



UNITED NATIONS
INDUSTRIAL DEVELOPMENT ORGANIZATION

**SECO Local Economic Development Assistance
Programme in iLembe – Value Chain and Cluster
Development (VCD) Component:**

**Supplementary Report:
Introduction & Context**

David Perkins and Duncan Pringle

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1 Context

The State Secretariat for Economic Affairs (SECO) of the Swiss Confederation developed a Programmatic Approach for Local Economic Development in the ILembe District of South Africa, which aims at contributing to the improvement of the economic future of the area and the quality of life of its inhabitants.

The Programme consists of a series of interventions to build the capacity of the local area for economic activity, job creation and urban development.

The key partners in the programme are SECO, the ILembe District Municipality, two of the four urban local municipalities in the ILembe district (KwaDukuza and Mandeni) and district private sector actors. Other partners are the Department of Economic Development, Tourism and Environmental Affairs (EDTEA) of the KwaZulu-Natal Provincial Government, the National Treasury (NT) of South Africa and SECO's international implementation partners, the United Nations Industrial Development Organisation (UNIDO) and the International Finance Corporation (IFC).

UNIDO was tasked to develop and implement the Value Chain and Cluster Development (VCD) Component with a focus on the Sugar, Wood and Horticultural value chains:

The programme components and research methodology are presented in the annexures and the key outputs expected of this research are focused on identifying:

- 1) Opportunities to access new markets through a comprehensive value chain development plan to prepare the local producers to tap into such markets.
- 2) Opportunities for improving the production capacity of SMEs in terms of scale, productivity, quality and compliance with national and international standards identified.
- 3) Opportunities for local business support institutions to provide enhanced services to target beneficiaries that are responsive to their needs and aligned with local economic development objectives of the programme.

2 Location

The iLembe District Municipality is made up of four Local Municipalities of Mandeni, Maphumulo, KwaDukuza and Ndwedwe. The configuration of these LMs, relative to each other is shown in Figure 1.

The LMs of most interest in this study are the coastal municipalities of KwaDukuza and Mandeni, recognizing there is always some relational spill-over between municipalities based on sector and geographic practicalities.



Figure 1: iLembe District Municipality

3 Agricultural Potential

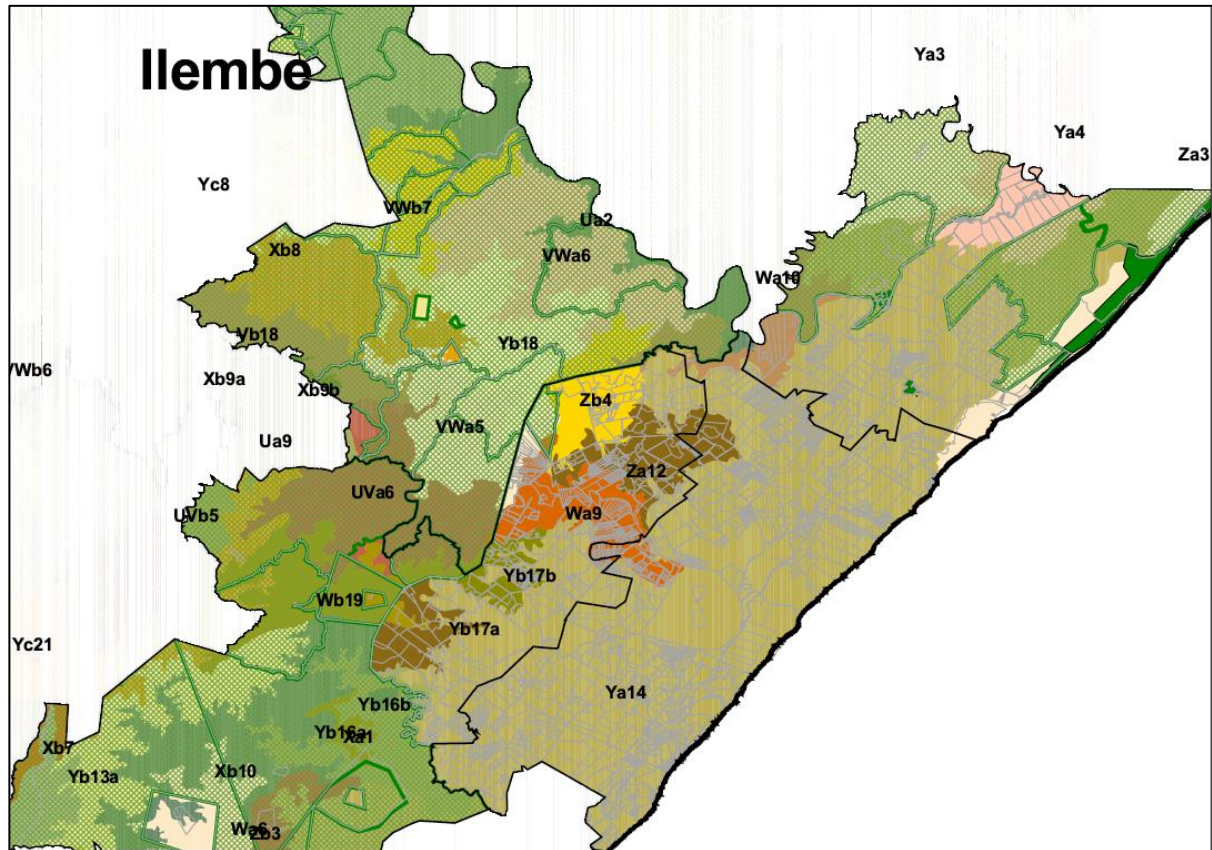
The provincial department of Agriculture and Rural Development (DARD) have a system of assessment of the agricultural potential of a range of bio resource units (BRUs)¹. The spread of BRUs are presented in the map below.

