



<b>From</b>	Agri Knowledge Centre
<b>To</b>	EMT Members, Agri Commercial Officers (ACO's)
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## 1. Summary – Quick Guide Pineapple Sector

### Facts and figures:

	<b>Fresh</b>	<b>Juice</b>
<b>Yield in tons per ha</b>	25 per year	4kg fresh fruit = 1 litre pure juice
<b>Total hectare</b>	2000 – 3000	
<b>Total production</b>	49.000 tons	
<b>Cost in RWF</b>	Unknown	2600/litre
<b>Price in RWF</b>	50 – 180 /kg	400 – 1500 /litre
<b>Plants per ha</b>	40.000	
<b>Harvest</b>	Feb-May and Sept-Nov	
<b>Market</b>	80%	20%

- It takes 12 to 18 months to grow the plant from seedling or split to first harvest. When the plant grows it get splits which gives new fruits.
- Main inputs are land, labour, water, splits, fertiliser and sometimes pesticides. Splits are bought or generated from older plants.
- Some growers work with cooperatives that collect the fruit and sell them on the local market, process juice or sell to a juice processor. The fruits are sold to the processor for a fixed price stated in off-take contracts.
- No export of fresh pineapples. The juice is mainly sold on the national market.

### Main risks:

Most pineapple farmers use no fertilizer or pesticide. Important risks are lack of farming skills and diseases such as the yellow disease, pests, fungus and bacteria. Furthermore risks are in transport.

### Financing opportunities:

Financing opportunities for individual growers are limited to input finance and can only be assessed on the basis of cash flows. More (raw material collection and asset) financing opportunities arise for professional cooperatives and processors.

**Save for a Loan:** Individual pineapple growers who work on a small scale and need working capital can use this type of loan.

**Input finance:** Growers who have off-take contracts and start using new inputs, input finance is possible on the basis of their off-take contracts and generated cash flows. Larger and more professional cooperatives may also be considered for input finance, based on past performance.

**Asset finance:** only applicable to cooperatives (truck for transport) and processors (buildings and machines) based on past and expected cash flows.

**Raw material collection finance:** Current delays in payment by processors to growers give an opportunity for raw material collection finance. Fixed prices in off-take contracts make financing interesting.

