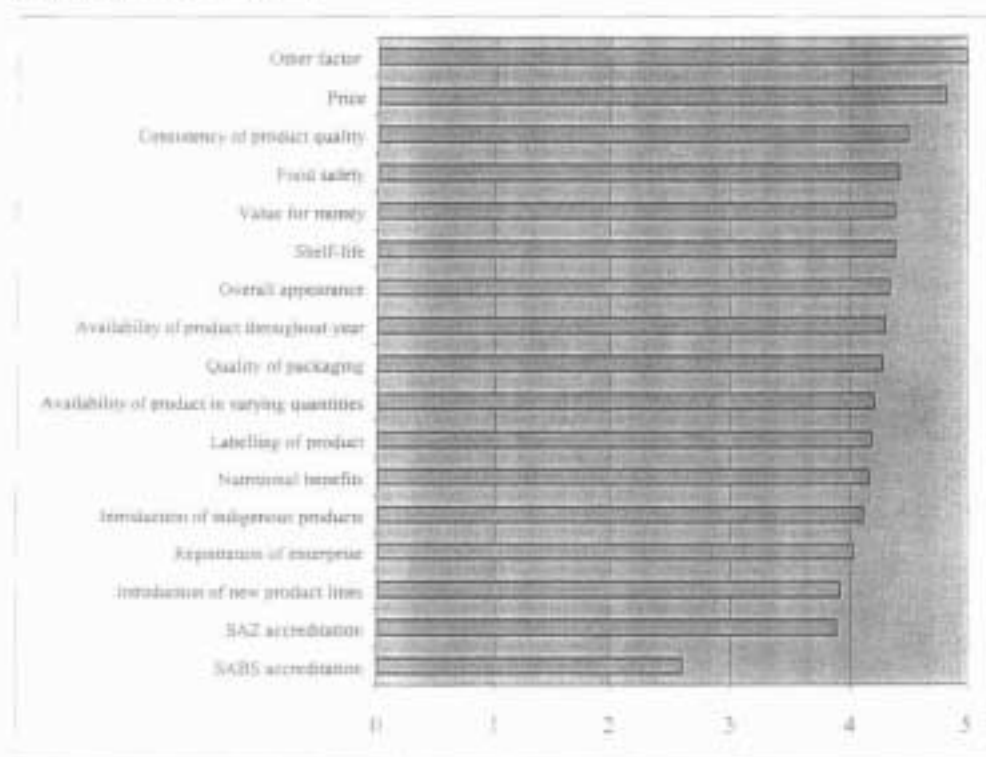
Attribute	Income Group			Total
	High	Middle	Low	
	Mean scores			
Price	2.94	2.45	2.80	2.69
Shelf-life	4.06	4.23	4.46	4.23
Consistency of product quality	4.00	4.00	4.57	4.30
Food safety	4.13	4.11	4.71	4.43
Quality of packaging	4.00	3.87	4.54	4.24
Labelling of product	3.75	3.83	4.34	4.09
Overall appearance	3.94	3.83	4.59	4.24
Value for money	3.69	3.55	4.14	3.88
Availability of product in varying quantities	3.75	3.77	3.96	3.86
Availability of product throughout year	3.87	4.00	4.66	4.33
Nutritional benefits	4.19	4.09	4.01	4.06

Note: Mean performance relates to 5-point scale where 1 = very poor and 5 = very good.

6.6.1 Meeting consumer demand

The criteria that households considered most important for the large-scale sector to act on were 'price' (4.82), 'consistency of product quality' (4.49) and 'food safety' (4.42), in terms of better addressing consumer demand for dried vegetable products (Figure 6.7). Those attributes rated least important were 'SABS' and 'SAZ accreditation' (2.61 and 3.88 respectively).

Figure 6.7 Mean importance scores for factors if large-scale processors are to better meet consumer demand for dried vegetables



Both high- and middle-income households rated all attributes except 'SABS accreditation' as significantly important, i.e. with a rating of 4.00 or more (Table 6.14). The high-income group rated 'quality of packaging' as most important (4.94), followed by 'price', 'consistency of product quality' and 'value for money' (all scores of 4.88). Middle-income households considered 'price' (4.77), 'shelf-life' (4.57) and 'consistency of product quality' and 'food safety' (both 4.49) as the most important attributes. The highest rated attributes among the low-income group were 'price' (4.84), 'consistency of product quality' (4.40) and 'food safety' (4.29). Low-income households rated a number of attributes lower than 4.00; the lowest rated attributes being 'SABS' and 'SAZ accreditation'. Again the apparent contradiction between scores given to 'food safety' and 'SABS' and 'SAZ accreditation' is noted.

Table 6.14 Mean importance scores for factors if large-scale processors are to better meet consumer demand for dried vegetables, as rated by income groups

Attribute	Income Group			Total
	High	Middle	Low	
	Mean scores			
Price	4.88	4.77	4.84	4.82
Shelf-life	4.81	4.57	4.16	4.38
Consistency of product quality	4.88	4.49	4.40	4.49
Food safety	4.81	4.49	4.29	4.42
Quality of packaging	4.94	4.36	4.06	4.27
Labelling of product	4.75	4.34	3.94	4.18
Overall appearance	4.81	4.32	4.23	4.33
Value for money	4.88	4.36	4.27	4.38
Availability of product in varying quantities	4.69	4.36	3.97	4.20
Availability of product throughout year	4.81	4.45	4.06	4.29
Nutritional benefits	4.81	4.47	3.80	4.16
Introduction of new product lines	4.38	4.26	3.57	3.91
Introduction of indigenous products	4.50	4.15	3.99	4.11
Registration of enterprise	4.69	4.32	3.69	4.03
SAZ accreditation	4.56	4.11	3.57	3.88
SABS accreditation	2.56	2.60	2.63	2.61
Other factor		5.00		5.00

Note: Mean importance score relates to 5-point scale where 1 = very unimportant and 5 = very important.

6.6.2 Brand loyalty

Of the households that had purchased products processed by the large-scale sector, over half buy a particular brand of product (Table 6.15). Across income groups, 57.1% of low-, 55.3% of middle- and 25% of high-income households were inclined to purchase a specific brand. This contradicts notions of the high-income group being more brand conscious than lower-income households.

