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Sector Report: Stone and Marble in West Bank/Gaza

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TO THE

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MARGOT ELLIS, CTO

BY

MASSAR ASSOCIATES

THE SERVICES GROUP (TSG)
2300 CLARENDON BOULEVARD 1110
ARLINGTON, VIRGINIA 22201
USA
WWW.TSGINC.COM

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Introduction

The stone and marble industry is expanding worldwide. Total world production of raw stone is estimated at 93 million tons per annum, of which approximately 50% is used in production. Annual global consumption of stone is nearly 500 million square meters, constituting a value of \$25 billion at \$50 per square meter.

Palestinian stone and marble production constitutes around 4% of world production and less than 2% of world production value. It represents one third of Turkey's output and half that of Germany's. The sector contributes 4% to the Palestinian Gross National Product (GNP) and 5% to its Gross Domestic Product (GDP). The average annual sales per employee are approximately \$40,000, a figure five times the average productivity per employee across all industries in West Bank/Gaza. Technology in use is mostly semiautomatic (85 percent) and automatic (15 percent). Ninety five percent of raw material comes from local sources and the annual growth rate is about 10 percent.

The Stone and Marble Industry in West Bank/Gaza

A. Numbers and Locations of the Palestinian Stone and Marble Industry

There are approximately 650 stone-cutting facilities in the West Bank and Gaza, with a significant rise throughout the 1990s. In the two decades prior to 1990, a total of 46 new establishments were started. The years 1991 - 1995 saw a further 28 new establishments open. Stone-cutting establishments are spread across several areas of the West Bank. Major suppliers of stone are located in Bethlehem and Hebron, with other concentrations found in the northern districts of Jenin, Tulkarem, and Nablus.

Stone-cutting workshops number 245 in the West Bank and Gaza, importing or buying finished material from local stone-cutting facilities. These workshops specialize in custom designing or decorating finished products for end users. Workshops are found primarily in the Hebron and Ramallah areas, with a significant secondary concentration in Gaza.

Table 1: Estimated Number of Operating Stone-Cutting Facilities, Quarries and Workshops by Location in the West Bank & Gaza

Location	Number Cutting & Shaping Facilities	No. of Quarries	No. of Marble Workshops
Hebron	175-180	125-135	40-45
Bethlehem	205-215	30-35	30-40
Ramallah	55	15-20	45-55
Nablus	55-65	20-25	30
Jenin	75-80	30-35	7-15
Tulkarem	10	2-5	10-15
Qalqilia	7-10	0	5-10
Salfeet	5-10	0	5
Jericho	2	0	1-2
Gaza	10	0	40-60
Total	599-637	222-255	213-277

Source: *The Stone and Marble Industry: Market Study*. Massar Associates, 1998

B. Ownership

Most stone-cutting establishments are private entities. More than half are owned by companies, while the rest are individually controlled. The type of machinery and equipment used in stone-cutting establishments tends to vary by geographical area, although the use of modern working tools is increasing. Technological advances are found in the Bethlehem and Hebron areas where, in some cases, large investments have been made in fully-automatic machines such as gangsaws, mono-blade machines, cutting saws, and polishing machines for slabs and tiles.

An important characteristic of this industry is that most establishments are small in size, comprising fewer than 15 employees. Approximately 70% of the total number of establishments contributes around 38% of sales.

C. Product Varieties and Characteristics

Various varieties, colors and features characterize Palestinian stone. Most types meet international standards and specifications. The type of stone is known by its location, while quality is defined by its source. There are no defined specifications based on scientific tests. Each type and name of stone reflects characteristics agreed upon through experience and knowledge of the stone's origin. Within each location and quarry there are various categories and types. For each category, the stone type, shape and color are different. In a broader type of classification, stone is predominantly classified as polished stone, rough stone and bush light chiseled stone. All types of finished stone are marketed in the West Bank, particularly rough stone. This stone is primarily used in construction and its use is required by municipality law throughout the West Bank. The white stone of Injasa, Aseerah, Sannout, and Shyoukh is the most popular, and accordingly, the most expensive type of stone in the West Bank. Stone preferences, however, differ according to geographical area. While Asseerah and Jarra'ah stones are the most popular stones in Ramallah, Nablus, and

Tulkarem, other types such as Sour Maeen, Abu Alkhabaz, Injasa and Shyoukh are preferred in Hebron.