A description of the various crops generally suitable to each of the BRUs is set out in Annex C. Whilst there is a wide-ranging set of potential crops sugar cane production dominates the KwaDukuza and Mandeni local municipalities.

There are also a range of vegetables and herbs indicated as having potential such as cabbage, carrot, tomato, potato, green beans and dry beans.

¹ A Bioresource Unit is a demarcated area in which the environmental conditions such as soil, vegetation, climate and, to a lesser degree, terrain form, are sufficiently similar to permit uniform recommendations of land use and farm practices to be made, to assess the magnitude of crop yields that can be achieved, to provide a framework in which an adaptive research programme can be carried out, and to enable land users to make correct decisions (after Scotney, 1986).

In addition the dominant potential for fruit is that of banana but only under irrigation. As banana has potential it is also an indicator for Macadamia, litchi and possibly mango but the latter would have to be irrigated ideally.



4 Challenges of linking small-scale producers into value chains

At the outset when undertaking this research cognisance has been taken of the challenges that small and medium enterprises (SMEs) experience when participating the South African (SA) food sector, which in turn influences the recommendations that flow from the study.

Key messages – Improved Small-scale Farmer access to fresh produce agri food markets in South Africa

There have been extensive changes in Southern Africa’s agro-food markets in terms of their structure and governance systems. Agribusiness change processes need to be set within a wider (development) context, to assist small scale farmers to respond successfully to changes experienced in the agro-food markets. Such assistance and support may come in the form of marketing, technology, finance, managerial and organisational development to enable them to engage with formal agri-business.

Successful inclusion of smallholder farmers into the mainstream agro-food markets requires a certain mix of organised farmers (collective action), receptive business, enabling public policy NGOs and civic society.

Policy makers need to understand the dynamics, given current policy, of the drivers of market restructuring (global, national, local) and their impact on smallholders as well as on the wider rural economy (poverty). Existing policies need to be realigned and/or new policies should be put in place to avert the marginalisation of small-scale farmers.

Small-scale farmers face many challenges to participate in the more formal sectors of the South African food economy and especially in fresh produce markets.

Source: Re-governing markets: Policy Brief January 2008. University of Pretoria

Trends internationally (Shepherd², FAO) in the arena of smallholder farmer development and the fresh produce value chain point to:

- A change in consumption patterns from staples/ carbohydrate foods to meat, dairy products, fruits and vegetables; because of increased affluence, improved marketing chains, growing interest in value-added products and interest in organics and fair-trade.
- Processing is increasingly shifting to Multinational Corporations (MNCs) who may take over local processors.
- A growing interest in contract farming arrangements, where firms often provide seeds and other inputs and closely monitor production.
- An emergence of closer relationships between firms at different stages of production and marketing within the value chain to ensure consistency in supply of product of an acceptable quality, compliant with appropriate food safety standards.

This creates opportunities to link farmers to markets in innovative and sustainable ways, especially as the non-viable production push strategies leave farmers in situations of producing crops with no market. Market linkages have the advantage of developing long-term business relationships, which create increased income-earning opportunities for smallholders.

Linking farmers to markets sustainably is thus a key criterion for achieving successful smallholders. Organisations participating in developing and maintaining these links have critical roles (*ibid*), which are:

- Link willing suppliers with willing buyers;
- Assist farmers to organise into groups for economies of scale;
- Train farmers to understand markets, and how to supply market demand;
- Promote trust between companies, traders and farmers through positive experiences of achieving production and delivery of contracted and/or agreed volumes, product mix and quality.

A linkage model is a requirement for developing a business plan that addresses both the needs and challenges faced by emerging farmers, is sustainable and attractive to private investors. As per Prof Karaan³ linkage model options for consideration are:

- Farmer to farmer;
- Farmer to processor;
- Farmer to customer;

² Andrew Sepherd, FAO. Presentation to a workshop on the role of NGOs in linking farmers to markets, Somerset West. NAMC, 2009

³ Prof A S M Karaan, SUN. Presentation to a workshop on the role of NGOs in linking farmers to markets, Somerset West. NAMC, 2009

Design elements which any model (Karaan – SUN, Terken – Cheatah Prapika, Stewart – Lima, Dr P J Masika – ARDI et al) must address, include:

- Identification and understanding of profitable markets as point of departure;
- Contract design and monitoring (Management of the associated transaction costs, which can be high);
- Subsidising bulky investments⁴;
- Removing information asymmetries;
- Checking on opportunistic behaviour (ex ante & post);
- Managing moral hazard and adverse selection (there are often risks of side-selling by smallholders);
- Quality enhancement;
- Distance from market and associated logistics;
- Value addition;
- Provision of support services (technology, inputs, finance, training, mechanisation etc.);
- Management of the cash cycle, with speedy payment;
- Building trust between partners in the value chain;
- Farmers to be prepared to invest their own resources.

