HORTI-SEMPRE
Smart Solutions
for Smart Agriculture

WARESTA HORTICULTURAL INDEX

Trends 2013-2018

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HORTI-SEMPRE: WARESTA HORTICULTURE INDEX 2018

The WARESTA Index report profiles the Northern Mozambique's (Nacala corridor) vegetable wholesale market dynamics and price metrics. The report draws on daily market data collected by the Swiss Agency for Development Cooperation (SDC) funded Horti-Sempre Project, in collaboration with the Nampula Horticulture Produce Wholesalers Association (AGROWAM) at the Northern Mozambique's biggest horticulture produce wholesale market called WARESTA.

The WARESTA Index report is designed to provide stakeholders with a complete short and long-term wholesale market dynamics and value-added trends of horticulture products. It provides insights on the:

- Traded crop volumes as indicators of the consumption and or demand of horticultural products in Northern Mozambique;
- Origin and specific production districts of the horticultural products. It draws the distinction between what is produced locally i.e. inside the Nacala Corridor, which is the geographical focus area for the Horti-Sempre Project, and imports from outside the corridor which could be from other provinces or foreign countries;
- Horticultural profiles of the districts, specifically the different crops produced in the different districts;
- Seasonality of the traded volumes;
- Price trends at wholesale level.

The WARESTA wholesale market covers approximately 20% of the total volumes traded in Northern Mozambique. In general, the index has high coverage and is a reliable indicator for:

- Crops such as tomatoes, peppers and carrots mostly consumed in urban centers but produced in rural districts;
- Crops like onions, potatoes and garlic mostly produced as cash crops;
- Vegetable origin - Districts / areas producing specific crops with the WARESTA market as the vegetable hub.

The index has low coverage and limited reliability for:

- Crops that by-pass the WARESTA market such as lettuce and kale that are commonly sold directly to consumers by the producers and hence don't pass through the WARESTA market;
- Crops that have a high incidence of consumption in the confined local areas of production with little surplus for trade and hence do not reach WARESTA wholesale market; for example cabbages produced in Ribaue;
- Districts / Areas that have developed their own parallel supply chain alternative to the WARESTA wholesale market i.e. Nacala.

Note: The WARESTA index does not represent all market activities. It denotes a sample of the market and is a good indicator of the horticulture market trends and tendencies. It should therefore be used to analyze trends, tendencies and percentages rather than absolute values and therefore should be used for general informational purposes.

1. Total crop volumes traded in period 2017 - 2018 vs. 2013 – 2018 (Traded volumes as proxy indicator of consumption)

The main objective of the Horti-Sempre Project is to promote horticultural production and consumption in the Nacala Corridor in-order to enhance the nutritional diet of the population which is currently skewed towards cereals and tubers. It also seeks to generate additional income opportunities for smallholders through the sale of vegetables in the market.

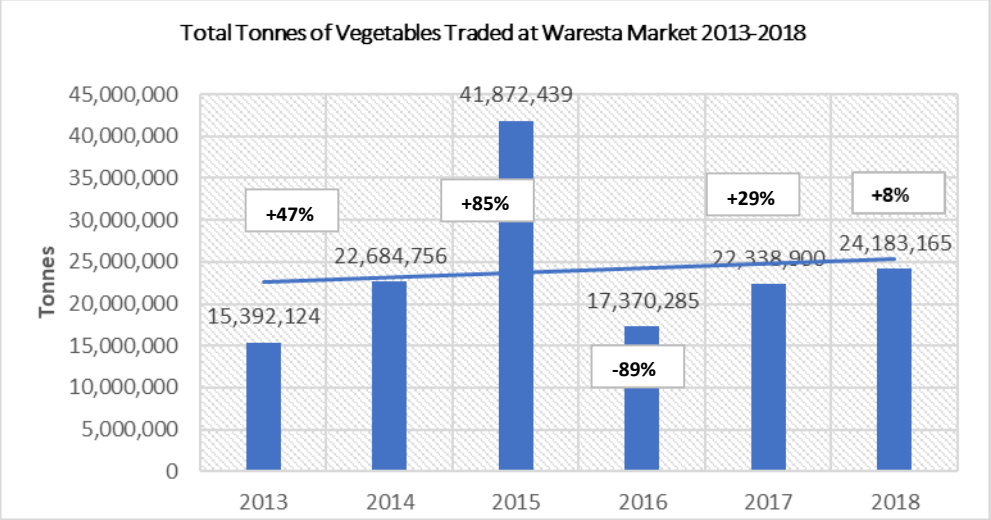
Despite being low cost, labour intensive and cultivated on small household plots, horticulture cash crop production is a considerable income generator for the farmers in the Nacala corridor. Continued support by stakeholders is essential to establish and forge a breakthrough in a strong horticulture value chain base.

This section will use traded volumes of horticulture products as a proxy indicator for consumption of vegetables.

GENERAL TRENDS: 2013 - 2018

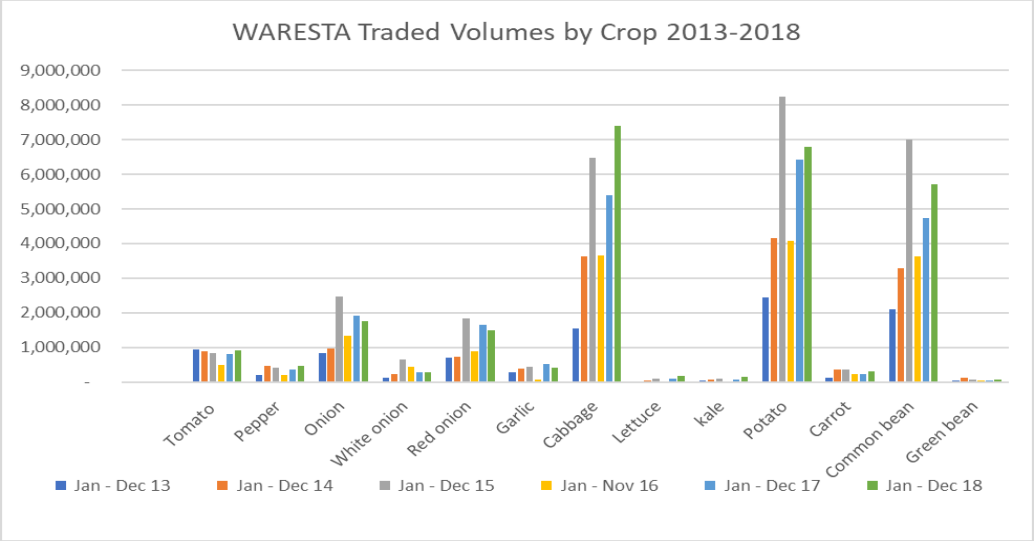
- There was a notable gradual increase in consumption of vegetable products following the 2016 drastic fall after the untimely economic crisis;
- From 2016, there was an overall total growth in traded volumes by 37% of which 8% was attributed to the increase over the 12 month period from 2017 to 2018.

Figure 1: Traded volumes in tonnes at the WARESTA Wholesale Market (2013 – 2018)



Source: Horti-Sempre & Association of Horticultural Wholesalers of Nampula *(AGROWAM) data*

Figure 2: Traded volumes by crop at the WARESTA Wholesale Market (2013 – 2018)

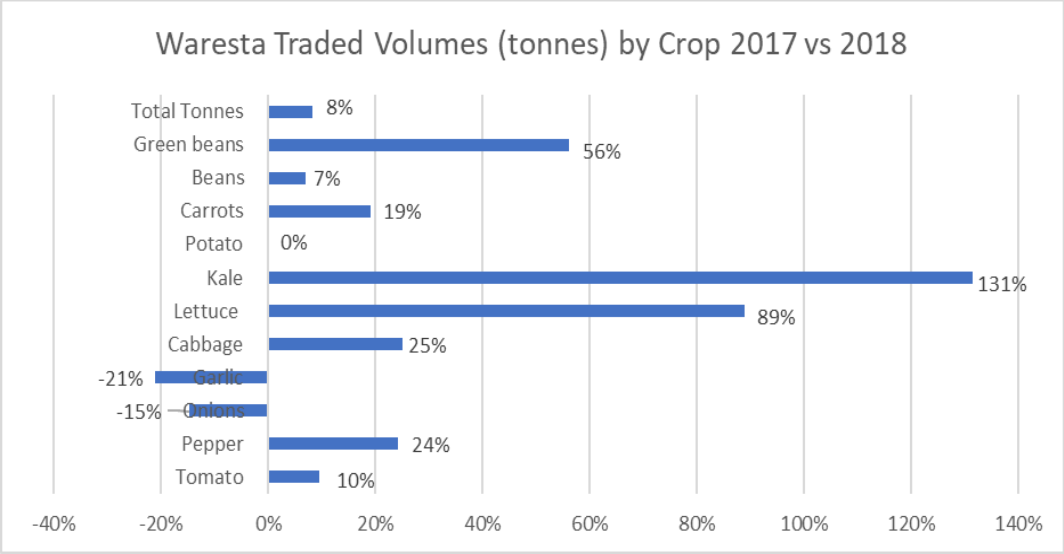


Source: Horti-Sempre & Association of Horticultural Wholesalers of Nampula *(AGROWAM) data*

- Cabbages, potatoes and common bean are the bulky products traded in high volumes at WARESTA;
- There is a noted increase in traded volumes in almost all products except onion and garlic whose decline could be caused by the continued use of degenerated seed varieties yielding less marketable produce per unit area aggravated by sale of the crops in their vegetative growth state, and hence don't reach maturity to be sold as mature bulbs.

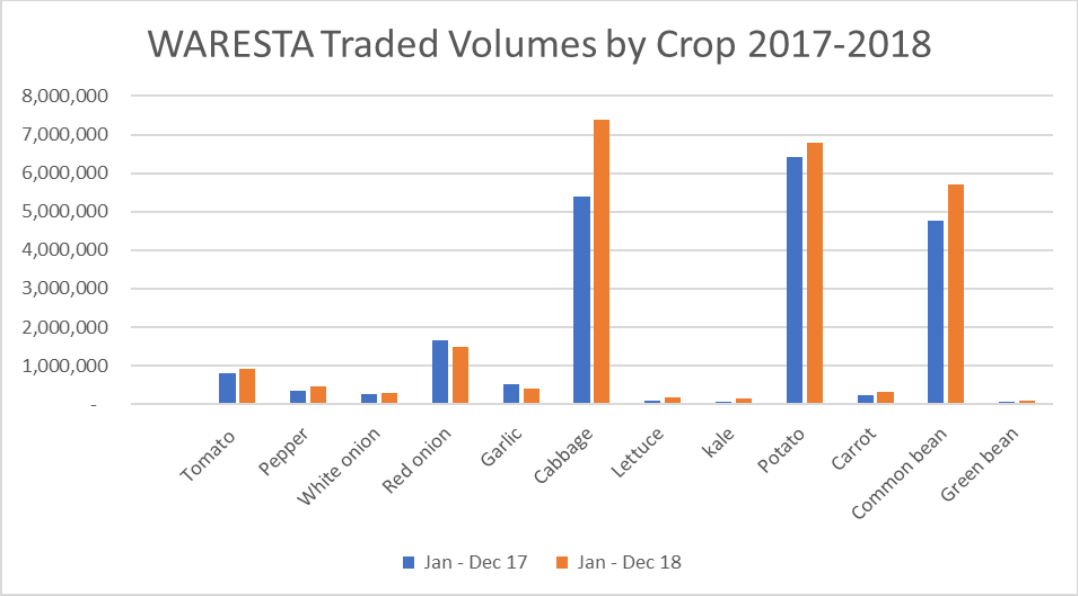
SHORT TERM TRENDS: 2017 vs 2018

Figure 3A: Traded volumes by crop at the WARESTA Wholesale Market (2017 vs 2018)



Source: Horti-Sempre & Association of Horticultural Wholesalers of Nampula *(AGROWAM) data*

Figure 3B: Traded volumes by crop at the WARESTA Wholesale Market (2017 vs 2018)



Main findings:

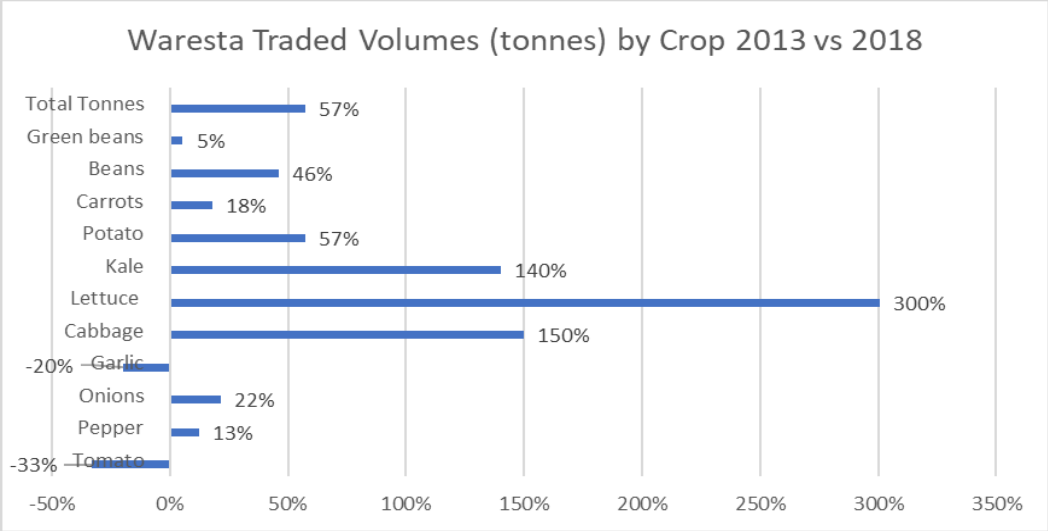
- Kale, lettuce and green beans registered the **highest production index increase** with a high of 131%; 89% and 56% respectively despite their small traded volumes given that they usually by-pass Waresta and are sold directly to consumers by the producers, see figure 3A.
- Onion (-15%) and garlic (-21%) registered a notable decline in production trend. Under onions the red onion contributed more to the decline mostly given that there is higher level of red onion production using degenerated seed.

MEDIUM/LONG TERM TRENDS: 2013 vs 2018

Main findings:

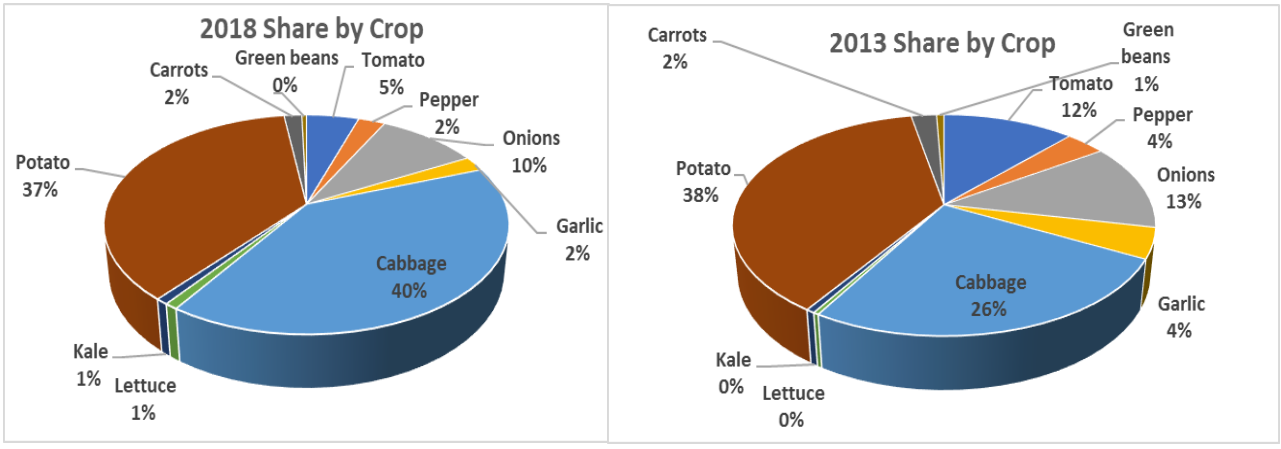
- Leafy vegetables lettuce, cabbages and kale registered the greatest growth of 300%; 150% and 140% respectively since 2013, see figure 4.
- Potatoes, carrots, and cabbages maintained a relatively steady share of the market over time with cabbage increasing market share by 14% and clocking a high of 40% by end of 2018, see figure 5.