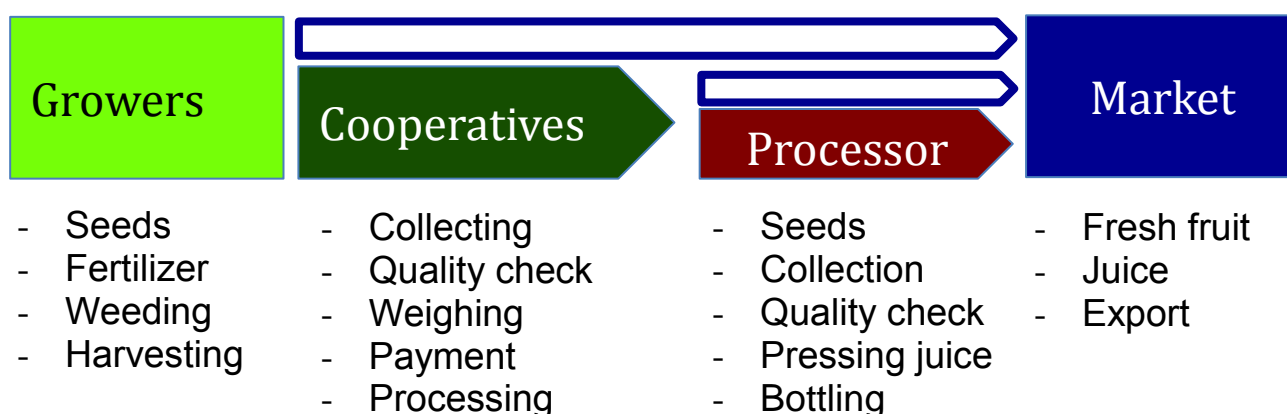
## 2. Introduction

Pineapple is mainly grown in the northern, eastern and southern province. The production occupies around 2000 to 3000 hectares and the yield per hectare is on average 20 to 30 tons per year. Yields as high as 60 tons per year can be achieved under optimal conditions (NAEB 2012). The best altitude for growing pineapple is 900 to 1800 meter, the soil should be sand and loam or laterite soils on hill tops. The crop needs around 600 to 1500 mm of rainfall per year. The total Rwandan production is estimated at 49.000 ton per year (RDB, 2010). A lot of pineapple farmers are individual farmers who produce for the local markets, however, there are multiple well organized cooperatives. Some cooperatives are joined together in a Union. These organization often has a contract with one of the major processors. The processors agreed to pay unions and cooperatives a fixed price. To improve efficiency, the unions and cooperatives bring their produce once a week to the factory. The harvest seasons for pineapple are between feb-may and sept-nov. It takes 12 to 18 months (depending on the size of the fruit) to grow the plant from seedling or split to first harvest. When the plant grows it get splits which gives new fruits. Those splits can also be used again as new plants. Each plant gives 4 to 5 splits. The life time of a plant is 5 years.

Pineapple is a fruit that grows perfectly in dry areas, however, with irrigation the harvest quantities will increase. In the different seasons the prices at the farm gate range from RWF 50 to RWF 180 / kg. The average price for consumers on the local market is around 125 RWF/kg.

The processor will test the pineapple on quality, this includes a colour and flavour check, and the amount of sugar and fat. Furthermore it is important the pineapple is not broken during the harvesting and transportation process.

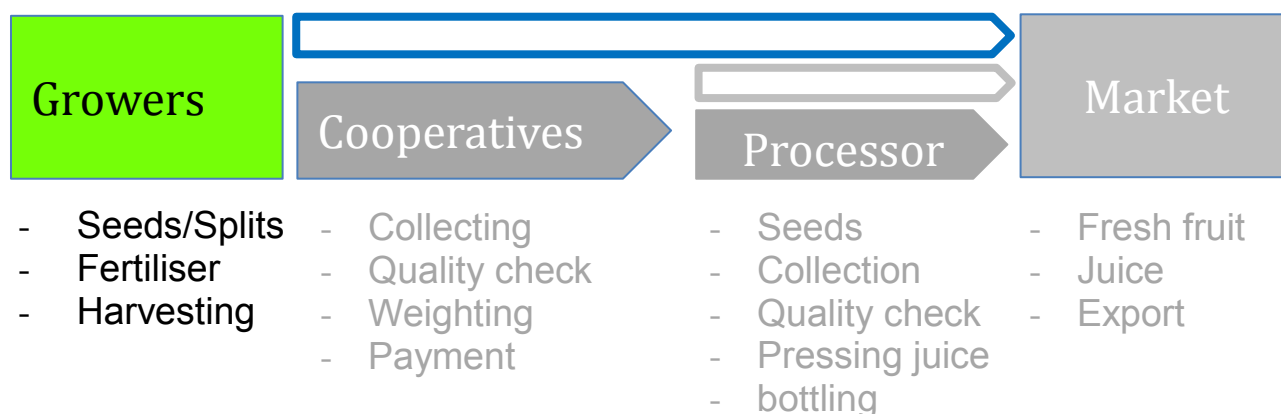
## 3. Pineapple Value chain



Looking at the pineapple value chain, 3 main players are identified. The chain starts with the growers, these farmers cultivate the land and produce the fresh pineapple fruits. The second actor in this chain are the cooperatives, they collect the fruits, link the growers to the market, sometimes pay the growers and in some cases process the fresh fruit into juice. The third party is the processor, who like the cooperatives process the product. Two main processors are identified; Sina Gerard and Inyange. Those processors buy the fresh fruits from growers or cooperatives and process the fresh fruits into juice. The fresh products are sold by the growers or cooperatives on the local markets. The juice is sold by cooperatives on local markets and by processors on local and the domestic market. This marks the final step in this value chain.

The different actors do not always have clear tasks. For instance, the role of cooperatives differs. Some only collect the fruits, some own land, some only link their growers to the market and some collect, process and bring the processed product to the market.

### a) Growers



Pineapple is a product easily grown around Rwanda because it is a dry crop, grown in dry areas. It is estimated that around 2000 to 3000 hectares are used in the cultivation of the pineapple. On average 20 – 30 tons per hectare per year is produced, an optimal quantity would be 60 tons per hectare. However, there are also reports of farmers producing 4 tons per hectare per year. Reports of such low production quantities are common among individual farmers as well as cooperatives.

