



## Business Case: Lead Onion Farmer with Outsourced Production



## Description of Business Model

This business model is developed for a commercial onion farm who produces high quality onions for the local high-quality market & for export to the region (Ivory Coast, Mauritania, Mali).

The company trains agricultural managers to become lead farmers, who effectively over time are able to become the primary producer in a decentralized production model. The company could own the land, making it available to farmers, or work with farmers who already have access to land and are within a workable distance from the farm (30km)

The company becomes a service provider to the outgrowers and so provides oversight of technical issues, selling imported seed and inputs as well as land preparation and other mechanized services to the outgrowers

The company owns the facilities and logistics for proper post-harvest handling, allowing the onions to reach premium markets, which are undersupplied.

The company benefits from an increased area under cultivation and outsources farming risk to the outgrowers.

Outgrowers benefit from prefinanced, high quality inputs, training and support and can attain yields of between 50t/ha and 100 tons/ha. They also benefit from access to premium markets.

Issues of land tenure and access are resolved by including the local community as outgrowers. This gives the commercial farm scalability.

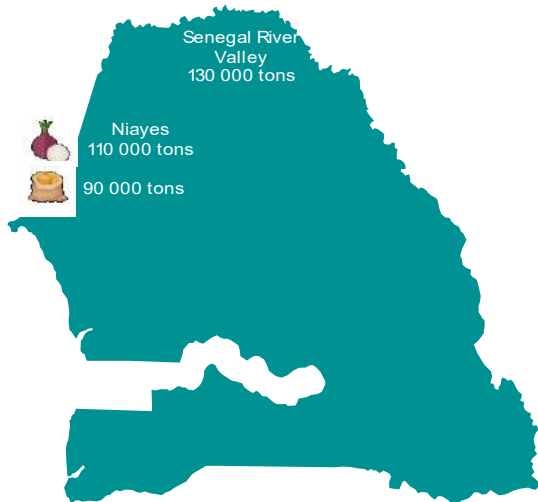


## Typical Entrepreneur

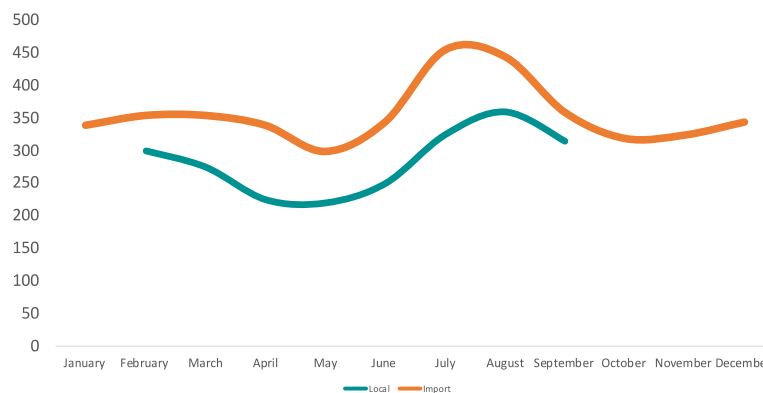
- Existing large-scale vegetable producers who are looking for rotation crops outside of the EU export onion production season.
- Dutch exporters to Senegal who are looking to protect their end-market in light of restrictions on imports in Senegal.
- Importers looking to invest in local production to meet requirements for import quota allocations.

### Market

- There's a growing demand for high quality onions on the local market. Each year imported onions fetch higher prices than local onions throughout the year. To accommodate this demand production of quality onions has been expanding.
- Regional opportunities also exist to export onions but these are dependant on an improvement in the quality of local onions.
- The willingness of local shoppers to pay premium prices for imported onions throughout the year suggests that there is an opportunity for local improved quality, mid-tier priced onions.



