

Prepared by:



Maple Place North
Momentum Park
145 Western Service Road
Woodmead, 2148
Tel: 011 802 0015
Fax: 011 802 1060
www.eciafrica.com

and



Plot 1336 off Mlali Road
(Behind the South African High
Commission), Msasani Peninsula,
PO Box 9630, Dar es Salaam
Tel: (255-22) 2600177/8

Competitive Analysis of Onions in the Iringa Region

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1 INTRODUCTION

DAI PESA is currently active in several subsectors including rice, oranges, cashew nuts and horticulture within the regions of Iringa, Morogoro, Tanga, Mbeya, Ruvuma and Rukwa. DAI PESA wishes to determine if there are interventions they may make in other sub sectors including Sugar, Paprika, chillies, Daga and Onions.

The principle objectives of this report are to provide DAI PESA with a full analysis of the onion industry, the current situation, constraints and opportunities and development assistance required from the DAI PESA project. Specifically in the Iringa and Mahenge areas, concentrating on the villages identified by DAI PESA as potential and current onion producing villages;

- Ruaha Mbuyuni
- Msosa
- Nyarizwa
- Mgowero
- Igunda
- Mtandika
- Lindi

OVERVIEW OF THE SUBSECTOR

1.1 PRODUCTION

Onions are an important crop in most areas of the world, in particular developing countries with, according to the FAO, an estimated global production of almost 28 million MT per annum. The tropics account for almost 30% of global production of onions. According to an ECI Africa report produced in November 2003, Tanzania's national production of fruit and vegetables is estimated at 1.1 million MT with a potential production of up to 2.0 million MT. The majority, over 95%, of this production comes from small-scale farmers cultivating areas of less than one acre, producing over 90% of the vegetable consumed by the Tanzanian domestic market. Small-scale farmers produce horticultural crops under both rain-fed and irrigated methods dependent on the location and rainfall patterns. Yields are low due to availability of water, management and availability and price of inputs. Yields are estimated to be approximately 50% of potential.

This document is part of an overall study named "Competitive Analyses of Seven Subsectors in Tanzania"

It is estimated by ECI that approximately 99% of fruits and vegetables produced in Tanzania are consumed in the domestic market. Export and processing together account for less than 2%. Citrus and Onions are recognised as the two main horticultural exports. Tomatoes, cabbages and onions account for over 98% of vegetable production, with the main areas of production of onions being the Southern Highlands, Arusha and Singida. The

DAI PESA project focuses on onion production in the Iringa region of the Southern Highlands.

There are a number of different routes, identified by ECI, through which the produce meets market demand:

- Small-scale farmers producing onions for food crops and surplus as cash crops to local Traders for transshipment to rural and urban market places;
- Commercial farmers supply on a large-scale to wholesalers and agents;
- Commercial farmers supplying directly for the export market through exporters; and,
- Contract farmers supplying a number of short-term contracts to various institutions such as supermarkets, schools, the department of defence, hotels and restaurants.

In the geographical area of focus by DAI PESA, only the first two routes seem apparent.

There are no accurate statistics available for the production of onions in Tanzania although the Ministry of Agriculture and Food Security estimate production over the past 3 years to have been approximately 170,000 to 175,000 MT per annum. A study performed by Sokoine University estimated the production of onions in the Iringa region in the year 2000 to have been approximately 31,000 MT.

However, this information is not supported by information received from the Iringa Traders Association, detailing the deliveries of onions into Iringa market in 2003, which totalled 211.5MT, if an average sack is 160kgs as a total of 1322 sacks were traded through Iringa market. However some of this produce is procured in Singida, Morogoro, Arusha and even Mbeya. This figure is also under dispute as the Traders class one sack to equate to 120kgs and the farmers equate one sack to be equal to 160kgs. Incidentally, the Traders in Dar es Salaam sell the sacks as 160kgs.

Bags weighed at Iringa Market

Sample-3 Bags

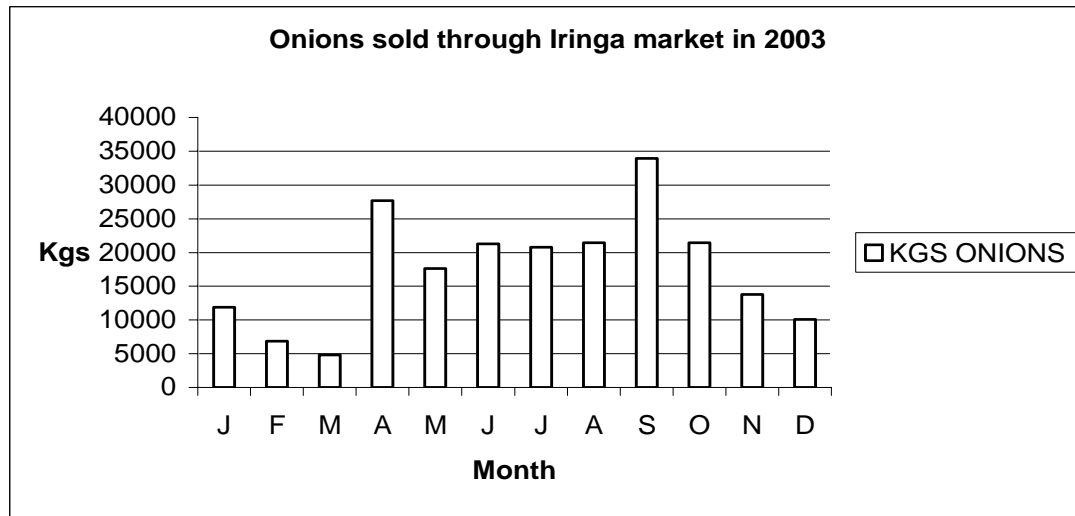
1st bag from Ruaha Mbuyuni weighed 125kgs

