Factsheet on exportables

Development of export value chains for mangoes, green beans & tomatoes in Senegal

1 Intro

This fact sheet summarizes the main developments in Senegal's horticultural export sector for the period 2000-2018. We draw on both secondary data sources (FAOstat, Comtrade, ANSD) and primary data obtained through quantitative surveys with rural households in the main horticultural regions, in addition to several rounds of qualitative and semi-structured interviews with horticultural export companies. We focus on three of the most important export crops: mangoes, green beans and cherry tomatoes. We provide an overview on: 1) past and current dynamics in production and trade, 2) value chain characteristics, 4) competitiveness 3) (private) standards and smallholder inclusion, 4) impact on rural development, 5) market access issues.

2 Production and trade

- Exports of mangoes, tomatoes (mainly cherry tomatoes) and green beans from Senegal have grown tremendously over the past 20 years (Fig. 2). Export of fresh mangoes has grown particularly fast over the last 10 years, nearly tripling from 6 650t in 2009 to 18 835t in 2018 (Fig. 2A). By contrast, growth in export volumes for (cherry) tomatoes has been less strong during this period.
- Season-wise, observe very strong growth for mango in July and August (Fig. 3A). While exported volumes in August grew by 660% between 2010 and 2018, values grew by 1470% (values not presented on graphs). For green beans, export volumes and values grew most in June, by 370% and 580% respectively. Exports of cherry tomatoes grew most in April and May, near the end of the export season to Europe.
- Meanwhile, relatively large shares of total domestic production also end up on the local market. On average 92% of the total (estimated) mango production, 86% for cherry tomatoes and 33% of total green bean production (DHort 2019).
- The horticultural export industry in Senegal is located in mainly two zones: 1) The southern part of the Niayes, the region in between Dakar and Thiès, and 2) the Senegal River Delta in the north of the country, near the city of Saint-Louis (Fig. 3). In recent years, exports of mangoes from the Casamance (in the South) have been picking-up as well, although these remain small.