Average Price of Onions in Senegal  
2005-2016



Source: Améliorer la qualité de l'oignon au Sénégal Contractualisation et autres mesures transversales  
FAO, 2018

### Ivory Coast Onion imports by origin during the peak production season in Senegal

	March	April	May
Niger	5 800	7 000	9 360
Burkina Faso	9000	5000	2880
Netherlands	2500	3350	3000
Other	700	770	760
<b>Total Imports</b>	<b>18 000</b>	<b>16 120</b>	<b>16 000</b>

Source : ITC Trade Map

### Product or Service

The business model includes the production of improved quality onions by lead farmer. This will be complimented by onions sourced from small scale producers and cooperatives. These onions will be retailed on regional market in the first half of the season (Ivory Coast & Mauritania). Late season onions will be sold on the local market. This will require storage.

- Average Sales Price: 220 FCFA/kg
- Variety: Red King & Mercedes\*

*Red King, Mercedes and non -Violet de Galmi varieties have been specifically selected to manage side selling. See ingredients for success for more.*

### Rationale for investment

#### Premium local segment:

- Premium prices are paid for high quality storable onions in Senegal. This is especially true in that this market is undersupplied. Import bans have also created pressure

#### Regional market opportunity:

- The regional market can only be accessed by high quality onions which can survive transport. Markets include Mali and Mauritania, although market prices are lower than Senegal. The Ivory Coast presents an interesting market, for surplus onions that cannot be sold domestically

#### Late season production (premium prices)

- Later in the season onion prices increase on the local market. Price premiums are thus possible. Good post harvest handling and storage can allow access to this market, although storage costs increase with time as well.

#### Access to land

- Outgrower schemes are a helpful mechanism for accessing land and creating a social contract between the community and the investor. See more in ingredients for success



### Key Assumptions

#### Red King Onion

Small scale farmers are accustomed to the Violet de Galmi variety which produces yields of 20 to 30 tons per ha. But, commercial farms prefer to use imported seed of high yielding varieties such as Red King or Mercedes which produce between 50 and 100 tons per ha. It also offers differentiation from the cheaper Violet de Galmi variety. Good agricultural practices & a good choice in variety provide improved quality and so a better shelf life.

#### Lead farmer

The lead farmer is a commercial export onion farmer who has the infrastructure for proper post harvest handling. They want to outsource production while maintaining control of the quality and storability of the onions. Effectively, the lead farmer becomes a service provider to the onion farmers, offering mechanisation services, inputs, training and off-taker/ post harvest services.

100ha are assumed for the lead farmer (6000 tons).

#### Outgrower component

The farm hires and trains people to run production blocks on the main farm's irrigated perimeter. When these 'managers' reach the required level of competence, they are given their own block of 25 ha to run with the lead-farm providing all of the mechanised services, extension and post harvest facilities.

An additional 100ha are assumed for generalised outgrowers (6000 tons).

#### Markets

The regional export and local market high quality onion remains under supplied. This can only absorb onions that have good shelf-life and transportability. The local market is not targeted because coxears buy directly from the farm-gate making the risk of side selling too great for the lead farmer. It also offers higher yields, improved storability, lower waste and better return on investment.

#### Location: Senegal River Valley with irrigation

Production in cooler regions of Les Niayes offers the possibility of a second rotation which arrives on the market later, achieving premium prices. However, the water insecurity in this zone is increasing and makes investment here risky.

The Senegal River valley offers only 1 season, however availability of water and land makes this the better option in the medium to long term.

#### Mechanised Direct Seeding

Direct seedings using a vacuum seeding machine massively reduces the cost of transplanting seedlings from a nursery. However, it does require precise water management over the entire block from day one, while transplanting allows a smaller nursery block to be irrigated for the first 2 months, before transplant.

#### Scale Up

The model outlines the end situation where 200 ha are under cultivation. However, additional blocks can be added in a step-wise approach over time. The rate of expansion depends on having sufficiently skilled local producers who are able to meet quality standards.

#### Single Onion Rotation

High temperatures & increasing humidity along the Senegal River Valley from February onwards are not conducive to onion growing.

