

R2170 (R)

Report on a visit to Tanzania
to initiate urban demand/needs
assessment study for non-grain
starch staple food crops in
Dar es Salaam

11 July - 22 July 1994

Project T0404

Philip Digges

Report Code: NGSS 94/95 V3

Circulation:

NRI Strategy Areas Manager FSCU
Programme Manager HTC
Problem Area Manager R&T

Loose copies

NRI	Mr A Marter	Tanzania	Dr W Lorri (TFNC)
	Ms A Gordon		Mr G Ndunguru (TFNC)
	Dr J Orchard		Mr F Modaha (TFNC)
	Mr G Bockett		Mr F Mashamba (MDB)
	NRI Library		
	NRI Registry		
	NRI PPS		

ODA EAfD ODA
Ms F Proctor
Mr N Gregory
Aid Section, BHC Dar es Salaam

Natural Resources Institute
Central Avenue
Chatham Maritime
Chatham
Kent ME4 4TB

Tel: 0634 880088
Fax: 0634 880066/77
Telex: 263907/8 LDN G

Contents

Executive summary	i
Abbreviations	ii
I. INTRODUCTION	
Background	1
Terms of reference	1
II. SURVEY GUIDELINES	2
Annex 1	
(a) Terms of reference (points of clarification)	4
Market size	4
Trends in size	4
Competing products/relative pricing	4
Consumer preferences	5
Price/quality relationships	5
Post-harvest losses	6
Marketing chains	7
Market efficiency	7
Supply	7
Producers	7
Methodology	7
(b) Work programme (25th July to 15th August)	8
Secondary data to be collected	8
Primary data collection	9
Tools	9
Annex 2	
Issues to consider with market participants	
Urban consumer	10
Urban market trader (retail or wholesale)	11
Truck trader	13
Farmer	14

Summary

The objective of this visit was to initiate the needs assessment case study examining the marketing system for non-grain starch staple food crops linking the rural producer to the Dar es Salaam urban market. Preliminary visits were made to city markets and an identified production area for cassava. Training was provided to members of the survey team covering information requirements, potential sources of information and methods of data collection. These field visits also provided the basis for the formulation of survey guidelines which were left with the project field manager.

The survey is to be conducted by members of the Tanzania Food and Nutrition Centre (TFNC) and Marketing Development Bureau (MDB) over the three month period July to September 1994. The primary objective of the survey is to characterise the marketing system identifying major constraints and possible technical intervention needs with a view to technology transfer activities in the non-grain starch staple post-harvest system. The survey also represents a logical extension of the transfer of needs assessment methodologies component of the project, with national participants conducting the survey.

Abbreviations

MDB	Marketing Development Bureau
NGSS	Non-grain starch staples
NRI	Natural Resources Institute
ODA	Overseas Development Administration
TFNC	Tanzania Food and Nutrition Centre

I. Introduction

Background

1. The report describes the initiation of the needs assessment case study to be conducted by members of the Tanzania Food and Nutrition Centre (TFNC) and Marketing Development Bureau (MDB) over the three month period July to September 1994. The study is the third in a series of needs assessment case studies conducted as part of the ODA funded and NRI managed project "The transfer of needs assessment methodologies and post-harvest technologies for non-grain starch staple food crops in sub-Saharan Africa". The study makes use of a market based approach to identify and establish post-harvest systems linking rural producers to the Dar es Salaam urban market. This follows the recommendation made during the Tanga case study for a need to cover marketing chains linking rural producers to the urban consumer (report of Digges, Ndunguru, Hamed, Laswai, Mbiha and Mwamanga NGSS 93/94 VI). Studies of market demand for commodities also represent an integral part of the project. Assessment of market demand is necessary before appropriate technological interventions can be made (visit report of Poulter and Westby July 1993 NGSS 92/93 V1).

2. A two week visit was undertaken by the project socio-economist to initiate the survey. Preliminary visits were made to selected urban markets as well as an identified production source for cassava. The purpose of these field visits was to provide training to members of the survey team, outlining the types of issues which should be examined, methods of data collection and potential sources of information. They also formed the basis of written guidelines left with the Project Field Manager.

3. The field notes which were left with the Project Field Manager are divided into two parts and are included as an Annex.

