Factsheet on importables in Senegal

Development of local value chains for onion & potato

1 Intro

In this short fact sheet, we highlight important dynamics observed in domestic onion and potato value chains in Senegal. We rely on both quantitative and qualitative data for our analysis. Primary qualitative information was obtained through semi-structured interviews conducted in 2018 and 2019 with local research institutions, government officials, and different actors up-, mid-, and downstream of the value chain. In addition, we use diverse secondary datasets and existing grey literature on domestic horticultural value chains in Senegal. In the following sections we give a short overview on: i) production and trade, ii) value chain structure iii) policy environment, iv) price trends and v) market access issues.

2 Production and trade

2.1 Onion sector

- Between 2003 and 2018, domestic production increased nearly tenfold from 47 000t to about 460 000t[1] (Fig.1A).
- Imported volumes grew as well, albeit at a slower pace from 55 214t in 2003 to 131 751t in 2018.
- Exports towards the sub-region remain negligent, with a very mild upward trend in recent years.
- Main production zones lie in: 1) the Niayes, a thin coastal strip in between Dakar and Saint-Louis known for its horticulture, and 2) the Senegal River Delta (SRD) and Senegal River Valley (SRV) in the North of the country (Fig.2).

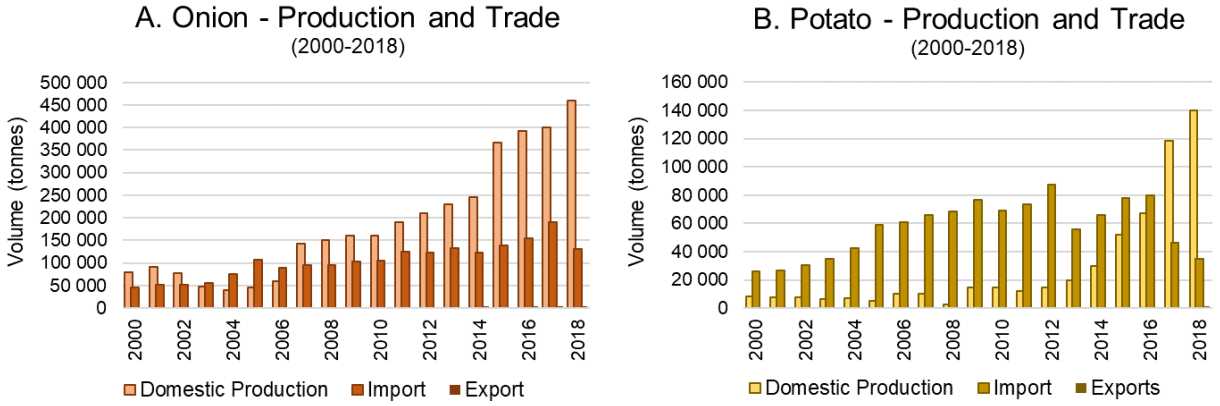


Figure 1. Domestic production, import and export flows (tonnes) during the period 2000-2018 for A) onion , and B) potato. Sources: FAOstat (2019), ANSD (2019) and UN Comtrade (2019).

[1] There exists ambiguity about the validity of the production data for onions. In a recent FAO-MAFAP report production indices for 2016 are re-estimated based on import volumes during those months when supply is assumed to be covered exclusively by imports. Taking into account potential losses and a certain price elasticity of demand, their estimated production is lower, in the range of 215 000t to 310 000t instead of the official estimate of 393 225t (David-Benz & Seck, 2018). According to those estimates, apparent consumption per person would lie on average between 24-30kg/person.

- Production is highly seasonal and growth cycles differ between different regions. Peak harvest usually occurs from March to May (Table.1).

2.2 Potato sector

- Imported volumes increased strongly since 2000, peaked in 2012, and are decreasing again from 2017 onwards (Fig. 1B).
- Domestic production was low and stagnant between 2000 and 2013, but has grown tremendously since 2014, soaring from 29 680t to 140 000t in 2018.
- Exports have been sporadic during this period, although some argue there is an upward trend in recent years which may have partly gone unregistered.