The grower can start the planting season with planting 40000 splits (from older plants) or seedlings per hectare in September or February. Most individual farmers and cooperatives use splits instead of seedlings because splits can be generated for free from older plants. Starting growers can buy splits from other growers for 50 - 80 RWF per split (i.e. approx. RWF 2 – 3.5 mln per ha). Every mature plant gives around 4 to 5 splits and has a lifetime of 5 years. The split needs to grow for one year to a maximum of 18 months (depending on the size of the fruit) before the first fruits can be harvested around September to November or February, depending on the month of planting.

After the first harvest some growers report a second fruit in the plants after 2 months, others have an average of new fruits in the plant once a year. This depends on the plant, the same grower can have multiple plants that can be harvested every two months and at the same time also have plants that give fruits only once per year.

The farmer needs to cut out the too abundant splits from the plants so the sun can get in and the fruits can grow to the fullest. Also rain and irrigation increases the quantities of fresh fruits from the plants. Under best practise the farmer buys seeds or tissue culture, plants 44000 seedlings per hectare, applies organic and non-organic fertiliser to the soil and uses insecticides and fungicides. However, only one cooperative reported the use of 6 tons of manure per hectare per year. Not many farmers or cooperatives reported the use of pesticides. The inputs that remain are land, labour and splits. The land preparation is RWF 150.000 per hectare and splits are generated for free or bought for RWF 50 – 80 per split (approx. RWF 2 – 3.5 mln per ha).

The main risk for pineapple growers are diseases (yellow disease, pests, fungus, bacteria) and low farming skills. Those two are interlinked; under best practise the farmer uses good quality seeds/splits, fertiliser, fungicides and pesticides and diseases will have little chance to develop. However, most farmers do not use pesticides but just take out the sick plant and throw it away. Furthermore, too much sun and the lack of manure can reduce the weight and taste of the pineapple.

Once the growers harvested their fruits they or a middle men/trader transport them to the local market by bike or the cooperative will collect the fruit by truck in order to bring it to a market, process it into juice or bring it to a processor.

If the fruits are sold locally the farmer gets around RWF100-125/kg but prices can be as low as 50 RWF per kg. If sold through a cooperative to process the fruit into juice the price could be fixed and differs per processor (RWF 120 to 180/kg)

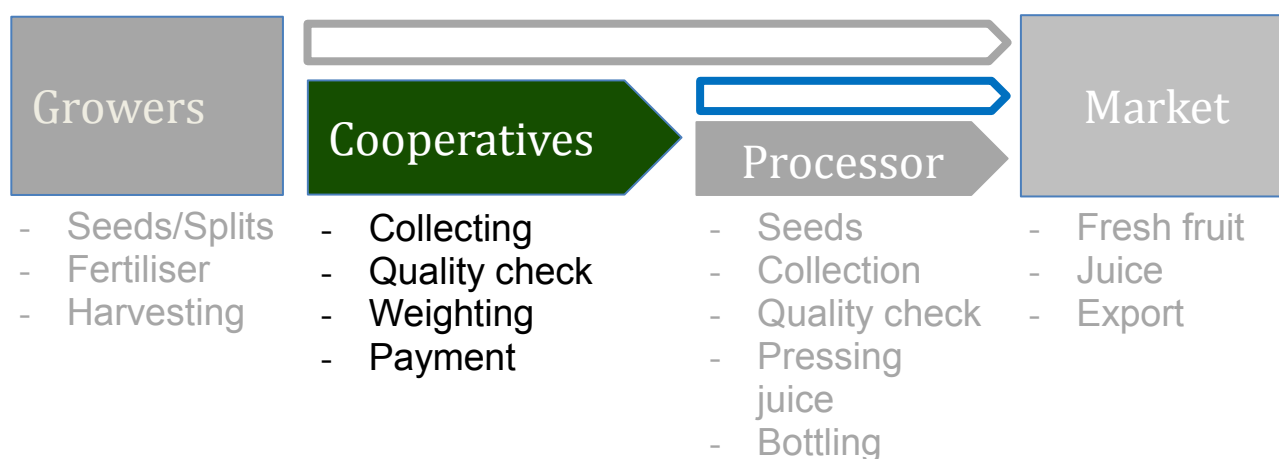
#### Key issues

- 2000 to 3000 hectares are used in the cultivation of the pineapple.
- The yield is on average 20 - 30 tons per hectare
- Often the only inputs are splits from older plants, labour and land
- Price range from RWF 50/kg to RWF 180/kg depending on the market

#### Risks

The main risk for pineapple growers are diseases (i.e. yellow disease, pests, fungus, bacteria) and low farming skills. Those risks can be mitigated through adequate use of insecticides, fertilizer and training of farmers.