Some key principles that flow from linkage strategies are:

- Be prepared to start small and build on success and experience;
- Integrate private sector into the enterprise model (refer text box on Dev Bhumi Cold Chain Ltd);
- Plan with farmers and not for them;
- Build trust by being open and approachable, developing lines of communications between role-players;
- Holding of regular training cycles, repeating the lessons to co-incide with the production calendar;
- Grower commitment to agreed production plan and contract;
- Combat incentives for side-selling by buying at farm-gate, speedy payment, fair competitive prices, offer of access to inputs and training;
- Apply a business-model approach (see table on commercialisation principles applied by Andisa in designs of smallholder market linkage systems)

⁴ With a cautionary note (A Shepherd, 2009) that subsidies can have a negative impact on the developing sustainable business, through placing selected producers at an unfair advantage to the detriment of others, secondly direct client services can squeeze of existing commercial services. However, where there are significant market imperfections targeted subsidies with a sunset clause can be justified.



Case Study - Dev Bhumi Cold Chain Ltd

This cold chain management company has been operating with farmers in India for 60-years. The company offers a yield improvement programme (YIP) to farmers, providing them improved rootstock and plants for improved yields.

Produce is purchased direct from farmers, with immediate payment through local village banks, transported in cold trucks to Strategic Distribution Centres (SDCs), located at the centre of the production area. The SDC prescribes and co-ordinates pre- and post-harvest practices, providing planting material with a buy-back guarantee, looks after the farmer needs for inputs, finance etc., makes co-operative arrangements for the transport of the goods from farm-gate to facility to wash, sort, grade, bulk store, package and re-distribution to Retail Distribution Centres (RDCs).

RDCs aggregate and consolidate stock and provide just-in-time (JIT) deliveries to individual retail stores. RDCs are in or near metros on national highways that provide easy transportation for fresh fruits or vegetables. RDCs have the capability to wash, sort and grade to ensure freshest fruit and vegetables arrive in retail stores; store the produce in cold storage, package in retail ready display packaging and palletise according to EuroCollo Module standards.

5 Annexure A – Supply Side Research Plan

1. Initiation

During this phase confirmation of the sectors for evaluation must be determined based on existing activities within the two districts and on the opportunities. The study parameters that need to be confirmed indicate:

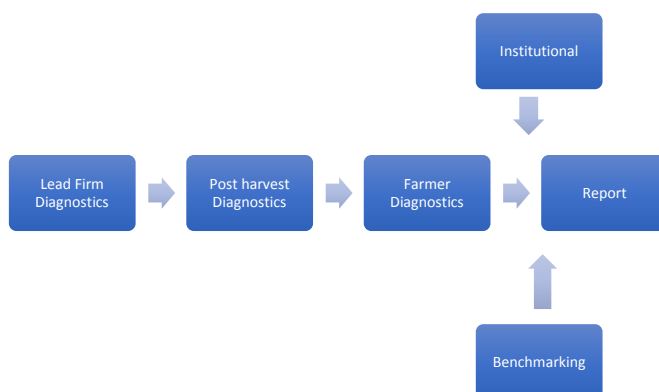
- a) Renewable energy with a focus on bio-gasification and biofuel potential
- b) Sugar value chain
- c) Wood value chain and furniture manufacturing
- d) Horticulture
 - a. Vegetables
 - b. Macadamia
 - c. Fruit
 - d. Flowers and
 - e. Moringa

An understanding of the institutional roles (i.e. the iLembe Development Agency v the District Municipality) and appropriate project contacts is required.

2. Identification of target Farmers and SMEs to Interview

The iLembe District Municipality is the target region and specifically the **KwaDukuza** and **Mandeni** Local municipalities **but** with some latitude to venture into other Local Municipal Districts.

The VCE will be consulted on the outcomes of the outcomes of the lead firm diagnostics to determine what typology of farmer should be consulted and the design of the farmer questionnaire.



6 Questionnaire design

6.1 Objective

To analyze farm productivity and the critical issues that have a bearing on farm level productivity and farmer capabilities. This should help to identify critical points at the farm level which need to be addressed to make significant productivity and product quality gains.

For each group of suppliers, the general characteristics will be provided to determine the specific constraints per group and to assess the support required to improve productivity and product quality for that group.

The approach was to gather information from key respondents in the sectors on an open-ended questionnaire technique asked along the following subject areas, with an outline of questions as appropriate to the respondent.

Supplier/ Farmer Diagnostics

- Land and demographic information
- Farm infrastructure
- Agriculture practices
- Input supply
- Finance
- Information supply
- Farm management

Benchmarking

- Farm level productivity
- Post-harvest supply chain productivity

Issues	Questions
Land and demographic information	How much agricultural land does supplier/farmer own? (Give details)
	Detailed breakup of supplier/farmer production data.
	What is the family size and Who all in the family work on the farm?
	Does supplier/farmer hire farm laborers? (How many, how often, and for what specific functions?)
	What is the education level of the supplier/farmer? Can they read and write? If not, are there other family members residing with the farmer who can read and write?
Agriculture practices	Who taught the supplier/farmer the agriculture practices that they currently follow?
	Are the supplier/farmer neighbor's agriculture practices different than theirs? If so, provide details?
	What is their biggest source of influence in information gathering and decision making regarding agriculture practices?