Production zones for onion and potato

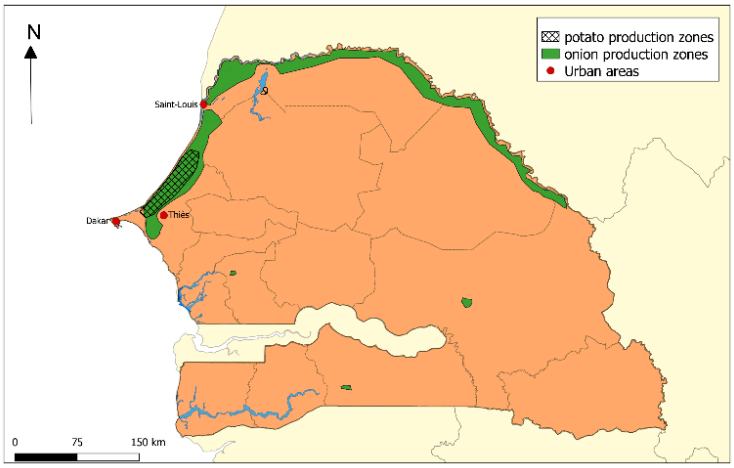


Figure 2. Map of main production zones for both onion and potato in Senegal.

- Production zones are situated both in the Niayes (smallholders in the southern and central areas) and the region around Lac de Guiers (part of the SRV) where production is concentrated on one large-scale farm, Senegindia[2].
- The local harvest season for potato starts earlier compared to onion (Table 2). Furthermore, Senegindia invested massively in cold storage rooms for their potatoes (capacity of 40 000t), which enables them to spread sales throughout the year. From June until September, they de facto hold a monopoly on the supply of potatoes.

Table 1: Availability of local onions throughout the year

Region	Prod.	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Senegal River Delta and Valley[1]	+++												
Northern Niayes[2]	++												
Central & Southern Niayes[3]	++												
Other[4]	+												

Notes: 1) Saint-Louis, Podor, 2) Potou, Rao, Gandiol, 3) Thiès, Dakar 4) Koalack, Tamba, Kolda. +++: High production volumes; ++: Intermediary volumes; +: secondary volumes

Start of harvest	**Peak harvest (high availability)**	**End of harvest**

Source: CGERV (2014)

Table 2: Availability of local potatoes throughout the year

Region	Prod.	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Central & Southern Niayes[2]	++												
Lac de Guiers (part of SRV), near Mbane	++			Approximately 40 000t stored in cold rooms									

Start of harvest	**Peak harvest (high availability)**	**End of harvest / sales of stored potatoes**

[2] Senegindia is an Indian-owned company, mostly active in construction, project developement and real estate in Dakar. Their potato farm near Lac de Guiers has grown impressively fast, starting from 150 ha in 2013 to 2000 ha in 2018. Senegindia's activities in domestic horticultural value chains in Senegal have been controversial.

3 Policy environment

Drivers of this surge in domestic production for onion and potato seem to be a combination of both increased local demand and several supply-side interventions that fit into the Senegalese government's broad vision of import substitution for certain 'strategic' crops (e.g. rice as the prime example, but also onion, potato, carrot). The most important policy trends are briefly summarized below.

3.1 Trade restrictions

- Maybe the most far-reaching of all current interventions are seasonal import bans, implemented for the first time in 2003 (for only 1 month. The main reason is to protect local farmers during peak harvest from 'unfair competition' due to flooding of the local market with cheap, high quality imported (mainly Dutch) onions. Over the years, these bans have extended in time to five months in 2007, and currently span seven or more months per year (approximately from the end of January to the beginning of September). To further increase Senegal's food self-sufficiency, authorities[3] have extended this strategy for carrots starting in 2007, and for potatoes starting from 2014.
- To further limit excessive imports during months when there is no ban (e.g. to counteract hoarding by importers), additional measures were taken in the form of import licensing and granting of quota to importers (partly) based on procurement of local produce (own interviews, 2018 & 2019; David-Benz & Seck 2018).
- Furthermore, in Senegal import tariffs for potato and onion are set at 35% since 2015, the highest tariff band of the ECOWAS Common External Tariff. It is said that for onions the CET fifth band actually decreased the cumulative tax rate, which stood at 42% in the years before 2015 (David-Benz & Seck 2018).

