TIPS

POLICY BRIEF: 4/2016

Maximising niche markets: South African abalone

EXECUTIVE SUMMARY

Aquaculture is the fastest growing food producing sector in the world. Although abalone contributes a relatively small proportion to aquaculture, it is one of the most highly prized, premium seafood delicacies and most sought-after invertebrate (Cook, 2014). Prices for assorted farmed abalone products in South Africa have averaged US$30-50/kg over the last five years, with the value of total legal production totalling US$73 434 900 in 2015, (Brenner, 2015). This figure is projected to rise to US$135 million by 2020. With such high returns, farmed, fished or ranched abalone, can generate foreign currency earnings for the aquaculture industry. In addition, farming uplifts communities along the coastline through generating higher levels of employment relative to other aquaculture activities. This is particularly so where fishing has diminished or been totally discontinued. However, for the industry to remain sustainable and economically viable, four main factors need attention. First, all produced abalone is primarily destined for international markets in Asia. Exploring new export destinations such as the Americas and Europe, which show positive import growth rates, is important if dominant markets were to disappear or collapse. Second, improving branding of South African abalone as a premium product is imperative for sellers to capture its full value and buyers to appreciate its quality. That is its flavour, texture, form and size – a robust animal that travels and can survive well in restaurant tanks, prepared with no preservatives or bleaches added to the brine. In addition, witt South Korea becoming a major producer, differentiating South African abalone is warranted. Third, adapting to trends in packaging preferred by Asian markets, such as sauced abalone in plastic bags. Fourth, illegal fishing worth nearly a billion rand represents loss of income and employment to communities and threatens the quality of legal exported abalone. Rethinking strategies to mitigate illegal poaching is fundamental, such as partnerships between communities and business, and long-term fishing rights which will potentially incentivise fishermen to protect coasts and stocks of abalone.

Trade & Industrial Policy Strategies (TIPS) is a research organisation that facilitates policy development and dialogue across three focus areas: trade and industrial policy, inequality and economic inclusion, and sustainable growth

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It is based on TIPS research commission by the Department of Trade and Industry, *Development of a Medium Term Branding Strategy for South African Abalone Exports.* Authors included: Rodger Krohn, Peter Britz, Lionel Brenner and Gillian Chigumira

INTRODUCTION

Agricultural abalone, commonly known as perlemoen in South Africa, is a sea snail in the mollusc family which generally includes clams, scallops, sea slugs, octopuses and squid. They are herbivores that average one to four years in their growth cycle before they are marketable. Worldwide different species of abalone exist, but *Haliotis Midae* is one of five species endemic to South Africa , native to its shores and most traded (Kgatla, 2015). Abalone worldwide is either farmed on shore or ranched in the oceans. It can be traded live, frozen, dried, and in canned form for meat consumption or sold and traded as decorative objects (ash trays, soap holders) and jewellery. Across the Far East, where abalone is mainly consumed, it is believed to bring great fortune and luck and is consumed for its flavour, described as more rich than scallops with a firm texture similar to calamari. Abalone meat is high in protein and low in fat, making the sea snail an excellent food for sustaining stamina. It is a good source of selenium and adored for its effectiveness as a mood enhancer.

ABALONE WORLDWIDE AND IN SOUTH AFRICA

Worldwide volumes of abalone fisheries (from the ocean) have declined since the 1970s largely due to illegal fishing, which inhibits the natural replenishment of fish. With diminishing stocks, farm production has increased over the years with more than a 750% increase in the years preceding 2010. Since then estimates have shown that farm production has increased by another 158% to reach global supplies of 103,464mt up until 2013. This has seen the share of imports and exports of abalone nowadays comprising mainly of farmed/cultured fish. Worldwide cultured abalone can be sold at any size throughout the year, unlike wild abalone which has a limited market as it is restricted (in South Africa) by minimum harvests and capture restrictions with imposed size limits and quotas. South Africa's current supply of farmed and wild abalone is 1660mt, and represents 2,8% of global supply. Even at this limited level, South Africa is the third largest producer of farmed abalone in the world after China and South Korea, the only producer in Africa, and only breeder of Haliotis Midae. Other producers of abalone (all with capacities below 700mt include: Australia, Chile, Japan, Taiwan, New Zealand and the US) (Cook, 2014).