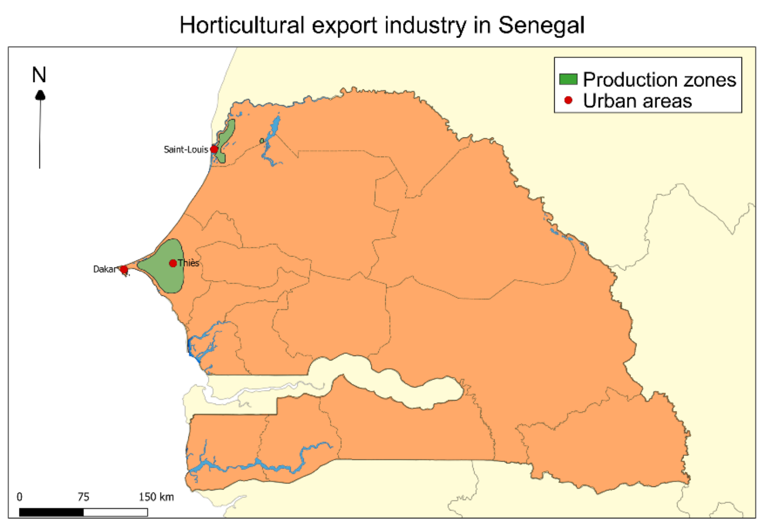

Figure 1. Main export-oriented horticultural production zones in Senegal

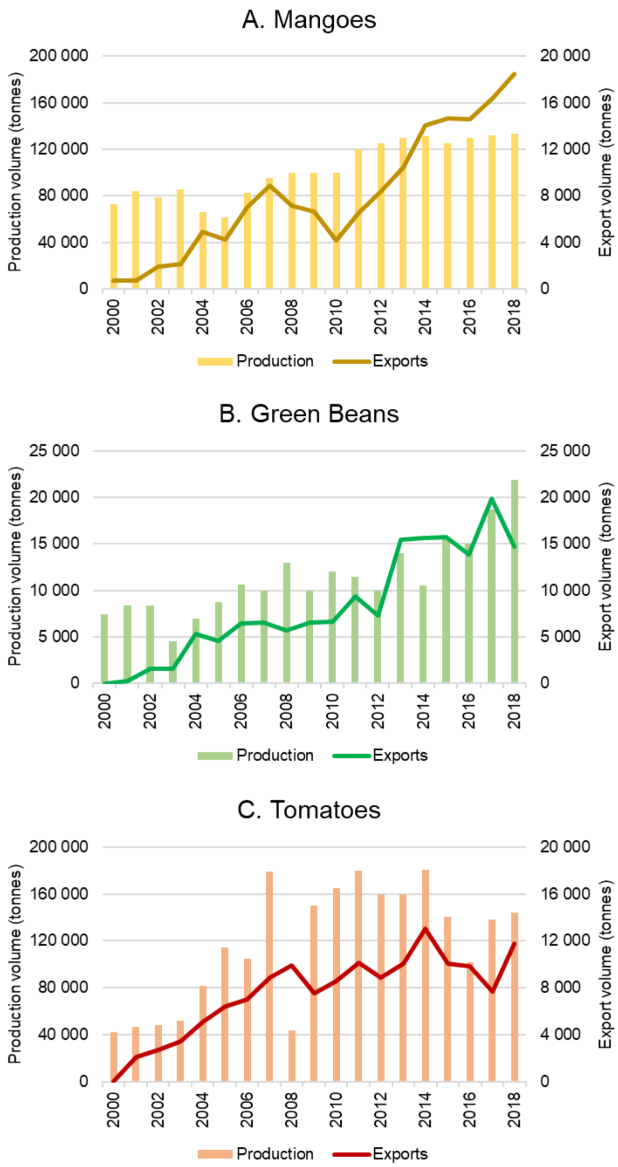

Figure 2. Production and export volumes during the period 2000-2018 for: A) mango, B) green beans and C) tomato (cherry and industrial). Sources: UN Comtrade, FAOstat and DHORT (ANSD).

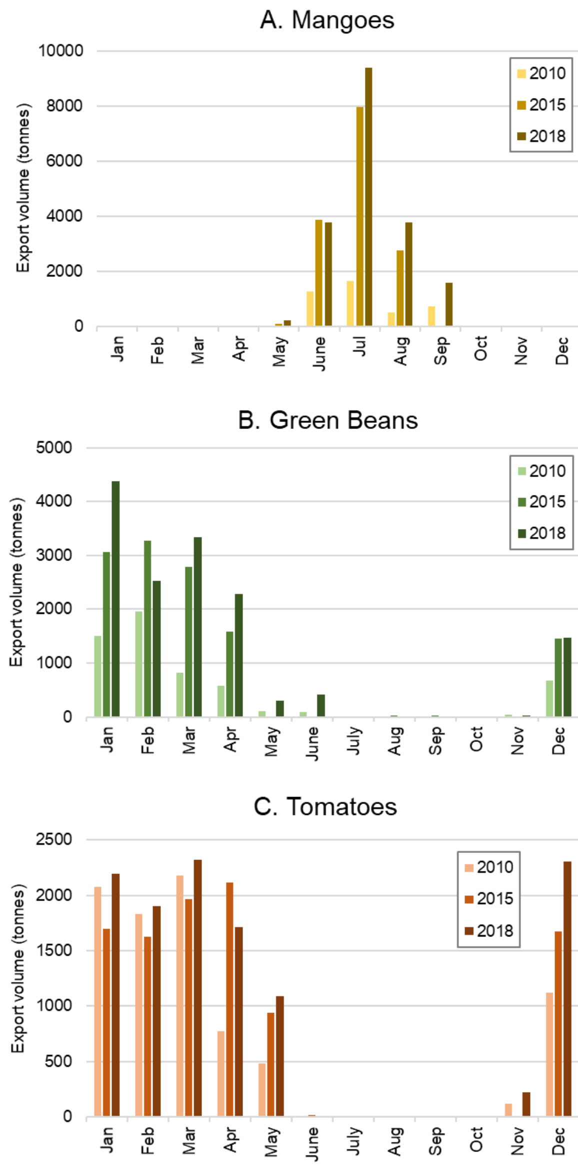

Figure 2. Monthly exports (tonnes) in 2010, 2015 & 2018 for: A) mango, B) green beans and C) cherry tomatoes. Source: UN Comtrade.