## b) Cooperatives (Unions)



Some growers grow pineapple for 'home' use and for the local market. However, growers are often united in cooperatives. Different cooperatives have different roles and provide different services to their members. Some cooperatives only link their members to markets, some cooperatives have a more social role and provide social security and medical insurance for the members and their families, some cooperatives collect the products, check the weight and quality of the fruits and bring them to a processor and some cooperatives collect the products and process the products themselves.

Most cooperatives ask a fee for the membership (10.000 to 20.000 RWF / year per grower). Some cooperatives have 300+ members while others have only 25 members. The bigger cooperatives can often organize more services for their members such as collecting the produce by truck and bringing it to a market or processor.

If the farmers would sell the pineapple themselves they would get RWF 50 to 100/kg on the local market. When joined together, the members can sell to Inyange or Sina for a fixed price ranging between RWF 80 to RWF 180/kg (depending on transportation). This price is fixed in a contract between Inyange and unions or cooperatives. The unions or cooperatives agree to supply 100% of their production to Inyange. The payment is done first through the union, then through the cooperative and then to the farmer. This payment process can take maximum 3 weeks.

Some cooperatives not only collect the products but also process them into juice. These are not necessarily the bigger cooperatives, however in the case of small cooperatives they often buy pineapples from neighbouring farmers as well.

### Key issues

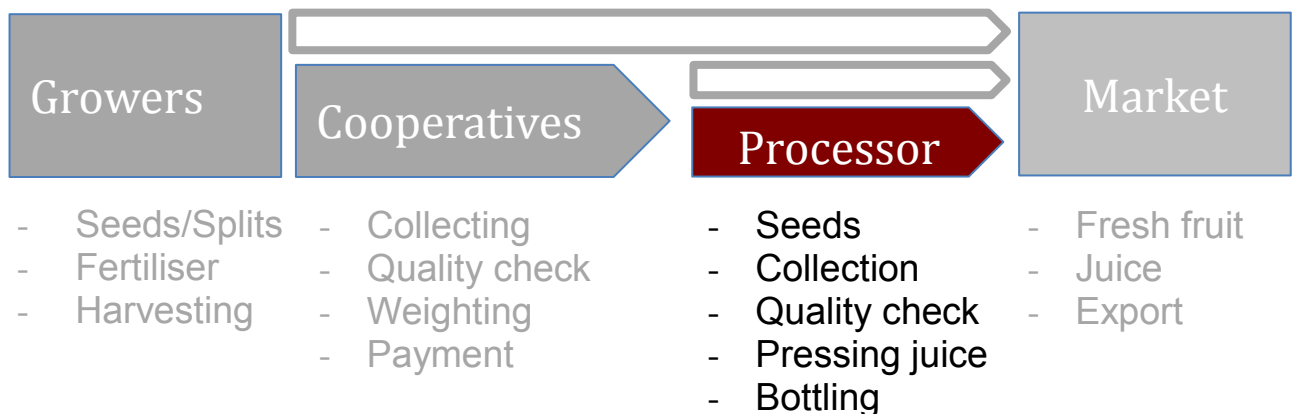
- Most pineapple growers are member of a cooperative
- Cooperatives have different roles and services for their members

1. linking their members to markets
2. collecting the products and bring this to a processor
3. collecting and processing of the fruits

### Risks

The main risks for cooperatives depend on their role. When a cooperative is only linking the farmer to a market there are no significant risks. When the cooperative is collecting the products and transporting these to the processor there are risks involved in the transportation (breaking and bruising of the pineapple). When the cooperative is also processing the produce their risk will be the same as for the processor in the next section.

### c) Processors



Rwanda has two main processors who, among other fruits, process fresh pineapples into juice. Next to the main processors, multiple cooperatives are producing juice on a smaller scale for the more local markets. The organisations produce juice or concentrate. To produce 1 litre of juice 3kg of fresh pineapple is needed, to produce 1 litre of concentrate 8 kg of pineapple is needed.