3.2 Input subsidies

Smallholder vegetable farmers receive relatively high subsidies for productive inputs compared to farmers in other sectors. Since 2004/2005 farmers can buy fertilizer at 50% of the market price (David-Benz et al. 2010; IPAR 2015). As part of hasty attempt to boost productivity in the potato sector and attain 'self-sufficiency', several sources note how Senegalese authorities increased the amount of subsidized seed potatoes from 500t in 2013 to over 10 000t in 2018 (VivAfrik 2018). Recent news reports claim the government will again reduce the amount subsidized seed potatoes this year (LeQuotidien 2019).

3.3 Private investment

The Senegalese government is known to be welcoming towards foreign investors. Until a few years ago, FDI in agriculture was mainly targetted at export-oriented production. Recently investments in the domestic horticultural value chains are picking-up as well, by both foreign and domestic investors. The combination of a growing urban middle class, the advent of modern retail, import restrictions and somewhat disappointing prices on European markets are pulling and pushing (export-oriented) horticultural firms towards diversification into domestic and even regional markets, despite widespread criticism on the chaotic structure of the domestic market. Government authorities support these developments actively (e.g. through land deals and tax cuts), and passively. For example, one law dictates how firms with an official export status are not allowed to sell more than 20% of their total produce on the local market. However, interviews revealed that this rule is quite flexible and that certain firms supply a much higher percentage, with government consent.