3 Value chain characteristics

➢ For the mango value chain, still an important share of the produce intended for export is procured through contract farming. During several visits in 2018 and 2019, we interviewed about 22 export firms, of whom 15 exported mangoes during the 2017-2018 season. In total these firms produced 9553t of mangoes on own mango plantations, while seven firms to some extent or exclusively relied on contract farmers. These seven firms (mostly the indigenous-owned) bought a total of 4935t of mangoes through contract-farming arrangements (from 279 contract-farmers[1] in total). Of the total supplied volume of 14488t, roughly 75% or 10819t were sold on the export market. The other 24% (rejected produce[2]) were sold either to small traders (bana-banas) who transport it to rural and urban wholesalemarkets, or to large processors such as Kirène, a local juice manufacturer.

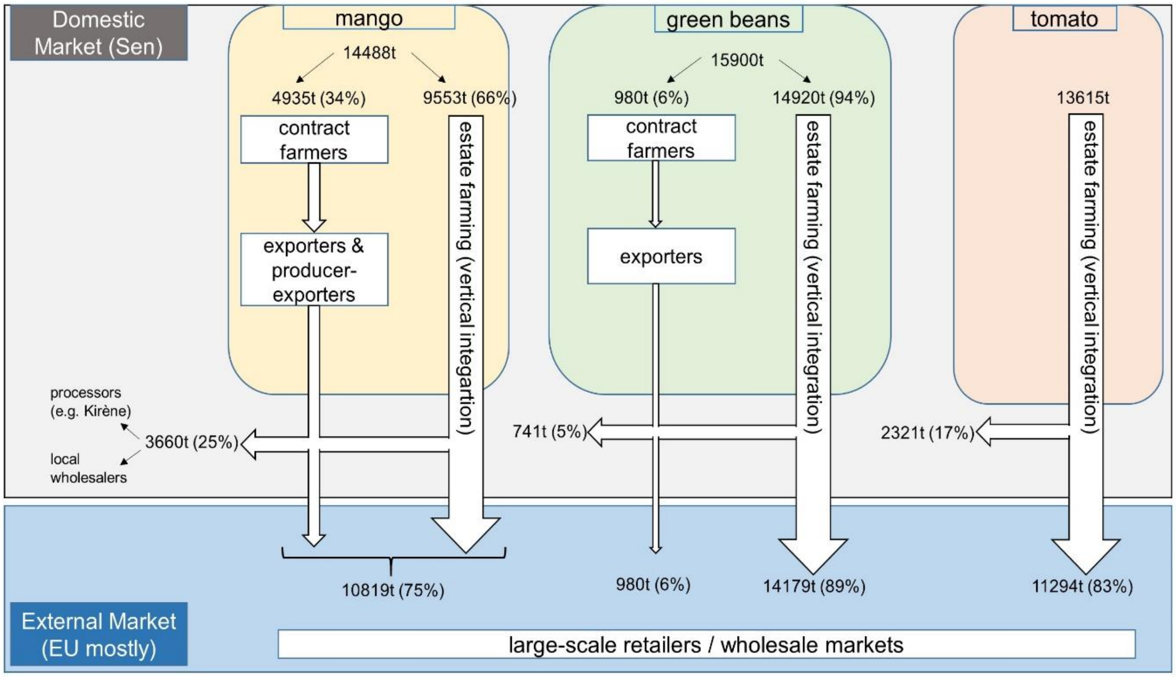

Figure 3. Structure of export chains for mangoes, green beans and tomatoes. volumes are for the 2017-2018 season and are based on own semi-structured questionnaires with 22 export companies in the Niayes and Senegal River Delta.

