Western Cape Government

Industry Review:
An Overview of the Honeybush Industry

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EADP 696: THE DEVELOPMENT OF GUIDELINES FOR THE SUSTAINABLE HARVESTING OF WILD HONEYBUSH

Western Cape: Department of Environmental Affairs and Development Planning

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AN OVERVIEW OF THE HONEYBUSH INDUSTRY

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- Marius Van Dyck (Cape Honeybush)

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1. INTRODUCTION

This discussion is based on knowledge accumulated in the process of carrying out research in the honeybush industry over the past three years. The information presented has been gathered from discussions with a range of industry stakeholders including farmers, harvesters, agricultural advisors, honeybush processors, and scientists, as well as formal surveys of the honeybush resource in the wild. The best existing review of the industry is given in a paper by Joubert *et al* (2011). Some of that information is now dated, and this discussion updates some of the facts and figures given there. While this is an industry review, the focus is on the wild industry. Information on the cultivated industry is presented where relevant to give context.

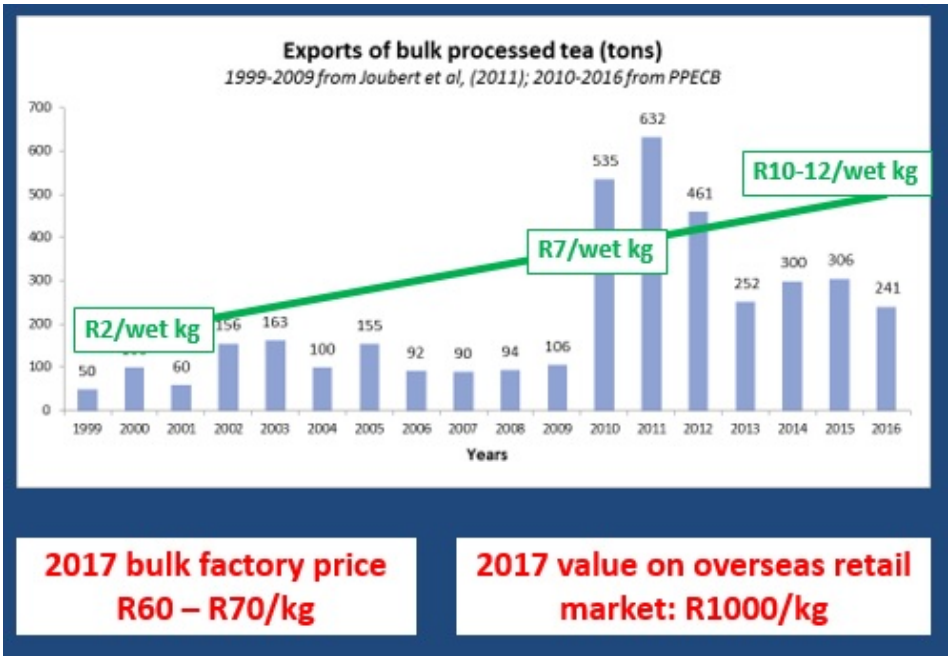

Figure 1: Honeybush industry statistics, 1999 to 2017.

1.1 The market

Over the past 15 years, there has been a steady increase in the export tonnage of honeybush as the overseas market has expanded. Although there is some variability there is a noticeable growth in the output over the past six years. The graph in Figure 1 represents the export component of the annual crop. A further 15% is packed for use in South Africa; about 90% of the annual honeybush tea crop is exported to the Netherlands, Germany and the UK. There are emerging markets in America where one supplier has secured a market for a 'school lunch' scheme to provide a sugar free, healthy drink and there is an exclusive market in Japan for a superior quality, pure wild, pure organic product, supplied by a single grower and processor. The East is opening up as a market too, with big demands for 'green' honeybush tea (i.e. unfermented).

To give an idea of the value adding that occurs in the honeybush value chain, some retail figures for the product on the international market (foreign currency) and on the local supermarket shelves, is given in Table 1. To give a perspective on the challenges in the local industry and the potential in the international market, comments from industry experts are presented as Information Boxes 1 and 2, on the next two pages.