[3] Coordinated by the Agence de Régulation des Marchés, or ARM

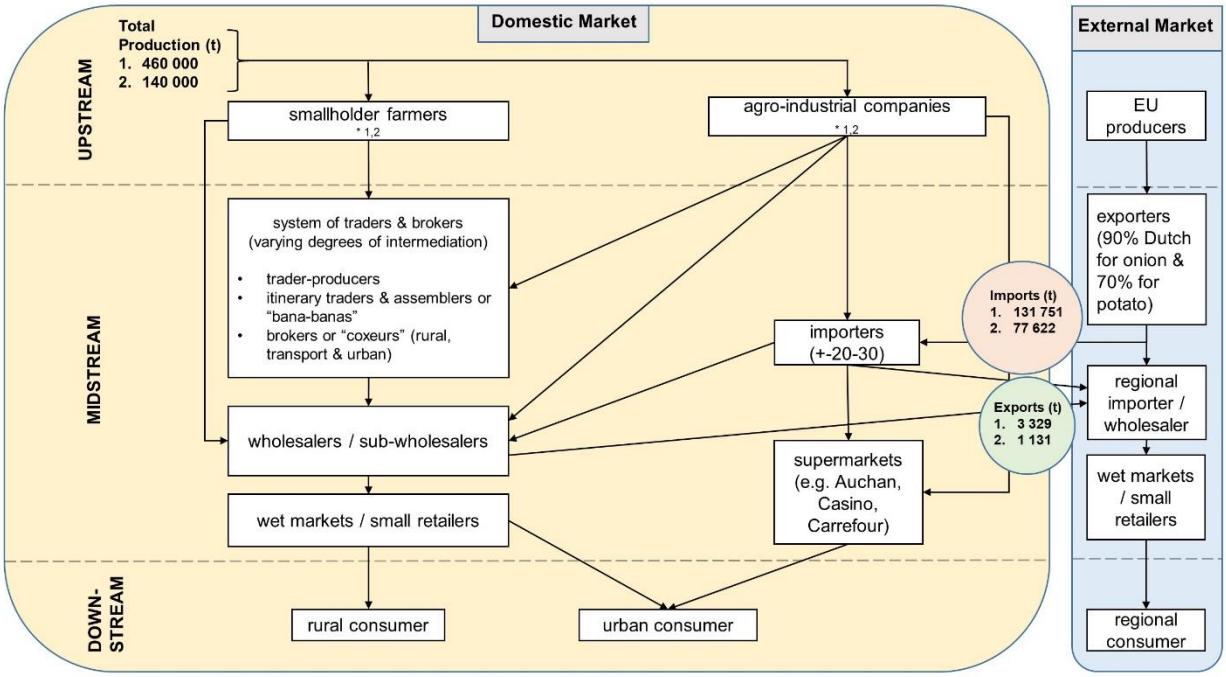
3.4 Expansion of arable land

Investments in large scale irrigation infrastructure in the SRD and SRV -as part of the different programs aimed at upgrading domestic rice value chains-, have drastically increased the amount of land that can be cultivated year-round. This has opened up the potential for smallholders to rotate rice with vegetable crops such as tomato, but especially onion which is considered a more profitable cash crop (Mosse et al. 2018).

4 Value chain characteristics

Figure 4 presents the structure of domestic onion and potato value chains.

Upstream, broadly two types of producers supply the domestic market: smallholder farmers (also more and more medium-sized smallholders), and medium or large-scale agro-industrial companies. Based on census data from 2013, onion cultivation remains primarily smallholder-based with an estimated 38 000 farm households who cultivate this crop (David-Benz & Seck 2018).



Notes: 1 = onion; 2 = potato; data on production and trade are given for 2018

Figure 3. Structure of domestic onion and potato value chains

Also agro-industrial companies are increasing production of onion for the local market. According to own interviews, an estimated 9915t of onions were produced by medium and large-scale agro-industrial companies[4] during the 2017-2018 season, so still a limited share (3%) of total domestic production that year. Nevertheless, several of these companies expressed interest to further expand their acreage destined for the domestic market. By contrast for potatoes, the implementation of the bans and the subsequent production growth has coincided with increasing agro-industrialization. Senegindia currently accounts for 43% of domestic production (60 000t) (own interviews & firm website, 2018).

[4] As we were only able to obtain reliable estimates for a small sample of these firms, the true production volumes by agro-industrial companies probably exceeds this estimate. Some of the interviewed firms also indicated they were planning to expand the acreage devoted to products for the local market.

The midstream section of the value chain remains traditional. A complex web of small-scale (often opportunistic) aggregators or 'bana-banas', brokers, and producer-traders transport the produce during the local season from rural markets and collection centers to urban wholesale markets (own interviews, 2019; Seck, 2014). From there on, more specialised wholesalers distribute these vegetables to small retailers, but also to modern retailers such as Auchan, Casino or Carrefour that are growing fast in some of Senegal's major cities (USDA 2019). Most trade is still done through spot market transactions. Formal contractual relations exist almost exclusively between supermarket outlets and the agro-industrials. Interviews with agro-industrial companies show how they prefer to work with larger wholesalers and importers (e.g. Senegindia only works with 12-15 large traders). Furthermore, there has been recent foreign investment[5] in more sophisticated storage infrastructure, capable to preserve and maintain quality of locally produced onion and potato for several months. Apparantly, local producer organizations have already made use of their services, with succes (own interviews).

5 Price effects

In Senegal prices for onion and potato are marked by strong seasonal price variation, induced by both the seasonality of production and the implementation of the import bans. In Dakar, prices for imported produce soar once borders are closed (Fig.4A). Using national-level[6], average retail prices for imported and local products, it becomes clear that a large price gap exists between both types of products, for both onion and potato (Fig.4B and Fig.5B). Each time the border closes, retail prices for local products plummet.

For onion, imported produce fetches an average premium of 88 CFA/kg compared to local produce. During peak harvest, an average kilo of local onion may be sold at less than half the price of one kilo of imported onion. These seasonal price drops seem to be the result of: 1) oversaturation of the market with local produce during peak harvest (April & May), 2) superior quality of the imported product and a general lack of attention for quality attributes (e.g. shelf-life, size or firmness) for the bulk of the local produce, and 3) inadequate and/or badly managed local storage facilities, which forces farmers to sell quickly after harvest. Similar price trends are observed for local versus imported potatoes, although the average price difference is less grave (around 45 CFA/kg). However, for potato it must be noted that the highest prices (at the end of the local season) are fetched by Senegindia, practically the only firm able to supply the local market from June until September.