Issues	Questions
	<p>In past 3 years, has the supplier/farmer learned new agriculture practices from any sources? If so, please provide details (The sources as well as the practices and their adoption or non-adoption of it)</p> <p>Is supplier/farmer aware of the good agriculture practices for the crops/cattle they grow?</p> <p>Does the supplier/farmer follow all the good practices? If not, why not? What constraints them from adopting those practices?</p> <p>What incentives would help the supplier/farmer adopt those practices?</p>
Farm infrastructure	<p>Have they undertaken any major land improvement activities in the past five years? (provide details)</p> <p>Do they use electricity for farming purpose? (Provide details). Do they get consistent electricity supply? What are the major issues with electricity supply?</p> <p>What is the current level of farm mechanization? What kind of machinery/tools do they use and for what activities? Do they own these machines/tools? Do they rent or lease these machines/tools? (Provide details)</p> <p>Did the use of these tools/machines led to increased farm productivity and farming efficiency? If so, please explain the causal link.</p> <p>Do they have access to all the tools and machines they need? If not, what are additional tools/machines that they need but are currently not available?</p> <p>Is the current level of their farm infrastructure sufficient to meet their needs? If not, what additional infrastructure/ upgrading they would like to do on their land and why? What constraints them from making those upgrading decisions?</p> <p>Are there any laws/ regulations which constraints them from making farm level investments?</p>
Irrigation	<p>How much of their land is irrigated?</p> <p>What are their current irrigation systems/practices? Do they use drip irrigation? Sprinklers?</p>
Input supply	<p>What kind of farm inputs do they use? (Provide details)</p> <p>What are the major sources of farm input supply? (If they prefer some institutional channel over others for specific inputs, please provide details)</p> <p>Are there any laws/ regulations which constraints them from getting access to the farm inputs?</p>
Seed / seedlings /	<p>Where do they procure the seeds from?</p>

Issues	Questions
Seedcane / trees /	Do they directly plant the seeds? Do they use seeding or sapling? Do they have access to nursery?
	Are these GM (genetically modified) or hybrid seeds? Do they chemically treat these seeds before using them?
	Do they get the seeds as per their desired quality, quantity, time and price? If not, what are the constraints and issues surrounding them?
Finance	Have they accessed credit for productive investment in their farm in the past five years? (provide details)
	What are the various institutional options for accessing finance? Which are the preferred source/s and why? (Buyer finance / supplier finance/ bank finance/ MFI/ money lender etc)
	What are the main constraints in accessing finance?
	Are they planning to avail some credit for farming purpose in immediate future? If yes, provide details.
	How do they pay for inputs? (Cash or credit)
	If they get some short term working capital loan, how would they invest it?
	If they get some long-term investment loan, how would they invest it?
Fertility management	Do they engage in soil fertility management practices? If so, please elaborate.
	Do they use fertilizers? What kind? How do they determine what dozes of fertilizers to apply and when? Do they keep a record of their fertilizer application schedule?
	Do they combine irrigation schedule with fertilizer application schedule?
	Do they get the fertilizer as per their desired quality, quantity, time and price? If not, what are the constraints and issues surrounding them?
	Do they get optimum productivity from their fertilizer application? Has their yield saturated in past few years and despite increased addition of fertilizer, the yield remains stagnant?
Plant protection	Do they follow integrated pest management or organic plant protection techniques? If yes, provide details.
	Do they use pesticides and insecticides? What kind? How do they determine what dozes to apply and when?
	Do they get the insecticide and pesticide as per their desired quality, quantity, time and price? If not, what are the constraints and issues surrounding them?

Issues	Questions
	Are their plant protection techniques effective? How much of their crop was damaged because of pest and disease infestation?
Information supply	How do they determine what to produce on their farms? What are their sources of information regarding projected demand of various produce?
	Do they get information about the prices of various farm produce in advance? From what sources? How does it influence their selling decisions?
	Do they get access to information about weather in advance? From what sources? How reliable is the information? Do they make decisions based on the weather update? (provide details)
	Do they get access to information about pest and disease outbreak in advance? From what sources? How reliable is the information? Do they make decisions based on these updates? (provide details)
	Do they get any agriculture advice/ agriculture extension support from any institution? Provide details. Which one of them is more relevant and trustworthy source of advice? How often do they avail these services? What are the critical constraints/ issue surrounding access to agriculture extension services?
	How do they determine what to produce on their farms? What are their sources of information regarding projected demand of various produce?
Market access	Where do they sell their farm produce? Do they prefer some market channels over others? Why?
	How do they determine which markets to sell what produce and at what time? What are their sources of information regarding markets?
	Is there a quality differentiation for their produce in their end markets? Do they get higher price for better quality produce? How is quality determined? (parameters for quality and price determination)
Farm management	Do they use any record keeping systems? Do they keep track of sales and purchase? How?
	Do they follow basic health and hygiene practices on their farm? Provide details.
	Who make decisions? Who control access to input, crop, tools, machines, etc.
	Do they lose any produce after harvest because of poor handling, wastage, and storage? If so, what percentage of their gross production?

7 Annexure C – iLembe (KwaDukuza and Mandeni) Agricultural Potential

The DARD Bioresource Unit (BRU) programme enables an estimate to be made of the agricultural resource potential of the district. The BRU numbers below associated with the accompanying map indicate the range of crop types that are suited to the climate and soils.