Figure 4: WARESTA Wholesale Market Traded volumes (tonnes) by crop (2013 vs 2018)



Source: Horti-Sempre & Association of Horticultural Wholesalers of Nampula *(AGROWAM) data*

Figure 5: Traded volumes market share (% by crop) at the WARESTA Wholesale Market (2013 vs. 2018)



Source: Horti-Sempre & Association of Horticultural Wholesalers of Nampula *(AGROWAM) data*

- Tomatoes, garlic, onion, pepper, green beans, all registered reductions in market share as a general trend.

CONCLUSIONS AND IMPLICATIONS FOR DEVELOPMENT PROJECTS AND HORTICULTURAL PLANNING IN THE VEGETABLE CONSUMPTION AREA

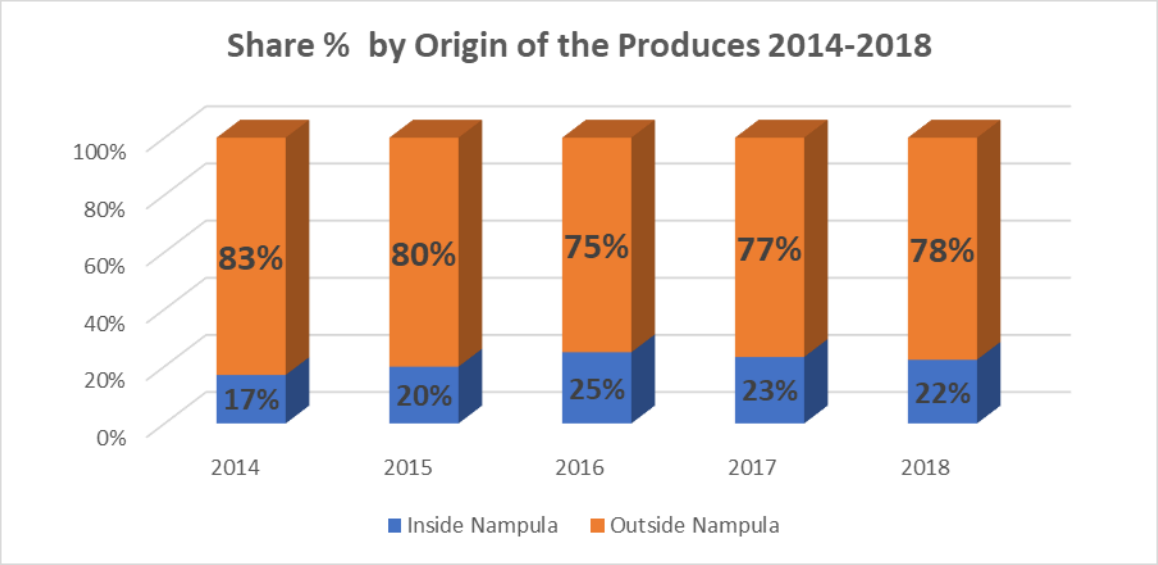
- Over the 5 year period from 2013 to 2018, the overall vegetable consumption trend increased by 57% in the Nacala corridor as per the WARESTA traded volumes.
- There was a notable exponential growth in consumption of leafy vegetable products mainly lettuce, cabbages and kale.

2. Origin of the produce in 2013 - 2018 (Competitiveness of local production vs production from outside the Nacala Corridor)

One of the Horti-Sempre Project objectives and of paramount importance is to increase local production of vegetables within the Nacala Corridor and reduce reliance on 'outside production' which comprises imports from other provinces in Central and Southern Mozambique and from abroad. It seeks to generate additional income for the producers, lower transportation costs and eventually reduce the prices of horticultural products making them more affordable for consumers.

ORIGIN OF THE PRODUCE: SHARE OF 'INSIDE THE CORRIDOR' VS 'OUTSIDE THE CORRIDOR'

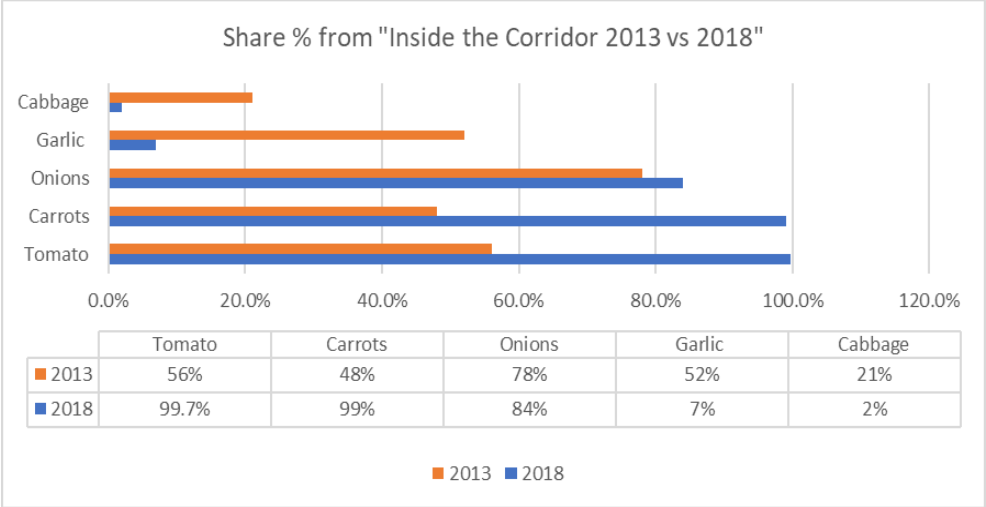
Figure 6: Total traded volumes by origin: Inside and Outside the Nacala Corridor (2014 – 2018)



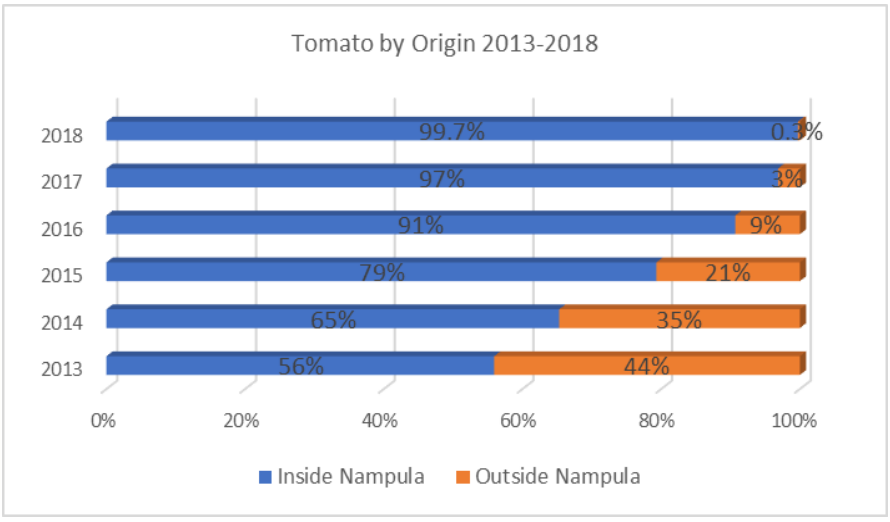
Source: Horti-Sempre & Association of Horticultural Wholesalers of Nampula *(AGROWAM) data*

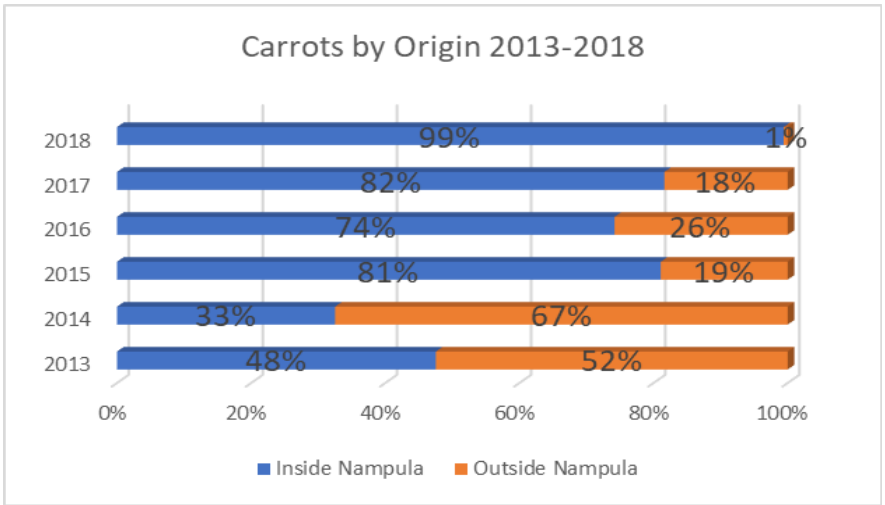
The share of vegetables produced 'Inside the Nacala Corridor' steadily increased from 17% to 25% between 2014 and 2016, see figure 6. There was a minor decline in the Nacala Corridor produced vegetables in 2017 and 2018 dropping to 22% despite considerable increased competitiveness and dominance of Nacala corridor produced vegetables such as tomatoes, carrots, onion, lettuce, kale, peppers and others.

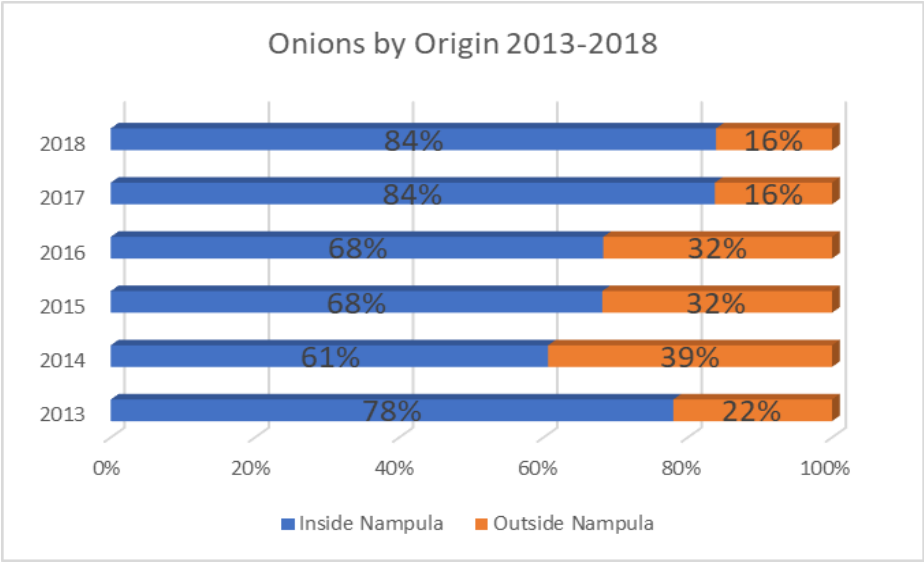
Figure 7: Total crop traded volumes by origin (2013 – 2018)



	Tomato	Carrots	Onions	Garlic	Cabbage
2013	56%	48%	78%	52%	21%
2018	99.7%	99%	84%	7%	2%

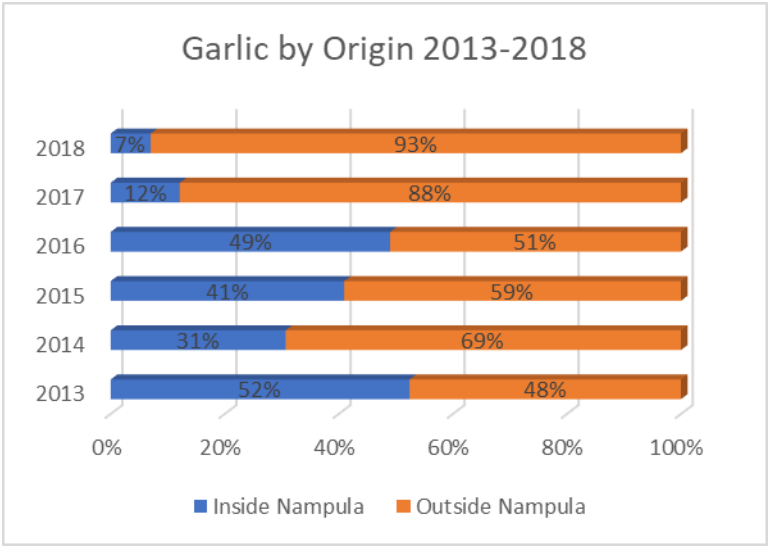


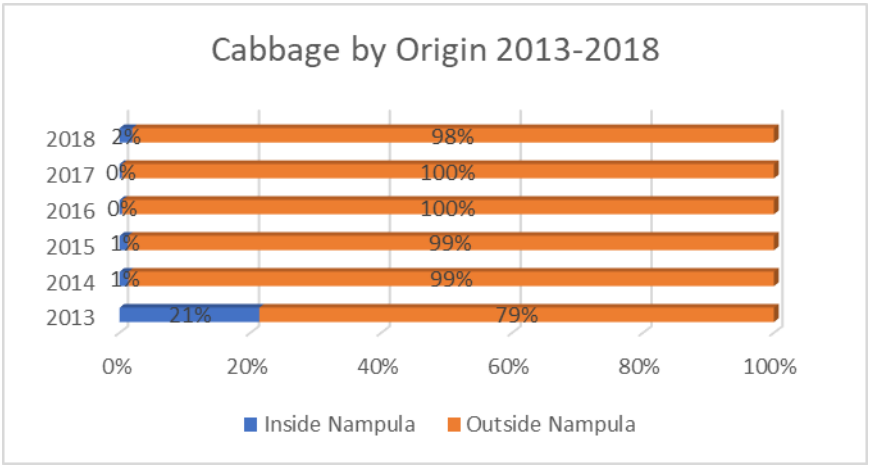




Between 2013 and 2018, the Nacala Corridor **tomato** production gained more competitiveness against imports to the extent of self-sustaining 99.3% of the traded volume against the 56% traded in 2013. High competitiveness also extended to **carrots** with 99% of the traded volumes in 2018 produced 'Inside the Corridor', versus just 48% in 2013. **Onions** also increased traded volumes to 84% in 2018 against the 61% traded in 2014.

The Nacala Corridor remains poorly competitive in the production of crops such as **cabbage** and **garlic** that are predominantly supplied from 'Outside the Corridor'. By end of 2018, garlic produced within the corridor captured just 7% market share as compared to 52% in 2013. This massive decline has mainly been caused by the introduction of imported garlic from China, with larger and more attractive bulbs that have greater consumer appeal and better competitive advantage over local varieties.





Cabbage has historically been imported from outside the corridor. Only 2% of cabbage was produced locally (inside the corridor), an improvement from 2017 which had registered 0%.

Lettuce, couve and **peppers** were produced within the 'Nacala Corridor' as a constant since 2013. The high perishable nature of these products has given them a great competitive advantage over imports from other provinces and or countries. Only 0.2% of the peppers were imported to fill in some niche demands.

Almost 100% of **Potatoes** were received from 'Outside the Corridor' with Angónia and Tsangano capturing 95.9% and Maputo/South Africa 3.9%. No major changes were registered between 2013 and 2018. Malema is emerging as a potential potato producing district within the Nacala corridor registering 0.1% of the production.



100% PRODUCED 'INSIDE THE CORRIDOR'

99.8% PRODUCED 'OUTSIDE THE CORRIDOR'

CONCLUSIONS AND IMPLICATIONS FOR DEVELOPMENT PROJECTS AND HORTICULTURAL PLANNING WITH REGARDS TO ORIGIN

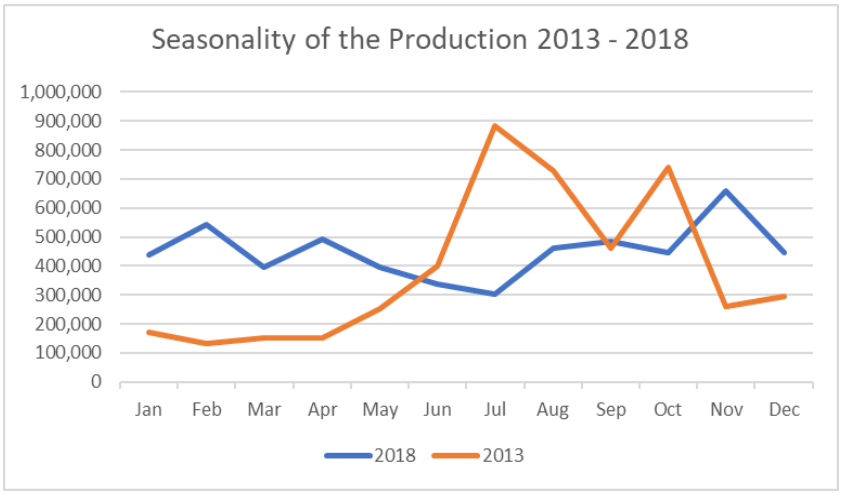
- Crops such as tomatoes, carrots, onions have increased their competitiveness since 2013 (the start of the Horti-Sempre Project) with proven increased production within the Nacala corridor.
- There lies a great opportunity in **cabbage, garlic and potato**, production given the dominance of imports of these products in large quantities into the Nacala corridor. A few farmers that have tried potato production in Malema have already reported positive and encouraging results. Good garlic varieties with large bulbs need to be promoted including the Horti-Sempre introduced variety, in-order to recapture the market that has almost completely shifted towards the imported garlic. Promotion of these additional crops will increase diversification and income opportunities for farmers in the Nacala corridor.