Table 2: Major Stone Types, Specifications & Uses

Stone Type	Source	Classifications	Specifications	Uses
Injasah	Hebron-Bini Nu'am	It is classified into five major categories: Asfar, Sid, Ardi, Sous, Areed	The "Ardi" type is the best one. White color in general, veined, hard, minimal absorption of water	"Chiseled" for building, polished stone, paving sidewalks, garden walls, decorating public places
Jarra'ah	Nablus	Band 60, and Band 40	Usually gray, minimal absorption of water, veined, hard, uniform color	Building, paving, decorating public places
Aseerah	Nablus-Aseerah	Band 60, and Band 40	White, minimal absorption of water, hard, uniform color	Building (all sides), paving, decoration
Al Shyoukh	Hebron-Al Shyoukh	Asfar, Sid, Ardi	White color, absorbs water, not uniform color	Building, paving, decorating public places, renovating ancient places
Tafouh	Hebron - Tafouh	Bind Asfar, Ardi	Beige color, soft stone, absorbs water more than others, not uniform color	Paving, polished stone, decoration
Sanout	Hebron-Sanout	Asfar, Ardi	Different colors, hard stone, minimal absorption of water	Building, paving, decoration
Qabatya	Jenin-Qabatya	Bind Awal (cover), Bind Ardi	Different colors (almost beige), absorbs water, color is changeable with time, hard stone	Building, paving
Yatta	Hebron - Yatta	Bind Asfar, Ardai	White color, hard, almost uniform color, absorbs water more than others.	Building, polished, paving, decoration

Source: *The Stone and Marble Industry: Market Study*. Massar Associates, 1998.

D. Sales and Market Share

The total value of the annual sales in 2001 of Palestinian stone was estimated at \$US 600 million; \$US 150 million in the local market, \$US 360 million in Israel, and \$US 90 million in export markets. The market share of imported stone (marble and granite) is estimated at 13% of total quantity; an equivalent of 25% of total dollar value. These figures indicate important issues: first, the market size of the West Bank and Gaza is large. Second, the market share of imported stone (marble and granite) is significant and its value is double that of the same quantity of local stone.

Polished stone constitutes approximately 38% of total Palestinian sales. Of this, 82% is sold to the Israeli market. The consumption of polished stone in the WBG markets does not exceed 11% of the total, suggesting that imported marble is performing better in the Palestinian market. Rough stone ranks second in terms of sales performance and accounts for 31% of total sales. Similarly, the majority of sales go to Israel (74%), but more is sold on the Palestinian market (22%) when compared to polished stone. Light chiseled stone ranks third

and captures 10% of total sales. In contrast to polished and rough stone, this stone is widely sold in the West Bank (65%) and 33% of total sales are directed to the Israeli market. Other stone, such as bush stone (hammered), is popular in the Israeli market, comprising 67% of sales.

Table 3: Average Annual Sales per Establishment by Capital Investment

No.	Invested Capital	No. of Est.	Ave. Yearly Sales/Est. in SM	Total Annual Sales in SM	Total Annual Sales (US\$)
1	<JD50,000	85	11,500	977,500	17,595,000
2	From JD60,000 to JD120,000	98	15,600	1,528,800	27,518,400
3	From JD130,000 to JD190,000	110	19,500	2,145,000	38,610,000
4	From JD200,000 to JD260,000	90	24,500	2,205,000	39,690,000
5	From JD270,000 to JD330,000	75	29,800	2,235,000	40,230,000
6	From JD340,000 to JD400,000	50	39,700	1,985,000	35,730,000
7	From JD410,000 to JD470,000	60	81,400	4,884,000	87,912,000
8	>JD480,000	40	95,800	3,832,000	68,976,000
Total		608	Average: 32,553	19,792,300	356,261,400
Total Including VAT					US\$ 416,825,838

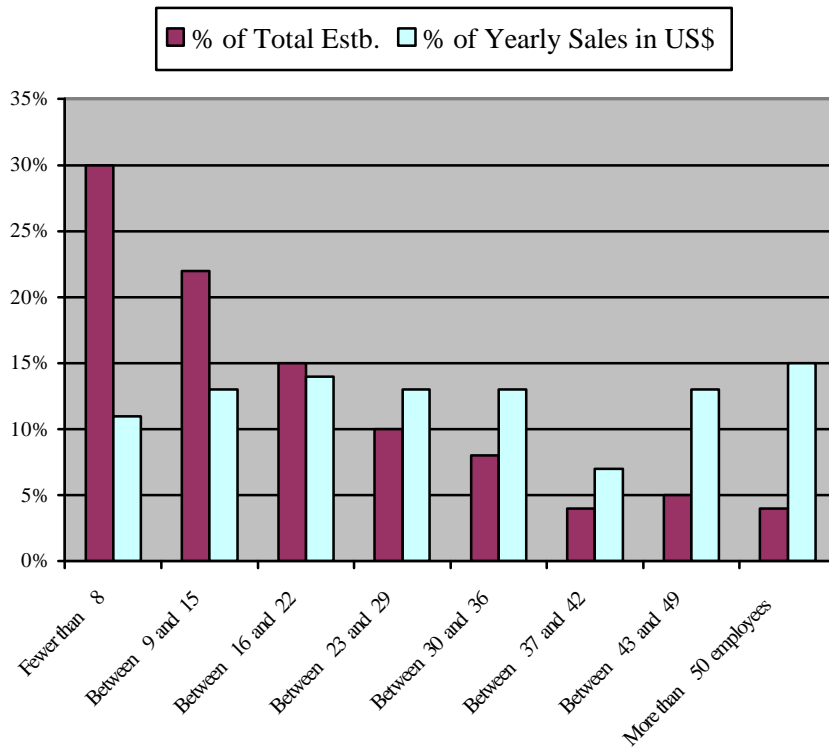
Note: the average price per square meter (sm) is US\$ 18, according to the average price taken from the surveyed stone-cutting facilities. Source: *The Stone and Marble Industry: Market Study*. Massar Associates, 1998.