The main processors are Sina Gerard and Inyange. Sina Gerard has a contract with 3000 farmers/cooperatives to supply fresh pineapples from all over the country. Sina Gerard supplies seeds and animals for manure to the growers for free and has 7 fruit collection centres over the country. From these centres the transport to the factory is arranged. This means that growers bring their produce to the collection centre and Sina Gerard is responsible for the transportation from that place on. The price is fixed at the moment at RWF 180/kg in the off-take contract.

Inyange receives 40 tons of fresh pineapples from growers once a week. This 40 tons is produced over a period of 5 days, processing 8 tons per day. The machines have a capacity of 5 tons per hour; 40 tons per day. This quantity of 40 tons per day is not reached because of market constraints. The demand for juice is growing slowly.

The company fixed the price in contracts with cooperatives and unions. The price is fixed at approx. RWF120/kg, depending on transportation and other agreements with the cooperatives. Inyange pays the farmers after the growers



bring the production to the factory, the payment will take one week. The company arranged a training for cooperatives and unions in checking the quality of their growers production. This decreased the amount of pineapples that had to be rejected on quality basis. The unions and cooperatives are responsible for the transport of the production. This transport is not always properly done, decreasing the quality of the pineapples.

The quality is checked when the products are brought to the processors. The fruits are tested on colour, flavour, bricks, juice, sugar and fat content and whether they are broken.

The produced juice is bottled or packed. A bottle can be stored for 3 months and a pack can be kept fresh for 12 months.

The local cooperatives that produce juice from pineapples pay their members and local farmers around RWF150/kg.

To produce juice from fresh pineapples water, sugar, citric acid and sodium benzoate and labour is needed. The main processors have washing, crushing, cooking and bottling machines. At the cooperative level the washing and bottling is done by hand. One cooperative has 5 machines with a purchasing value of RWF 5mln. The capacity of these machines is 150 litre of concentrate per day. The factories can make concentrate or juice. From one litre of concentrate 5 litres of juice can be made. The average costs per litre pineapple concentrate at cooperative factories is RWF 2200 and sold for RWF 2500 at the local market. Juice is made out of concentrate and water and is sold for 1500 per litre.

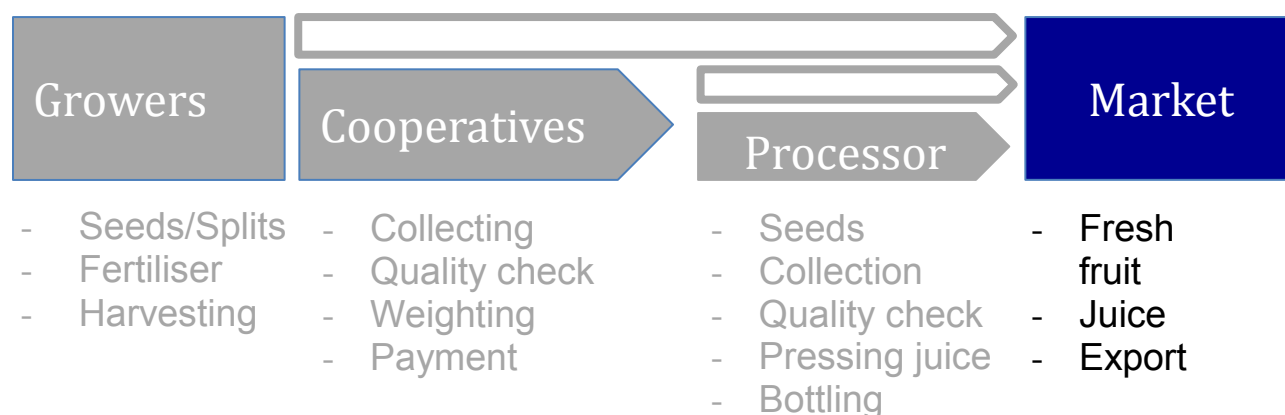
#### Key issues

- Two main processors
- Some cooperatives process the fresh fruit into juice and concentrate as well
- The pineapples are bought under contract with fixed prices ranging from RWF 120/kg to RWF 180/kg

#### Risks

- Not enough supply
- Not enough demand for juice
- Transportation
- Quality

#### d) Market



At the moment of writing this report (i.e. October 2012) all pineapples that are sold fresh are sold through local markets for home use at prices ranging from RWF 50 to RWF 150. There is a consistent demand for fresh pineapples on the domestic market but it's not a growing market.

There is no export of fresh pineapples reported. The juice produced by the major processors is mostly sold on the national market at a price ranging from RWF 400 to RWF 1500 per litre. The price depends on the purity of the juice (how much water is added) and the location.