Information Box 1: Dave Mills, Honeybush Farmer

Perspectives on the growth of the international market for healthy beverages including honeybush tea

Honeybush has an advantage as an agricultural product: it is unusually stable, so it has a good shelf life, with no deterioration in quality and properties over time. There is a high and growing international demand for the product. Shoup 2016, puts herbal teas on the USA Top Ten superfood list along with seeds, avocados and nuts. In the same survey conducted by Pollock Communications, they note that: "The beverage category has grown exponentially and tea is set to experience a lot of growth moving into 2017 and 2018." Mills identifies sustainability of supply and a lack of empirical data around the industry as challenges which must be overcome in order to grow the industry. Fundamental to growth of the commercial industry has been the achievement of adequate yields per cultivated hectare.

In terms of the market, Mills identifies the 'plant-based water' market and the consumer desire for a healthy and hydrating drink as a market which is ripe to take up honeybush tea. The sales growth of the group of commodities branded as 'plant-based waters' is predicted to double by 2020 (Arthur, 2017). The same article shows that the trend for 'healthy hydration' drove global sales growth in plant based waters to 21% in 2016, reaching sales of more than $2.7bn. While the main sources of these products are North and South America, Mills has been involved in the development and promotion of a 'naturally sweet' honey-bush beverage, (instant drink powder) to the North American market. Shoup 2016, cites a report by Mintel, which shows that about 50% of consumers wanted a tea that was healthy and hydrating, in contrast to the 26% of consumers who wanted an energizing tea. Their desire is for a beverage with "relaxing and health and wellness qualities."

Mills cites figures from a report by *Euro-monitor* (March 2016) where, in an article on 'Tea in the U.S.,' it is reported that sales of traditional herbal teas jumped 13% in 2015, and herbal/ medicinal tea sales were up 14%. Based on his experience in the international beverage market, and this kind of market information, Mills predicts an annual market demand for about four hundred tons of honeybush tea in the USA, about eight hundred tons in Germany, and unknown potential in Asia.

Mills envisages a very positive future for the South African honeybush industry in which the potential growth to meet overseas market demands will be achieved. In order for this to happen, the following is necessary:

- commercial cultivation must be promoted;
- financing should be made available for the development of a reliable and sustained cultivated honeybush sector;
- the product must be sold by an effective marketing agency, with a budget to tell the "Honeybush Story."
- the wild honeybush industry will be a limited feature of the future honeybush industry.

Information Box 2: Eugene Smith, SAHTA Chairperson

Perspectives on the Honeybush Industry

What are some of the challenges in the industry because of the uniqueness of the product?

The honeybush Industry is currently mainly dependent on wild harvesting which cannot sustain much more growth, if any. It is therefore important that cultivation increases over the next couple of years. The price paid for raw honeybush per kilogram is also based on the no-cost maintenance of wild honeybush, whilst the cost and financial risks involved in setting up a cultivated concern are considerable, but the price does not reflect that.

What characterises the growth of the industry from a cottage industry to a commercial market?

In recent years, consumers have become increasingly aware of health issues linked to what you eat or drink. As honeybush tea is professed as a tea with many health properties, it has become increasingly popular, and the need to commercialise the industry has arisen.

What are the new emerging markets and products?

The main demand in the industry is for the tea product, which is seen as a healthy beverage. Growth in the overseas markets is tricky: the taste of honeybush tea improves if it has been boiled, but the overseas market demand is mainly for an 'instant' drink. The potential market for other products, however, is huge: Honeybush tea species which are not desirable for tea production can be used to produce other products such as creams and soaps.

In terms of volume of tea, what is the potential demand in these areas?

Most people would say that the demand for the tea is unlimited. Notwithstanding this belief we find that growth in the industry is very slow for various reasons mentioned in this interview.

What are the factors which will limit this growth?