Abalone is a high-value export commodity that generates foreign currency earnings for the aquaculture industry and more so for a developing country such as South Africa where nearly all of the production is export oriented. Prices for assorted farmed abalone products have averaged $US30-50/kg over the last five years, with the value of total legal production this year at $US73 434 900. Most of existing farms are in the process of increasing their production volumes.

Estimates highlight that this will result in an additional 1200mt of farmed production per annum, boosting total farm production to just over 2300 tonnes per year by 2016. Table 1 shows further estimations from existing and new farms entrants and fished abalone.

Potentially the abalone industry can produce 6 800 tons per annum by 2025, representing a relative proportion of 4.5% from an expected global production of 150 000 tonnes per annum within five years.

Abalone farming and ranching is a potentially high-growth industry as it embodies the scope to become a significant contributor to the social upliftment, revenue and sustainability of rural communities along the coastline of South Africa. Farms tend to generate higher levels of employment relative to other aquaculture activities, particularly in coastal areas where fishing has diminished or has been totally discontinued. Consequently, these areas suffer from high levels of unemployment and poverty within fishing communities.

Abalone farming, by virtue of its inherent potential for continuous production well into the future, presents a viable option for the long-term development of communities and the creation of local enterprises. In general, direct on-farm employment of up to one job per ton of farmed abalone is created. This excludes induced employment for value adding processes and creation of other enterprises associated with the sector. For these reasons, in 2013 aquaculture was identified as a priority sector in South Africa through the Operation Phakisa Oceans Economy (Krohn et al. 2015).

Table 1: Projected farmed and fished abalone in tonnes and US dollars

Year	Tonnes	Value of production in US$
2016	2328	84 771 792
2017	2599	96 532 786
2018	2870	108 730 310
2019	3141	121 377 123
2020	3426	135 038 136

Source: Brenner, 2015

Table 2: Top 5 imports of live fresh or chilled abalone in US dollars

Live, Fresh or Chilled	2010	2011	2012	2013	2014
Japan	46 760 000	63 657	66 402	59 653 000	55 427 000
Hong Kong, China	34 592 000	31 183 000	36 516 000	33 469 000	31 854 000
Vietnam	0	0	0	0	27 086 000
China	0	0	24 152 000	22 635 000	21 555 000
Taipei, Chinese	5 119 000	7 520 000	0	44 000	10 579 000

Source: Trademap, 2015a; 0 = No data available

Table 3: Top 6 imports of prepared or preserved abalone in US dollars

Prepared or Preserved	2010	2011	2012	2013	2014
Hong Kong, China	85 935 000	119 513 000	99 712 000	107 388 000	93 364 000
Singapore	54 002 000	72 348 000	60 440 000	67 838 000	62 666 000
Japan	13 168 000	15 822 000	15 877 000	12 191 000	11 919 000
US	50 97 000	6 929 000	8 290 000	6 848 000	11 374 000
Viet Nam	0	0	648 000	34 000	10 271 000
Taipei, Chinese	11 602 000	8 142 000	0	969 000	9 568 000

Source: Trademap, 2015b; 0 = No data available

TRADE OF ABALONE

The most important driving factor for the abalone industry in South Africa is that production on farms, fisheries and ranching in the ocean is primarily destined for international markets, this renders its trade, export markets and potential markets, fundamental.

Abalone is mainly traded globally along three product lines, live, fresh or chilled (LFC); prepared or preserved (PP) in airtight cans and vacuum bags; or traded frozen, dried or smoked. Global imports of abalone (HS 030781) abalone LFC in the last three years averaged values of US$135 349 000 in 2012; US$126 035 000 in 2013, and $153 041 000 in 2014. Top importers of this product were mainly Asian and included Japan, Hong Kong, China Taipei, China, Macao China, Australia, Republic of Korea, United States of America, Canada and Australia (see Table 2, page 2). Although Vietnam lacks data for years preceding 2013, it imported abalone worth US$27 086 000. Other importers, although at minimal values (below US$10 000), were Thailand and Malaysia (Trademap, 2015a).