This model would be for a single season in the north of Senegal, with other rotation crops in the wet season.

#### Improved Yields

Yields for improved varieties from imported seed may exceed 100 t/ha, with 60 tons being average. This compares to Violet de Galmi under traditional techniques which may attain 30 tons/ha.

60 tons per ha have been used in the model.



### Production Costs & Gross Margins

Own production cost per ha		Cost per outgrower Ha
Inputs	FCFA 737 560	FCFA 737 560
Labour	FCFA 1 370 000	(outgrower)
Transport & marketing	FCFA 1 420 752	FCFA 1420 752
Purchase of onions		FCFA 10 500 000 (FCFA 175/kg)
<b>Total</b>	<b>FCFA 3 528 312</b>	<b>FCFA 12 676 312</b>

Gross margin own production per ha		Cost per outgrower Ha
Revenue	FCFA 13 200 000	FCFA 13 200 000
Repayment of prefinance		FCFA 2 176 312
<b>Total revenue</b>	<b>FCFA 13 200 000</b>	<b>FCFA 15 376 312</b>
Variable costs	FCFA 3 528 312	FCFA 2 176 312
Purchase of onions		FCFA 10 500 000 (FCFA 175/kg)
<b>Total variable cost/ha</b>	<b>FCFA 3 528 312</b>	<b>FCFA 12 676 312</b>
<b>Gross margin (ha)</b>	<b>FCFA 9 671 688</b>	<b>FCFA 2 700 000</b>
<b>Gross margin %</b>	<b>73%</b>	<b>FCFA 17,6%*</b>

\* Low gross margin is due to paying outgrowers the market price to avoid side selling. Prefinance is repaid at cost

### Investment Required

Existing investments		New investments for out-growers	
Dry facility & packhouse	FCFA 900 000 000	NA	
Shed and offices	FCFA 600 000 000	NA	
Implements and equipment	FCFA 427 879 066	Additional rotavator and plough	FCFA 1 733 333
Vehicles (incl. tractors)	FCFA 60 600 000	Additional tractors and pickup	FCFA 45 000 000
<b>Total additional investments</b>		<b>FCFA 46 733 333</b>	

### Return on Investment

The additional investments are recovered during the first season of outgrower production. Cost per kg of onions for the outgrower program is FCFA 36 which is reimbursed after harvest.

### Available Financial Instruments

- Micro finance loans to individual outgrowers
- Commercial bank loans to the company for aggregation of onions at harvest



### Without Outgrower

In the existing situation the commercial farm has invested in equipment and infrastructure and farms on 100 ha of own land.

- Revenue is FCFA 1 320 000 000
- Gross margin on own production is 73%
- Net profit per cycle is FCFA 408 652 149

### With Outgrower program

- In the improved situation the commercial farm uses the same infrastructure and equipment to service an additional 100 ha for outgrowers

- Revenue is FCFA 2 640 000 000
- Gross margin is 39%
- Net profit per cycle is FCFA 463 543 616
- Net revenue increase is FCFA 46 683 466 (13,5%)

Without Outgrower		With Outgrower program	
<b>Revenues</b>			
Onions main season(own production)	1 320 000 000		1 320 000 000
Onions main season (outgrowers)	-		1 320 000 000
<b>Total revenues</b>	<b>1 320 000 000</b>		<b>2 640 000 000</b>
<b>Variable costs</b>			
Onions main season(own production)	352 831 200		342 831 200
Onions main season (outgrowers)	-		1 267 631 200
<b>Total variable costs</b>	<b>352 831 200</b>		<b>1 610 462 400</b>
<b>Gross margin</b>	<b>967 168 800</b>		<b>1 029 537 600</b>
<b>Fixed costs</b>			
Maintenance and insurance	119 308 744		122 112 744
Fixed staff	73 200 000		73 200 000
Other fixed costs	242 160 000		242 160 000
Depreciation	123 847 907		128 521 240
Long term loan interest expenses	-		-
Seasonal loan interest expenses	-		-
<b>Total fixed costs</b>	<b>558 516 651</b>		<b>565 993 984</b>
<b>Profit before tax</b>	<b>408 652 149</b>		<b>463 543 616</b>
Applicable tax	-		-
<b>Net income</b>	<b>408 652 149</b>		<b>463 543 616</b>