Table 6.15 Purchase of particular brand of product processed by large-scale sector

Income Group	Purchase from large-scale sector	Purchase particular brand of product	
	No. households	No. households	% Group
High	16	4	25.0%
Middle	47	26	55.3%
Low	70	40	57.1%
All	133	70	52.6%

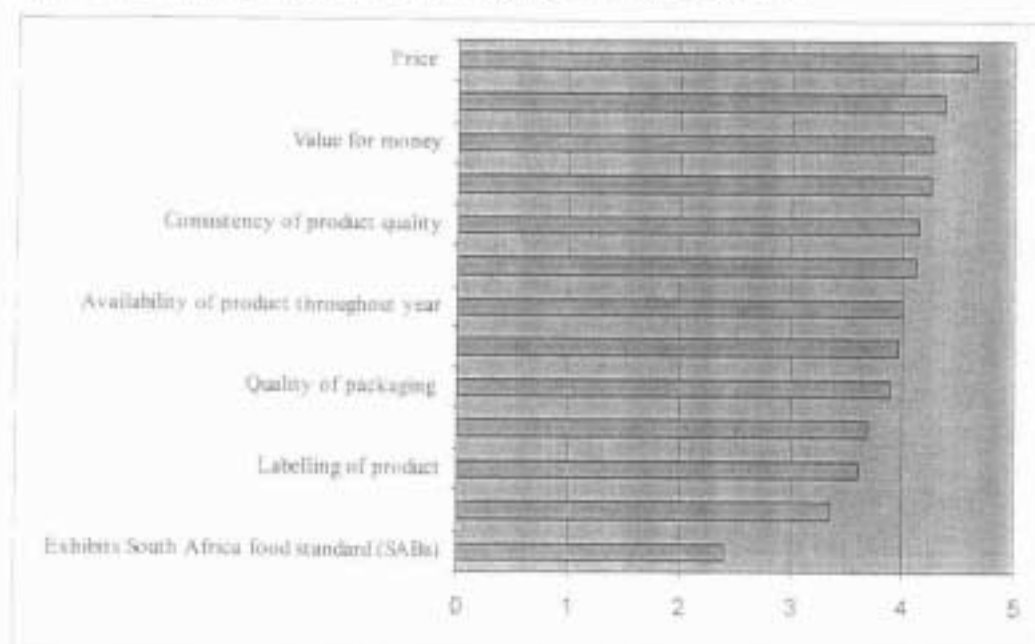
In terms of brands purchased, the most popular brands were Lever Brothers and Red Seal, followed by National Foods, Victoria Foods, Nestle and Blue Ribbon. Lever Brothers, National Foods and Victoria Foods were the most popular brands purchased by the low-income group. Red Seal was overwhelmingly the most popular brand among middle-income households. As regards the reasons why consumers purchase particular brands of product, taste was the reason most frequently cited. Other reasons given included: price, product quality, familiarity with a particular brand, and availability of the brand, in that order. In fact, households exhibited a considerable degree of brand loyalty with respect to dried vegetable products. Almost half the sample suggested they had been buying their chosen brand for a period of 16 years or more (Table 6.16).

Table 16 Number of years purchasing particular brand of dried vegetable product

	Income group						Group Total	
	High		Middle		Low		Count	% Total
	Count	% Group	Count	% Group	Count	% Group		
Less than 1 year					3	7.5	3	4.3
2-5 years	2	50.0	1	3.8	9	22.5	12	17.1
6-10 years			2	7.7	10	25.0	12	17.1
11-15 years			3	11.5	6	15.0	9	12.9
16 years or more	2	50.0	20	76.9	12	30.0	34	48.6
Group Total	4	100.0	26	100.0	40	100.0	70	100.0

'Price' (4.67) was considered to be the most important factor determining brand choice, among households purchasing products from the large-scale sector (Figure 6.8). 'Food safety' (4.37), 'value for money' (4.27), 'overall appearance of the product' (4.26), 'consistency of product quality' (4.14), and 'shelf-life' (4.13) were also considered important. Whether or not a product is imported (e.g. from South Africa) seems of little significance in the choice of brand, given that 'SABS accreditation' received the lowest mean score (2.40).

Figure 6.8 Mean importance scores for factors relating to brand choice



Note: Mean importance score relates to 5-point scale where 1 = very unimportant and 5 = very important.

This same relationship was evidenced across all income groups (Table 6.17). All other factors were considered to be important or very important for brand choice among the high-income group. This potentially questions stereotype assumptions of high-income consumers showing allegiance to imported products. However, it must be noted that the high-income sample is very small in this case.

Table 6.17 Mean importance scores for factors relating to brand choice, as rated by income groups

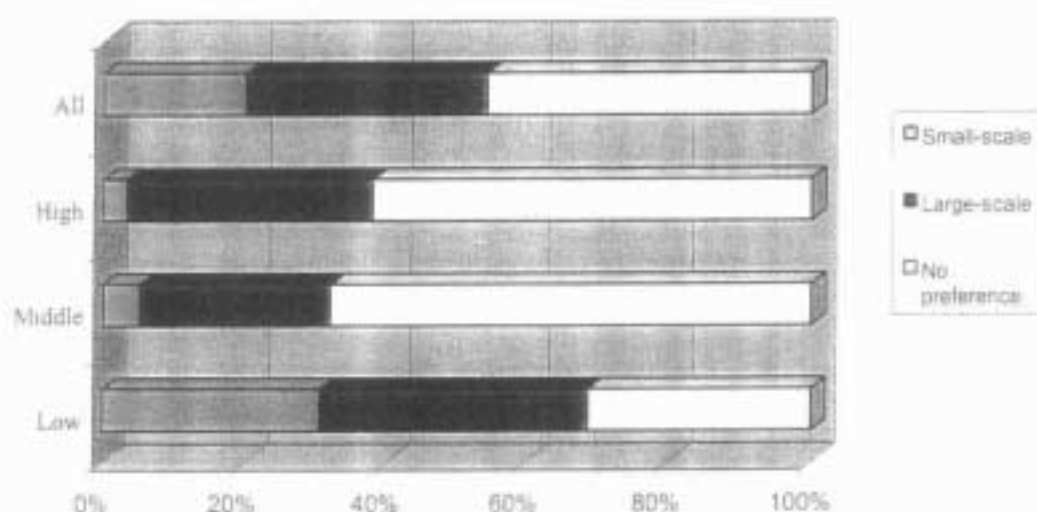
Attribute	Income Group			Total
	High	Middle	Low	
	Mean scores			
Price	5.00	4.73	4.60	4.67
Shelf-life	5.00	4.12	4.05	4.13
Consistency of product quality	5.00	4.27	3.98	4.14
Food safety	5.00	4.27	4.38	4.37
Quality of packaging	4.50	4.00	3.78	3.90
Labelling of product	4.50	3.92	3.33	3.61
Overall appearance of product	5.00	4.19	4.22	4.26
Value for money	5.00	4.23	4.23	4.27
Availability of product in varying quantities	4.50	3.92	3.93	3.96
Availability of product throughout year	4.50	4.19	3.83	4.00
Nutritional value/benefit of product	5.00	4.19	3.25	3.70
Exhibits Zimbabwe food standard (SAZ)	4.75	4.04	2.80	3.37
Exhibits South Africa food standard (SABS)	3.00	2.54	2.25	2.40
Other		5.00		5.00