3. Seasonality of the Production Overlook (2013 – 2017) (Increasing 'Off-Season' Production)

One of the paramount objectives of the Horti-Sempre Project is to reduce the seasonality of vegetable production in the Nacala Corridor that has historically been concentrated in the cold and dry season from April to August with limited supply (or reduced in the case of some crops) in the hot and wet months from September to March.

OVERALL SEASONALITY

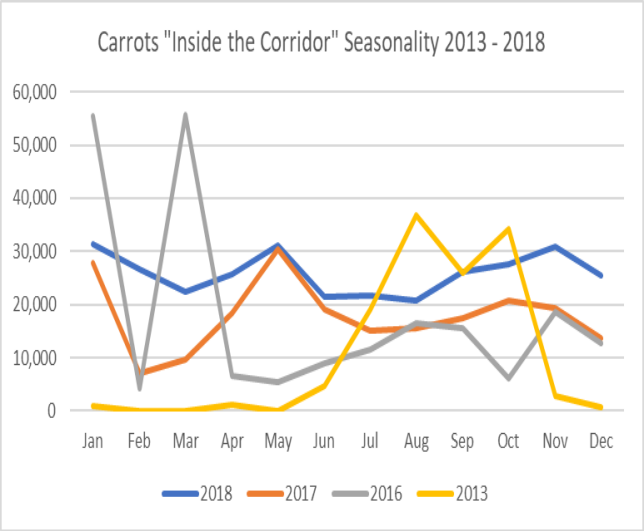
Figure 8: Seasonality of the Production from 'Inside the Nacala Corridor' (2013 – 2017)

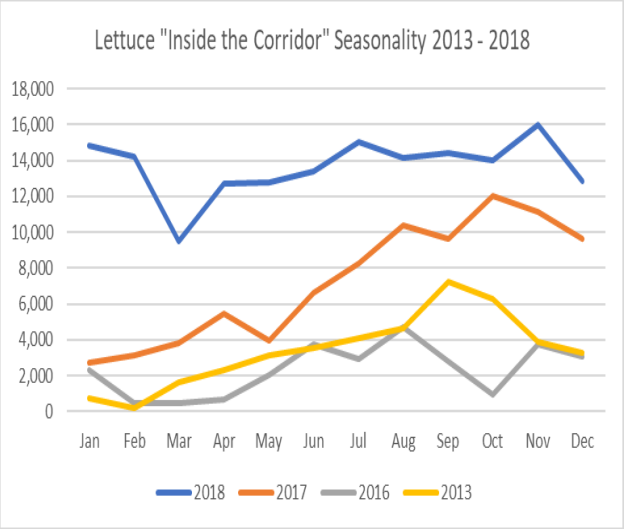


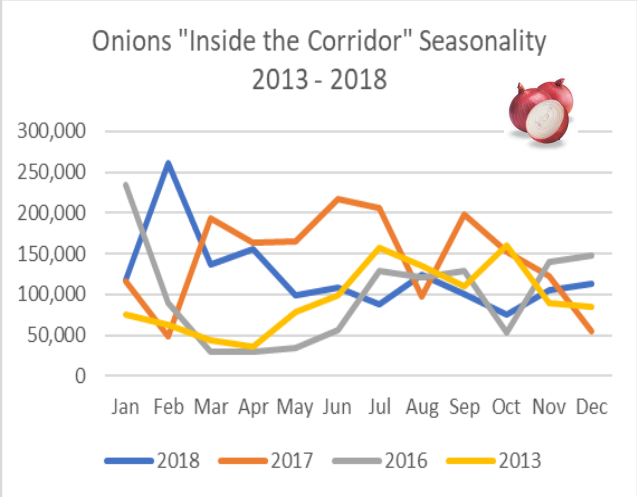
Source: Horti-Sempre & Association of Horticultural Wholesalers of Nampula *(AGROWAM) data*

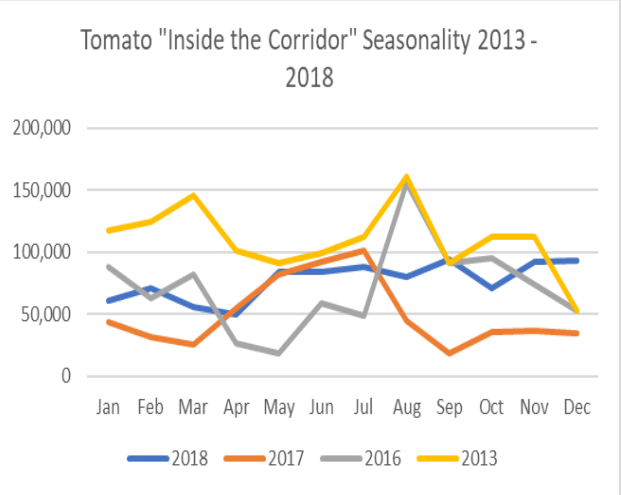
From 2013 to 2018, the vegetable production in the Nacala Corridor has stabilized and become less erratic/seasonal as in figure 8. Production within the hot and wet season (summer) considerably increased by up to 100% in some months as compared to 2013. The erratic nature of production during the cold and dry season (winter) significantly reduced.

SEASONALITY BY CROP









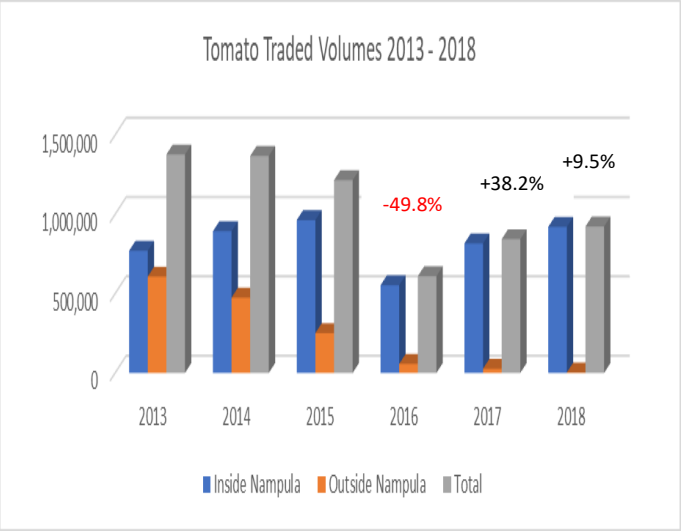
Carrots, lettuce and tomatoes registered constant non-erratic production and supply in 2018 during in-and-off season period as compared to other years whilst onion registered erratic supply.

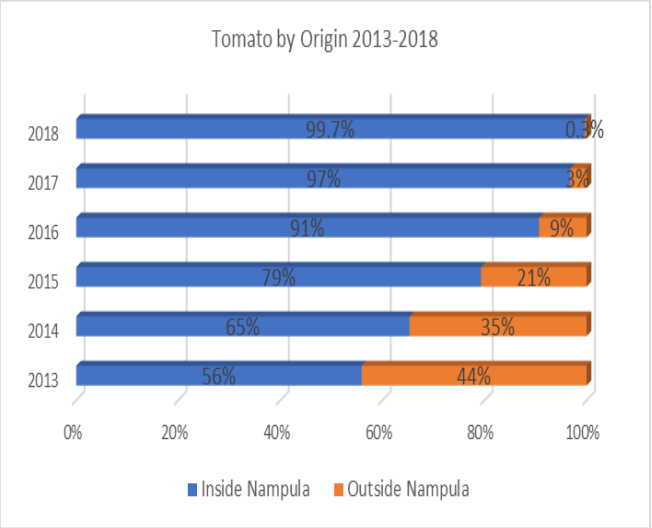
CONCLUSIONS AND IMPLICATIONS FOR DEVELOPMENT PROJECTS AND HORTICULTURAL PLANNING WITH REGARDS TO SEASONALITY

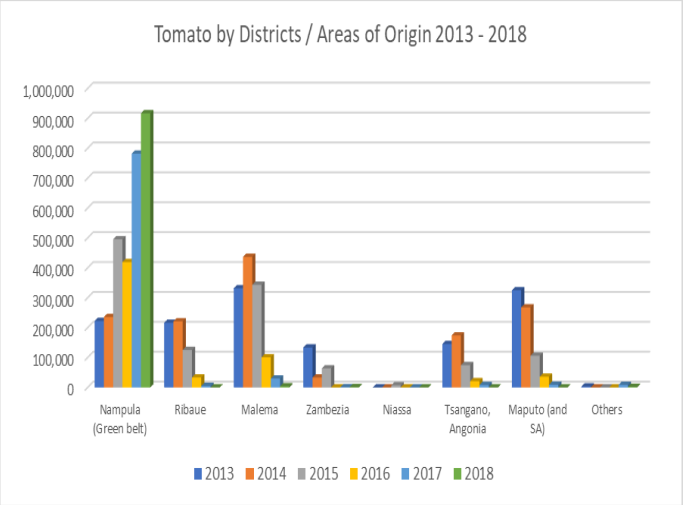
- The deseasonalized production of vegetables in the Nacala Corridor has significantly progressed between 2013 and 2018.
- Best results in terms of deseasonalized production have been obtained with carrots, lettuce and tomatoes.
- The deseasonalized production process which started in 2013 also reflects Horti-Sempre interventions supporting the introduction of tropical hot varieties, (eg. Kale-"1000 folhas", 'early-maturing' Cabbage - 50 day maturity); tomato IPA 6 variety and Good Agricultural Practices and techniques for all year round production.

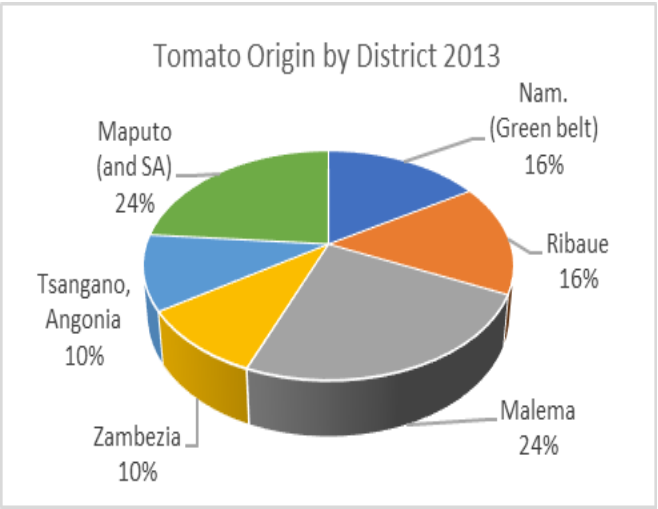
4. Crop Analysis Overlook (2013 – 2018)