Inyange reported exports of 20% of their total produced pineapple juice to neighbouring countries.

Inyange is not producing at full capacity because the national juice market is already satisfied. The market for pineapple juice is growing, but only slowly.

The cooperatives report no significant competition with the major producers since the juice produced by cooperatives is sold locally and in some surrounding cities and is known among locals for its better quality and thereby significantly different from the juices of major processors.

#### Key issue

- Fresh fruit is sold on the domestic market only (no exports)
- Juice is sold mainly on the domestic market (approx. 80%) but also in neighbouring countries (approx. 20%)
- The juice market is satisfied and thereby a constraint for major producers which are only to use part of their capacity
- Cooperatives that produce juice for the local market face no firm competition since their product is perceived as significantly different from the juice produced by major processors

#### Risks

- The market for juice is growing slowly
- Growing competition from major players for cooperatives



#### **4. Financing needs**

Financing opportunities in the pineapple business depend on the position and the role of the actor in the value chain. Financing opportunities for individual growers are limited to input finance and can only be assessed on the basis of their track record and past cash flows. More (raw material collection and asset) financing opportunities arise for professional cooperatives and processors. In any case financing options in the pineapple business should be considered on the basis of the cash flow that will be generated and how secure this cash flow is.

##### ***a) Save for a Loan***

Small scale farmers continue to struggle for the finance they need to increase the yield. Small scale farmers, who require finance to buy inputs, are often required to borrow against collateral, which they simply do not have. As a solution BPR has developed a finance solution: Save for a Loan, to provide small farmers a working capital facility. For more information read the product proposal: Agriculture Save for a Loan.

##### ***b) Input finance***

At the moment of writing this report (October 2012), the need for input finance in the pineapple business is limited due to the fact that most growers use splits from their own older plants as input and often use no pesticides and fertilizer. Sina Gerard supplies seeds to their supplying growers. In future opportunities for input finance will arise if the farm skills of the farmers increase and they need to buy “new” seeds and fertilizers and pesticides to increase production.

Furthermore, rain is currently the only source of watering. Irrigation could improve the production. So far only one cooperative reported the use of irrigation systems.

So far the performance risk is relatively low as in the past harvests are not highly affect by diseases or pests. However, lack of farming skills and professionalism among cooperatives do form significant risks. For cooperatives who have off-take contracts and start using ‘new’ seeds and adequate fertiliser input finance is possible on the basis of their off-take contracts and generated cash flows. Furthermore, input finance is possible for larger and more professional cooperatives based on past performance.

##### ***c) Asset finance***

Asset finance is mainly applicable to cooperatives and processors since growing pineapples doesn't need important assets. In case of cooperatives, one of the first assets to finance would be a truck to transport and collect the fruits from the growers field and bring the fruits to the market or a processor. In case of processing cooperatives or processors, pressing machines can be considered for asset financing. More advanced processors use washing and bottling machines which could also be considered for asset financing based on their past and expected cash flows.

#### **d) Raw material collection finance**

Currently the growers who supply processors (mainly through cooperatives) or to processing cooperatives are paid with a delay of maximum of 3 weeks. This gives an opportunity for raw material collection finance; however, this would bring the risks of paying too much for too low quality for cooperatives since they are not able to assess the quality by the standards of the major processors. The fixed prices in off-take contracts make this kind of financing of interest.

### **5. Strength, Weaknesses, Opportunities & Threats ("SWOT")**

The SWOT analysis of the pineapple sector is summarised in the table below:

<b><u>Strengths</u></b> <ul style="list-style-type: none"><li>- Pineapple grows perfectly in the dry areas of Rwanda</li><li>- Consistent demand on the national market</li><li>- Little input and labour is needed</li><li>- Previously harvests are little affected by diseases or pests</li><li>- Some organized cooperatives</li><li>- Cheap labour</li></ul>	<b><u>Weaknesses</u></b> <ul style="list-style-type: none"><li>- Many individual growers</li><li>- Lack of proper transportation of fresh fruit to processors resulting in damaged fruits</li><li>- Requires processing for storage</li><li>- Structural over capacity in processing business</li></ul>
<b><u>Opportunities</u></b> <ul style="list-style-type: none"><li>- Production improvement by using new seeds, fertilizer, pesticides and irrigation</li><li>- Increasing yield by professionalism of growers / cooperatives</li><li>- Development of tissue culture (disease free start)</li></ul>	<b><u>Threats</u></b> <ul style="list-style-type: none"><li>- Slow growing market for juice</li><li>- No export of fresh fruit and only little export of juice</li><li>- Cheap imports from neighbouring countries</li><li>- Diseases and pests</li></ul>

### **6. Risks**

Currently, some financing opportunities arise for different actors at different stages in the value chain.