Table 1: iLembe District Agricultural Resource Potential - Bio Resource Units

BRU No.	Climate	Soil	Topography	Fruit, Vegetable & herb potential
Ya14	C1: Local climate is favourable for good yields for a wide range of adapted crops throughout the year.	30.6% of the BRU is arable. 19.4% of the arable land is high potential. Soils of moderate to poor drainage occupy 66.9%.	Mainly rolling and partly broken with generally steep and some moderate slopes.	Banana / Cabbage / Carrot / Dry Bean / Potato / Tomato / Irrigated groundnuts / Maize / sorghum / soya bean / sugar cane / Eucalypt / Pinus Elliotti
Ya3	C1: Local climate is favourable for good yields for a wide range of adapted crops throughout the year.	28.9% of the BRU is arable. 18.7% of the arable land is high potential. Soils of moderate to poor drainage occupy 72.9%.	Mainly broken and partly rolling with generally steep slopes.	Banana / Cabbage / Carrot / Dry Bean / Potato / Tomato / Irrigated groundnuts / Maize / sorghum / soya bean / sugar cane / Eucalypt / Pinus Elliotti
Ta2	C7: Severely restricted choice of crops due to heat, cold and/or moisture stress	20.6% of the BRU is arable. 51.1% of the arable land is high potential. Soils of moderate to poor drainage occupy 55.3%.	Mainly broken and partly valley with generally steep and some moderate slopes.	Cabbage / Carrot / tomato / Groundnut – irrigated / Lucerne irrigated / Maize / Potato / Sorghum / Soya / Sugarcane / Sunflower
Za5	C1: Local climate is favourable for good yields for a wide range of adapted crops throughout the year.	Sandy soil makes up 94.9% of the area. Soils of moderate to poor drainage occupy 37.2%.	Mainly rolling with generally moderate and some gentle slopes.	Banana / Cabbage / Carrots / Cotton / Dry Bean / Paprika / Potato / Tomatoes / Eucalypt / Pinus Elliottii / Pinus Taeda / Soya / Sugarcane
Ya4	C1: Local climate is favourable for good yields for a wide range of adapted crops throughout the year.	21.6% of the BRU is arable. 38.3% of the arable land is high potential. Soils of moderate to poor drainage occupy 84.0%.	Mainly rolling with generally moderate and some gentle slopes.	Banana / Cabbage / Carrots / Potato / Tomatoes / Cotton / Soya / Sugarcane /
Xb8	C2: Local climate is favourable for a wide range	52.6% of the BRU is arable. 0.1% of the arable land is	Mainly broken with generally steep slope.	Cabbage / Carrots / Potatoes / Tomato /

BRU No.	Climate	Soil	Topography	Fruit, Vegetable & herb potential
	of adapted crops and a year round growing season. Moisture stress and lower temperatures increase risk and decrease yields relative to C1.	high potential. Soils of moderate to poor drainage occupy 45.7%.		Dry Bean / Lucerne – irrigated / Maize / Sugarcane / Sorghum / Soya / Pinus Elliottii
Xb10	C2: Local climate is favourable for a wide range of adapted crops and a year round growing season. Moisture stress and lower temperatures increase risk and decrease yields relative to C1.	52.3% of the BRU is arable. 0.3% of the arable land is high potential. Soils of moderate to poor drainage occupy 46.6%.	Mainly broken with generally steep slopes.	Cabbage / Carrot / Potatoes / Tomatoes / Dry Bean / Lucerne – Irrigated / Maize / Sorghum / Sugarcane / Pinus Elliottii
VWa6	C4: Moderately restricted growing season due to low temperatures and severe frost. Good yield potential for a moderate range of adapted crops but planting date options more limited than C3.	14.2% of the BRU is arable. 3.2% of the arable land is high potential. Soils of moderate to poor drainage occupy 65.5%.		Bananas / Cabbage / Carrots / Cowpeas / Dry Bean / Groundnut / Potatoes / Tomatoes / Lucerne – irrigated / Sorghum / Soya / Sugarcane
Yb13	C2: Local climate is favourable for a wide range of adapted crops and a year round growing season. Moisture stress and lower temperatures increase risk and decrease yields relative to C1.	49.9% of the BRU is arable. 12.3% of the arable land is high potential. Soils of moderate to poor drainage occupy 46.7%.	Mainly broken with generally steep slopes.	Cabbage / Carrots / Potatoes / Tomatoes / Dry Bean / Lucerne – irrigated / Maize / Sorghum / Sugarcane / Soya / Eucalyptus / Pinus Elliottii
UVa6	C2: Local climate is favourable for a wide range of adapted crops and a year-round growing season. Moisture stress and lower temperatures increase risk and decrease yields relative to C1.	48.9% of the BRU is arable. 19.4% of the arable land is high potential. Soils of moderate to poor drainage occupy 45.6%.	Mainly broken and partly valley with generally steep slopes.	Bananas - irrigated / Cabbage / Carrots / Potatoes / Tomatoes / Dry Beans / Lucerne – irrigated / Maize / Sorghum / Soya / Sugarcane / Pinus Elliottii
Ua2	C5: Moderately restricted growing season due to low temperatures, frost and/or moisture stress. Suitable crops may be grown at risk of some yield loss.	22.6% of the BRU is arable. 47.6% of the arable land is high potential. Soils of moderate to poor drainage occupy 61.2%.	Mainly valley and partly broken with generally steep and some moderate slopes.	Banana – irrigated / Cabbage / Carrots / Paprika / Potatoes / Tomatoes / Dry Bean / Groundnut / Lucerne – irrigated / Sorghum / Soya / Sugarcane /