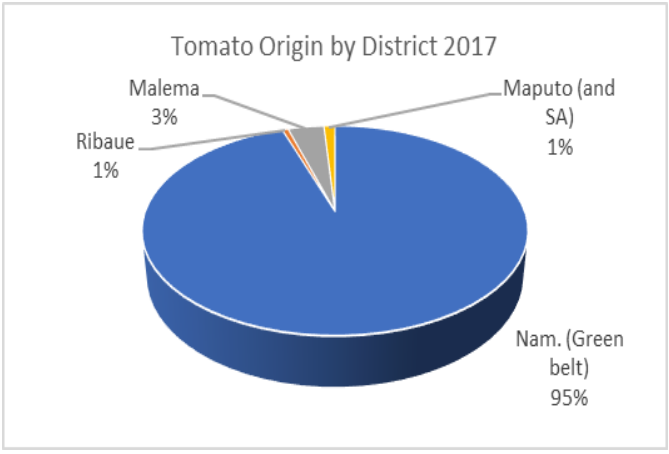
4.1 TOMATOES

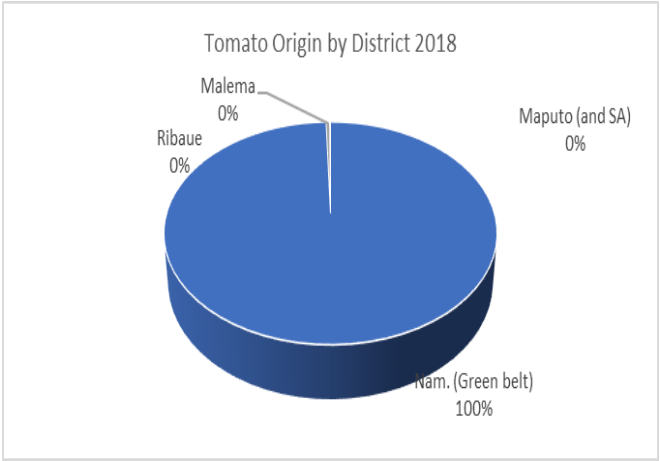






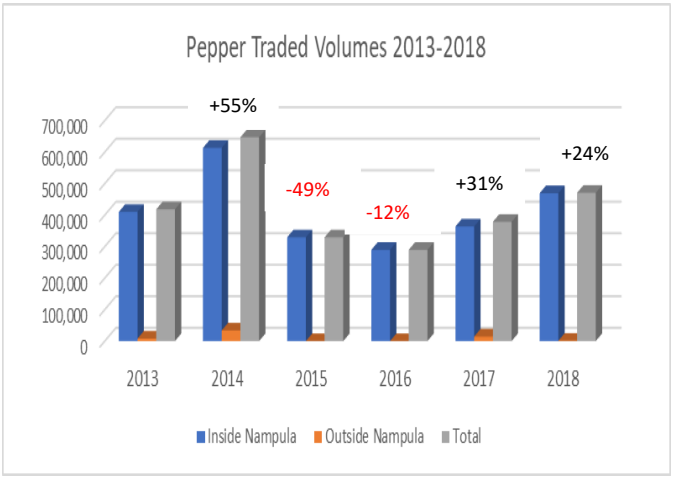


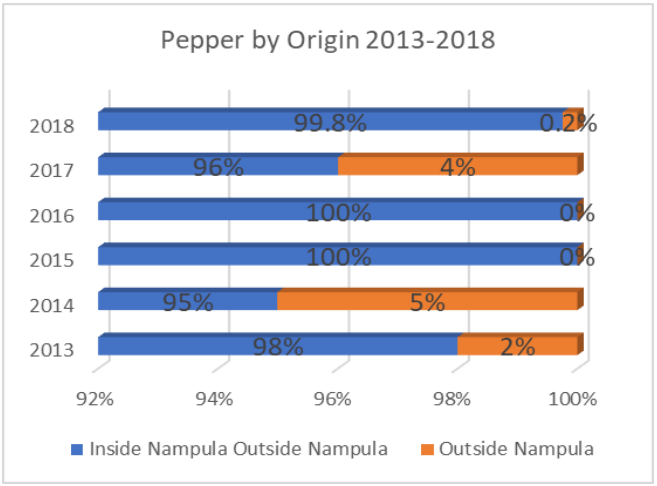


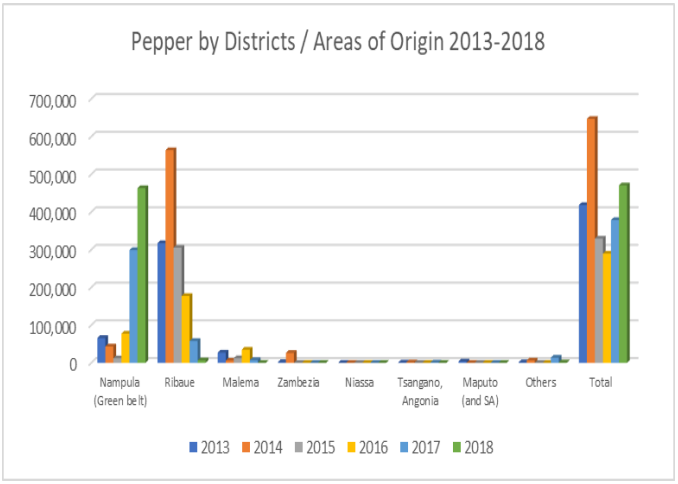


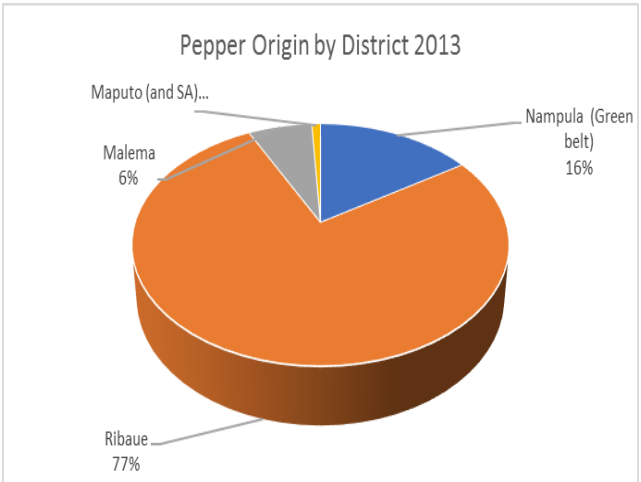
SUMMARY: TOMATO TRENDS	
Consumption	▪ There is a general trend showing the recovery of tomato traded volumes / consumption after the 2016 decline following the economic depression. There has so far been a positive consumption index of 47.7% since 2016 with 9.5% attributed to 2018. This confirms the fact that tomato consumption was greatly affected by the economic crisis that eroded the purchasing power of the urban-middle class of the Nacala Corridor where tomato consumption was previously higher. The 2018 tomato consumption is still 32.9% below the 2013 consumption level.
'Inside-Outside the Corridor'	▪ Tomato production inside the corridor gained competitiveness from 2013 to the extent that by 2018, 99.7% of the entire tomato supply was from within the 'Corridor' leaving only 0.3% of the supply coming from 'Outside the Corridor'.
Districts / Clusters	▪ Almost the entire supply of tomatoes consumed in the Nacala Corridor in 2018 was produced in the **Nampula Green Belt** which currently accounts for 99.7% of the traded volume of tomatoes. ▪ Tomato suppliers from **Zambezia** and **Maputo** now supply only 0.3% (0.1% & 0.2% respectively) despite historically having supplied 40-50% of the tomatoes traded in the Nacala Corridor.

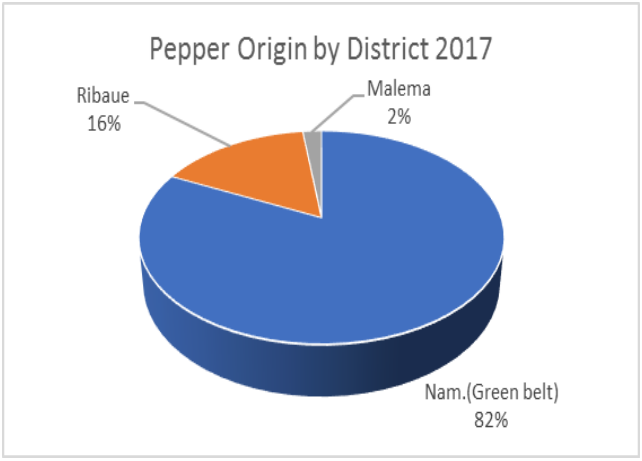
4.2 PEPPERS

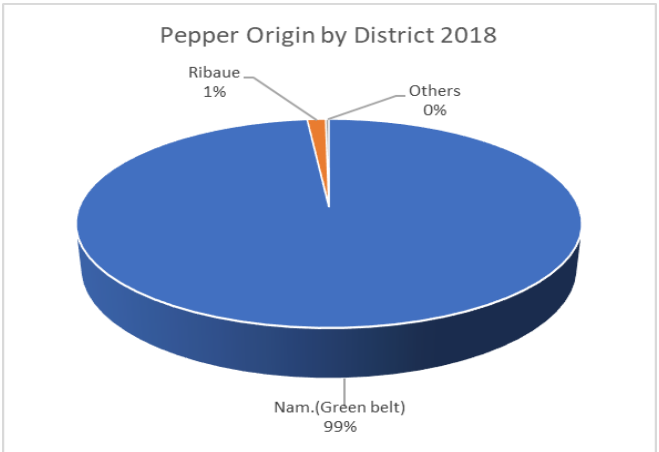

Pepper Traded Volumes 2013-2018
+55%
-49%
-12%
+31%
+24%
700,000
600,000
500,000
400,000
300,000
200,000
100,000
0
2013
2014
2015
2016
2017
2018
Inside Nampula
Outside Nampula
Total


Pepper by Origin 2013-2018
2018
2017
2016
2015
2014
2013
99.8%
0.2%
96%
4%
100%
0%
100%
0%
95%
5%
98%
2%
92%
94%
96%
98%
100%
Inside Nampula Outside Nampula
Outside Nampula


Pepper by Districts / Areas of Origin 2013-2018
700,000
600,000
500,000
400,000
300,000
200,000
100,000
0
Nampula (Green belt)
Ribaue
Malema
Zambezia
Niassa
Tsangano, Angonia
Maputo (and SA)
Others
Total
2013
2014
2015
2016
2017
2018

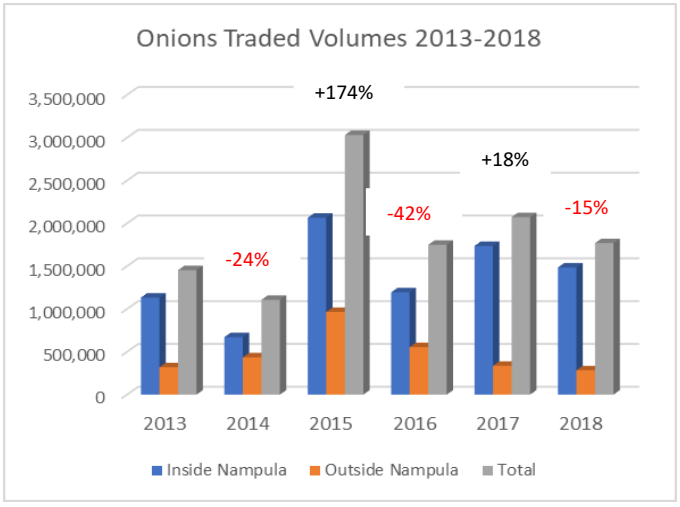

Pepper Origin by District 2013
Maputo (and SA)...
Nampula (Green belt)
16%
Malema
6%
Ribaue
77%

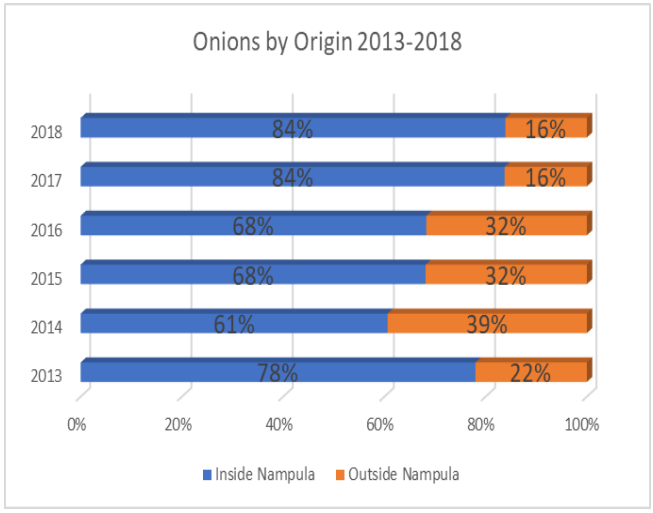

Pepper Origin by District 2017
Ribaue
16%
Malema
2%
Nam.(Green belt)
82%

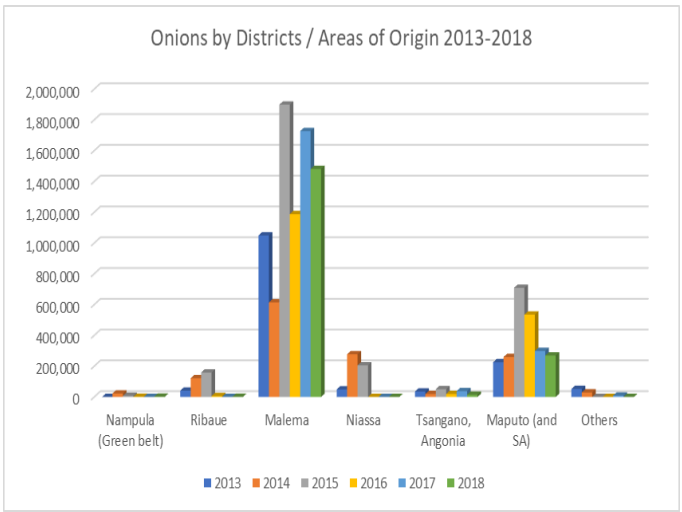

Pepper Origin by District 2018
Ribaue
1%
Others
0%
Nam.(Green belt)
99%

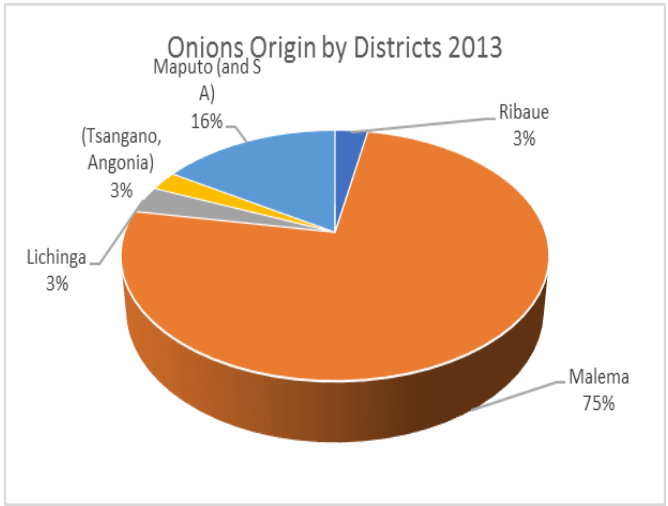
SUMMARY: PEPPER TRENDS	
Consumption	▪ The past two years have seen a 55% increase in consumption of peppers of which 24% is attributed to 2018. Despite this increase, traded volumes have not yet tallied the 2014 peak of about 650,000 tonnes following the consumption decline of -49% in 2015. The 2018 consumption volume is still around 470,000 tonnes per year which is 27% below 2014 consumption level.
'Inside-Outside the Corridor'	▪ 99.8% of the production comes from 'Inside the Corridor' of which 99.4% and 1.4% come from the Nampula Green Belt and Ribaue respectively.
Districts / Clusters	▪ The Nampula Green Belt has championed pepper production, confirming substitution of almost all imports including from nearby districts such as Ribaue that used to be the leading supplier of peppers. The Ribaue shift from supplying 77% of pepper in 2013 to a mere 1.4% in 2018 clearly shows increased competitiveness of the Nampula Green Belt producers.

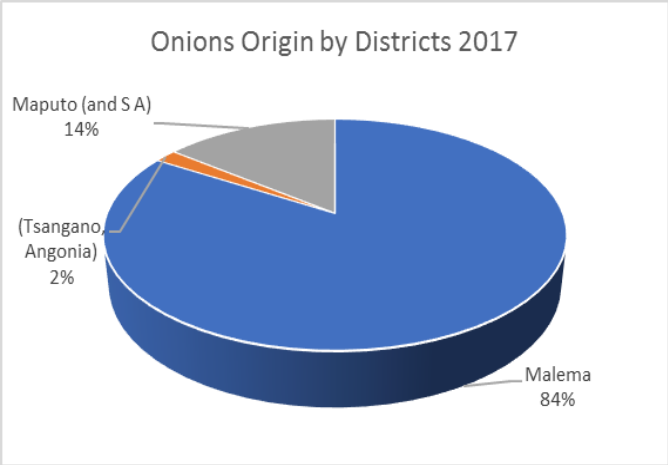
4.3 ONIONS

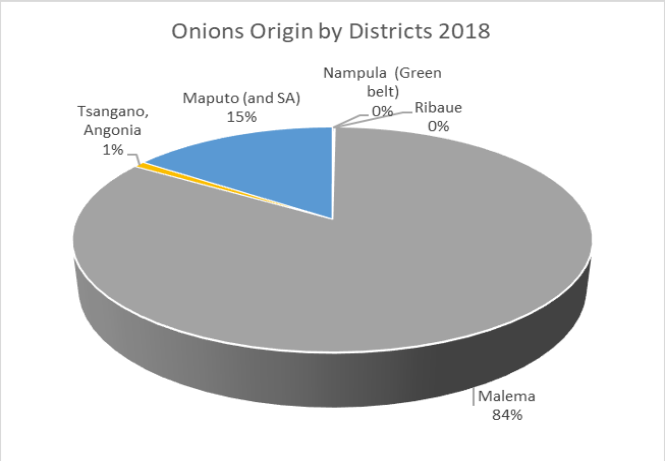






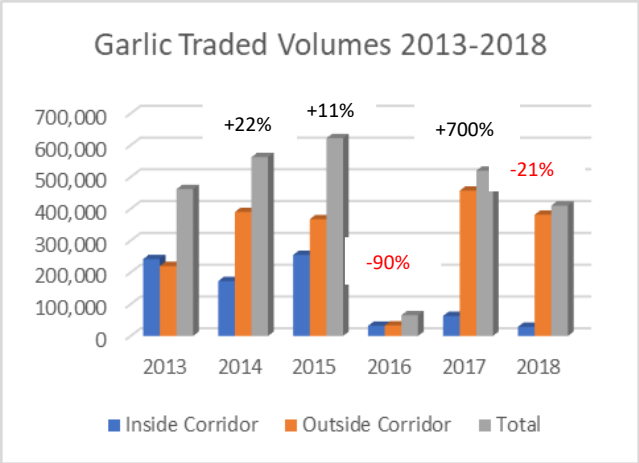


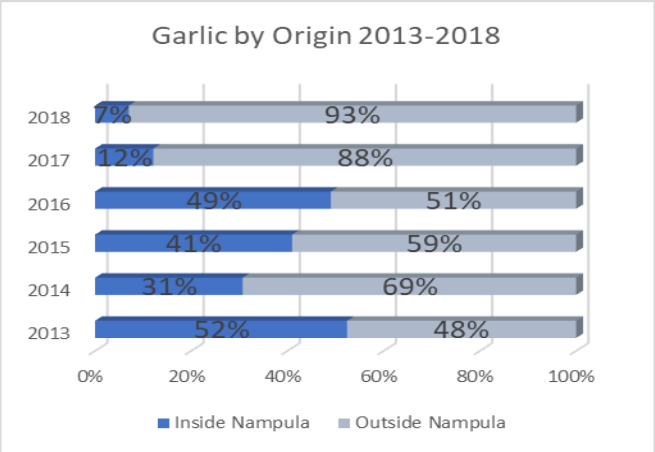


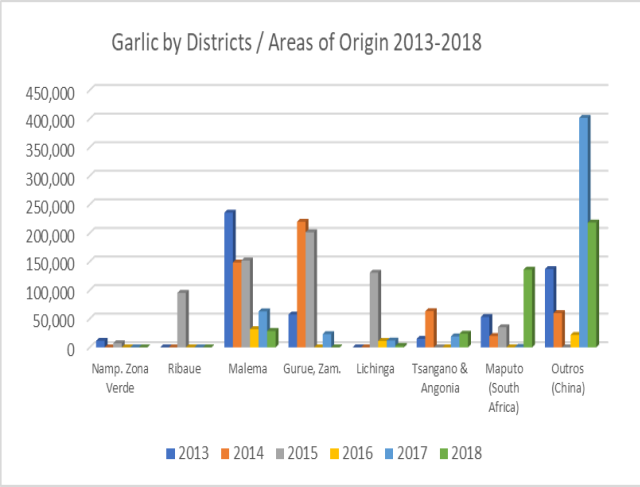


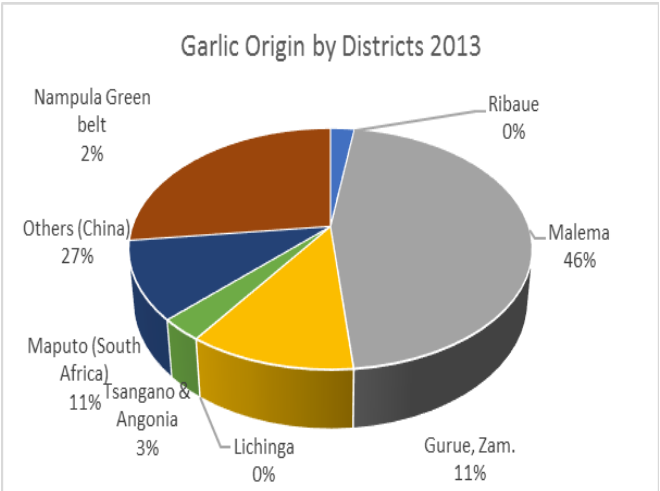
SUMMARY: ONION TRENDS	
Consumption	▪ Over the years onions have registered an erratic supply trend. Whilst there was an 18% growth in traded volumes in 2017, a notable 15% decline was registered in 2018. Red onion contributed more to the decline given that there is higher level of red onion production using degenerated seed.
'Inside-Outside the Corridor'	▪ 86% of onions was produced "inside the corridor" with Malema district being the bulk producer (83.7%) followed by Ribaue and the Nampula Green Belt both contributing 0.1%.
Districts / Clusters	▪ **Malema** (83.7%) is the leading supplier followed by imports from Maputo and South Africa providing 15.2%. Imports from Maputo/South Africa increased by 1% from 2017 with a corresponding decline in supply from Tsangano/Angonia districts.