There are challenges associated with cultivating honeybush tea. Cultivating C. intermedia *on which the wild industry is based, is difficult. Species like* C. subternata *need a lot more water for good yields. Production of secondary goods using honeybush extracts comes with a range of restrictions and difficulties, mostly in the form of red tape.*

What would help promote growth of the industry? What needs to be done and by whom?

The honeybush industry is currently very fragmented; i.e. it needs to be better coordinated and drawn together as an industry. The South African Honeybush Tea Association (SAHTA) is working towards a unified honeybush industry, involving all stakeholders. The formation of a Community of Practice in 2016, in collaboration with relevant Eastern and Western Cape governments and involvement from various stakeholders will help to bring this about. Unfortunately it will take time to get all stakeholders in the industry to move in the same direction; it is human nature to look after our own interest first!

What is the role of the wild harvesting industry in the future of honeybush?

Wild harvesting alone is not the future of honeybush. However it should always play a role if sustainable and responsible harvesting guidelines are being followed. It is unfortunately also the area where most of the illegal harvesting takes place which means it should be well regulated.

Table 1: Retail value of honeybush tea on the overseas market and the local market. All weights are converted to a 'Rand per kilogram' value for comparison, using current exchange rate values (March 2017).

Product	**Weight**	**Price**	**Rand per kilogram ($ 12.8, €13.7, £15.7)**	**Source**
Overseas				
African Dream Honeybush Blend	50g	$ 4. 75	1216.00	Blue Teapot
Honeybush Original Organic	50g	$ 4.25	1088.00	Blue Teapot
Honeybush	85g	€ 6.50	1047.00	Adagio teas
Honeybush Tea (natural)	50g	£ 1.70	533.80	Tea story
Honeybush	100g	£ 6.00	942.00	Imperial Teas
Francis & Green, Organic Honeybush	200g	£ 8.29	650.70	Amazon
South Africa				
Honeybush Tea *(C. Intermedia)*	50g	R65.00	130.00	Medica Herbs
Numi Tea Honeybush	45g	R89.68	199.30	eVitamins
Melmont Honeybush Tea *(C. intermedia)*	300g	R38.00	114.00	Kareedouw Supermarket
Cape Honeybush (Cult. *C. subternata*)	250g	R35.00	140.00	Cape Honeybush

2. THE FOCUS ON CULTIVATION

The development of the cultivated sector has been promoted in order to meet the demands of the export market, to ensure reliability of supply consistency of the product, as well as to relieve the pressure on the wild harvested resource (Hobson and Joubert, 2011; Joubert, 2011). A range of figures can be found relating to the extent of land which has been put under honeybush cultivation in the last 10 years: Joubert *et al,*, 2011 give a figure of 200 ha under cultivation in 2010; 120 ha were under cultivation according to Hobson and Joubert, 2011; 230 ha were under cultivation in 2011 according to the DAFF (2011*)* report: *A profile of the South African honeybush tea market value chain, 2011*. In the same report series, this drops to 120 ha in 2013, then rises to over 200 ha in 2015.[1]

A recent survey commissioned by SAHTA in 2016, gives a detailed breakdown of the extent of land under cultivation in the Eastern and Western Cape and the species under cultivation:

Table 2: Cultivated honeybush land in the Eastern and Western Cape (SAHTA, 2016).

Species	Eastern Cape	Western Cape
C. subternata	11ha	56ha
C. genistoides	0ha EC	59ha
C. longifolia	9ha EC	4ha
C. intermedia	1ha E	4ha
C. maculata	0ha EC	4ha
Total: 147ha	16ha	131ha