BRU No.	Climate	Soil	Topography	Fruit, Vegetable & herb potential
				Sunflower
Wb19	C2: Local climate is favourable for a wide range of adapted crops and a year round growing season. Moisture stress and lower temperatures increase risk and decrease yields relative to C1.	52.2% of the BRU is arable. 4.4% of the arable land is high potential. Soils of moderate to poor drainage occupy 45.8%.	Mainly broken with generally steep slopes.	Cabbage / Carrots / Cowpeas / Potatoes / Tomatoes / Lucerne – irrigated / Maize / Sorghum / Soya / Sugarcane
VWa5	C4: Moderately restricted growing season due to low temperatures and severe frost. Good yield potential for a moderate range of adapted crops but planting date options more limited than C3.	66.5% of the BRU is arable. 11.1% of the arable land is high potential. Soils of moderate to poor drainage occupy 32.2%.	Mainly broken with generally steep slopes	Banana – irrigated / Cabbage / Carrots / Potatoes / Tomatoes / Cowpeas / Dry Bean / Lucerne – irrigated / Maize / Sorghum / Soya / Sugarcane / Sunflower
Yb18	C2: Local climate is favourable for a wide range of adapted crops and a year-round growing season. Moisture stress and lower temperatures increase risk and decrease yields relative to C1.	82.8% of the BRU is arable. 61.0% of the arable land is high potential. Soils of moderate to poor drainage occupy 14.0%.	Mainly rolling and partly broken with generally steep slopes.	Bananas – irrigated / Carrots / Chinese Cabbage / Lavendar / Mint / Paprika / Pumpkin / Tomatoes / Potatoes / Dry Bean / Eucalypt / Pinus Elliottii / Pinus Taeda / Maize / Oats / Soya
Wa6	C2: Local climate is favourable for a wide range of adapted crops and a year-round growing season. Moisture stress and lower temperatures increase risk and decrease yields relative to C1.	46.4% of the BRU is arable. 10.6% of the arable land is high potential. Soils of moderate to poor drainage occupy 48.7%.		Banana – irrigated / Cabbage / Carrots / Tomatoes / Dr Bean / Lucerne – irrigated / Sorghum / Sugar cane / Soya
VWb7	C2: Local climate is favourable for a wide range of adapted crops and a year round growing season. Moisture stress and lower temperatures increase risk and decrease yields relative to C1.	17.7% of the BRU is arable. 12.2% of the arable land is high potential. Soils of moderate to poor drainage occupy 60.9%.	Mainly broken with generally steep slopes.	Cabbage / Carrots / Potatoes / Tomatoes / Groundnut / Lucerne – irrigated / Maize
Xa1	C2: Local climate is favourable for a wide range	58.1% of the BRU is arable. 4.1% of the arable land is	Mainly rolling and partly broken with generally steep	Banana – irrigated / Cabbage / Carrots /

BRU No.	Climate	Soil	Topography	Fruit, Vegetable & herb potential
	of adapted crops and a year-round growing season. Moisture stress and lower temperatures increase risk and decrease yields relative to C1.	high potential. Soils of moderate to poor drainage occupy 37.6%.	slopes.	Potatoes / Tomatoes / Dry Bean / Lucerne – irrigated / Maize / Sorghum / Soya / Sugar cane / Pinus Elliottii
Wa9	C2: Local climate is favourable for a wide range of adapted crops and a year-round growing season. Moisture stress and lower temperatures increase risk and decrease yields relative to C1.	44.1% of the BRU is arable. 57.3% of the arable land is high potential. Soils of moderate to poor drainage occupy 47.0%.	Mainly broken and partly rolling with generally steep slopes.	Banana – irrigated / Basil / Cabbage / Carrots / Paprika / Potatoes / Pumpkin / Tomatoes / Sorghum / Soya / Maize / Lucerne – irrigated / Sugar cane
Yb17	C2: Local climate is favourable for a wide range of adapted crops and a year-round growing season. Moisture stress and lower temperatures increase risk and decrease yields relative to C1.	92.8% of the BRU is arable. 14.3% of the arable land is high potential. Soils of moderate to poor drainage occupy 10.7%.	Generally steep and some are moderate.	Banana – irrigated / Cabbage / Carrots / Beans / Potato / Dry Bean / Tomatoes / Maize / Sorghum / Pinus Elliottii / Sugar cane
Yb16	C2: Local climate is favourable for a wide range of adapted crops and a year-round growing season. Moisture stress and lower temperatures increase risk and decrease yields relative to C1.	Soils of moderate to poor drainage occupy 100%.	Slopes are generally moderate and some are steep	Cabbage / Carrot / Potato / Tomato / Dry Bean / Eucalypt / Lucerne – Irrigated / Maize / Pinus Elliottii / Sorghum / Soya / Sugar Cane
Za12	C3: Slightly restricted growing season due to the occurrence of low temperatures and frost. Good yield potential for a moderate range of adapted crops.	Soils of moderate to poor drainage occupy 100%.	The terrain is mainly rolling and partly broken with generally steep slopes.	n/a
Zb4	C2: Local climate is favourable for a wide range of adapted crops and a year-round growing season. Moisture stress and lower temperatures increase risk and decrease yields relative	77.7% of the BRU is arable. 37.2% of the arable land is high potential. Soils of moderate to poor drainage occupy 13.3%.	Mainly rolling with generally steep slopes.	Banana – irrigated / Cabbage / Carrots / Potatoes / Tomatoes / Basil / Lavendar / Mint / Paprika / Pumpkin /