- The lion's share of exported green beans are produced on estate farms. Based on our sample, nine exporters collectively traded 15900t of green beans during the 2017-2018 season, of which 94% came from own production. The remaining 6% was procured through contract-farmers. In the early years 2000, it is estimated that 95% of exported green beans were still procured through CF (Maertens & Fabry, 2018). According to our data, the vast majority of this total supply of 15900t were exported, although it could be that the percentage sold on the local market (the rejects) is underestimated (estimates by the Direction de l'Horticulture are around 33%). Not all our respondents could give an accurate estimate on that number.
- By contrast, the export value chain for cherry tomatoes is completely vertically integrated. Here, one foreign-owned firm located in the SRD is responsible for at least 85% of the exported volume.

[1] 55% of these farmers work with written (production) contracts (specifying price, date of delivery, required techniques etc.). For the other half, agreements much more informal and mostly built on mutual trust as exporters have been working with them for several years.
[2] Contract farmers themselves are encouraged to pre-condition before they transport the produce to one of 24 condition centers in the Southern Niayes or Senegal River Delta (whom are either privately owned or state-sponsored).

4 Competitiveness

The EU remains the prime destination market for Senegalese fresh fruit and vegetable exports. Between 2010 and 2018, the EU accounted for 89,2% of the country's total export value of cherry tomatoes, 98,6% of the value of green bean exports and 85,9% of mango exports. Within the EU, the Netherlands are the most important destination country for Senegalese FFVs. Other important non-EU European destinations include: Albania (9,4% of cherry tomatoes), Switzerland (4% of mangoes) and Ukraine (1% of mangoes and 1% of green beans) (UN Comtrade, 2019).

Within the top five African green bean exporters to the EU, Senegal has been able to increase its market share from 3% in 2009 to 6% in 2018. Morocco remains the dominant competitor (74%), while Kenya and Egypt have fallen from 16% to 11% and 19% to 8%, respectively. For (cherry) tomato and mango, Senegal's market share has decreased compared to its African competitors, from 3% to 2% for tomato and from 25% to 11% for mango. Morocco is the dominant African exporter of tomato, while for mango Ghana has risen from 0% market share to 46% (Comtrade, 2019).

Regarding intra-Africa trade, small quantities of green beans and cherry tomatoes seem to end-up in neigbouring countries, but these exports remain fairly insignificant. Mango exports to the sub-region are more important. Over the same period (2010-2018), about 7000t of mango were exported towards Morocco, while nearly 11 000 tonnes were exported to Ghana, (most probably to be processed there by the Blue Skies company) (UN Comtrade, 2019; ITC TradeMap, 2019).

5 Standards & smallholder inclusion

In addition to mandatory public standards imposed by the EU, adherence to private (voluntary) certification schemes has in many cases become de facto necessary for Senegalese exporters.