A lot of published material refers to the potential for growth of the cultivated sector: du Toit *et al.*, 2008; Joubert *et al.*, 2011, Hobson and Joubert, 2011; Erasmus, 2012; DAFF, 2011; DAFF, 2013; DAFF, 2015, *etc*. The Agricultural Research Council has taken up the challenge of domesticating this wild plant for commercial cultivation: for example, through selection for improved seed they have shown the potential for non-irrigated per-hectare yield of up to 10 tons over several years of harvest for *C. subternata* and *C. genistiodes* (Bester, 2016). A small intensive farm in the well-watered Plettenberg Bay area produced average yields of 1.5-2.0 kg per *C. subternata* plant, on lands with 9 000 -10 000 plants per hectare (Wilshire, 2015; pers. comm.), amounting to per hectare yields of 14 tons. In The Crags area with intensive management and a high planting density of 12 500 plants (*C. subternata*) per hectare it is possible to crop up to 16 tons per hectare giving an average of 1.28kg per plant (Oelschig, 2017, pers. comm.). It is important to note that these figures represent peak production from two to three year old plants and it is unlikely that these production levels can be sustained. In the middle Langkloof, yields of 2.5-3 kg per plant have been reported (van de Linde, 2016, pers. comm.). In the dry reaches of the Onder-Kouga, with minimal till and minimal irrigation, *C. subternata* plants yield on average, only 750 g per plant. On the coastal sands of the Bredasdorp area, the Joubert family who have selectively bred *C. genistoides* for cultivated production, have recorded yields of 3-4 kg for some plants, with average yields of 1 – 2 kg per plant over several years, giving an average of two tons per hectare, per year (Erasmus, 2012). The yield of cultivated honeybush is therefore extremely variable, depending on intensity of cultivation, age of plants, management approach and the local environment.

[1] The information in these particular reports seems unreliable: figures given are orders of magnitude out, the sums do not add up, the data is not adjusted from one report to the next, the units used are not standardised and the conclusions that are drawn are therefore inaccurate.

3. THE WILD CROP

Although the potential for high yields from cultivation has been achieved by some successful farmers the proportion of wild harvested tea at the three processing plants which handle wild harvested and cultivated harvested tea remains at 95%, 96% and 75% respectively (Table 1). Of the other three processing plants, two handle only cultivated tea and one only processes wild tea. The bulk of the annual harvest of about 732 tons[2] of harvested tea for the production of processed honeybush tea, still comes from the wild, harvested by teams of harvesters from the slopes of the Cape Fold Mountains.

The commercial wild harvested honeybush crop consists of 'bergtee' *(C. intermedia*) which makes up 85% of the harvest, 'vleitee' (*C. subternata*) constitutes about 10% of the wild crop and smaller quantities of the less palatable *C. maculata*, and *C. plicata* make up the rest of the crop*. C. sessiliflora* is locally important in the Langeberg and Heidelberg area for home use.

The values of honeybush delivered to the factory in 2017 is as follows:

- R12.00 per kilogram for wild 'bergtee,' (*C. intermedia*) when the source is a certified 'organic' farm;
- R11 per kilogram for wild 'bergtee,' (*C. intermedia*);
- R9.00 - 10.00 per kilogram for 'vleitee' (*C. subternata*), *C. plicata* and *C. maculata,* wild or cultivated.

The normal rule is that the landowner receives one third to half the crop value and the harvest team manager takes the rest, from which he pays his expenses and a rate of R1.50 – R3.50 per kilogram to the harvesters, (related mainly to difficulty of access). The potential load per harvester ranges from 50-180kg, with highs of over 300kgs, and lows of 20 kg per day depending on personal experience, ability and desire to earn a good wage, the state of the resource at the site, weather conditions and the distance to the transport point.

The map (Figure 2) shows the distribution of the five commercially important wild harvested species of the genus *Cyclopia.* Two other species: *C. longifolia* (Van Stadens Tea) and *C. genistoides* (Kus Tee) are successful cultivated species. By far the most abundant and widely distributed species is *C. intermedia,* with a distribution that ranges across the Cape Fold Mountains. The most western populations occur in the Waboomsberg (north west of Barrydale), the furthest inland in the Witteberg (North of Willowmore), the most easterly in the Vanstadens mountains, west of Port Elizabeth. Other mountain areas in which *C. intermedia* occurs include the Witteberg (between Laingsberg and Touws Rivier), Anysberg, Swartberg, Touwsberg, Rooiberg, Kammanassie, Kouga, Baviaanskloof, Langeberg, Outeniqua, Tsitsikamma, Elandsberg and Langkloofberge (Schutte 1997, Manning and Goldblatt 2012, Vlok, J.H.J., 2017, pers. comm.) Using a GIS based model, and data from expert mapping, locality records and field observations, *C. intermedia* is shown to be distributed across an area of approximately 13 900 km^2 (Figure 2). Of the potential honeybush-bearing land area (based on aspect, elevation, vegetation type and geology) of 2520 km^2, 1395 km^2 occurs in formally protected areas while 1125 km^2 of land is privately owned. In terms of the conservation of the species this is a fortunate situation.

