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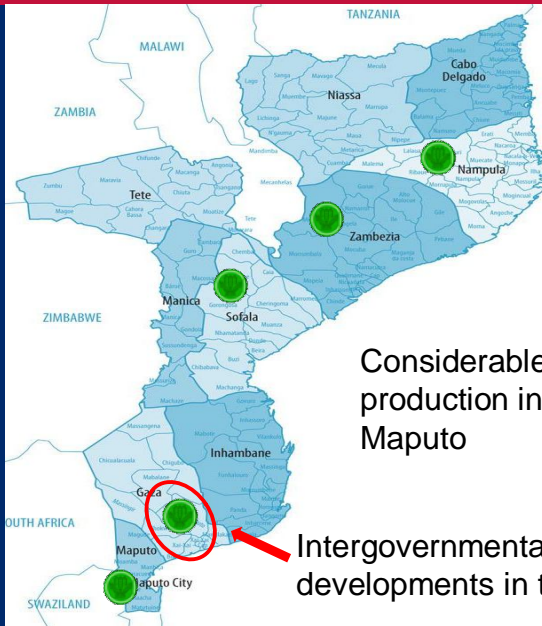
SPEED
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Environment

Mozambique's Natural Resource Boom

What potential impacts on the competitiveness of Mozambique's **Rice** industry?



Despite favorable agro-ecological conditions, Mozambique depends on imports for two-thirds of total rice consumption



Mozambique has a **500-year tradition** of rice cultivation

Rice plays an important role in the diet of Mozambicans: currently a quarter of all cereal calories consumed

Considerable initiatives are underway to raise rice production in Zambezia, Nampula, Sofala, Gaza and Maputo

Intergovernmental cooperation with China has led to new developments in the Chokwe and Xai-Xai irrigation perimeter



900,000 ha: rice production potential

300,000 ha in use for rice production

Area per farmer: **0.5 – 1 ha**



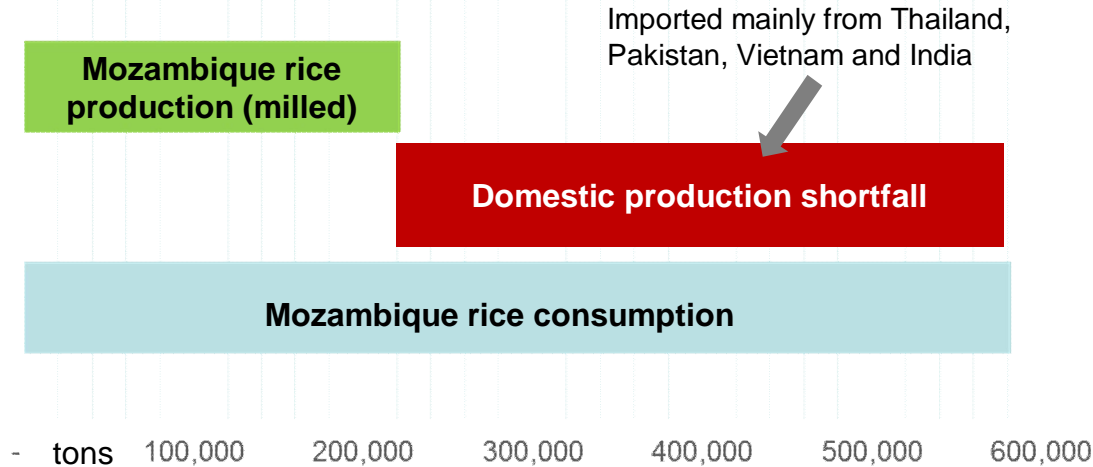
Low yields: **0.5 – 2.5 tons/ha**

Mostly traditional small-holder farming

Large-scale production is being experimented in Xai-Xai

- Public-private partnership with Chinese company (Wanbao Grain and Oil Investment Limited)
- Wanbao's production technology has yield potential of 10 tons/ha
- The company offers a training program to teach their methods to local farmers on outgrower schemes (increasing their yields to about 5 tons/ha)

2012



Rice production in Mozambique is heavily dependent on water and labor availability



Rice cultivation (paddy)

Rice production is heavily dependent on water availability



Production in Gaza is carried out in large irrigation perimeters managed by public institutions (water charged at flat fee of MZN 800/ha)

Small-scale irrigation perimeters managed by water users' associations predominate in other rice producing provinces

Farmers acquire seed from both public and private outlets



Producers typically use local, drought-tolerant seed varieties with production cycles of 5 to 6 months and yield potential of 2.5 tons/ha

