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FROM THE AMERICAN PEOPLE

**OTF**  
GROUP

Marble Cluster Strategy  
*February 2006*



## Agenda

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### **Introduction to the OTF Group & the Afghanistan Competitiveness Project**

- Step 1: Situation Analysis
- Step 2: Setting Goals
- Step 3: Understanding Marble Buyers' & Importers' Needs
- Step 4: Articulate Afghan Marble Positioning
- Step 5: Develop Action Guidelines

## Who is The OTF Group?

*The OTF Group (OTF = On The Frontier) is a private sector consulting firm that provides cutting-edge solutions to help firms and industries in emerging markets confront the challenge of developing successful business strategies.*



**Analysis**

- Describing the causes of underdevelopment
- Discovering that simply providing the right insight is insufficient to create change

**Change Process Facilitation**

- Fitting the preconditions for change together, through collaborative processes, to build working industry clusters

**Multilateral Engagement**

- Attempting to help donor institutions reshape their aid programs to build competitiveness at the microeconomic level

**New Economy Solutions**

- Creating solutions to help firms discover new export markets and become globally competitive
- The OTF Group develops industry strategies based on concepts of "clusters"

**OTF Client List (Partial)**

- US Council on Competitiveness
- US States
- Colombia
- Ireland
- Bermuda
- Peru
- El Salvador
- Jamaica
- Dominican Republic
- Serbia
- Tartarstan
- Macedonia
- Rwanda
- Gabon
- South Africa
- Vietnam
- Thailand

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3

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## Overview of the Afghanistan Competitiveness Project

### What is the Afghanistan Competitiveness Project?

The Afghanistan Competitiveness Project (ACP) is a two-year OTF Group project that will work with **3 priority clusters** and 2 enabling clusters. The ACP is funded by USAID.

The project is designed to achieve the following objectives:

1. Improve dialogue between the public and private sectors.
2. Help local industries develop great products and services using cluster development.
3. Create a sustainable platform that enables continuous improvement of Afghan products and services in the global marketplace.

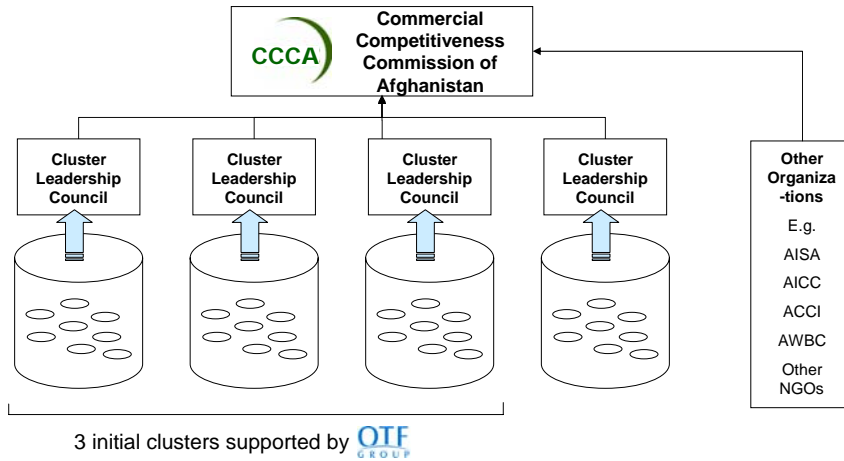
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4

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## Overview of the Afghanistan Competitiveness Project

### Institutional Framework of the CCCP



There is an institutional framework being established to ensure that the ACP creates a sustainable forum for public-private sector dialogue.