In short, there seems to be a mismatch in demand for and supply of local quality products. While an important share of the Senegalese consumers prefers and is willing to pay more for quality, small farmers are either unable (lack credit for quality inputs), or lack the incentive (traders do not pay quality premia) to deliver such a produc

[5] Agro-expedition Senegal, a subsidiary of the Silas Export Holding, one of the larger Dutch exporters of onion, potato, carrots etc. They have been active in Senegal since 2018. During our last visit in 2018 their storage capacity stood at 1500t, but they were planning the construction of an extra cold chamber in 2019, able to store an extra 2000t. According to them, demand for their services is very high.

[6] We use prices averaged over all of Senegal's fourteen administrative regions.

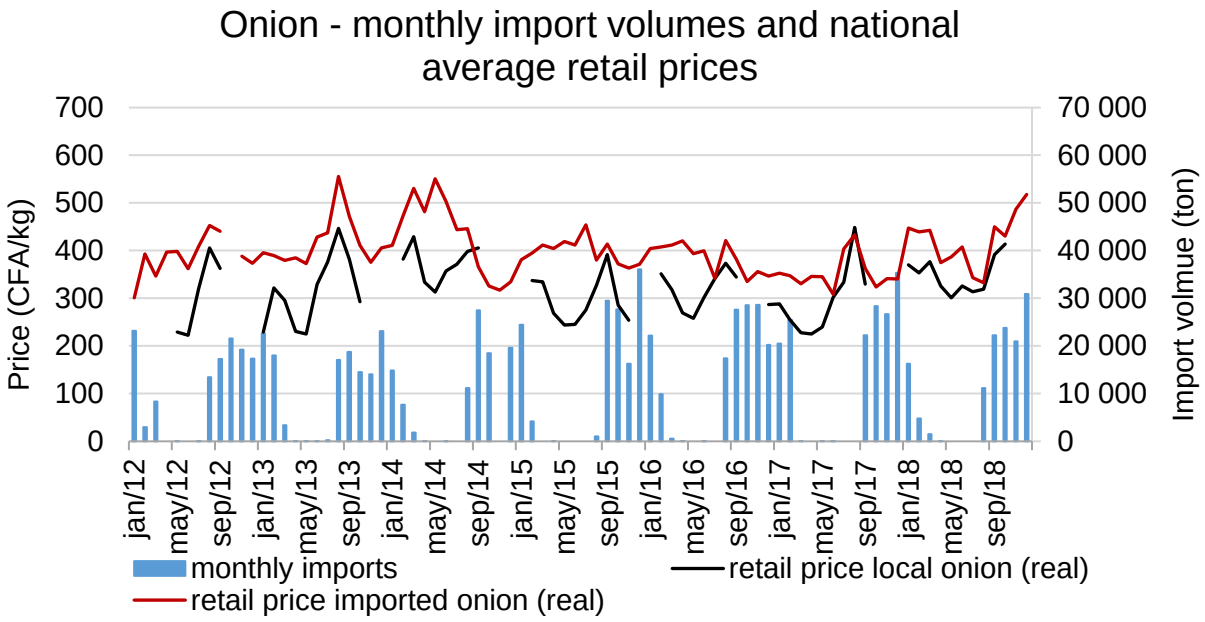


Figure 4. Monthly onion imports (ton) and national average retail prices for local and imported onion during the period 2012-2018. Sources – Commissariat à la Sécurité Alimentaire (CSA) for national level retail prices. Monthly import volumes retrieved via UN Comtrade; Real price levels are calculated using the Food CPI with 2010 as the base year, retreived via FAOstat