BRU No.	Climate	Soil	Topography	Fruit, Vegetable & herb potential
	to C1.			
Zb3	C2: Local climate is favourable for a wide range of adapted crops and a year-round growing season. Moisture stress and lower temperatures increase risk and decrease yields relative to C1.	82.2% of the BRU is arable. 23.3% of the arable land is high potential. Soils of moderate to poor drainage occupy 16.7%.	Mainly rolling with generally steep slopes.	Banana – Irrigated / Cabbage / Carrots / Beans / Potatoes / Tomatoes / Basil / Lavender / Paprika / Eucalypt / Lucerne – Irrigated / Maize / Pinus Elliottii / Pinus Taeda / Soya / Sugar cane / Sorghum



8 Annexure D – List of Interviews

No.	Name	Organisation	Tel	email
1.	Cheryl Peters	Enterprise iLembe	082 055 2010	cheryl@enterpriseilembe.co.za
2.	Thuthu Ngcobo	Enterprise iLembe	032 946 1256	thuthu@enterpriseilembe.co.za
3.	Derrick Baird	Qutom Farms (Dube TradePort Agrizone) – Managing Director	082 652 5048	
4.	Rob Tucker	Liv Flowers – Managing Director	083 419 0337	
5.	Sean O’Connor	Bloemendal Flowers – Production Manager	083 661 5177	sean@bloemendal.co.za
6.	Trevor Millstead	Sugar & Macadamia farmer	082 898 3957	
7.	Marieke Mendes	Dube Trade Port AgriLab	072 141 6063	marieke.mendes@dubetradeport.co.za
8.	Charles Wilson	Owner SuperSpar (Salt Rock)	032 525 8030	
9.	Lauren Hinds	ex ROMAC Farms – Production Manager	073 141 7289	laurenstidolph@gmail.com
10.	Jeff Schinns	Ex ROMAC – Shareholder and MD	083 5005479	
11.	Radeshni Govender	ROMAC Farms – Lessee at the time of interview	076 465 6626	v.v.veg2@gmail.com
12.	Xolani Gumede	Capenny Estates (strawberries) – Owner	083 741 6140	gumede@cappenyestates.com
13.	Fezile Nzuzza	Mandeni Local Municipality	032 456 8200	fezile.nzuzza@mandeni.gov.za
14.	Andrew Sheard	Mayo Macs – Horticulturalist	083 784 3627	andrew@mayomacs.co.za
15.	Tich Smith	Liv Village - CEO	082 442 7872	tich@liv-village.com
16.	Cobus Oelofse	iLembe Chamber of Commerce – CEO	071 519 2585	ceo@ilembechamber.co.za
17.	Ian Coates	Businessman (Bamboo & Elephant Grass)	082 808 0042	mjwayela@mweb.co.za
18.	Alistair Smith	National Procurement SPAR	082 788 5121	alistair.smith@spar.co.za
19.	Andrew Tulley	Businessman (Moringa)	082 450 1350	
20.	Ranveer Persad	Dept. Econ Development, Tourism and Environmental Affairs	082 309 4433	ranveer.persad@moseskotane.org
21.	Nigel Simmonds	Tongaat-Hulett	083 386 8368	nigel.simmonds@tongaat.com
22.	Jason Smith	CEO: Mondi Zimele Programme	083 657 5749	jason.smith@mondizimele.co.za
23.	Mlibo Bantwini	Head: Dube TradePort Agrizone	032 814 0000	mlibo.bantwini@dubetradeport.co.za
24.	Michelle Cole	Cedara: Natural Resources		m.cole@kzndard.gov.za



No.	Name	Organisation	Tel	email
25.	Nhlanhla Gumede	South African Farmer Development Association (SAFDA) – CEO	082 460 7801	ngumede@sa-fda.org.za
26.	Bonakele Mbonambi	SAFDA – Development Officer	060 329 0426	bmbonambi@sa-fda.org.za
27.	Dr Kathy Hurly	Canegrowers – Corporate Executive: Strategy and Operations	082 800 3333	Kathy.Hurly@canegrowers.co.za
28.	Richard Nicholson	Canegrowers – Research Economist	031 508 7200	
29.	Brendon Nothard	Canegrowers – Senior Economist	082 254 9856	
30.	Cliff Ingle	Tongaat Hulett – Cane Procurement Manager	083 386 8337	Cliff.Ingle@tongaat.com
31.	Paul de Robillard	Gledhow Sugar Company – Board Chairman	083 649 3866	
32.	Ray Ninela	Gledhow Sugar Company – SSG/Land Reform Manager	032 437 54476 073 773 0887	RNinela@gledhow.co.za
33.	Khetha Seme	Development Officer	060 368 8098	KSeme@gledhow.co.za
34.	Gordon Spalding	Balanced Consulting – MD	084 804 8183	Gordon@balancedconsulting.co.za
35.	Norman Dlamini	Forestry South Africa – Smallholder Development Manager	033 346 0344 081 017 0978	
36.	Rechie Dlamini	ADA – Project Manager	082 560 0117	DlaminiR@ada-kzn.co.za
37.	James van Zyl	NCT	033 394 1202	james@nctforest.com
38.	Gary van Vuuren	Independent Consultant – Moringa Project Manager for Enterprise iLembe	082 889 0270	garyvanvuuren@gmail.com
39.	David Aitken	Businessman – Forestry/Mushrooms	082 552 5199	
40.	Dr Syd Kelly	Consultant – Biomass and ex-CEO Richardsbay IDZ	082 652 1145	skelly@cybertrade.co.za
41.	Siyabonga Madlala	Qwabe Secondary Co-operative - CEO	071 216 7974	
42.	Nathi Phakathi	Qwabe Co-operative - Economist	076 957 9327	Nphakathi1986@gmail.com
43.	Bongani Ndlovu	Qwabe Co-operative - COO	082 507 4707	
44.	Mpilo Khuzwayo	Enterprise iLembe – Vegetable Grower Extension Officer, Maphumulo	073 368 9314	mpilo@enterpriseilembe.co.za
45.	Sifiso Mdletshe	Enterprise iLembe – Vegetable Grower Extension Officer, Mandeni	071 986 2596	sifisom@enterpriseilembe.co.za