Efforts are in place to increase the use of improved, shorter cycle, high-yielding varieties that allow for 2 annual crop cycles (doubling yields to 6 tons/ha)

Rice cultivation is labor intensive



Labor constraints (insufficient labor for large scale production) have been identified in certain regions



Milling (processing)

Milling capacity installed in several locations



Low capacity utilization due to insufficient paddy supply

Average milling ratio is 67% (a respectable ratio)

Most rice produced by smallholders in Zambezia is processed at home (using traditional methods)

Both Gaza and Zambezia have two existing rice milling factories

Milling Ratio

(% of processed rice obtained from paddy)

67%



Mozambique

72%



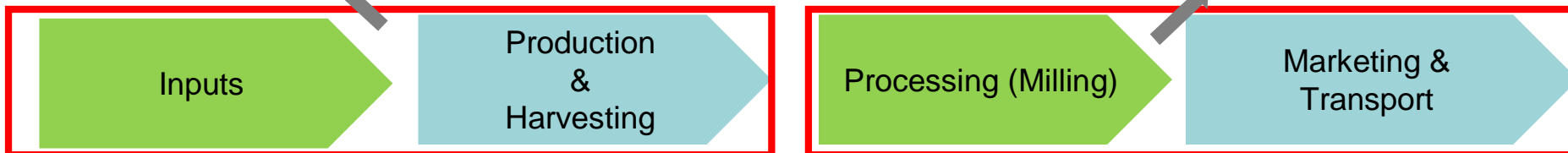
Asia
(best practice)

Competitiveness of Mozambique's rice industry is negatively affected by poor practices and inefficiencies at farm and post-farm level

Farm-level segment: 71% of costs

Rice value-chain

Post-farm segment: 29% of costs



- Seeds released by IIAM (public institute) and multiplied/marketed by private companies
- Intensive use of irrigation
- Use of fertilizers and pesticides
- Rental use of tractors in mechanized operations (land preparation and and harvesting)

- Shortages of labor in some areas
- Low yields due to factors such as poor land preparation and poor crop management
- Substandard post-harvest practices (drying, threshing) reduce competitiveness

- Low capacity utilization (below 50%)
- Outdated rice milling technology
- High degree of broken grains
- Average cost of milling is five times higher than Southeast Asia benchmark
- High labor and handling costs due to high wages and low productivity

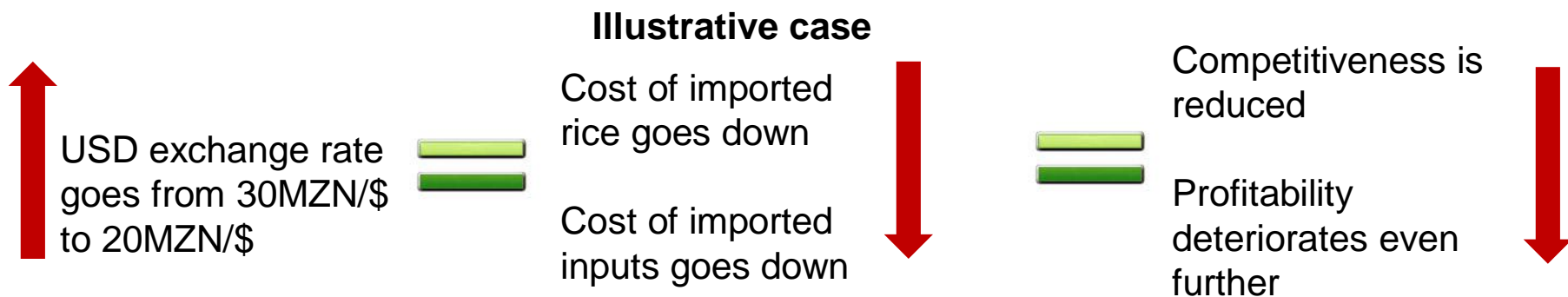
- High transport costs from mill to wholesale
- Mozambique does not export rice because it cannot compete internationally
- Focus is on competing domestically with imported rice

Sample profitability analysis (based on Maputo Wholesale prices; 30MZN/\$ and 4 tons/ha)

| | | |
|-----------------------------|----------------|---|
| Gross Revenue (Metical/ton) | 14,219 | Rice production in Mozambique is unprofitable |
| Costs (Metical/ton) | 20,047 | |
| Profit (Metical/ton) | (5,828) | |
| Cost-benefit ratio | 1.41 | |