Compared to LFC, global imports of abalone PP were higher. Reports show in the last three years global imports of this commodity totalled US$196 495 000 in 2012; US$215 874 000 in 2013, and US$220 809 000 in 2014. Major importers of this product comprised of: Hong Kong, China, Singapore, Japan, United States of America, Taipei-Chinese, Korea, Republic of Malaysia and Macao, China (see Table 3, page 2).

Other importers (below US$100 000) include Australia, Canada, Cambodia, United Kingdom, China, Mexico, France, Belgium, Thailand, and New Zealand, (Trademap, 2015).

Global imports of dried abalone from the Food and Agricultural Organisation (FAO) 2011 illustrate that imports were mainly dominated by Hong Kong, China; Taipei, Chinese Thailand; Singapore Macao, China; New Zealand. Globally frozen abalone imports are mainly imported by Hong Kong – China, Japan Taipei – Chinese, the US, China – Macao, China, Italy United Kingdom, Australia, North Korea and New Zealand, (FAO, 2015) (See Figure 1).

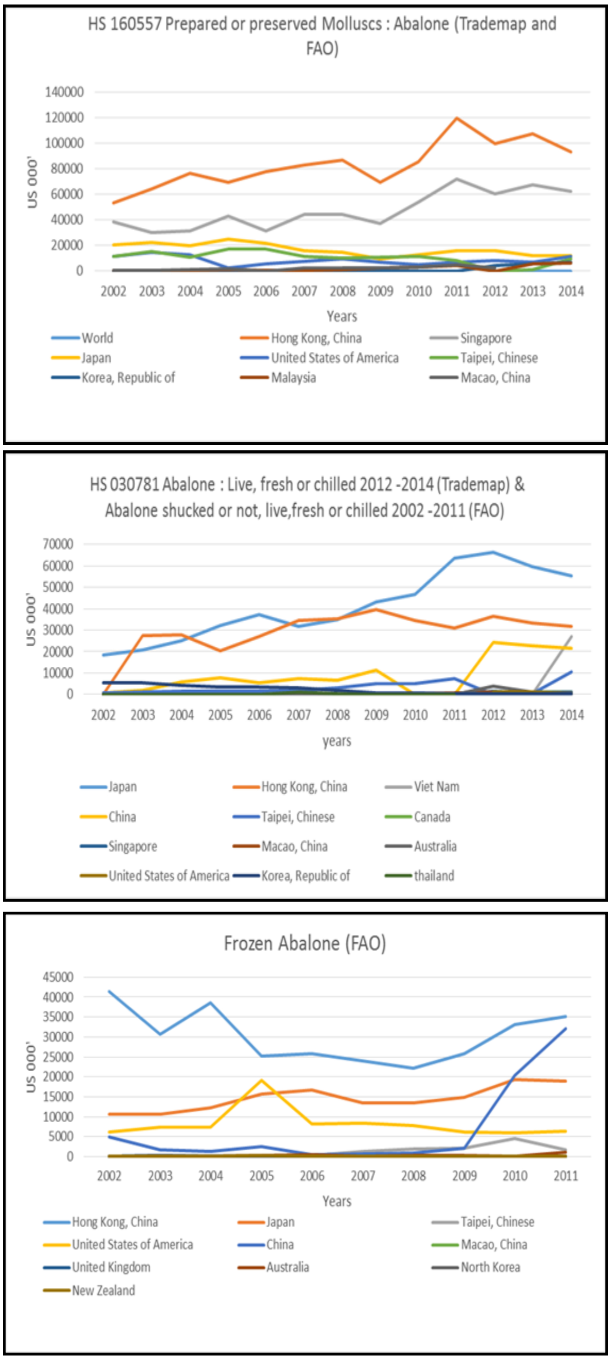
SOUTH AFRICA'S ABALONE EXPORTS

South Africa mainly exports abalone, live, fresh or chilled, prepared or preserved abalone in airtight metal containers and abalone other (dried or frozen), to Hong Kong, China, Taipei – China, Japan, Singapore, Malaysia, Vietnam, South Korea, United Arab Emirates and Australia. These markets are predominantly Asian, with negligible exports to the US, and no exports to other American countries or Europe. However, import growth rates of 2014 illustrate that in the prepared or preserved category, potential export destinations lie in a number of destinations in Asia, the Americas and Europe. (see Table 4, page 4).