Note: Mean importance score relates to 5-point scale where 1 = very unimportant and 5 = very important.

6.7 Preference for products processed by small- or large-scale sector

Of the households that purchase dried vegetables, 34.5% said they prefer products produced by the large-scale sector, compared to just 20% that had a preference for small-scale sector products (Figure 6.9). Surprisingly enough almost half the sample stated they had no preference. This may imply, that such households do not necessarily consider dried vegetable products processed by the small-scale sector as inferior to those manufactured by the large-scale sector. Such households appear willing to accept products from either sector. Of the income groups, low-income households expressed a much greater preference for products processed by the small-scale sector—30.5% compared to 3.4% and 5.3% of high- and middle-income households respectively. Across each income group however, households exhibited a preference for products manufactured by the large-scale sector. However, the actual figures were perhaps not as high as anticipated, with just a third of consumers showing a preference for the large-scale sector (or 38.4% of low-, 26.7% of middle- and 34.5% of high-income households).

Figure 6.9 Preference for products processed by small- or large-scale sector



In terms of the reasons why households preferred products produced by the small- ($n=51$) or the large-scale sector ($n=88$), price and product quality were the most frequently cited reasons in each case respectively (Table 6.18). Price, hygiene, and familiarity with the product were also popular reasons to explain a preference for products from the large-scale sector.

Table 6.18 Reasons for preference of products processed by small- or large-scale sector

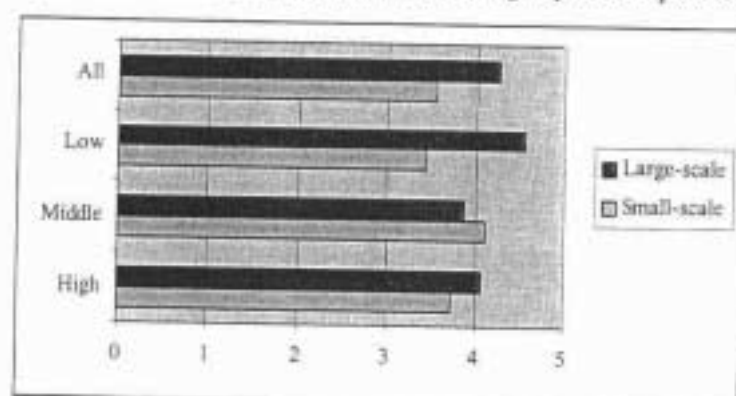
Small-scale food processor		Large-scale food manufacturer	
Price	40	Quality of products	38
Quality of products	4	Price	11
Flexible price	3	Hygiene/cleanliness	11
Promote small-scale processors	3	Familiarity with product	11
Know processor personally	3	Availability of product	9
Provision of credit facility	3	Packaging	9
Additional items at no cost	2	Food safety	8
Availability of product	2	Variety of products on sale	6
Value for money	1	Consistency of product	5
Promote indigenisation of businesses	1	Taste	3
Hygiene/cleanliness	1	Shelf-life/expiry date	2
Accessibility	1	Products free from contamination	2
Taste	1	Convenience	1
Variety of products on sale	1	Value for money	1
Reputation of processor	1	Reputation of processor	1
Availability of discount on product	1	Trustworthy	1
		Provide competitions for consumers	1
		Meet SAZ standards	1
		Satisfactory grading	1
		Ability to increase nutritional value of product	1
		Efficiency/functional equipment	1

Note: Each household could cite up to three reasons to explain their preference.

Large-scale food manufacturers scored better than small-scale processors in terms of the overall mean performance rating (Figure 6.10). Low-income households rated large-scale

food manufacturers the highest (4.56 compared to 4.06 by the high-income group) and small-scale processors the lowest (3.42). It is important to bear in mind however, that the low-income group may aspire to purchase products processed by the formal sector given the perceived social status attached to such consumption patterns. This challenges the somewhat accepted belief that low-income households are *more* likely to accept products produced by the small-scale food-processing sector than other income groups. Middle-income households considered small-scale processors to perform better than the large-scale sector, giving the former the highest rating of all income groups (4.10).

Figure 6.10 Overall mean performance rating of products processed by small- and large-scale sector



Note: Mean performance relates to 5-point scale where 1 equals very poor and 5 equals very good.

6.8 Changes in consumption levels

When households were asked to compare their current consumption levels of dried vegetables with that of three years ago, 44.3% suggested they now consume less dried vegetables (Table 6.19).