[2] PPECB data for the period 2010 to 2016, show an average annual export of 390 tons per year of processed tea. If this represents 85% of the average annual crop, then the total crop would be 459 tons. If on average, 80% of the crop is wild harvested, then 367 tons of this comes from the wild. If the loss of moisture in processing is about 55%, then the total annual average of wild harvested honeybush is 816 tons.

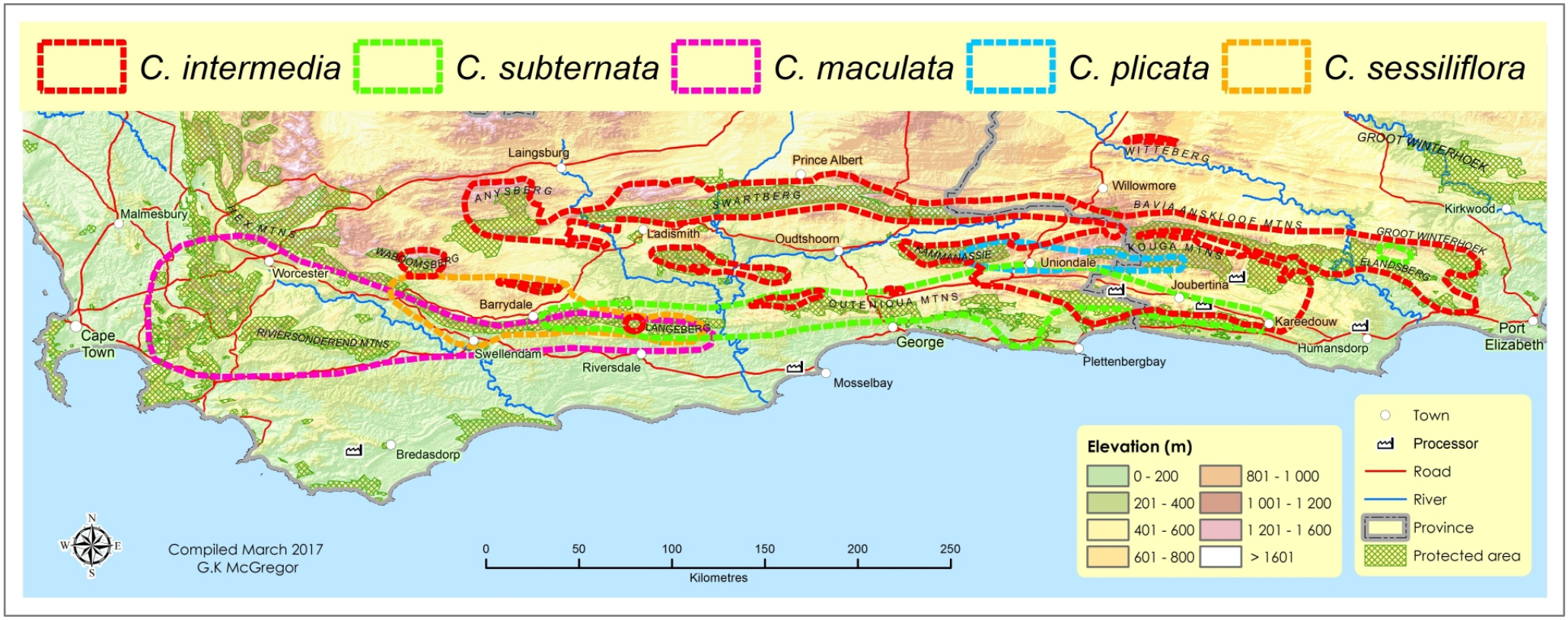

Figure 2: Map showing the distribution of the five commercially important wild harvested *Cyclopia* species.