Terms of reference

4. The terms of reference for the survey are as follows:

- (a) To briefly characterise the Dar es Salaam urban market for non-grain starch staples (NGSS); scale, trends in size, competing products/relative pricing, consumer tastes and perceptions.
- (b) To briefly characterise the main marketing chains supplying these markets eg with respect to structure, market efficiency, degree of competition.
- (c) To briefly characterise the main supplying

areas for NGSS, include place of NGSS within changing cropping systems and characteristics of households producing surpluses for sale in comparison to those who do not.

- (d) To identify any major issues relating to seasonality of supply and demand.
- (e) To identify the main long term trends in supply, marketing and market demand.
- (f) To analyse current and potential problems confronting the sector including those identified by current participants.
- (g) To document major constraints and opportunities in NGSS post-harvest systems for potential technical interventions.

II. Survey guidelines

5. Field notes which compliment the practical training provided during the visit are given in Annex 1 and 2. Annex 1 clarifies the study terms of reference, provides guidance as to the types of information required, outlines potential sources of information and describes the kinds of issues which need to be covered. Annex 2 provides a detailed list of issues which should be raised with each of the key players in the marketing system. This list is not exhaustive and other interesting and relevant issues should be pursued as they arise (a benefit of an informal approach to data collection).

6. An NRI socio-economist, Mr Ulrich Kleih, is due to arrive in Dar es Salaam on 15 August 1994. Information addressing the issues outlined should be in a presentable form by the date of his arrival (this does not mean a report has to be written since the purpose of the next three weeks is to collect the information). Any information gaps, points of clarification can then be discussed.

7. It is important that all issues relating to the availability of a vehicle and project funds (now that they have been paid into TFNC's bank account) are arranged prior to the arrival of Mr Kleih. It is also important to make sure that formalities of contacting and gaining the permission of the relevant regional and district authorities have been made. It should be noted that given the limited amount of time Mr Kleih will be in Tanzania (1 to 2 weeks), it is unlikely to be feasible to go to distant areas during his stay.

8. It is suggested that at this stage the study focus upon two of the three NGSS crops: cassava, cooking banana and sweet potato. It is better to examine two of these commodities in sufficient detail rather than have shallow

information on all three crops which provides an insufficient basis on which to assess possible technical intervention needs. It is suggested that cassava and banana should be examined given the information which has already been gathered during the first two weeks of the survey.

9. The timetable for the completion of a draft report should be the end of September 1994. The recommendations arising from this study will then be tabled for discussion at a national workshop to be held in October or November 1994. The purpose of the workshop is to identify and prioritise needs for possible technology transfer activities.

Annex 1

(a) Terms of reference (points of clarification)

10. The purpose of these notes is to clarify a number of the issues listed under the terms of reference to ensure that the objectives of the study are well understood.

Market size

11. Household expenditure data used in conjunction with retail price data can be used to estimate the size of the Dar es Salaam market. It is important to note the year the survey was undertaken so retail prices (monthly) corresponding to the same period are collected.

12. Household expenditure (given on a per month basis) divided by price will give an estimate of the volume of each commodity purchased per household. This figure multiplied by the number of households in Dar es Salaam provides an estimate of market size.

13. Collecting the information is the important issue here and not the calculations involved.

Trends in size

14. Exact figures relating to the change in size of the market are rarely if ever available. However, it is possible to gain an impression of the changing nature of the market. The information collected relating to the rate of urbanisation, income per head and income elasticity of demand will allow an estimate to be made. Again collecting the information is the important issue here rather than the calculations.

15. Interviews with traders, market masters, city council etc are likely to be able to give you an impression on whether the market is increasing or decreasing by giving indications on changes in the quantity of produce entering Dar es Salaam or individual markets, and changes in the number of markets over time.

Competing products/relative pricing

16. Obtain a picture of the standing of NGSS food crops in relation to other food staples and other NGSS food crops.

17. Household expenditure data can provide an indication of the importance of each of the food staples, while monthly price data, used in conjunction with information elicited from consumers and retailers regarding consumption habits, can assist in establishing what are competing products.