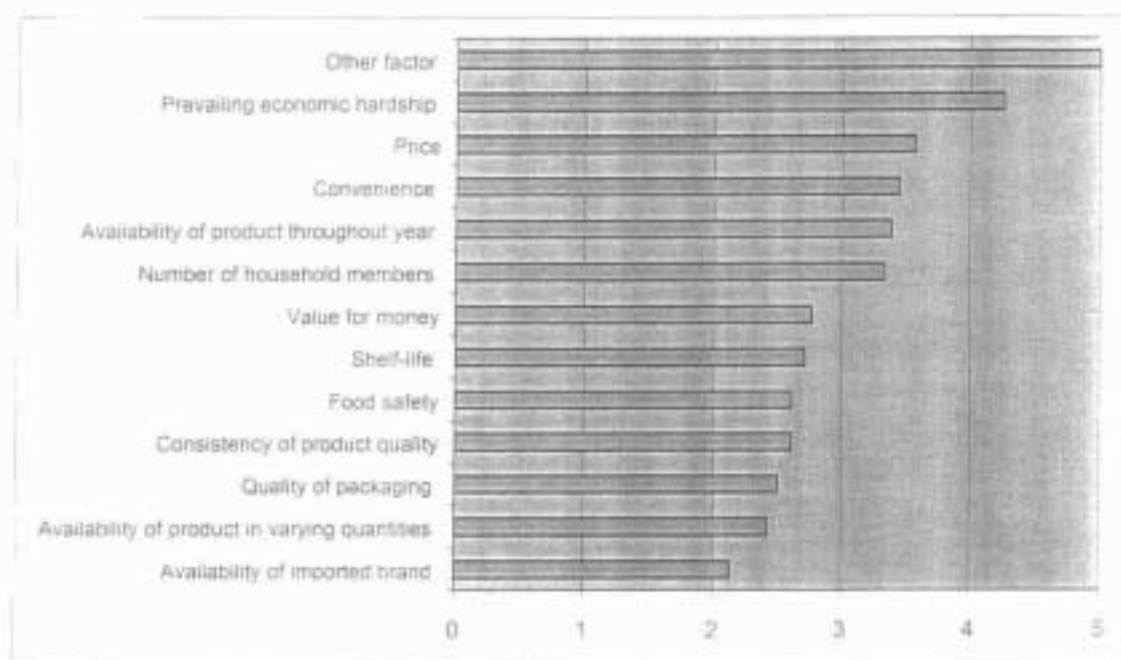
Table 6.19 Current consumption levels of dried vegetables compared to that of three years ago

	Income Group						Group Total	
	High		Middle		Low		Count	%
	Count	% Group	Count	% Group	Count	% Group		
More	3	10.3	17	22.7	18	11.9	38	14.9
Less	5	17.2	22	29.3	86	57.0	113	44.3
Same	21	72.4	36	48.0	47	31.1	104	40.8
All	29	100.0	75	100.0	151	100.0	255	100.0

Households were asked to consider the importance of various attributes in terms of explaining their increase ($n=38$) or decrease ($n=113$) in consumption of dried vegetables (Figures 6.11 and 6.11 respectively). The most important factors to explain any increase in consumption were 'other factors' (mean score of 5.00)⁵⁰ and 'prevailing economic hardship' (4.26).

Note however, only four households mentioned 'other factors', and therefore it is not significant. This same relationship was found with both the middle- ($n=17$) and low-income groups ($n=18$). High-income households ($n=3$) sighted 'prevailing economic hardship' and 'price' as equally important to explain an increase in consumption of dried vegetables. The factor of least importance was the 'availability of imported brands'.

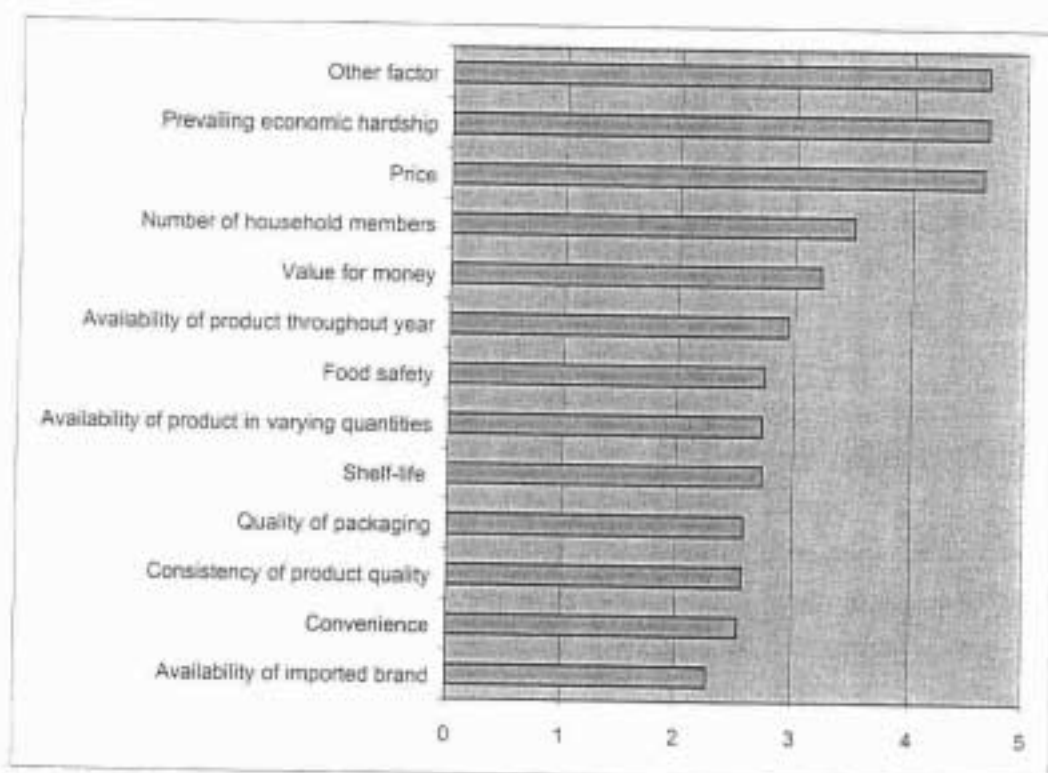
Figure 6.11 Mean importance scores for factors relating to increased consumption of dried vegetables



Note: Mean importance score relates to 5-point scale where 1 = very unimportant and 5 = very important. Other factors include: 'a greater liking for dried vegetables than in the past' (1 case), and the 'consumption of dried vegetables as a substitute for meat products' (3 cases).

The most significant factors to explain a decrease in consumption of dried vegetables were 'other factors' (mean score of 4.67) 'prevailing economic hardship' (4.66) and 'price' (4.62) (Figure 6.12). However, only three households mentioned 'other factors'.