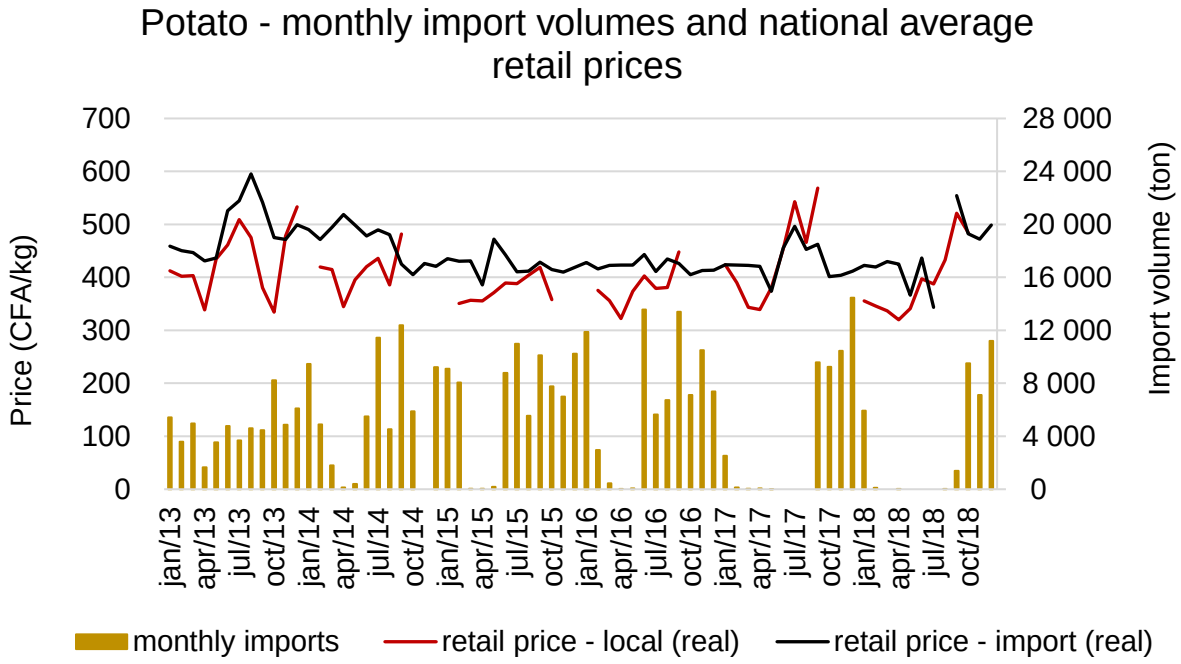


Figure 5. Monthly potato imports (ton) and national average retail prices for local and imported potato during the period 2013-2018. Sources - Commissariat à la Sécurité Alimentaire (CSA) for national level retail prices. Monthly import volumes retrieved via UN Comtrade; Real price levels are calculated using the Food CPI with 2010 as the base year, retreived via FAOstat

6 Market access issues

6.1 Producers

We can say that seasonal import bans have made it easier for local smallholders to sell their vegetables, and have therefore increased market access for local producers. This is evidenced by the huge supply response that has coincided with increasing border protection over the years (even when estimates would be exaggerated). However, opinions on whether these measures continue to benefit smallholders are mixed, and there is a lack of data to actually measure the impact. There are still several issues that limit market access for smallholders:

- First, there is the issue of quality. The Senegalese government's focus has been on supply-side interventions, without taking consumer demand for quality into account. Superior shelf-life may give imported products an advantage over local produce when both are on the market. Since farmers cannot adequately signal this quality attribute to traders (shelf-life is largely unobservable), traders do not remunerate it. Traders do reward size (which is visible), but this in turn induces adverse production practices by farmers, which further decreases shelf-life (Bernard et. al. 2017). These practices may have led to a "lemon market" situation, whereby those farmers that produce quality are competed out of the market. This lowers value chain efficiency, potentially through high post-harvest losses.
- Second, the gradual extension of the seasonal import bans over the years (e.g. Fig. 3) has sometimes brought confusion and uncertainty to the market. Although the seasons during which bans are active are somewhat predictable, the exact dates of when these bans will be imposed or lifted are communicated only a few days in advance to the general public, and can still differ up to month or so compared to the previous year. The ultimate decision is made by the ARM (Agence de Régulation des Marchés) after having shared collective discussions with all relevant actors along these value chains (PO representatives, importers, traders, consumer organisations, research institutes). Some think these decisions occur too much on an ad-hoc basis, lack transparancy and are not communicated well to the majority of those involved. This may cause significant financial losses for some (own interviews; Le360Afrique, 2019;).
- In the potato sector, the issue of competition between small-scale and large-scale agriculture is most tangible. POs in the Niayes whom have specialised in cultivation of potatoes blame the Senegalese government for letting foreign (Indian) investors abuse these import bans at the expense of small farmers, who are unable to compete with the low prices they set. From interviews with several actors along the chain, it became clear the ARM is having a hard time making sure prices remain stable and low enough for consumers, remunerative for producers while also limiting 'unfair' competition between agro-industrials and smallholders.

6.2 Consumers

For decades, Senegalese consumers have been exposed to cheap, high quality imported vegetables from Europe, especially so in urban areas. Price data (Figures 4 and 5) suggest they developed a taste for imported products and are willing to pay more for it. A few interviewees in Dakar noted how during the period of the import ban they are "forced by the government to eat rotten onions". However, it remains unclear whether preferences for imported vegetables are purely due to higher quality characteristics, or whether the origin of the product as such results in those preferences, which would imply different types of policy measures to solve the issue. In August 2019, we ran a Discrete Choice Experiment on consumer preferences for quality attributes of onions with 300 respondents in three major cities in Senegal. Preliminary results from a

conditional logit model point indeed to higher preferences for imported produce. Furthermore, respondent had significantly higher preferences for onions with longer shelf-life and for onions that are more firm.

6.3 Midstream

Interviews suggest that the number of horticultural traders in the domestic market has increased in recent years. Whereas supply chains for imported vegetables are very concentrated (controlled by a handful of importers), supply chains for local produce are basically open for everyone able to buy or rent a car or truck. Interviewees note how especially in recent years they observed more seasonal (onion) traders, even when these normally do not trade vegetables at all suggesting that increased profitability in sector has drawn in many new players. In addition, road infrastructure in between Dakar and the main production zones has greatly improved in recent years (e.g. the renewed 'Route des Niayes' and the new highway between Dakar and the new airport). Telecom infrastructure and mobile (smart) phone penetration in rural areas has expanded as well. These public and private investments may have contributed to greater efficiency and (lower transaction costs) and greater inclusiveness (connecting remote markets in the north with Dakar and other urban centers), benefitting actors along the value chain.

However, there are hurdles still. Large-scale agro-industrials favor doing business with larger, more capitalised traders, able to buy large quantities at once and on a more regular basis. Importers and larger wholesalers in Dakar are beginning to see opportunities to fill in this gap, given the seasonal import ban. A large share of the rapidly growing potato sector already seems to be in the hands of a few large traders, through the firm Senegindia. We have little knowledge on how these trading firms operate, how many people they employ, or how they compete or perhaps work together with smaller traders (the 'bana-banas').

Traders used to operate completely free of regulations. This laisser faire policy is now being questioned because of increasing complaints about 'exploitative' bana-banas taking excessive margins and not rewarding farmers adequately. Many of these traders may also not provide the right incentives for farmers to focus on quality of production, instead of only on quantity and size. In reaction to this, the ARM has tried to implement recommended producer and consumer prices, depending on the production zone, market and time of year. Furthermore, they try to stabilize prices by keeping a closer watch on or even limiting the amount of produce that is being transported to Dakar's wholesale markets. When buying produce at rural collection centers in the production zones, traders must receive a "lettre de voiture" as proof of purchase. if the trader gets pulled over and does not have this proof with him (together with all the necessary stamps), he receives a fine. There is a trend towards greater regulation and market intervention by the government. The question remains whether these measures will help solve current issues.

7 References

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