3.1 Overview of *C. intermedia*

C. intermedia, is commonly known as 'bergtee.' In some areas it is simply named (in Afrikaans) 'die heuningbos.' It is a member of the legume family, of the genus *Cyclopia* and can be recognised by its characteristic yellow legume flowers and trifoliate leaf arrangement. It is a resprouter, so typically recovers well after fire by regenerating from its rootstock (underground lignotuber). Harvesting the plant effectively simulates the role of fire. The common practice is to allow a regeneration period of about four years before cropping. Because of its slow growth, it is not used for cultivation. Because it relies on resprouting rather than germination for regeneration (after fire), it does not flower prolifically, but saves its reserves for resprouting. It is obviously still important for the plants to set seed for the germination of new plants, but not to the same extent as is the case of reseeders such as *C. subternata*.

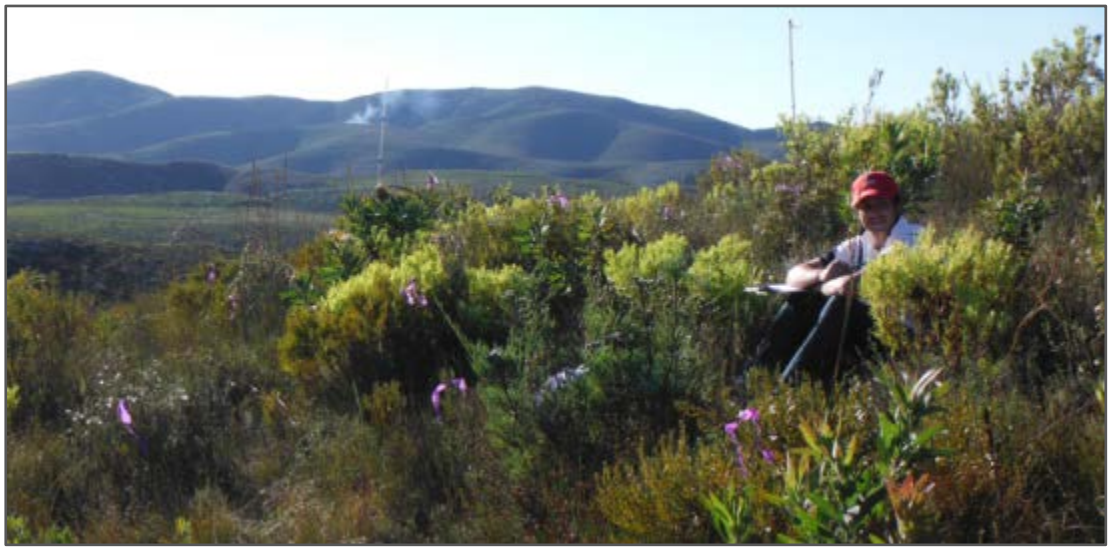

Figure 3: A C. *intermedia* harvest site; honeybush plants are marked with purple tags.

C. intermedia survives in a range of environments, from the high rainfall zones of the Tsitsikammas and Outeniquas to the arid slopes of the Karoo mountains. It has an extensive but patchy distribution with tremendous variation in abundance and density from one site to the next. We have recorded densities of 3500 plants per hectare in the Kouga Mountains, to as few as 50 plants per hectare on nearby sites. Figure 3 shows a site in the Kouga Mountains, just before harvest. The honeybush plants have been measured and marked with purple flags to allow for monitoring of the harvest yield. The honeybush regrowth is about four years old.