Figure 6.12 Mean importance scores for factors relating to decreased consumption of dried vegetables



Note: Mean importance score relates to 5-point scale where 1 = very unimportant and 5 = very important. Other factors include: less travel associated with the heightened cost of fuel which meant lowered access to such foodstuffs; the availability of alternative foodstuffs, e.g. meat products; and a decline in preference for dried vegetable products within the family.

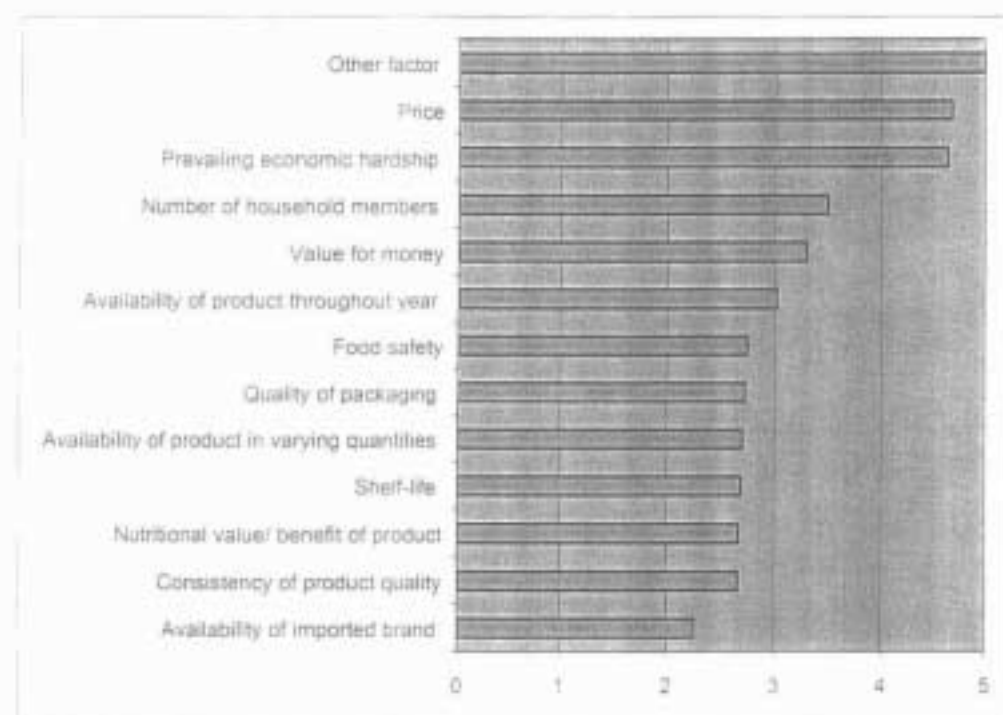
Across income groups, 'price' (5.00) was most important for high-income households ($n=5$), followed by 'prevailing economic hardship' (4.40). 'Other factors' (4.50, but $n=2$) and 'prevailing economic hardship' (4.45) ranked highest among the middle-income group ($n=22$). And finally among low-income households ($n=86$), 'other factors' (5.00, but $n=1$), 'prevailing economic hardship' (4.73) and 'price' (4.71) were the most important factors to explain a decrease in consumption levels of dried vegetables. The least important factor to explain any decrease was the 'availability of imported brands'.

Half the sample group ($n=255$) suggested they would like to consume more dried vegetables than they currently do.⁵¹ However, various factors inhibited their ability to do so. The most important were 'other factors' (5.00)⁵², 'price' (4.69) and 'prevailing economic hardship' (4.65) (Figure 6.13). This same trend was generally true of all income groups. In general terms, all other attributes were considered to be unimportant. The factor of least importance was the 'availability of imported brands'; true for all groups except the high-income group.

⁵¹ Across income groups, the figures related to 62.9% of low-income, 34.5% of high- and 29.3% of middle-income households.

⁵² However, only one household mentioned 'other factors' (mean score of 5.00) as being of importance.

Figure 6.13 Mean importance scores for factors inhibiting increase in dried vegetable consumption



Note: Mean importance score relates to 5-point scale where 1 = very unimportant and 5 = very important.

6.9 Summary

Of the 500 households surveyed, 12.6% indicated that they never consume dried vegetables. Of the 437 consumer households of dried vegetables, 58.4% are accustomed to purchasing the product. When the latter group of households were asked about the types of dried vegetables purchased, the most common varieties included beans, tomatoes, cowo, okra, rape, nyevhe, cabbage, tsunga, chillies and rugare, in that order. Low-income households made the most frequent purchases of dried vegetables. That said, when considering the median quantity of product purchased per month, the data suggests that high- and middle-income households purchase larger quantities of dried vegetables per month than low-income households.

The overwhelming majority of households that purchase dried vegetables tend to frequent formal supermarkets (70.2% of sample; 90% of high-income group); just less than half made purchases at local markets. Although dried vegetable products were purchased in a variety of packaging materials, the majority of households (74.9%) tended to purchase dried vegetables in sealed plastic packs (93.1% of high-income households compared to 64.2% of low-income households). Half of all low-income households often buy products in unsealed plastic bags (51%) and approximately one-quarter of them purchase unpacked products (26.5%).

Just under one third (32.5%) of households that purchase dried vegetables had at some time (to their knowledge) purchased a product processed by a small-scale enterprise. Low-income households were more likely to do so than middle- or high-income households. Few households purchased the product direct from the processor (again the majority of them were from the low-income group). In most cases the consumer knew the processor personally or was a relative. The criteria which consumers considered most important when deciding which

small-scale processor to buy products from were: hygiene/cleanliness of the processor, and availability of credit.

When consumers were asked to give their impression of small-scale dried vegetable processors and their products, the criteria which small-scale processors performed best on were: availability of product in varying quantities, and price. Those criteria rated lowest were: labelling of product, and the quality of packaging materials. Surprisingly enough, low-income households rated small-scale processors the lowest in terms of their overall performance; middle- and high-income households rated them higher. The criteria rated of least importance for small-scale processors to better meet consumer demand for dried vegetables were SABS and SAZ accreditation.

