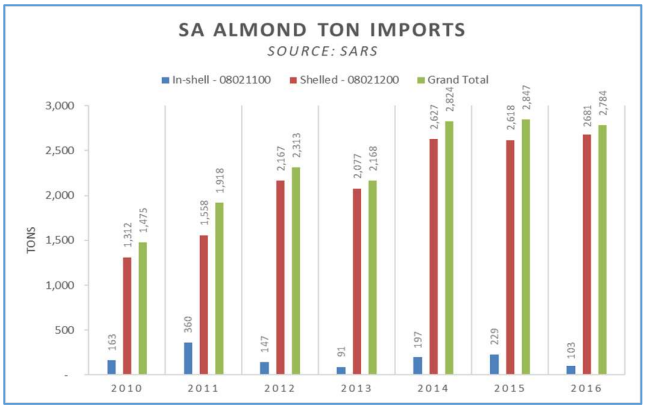
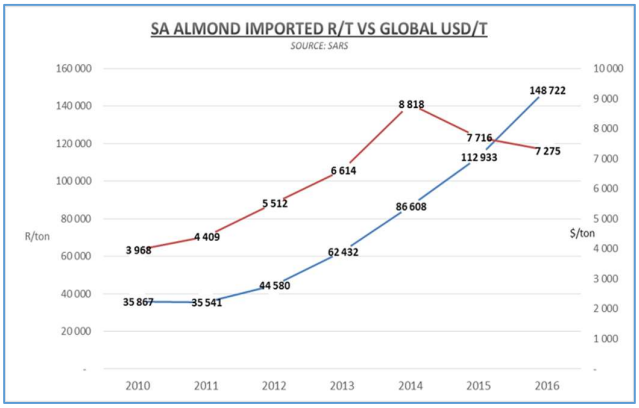
Prospectus: Independence Cultivar *24 June 2017*

This prospectus aims to catalyse and initiate the development of South Africa's integrated almond industry. Furthermore, to identify competent and knowledgeable farming entities to partner with Cape Almonds (Pty) Ltd - which is a subsidiary of ZZ2 - in order to create synergistic benefits through a combined integrated marketing channel and harvesting division.

The opportunity exists to establish several large-scale commercial almond farms in South Africa by partnering with existing Independence Almond Cultivar Growers. Through collaboration we will be able to replace lower quality imported almonds with competitively priced local production. In addition, premium production and value-added products would be targeted towards higher LSM groups. Local and international demand for almonds continues to rapidly escalate due to various long-term positive fundamentals. This will allow us to ultimately develop a raw and processed almond export market through cooperative relationships. However, nurturing the brand of South African Almonds through an alliance will be quintessential for every Grower.

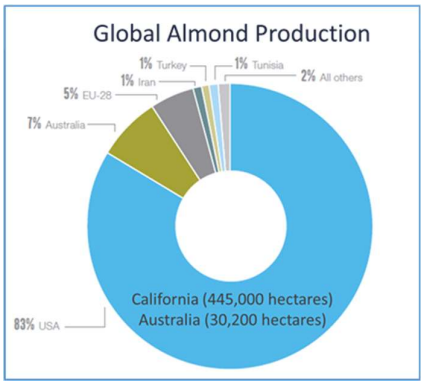
South Africa currently imports approximately 3,000 tons of almonds and only produces at best 300 tons locally from various small-scale fragmented growers. South African's subsequently pay extremely high prices above import parity and still receive relatively poor quality. Furthermore, the anticipated depreciation in the exchange rate alongside insufficient local production, will continue to price almonds at premium prices. This provides us with the ideal opportunity to initially close the price gap to benefit local consumers, and create a robust export market with USD denominated income. Almonds therefore provide growers with an opportune USD/ZAR hedge.