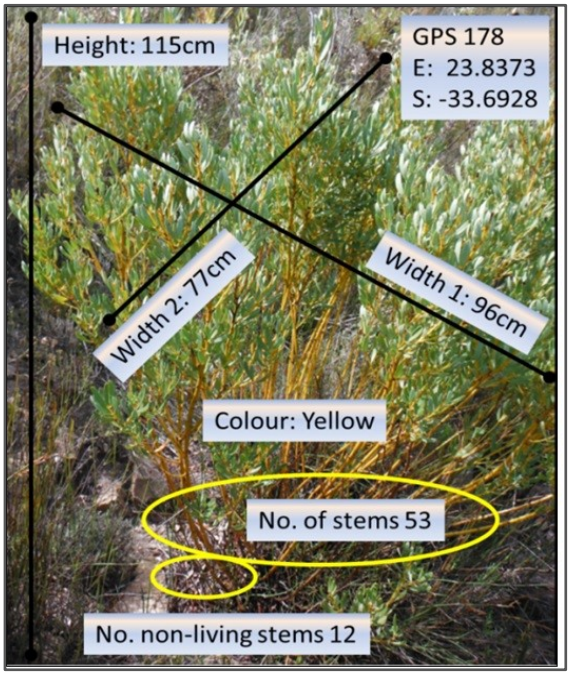

Figure 4: Dimensions of a C. *intermedia* plant.

Figure 4 shows a typical honeybush plant: the regrowth is about two years old, indicated by the yellowish stems. It would yield about one kilogram of harvest material. An older plant would have darker stems which are more desirable for the production of flavour in tea. The plant has good regrowth with 53 healthy stems and a handful of non-living stems. The dimensions taken represent two crown width values and a height value which are used for producing an allometric equation for honeybush, to estimate yield per plant. Unfortunately there is no significant relationship between the variables, so allometric modelling does not (yet) seem to be an accurate way of estimating yield.

3.2 Wild honeybush harvesting

The plant is harvested using a sickle with a rapid scything action. This method seems to be favoured by most harvesters, but is potentially harmful to the harvester if handled carelessly. The use of secateurs is possibly more controlled, but slower and selection of only the honeybush stems is more accurate. There is anecdotal evidence from harvesters that secateurs damage the plants. The whole plant is cut if it is deemed to be old enough (size and stem colour are the main indicators). Short plants of less than about 65 cm are not cut as they do not bundle securely. The plant is cut at about 12–15 cm above the ground for best regeneration results.

Figure 5: Harvesting with a scythe.

The harvesters cover substantial distances in a harvest day as they collect their load. In the mountainous terrain with several returns to the loading point they also gain and lose elevation. In this example, (Figure 6) using a GPS the harvesters' movement for the day was tracked and the number of plants harvested and not harvested was recorded. In the first hour, where the plants were most abundant, (indicated by the red circle) 37 plants yielded about 30 kg of harvest. About one third of plants visited were left behind. This particular team harvests the same area every 18 months to two years, deliberately leaving younger plants to flower and set seed and grow to a size suitable for harvesting in the next season.

Figure 6: A harvester's track.

Figure 8: Weighing and loading the harvest.

At the transport point, each harvester weighs their load for the day and the bundles are loaded onto a bakkie for transport to the factory or to a factory pick-up point. The bundles are moistened with water to prevent desiccation and leaf loss. The load for the harvest day shown in Figure 8 was 684 kg, brought in by nine harvesters over a five hour working period, load per harvester ranged from 43 kg to 166 kg. This was considered an 'easy' site; the vehicle could access two pick up points within 1000 m of the furthest harvest area.

4. PROCESSING

The load is taken to the factory, usually once a week on a Thursday or Friday. Because the work is physically demanding, most harvesters work three to four days a week and rest Friday to Sunday.

Figure 9: Delivering the load to the factory.