Of the 255 households that indicated they purchase dried vegetables, 52.2% had at some time (to their knowledge) purchased a product processed by a large-scale manufacturer. Over half of the latter group indicated that they tend to purchase a particular brand of product. Of these, again half suggested they had been buying the brand for 16 years or more, therefore exhibiting a considerable degree of brand loyalty. "According to Packard's (1959) theory of conspicuous consumption, people consume products to demonstrate a superior level of status both to themselves and to their friends" (Fish, Leyland, Napoli, DeBussy and Dix, 2001:5). Consumers acquire, own, use, and display certain goods and services to enhance their sense of self, to present an image of what they are like, to represent what they feel and think, and to bring about the types of social relationships they wish to have (Ibid. citing Goffman, 1959; Belk, 1988). This pattern of behaviour is evident in modern society, where prestigious brands are acquired as an outward display of status (Fish et al. 2001). The most popular brands were Lever Brothers, Red Seal, National Foods and Victoria Foods. Price rated as the most important factor in choice of brand, followed by food safety.

When consumers were asked to give their impression of large-scale dried vegetable processors and their products, the criteria which the large-scale sector performed best on were: food safety, shelf-life, and availability of product throughout the year. Those criteria rated lowest were: price, availability of product in varying quantities, and value for money. Large-scale processors performed better than the small-scale sector in terms of their overall mean performance rating. Low-income households gave the large-scale food-manufacturing sector the highest rating. Price, consistency of product quality, and food safety were the criteria rated most important if large-scale food manufacturers were to strive to better meet demand for such products. Again SABS and SAZ accreditation were rated of least importance.

Of the 255 households that purchase dried vegetables, 34.5% stated a preference for products produced by the large-scale food-manufacturing sector and 20% for products processed by the small-scale sector. Half the sample suggested they had no preference. Quality of product and price were overwhelmingly cited as the reasons for preferring products from the large- and small-scale sector respectively.

Approximately 44.3% of households (n=255) indicated that they now consume less dried vegetables than three years ago (14.9% said they consume more). The most significant factor to explain a decrease in consumption of dried vegetables was other factors, prevailing economic hardship and price. This suggests that the price of dried vegetables is going beyond the reach of some households. Interestingly enough, prevailing economic hardship was also a significant factor to explain an increase in consumption of dried vegetables among some

households over the same three-year period. Some households appear to be turning to dried vegetables as a means of substituting for other foodstuffs, which have now gone beyond their reach due to the food price increases of recent years.

Half of the sample (n=255) indicated that they would like to consume more dried vegetables than they currently do (of which 74.8% belong to the low-income group), but that price and prevailing economic hardship were the most crucial factors inhibiting them from doing so. The latter finding is particularly worrying as dried vegetable products are perhaps one of the most accessible processed horticultural foodstuffs in Zimbabwe in monetary terms.

7. CONCLUSIONS

7.1 Introduction

The previous three chapters have discussed the findings for each of the study products in turn—dried fruits, fruit preserves and dried vegetables. The focus of the current chapter is to highlight the contrasts and comparisons across the three study products in terms of their consumption and purchasing profiles, consumer attitudes to products processed by the small- and large-scale sectors, and consumer preferences for such products. The chapter then outlines the prospects for small-scale processors of dried fruits and vegetables and fruit preserves, based on the findings of the research conducted. The chapter concludes by highlighting some of the more pertinent policy implications of the research, for example in terms of the support needed to facilitate the effective production and marketing of products by the small-scale sector, and their acceptance among consumer groups.

7.2 Discussion of the findings: Contrasts and comparisons

7.2.1 Comparisons of consumption and purchasing profiles

Of the three study products, fruit preserves are the most popular products, followed by dried vegetables and dried fruits. Fruit preserves which are consumed with bread and such derivatives are widely consumed by the majority of households, and are mainly accessed through formal supermarkets—irrespective of income group. While we may be inclined to consider dried fruit as a luxury product, in fact dried fruits are least popular among the high-income group. It is important therefore to consider the function of such foodstuffs in the diet. Dried fruits for example are largely used for baking among high-income households, particularly exotic varieties of fruit including raisins, sultanas and currants. Indigenous dried fruits (e.g. masau, mawuyu and matohwe), are however more likely to be consumed as snacks among lower-income households. The availability of these products is also an issue considering that they are largely sold in local markets or by street vendors—outlets that are much less frequented by middle- and high-income groups. Dried vegetables are perhaps the most accessible product in monetary terms, but nonetheless lack popularity among some income groups—primarily the high-income group. Dried vegetables, which are reconstituted into relish and served with sadza—the local staple, do not form a major part of the diet of high-income urban households. Although these products are available in formal supermarkets, the selection is often much more limited than in local markets for example.

The findings of the study suggest that different socio-economic groups tend to show particular purchasing patterns in relation to the three products. About 52% of low- and middle-income households purchase up to 6 and 5.4 kg of fruit preserves per month, respectively, while the high-income group purchase up to 2.5 kg per month.

Meanwhile, about 54% of households purchase up to 24 kg of dried fruit per month. The middle- and low-income groups purchase up to 24 and 20 kg of dried fruit per month respectively, compared to a maximum of 1 kg for the high-income group. The general assumption is that the relative amounts of products purchased translate to consumption. Relatively large families under this category may explain the high monthly purchases of the two products among the low- and middle-income groups.

The average quantity of dried vegetables purchased by the three income groups was about 2 kg per month. The high- and middle-income groups purchase higher quantities than the low-income group. The relative quantity of dried vegetables purchased by the high-income group was in contrast to data obtained for the other two processed food products. On a quantitative basis, comparison of dried vegetables to fruit preserves should be done with caution since the products are different and also their function in diet. This observation has no clear explanation, except to suggest that the high-income group now quest for traditional products as well. Another possible reason is economic hardship, which has compelled households to source for locally available and affordable food products.