Import growth rates of abalone live, fresh or chilled between 2013 and 2014 suggest potential export markets in Asia, the Americas and Europe (see Table 5, page 4)

Other parts of the world such as Israel had very high import rates in 2012 and 2013 of 15259%. Table 6 (page 4) highlights the export potential for abalone other (dried or frozen).

Figure 1: Imports of abalone — prepared or preserved; live fresh or chilled; dried or frozen



Source: Author's own compilation from Trademap, 2015a and FAO, 2015

Table 4: Import growth rates of abalone prepared or preserved

Country	Import growth rates in 2014	Country	Import growth rates in 2014
Taipei, Chinse	877%	US	66%
South Korea	13%	Mexico	51%
Malaysia	11%	France	2%

Source: Trademap, 2015b

Table 5: Import growth rates abalone live, fresh or chilled

Country	Import growth rates in 2014	Country	Import growth rates in 2014
Taipei, China	877%	US	66%
South Korea	13%	Mexico	51%
Malaysia	11%	France	2%

Source: Trademap, 2015a

Table 6: Import growth rates abalone dried or frozen

Country	Import growth rates 2013-2014	Country	Import growth rates 2013-2014
Taipei, Chinese	2839%	US	14%
Thailand	611%	Canada	8%
Hong Kong	6%	Spain	454%
Japan	5%	Switzerland	250%
Singapore	7%	Greece	50%
Bahamas	175%	UK	86%

Source: Trademap, 2015c

Although South Africa exports prepared or preserved abalone, it does so mainly in the canned form. Diversifying the range of products in this category may boost demand particularly from Asia, where abalone is enjoyed sauced or packaged in airtight plastic bags that contain a maximum of four abalones (see Tables on page 5).

As abalone is consumed mostly by Asians for delicacies, celebrations, gifts and festivals, potential export markets could also exist in Asian populations across the globe. Statistics show Vancouver in Canada has the largest percentage of residents of Asian heritage of up to 43%.

Other major cities with Asian populations are San Francisco (33%), London, England (21%), Metro Toronto (35%), Calgary (23%and Sydney, Australia (19%). For Vancouver, it has been reported that the number of people with Asian roots will continue to grow at a faster rate than non-Asian populations with ramifications for more Asian-orientated restaurants.

Trade wise, South Korea is now a major supplier of abalone to the world market. Farm production, which is estimated to have increased 60 times over the past 10 years, totalling about 4 500 mt in 2007, 6 288 mt in 2010, and is estimated to reach over 10 000 mt by 2015 (Cook, 2014).

Korean aquaculture production has the capability to put downward pressure on abalone prices. This makes it essential to distinguish South African abalone from other products to re-establish its image as a premium species and maintain a higher price than Chinese and Korean farmed abalone (Krohn et al, 2015).

Abalone in South Africa (both farmed and wild), is a premium species with superior product characteristics, though it is produced in relatively small quantities. From a branding perspective, the country has the appropriate geography (unpolluted – the Atlantic, Southern and Indian Ocean), which has the only *Haliotis Midae* or perlemoen species in the world. South African abalone is highly prized in the markets due its flavour, texture, form and size. It is also highly valued by importers because it is a robust animal that travels well and can survive well in the restaurant tanks, which is the preferred style in Hong Kong. South African canned abalone is also highly favoured as no preservatives or bleaches are added to the brine as is done with Australian abalone (Krohn et al, 2015).

