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Strategic positioning study of the glass manufacturing branch

FOREWORD

Glass is one of the most familiar materials. It is used in many forms and for very diverse applications, from drinking glasses to windshields for automobiles and flat glass for the construction industry.

NATIONAL SITUATION

In 2001, the glass branch was composed of 45 enterprises, employing around 1900 persons.
24 enterprises are specialized in the transformation of flat glass.
Five enterprises are specialized in the industrial manufacture of hollow glassware.
The rest of the enterprises are specialized in a number of different activities such as decoration of hollow glassware, transformation of technical glass, artistic blown glass, etc.

During the period 1997-2001, the production volume of hollow glass has remained at the same level of around 32 000 tons. The value of the production of hollow glass in 2001 was 22 million dinars.

The production value for the transformation of flat glass in 2001 was 45 million dinars compared to 42 million dinars in 1997.
Value added for the branch is 32 % for hollow glass and 29 % for the transformation of flat glass.

In 2001, importation of glass was valued at around 36 million dinars, of which close to half was for flat glass, and the remaining was composed of technical glass, laminated glass and tempered glass.
Tunisian exports of glass products were valued at 7.5 million dinars in 2001, versus just 4.5 million dinars in 1996.
The major glass products exports include drinking glasses for the Libyan market and phials for the French market.

INTERNATIONAL SITUATION

Worldwide, flat glass is utilized as follows:
- 50 % in the construction industries and furnishings;
- 30 % in transport;
- The remaining is used in diverse specialties.

The production of floated glass is dominated by five major international groups: Glaverbel, Pilkington, Saint-Gobain, Guardian, PPG and by a few other companies such as Sisecam and Euroglass, …
In terms of volume the world production of flat glass was 33 million tons in 2000.

The manufacture of glass packaging products represents the leading activity of the glassmaking industry, with a world market valued at an estimated 50 billion Euros and a volume of around 57 million tons in 2000
The major manufacturers are Saint-Gobain (France), Bormoglio Rocco (Italy), Owens (USA).

INTERNATIONAL COMPARISONS

An analysis of the Benchmarking study conducted on the branch in Tunisia vis-à-vis a reference group composed of the branches in France, Italy, Portugal and Turkey has resulted in the following observations :

Flat glass

- The internal per capita consumption of flat glass is particularly elevated in Italy, explained in part to the country's ancient glass works tradition.
- Pricing levels for floated glass in Tunisia are similar to those practiced in Europe. Only Morocco has higher prices as a result of customs protection which makes imported inputs and products more expensive.
- The net cost of tempered glass in Tunisia is not significantly different than the foreign competitors' prices. To the contrary, the net cost of laminated glass for construction is higher. The net cost of insulated windows is less expensive in Europe than in Tunisia.
- The net cost for laminated glass for automobiles in Tunisia is competitive for small runs. On the other hand, the large European manufacturers are more competitive for standard windshield models.

Hollow glass

- Consumption of hollow glass in Tunisia is inferior to that of the European countries of the reference group: 3.2 kg per inhabitant, contra 70 kg in France and 88 kg in Portugal.

- In Tunisia the net cost per kilo for goblets after the firing stage is higher than that of the other countries in the reference group, explained in part by the design and size of the firing ovens.
- The net cost for basic glass packaging products is higher than European norms due in part to the large consumption of energy and a low level of automation.
- Tunisian goblet products for the local market are competitive relative to those manufactured in Turkey and in Morocco. On the other hand, the average price per kilo of goblets in France and in Italy is higher as the majority of the products are high value added products.
- Productivity is two times higher in Europe than in Tunisia, which can be explained by the level of automation within European plants and that they are mass producers, manufacturing in large series.

OBJECTIVES 2006

For the transformation of flat glass

1. Reach a production volume of:
   - **350 000 m^2** of double panes contra, 177 000 m^2 in 2000
   - **130 000** windshields of which 15% will be destined for export, contra 90 000 pieces in 2000
   - **145 000** lateral automobile windows, contra 104 000 pieces in 2000
2. Ameliorate average productivity by 50% for flat glass transformation.

For hollow glass

1. Reach a production volume of :
   - **56 000 T** of bottles, of which 10% are destined for export, versus 19 000 T in 2000
   - **6 000 T** of phials, of which 22% are destined for export, contra 2 000 T in 2000
   - **16 000 T** of goblets, of which 75% are destined for export, contra 11 000 T in 2000
2. Ameliorate average productivity to a level of 120 T/man/yr, contra 60 T/man/yr in 2000
3. Reduce average energy consumption by 20 %
4. Reach an utilization level for calcine of 75% for bottles, versus 70% in 2000 , and 10% for goblets, contra 5% in 2000

LUCRATIVE NICHES AND MARKETS

- **Transformation of flat glass**
  1. Laminated automobile glass for replacement for the local market.
  2. Double panes, tempered glass for furnishings and the transformation and forming of glass for construction industry and furnishings.
- **Hollow glass**
  1. Glass packaging (bottles, etc.)
  2. Case-bottles, phials for the pharmaceutical and cosmetics industries
  3. High quality drinking glasses
  4. Decoration of hollow glass

ACTIONS TO BE UNDERTAKEN

Actions within the enterprises

- **Linked to the transformation of flat glass**
  - Center efforts on productive activities to accelerate the realization of modernization and upgrading programs.
  - Develop activities linked to decoration and furnishings.
  - Augment the capacity of enterprises to respond to the increased demand for certain glass products such as insolated windows while maintaining quality standards and profitability criteria.
- **Linked to the manufacture of hollow glass**
  - Ameliorate the quality of glass packaging containers and goblets manufactured locally.
  - Reduce the energy consumption used for fusion ovens.
  - Augment the utilization of calcine in order to reduce energy consumption.
  - Expand the utilization of local Tunisian sand in goblet making.
  - Develop exports to neighboring countries and to sub-Saharan Africa.
  - Develop sub-contracting for the decoration of glass tableware destined for the export market.

Institutional Measures

- Examine furthermore the feasibility study for a flat glass manufacturing unit in Tunisia or an inter-Maghreb cooperation project.
- Take the necessary measures concerning imports that are invoiced at marginal cost by multinationals during periods of over production.
- Develop collection and recycling structures for used glass.

Promotional Actions

- Promote the employment of functional glass in the construction industry.
- Create awareness among public and private sector specialists and principals about the safety and insulation qualities of glass for construction industries.
- Develop the field of « decoration on glass » within the center for professional training for fired arts of Nabeul.

Creation of enterprises and partnerships

The study had resulted in the identification of :

- 7 project files to promote
- practical advice for the manufacturing of insulation glass, windshields for automobiles and tempered glass.