Different forms of packaging materials are used ranging from very simple inexpensive types such as wrapping in newspapers to more sophisticated and expensive glass bottles. The nature of the products tends to determine the type of packaging material used. Simple packaging materials are commonly used for dried fruit and vegetables, while glass jars or plastic bottles are used for fruit preserves. The majority of the households purchase dried fruit in unsealed plastic bags, while sealed plastic bags are used for dried vegetables. Fruit preserves are commonly packaged in cans. However, there were some differences across the income groups particularly with dried products. Dried vegetables in sealed plastic packages are most popular among high-income households, while the low- and middle-income groups commonly purchase unsealed packages. Similar observations were made with respect to the packaging of dried fruits. With respect to fruit preserves, canned products were overwhelmingly popular among all households, irrespective of income group. Fruit preserves packaged in glass jars were purchased most by middle-income households. Given the superiority of this type of packaging over other packaging materials, it is therefore expected to be attractive to upper income households. Packaging has an additive cost to the final price of the product, and it is therefore assumed that households (particularly the low-income group) would take this into consideration in view of prevailing economic hardships faced.

The main functions of packaging of food products are designed to protect the contents, preserve them and allow convenience during handling and storage. Fruit preserves investigated in this study were packaged in accordance with the national regulations (SACA, 1968). Use of packaging materials for fruit preserves is reinforced by local regulations governing the processing of the products. However, the packaging materials of dried fruits and vegetables do not seem to be covered by national regulations. This probably explains the use of various packages, and in some cases, where products are not packaged at all.

7.2.3 Consumer attitudes to small- and large-scale food processors

The study suggests that more households purchase dried fruits processed by small-scale enterprises compared to purchases of dried vegetables and fruit preserves from the same sector. Low-income groups dominate in the purchases of dried fruit and vegetables, while high-income households tend to dominate in the purchase of fruit preserves. There were however some differences in the way the products were characterised by the households.

There was general agreement that the price of products processed by small-scale enterprises was lower than that of similar products from the large-scale sector. In this regard, consumers suggested that products processed by the small-scale sector offered 'value for money'. However, food safety, labelling and the quality of packaging used by small-scale processors was considered poor across all three study products. Although the large-scale sector dominates the market for these products based on such attributes mentioned, small-scale processors have an advantage in terms of product price. This is an important factor for the development of the sector especially under prevailing economic conditions in Zimbabwe. Price appears to be the most important factor influencing purchasing patterns of all three products. The small-scale sector therefore has scope given that their products perform favourably in terms of price and value for money. Food safety however, was the key concern among consumers irrespective of product type, and particularly among the high-income group.

Although food safety is considered important for increasing the market share of the small-scale sector, it seems the use of 'food safety standards' is not viewed the same, suggesting that there is little appreciation of the function of such standards among households generally. There is therefore a need to increase awareness of the function of food safety standards and use of various logos, e.g. the Standards Association of Zimbabwe and the South African Bureau of Standards mark.

Most consumers frequented small-scale processors of dried fruits and vegetables, and fruit preserves in and around the Greater Harare area. However, some frequented processors in other provinces, e.g. dried fruit and vegetable processors in Mashonaland Provinces (Central, East, West), and processors of fruit preserves in Manicaland Province. Most households have no real connection with the small-scale processors involved, except that some may be known because of their location. Compared to the large-scale sector, households seem to have been purchasing products from small-scale processors for significant periods. The majority of households have been purchasing products from small-scale processors for a period of 2 to 5 years.

7.2.4 Consumer preferences: Small or large-scale?

In the case of each study product, the large-scale sector performed better than the small-scale sector in terms of overall consumer ratings of their products. Small-scale processors were rated 'neither good nor poor' in each case, whereas large-scale food manufacturers of each product were rated 'good'. However, small-scale processors of fruit preserves and dried vegetables were rated 'good' by the high- and middle-income groups respectively (Table 7.1).

Table 7.1 Overall direct evaluation of products produced by small- and large-scale sector

Product	Sector	Income Group						Total	
		High		Middle		Low		N	Mean
		N	Mean	N	Mean	N	Mean		
Dried fruit	Small	4	3.25	19	3.53	18	3.49	207	3.49
	Large	20	4.05	21	4.10	15	4.20	56	4.11
Fruit preserves	Small	11	4.00	9	3.89	21	3.95	41	3.95
	Large	53	4.17	112	4.07	238	4.55	403	4.37
Dried vegetables	Small	7	3.71	10	4.10	66	3.42	83	3.53
	Large	16	4.06	47	3.87	70	4.56	133	4.26

Note: Mean performance relates to 5-point scale where 1 equals very poor and 5 equals very good.

Some mixed feelings about the preference of products were observed; i.e. whether the products were produced by the small- or large-scale sector. On a product basis, an overwhelming majority of households preferred fruit preserves produced by the large-scale sector, in contrast to those who preferred dried fruits produced by small-scale processors. Households do not seem to have any preference, regarding the scale of enterprise processing dried vegetables. Across income groups, the high-income group dominated in the preference for fruit preserves, while the low-income group dominated for dried fruits and dried vegetables. Dried products processed by the small-scale sector are preferred because of price compared to similar products produced by the large-scale sector.

Fruit preserves processed by the large-scale sector are rated good in most categories except price and value for money. As mentioned earlier, this is in contrast to products produced by the small-scale sector, which are considered favourable in terms of price, and thereby offering value for money. Overall, all income groups rate fruit preserves produced by the large-scale sector good to very good.

7.2.4 Opportunities for small-scale processors of study products

There are clear price advantages for products processed by the small-scale sector. The price of such products is considered cheaper than similar products processed by the large-scale sector. This is a factor that the small-scale sector (whether fruit preserves, dried fruits and vegetables) could take advantage of. Price could be exploited in favour of the small-scale sector particularly given the present economic hardships faced by consumers in Zimbabwe. However, the products need to be safe, well labelled and the quality of packaging must be acceptable. Further, the products should be available throughout the year. These are some of the concerns raised by consumers, who expressed a preference for products processed by large-scale food manufacturers.

Although the market for dried fruits and vegetables seems to be dominated by products from the small-scale sector, there is room for increasing their market share if some of the factors raised in the preceding paragraph are addressed. This is contrary to the market for fruit preserves, which is dominated by products from the large-scale sector. The differences in the market share of the products may be influenced by the respective demands of the production technologies used. The technology for the processing of fruit preserves requires greater capital inputs compared to dried fruit and vegetable processing. The large-scale sector has therefore more technical know-how in the production fruit preserves than the small-scale sector.

particularly in terms of packaging. Canned fruit preserves are popular, but this type of packaging requires more capital investment in terms of equipment, backup service and availability of spare parts. Whereas, the packaging of dried fruits and vegetables is relatively simple, and in most cases plastic bags are used.