Consumer preferences

18. When examining consumer preferences, a more detailed assessment of the characteristics consumers look for when purchasing NGSS should be undertaken. A first step is to identify the NGSS products on sale (eg fresh produce or processed products) and the relative importance of each. Initial visits to Kariakoo and Tandale markets confirm the information presented in the household expenditure survey which highlights the importance of fresh cassava, banana and sweet potato. Cooking vendors who fry and roast cassava and banana were also identified and should be interviewed.

19. Issues to consider:

Establish the important characteristics which determine consumers purchase decisions. Examples are given below.

- **Banana:** Does the consumer look for the size of bunch, finger, colour, freshness, variety, damage, maturity, ripeness etc. Establish the relationship of characteristics to use (form of product or product type). Establish what the consumer means when they use these and other terms.

It may be worth undertaking some ranking exercises of the criteria given by consumers to gain a feel for the weight attached to each of the characteristics.

- **Cassava:** Freshness, age, variety, size of root, damage (bruising, cuts etc), relationship of characteristics to use (form of product or product type).

Again it may be worth trying to rank the criteria identified.

Price/quality relationships

20. This information builds upon the characteristics identified by the consumer by establishing the important criteria for each of the different types of trader identified. The relationship between the grading of produce and price can then be established.

21. Issues to consider:

- Relationship of price with age of produce (any critical time periods when discounting is introduced, profile of price discounting over time). Note the different uses of "fresh" and "older" produce (eg ripe banana for brewing, older roots for makopa).
- Relationship of price with size of finger, bunch, root, heap etc.

- Relationship of price with variety.
- Relationship of price with damage to produce (eg bruising, cuts, moulding etc).
- Other important grading criteria not listed here.

22. Identifying grading criteria is an important first step in establishing where price discounts or premia occur. It is important to establish the grading terms used by the trader/consumer and the reasons why each of these criteria are important (eg why is age important, because it affects colour, taste, texture, shorter remaining shelf-life, withering of produce etc).

Post harvest losses

23. It is very important to gain an idea of the level and cause of post-harvest losses at each stage of the marketing chain (from the retailer back to the farmer).

24. Price/quality relationships are a first step in establishing the cause of post-harvest losses and the weight attached to each of the grading criteria (the level of price discounting or premium is an indication of the value placed upon each product characteristic by the market). For example:

- Age: If age has been identified as an important grading criterion (eg a price premium is paid for a fresh product), establish where delays in the marketing chain occur (eg farm level, at urban market etc) and what the problems are.
- Damage: If bruising is an important issue, identify where along the marketing chain this occurs and what causes the bruising (eg during transportation produce is compressed etc).

25. In addition to the cause, an idea of the significance of the problem needs to be established at each stage of the marketing chain, ie quantity of produce/proportion of produce which goes to waste or is sold at a discount. For example:

- If the major problem is the bruising of banana during transportation by truck, get an idea of the number of bunches/proportion of bunches affected per trip.

26. The cause and magnitude of post-harvest losses is an important guide for identifying where potential technical interventions can be made. For example:

- If a price premium is paid for fresh cassava, and a problem of ageing of fresh cassava occurs primarily at the urban market, it may be that improved methods of storing and extending the shelf-life of fresh

cassava should be examined at the urban market.

Marketing Chains

27. Characterise the marketing system by focusing upon the major marketing chains from the production/supplying areas to the urban consumer in Dar es Salaam. Identify the key players involved and establish their role/function.

Market efficiency

28. Consider market structure (number and types of vendor, whether independent or member of an association/coop etc, role and function of assoc etc), barriers to entry (how easy is it for new traders to enter, consider space, licence, set up costs, availability of transport, any seasonal entry and exit of traders), horizontal and vertical relationships between the various types of trader and farmers (eg the number of buying and selling options).

29. Compare market price data (retail and wholesale monthly time series) for Dar es Salaam with price data for the major regions/districts which supply Dar es Salaam. These producing areas will be identified during the course of the interviews with urban traders. Focus upon the collection of this secondary information, if available, rather than the analysis at this stage.

Supply

30. Consider sources of supply (region/district), changes over time, seasonality in Dar es Salaam and producing/supplying regions.

Producers

31. Gauge importance of crop in farming system and any changes over time. Identify uses of crop, relative importance. Processing and storage methods, marketing options, should be considered. Distinguish between independent farmers ("large" and "small") and any coops etc.