- The gross margin is substantially decreased because onions have to be purchased from the outgrowers at the going market price
- In effect the commercial farm takes a trading margin of 20% on the onions + reimbursement of the prefinance and extension costs
- Volumes of onions traded double
- This model is highly profitable for the outgrowers because the production costs excluding labour are all prefinanced through the outgrower program.
- The revenue increase for the commercial farm seems less attractive
- However, the strategy has other significant benefits for the commercial farm:
  - gaining and maintaining a larger market share
  - Accessing land through outgrowers
  - Outsourcing agricultural risks



1

### An Efficient Lead Farmer model

Successful outgrower schemes require access to finance in order to pre-finance inputs, mechanization services etc. This hinges on the credit worthiness of the investor, which in turn is greatly assisted by ownership of meaningful assets and good control over a portion of production.

The lead farmer in the system ensures that there is a guaranteed throughput of onions and offers a “demonstration” plot for learning-by-doing of the farm foreman.



2

### Training and Ongoing Extension Services

Quality onion production hinges on the ability of the lead farmers to source quality onions. However, current farming practices are counter-productive in this respect.

To ensure the quality of the onions & achieve improved pricing, services will need to be provided to the small-scale farmers who are participating in the system. This also ensures that the farmers are able to improve yields and reduce waste- all important contributions to the value of belonging to the outgrower program.

Extension and training is essential to ensure that expensive inputs are used correctly, and economic yields of high-quality onions are produced.



3

### Pre-Financing of Inputs

All costs of production, including mechanized services, irrigation and inputs are pre-financed by the commercial company who owns the equipment and the facilities for post harvest handling. This is accompanied by extension and training to ensure that farmers achieve economic yields and produce high quality storable onions.

Prefinance is repaid from the purchase price of high-quality onions.



4

### Inclusion of Mechanization Services

Onion production in the traditional system is hugely labour intensive and expensive, limiting the area that a farmer can cultivate.

Mechanised services such as land preparation and direct planting save time and labour cost, but also allow higher yields and more control of the uniformity and marketability of the onions produced.



5

### On the Job Training and Selection of Block Chiefs

Quality production is critical. BU selecting block chiefs from the foremen you have a total immersion in to the growing practices and quality standards of the leaf farmer. The foremen who will become block chiefs are are selected from the local community and are employed on the main farm for a period of years. This allows for an intensive training. They themselves become a Block Chief or independent producer, employing others from the community, providing a step-down approach for the dissemination of good agricultural practices.



6

### Tight management of “side-selling”

Production of Violet de Galmi onions for the local market is not suitable for an outgrower program because the system of coxeurs who buy at the farm gate makes the risk of side selling too high.

This model allows for outgrower production on the main farm, giving complete control of production practices and sale of onions to the commercial farm.



7

### Incorporate a financing institutions to reduce default risk to the commercial farm

1. Pre-finance only to farmers with a track record of being reliable payers
2. Use MFI's as a means to disburse funds, approve loans, check credit worthiness & collect repayments. They are better geared to carry out these tasks.
3. Loan recipients are also less likely to default to an MFI as this has repercussions for their credit record.
4. Reduced working capital need or credit risk for the commercial farmer who provides the inputs, mechanization and extension services.



8

### Cooperatives and community inclusion

While cooperatives are not included in this phase of the model, it is possible that farmers outside of the main farm will achieve a standard of production whereby they are able to produce high quality onions for sale to the commercial farm. These farmers could be clustered for ease of mechanization and receive inputs, mechanization services and post harvest support from the commercial farm who would become a service provider/offtaker. These farmers could be organized in to cooperatives to access prefinance and organize production.