2nd bag from Msosa weighed 120kgs

3rd bag from Malolo-Kilosa District in Morogoro weighed 140kgs

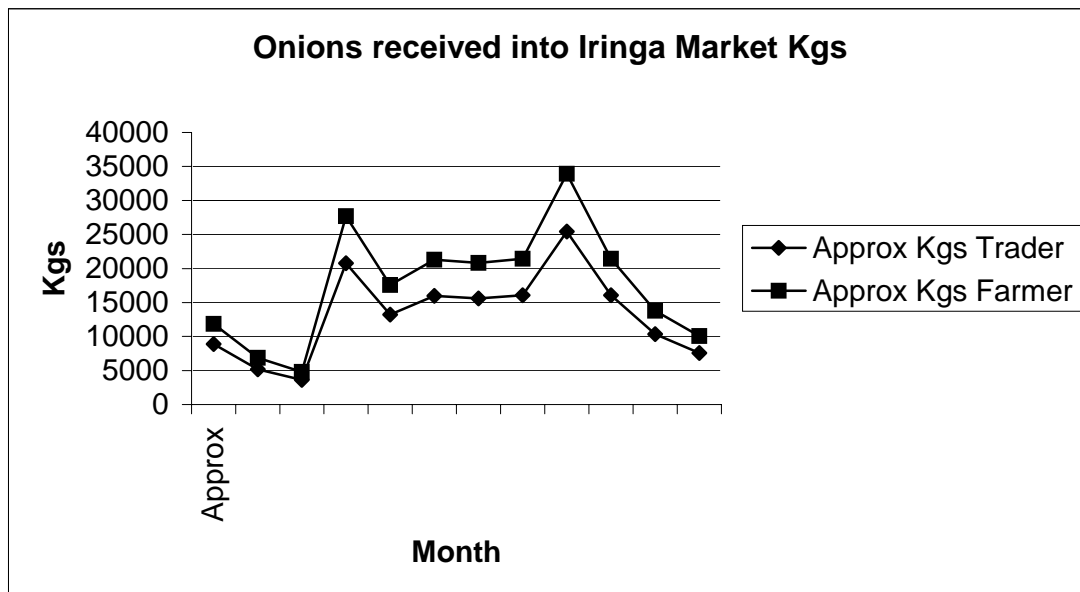
Average net weight for all was 121kgs with a maximum variance of 20 kg

FIGURE 1: ONIONS TRADED THROUGH IRINGA MARKET IN 2003. SOURCE: IRINGA TRADERS ASSOCIATION



This uncertainty over the weights of the sacks has a major effect on establishing the production by weight as is demonstrated in the graph below;

FIGURE 2: VARIATION ON WEIGHT OF ONIONS TRADED THROUGH IRINGA market.



Source Iringa Traders Association

1.2 LAND LEASE

The farmers utilise land leased primarily from the local village governments, which in the majority of cases has traditionally been utilised by their families. However, some farmers are leasing extra land for cash crop development and paying rent to the village government or to the original land lessees. Although much of the land is in blocked agricultural areas, very little block or co-operative farming exists, with the majority of farmers operating as individuals throughout the whole process from production to marketing and sales. The

project focus villages estimate that there are in excess of 1200 acres available for irrigated onion production. Two groups were interviewed during this study, Ruaha Mbuyuni and Msosa; they alone have in excess of 500 acres dedicated to onion production. It is estimated that a total of 2000 farmers are involved in onion production in the region.

1.3 ORGANISATIONS

Although the farmers operate individually, there are village organisations that traditionally have been involved in the organisation of the crop and since the commencement of the DAI PESA project, farmers associations have been established in the target project villages to assist with the organisation, capacity building and management of the farmers.

1.4 CREDIT AND FINANCE

Farmers often rely on credit advanced to them by the Traders on an informal basis, with an agreement that the credit will be repaid in the form of crop upon harvest. It is usual that a Trader will enter into an agreement with a farmer that for every Tshs 10,000 loaned, 3 sacks of onions will be repaid. The potential cost of this loan varies according to the potential purchase price of the crop and is demonstrated in the table below:

TABLE 1: LOAN IMPLICATIONS

Loan from trader	70000
Bags per 10,000 to be repaid	3
Bags to be repaid	21
Cost of loan - min	147,000
Cost of loan - max	1,050,000

Many farmers cannot afford to store their produce due to cash requirements and thus receive poor payments, which do not enable them to retain enough proceeds to facilitate the planting of the next crop. Refer Annex 2.

1.5 IRRIGATION

The farmers in the project villages utilise small-scale flood irrigation systems to secure their crops in an area that has a relatively low annual rainfall, estimated to be approximately 900mm per annum. The rainfall in this area mainly occurs between December and April, known as the wet season. The wet season dictates that, even with irrigation, the majority of planting occurs during this period for growth using rain-fed systems. This seasonality results in very high price fluctuations as large amounts of produce become available in the dry season, produced during the rains, thus reducing the price significantly and increasing it when the production is low during the wet season. However, many of the farmers in the project areas produce two crops per annum, using irrigation during the dry season where water is available for pumping. This also offers an added advantage to the growers in the Iringa region over those producing onions in Singida, who are solely reliant on rain-fed crops and so cannot take advantage of the higher prices during the wet season. The whole process from nursery to harvest, is approximately

4 to 5 months, with the nursery period being approximately 6 weeks and a crop production period of 3 months.