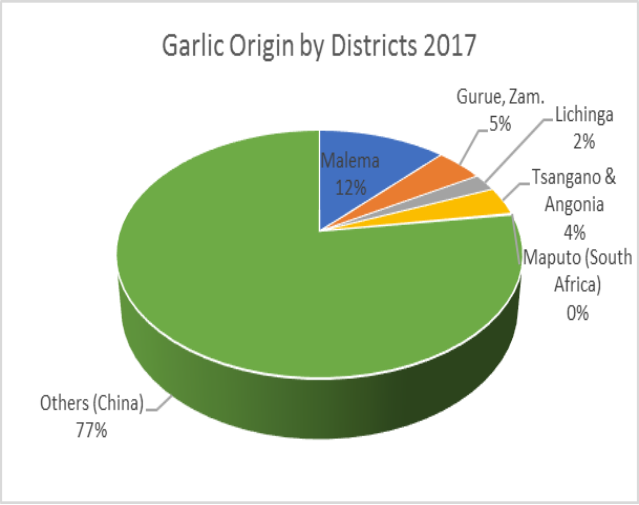
4.4 GARLIC

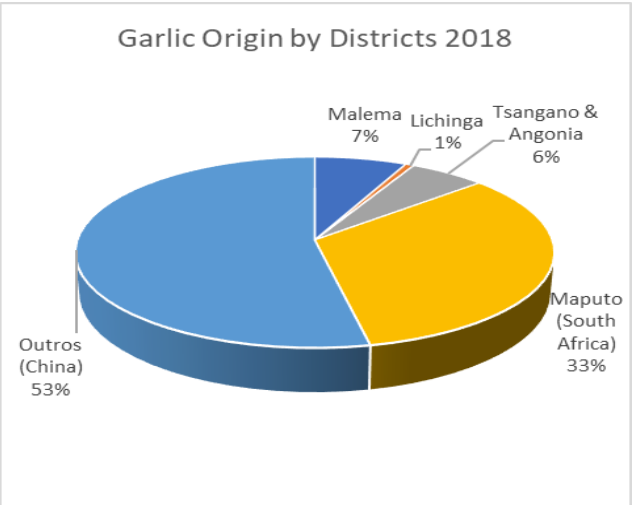

Garlic Traded Volumes 2013-2018
700,000
600,000
500,000
400,000
300,000
200,000
100,000
0
+22%
+11%
-90%
+700%
-21%
2013
2014
2015
2016
2017
2018
Inside Corridor
Outside Corridor
Total


Garlic by Origin 2013-2018
2018
2017
2016
2015
2014
2013
7%
93%
12%
88%
49%
51%
41%
59%
31%
69%
52%
48%
0%
20%
40%
60%
80%
100%
Inside Nampula
Outside Nampula


Garlic by Districts / Areas of Origin 2013-2018
450,000
400,000
350,000
300,000
250,000
200,000
150,000
100,000
50,000
0
Namp. Zona Verde
Ribaue
Malema
Gurue, Zam.
Lichinga
Tsangano & Angonia
Maputo (South Africa)
Outros (China)
2013
2014
2015
2016
2017
2018

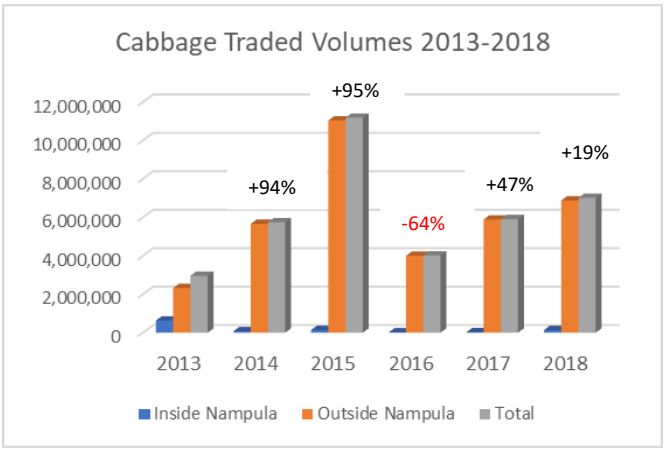

Garlic Origin by Districts 2013
Nampula Green belt 2%
Ribaue 0%
Malema 46%
Others (China) 27%
Maputo (South Africa) 11%
Tsangano & Angonia 3%
Lichinga 0%
Gurue, Zam. 11%

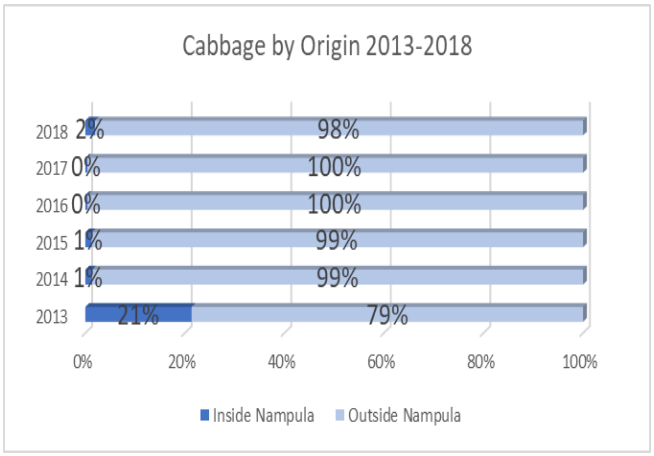

Garlic Origin by Districts 2017
Gurue, Zam. 5%
Lichinga 2%
Malema 12%
Tsangano & Angonia 4%
Maputo (South Africa) 0%
Others (China) 77%

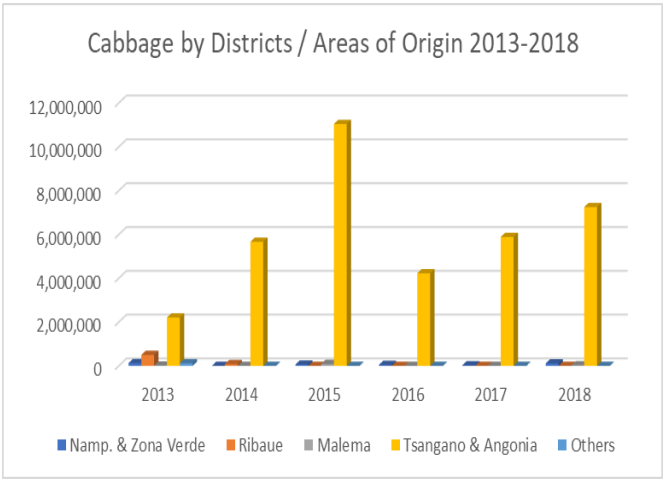

Garlic Origin by Districts 2018
Malema 7%
Lichinga 1%
Tsangano & Angonia 6%
Maputo (South Africa) 33%
Outros (China) 53%

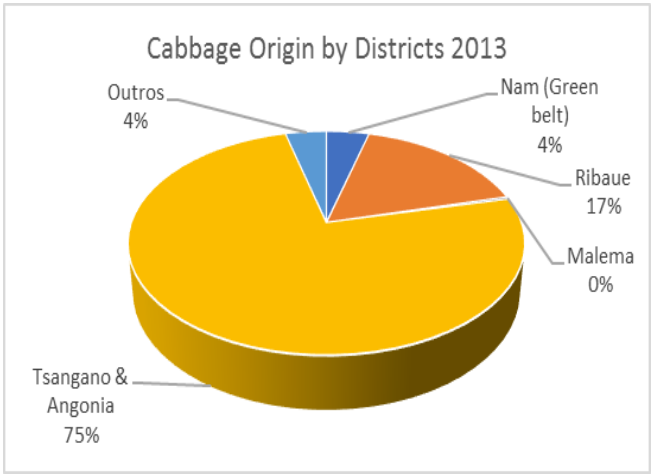
SUMMARY: GARLIC TRENDS	
Consumption	▪ There is a general trend showing decreasing competitiveness of local garlic against imports. The market is consuming more imported garlic as compared to the locally produced garlic.
'Inside-Outside the Corridor'	▪ Local garlic has lost market share from 52% in 2013 to 7% in 2018. The landslide defeat has mainly been due to larger and more attractive bulbs of the imported garlic that have greater consumer appeal and better competitive advantage over local varieties. The degeneration of local varieties is the major factor leading to local garlic uncompetitiveness.
Districts / Clusters	▪ In 2018, 86% of the garlic was imported from China and South Africa. Tsangano and Angonia districts supplied 6% whilst Lichinga supplied 1%. The remaining 7% was produced within the Nacala Corridor mainly in Malema district.

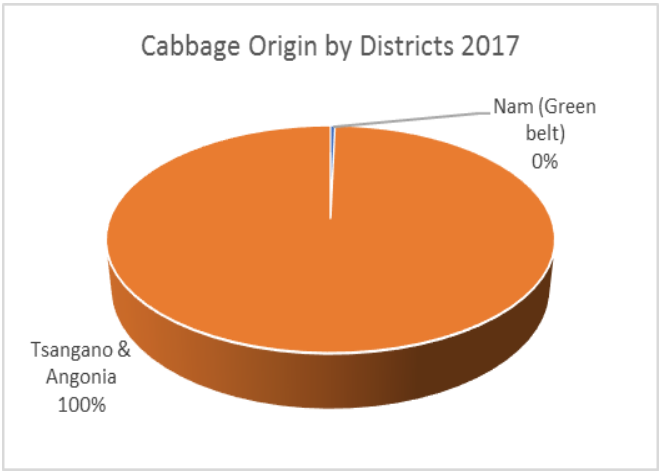
4.5 CABBAGE

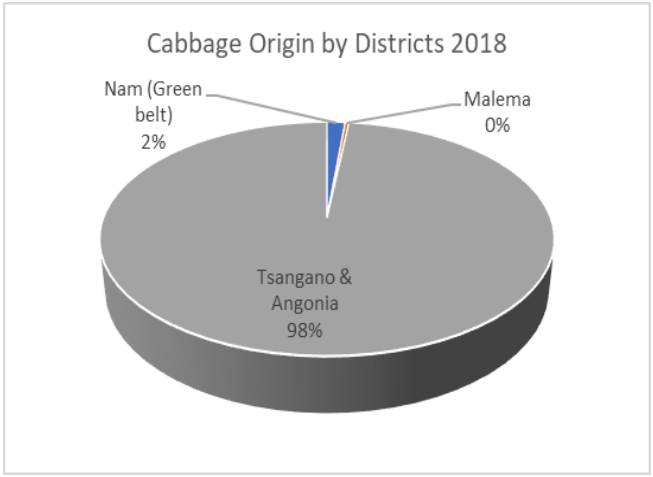

Cabbage Traded Volumes 2013-2018
12,000,000
10,000,000
8,000,000
6,000,000
4,000,000
2,000,000
0
+94%
+95%
-64%
+47%
+19%
2013
2014
2015
2016
2017
2018
Inside Nampula
Outside Nampula
Total


Cabbage by Origin 2013-2018
2018 2%
98%
2017 0%
100%
2016 0%
100%
2015 1%
99%
2014 1%
99%
2013
21%
79%
0%
20%
40%
60%
80%
100%
Inside Nampula
Outside Nampula


Cabbage by Districts / Areas of Origin 2013-2018
12,000,000
10,000,000
8,000,000
6,000,000
4,000,000
2,000,000
0
2013
2014
2015
2016
2017
2018
Namp. & Zona Verde
Ribaue
Malema
Tsangano & Angonia
Others

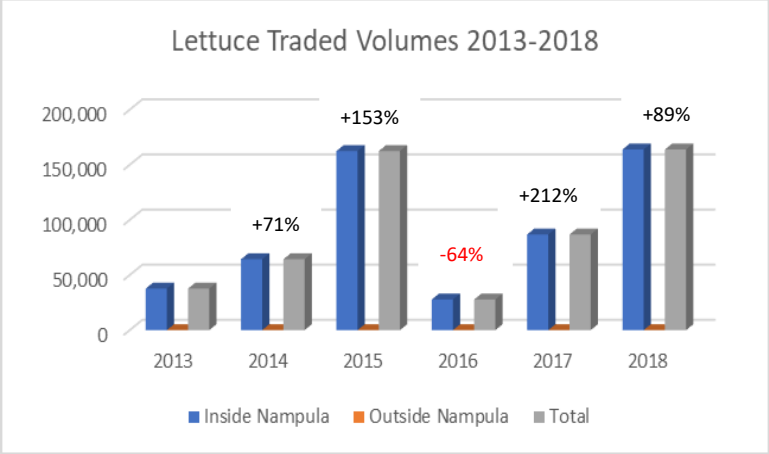

Cabbage Origin by Districts 2013
Outros
4%
Nam (Green belt)
4%
Ribaue
17%
Malema
0%
Tsangano & Angonia
75%


Cabbage Origin by Districts 2017
Nam (Green belt)
0%
Tsangano & Angonia
100%


Cabbage Origin by Districts 2018
Nam (Green belt)
2%
Malema
0%
Tsangano & Angonia
98%

SUMMARY: CABBAGE TRENDS	
Consumption	▪ Consumption of cabbages has increased by 66% since the decline experienced in 2016 with 19% growth attributed to 2018. ▪ Despite the notable recovery in cabbage consumption level in 2018, it is still 47% below the 2015 consumption level.
'Inside-Outside the Corridor'	▪ Angónia / Tsangano (outside the corridor) were the dominant suppliers of cabbages providing 98% of in traded volumes the traded volumes. ▪ 2018 saw a 2% increase of cabbage coming from the Nampula Green Belt (inside the corridor).
Districts / Clusters	▪ Angónia / Tsangano enjoy the monopoly of supplying cabbages to the Nacala corridor. ▪ There is a great opportunity for farmers "inside" the Nacala corridor to produce cabbage given the dominance of imports in large quantities.