7.3 Policy implications

Concern for food safety among consumers of all three study products, despite the popularity of dried fruits and vegetables produced by the small-scale sector. Food safety measures need to be reinforced by government bodies, although some producers may have their own protocols on food hygiene during production. Nonetheless, enforcement of such standards still remains the domain of government (WHO, 1999). With respect to the study products, it seems that consumers are concerned about food safety, suggesting that there is no clear known policy on this issue. Furthermore, it would appear that local food safety standards regulating the production of dried products (whether fruits or vegetables) are lacking. However, where such standards and regulations exist, it has been shown that there is reluctance on enforcement, even in developed economies (WHO, 1999; Taylor, 2001). Poor uptake of national food safety standards and regulations may be attributed to inadequate resources and infrastructures in small-scale companies. It is therefore imperative that government, consumer associations, NGO's, educational institutions, international organisations (e.g. FAO, WHO) work together with small-scale food processors with respect to the implementation of food safety measures (Ibid.). Food safety standards should cover all aspects of production including packaging and food labelling, which are often poorly handled by the small-scale sector.

7.4 Recommendations

The following recommendations are based on the main findings of the consumer survey research. Although this is by no means an exhaustive list, it is hoped that they provide some ideas as to the way forward in order to facilitate the effective production and marketing of processed horticultural products by small-scale producers in Zimbabwe.

- Small-scale processors need to ensure that their products are available where consumers most frequently purchase products, i.e. in supermarkets. However, the majority of consumers are of low-income status and make purchases in local markets, which means giving such outlets greater attention.
- Small-scale processors need to ensure the consistent supply of their products throughout the year.
- Small-scale processors need to produce food products, which are not only competitively priced (which is seen as their main benefit on the part of consumers), but also of a high and consistent quality.
- Where possible, small-scale processors need to produce a distinctive product that would enable them to enter a particular niche market. To this end, further research needs to be carried out on the suitability of processing indigenous fruit and vegetable varieties into a range of end products.

- Small-scale processors need to be further encouraged to adopt stringent food safety measures within their processing operations. This will have the dual benefit of improving food safety and gaining higher regard for such products among particular consumer groups, i.e. enabling small-scale processors to overcome poor consumer perceptions of their products.
- More high profile food safety campaigns need to take place.
- Price factors exert a strong influence on consumer preferences for processed food products, as well as on performance of processed food products. Therefore, small-scale processors would do well by taking advantage of their competitive prices and increase their market share.
- Identification of national (domestic) and regional markets should be considered a priority.

APPENDIX

Appendix 1. List of suburbs in Harare

	Name	Population density	Income area
	Alexandra Park	Low	High
	Arcadia	Medium	
	Avondale	Low/Medium	Middle/High
	Belvedere	Medium	Middle
	Beverley	Low	High
	Borrowdale	Low	High
	Budiriro	High	Low
	Carrick Creagh	Low	High
	Colne Valley	Low	High
	Cranborne Park	Medium	Middle
	Dzivarasekwa	High	Low
	Eastlea	Medium	Middle
	Epworth	High	Low
	Fontainbleu	Low	High
	Glen Lorne	Low	High
	Glen Norah	High	Low
	Glen View	High	Low
	The Grange	Low	High
*	Greencroft	Medium	Middle
*	Greendale	Low	High
	Greengrove	Low	High
	Greystone	Low	High
*	Hatcliffe/Hatcliffe Extension	High	Low
	Hatfield	Low/Medium	Middle
	Helensvale	Low	High
	Highfield	High	Low
*	Highlands	Low	High
	Jaoha	High	Low
	Kambuzuma	High	Low
*	Kuwadzana/Kuwadzana Extension	High	Low
*	Mabelreign	Medium	Middle
*	Mabvuku	High	Low
	Marlborough	Low	Middle
	Mandara	Low	High
	Marimba Park	High	Low
*	Masasa Park/Queensdale	Medium	Middle
*	Mbare	High	Low
	Midlands	Low/Medium	Middle
	Mount Pleasant	Low	High

	Name	Population density	Income area
	Alexandra Park	Low	High
	Arcadia	Medium	
	Avondale	Low/Medium	Middle/High
	Belvedere	Medium	Middle
	Beverley	Low	High
	Borrowdale	Low	High
	Budiriro	High	Low
	Carnick Creagh	Low	High
	Colne Valley	Low	High
	Cranborne Park	Medium	Middle
	Dzivirasekwa	High	Low
	Eastlea	Medium	Middle
	Epworth	High	Low
	Fontainbleu	Low	High
	Glen Lorne	Low	High
	Glen Norah	High	Low
	Glen View	High	Low
	The Grange	Low	High
*	Greencroft	Medium	Middle
*	Greendale	Low	High
	Greengrove	Low	High
	Greystone	Low	High
*	Hatcliffe/Hatcliffe Extension	High	Low
	Hatfield	Low/Medium	Middle
	Helensvale	Low	High
	Highfield	High	Low
*	Highlands	Low	High
	Jaohla	High	Low
	Kambuzuma	High	Low
*	Kuwadzana/Kuwadzana Extension	High	Low
*	Mabelreign	Medium	Middle
*	Mabvuku	High	Low
	Marlborough	Low	Middle
	Mandara	Low	High
	Mufakose	High	Low
	Mukuvisi		
	Northwood	Low	High
	Park Meadowland	Medium	Middle
	Park Ridge	Medium	Middle
	Parktown	Medium	Middle
	Philadelphia	Low	High
	Prospect	Medium	Middle
	Queensdale	Medium	Middle
	Rugare	High	Low
*	Tafara	High	Low
	Tynwald	Mixed	
	Umwindi	Low	High
	Vainona	Low	High
	Warren Park	High	Low
	Waterfalls	Medium	Middle
	Willowvale	Industrial?	

Source: Bowyer-Bower and Tengbehi, 1997; Mbiha, 1995; MDP in association with IDRC, 2001

Note: * Indicates suburbs where consumer survey conducted.

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