The irrigation of the small-scale onion crops is facilitated by the use of a mobile pump service provider who pumps water from a major water source into feeder canals, which lead to the boxes within the fields and gravity fed flood irrigation is used from that point. The farmers usually irrigate approximately 9 to 13 times per crop, dependent on weather and soil conditions and pay a fixed price of Tshs 3,000 to the service provider along with an annual water fee of Tshs 3,000.

1.6 HARVEST

Once harvested, the crop is graded, stalks are cut and the roots are trimmed. The crop is then dried on wooden racks in locally made drying shacks with thatch roofs. The racks allow for a through flow of air to the onions, which are regularly moved around to facilitate the drying process. The onions are stored in these shacks until ready for sale.

1.7 VARIETIES

There are two main varieties of onions grown in the project area:

- Red Creole
- Red Bombay

Red Creole is the preferred variety as it produces a better quality onion, grows faster and is more resistant to dry conditions. It also stores better and remains fresher longer. Red Bombay, although seemingly more common in the market place, takes longer to grow and has a shorter shelf life before deteriorating. The Uyele Agricultural Research Institute (UARI), located in Mbeya, is researching a new variety, Mangole Red, which is believed to be an improved variety, suitable for small-scale irrigated production. This variety is not yet available in the project areas. UARI has undertaken the development and promotion of production of a number of improved varieties, post harvest technologies and sun drying techniques for the preservation of vegetables.

1.8 PROCESSING

The quantity of onions processed in the Iringa Region is extremely limited as there is only one food processing plant, Dabaga Vegetable and Fruit Canning Company Ltd, based in Iringa. Currently Dabaga only purchase 10 MT per annum although they intend to increase their production capacity, which will increase the available market for processed onions by 30%. Dabaga will only purchase Red Bombay onions due to their larger size, in loads not less than 1MT, usually from the Kitonge area, which they then store for 3 to 4 months. The farmers bring samples for inspection, negotiate a price with the company and then deliver to the factory. All transport costs are allocated to the farmer. Dabaga purchase at the factory gate only paying between Tshs 90 and Tshs 120 per kilogram. These onions are used in the production of tomato sauce, chilli sauce and pickles, which are then mainly exported to Kenya, Holland, the DRC and South Africa.

1.9 EXPORT

There is very limited export of fresh vegetables from Tanzania; the main export markets for onions from Tanzania have been identified as Kenya, Rwanda, Zambia, DRC, India, USA and Thailand. Currently little, if any produce produced in the project area is exported internationally.

2 MARKETS

According to the ECI November 2003 report, the market for fruit and vegetables in general, not specifically onions, can be divided into three broad categories; (1) Fresh domestic consumption, accounting for over 99% of annual output; (2) Fresh export market, accounting for less than one percent of total annual output; and (3) Processed fruits and vegetables, also accounting for less than 1%.

2.1 THE FRESH DOMESTIC MARKET

Small-scale farmers, growing onions as both a food and cash crop supply the majority of this market. The wholesale Onion Traders Association market at Kariakoo stated that the preferred onions came from Morogoro, which are white onions or Arusha, which are a superior quality red onion, both of these types of onions fetch premiums at the market place. Iringa onions were accepted to be the standard onions on the market, acceptable but not of high quality.

These onions reach the market place by four main routes.

- Small-scale farmers selling any surplus to their own family needs directly from the road side, through local small markets, in small-scale sales on the roadside to passing trade in cars and buses;
- Traders purchasing from the farm gate or locally known business areas along the roadside and shipping to regional markets for sale to vendors on a wholesale market for onward retail sales or through pre-arranged sales between farmers and Traders at the farm gate. Very few farmers deliver produce to the markets themselves due to the associated costs of transportation and market Cess levies.
- Traders or commissioned agents purchasing wholesale quantities from several farmers to fill a truck, transshipment to Dar es Salaam for wholesale at Kariakoo or Tandale market. Kariakoo market receives over 80% of the onion transactions in Dar es Salaam and the Dar es Salaam market is estimated to consume over 50% of the country production of fruit and vegetables.
- A few, but increasing number, of supermarket shops and chains are being developed in Tanzania in the main towns and cities. The South African supermarket chain, Shoprite, is the largest supermarket chain in Tanzania with five branches countrywide, four in Dar es Salaam and one in Arusha. Sales of onions into these institutions are limited and quality expectations are high. Shoprite are actively expanding their local produce and decreasing the import of fresh goods and are purchasing over 65% of their fresh produce directly from the farmers. Shoprite, in an interview with ECI indicated that probably less than 1% of fruits and vegetables for fresh domestic consumption is channelled through this route.