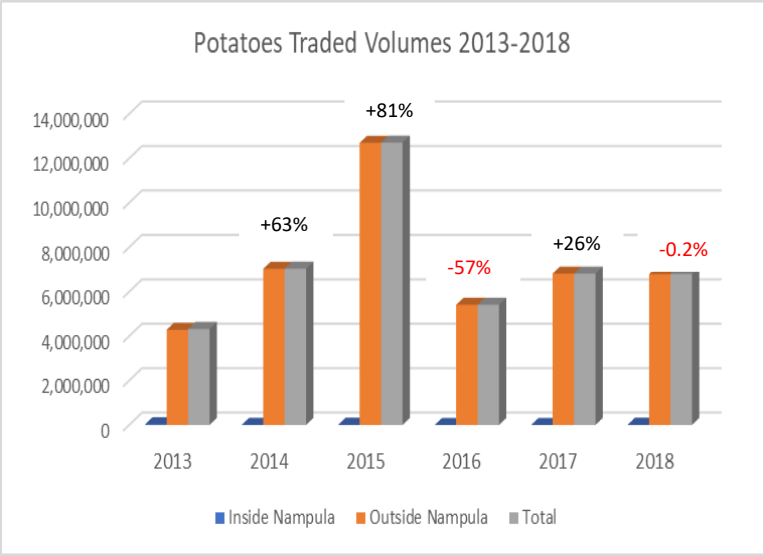
4.6 LETTUCE



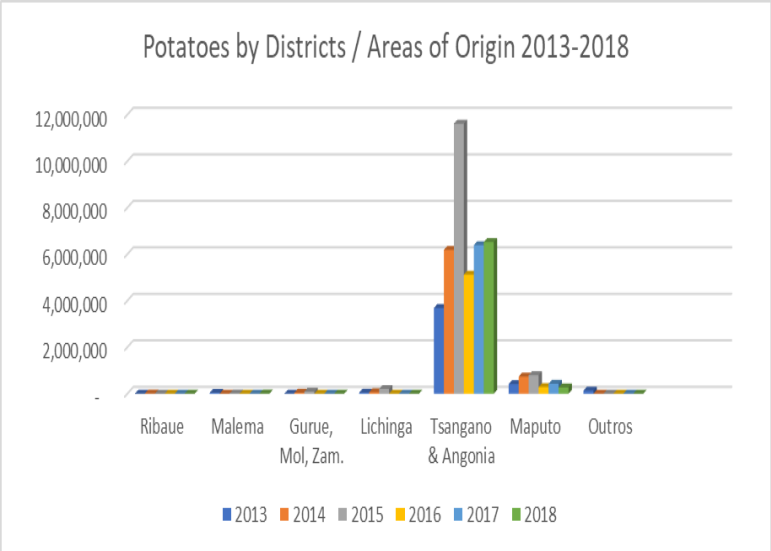
100% PRODUCED 'INSIDE THE CORRIDOR' IN NAMPULA GREEN BELT

SUMMARY: LETTUCE TRENDS	
Consumption	▪ Lettuce consumption rebounded strongly since 2016 with a cumulative consumption growth index of 301% of which 89% is attributed to 2018.
'Inside-Outside the Corridor'	▪ All lettuce is produced "inside the corridor, specifically in the Nampula Green Belt. ▪ Competitiveness of the crop has been promoted by its perishable nature hence the need to be produced very close to the market. At the same time the introduction of hot climate tolerant tropical 'short-cycle varieties' e.g. *Veneranda* by Horti-Sempre complimented competitiveness given the short growing cycle, greater appealing nature and taste of the variety.
Districts / Clusters	▪ The Nampula Green Belt is the sole supplier of lettuce traded volumes.

4.7 POTATOES

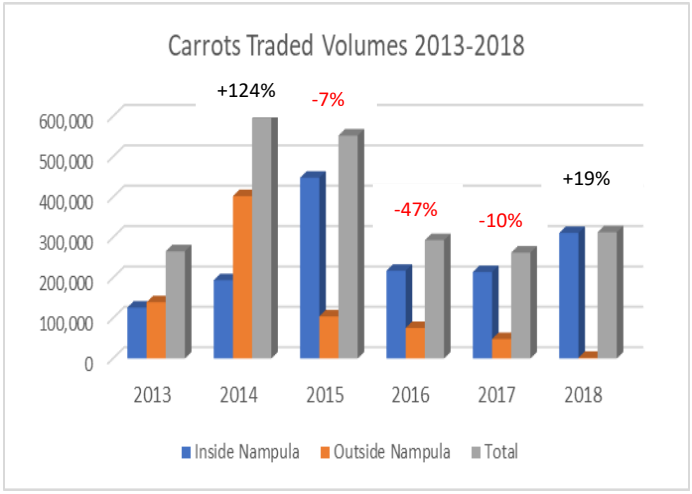


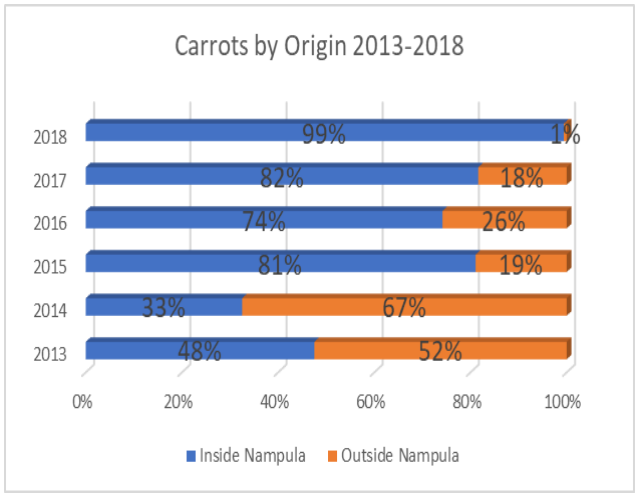
100% PRODUCED 'OUTSIDE THE CORRIDOR'

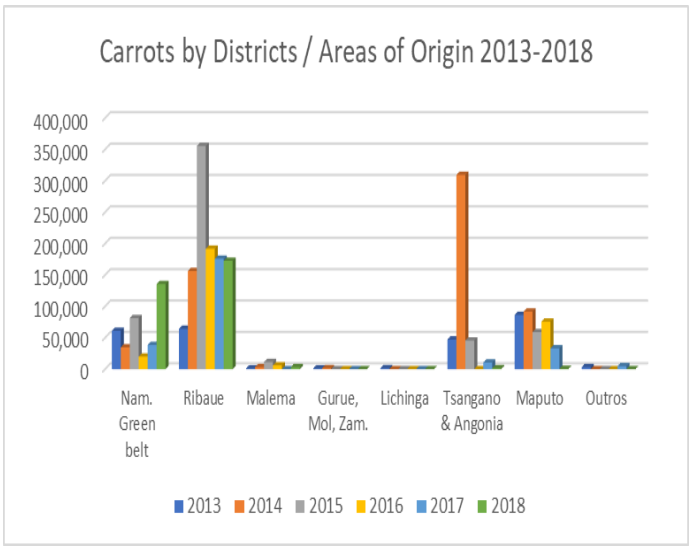


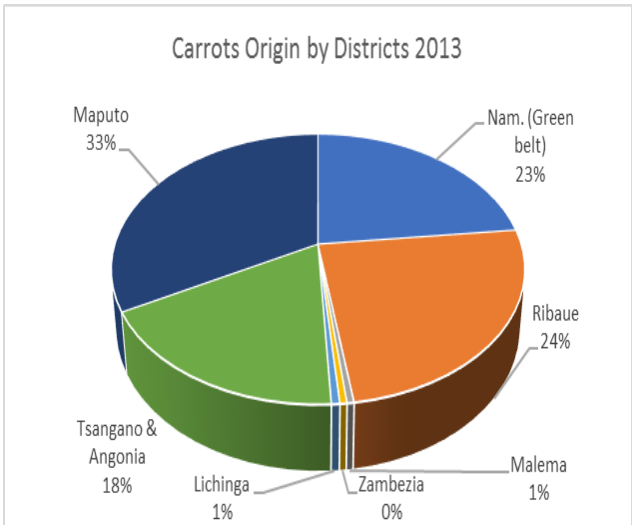
SUMMARY: POTATO TRENDS	
Consumption	▪ There was a 0.2% decline in potato consumption in 2018 as compared to 2017. The 2018 consumption level is still 46.5% below 2015 level that was at 12.7 million tonnes then.
'Inside-Outside the Corridor'	▪ 99.8% of potatoes are supplied from "outside the corridor" namely Angónia / Tsangano (95.9%) and Maputo/South Africa (3.9%). Only 0.1% is supplied from within the corridor from Malema district.
Districts / Clusters	▪ Angónia / Tsangano have the monopolistic supply of potatoes to the Nacala corridor.

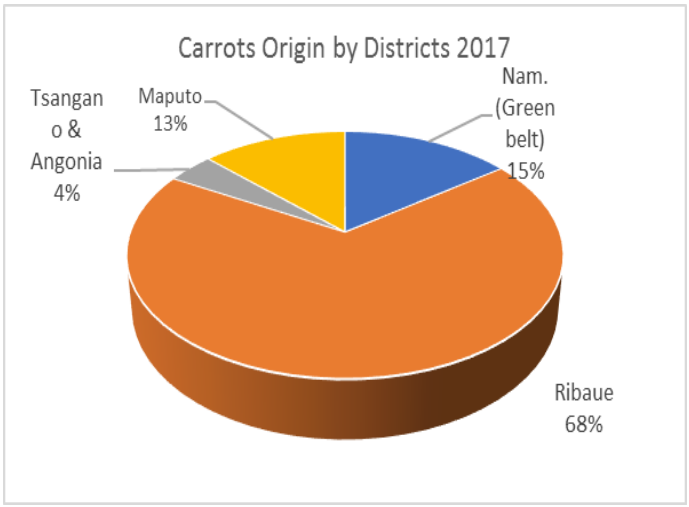
4.8 CARROTS

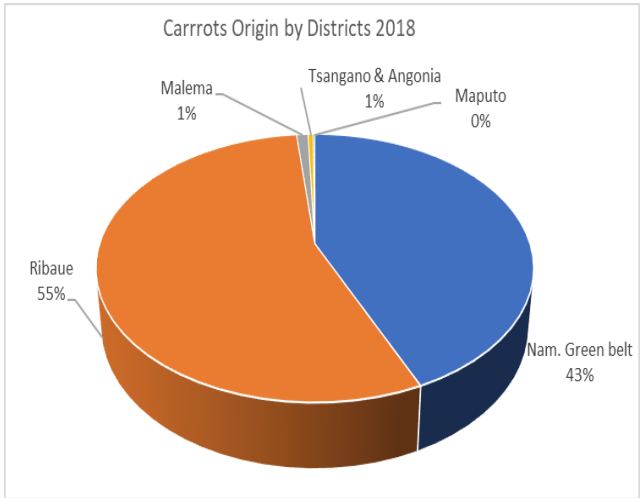

Carrots Traded Volumes 2013-2018
+124%
-7%
-47%
-10%
+19%
600,000
500,000
400,000
300,000
200,000
100,000
0
2013
2014
2015
2016
2017
2018
Inside Nampula
Outside Nampula
Total


Carrots by Origin 2013-2018
2018
2017
2016
2015
2014
2013
99%
1%
82%
18%
74%
26%
81%
19%
33%
67%
48%
52%
0%
20%
40%
60%
80%
100%
Inside Nampula
Outside Nampula


Carrots by Districts / Areas of Origin 2013-2018
400,000
350,000
300,000
250,000
200,000
150,000
100,000
50,000
0
Nam. Green belt
Ribaue
Malema
Gurue, Mol, Zam.
Lichinga
Tsangano & Angonia
Maputo
Outros
2013
2014
2015
2016
2017
2018


Carrots Origin by Districts 2013
Maputo 33%
Nam. (Green belt) 23%
Ribaue 24%
Malema 1%
Zambezia 0%
Lichinga 1%
Tsangano & Angonia 18%

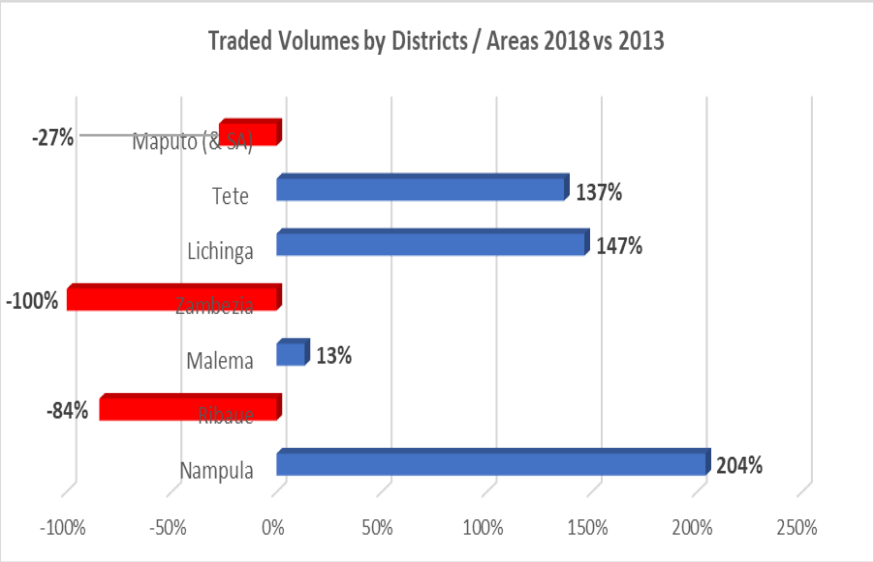

Carrots Origin by Districts 2017
Tsangano & Angonia 4%
Maputo 13%
Nam. (Green belt) 15%
Ribaue 68%


Carrrots Origin by Districts 2018
Malema 1%
Tsangano & Angonia 1%
Maputo 0%
Ribaue 55%
Nam. Green belt 43%

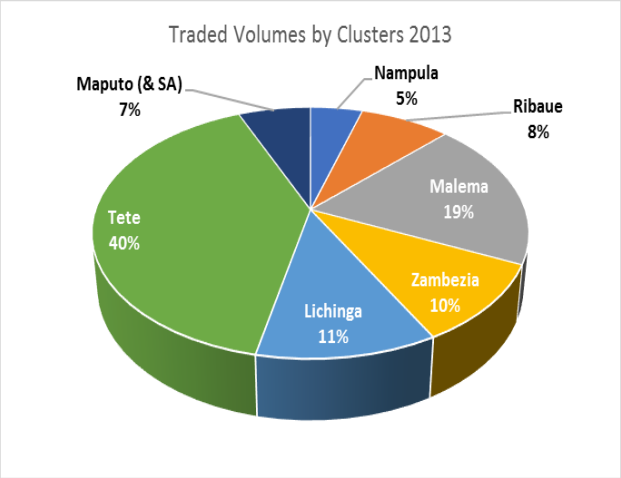
SUMMARY: CARROT TRENDS	
Consumption	▪ The carrot consumption index registered a cumulative declining trend of 64% from 2015 to 2017. ▪ 2018 registered a 19% increase in consumption after 3 years of declining consumption. ▪ The 2018 consumption level is however still 48% below 2014 level.
'Inside-Outside the Corridor'	▪ The Nampula Green Belt has gained competitiveness and gained an additional 28% market share from its 2017 position and harnessed a total of 43% of the market share by end of 2018. ▪ Overall, 99.4% of the carrots were produced "inside the corridor" with imports of only 0.6%. ▪ Supply from 'Inside the Corridor' stands at 99.4 % in 2018 against 48% in 2013.
Districts / Clusters	▪ Ribaue was the lead carrot supplier with 55% market share in 2018. Highest market share growth was registered in the Nampula Green Belt currently with 43% of the share. The Nampula Green Belt has displaced the Angónia/Tsangano and Maputo that have now become marginal suppliers.