Table 7: South African exports HS160557 prepared or preserved abalone in US$

Country	2012	2013	2014	2015	Total
Hong Kong, China	6,127,000	12,742,000	11,843,000	13,386,000	44,098,000
Singapore	111,000	1,048,000	2,325,000	1,890,000	5,374,000
Malaysia	0	252,000	225,000	212,000	689,000
China	0	0	309,000	161,000	470,000
Taipei, Chinese	0	0	205,000	138,000	343,000
Japan	0	0	5,000	0	5,000
Mauritius	0	0	253,000	0	253,000
Seychelles	0	117,000	0	0	117,000

*Source: Author's own compilation from Trademap, 2016; 0 = no dat*a

Table 8: South African exports HS030798 abalone other, frozen, dried or in brine in US$ 000'

Contry	2012	2013	2014	2015	Total
Hong Kong, China	16171	9456	18150	19882	63659
Taipei-Chinese	50	93	4036	4917	9096
Japan	245	0	3516	2345	6106
Singapore	1499	632	1618	1545	5294
Malaysia	561	152	460	361	1534
Vietnam	0	0	23	78	101
China	17	12	715	61	805
United Arab Emirates	0	21	1	32	53
Namibia	1	10	0	2	15
Korea, Republic of	0	16	0	0	13
Zambia	0	0	2	0	2

*Source: Author's own compilation from Trademap, 2016; 0 = no dat*a

Table 9: South African exports HS03079100 abalone live, fresh or chilled in US$

Country	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	Total
China	690755	1037026	0	227064	0	0	0	832775	383103	104302	3275025
Hong Kong	9781163	10444809	15117904	8207094	2903671	0	0	13542251	17718597	9228256	86943745
Japan	2429721	2071862	1663791	1049368	669940	0	0	1324955	1762786	290588	11263011
Republic of Korea	0	0	0	0	0	0	0	0	0	0	0
Malaysia	485601	309372	0	104441	30214	0	0	0	49263	37009	1015900
Singapore	1125656	416152	274918	162963	35136	0	0	90095	143317	47556	2295793
Taiwan	62075	507599	820789	1002195	928923	0	0	3628583	4581622	1158784	12690570

Source: Author's own compilation from Quantec, 2015 ; 0 = no data

ILLEGAL ABALONE FISHING

A major threat to the economic viability of the abalone value chain is illegal poaching. Over the past 15 years illegal fishing has surpassed both legal (total allowable catch –TAC) and farmed abalone (see Figure 3). It carries with it high social and economic costs. Economically, illegal abalone is sold at low prices compared to its true market value, negatively affecting the market and damaging the high quality branding associated with legal abalone. It has been estimated that over 2 000 tons of illegally captured abalone have a financial implication worth nearly a billion rand, which should be taxed, in addition to loss of income and employment to communities a year.

PRODUCTION TRENDS IN ASIA AND SOUTH AFRICA

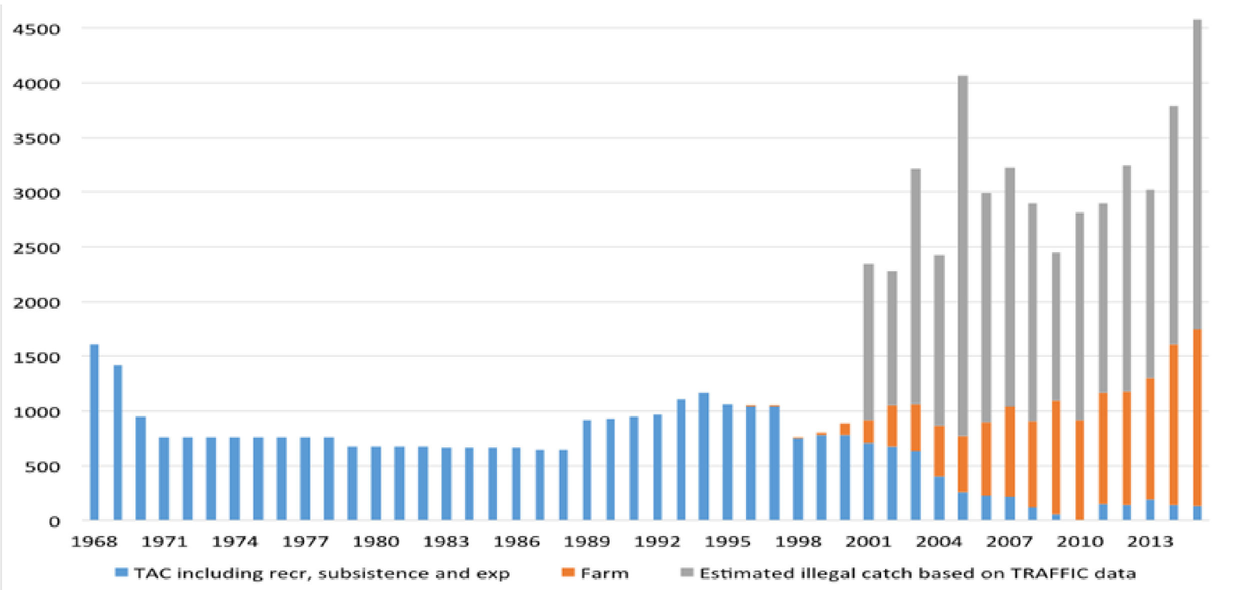
Although China dominates as the lead producer, its stock of *Haliotis diversicolor* and *Haliotis discus hanai* are not native to China. Its farmed stock is produced from farm-reared broodstock, which has resulted in a serious problem of inbreeding depression. This has made the abalone perform poorly in "aquaculture conditions, particularly in having lower fecundity and lower disease resistance". In addition to this, shortage of feed has posed a real danger to the aquaculture industry and other industries. As abalone are generally fed seaweed (Gracilaria) in cages, overharvesting, declining stocks and increases in the production of abalone have resulted in insufficient the highly priced feed, posing a threat to sustainable production, (Cook, 2013).