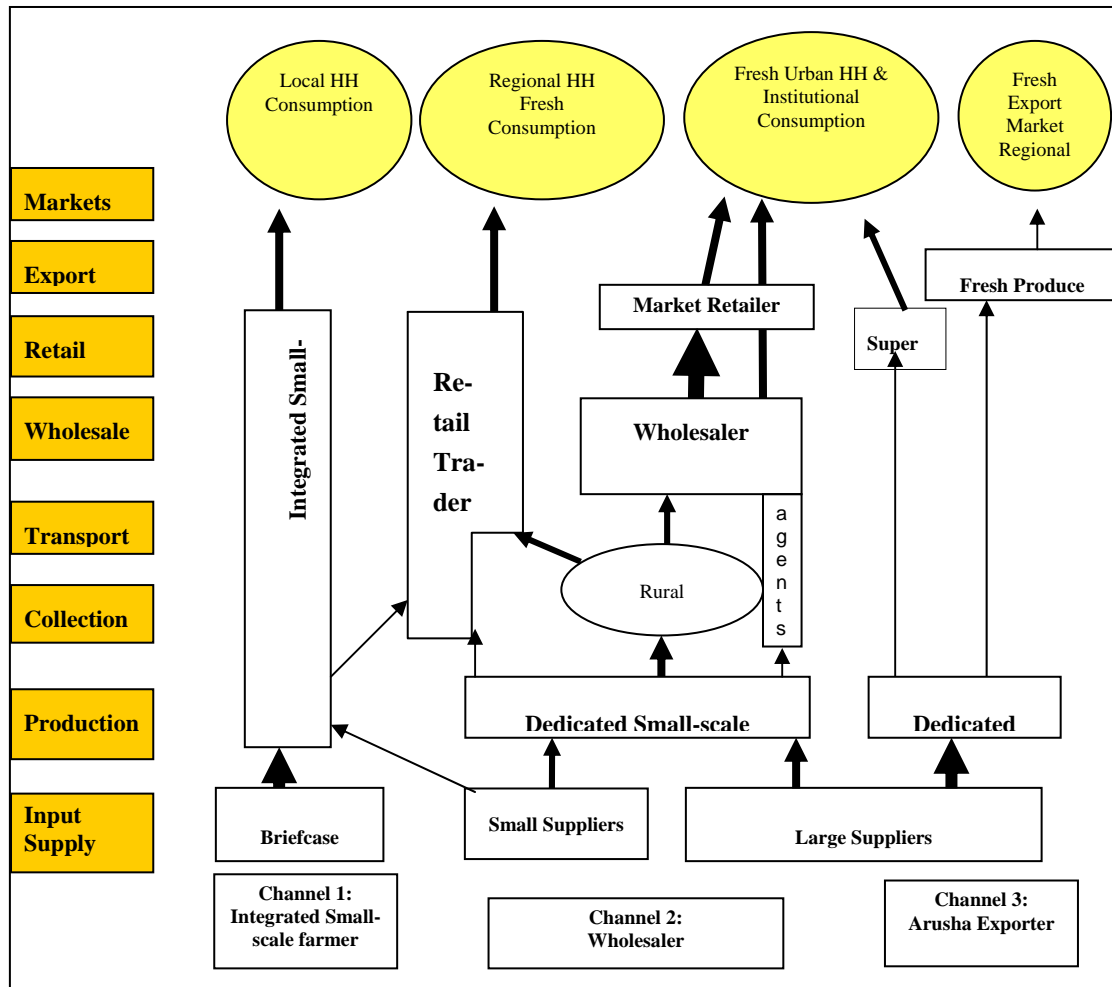
2.2 EXPORT AND PROCESSED MARKET

As discussed in section 2, both the export and processed onion market is extremely limited.

Processing of fruit and vegetables is being promoted by various agencies such as the TIC and Private Agricultural Support Services, as a prime investment area, with surplus supplies of raw products for processing. The domestic market demand for processed fruits and vegetables is still extremely small, with most Tanzanians preferring to use fresh produce.

3 THE SUBSECTOR MAP

The subsector map is a schematic representation of the structure of a subsector, essentially showing how products flow through the subsector systems. The map presents the various functions and markets. In other words, a subsector map traces the product flow and the transactional relationships between various actors in a subsector right from inputs supply and production to the consuming markets.