No.	Name	Organisation	Tel	email
46.	Nonhlanhla Mbuyazi	Enterprise iLembe – Vegetable Grower Extension Officer, KwaDukuza	073 086 2648	nonhlanhlam@enterpriseilembe.co.za
47.	Sibonelo Simelane	Enterprise iLembe – Vegetable Grower Extension Officer, Ndwedwe	076 760 3776	sibonelo@enterpriseilembe.co.za
48.	Sifiso Mnguni	Canegrowers – Manager Grower Sustainability	071 885 1087	Sifiso.mnguni@canegrowers.co.za
49.	Sizwe Khuzwayo	Mandeni Local Municipality –Acting Municipal Manager/Director	084 250 3327	Sizwe.khuzwayo@mandeni.gov.za
50.	Mile Taylor	Farmers Agri-Care - Advisor	082 904 0155	TaylorM@agricare.co.za
51.	Hamish Erskine	Dube TradePort – CEO	082 338 9433	Hamish.erskine@dubetradeport.co.za
52.	Roy Nohari	Nohari Farms – MD	082 965 2121	roynohari@gmail.com
53.	Dumisani Dlamini	Mshikashika Co-op - Member	073 501 1210	
54.	Sthembiso Dube	Daka Daka Irrigation Scheme	078 438 2221	
55.	Khumbuzile Ntombela	Ezibadleni Co-operative	072 376 8819	
56.	Bongiwe Maneka	Qwabe Development Co-operative	084 806 6658	
57.	Sithethevelo Zondi	Gledhow Sugar Company – Intern	063 719 8324	Sthe.zondi10@gmail.com
58.	Mbali Mbonambi	Gledhow Sugar Company – Intern	078 514 9308	Mbali.mbonambi@yahoo.com
59.	Amanda Melane	Gledhow Sugar Company – Development Officer	076 615 5021	amelane@gledhow.co.za
60.	Msongelwasi Mhlongo	Maqumbi Co-op – Exec Member	083 551 3742	
61.	MJ Bhuleni	Mhlanguseni	083 952 5994	
62.	M Ngena	Maqumbi Co-op – Exec Member	073 550 4016	
63.	Renuka Somaroo	Ashville Farm - Owner	032 483 7266	
64.	Keith Palmer	Ithala – Isithebe Industrial Estate - Manager	082 805 2028	KPalmer@ithala.co.za
65.	Dr Marilyn Govender	SASA – Natural Resources Manager; External Affairs	082 654 7395	Marilyn.Govender@sasa.org.za
66.	Anwhar Madhanpall	SASA – Land Reform Manager; External Affairs	083 790 4080	anwhar.madhanpall@sasa.org.za
67.	Dave Litley	Private sugar grower	083 270 3755	dlitley@mwb.co.za
68.	Roger Godsmark	Assistant GM: Forestry South Africa	082 805 7123	forest@global.co.za



No.	Name	Organisation	Tel	email
69.	Errol Dhaniram	Farley Farms	083 783 7042	
70.	Ronnie Bloch	Owner: Picketwood Farm	032 525 9205	ronbloch@netactive.co.za
71.	Martin Alborough	Sugar Farmer & ex-partner Bethany Farms	082 329 3924	
72.	Gerard von Egmond	Managing Director: Vegmoflora	083 679 4121	
73.	Dave Wise	Macadamia & Sugar farmer	082 898 3957	
74.	Sizwe Dladla	Deputy Manager: LED Project Development & Management, DEDTEA	082 8683940	sizwe.dladla@kznedtea.gov.za
75.	Kim Hageman	Bethany Farm	082 3885546	
76.	Linda Mncube	LED iLembe District Municipality	084 663 0398	linda.mncube@ilembegov.za
77.	Trevor Millstead	Macadamia Farmer		
78.	Micky Robert	Sugar & Macadamia Farmer	082 892 9362	
79.	Suzanne Ackerman	Pick n Pay		dmullins@pnp.co.za
80.	Gerhard Ackermann	Pick n Pay	021 658 1033	nmeyer@pnp.co.za
81.	Dallas Langman	Pick n Pay		dlangman@pnp.co.za
82.	Eben van Heerden	Pick n Pay		nmeyer@pnp.co.za
83.	Paulo Peereboom	Pick n Pay	021 658 2290	pjales@pnp.co.za
84.	Graeme Liebenberg	Food Lovers Market		greyvan@iafrica.com
85.	Willem van Wyk	Food Lovers Market		wwanwyk@fvc.co.za
86.	Robert Brink	SPAR		Colin.Patterson@spar.co.za
87.	Colin Patterson	SPAR		Colin.Patterson@spar.co.za
88.	Yasin Naby	Nu Lounge Industries (furniture)	0324593195	
89.	Ujesh	Ful Gear Trading and Projects (furniture)	0324591786	
90.	Vijay Naidoo	President South Coastal Chamber Industry	0837005427	president@sccci.org.za
1.	Justin Barnes	Benchmarking and Manufacturing Analysts	0827875608	Justin@bmanalysts.com