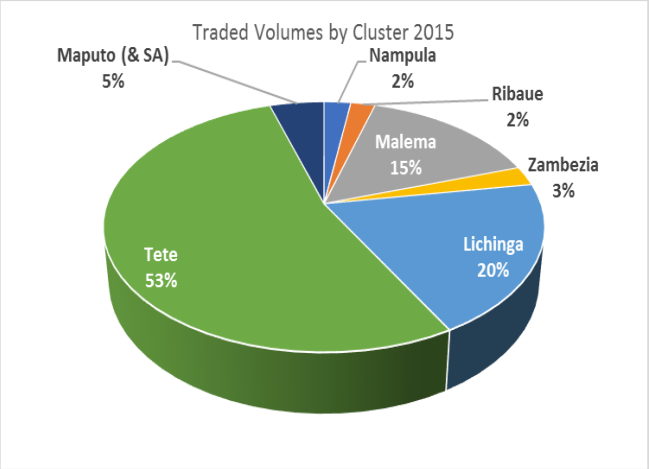
5. Traded Volumes Overlook (2013 – 2018)

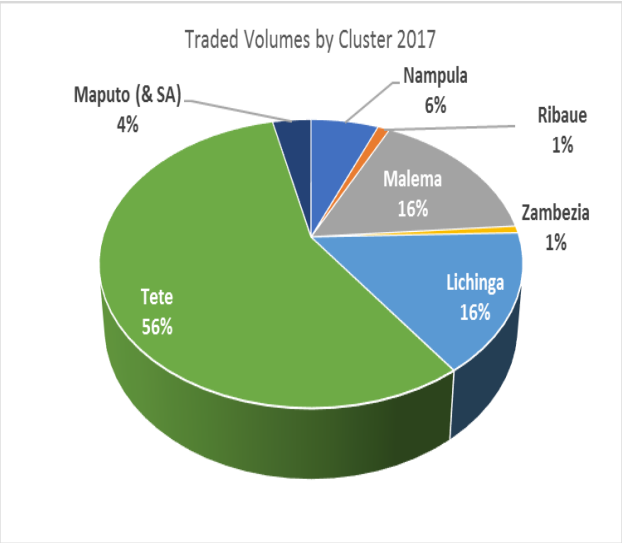
Figure 9: Total Traded Volumes by Origin Comparison (2018 vs 2013)

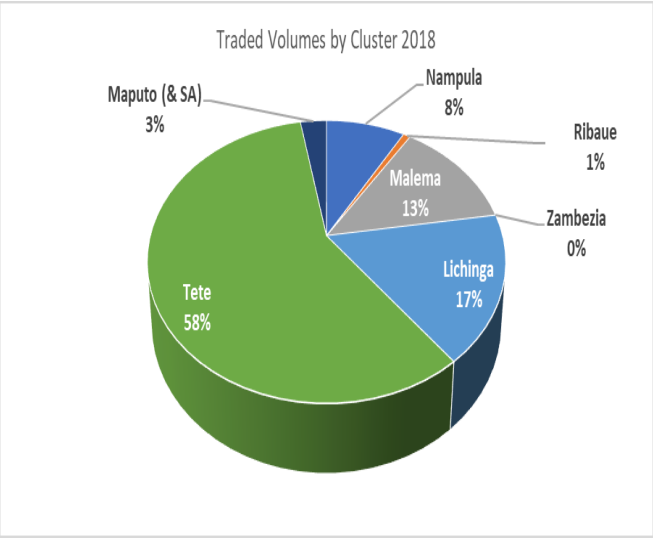


Figures 10: Traded Volumes by Origin – Market Share (2013-2018)



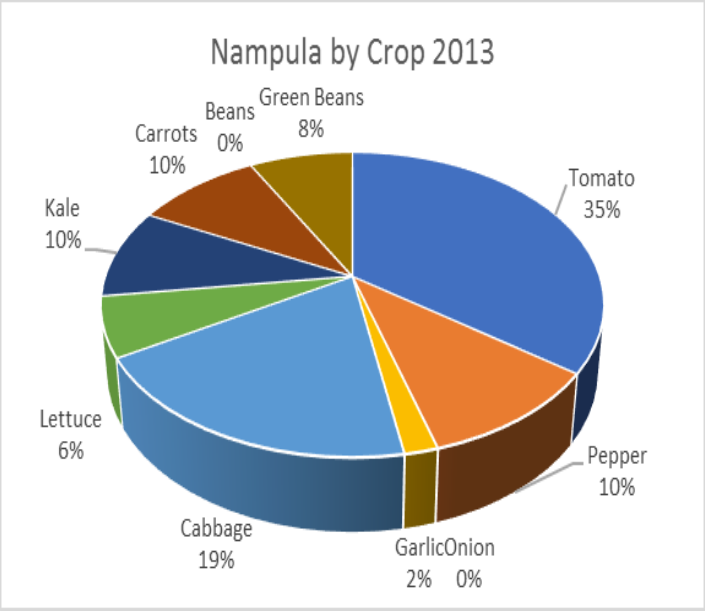


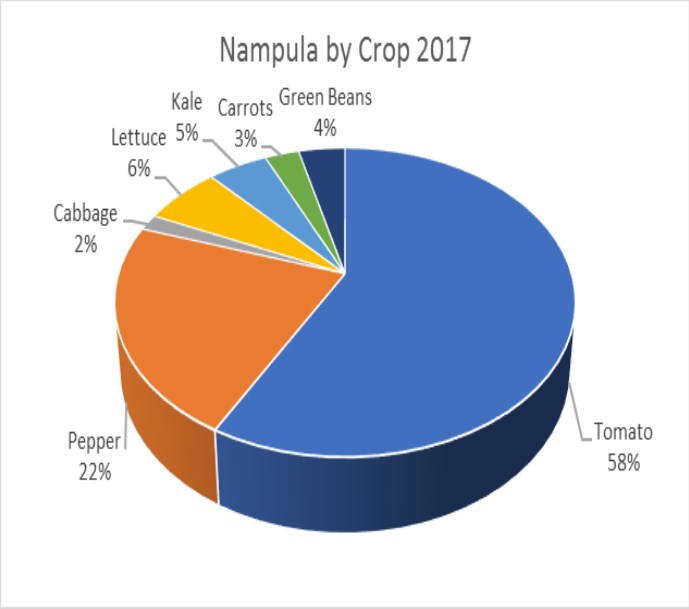


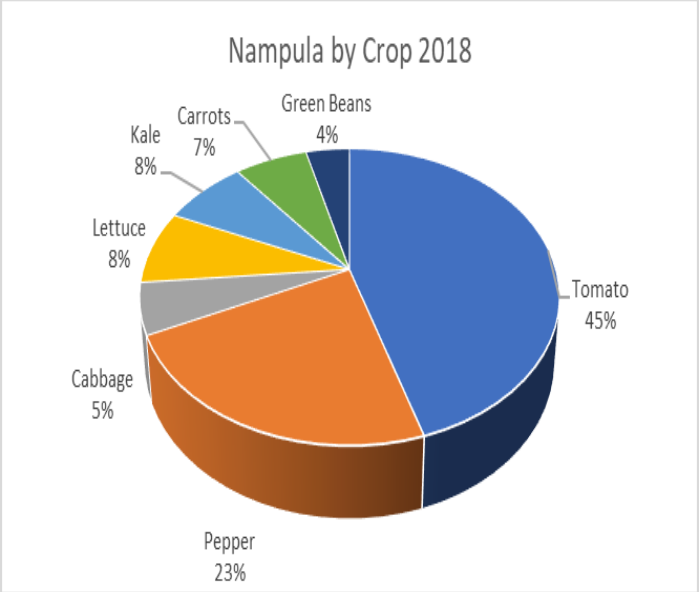


- Nampula district showed an outstanding growth in traded volumes registering a 204% increase followed by Lichinga (147%) and then Tete (137%) in comparison with 2013 data.
- Whilst some districts have increased competitiveness of their products and gained market share, provinces/districts such as Zambezia, Ribaue and Maputo/South Africa lost considerable market share of traded volumes declining by 100%; 84% and 27% respectively since 2013.
- The traded volumes dynamics is still favourable and monopolized by Tete and Lichinga that cater for 75% of traded volumes mainly composed of the bulky products such as potatoes, cabbages, beans.
- Highly perishable products such lettuce, tomatoes, and peppers have mainly been supplied by the Nampula Green Belt with Malema providing onion.

5.1 NAMPULA GREEN BELT & MARATANE



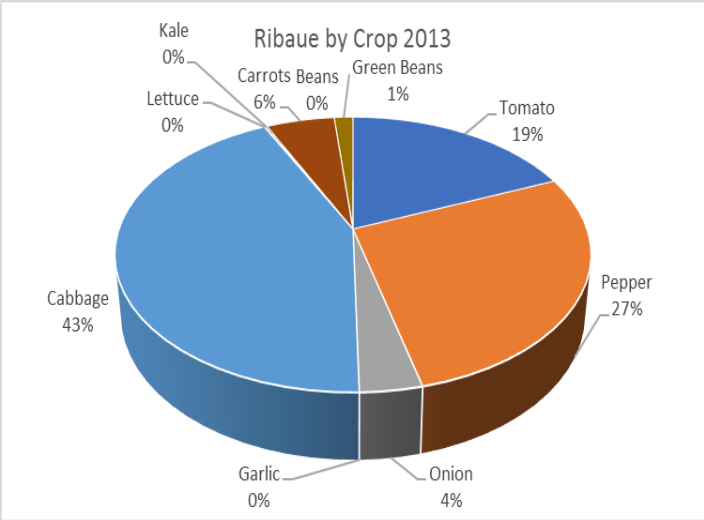


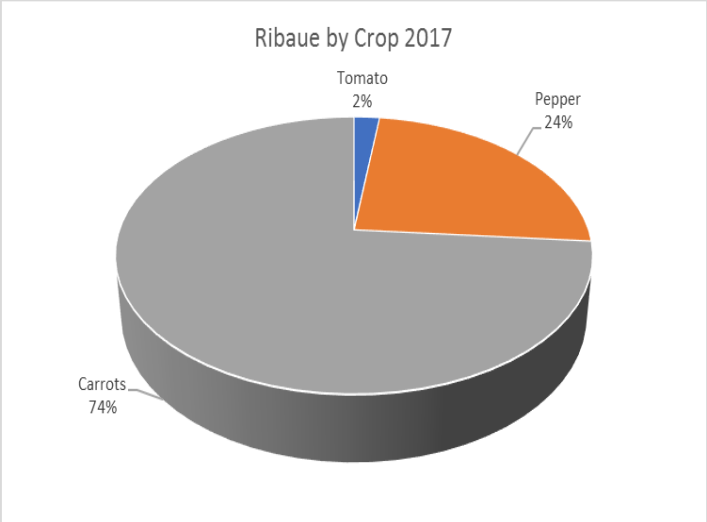


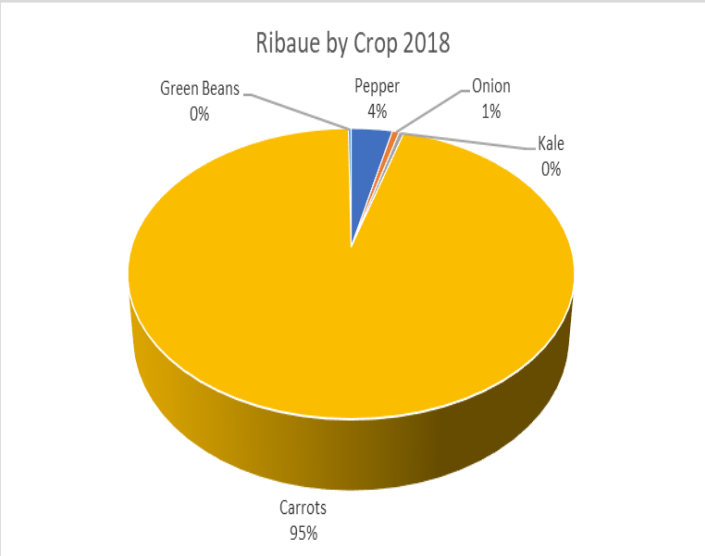
NAMPULA GREEN BELT / MARATANE

- Nampula registered 8% of total traded volume in 2018 composed of an assortment of highly perishable vegetables.
- The Nampula produce greatly gained competitiveness and registered a 204% growth in traded volumes since 2013.
- Tomato and pepper made up 45% and 23% of the Nampula Green Belt total traded volume respectively.

5.2 RIBAUE



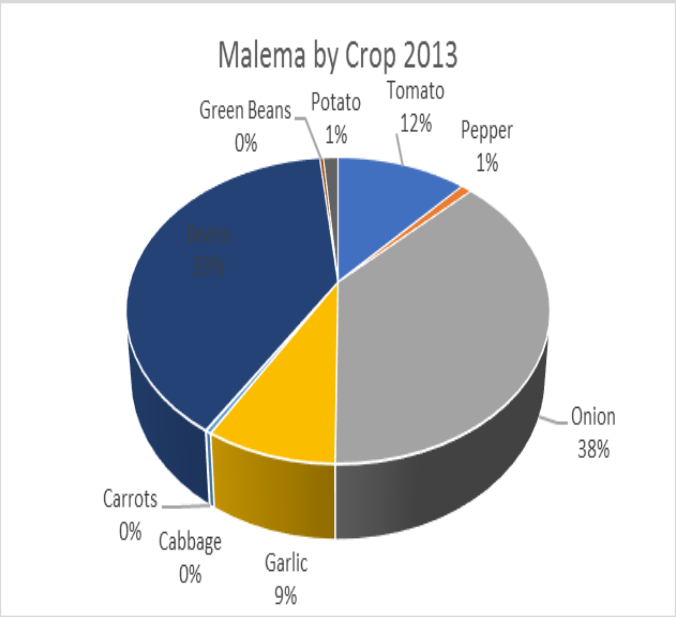


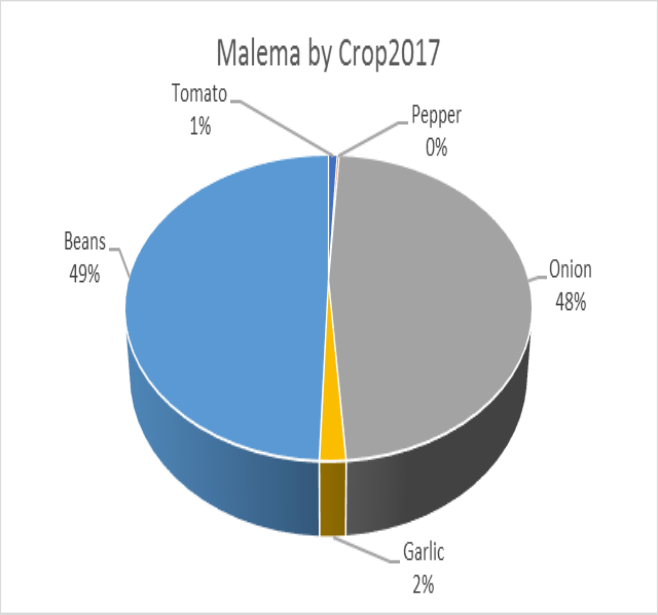


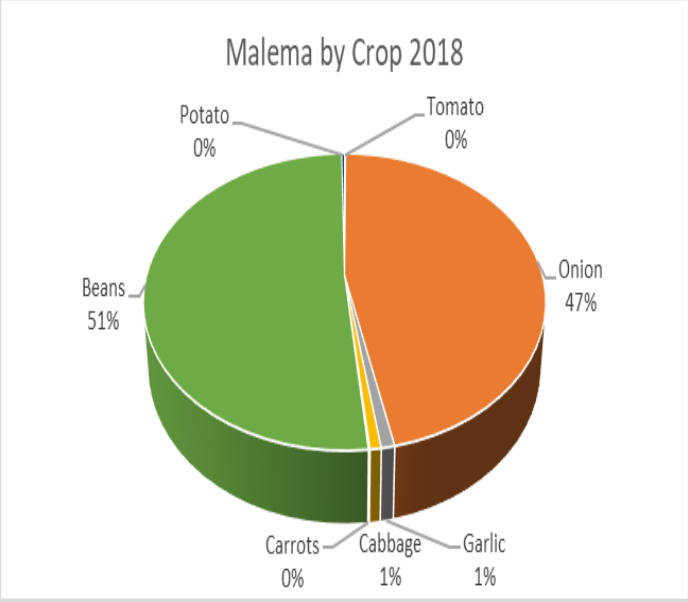
RIBAUE

- Ribaue registered 1% of total traded volume in 2018
- Production channeled to the market became less diversified due to increased farmer specialization and or lack of competitiveness against competing districts dynamics
- The district shifted production specialization to carrots that became the bulk (95%) of the total traded volume.