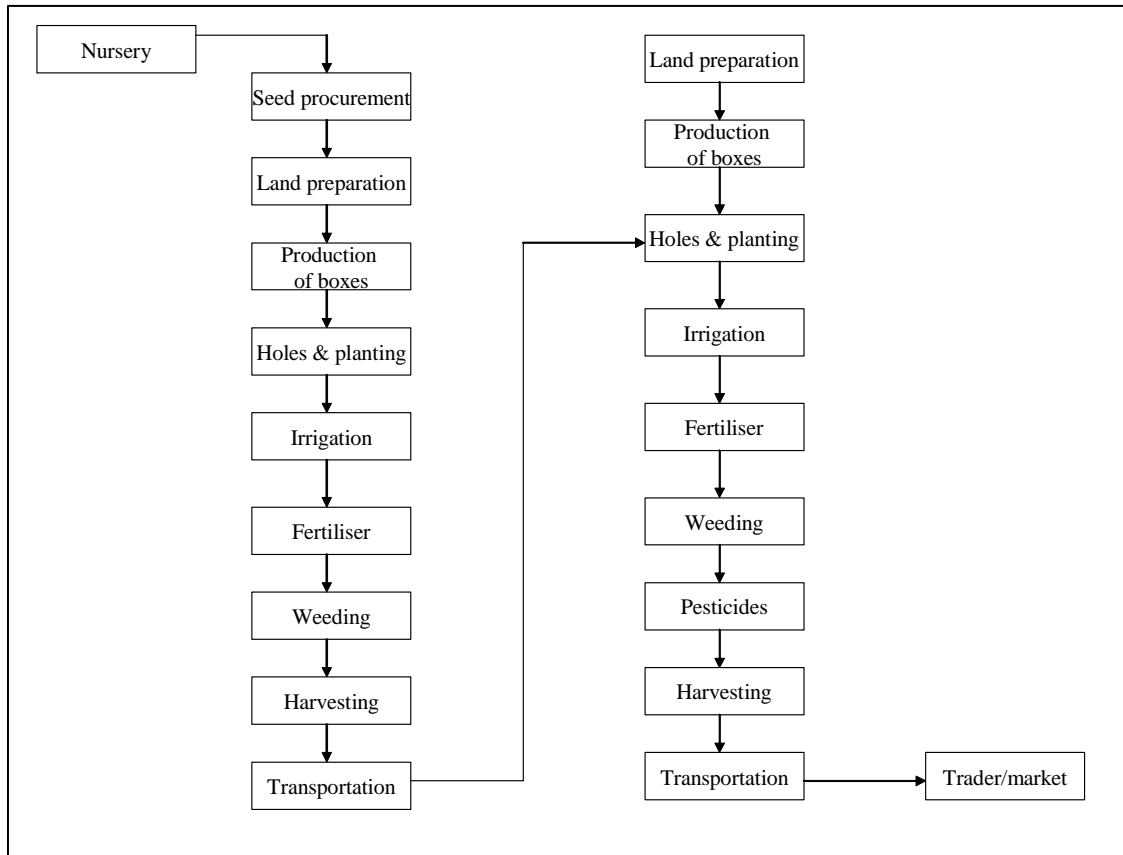


3.1 INPUT SUPPLY

- Seed procurement – farmers either retain seed from previous crops, or purchase from locally based Traders. 6 kgs is required to produce sufficient bulbs for 1 acre of planting out;
- Fertiliser, pesticide and herbicides are procured from small suppliers who may visit the villages, from village based suppliers and from town based suppliers. Town based suppliers are generally cheaper, though transport cost has to be factored in.

3.2 PRODUCTION

FIGURE 3: FLOW OF ACTIVITIES IN ONION CULTIVATION AND PRODUCTION



3.2.1 Nursery cultivation

- Land lease where necessary;
- Land preparation is performed by oxen, tractor or hand, depending on the location of the farm and available resources, on new land, bush clearing may be required, on previously cultivated land, a single harrow will suffice;
- Boxes are produced of various sizes, usually 24 boxes of 3m x 9m to produce enough bulbs for 1 acre of planting. These boxes are created by hand, either by the farmer or by using hired labour;
- Holes approximately 5 inches apart are made and the seeds inserted and covered, again either by the farmer or hired labour;
- The boxes are irrigated if necessary, according to the rain;
- Fertiliser, Urea or CAN is applied;
- The nursery boxes are weeded twice during cultivation;
- Harvesting takes place after approximately 6 weeks;
- The bulbs are transported to the planting area

3.2.2 Plant out

The same process is followed as in the nursery but on a larger scale:

- Approximately 300 –350 boxes per acre are produced either 2.5m x 3m or 3m x 9m dependent on the land area and topography, these boxes are levelled accurately to enable the use of flood irrigation techniques;
- Irrigation is supplied between 9 and 13 times per season, using diesel pump services, canals and flood irrigation systems;
- Pesticides are applied using hired knapsacks and sprayers, Celecom is the main pesticide applied;
- Upon harvest after approximately 3 months, the onions are sorted, stalks cut and roots trimmed;
- Onions are then transported to the drying racks for curing.

The costs associated to this process may be seen in Annex 1. The annex compares own labour and hired labour scenarios. Land lease amounts may not always be applicable as the farmer may be using their own land.

3.3 COLLECTION

Traders visit the farmers, examine the crop and negotiate a price. Once purchased from the farmers, the farmer's package the onions into the lombesa bags, the Trader then pays for transportation to the road if required.

The Traders supply the sacks to the farmers, which are commonly known as Lombesa or Kosovo sacks. Prior to 1995, the sacks used to have a capacity of 8 debes (containers) of onions, however in 1995, the Traders began sewing an extra part to the sacks increasing the capacity to 12 debes, however still insisting on purchasing the sack at the same price.

Price per sack at farm gate can fluctuate between Tshs 7,000 per sack during the dry season to Tshs 50,000 per sack in the wet season dependent on supply availability.

3.4 TRANSPORTATION

The Traders transport the onions to either the regional market place or Dar es Salaam. Using an example of onions purchased from Msosa village to be sold at Iringa market; the Trader incurs the following costs. The size of the load may vary dependant on the financial resources of the trader. Crop purchased from Msosa requires transportation across a river by canoe. The costs may be increased by the Traders having to pay for the security of their produce whilst waiting for transportation and the loading and offloading period.

TABLE 2: TRANSPORT AND COLLECTION COSTS-MSOSA VILLAGE TO IRINGA MARKET

TRANSPORT COSTS-PER BAG	AMOUNT TSH
Porter to River	500
Canoe over the River	500
Offloading	500
Load onto Truck	300
Rope	700
Transport to Iringa	1500
Offload at Market	500
Market Cess	300
Total	4800
Traders Cost-Travel and Accommodation	4500 per collection trip

As will be noted from the above, the lack of rural infrastructure-in this case the absence of a bridge- adds significantly to the cost of transport.