Mozambique's rice industry would be seriously affected by Dutch Disease

- 1 One of the potential effects of Mozambique's impending resource boom is an appreciation of the Metical (one consequence of the a phenomenon known as "Dutch Disease")
- 2 This means domestic buyers would need fewer Metical to buy the same amount of imported rice
- 3 This would result in a loss of competitiveness of Mozambican rice relative to rice imported from countries where currencies have not undergone a similar appreciation



Maputo Wholesale rice

Sample profitability analysis

| | 30MZN/\$ | 20MZN/\$ |
|------------------------------------|----------|----------|
| Gross Revenue (Metical/ton) | 14,219 | 9,646 |
| Costs (Metical/ton) | 20,047 | 16,757 |
| Profit (Metical/ton) | (5,828) | (7,111) |
| Cost-benefit ratio | 1.41 | 1.74 |



A doubling of yields could make the Mozambican rice industry profitable and competitive

4 steps to improving competitiveness of the Mozambican rice industry

1

1 Improve farm-level volumes and yields

- Increase use of quality inputs (fertilizers, pesticides, improved seeds)
- Adopt modern land preparation and crop management techniques
- Improve post-harvest practices
- Expand production areas and increase access to irrigation systems

2

2 Improve the overall business environment

- Reduce bureaucracy/streamline processes
- Eliminate illegal taxes

3

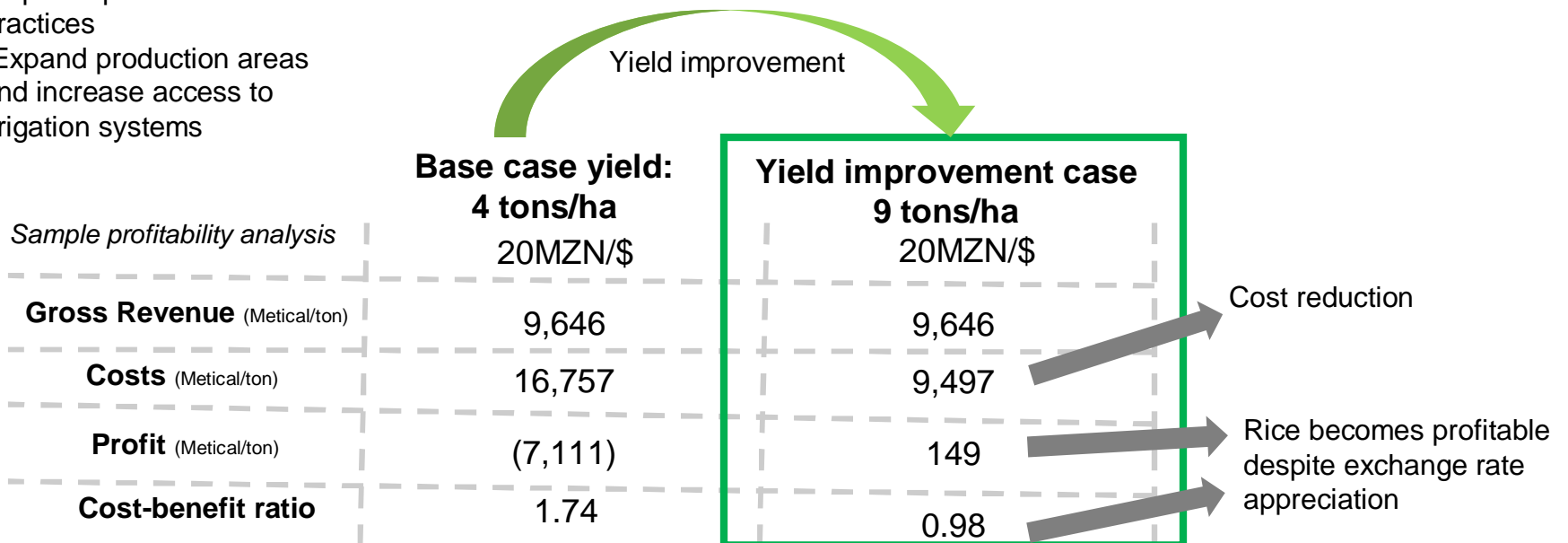
3 Improve milling quality

- Upgrade processing machinery
- Increase asset utilization
- Improve quality control (reduce degree of broken grains)

4

4 Reduce transport and logistics costs

- Improve road quality
- Improve storage infrastructure
- Improve management efficiency



The End

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