The risks related to the financing of these actors are different for every individual case and should be assessed carefully on a case by case basis. The tables below summarises the main risks and some of the possible mitigants for each type of financing.

#### **a) Save for a Loan**

The save for loan system is fully automatic and there should be no need to add extra mitigants next to the normal precautions. See product description.

### **b) Input Finance**

Input finance is currently not used by individual farmers and by many cooperatives, however, when growers professionalize and start using seeds, fertilizer and pesticides, this financing structure can be implemented with any grower / cooperative that has sustainable cash flows and preferably a trade relationship with an off-taker.

<b>Risk</b>	<b>Description</b>	<b>Mitigants</b>
Usage	- Risk that the financing is used for other purposes than purchase of inputs.	- Only finance reliable BPR clients with good track record - Pay suppliers of inputs direct - Visit the grower regularly
Performance	- Risk of crop failure / failure to reach targeted production yields	- Financing of only professional growers with an adequate track record
	- Climate risk	- Input insurance
Market	- Risk that the product cannot be sold on the market	- Off-take contract from a reputable party at an agreed quality related price - Monitor supply and demand trends
Price	- Risk of price fall after financing is disbursed to client	- Off-take contract from a reputable party (processor) at an agreed quality related price - Processors pay a fixed price and the price at the market moves with the seasons but has been stable over the years
Payment	- Risk that payment is not used to repay finance	- Payment to farmer or cooperative must be made through borrower's account with BPR

### **c) Asset Finance**

Investments for transport equipment or machinery for processing can be considered at the level of cooperatives or processors.

<b>Risk</b>	<b>Description</b>	<b>Mitigants</b>
Usage	Risk that financing is not used for intended investments	- Financing to be granted on the basis of acceptable invoices from acceptable suppliers
Performance	- Risk that cooperatives or processors does not meet the production targets for instance due to failure to meet the projected quantities or qualities	- Financing of professional cooperatives and processors with an acceptable track record

Market	- Risk that access to market does not meet expectations	- Assess historic market price and trends. Use conservative potential (for instance 75% of sales projection should cover financing needs for investment)
Price	- Risk of price fall	- Enter into fixed price contracts with suppliers for fresh pineapples and/or for processed produce with an off-taker - Over the past years price risk of fresh pineapples and processed produce has been relatively low as the market moves with the seasons but has been stable over the years
Payment	- Risk that payment is not used to repay financing	- Payment must be made through borrower's account with BPR

**d) Raw material collection finance**

Financing solution for cooperatives which have a trade relationship with a reputable off-taker and/or a credible reputation on past records.

Risk	Description	Mitigant
Usage	Risk that financing is used for other purposes than purchase of fresh pineapples for aggregation.	Financing only reliable cooperatives with a credible and acceptable track record.
Performance	Risk that the cooperative accepts and pays growers too much for low quality goods	Cooperatives must have adequate quality check facilities available.
	No link between purchase and sales price of the cooperative	Cooperatives should base their purchase price on price of the off-take contract and keep a safety margin
Market	Risk that access to market does not meet expectations	- Purchase should be backed by an off-take contract from a reputable party at an agreed quality-related price - Advance rate of X% of the market value to

		<p>mitigate market risk in case of default of off-taker</p> <ul style="list-style-type: none"> <li>- Facility only available during the harvest period</li> </ul>
	Risk that the processor cannot sell the juice	Only provide facility if processor has a good credit quality and has a good track record in selling her produce in the market.
Price	Risk that price drops after disbursement of the facility	<ol style="list-style-type: none"> <li>1. Financing should be based on reliable market price information</li> <li>2. Financing is granted by a fixed-price in off-take contract</li> </ol>
Payment	Risk that off-taker fails to pay or payment is not used to repay financing	<ul style="list-style-type: none"> <li>- Agreements should be made with a reputable counterparty</li> <li>- Payment must be made through customer account with BPR</li> </ul>