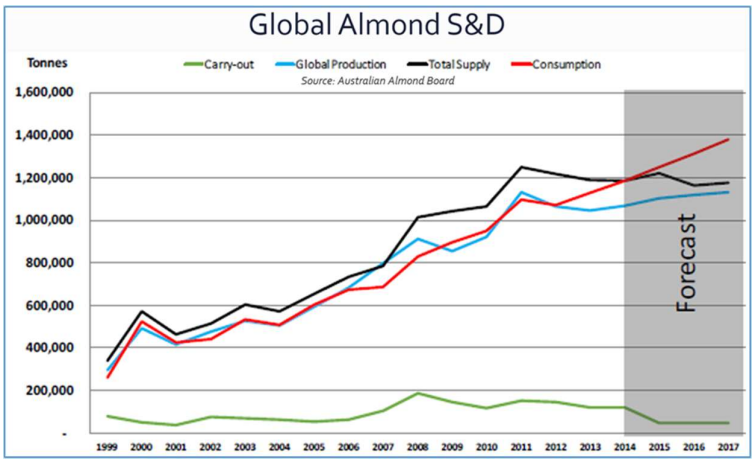




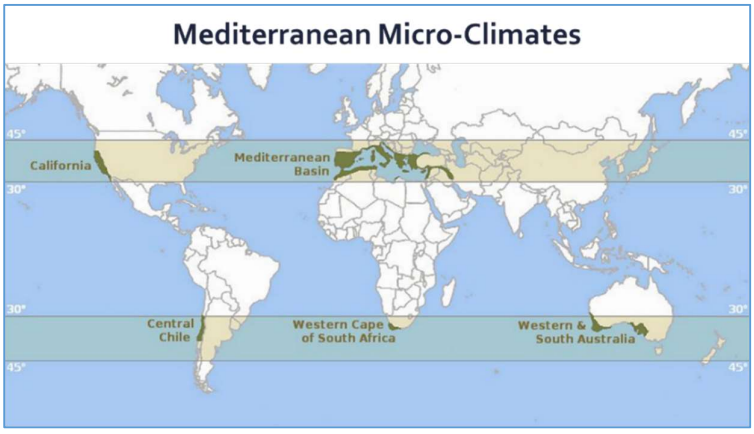
Almonds are arguably the healthiest edible nut and have shown a dramatic growth in consumption over the last decade. This is particularly thanks to a growing population of health-conscious consumers and a growing middle class. From 2010 to 2016, South Africa alone experienced a 14% compound annual growth rate in almond consumption. Consumers have become increasingly aware of the benefits from almonds, which have mono-unsaturated fats, low cholesterol, high protein, vitamin E, dietary fibre, gluten free properties, weight loss benefits, preventative benefits towards diabetes and heart attacks, and reduces cancer mortality.

Global almond production is approximately 1,110,000 tons, with California producing between 77 - 84% of global production. This is followed by Australia with 6-7%, Spain with 4% and Iran with 3% of global production. Almonds only grow optimally in Mediterranean climates with a winter rainfall. However, most of the ideal growing areas in these Mediterranean areas within these countries are now saturated. New plantings are now being considered in marginal areas in these countries, where new cultivars that yield in excess of 3.5 tons per hectare (t/ha) may not yield their full potential. Furthermore, California is experiencing a protracted drought alongside severe ground water stress, which is the primary source of almond irrigation, and which cannot simply be rectified by good rains. In addition, global almond production has only increased by 96% since 2004, while USD supply in millions has increased by 142%. Thus, indicating that our global consumption is not only exceeding global production, but also global total supply as we continue to deplete global carry-over stocks.