Table 4: Average Annual Sales per Establishment by Size of Employment

Average Number of Employees	No. of Est.	% of Total Est.	Ave. Yearly Sales in SM	Tot. Yearly Sales in SM	Tot. Yearly Sales in US\$
Eight or fewer	185	30%	13,000	2,405,000	43,290,000
Between 9 and 15	136	22%	19,800	2,692,800	48,470,400
Between 16 and 22	94	15%	31,500	2,961,000	53,298,000
Between 23 and 29	62	10%	43,500	2,697,000	48,546,000
Between 30 and 36	50	8%	56,500	2,825,000	50,850,000
Between 37 and 42	22	4%	69,600	1,531,200	27,561,600
Between 43 and 49	32	5%	85,700	2,742,400	49,363,200
More than 50 employees	27	4%	115,600	3,121,200	56,181,600
Total	608	100%	34,499	20,975,600	377,560,800
Total including VAT @17%					441,746,130

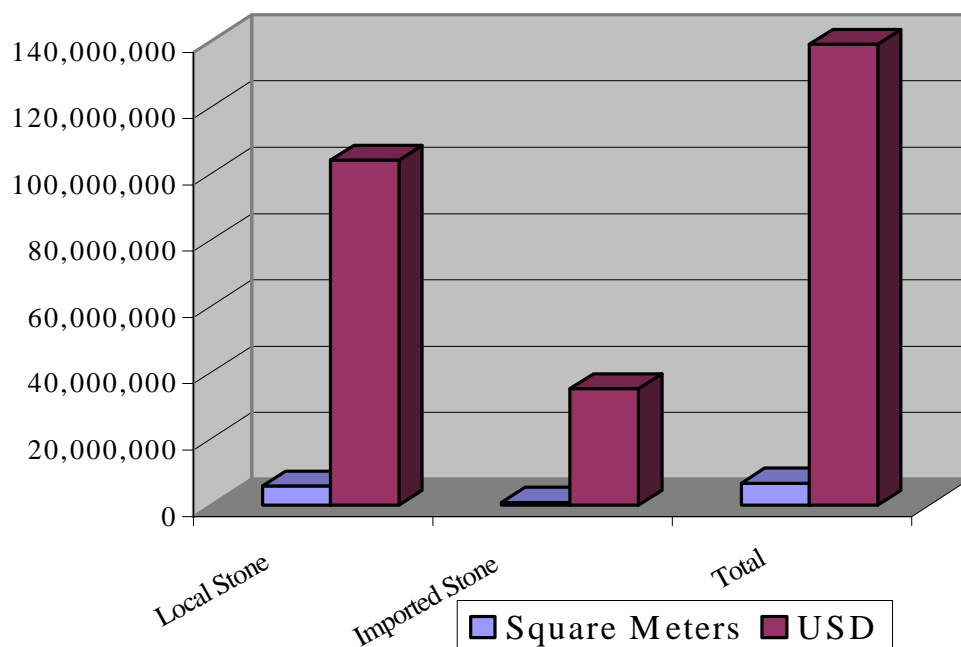
Source: *The Stone and Marble Industry: Market Study*. Massar Associates, 1998.

Figure 1: Annual Sales by Establishment Size



Source: *The Stone and Marble Industry: Market Study*. Massar Associates, 1998.