4.1 Honeybush processing plants

There are six processing plants currently in operation. *Melmont Honeybush* in the lower Kouga is a closed system, harvesting, processing and marketing its own tea exclusively. *The Heights* near Joubertina serves the middle Langkloof and some farmers in the Plettenberg Bay and Tsitsikamma region. *Honeybush Natural Products* is the largest honeybush processing plant, catering for the top end of the Langkloof and Western Cape harvesters from Haarlem and the Uniondale area. They are by far the largest processing plant, and over 90% of their intake is wild harvested. The majority (65%) of this intake comes from a single harvesting team, operating almost exclusively in the Western Cape, because the Western Cape farms operate with limited permitting requirements. There is a small factory near Humansdorp (*Honeyblossom Tea Traders*) which is supplied by the eastern most area of wild honeybush production, the Elands Valley. *Cape Honeybush* is based in Mosselbay, but processes only cultivated honeybush, (M. van Dyk, 2017, pers. comm.) as does *Aghulhas Honeybush Tea* near Bredasdorp (M. Joubert, 2017, pers. comm.).

Table 3: Approximate quantities of processed material for 2016 for the four processing plants which handle wild harvested tea. [3]

	Total intake wet tea	Total output processed tea	% wild tea	Wild tea supply area
Processor 1	77.7 ton	35 ton	95%	Elands Valley, Kareedouw, Joubertina, Louterwater, Tsitsikamma
Processor 2	388 ton	182.5 ton	96%	EC: Misgund, Onder-Kouga, Tsistsikamma; WC: De Hoop, Bo-Kouga, Harlem, Haartebees R.
Processor 3	44.4 ton	20 ton	100%	Koudnek farms
Processor 4	82.340 ton	32.6 ton	70%	Joubertina, Tsitsikamma, Kareedouw, Krakeel, Louterwater, Onder Kouga

The table shows that the proportion of wild tea received at these four processing plants is substantial: on average, 90% of the 2016 intake. Figures from other publications (Joubert *et al.*, 2011; Hobson and Joubert, 2011; DAFF, 2015) give a figure of 70% for wild harvested honeybush and 30% for the cultivated harvest share. In terms of the total annual honeybush harvest (wild and cultivated combined), it is likely that the wild harvested share is around 80%. The figures suggest that the cultivated sector in 2016 made a very small contribution to the annual crop intake of these processing plants.

4.1.1 Tea processing

The bundles are weighed as they are offloaded and sorted into *C. subternata* (lighter, greyish green coloured small stack in Figure 10) and C*. intermedia*. The drums in the background of Figure 10 are heated rotating ovens for fermentation. The green machine to the left of the image is a tobacco cutter used to chop the fermented material before air drying. The honeybush may lose up to 60% of its weight in the tea making process. More mature *C. intermedia* stems lose only 45% on average in processing, (Q. Nortje, 2017, pers. com) as do cultivated *C. genistoides* plants (M. Joubert, 2017, pers. comm.).

Figure 10: A load of tea at the beginning of the processing sequence.

[3] The weights given by the processors were adjusted to make the figures comparable. For example, if a range of 150-200 ton processed weight was given, an average weight of 175.5 ton was used. The wet tonnage was adjusted using a wet to dry weight loss of 55% on average, across all the processing plants.

The green honeybush stems and leaves are passed through a tobacco cutter and chopped before fermenting. The machine can only handle stems of approximately a pencil thickness; thicker stems are wasted. Once the tea has been fermented, it is laid out to dry in indoor drying bins. Outdoor sun drying bins are no longer acceptable in terms of health and safety regulations.

Figure 11: The whole honeybush plant is fed into the tobacco cutter.

The finished product is sorted into size grades (coarse, medium, fine) and packaged in sacks for bulk sales. The wild 'bergtee' still produces the finest most delicate tea, while the cultivated *C. subternata* produces a more earthy flavoured tea with a darker colour.

The tea-maker may blend the tea of various species to get the desired product for a particular market. For example, the Germans like the dark coloured, strong flavoured tea made from cultivated *C. subternata.* (M. van Wyk, 2017, pers. comm.) The introduction of *C. longifolia* (van Stadens tea), a very successful cultivated crop option that has proven to be a good tea for blending with *C. subternata* (G. Ferreira, 2017. pers. comm.).

Figure 12: The finished product: bulk packaged, processed honeybush tea.

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