The lead farmers could consider this as a bolt-on to operations- especially where this is a winning ingredient for access to land. It also allows the lead farmer to expand beyond the land agreed in phase 1.





8

### Community Support to access land

Land in Senegal cannot be bought. And because fertile, productive land, with access to water is limited, accessing land-especially large tracts for development- almost inevitably involves the transfer of land from communities to investors. If done sensitively and sensibly it works. If not, it can result in land grabs and blockages to successful implementation of the project.



### Lessons can be drawn from successful cases:

1

#### Identify land and de factor owner:

The traditional system of land rights means that it's not always clear who owns the land. Start by working with associations, local partners, state actors to identify suitable land. APIX can support to identify the "owners" of the land. They also moderate the discussions as one work to get community support.

2

#### The Delibération Step:

This is negotiated with the community, usually through the mayor& village chiefs. Through community discussion and debates involving the local village, residents, town etc they come to an agreement around their willingness to vest usage of the communal land to the investor. This also involves the community making clear what they expect in return by way of jobs, contributions to community development etc.

3

#### Formalise with a lease:

Land can be leased. This is managed through the state. A small annual fee is paid to the central government Small annual fee to the central government, an asset in loans

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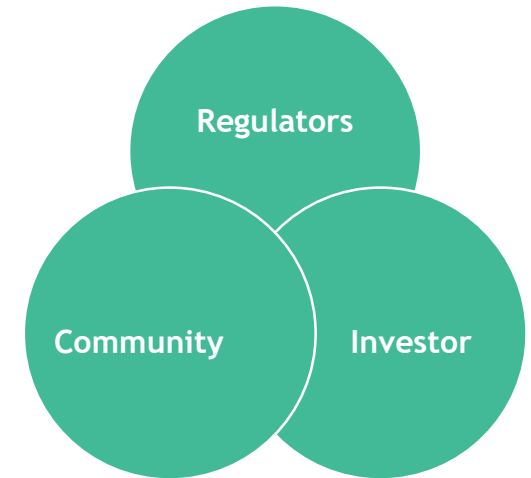
#### Secure Land Right Titles for critical infrastructure points :

Often issued for a small portion of the land you have. This is typically where you are making major capital investments, such as investing in pack houses etc.