3.5 WHOLESALE AND RETAIL

The Traders deliver to their chosen market. In Iringa the produce is either sold by the Trader directly through his own stall or is sold wholesale to other vendors who then sell by containers of 3 litres, 2 litres, 1 litre or by piles to the retail customer. Onions shipped to Dar es Salaam enter into the wholesale market at Kariakoo and are then sold to intermediary Traders who deliver to other market places or sell retail within the Kariakoo and other markets. During the study period, a bag of onions from Ruaha Mbuyuni could be purchased for Tshs 18,000, at Kariakoo, a bag of onions was being traded at wholesale for Tshs 45,000 and retail at Tshs 300 per kg or Tshs 500 per kg at smaller markets.

TABLE 3: PURCHASE PRICE COMPARISON

LOCATION PURCHASED	TSHS/BAG
Purchase from farmers	18000
Purchase from Kariakoo trader	45000
Purchase at Kariakoo retail assuming 160kgs/bag	48000
Purchase at other Dar retail markets 160kgs/bag	80000
Purchase at Shoprite supermarket 160kgs/bag	96000

3.6 EXPORT

Export of onions from the study area occurs on an ad hoc basis. Traders will collect onions from regional markets/collection points, e.g. Ruaha Mbuyuni, and transport them to

Zambia or Malawi on available transport. The ECI team established that there is an informal export market from Mbeya to Zambia, Malawi and the DRC equating to approximately only 10-20 sacks per week for 3 months of the year.

The export of onions regionally within East Africa and internationally is still extremely low. There is potential for the expansion of this market area, but would have to be hand in hand with increased quality and storage facilities. Regional export from Tanzania holds great potential for expansion, however the requirements for international quality standards are high and must be interpreted and applied to all export produce.

3.7 GROSS MARGINS

3.7.1 Key Observations

During the study performed by ECI, they made the following key observations:

- During the dry season, retailers and farmers attain the highest gross margin, followed by the wholesalers;
- During the wet season, the farmer gets the highest gross margin (more than double the margins in the dry season), followed by the retailer and then the wholesaler. This gives an extreme variation in potential cash flow to the farmers, creating an unprofitable or low profit environment if the farmer sells immediately upon harvest during peak production times or a very profitable environment if the farmer has the ability to store produce until the wet season and low supply.
- Transportation to Dar es Salaam and farmers' cost of production per bag each account for 34% of the total cumulative cost up to the retailing point, followed by agents commission (11%)

4 INSTITUTION AND REGULATORY FRAMEWORK

4.1 INSTITUTIONS

There are few institutions and regulatory frameworks which directly affect the small scale farmers, although there are seven Government Ministries significantly involved in the development of the horticulture sector;

- The Ministry of Agriculture and Food Security (MAFS)
- The Ministry of Co-operatives and Marketing
- The Ministry of Water and Livestock development
- The Ministry of Community Development and Gender
- The Ministry of Regional Administration and Local Government
- The Ministry of Trade and Industry
- The Ministry of Health.

The Ministry of Agriculture and Food Security

MAFS is the most pertinent development industry in horticulture in policy development and direct subsector support through extension services and regional and district agricultural offices. These agricultural units utilise the following structures:

- Regional Agricultural Advisors (RAA)
- District Agricultural and livestock Development Officers (DALDO)
- District Agricultural Extension Officers (DaEO)
- Subject Matter Specialists (SMS)
- Ward Agricultural and Livestock Extension Officers (WALEO)
- Village Extension Officers (VEO)

The VEO is the only official body that most farmers will be involved with, he will offer extension advice on various crops, but is often under skilled in cash crop development and also does not receive any incentive to actively develop horticulture in the area.

4.1.1 Iringa local information

The DALDO in Iringa has performed some studies into onion development. They offer limited support to the onion growers but recognise onions as a potential growth crop:

4.2 DISTRICT CESS

District Cess is charged at the market place at a sum of Tshs 300 per bag of onions. In Iringa market in 2003, this brought in revenue to the district government of Tshs 396,300. The farmers currently do not directly pay Cess on their produce due to the informality of production, however the Cess applied at the market point will be considered in the pricing negotiations by the Trader.

5 SUBSECTOR CHANNELS

- Channel 1-The integrated small-scale farmer. This channel would encompass the small-scale farmer who grows onions primarily for home consumption and would sell surplus production.
- Channel 2-Wholesaler Channel. Dedicated small-scale commercially orientated farmers, growing onions on irrigated lands would supply this channel.
- Channel 3-Dedicated Commercial Channel. Dedicated commercial farmers who would be supplying onions on contract to processors or supermarkets would supply this channel.

6 SUBSECTOR DYNAMICS

There is a gradual move from Channel 1 to Channel 2, as farmers obtain the financial capacity to lease irrigated lands and afford the input requirements. Within Channel 2 there is a graduation of farmers from smaller areas under cultivation to larger areas. Channel 3 is growing slightly with the advent of supermarkets and a slight increase in the processing capacity of Dabagaa.

6.1 DRIVING FORCES

6.1.1 Dar es Salaam Market

To increase supply to the Dar es Salaam market and attract premium pricing, the project areas will need to increase the quality of the crop supplied. Traders are currently favouring red onions from Arusha due to market demand for quality. The introduction of the new variety, Mangole Red, should assist in this quality development, however it is likely to be several years before large-scale use of this variety is apparent, due to availability of seed and traditional usage of the current two varieties. The heavy reliance on this market is an extremely important driving force within this subsector and it is this market that dictates prices and quality across the country for crops. Demand at Dar es Salaam is expected to improve due to the combined factors of population growth and an emerging affluent society.