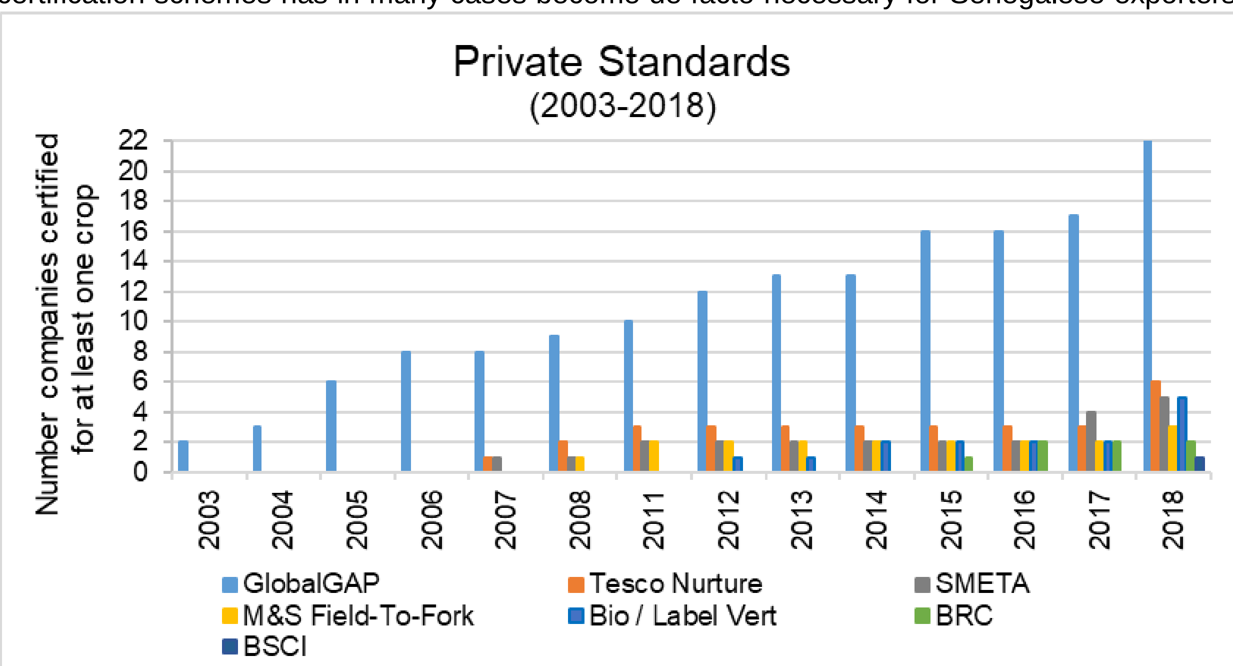

Figure 4. Certification to private standards (at least for one crop). Calculated based on own sample of export companies (assuming they did not skip years in between the first year of being certified and the last year, 2018). Four companies could not remember their first year of certficiation, but were certified in 2018, which explains the small bump for 2018.

This is especially the case for GlobalGAP. From the 22 export companies we interviewed in 2018, all had obtained for at least one of their export crops the GlobalGAP certificate. Figure 4. shows how based on our sample, certfication has evolved over time. However, it must be noted that for many of the newer companies (started after 2010 or so) certification to GlobalGAP came fairly rapidly (within the first or second year of exporting). Certification to other private standards are necessary to enter certain markets, with the UK and the Netherlands being particularly demanding.

Proliferation of these standards and the high (recurrent) costs associated with them is believed to have led to increased concentration and vertical coordination (in the form of complete vertical integration) within the sector. For Senegal, this transformation has been most drastic for exports of vegetables during the winter (see cherry tomato & green beans), while for mango we still observe a fairly large share of produce that is being sourced through contract farming. However, it must be noted that several of the companies interviewed did mention they were planning to switch to own mango production. They have the orchards already, but are waiting for the trees to mature. This ongoing transformation of the value chain structure from contract-farming to integrated estate farming implies that potential effects on welfare for rural households are more likely occur through labour markets than through product markets.

6 Impact on rural development

Household surveys were conducted in the Niayes in 2005, 2007, 2010 and in the SRD in 2006, 2013 and 2016. Original samples sizes started with 300 households in both regions, but were gradually expanded in subsequent rounds to 450 and 600 households in the Niayes and SRD, respectively. Using various analytical methods, research results indicate that:

- Both contract-farming with export companies and wage employment in those companies increases the income of farm-households, with an estimated 110% and 50 to 60% respectively.
- Contract-farming is exclusive and biased towards relatively larger and more capitalized farmers, while wage employment in export companies is more inclusive towards poor households and lower educated people and women.
- The horticultural export industry has contributed greatly to the development of rural labour markets in these regions. Results show that employment in the sector increases incomes, especially at the lower end of the incdome distribution.
- Employment in the horticultural export sector has a direct effect on household income, but also an indirect effect through spillovers; wages earned in the sector are reinvested in