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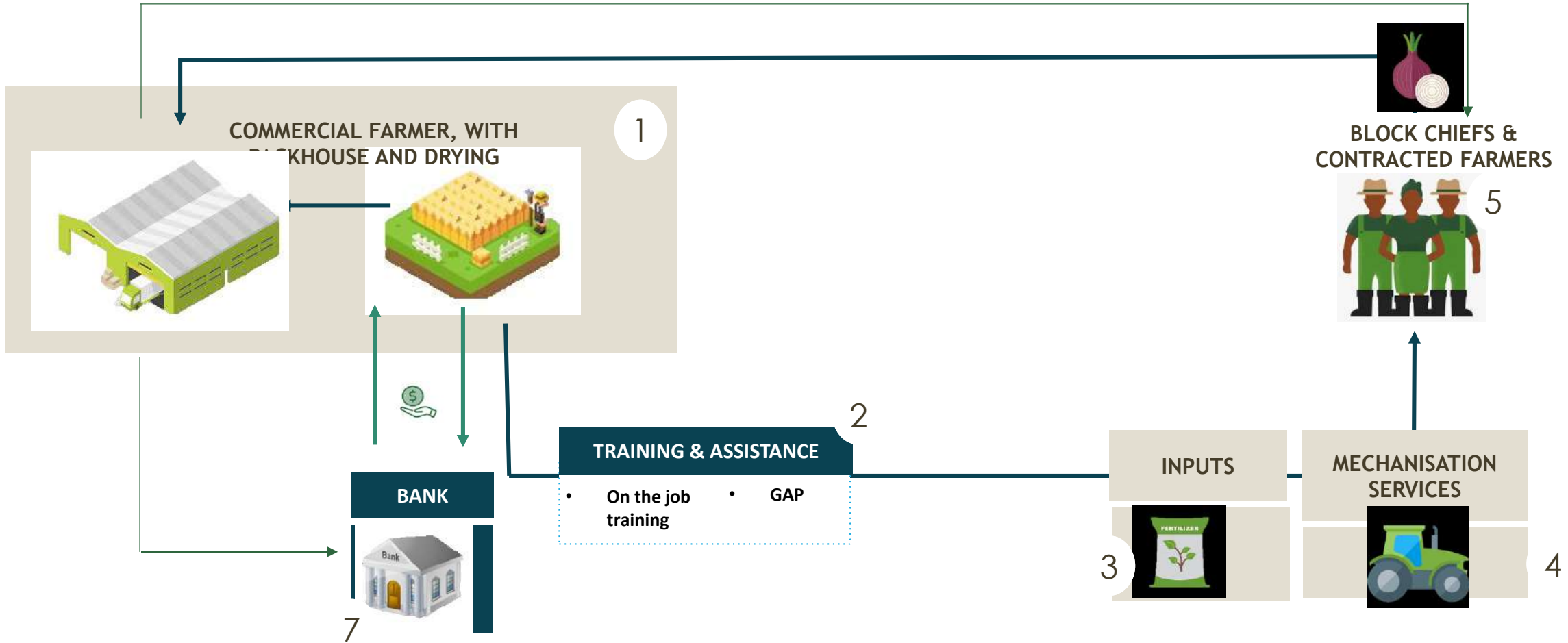
#### Ongoing Community Relationship Building

The long term nature of orchard investments makes it especially critical for the relationship on both sides to be mutually beneficial. CSR efforts are a key part of sustainable investment activities. It builds trust, cements the role of the investment in the community and stabilises continued support of the and lease arrangement. Some initiatives include social welfare efforts such as access to water, clinics or improving schools. But building business linkages is another way to strengthen ties and a mutually beneficial relationship.





### Outgrower Model of Success





### Risk Analysis

#### **Side selling**

The low availability of quality onions on the market increases the incentives from side selling. It will be important to manage the side selling rate so that the lead farmer gets full value from the outgrower support packages that they finance and pre-finance to the small-scale farmers.

#### **Credit default**

Access to credit is an important ingredient to these farmers being able to achieve the quality and quantities that will make their participating in the outgrower scheme worthwhile.

#### **Onion Quality & Yields**

Traditional farming techniques and marketing systems do not lend themselves to high quality, storable onions. Small scale onion farmers default to this system if not supervised throughout the production process.

“Sight of eye” is used to determine whether inputs such as fertiliser and pesticides are required. This systems lead small-scale farmers to save money by economizing on inputs with disastrous consequences for onion quality and yields



### Risk Mitigation

#### **Side selling**

By giving outgrowers (Block Chiefs) a block on the main farm gives the commercial farm full control of the post harvest handling and sale of the onions.

In addition, selection of other higher yielding and better-quality varieties, means outgrowers can get higher prices than coxeurs, who buy at farm gate are prepared to pay. Managing the harvesting provides additional leverage to collect the onions before side selling occurs.

#### **Credit default- MFI's as a conduit for cash**

MFI's are best placed to screen credit worthiness of the block chiefs and where included the outgrower scheme members. Project experiences have shown that issuing financing through the MFI increases the perceived consequences for not repaying pre-financing. As a result, they play a critical role in improving compliance.

#### **Onion Quality & Yields**

The Block Chief system requires that outgrowers go through several years of training under the direct employ of the company, with constant supervision. Once they attain the required level of competence, they are given a 25 ha block to farm, using the commercial farm as a service provider for input supply, mechanization, irrigation, post harvest handling and marketing. This ensures the quality of onions is suitable for transportation and sale on mid to high end markets at a premium price.