6.1.2 Productivity/technology

Many of the farmers specialise in onion growing along with one or two other food crops for domestic use. The potential growth for small-scale onion producers is large but prohibited by availability of water in the dry season (planting) if they wish to compete and supply onions during the wet season, this obtaining the highest margins. Appropriate and efficient irrigation technology combined with improved cultivars could assist in this process.

6.1.3 Location

The location of the project focus villages benefits the development of the onion trade by the immediate access to the Tanzania – Zambia route, providing a wealth of transporters and passing trade. This route decreases the transportation costs of the crops, which although not directly received by the growers, does indirectly affect the price negotiations from the Trader. This location also presents easy access into the Zambia and Malawi markets for export.

6.2 POINTS OF LEVERAGE

6.2.1 Rural Market Collection Points

Rural market collection points, like Ruaha Mbuyuni, are the central points where the cash crop farmers trade their produce, usually situated in close proximity to the main transportation route. This is the meeting place of the farmers and Traders. These areas form a central hub for the economic development of the rural villages and are an extremely important part of the onion subsector system.

7 CONSTRAINTS AND OPPORTUNITIES

7.1 CONSTRAINTS

The main constraints identified by the farmers are:

7.1.1 Production Constraints

Lack of working capital

The lack of capital available to the farmer for investment into the establishment of the onion crop has resulted in the farmer plunging into a cycle of heavy debt with high 'interest' rates. Onion production has a relatively high capital expenditure with seed and inputs being procured externally, currently the only source of finance for crop development currently available to the farmer is to secure loans from the Traders.

The financial position of the farmer is put under more pressure by the lack of available disposable income to enable them to store their produce until the price increases during the wet season. Many farmers, although they recognise that the achievable price in the wet season can be substantially higher than at harvest, their lack of cash flow dictates that they have to sell immediately and cannot afford to store the produce.

Lack of Agricultural skills and training

Many of the onion farmers are unqualified, self taught farmers, unaware of the potential of their crop and how to achieve this potential through correct usage of inputs, agricultural techniques and irrigation techniques. With improved knowledge farmers can reduce the cost of production per unit, increase yields and thus increase potential profitability. New technologies are currently not available to the farmers and VEOs working with the farmers have not been exposed to onion growing as a cash crop and thus are unable to assist in giving advice.

Input supply and costs

Currently, in Tanzania as a whole, there is a shortage of Urea, which has increased the cost of what is available by over 100%. With increased agricultural skills and knowledge as listed above, the farmers may be able to source alternative products. Through the development of the associations, the farmers should be able to access cheaper inputs. The associations will have more purchasing power and may be able to purchase in bulk for their members.

Lack of Quality Seeds

Currently the farmers purchase seed from local suppliers or retain their own seed from their previous crops. Both of these routes make it difficult to ensure high quality seed. The two varieties available to the farmers are not necessarily the optimum variety for the growing conditions, yet to date the farmer has no choice of purchase and sometimes does not know which variety they have planted.

High Water Fees

The annual water fees for use of irrigation systems are relatively high when taken against the low current yields. If yields reflected the expense of irrigation, water fees would no longer be considered a constraint.

7.1.2 Marketing Constraints

Lack of Market Knowledge

The farmers' lack of market knowledge, demand and pricing leaves them extremely exposed to the Traders and unable to make legitimate and valuable business decisions. With increased knowledge of the markets, the farmers could decide when and where to sell their crop and to whom, whether to deliver directly to the market place or whether to sell via a Trader, how to access other markets including the requirements to access the export market. On a more local level increased market knowledge may assist the farmers in planning their planting more efficiently to reduce the risk of over production and waste.

Poor infrastructure

The lack of reliable infrastructure increases the risk of crops not being harvested from the fields and reaching the market, particularly in remote villages such as Msosa. Heavy rainfall can mean that traders cannot reach the villages or farmers cannot bring the crop to the traders, thus eliminating any potential sales and cash generation.

High Transportation Costs

With all of the loading and offloading of various forms of transport, the price of transporting each bag is extremely high meaning that the traders have to increase the selling price.

7.1.3 Other Constraints

Lack of standard weights and measurements and weighing scales

The use of the non-standard lombesa or kosovo bags has had a major effect on the profitability of the onion farmers. With the introduction of these units of sale, the farmer suddenly lost 1/3 of his income by having to provide an extra 1/3 at no extra return. The Traders put pressure on the farmers to access this unit of sale at the request of the market and basically forced it onto the farmers with a 'accept it or we won't buy' approach. The recognised standard weight of these bags varies from 120kgs as listed by the Traders at Iringa market to 160kgs as listed by the Traders at Kariakoo market and the farmers. The farmers always trade in bags, with the exception of Dabaga, and have no method of weighing their produce. Only at the retail part of the process is the produce sold by weight. Unless there is a standard weights and measurement agreement in place, it is difficult for the farmers to access yields and profitability or decide whether to market themselves.

Lack of groupings

Prior to the formation of village associations by DAI PESA, there were no formalised groups or representation of the farmers acting on behalf of the farmers. When operating as individuals, the farmers are very vulnerable to market fluctuations and Trader demands. The leadership is still very new and requires capacity building to enable them to represent their members efficiently and effectively.

7.2 OPPORTUNITIES

The opportunity for the development of horticulture crops within Tanzania is huge; the project area is ideal for the production of these crops due to its close proximity to the transport system, climate and soil conditions. The opportunity is there to increase the number of onion growers and the yields produced by the current and new growers whilst simultaneously improving the quality of the produce to potentially open up international export markets.