Methodology

32. Make a note of the methodology used:

Site selection:	Production areas visited, markets visited
Sources of information:	Ministries, city council etc
Tools used:	Group/individual interviews, seasonal calendars, ranking etc. What worked well, difficulties faced

(b) Work programme (25 July to 15 August)

33. During the three week period, 25 July-15 August, it will be necessary to carry out the bulk of the survey work. This will entail collecting additional secondary information as well as primary data collection using informal survey methods.

Secondary data to be collected

34. The following secondary data need to be collected:

- (a) Household expenditure data for cereals and starchy roots by income group. The household expenditure survey usually includes this information.

Note the methodology used by the household expenditure survey. A detailed analysis is not required but a comment on the method used is appropriate.

- (b) Retail price data (Monthly) for cooking banana, cassava, sweet potato, Irish potato, rice and maize (1990 to 1994). The Bureau of Statistics has this information.

In terms of the retail price data, check what the price refers to. Is an average price for a selection of markets used? How frequently are the prices collected (monthly spot price or collected weekly etc)? How are the prices collected (from a panel of traders, do they actually bargain and buy the produce)? What unit is used? Is one referring to a standard product?

- (c) Wholesale price data (Monthly) for cooking banana and cassava (1990-1994). Bureau of Statistics.
- (d) Price data (usually only have market price data for main regional town) for the regions identified as major sources of supply to the Dar es Salaam market. The regions are to be identified during the course of the study.
- (e) For the volume and price data already collected from Kariakoo, Tandale..., check with the Market Master the method used for collecting this information.
- (f) Population figure for Dar es Salaam, rate of urbanisation. Refer to Population and Housing Census.
- (g) Any reports which have estimated the income elasticity of demand for NGSS (World Bank and FAO reports are often a good source).
- (h) List of markets in Dar es Salaam (City council). Interview the appropriate person (eg Chief Market

Administrator) and obtain an opinion on any changes in the number of markets, rules and regulations etc.

Primary data collection

35. A list of the types of issues which should be considered with each of the market participants identified and to be identified during the course of the study is presented in Appendix 1. (NB/ Reference is often made to cassava products for illustrative purposes only because this was the crop examined during my time here.)

36. The importance of spending time analysing the information you have collected cannot be over emphasised. This not only allows information gaps to be identified but is an essential means of focusing the study by ensuring that the important issues are identified and explored in sufficient detail.

Tools

37. Group and individual interviews will be the primary techniques used. When examining the issues listed below always consider the six "helpers" WHERE, WHY, WHAT, WHO, WHEN and HOW. These words encourage enquiry and probing.

38. Observation is also an invaluable tool particularly in the context of markets where other more time consuming tools may not be possible.

39. Consider ranking techniques, for example ranking may be a useful tool in the context of eliciting and ranking consumer preference criteria.

40. Again it is stressed that the following issues are not exhaustive; other important issues are likely to be identified during the course of the study.

41. Finally, always consider ways of cross-checking the information given whether through the use of different tools or respondents. For example: A truck trader may indicate that he always brings in fresh cassava to the market. However, interviewing market traders or observing produce being unloaded from a truck may indicate that a problem is the supply of old roots from the truck traders! Establish the real situation.

Annex 2

Issues to consider with market participants

Urban consumer

- establish importance of NGSS in relation to other food staples
- seasonal changes in consumption, reasons
- product (fresh, processed etc), relative importance of each
- characteristics looked for when purchased (age, size, broken roots, bruising etc), relative importance of each, relationship to use, implications for price (price discounting, premiums)
- problems with produce, reasons to reject produce, frequency/importance of problem
- quantities purchased eg heap, frequency

Urban market trader (could be retail or wholesale)

Supply

- Source of supply (region, district, village)
- seasonality in supply
- type of trader buy from (truck, bicycle, market wholesaler etc)
- relationship with supplier (regular etc)
- number of suppliers coming to market (buying options)
- coordinated supply or independent
- daily gluts
- how frequently buy produce
- quantities involved

Characteristics look for when buying

- freshness, maturity, size of bunch or fingers, variety, bruising, cuts, moulding etc
- establish what is meant by each of the terms
- relative importance of each characteristic in buying decision
- price/grading relationships
- most common problem with produce arriving in market
- nature and cause of problems
- importance of problem (quantity/proportion affected)

Selling options

- consumer, types of trader (eg traders other markets, cooking traders, brewers etc)

Price/quality relationships

- selling price, establish any grading criteria. For example: age (critical time periods, profile of price discounting if any), variety, size, cut, bruising, size, colour, moulding, withering, other.