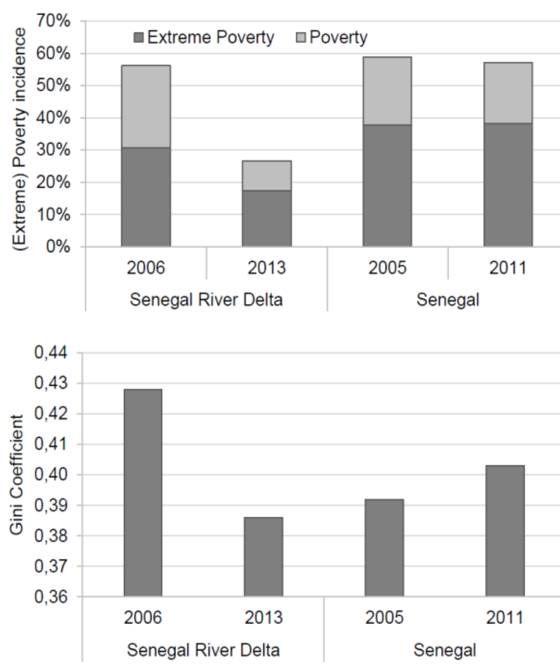

Fig. 5: Poverty headcount ratio and Gini coefficient for Senegal and for the Senegal river delta region. Source: adapted from Van den Broeck, Swinnen and Maertens, Food Policy (2017).

own farm and non-farm businesses, leading to reinforced income effects.

- GlobalGAP certification of export companies has contributed to higher wages and more secure employment in the sector.
- Approximately 60% of workers in the Niayes and 90% of workers in the SRD are women[3]. It is shown how female employment at these companies increases their household bargaining power and contributes to their empowerment in society, which in turn decreases their number of children and age of marriage, and increases household food security and children's school enrolment.

7 Market access issues

- Public standards: The new EU directive (2019-523), aimed at preventing the spread of fruit flies in the EU and implemented on september 1st 2019, is definitely a source of concern for Senegalese mango exporters. At the time of the interview, the DPV[4] was preparing an official plan of action to prepare the sector. Most probably they will opt for post-harvest measures (agreed upon with all local stakeholders) in the form of fumigation of mango shipments at the ports (sea- and airport) of Dakar to make sure all is adhered to. This year, only 60-100t of mango were rejected (Abdoulaye Ndiaye - DPV, August 2019).
- Other vegetables for which public regulations have become critical -not just one specifically, but more the accumulation of directives over the years- according to DPV officials are: sweet corn, paprika, fresh pepper and tomato.
- Private standards: Nearly all exporters in our sample were GlobalGAP certified (either option I or II), with one exception. Despite this high degree of certification, the high recurrent (annual) costs are mentioned as an important hurdle to tackle every year. This remark was mentioned most often by smaller, senegalese-owned companies.
- Other issues that were mentioned related to issues with transports and issues with finding new clients in Europe. Regarding the first, Blue Skies had some critiques about delays of shipments at the port. This is very rare though. To solve the problem they simply switched to airfreight to export their mangoes to Ghana. Second, the director of CFAHS, one of two the main producer organization mentioned the lack of decent 'facilitators' that put Senegalese exporters into contact with European Importers.
- Employment in horticultural export industry has been shown to be inclusive towards the poor, unskilled workers, women and youth. However, recent evidence from the region based a worker survey of 396 employees in ten exporting firms conducted in march 2019 points to significant levels of indirect wage discriminationa and direct discrimination in job quality between female-, youth- and migrant employees with male-, elder- and local employees (Fabry et al. 2019).

8 References

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[3] Current total number of employees in the Senegalese horticultural indrustry is estimated at 27200, of which 57% are female (Maertens & Fabry 2019)

[4] Direction de Protection des Végétaux, responsible for phytosanitary control and registration of air and sea shipments of plant products within the Ministry of Agriculture

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