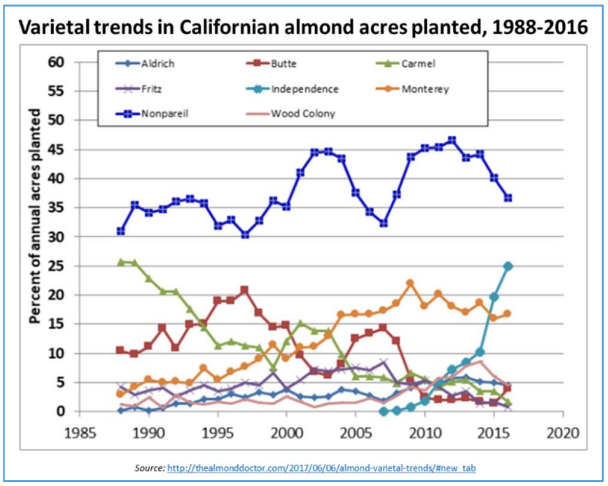


Only South Africa has the right geographical position in terms of day light length and Mediterranean climatic conditions to produce almonds in Sub-Saharan Africa. However, only select micro-climatic pockets within our Mediterranean climate would be suitable for almond production. South Africa nevertheless benefits from counter-seasonal advantages to California and Spain with off-peak fresh production. Australia by way of example receives a marginal price premium to the Californian set price due to their ability to deliver fresh almonds from February due to their counter-seasonal advantage. Furthermore, despite the unique, niche and optimal micro-climatic conditions in the Cape's sub-climatic pockets, we are still a net importer of almonds. This is historically due to competition from other deciduous fruits (apples, peaches, plums, pears) which have proven to be more profitable with industry infrastructure, technical support and affordable labour costs. In addition, almonds have low perishability with a less strenuous cold-chain, and is an ideal substitute for less economically viable hectares under certain wine grapes. There is therefore compelling evidence to support a change in South Africa's almond market dynamics from an investment perspective.



Yield is a crucial determinant of revenue per hectare and is affected by season, management, cross-pollination, tree spacing, micro-climate, soil, water and agricultural techniques. Permanent plantings are a long-term investment with the first conventional commercial almond crop in years 3 to 4 and full production in years 7 to 8. Almond trees are productive for generally 25 to 35 years depending on the cultivar with rotational replanting. The Independence cultivar now accounts for 25% of new Californian plantings and is rapidly gaining momentum as an industry leading cultivar.

ZZ2 (Cape Almonds) has been granted the exclusive master-license to the Independence cultivar by Zaiger's Inc. Genetics and Zaiger SA in Southern Africa. To date, Cape Almonds has partnered with several sub-licensee growers to commercialize the Independence cultivar. Our intention is to establish upwards of 900 hectares through existing owned land and through potential joint venture relationships on an out-grower based model. ZZ2 has long standing and well aligned arrangements with retailers and fruit exporters. These relationships will provide all Independence Growers with a price competitive advantage on an open-book price transparency basis. Furthermore, Cape Almonds has fostered working relationships with technical experts and growers in California, Australia, Europe and Chile, who continue to assist Independence Growers in South Africa with valuable insights.



The Independence cultivar generates superior value for not only prospective farmers, but also consumers. These include:

- Higher yielding capabilities upwards of 3.5 t/ha of clean kernel-meats, whereas as Nonpareil averages 2 to 3 t/ha.
- A higher kernel-meat to shell ratio at 73-78% indicating a better fruit size, as opposed to conventional cultivars with a lower kernel-meat to shell ratio at 60-65%.

- Early stage bearing in years 2 to 3 whereas other cultivars start bearing at years 3 to 4. Thus, demonstrating the precociousness of the Independence cultivar.
- Independence has a lower chill portion requirement at approximately 23.7 CP under the Dynamic Model which was developed by the Israeli's for warmer climates. Alternatively, approximately 400 Chill Hours using the Richardson Model. Therefore, Independence is suitable in areas of the Western Cape where other cultivars would not receive sufficient chill hours to promote uniform and synchronized blooming after rest dormancy.
- Independence has self-compatibility and self-pollinating (monoicous) benefits. It therefore does not require a cross-pollinator tree - thereby effectively doubling the bearing capacity of the preferred cultivar per hectare. By eliminating the necessity for cross-pollinator cultivars, we are able to reduce the dependence on bees for pollination by approximately 25%. Furthermore, cross-pollinators not only reduce yield, but their nuts may also not be mixed with the primary cultivars nut crop.
- Mechanized harvesting with one shake and one harvest as opposed to needing to harvest different cultivars at different maturity stages. A study by the University of California Davis found that harvesting costs are reduced by approximately 20% for sweeping and 30-40% for harvesting with the Independence self-fertility. Thereby significantly reducing logistical and harvest cost structures for growers.
- Flowering buds are tightly packed over branches and evenly distributed over trees, making harvesting easier.
- Earlier harvesting in February to March which reduces the risk of early winter rains. As rain approaches, pathogen and pest problems can exacerbate, and potentially lead to Aflatoxin if not meticulously managed.
- Later flowering in September to avoid any late winter frosts which can kill buds.
- Independence is a soft-shelled variety, thereby ensuring easier and more cost-effective processing as opposed to several hard-shelled Spanish varieties.
- Physically larger and more vigorous almond trees that are compatible with several rootstocks.
- Superior quality with colour and taste considered comparable to the benchmark Nonpareil.