5.3 MALEMA



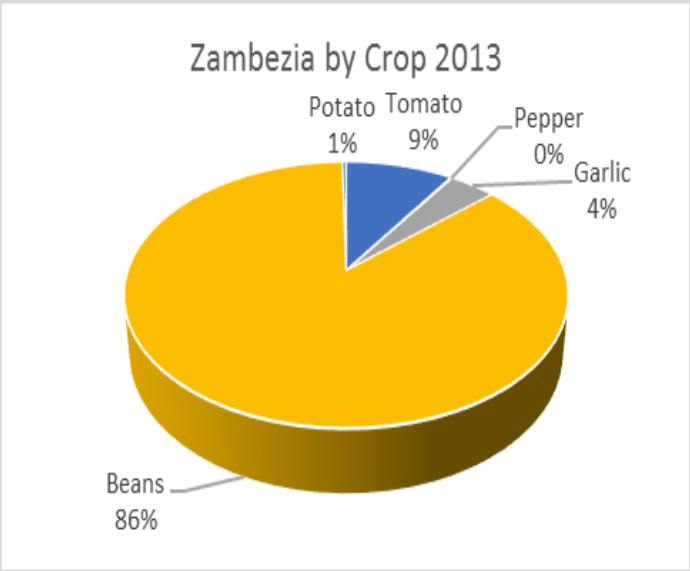


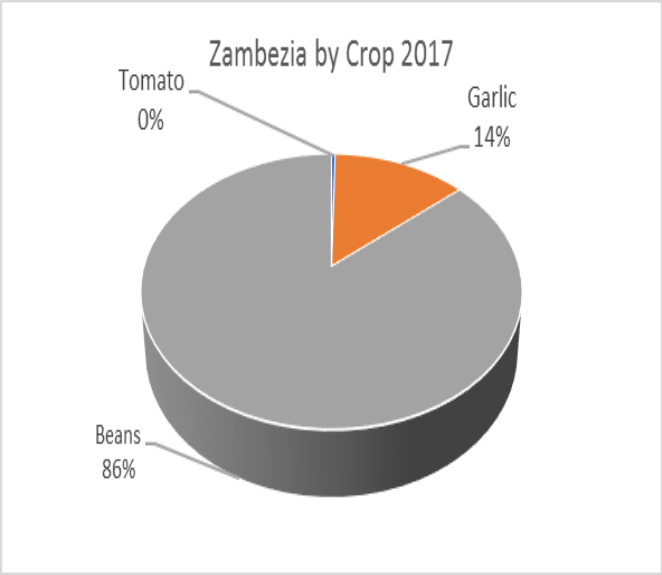


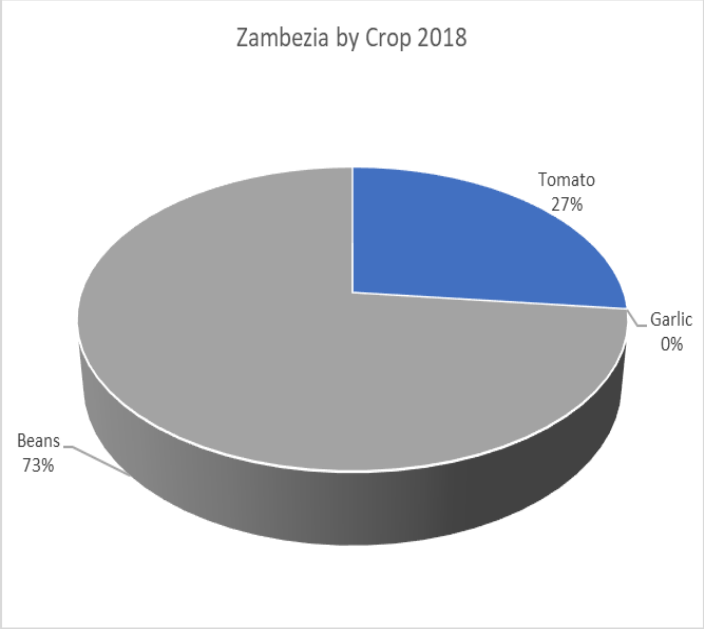
MALEMA

- Malema registered 13% of total traded volume in 2018 mainly composed of onion and beans.
- In recent years the crop profile changed significantly as compared to 2013 with specialization in producing onions and beans.
- Beans and onions took up 98% of the Malema total traded volume.
- The competitiveness of Malema in producing beans and onions remains strong given market share taken by the two crops over the years.

5.4 ZAMBEZIA



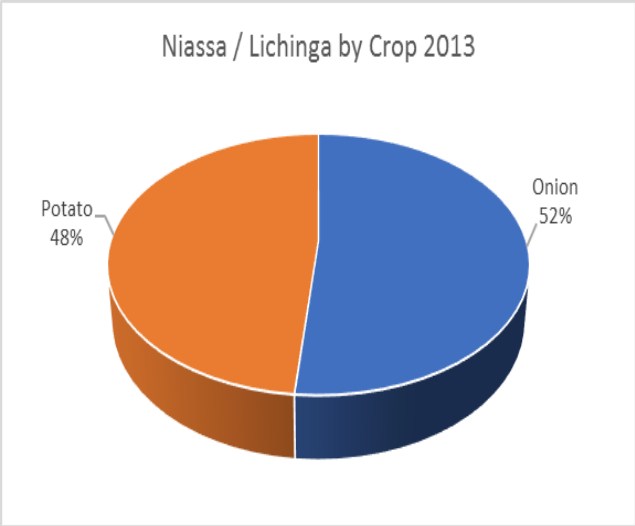


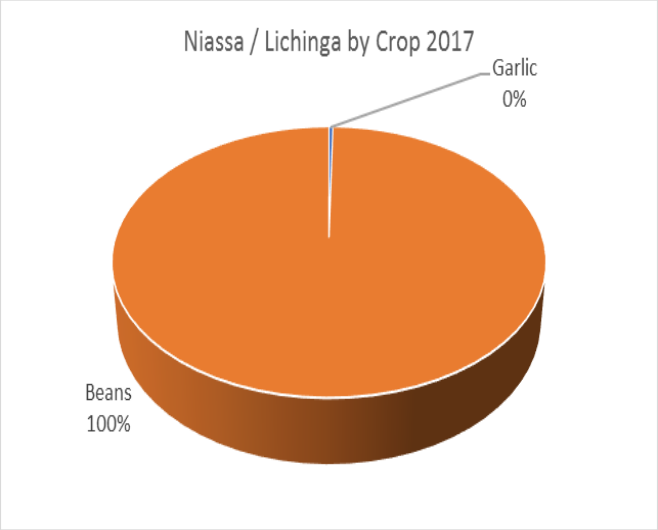


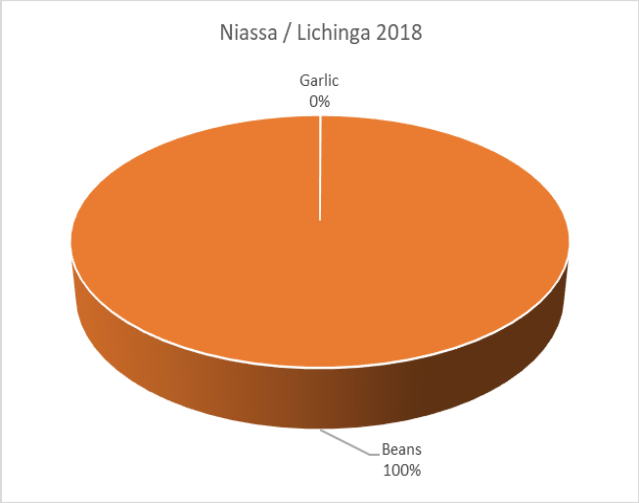
ZAMBEZIA (GURUE, MOLOCUE, ZAMBEZIA)

- Using 2013 as the baseline, Zambezia lost 100% of traded volume.
- Zambezia progressively lost importance as the provider of vegetables that initially comprised of beans, potatoes, tomatoes and garlic.
- By end of 2018 Zambezia only supplied 0.04% of the total beans traded dropping from 52.5% registered in 2013.

5.5 NIASSA / LICHINGA



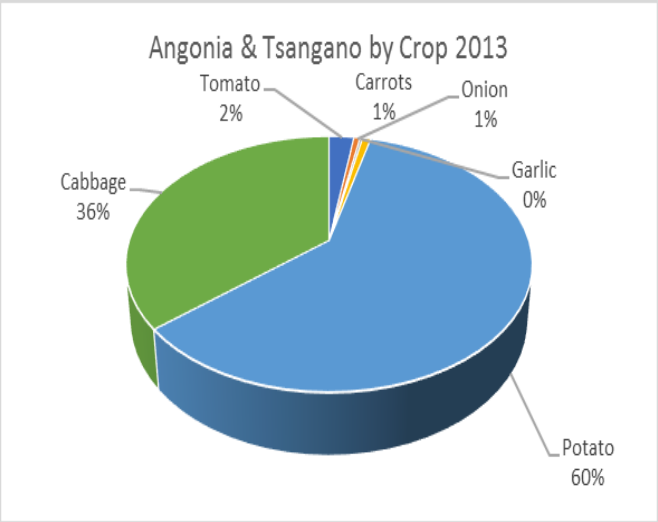


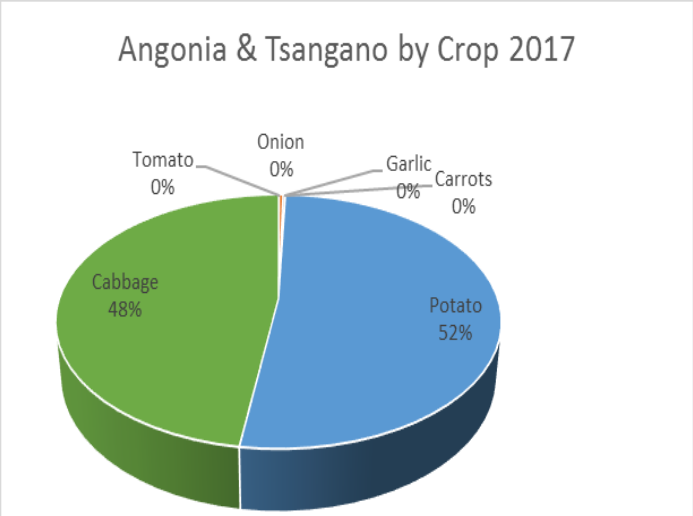


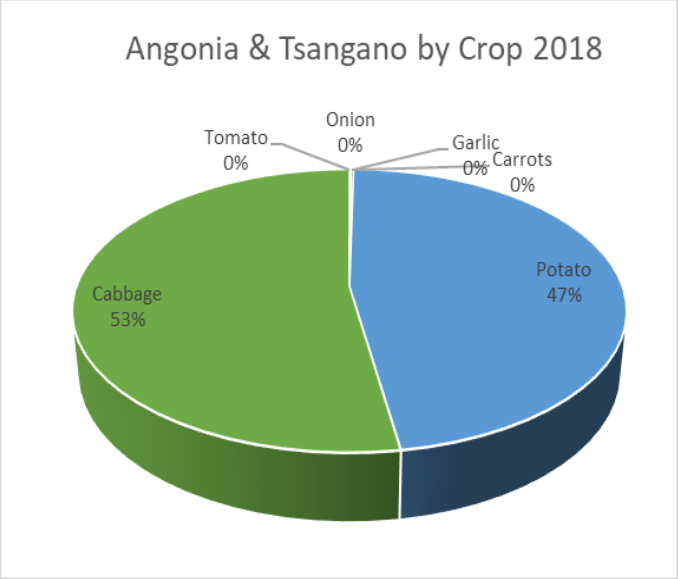
NIASSA / LICHINGA

- Lichinga registered 17% of total traded volume in 2018 mostly composed of beans.
- The Lichinga produce greatly gained competitiveness and registered a 147% growth in traded volumes since 2013.
- Beans made up 100% of the Lichinga total traded volume.

5.6 TETE (ANGONIA & TSANGANO)



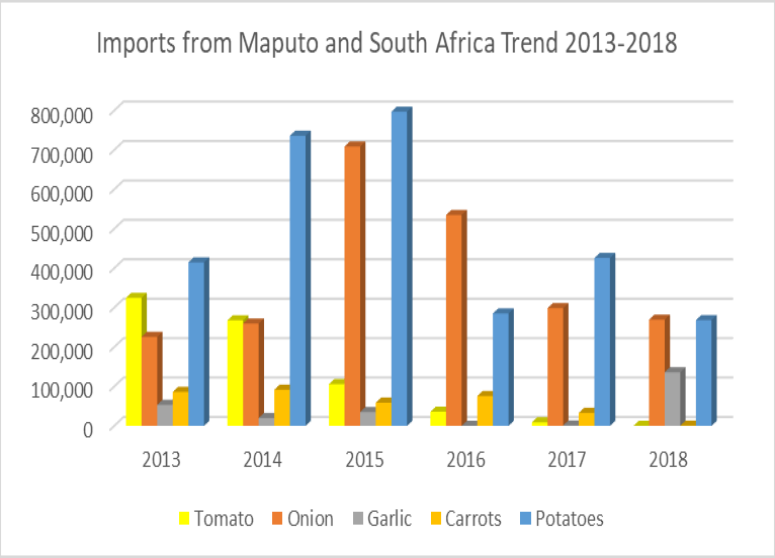




TETE (ANGONIA & TSANGANO)

- Angonia & Tsangano registered 58% of total traded volume in 2018 mostly composed of potatoes and cabbages.
- The Angonia & Tsangano produce greatly gained competitiveness and registered a 137% growth in traded volumes since 2013.
- Cabbages and potatoes made up 53% and 47% of the Angonia & Tsangano total traded volume respectively.

5.7 MAPUTO & SOUTH AFRICA



CLUSTER MAPUTO & SOUTH AFRICA

- 3% of the traded volume of vegetables still comes from Maputo/South Africa.
- Vegetable imports from Maputo and South Africa registered a 27% decrease in 2018 as compared to 2013.

Figures 11: Horticulture Crop Product Origin Matrix - Year 2018

CROP / CLUSTERS SHARE %	Nampula Green belt	Ribaue	Malema	Lichinga Niassa	Zambezia	Tsangano / Angónia	Maputo South Africa China
	99.3%		0.4%		0.1%		0.2%
	98.4%	1.4%					0.2%
	0.1%	0.1%	83.7%			0.8%	15.2%
			7%	1%		6%	86%
			0.1%			95.9%	3.9%
	2%					98%	
	100%						
	43.3%	55.1%	1%			0.4%	0.2%
			28.6%	70.8%		0.5%	

6. Conclusions and Recommendations (Possible Strategy)

CONCLUSIONS & RECOMMENDATIONS FOR DEVELOPMENT PROJECTS AND HORTICULTURAL PLANNING

- Over the 5 year period from 2013 to 2018, the overall vegetable consumption trend increased by 57% in the Nacala corridor.
- There was a notable exponential growth in consumption of leafy vegetable products mainly lettuce, cabbages and kale.
- Crops such as tomatoes, carrots, onions have increased their competitiveness with proven increased production within the Nacala corridor.
- There lies a great opportunity in cabbage, garlic and potato, production given the dominance of imports of these products in large quantities into the Nacala corridor.
- Good garlic varieties with large bulbs need to be introduced and promoted including the Horti-Sempre introduced variety, in-order to recapture the market that has almost completely shifted towards the imported garlic.
- The deseasonalized production of vegetables in the Nacala Corridor has significantly progressed between 2013 and 2018 evidenced by carrot, lettuce and tomato production.
- The deseasonalized production process also reflects Horti-Sempre interventions supporting the introduction of tropical hot varieties, (eg. Kale-"1000 folhas", Cabbage - 50 day maturity) 'early-maturing'; tomato IPA 6 variety and Good Agricultural Practices and techniques for all year round production.
- Nampula district showed an outstanding growth in traded volumes registering a 204% increase followed by Lichinga (147%) and then Tete (137%) in comparison with 2013 data. Whilst some districts have increased competitiveness of their products and gained market share, provinces/districts such as Zambezia, Ribaue and Maputo/South Africa lost considerable market share of traded volumes declining by 100%; 84% and 27% respectively since 2013.
- The traded volumes dynamics is still favourable and monopolized by Tete and Lichinga that cater for 75% of traded volumes mainly composed of the bulky products such as potatoes, cabbages, beans.
- Highly perishable products such lettuce, tomatoes, and peppers have mainly been supplied by the Nampula Green Belt with Malema providing onion.
- Need to continue project collaboration with private agricultural inputs providers to ensure provision of quality inputs; (hybrid and OPV seed varieties with good germination potential and high yielding; effective agro-chemicals and fertilisers).
- Continue support to domestic production of seeds such as lettuce *veneranda*, cabbage *60 dias*, kale *mil-folhas*, onions *IPA 10*, *IPA 11*, and *alfra franciscana*, and garlic *hozan* with qualified seed providers.

CONCLUSIONS & RECOMMENDATIONS FOR DEVELOPMENT PROJECTS AND HORTICULTURAL PLANNING

- Promote farmer produce competitiveness through value addition and processing (eg. Use of standardized packaging like boxes, onion mesh sacks etc).
- Promote production of quality and healthy vegetable seedlings through private entities; associations and individuals to improve production levels.
- Promote continued dissemination of good agricultural practices through private sector, service providers and tertiary education institutes.