NB: Possible approach for establishing price/quality relationships

Example

Take a fresh bunch of bananas (today's arrivals/what the vendor considers fresh) and compare it with a like bunch (size, variety and condition/level of damage) which is less fresh (eg X days old). In this way discounts (if any) associated with age can be estimated. This type of questioning can be made easier by observing and pointing to like produce of different age. A similar approach can be used for other possible quality characteristics. In this way an attempt can be made to try and isolate and establish the important factors.

- elicit from the trader what they mean by the characteristics given
- which of the above characteristics are important and why (eg variety make be important for taste, texture etc)
- note nature of produce sold and types of buyer (eg

- traders who make and sell makopa may buy older roots)
- establish nature and cause of characteristics identified (eg withering of roots due to the sun, particularly during the dry season)
 - how are the products sold eg heaps, number of roots in heap, whole or cut pieces, sacks etc

Post-harvest losses

- make sure have established price/grading information
- establish importance of each criterion in terms of quantity/proportion of produce sold in particular form.

For example:

Old roots (define what is mean by old) may not be purchased by household consumers and are instead sold to traders who make makopa. Establish just how important this outlet is to the trader. It may be that the trader only has to sell a small proportion and quantity of roots to makopa traders and that this is not a common practice?

- physical waste

Storage at market

- methods (eg different types of sacks)
- shelf life
- determinants of shelf-life (seasonal variations, variety, condition of root eg any bruises or cuts, type of sack used etc)
- duration keep produce (range, average)
- problems (moulding, withering etc)
- cause
- quantity/proportion affected

Market structure

- number of traders
- independant/association
- function, rules and regulations of association
- price setting mechanism (auctioneer etc)

Barriers to entry

- space
- licence
- association
- set up costs
- other

Truck trader

Supply

- sources of supply, seasonality

Describe trader

- farmer/trader or specialised trader
- hire or own truck
- availability of trucks, seasonality, competing products eg trucks used to carry oranges when in season
- charge, by distance, per bag/bunch, per truck etc
- instances of sharing truck

Market structure

- number of traders
- independant/association
- function, rules and regulations of association
- price setting mechanism (auctioneer etc)

Barriers to entry

- availability of trucks
- licence
- association
- set up costs
- other

Buying options

- who buy from eg farmer, other trader
- where buy from eg farm, collection points etc, preference
- method of buying eg by sack, field, bunch etc, preference
- characteristics look for when buy, any grading
- reasons reject produce eg broken roots, bruising, ripe banana etc, importance of problem

Selling options

- which market sell produce
- who sell to, method eg by bunch, sack etc
- any grading criteria eg ripe banana, older cassava roots sold at a discount, what is the discount, what determines the discount etc
- cause of grading criteria, where on marketing chain
- how long does it take to sell produce, range
- once established any grading criteria, gain an idea of volume/proportion sold to gauge post-harvest losses
- storage at market, how, duration, impact on price
- instances unable to sell produce, reason

Farmer

Briefly describe farming system

- importance of crop in farming system, food/cash crop
- changes over time
- seasonality in production

Products marketed

- products sold eg fresh cassava, makopa
- importance of product
- identify who sell to, options, seasonality, reliability
- method of selling eg sack, area of field, bunch
- grading criteria
- responsibility for harvesting, packing, transportation to truck etc
- packaging methods eg different sacks used, establish preference for each method, problems etc
- reasons produce rejected by trader eg broken roots, bruising etc and importance
- uses of rejected product eg broken cassava roots for makopa
- selling price makopa, grading criteria eg broken roots for makopa vis a vis whole roots, variety etc

Processing methods

- methods for making makopa, problems eg drying of produce in rains

Storage

- storage of makopa, methods, duration, problems
- storage of flour, methods, duration, problems,

Household consumption

- consumption of makopa products, seasonality in consumption of makopa, eg limited storage life and drying problem in rains so reduce consumption of makopa during rain season
- find out substitute products eg maize meal, consumer preferences
- price of substitute products, seasonal changes