Cape Almonds* Establishment & Production Costs - *for illustrative purposes only			
USD/ZAR	12.5	ZAR	USD
Hectares		1	1
Establishment cost		-R 130,000	$ (10,400)
Production cost up to 6 years		-R 460,000	$ (36,800)
Total cost/ha at first full yield		**-R 590,000**	**$ (47,200)**
$ per pound (lbs)		**$3/lbs**	
ton per hectare		**3.5 t/ha**	
Income @ 3.5 t/ha x ZAR 82,672/t or $3/lbs		R 289,352	$ 23,148
Other income (hulls & shells)		R 9,000	$ 720
Production & Harvesting cost		-R 90,000	$ (7,200)
Processing & Packaging cost @ R7/kg		-R 24,500	$ (1,960)
Marketing cost @ 10% of income		-R 29,835	$ (2,387)
Gross Margin (years 7-25)		**R 154,017**	**$ 12,321**
Overheads 15% of revenue		-R 43,403	$ (3,472)
Earnings Before Interest & Tax (years 7-25)		**R 110,614**	**$ 8,849**

		ton per hectare				
		2.5 t/ha	3.0 t/ha	3.5 t/ha	4.0 t/ha	4.5 t/ha
$ per lbs	$2.0/lbs	R 3,940	R 21,108	R 38,276	R 55,444	R 72,612
	$2.5/lbs	R 29,775	R 52,110	R 74,445	R 96,780	R 119,115
	$3.0/lbs	R 55,610	R 83,112	R 110,614	R 138,116	R 165,618
	$3.5/lbs	R 81,445	R 114,114	R 146,783	R 179,452	R 212,121
	$4.0/lbs	R 107,280	R 145,116	R 182,952	R 220,788	R 258,624

Establishment costs should range from approximately R125,000 to R155,000 per hectare, depending on individual site characteristics. This capital expenditure excludes the purchase of land and the required water of up to 12,500m³/ha including rainfall. Soil preparation, drainage, irrigation installation, trellising/stakes, grafted trees, royalties and planting is included in the establishment costs. Comparative land and establishment in the USA and Australia would cost approximately R1,200,000 per hectare, which is 2-3x more expensive than South Africa. This is principally driven by the costs of labour, land, water, planting material, property taxes, insurance etc.

The highlighted costs and EBIT sensitivity analysis is provided for illustrative purposes. The minimum number of viable hectares is approximately 30 hectares with the support services of Cape Almonds harvesting equipment and processing division to shake, sweep, harvest, haul, hull and shell. Independence is optimally spaced at 6 x 4 meters with a stand of 416 trees per hectare due to its vigorous growth. Production and harvesting costs are estimated to be approximately R90,000 per hectare once in full production and include organic feed, fertiliser, chemicals, irrigation, orchard maintenance, spraying, pruning, harvesting and royalties. Processing and marketing costs are highlighted above for illustrative purposes only, and are yet to be finalized. Overheads are estimated to be 15% of income, but are completely distinctive for each grower. Furthermore, working capital interest and taxes are idiosyncratic for each juristic entity and are additional. Finally, each project will have a unique capital structure and thereby different discount rate affecting the Net Present Value (NPV). However, a relative Real Internal Rate of Return (IRR) of 22% with a payback period of 7 years, excluding interest is considered obtainable and realistic.

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