### Economic & Social Impact

- Improvement in the yields, quality and revenue for onion farmers
- Access to premium markets
- Access to professional post-harvest infrastructure
- Skills transfer
- Inclusion of small scalers into a vertically integrated and professional onion production and marketing system



### Environment Sustainability

- Waste in the onion chain is estimated as being as high as 50%. This model has the potential to improve the storability of onions and encourage farmers to shift techniques to deliver better quality onions overall.
- Reduction of misapplication or over application of nitrogen fertilisers and pesticides which lead to pollution of waterways.



### Women & Youth

- Women are particularly over-represented in packhouses across West Africa. This opportunity would thus provide improved employment for women. This is often in safer work conditions with better remuneration and assorted benefits.
- Youth are generally more suitable for the outgrower program than older farmers who default to old ways of farming. In addition, youth have a higher degree of literacy than the previous generation
- The block farmer system can give youth unprecedented access to land, which is usually vested in the head of family



### Knowledge Transfers

The Netherlands holds deep knowledge in the techniques and agricultural practices required to maximise yields and quality onion.

There are many opportunities to transfer knowledge around good agricultural practices, to develop new knowledge around onion seed optimised for saline conditions etc.

The Senegalese onion sector can also learn much from the Dutch onion sector about how to access regional markets, optimising systems to improve quality & volumes and the ability to service export markets.



### Commercial Interests

- There are many opportunities for Dutch producers and suppliers in this business model. Firstly, as investors Dutch onion exporters have the opportunity to retain share of the Senegalese market, even during the import ban. This is a key market for the Netherlands in the early part their selling season.
- The outgrower model provides opportunities to get access to land through the Block Farmer System. Effectively, the land remains in the hands of locals, while the investor controls the quality and marketing of the end product



### Technology

- Dutch technology is particularly relevant to the onion packhouse environment. Dutch suppliers of equipment, mesh bags and potentially cold storages solutions are all very relevant.
- The commercial company uses only imported seed and high quality inputs in the outgrower scheme. This provides an opportunity for Dutch companies to supply these inputs into the Senegalese market.



### State Institutions, Universities

#### **Extension Services**

ANCAR is responsible for coordinating extension services. They work through agencies that focus on specific tasks in the various regions.

#### **SAED**

Along the Senegal River Valley SAED , the Senegal River Development Authority, is heavily involved in organising farmers and supporting their projects that involve irrigation. This includes technical support. Working with SAED would be a sensible move as they are very aware of the local farmers, new areas for expansion, the topography etc.



### Private Sector

#### **La Banque Agricole (previously CNAAS), Banks & MFI's**

Access to finance and mechanisms to screen farmers requiring loans are all important elements to building an outgrower scheme with real value to farmers. Working with MFI's is thus sensible and beneficial for all stakeholders.

#### **Input dealers– seed, fertiliser, pesticides**

Quality inputs that are delivered on time is essential to achieving the volume and quality of onions required to make the business model financially beneficial to the lead farmer and the small scale producers. Working in partnership with one or many input dealers to secure the right inputs in full and on time is thus very useful. It also allows for a strong integration of extension services with the input supplier.

#### **Mechanisation Service Providers**

A powerful bolt-on to the outgrower scheme is to include a mechanisation service provider. This is particularly valuable where harvesting services.



### Professional Associations

#### **IPOS**

This is the overarching association for the onion chain. They are increasingly active and are supported by the Dutch organisation PUM. They could be a helpful partner to identifying opportunities for mechanisation investors, locations, potential partners and coordinating efforts with equipment dealers.

#### **Onion Local Associations & Cooperatives**

Additional active local associations to consider are:

- GPAR (Union des Groupements et Agriculteurs de Rao)
- UFMT (Union Forestière et Maraîcher de Thieppe)
- APOQ ( Association des Producteurs d'Oignons de Qualités de Potou)
- UGPM (Union des Groupements des Producteurs de Mboro)



This business case was developed by Sense  
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