With 14 active producing farms and new farms in the pipeline, future collaborations with the East to extend production in South Africa or grow feed and export feed may provide economic opportunities for the aquaculture industry. Experiments which have been run in Saldanha Bay, South Africa, have proved to be ecologically and possibly economically feasible.

CONCLUSION

Identified as a priority sector through Operation Phakisa Oceans Economy, it becomes worthwhile to explore abalone's sustainability as a premium mollusc and its economic viability. Illegal poaching, which continues to erode millions in revenue for the industry, may require strategic approaches such as long-term ranching or fishing rights to incentivise stock and rehabilitation of abalone. With growing local production, the possibility of a decline in exports to the dominant market exists and maximising non-traditional international markets such as the Americas and Europe (which are exhibiting positive import growth rates) as well tapping into growing Asian populations across the globe is imperative. With the characteristics peculiar to South African abalone (taste, size, survival rate, free from preservatives and bleaches, and farmed or fished in safe waters), branding the commodity will help show its premium status and possibly better prices.

Figure 3: Legal, farmed and illegal abalone fishing in tonnes



Source: Britz and Raemaekers, 2015

The following **recommendations** are proposed:

1. Investment in export strategies and incentives to grow the market share in existing markets and establish a presence in new markets which exhibit positive import growth rates and growing Asian populations such as Canada (Vancouver, Toronto and Calgary), San Francisco, US and London, England.
2. Investment in developing direct links with trading and marketing companies in traditional export markets rather than through intermediaries, and expanding into new markets that exhibit high import growth rate potential.
3. Investments in direct and generic brand promotion strategies of South African Abalone and its premium properties to restaurants, the hotel industry, media (online and in magazines or newspapers), to chefs, instore promotions, and seafood expos in high importing countries.
4. Increasing production through investments in ranching to support more experimental trials which will commercially benchmark the technology and risk before investments in large-scale seeding. This is primarily to expand seed production capacity and develop linkages with the appropriate equipment manufacturers.
5. In the case of illegal poaching, partnerships of communities, business and government should be given long-term ranching or fishing rights to incentivise stock and rehabilitation of abalone and anti-poaching activities as benefits will accrue to all stakeholders.
6. Increasing participation of new entrants, particularly previously/historically disadvantaged people and communities through:

   - Building infrastructure such as processing facilities for value addition of wild abalone caught legally, which supports and encour ages sustainable employment and generates income in the aquaculture industry.

   - Investment in building hatcheries or reseeding infrastructure run by previously/historically disadvantaged people and communities to ensure that in each zone spawning biomass recovers to 40% of prevailing levels within 15 years.

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