Figure 2: Annual Consumption of Stone & Marble by Product Origin



Source: *The Stone and Marble Industry: Market Study. Massar Associates, 1998.*

Table 5: Total Annual Consumption in \$US by Product Type & Market

Type of product	WB	Israel	Gaza	Export	Total
Polished Stone	14,255,443 (9%)	129,882,931 (82%)	3,167,876 (2%)	11,087,567 (7%)	158,393,818 (38%)
Rough Stone	28,427,522 (22%)	95,619,847 (74%)	2,584,320 (2%)	2,325,888 (2%)	128,957,578 (31%)
Bush Stone	9,336,899 (32%)	19,549,132 (67%)	-	145,889 (1%)	29,031,920 (7%)
Light Chiseled	27,093,679 (65%)	13,755,253 (33%)	-	833,652 (2%)	41,682,584 (10%)
Other Types	18,090,241 (31%)	33,262,702 (57%)	1,750,669 (3%)	5,252,006 (9%)	58,355,617 (14%)
Total	97,203,785	292,069,865	7,502,865	19,645,002	416,421,517
% of Market	23.3%	70.1%	1.8%	4.7%	100%

Source: *The Stone and Marble Industry: Market Study. Massar Associates, 1998.*

E. Labor Issues

The stone industry is an important job-creation industry, employing a total of approximately 13,000 workers. Three types of employees dominate the stone-cutting industry: administrative, skilled and unskilled labor. The average number of workers per establishment is 10 workers. According to Ma'an (1995), 40% of establishments employ between 6-10 workers, 28% employ between 3-5 workers, 20% employ between 11-20 workers and only 10% employ more than 20. Increasing demands for additional workers is directly linked to the expansion in local construction. The stone industry is, therefore, an important job-creation industry. A high number of unskilled laborers are employed within this sector due to the high wages of the industry. The average annual wage per laborer in this sector is \$5,400. This is considered the highest wage paid to unskilled laborers in any major industry in West Bank/Gaza.

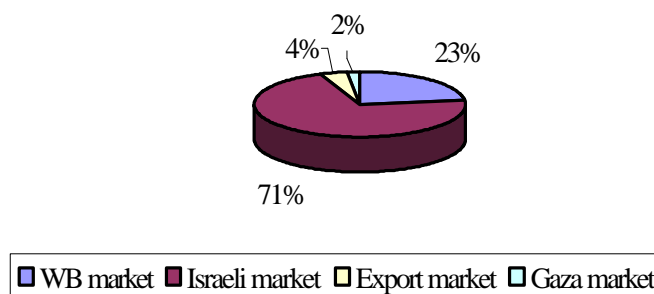
F. Local and International Markets

There are currently two major geographical markets for Palestinian stone: the West Bank and Israel. Secondary markets, and those with great potential for expansion, are found in the region, as well as internationally. The most significant market for Palestinian stone is neighboring Israel, which commands around 71% of sales. The West Bank is the second largest consumer, accounting for around one quarter of total sales.

The Gaza Strip market, in contrast, consumes only 2% of total production, as construction is heavily dependent upon cement blocks. On the other hand, Gaza produces terrazzo tile, which is often made into beautiful patterned tiles. Export markets currently account for only 4% of sales.

The Middle East region also constitutes a strong market with ever-increasing potential. This market is close to West Bank/Gaza and is supported by existing distribution systems. Until recently, Jordan and the markets of the Arab countries constituted an important market for West Bank limestone. However, this share has declined due to Israeli export restrictions and the high cost of transporting shipments over land. Exports have also been affected as a result of the competition of Jordanian products. Total limestone exported to Jordan and the Arab countries is estimated at around 4%.

The United States is a large, highly competitive market, with marble produced domestically, as well as being imported from the entire world, including nearby Mexico. Europe is another good market. However, Palestinian marble exported to this market competes with similar materials from Italy, Portugal, France and Spain. Overall, Palestinian stones have a good potential for export, as they are similar to several marbles currently in demand in world markets, including those with golden color tones, and tones comprising beige and pink and beige and gray or darker gray.

Figure 3: Stone Sales by Market

Source: *The Stone and Marble Industry: Market Study*. Massar Associates, 1998.

G. Export Potential

Rough blocks, polished slabs and tiles are feasible products for the export market. Rough blocks are currently exported to Italy and Israel. Their sale is relatively profitable as they allow a high profit margin against low investment and production costs.

The Union of Stone and Marble in West Bank/Gaza

The Union of Stone and Marble has played a key role in revitalizing the stone industry, identifying foreign markets for Palestinian stone and boosting sales of locally-produced stone in the local market. It serves the industry by providing technical assistance to its members, and facilitating participation in international trade fairs and exhibitions. The union also assists in improving quality, penetrating new markets, and setting standards and specifications for the industry to ensure that they meet international standards. Resolving disputes among members, disseminating information, as well as lobbying to improve the overall macro-environment constitute other responsibilities. Today, the Union has more than 350 members (approximately 40% industry players) and serves as a good source of information for researchers, producers and potential investors.

Union of Stone and Marble

PO Box 45

Hebron

Tel: 02 – 2776393

Head: Nour Eddin Jaradat

References

The Stone and Marble Industry: Market Study.
Prepared by Massar Associates, 1998.

The Stone and Marble Industry in West Bank/Gaza: A Promising Industry.
Prepared by Massar Associates, 1998.

Stone-cutting Establishments Survey in the West Bank.
Prepared by Ma'an Development Center, 1995.