With the correct storage facilities, the project areas could supply onions to the market place during the wet season and secure premium prices. The ability to store onions is predicated in part by the farmer's cash flow.

The small expansion of the Dabaga processing plant will have a limited effect on the farmers.

The opportunity for technical and agricultural development of the farmers is huge, enabling them to improve their livelihoods through cash crop cultivation, diversifying their crops if necessary.

There is an opportunity for the farmers to commence operating as a group to potentially eliminate the need for a middle man/trader and sell directly to the market place with the

correct support, training and information availability, thus retaining the premium for themselves.

There is an opportunity for the development of Micro-finance credit facilities to be established, utilising the association and group partnerships to secure loans, thus eliminating the need to borrow from the trader at extortionate rates.

There is an opportunity for the development of a farmer information system, distributing market and price data, information on inputs and prices on a regular/daily basis to enable the farmer to make informed business decisions.

8 RECOMMENDED OPTIONS FOR PESA ASSISTANCE

There is an overall strategic opportunity for the PESA project to help the farmers increase their incomes by focusing on post harvest handling/storage, increasing access to market pricing information and improved seed cultivars. Emphasis should be placed on improving the quality of the product in order that it may compete more effectively in the market.

8.1 CREDIT AND STORAGE FACILITIES

DAI PESA could facilitate the establishment of micro credit facilities or SACCOS to loan to the farmers for crop establishment utilising potential links with CRDB and PASS Ltd. PASS Ltd are experienced in forming the farmers into legal entities to enable them to borrow on commercial terms using joint and several liability guarantees, in addition, PASS Ltd will supply a guarantee to CRDB for this loan thus reducing the risk of the loan to the bank and cost of the loan to the farmer. PASS Ltd is closely linked to CRDB and is also experienced in the establishment of rural SACCOS. Once a credit line has been established, the farmers can secure crop establishment credit and avoid taking high interest loans from the Traders.

To overcome the problem of farmers having to sell immediately upon harvest to facilitate cash flow, DAI PESA could look into storage potential and the utilisation of produce being used as a security against loans extended to farmers to cover this difficult period until the prices increase and the crop can be sold and loan repaid.

8.2 ASSOCIATION CAPACITY BUILDING

DAI PESA should continue with the development of the farmer associations and actively encourage the farmers to become involved in the groups to increase their power in the market place. The associations would also provide a convenient entry point for skills training initiatives.

8.3 TECHNICAL ASSISTANCE

Agricultural/Technical training could be provided by DAI PESA to improve production techniques, crop husbandry and harvesting techniques to increase the yield and ensure the quality of the produce. With long-term support and an improvement of varieties, it may be possible for the farmers to access the international export market.

8.4 BUSINESS TRAINING

DAI PESA should provide small-business skills and business development skills to the farmers to enable them to manage their farms more efficiently and make effective business decisions. These business skills should demonstrate how to keep records, how to establish whether an activity is profitable, how to manage finance, basic market understanding and other basic business skills.

8.5 FARMER INFORMATION SYSTEM

DAI PESA could facilitate a simple system of feeding market and pricing information to the farmers. As suggested by William Creighton of DAI PESA, this system could utilise the frequent Scandinavia bus route that passes through the project area to distribute market information on a daily basis to enable farmers to decide whether to sell their produce directly at the market or to a trader.

8.6 INFRASTRUCTURE DEVELOPMENT

DAI PESA should assist the associations to lobby the district Government for the improvement of the roads and bridges through the District Roads Programme. DAI PESA may also play a role in getting the associations to identify and prioritise infrastructural constraints and bring these to the attention of the NGO/Donor community dealing with rural infrastructure.

ANNEX 1: COSTS OF ONION CULTIVATION

Pesticide	Celecom 1.2 litres	1.2	1	18,000	21,600
Knapsack & Sprayer	hire	1	10	500	5,000
Harvesting		300	1	100	30,000
Cut / Trim	Stalk cutting / root trimming	1	1	18,000	18,000
Total plant out costs					330,600
Total Costs					449,400
Production		Quantity bags	Kgs per bag	Price per bag	Total revenue
	Normal Bags = +/- 8 debis	65	120		
Minimum price	Min price -Lombesa Bags = +/- 12 debis	45	160	7,000	315,000
Profit	Profit				- 134,400
Maximum price	Max price - Lombesa Bags = +/- 12 debis	45	160	50,000	2,250,000
Profit					1,800,600

ANNEX 2: PRICE VARIATIONS AND PROFITABILITY

PRODUCTION		QUANTITY BAGS	KGS PER BAG	PRICE PER BAG	TOTAL REVENUE	PRICE PER BAG
	Normal Bags = +/- 8 debis	65	120			
Minimum price	Min price -Lombesa Bags = +/- 12 debis	45	160	7,000	315,000	10,000
Profit	Profit				- 134,400	
Maximum price	Max price - Lombesa Bags = +/- 12 debis	45	160	50,000	2,250,000	25,000
Profit					1,800,600	

ANNEX 3: LIST OF MEETINGS

Ruaha Mbuyuni –
Mohamedi Matinya
Nasoro Almasi
Nyaulingo Madumba
Abdalah Kimulu
Halfani Ng'omwa
Omari Amili

Msosa – Abdullah Chambo

Iringa Market Traders Association –
Gervas Luta
Joel Athuman
Members

Iringa Market Traders –
Saidi Alias
Castro Mkwama

Dabaga – Tushar Mehta

Kariakoo Onion Agents Association – Mr Mashaka

PASS Ltd