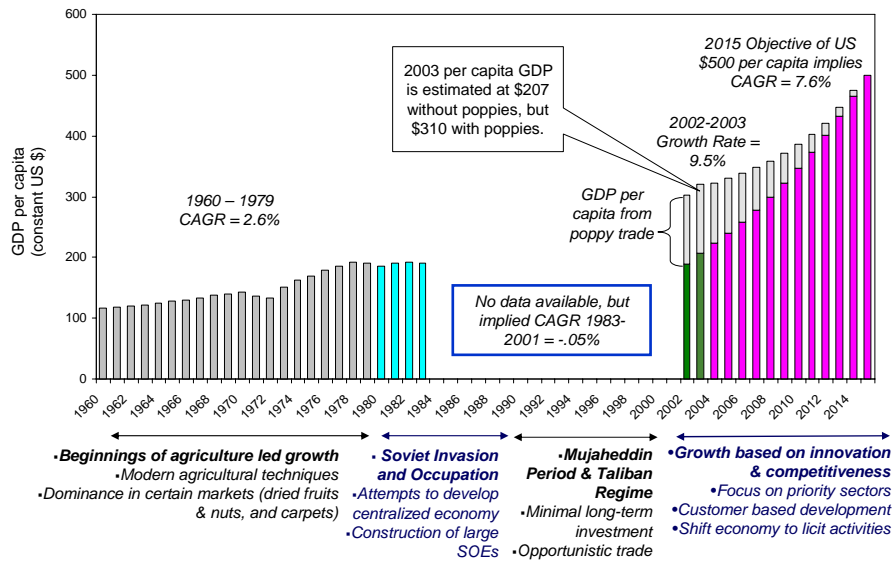
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5

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## Overview of the ACP

### Why Focus is Important – Afghanistan's Historical GDP per capita



Source: World Bank Development Indicators Online, World Bank Afghanistan Country Report, Ministry of Commerce Reports

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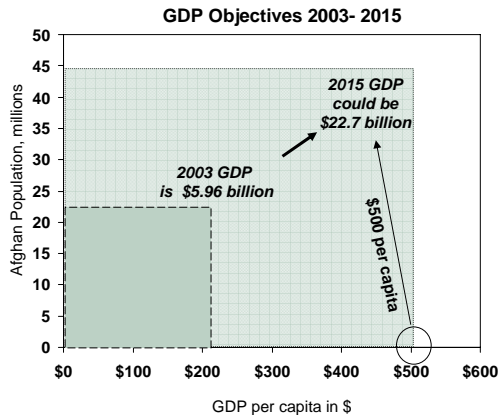
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## Overview of the ACP

### Afghanistan's Development Objectives

Based on GDP per capita objectives and historical population growth rates, Afghanistan's economy will need to grow **nearly 300%** between 2003 and 2015.



#### GDP Growth

- Afghanistan's economy will need grow **nearly 4-fold** to achieve the objective of \$500 per capita by 2015.

#### Population Growth

- Average population growth for the past ten years was 3.86%.
- At this growth rate, Afghanistan's population will increase by 57% between 2003 and 2015.
- Despite possibilities to influence family planning, economic objectives should assume higher-end demographic projections

Source: WDI Online, Afghanistan Ministry of Commerce Reports

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7

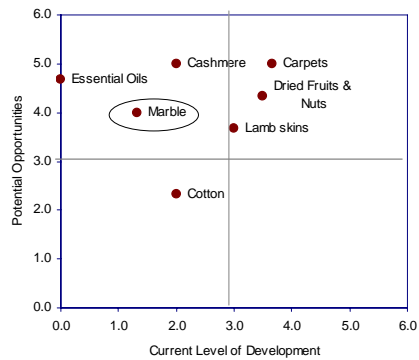
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## Overview of the ACP

### Why focus on Marble?

Afghanistan has the natural resources to profit from marble & granite, but is not doing enough to capture local and foreign markets. Investment into better processing is key to improve industry competitiveness

Base/Size	Size is unknown, but majority of exports seem to be to Pakistan.
Growth	Accessing foreign markets should lead to more export opportunities than relying on Pakistan, but exports are difficult to quantify
Value-add	Little processing for export markets is done in Afghanistan, most of the value is captured abroad: exports raw marble, imports marble blocks
Branding	Few countries have been able to successfully brand marble
Receptivity	Recent investments into cutting equipment have been made; Processors seem eager to capture more value and cooperate with the project



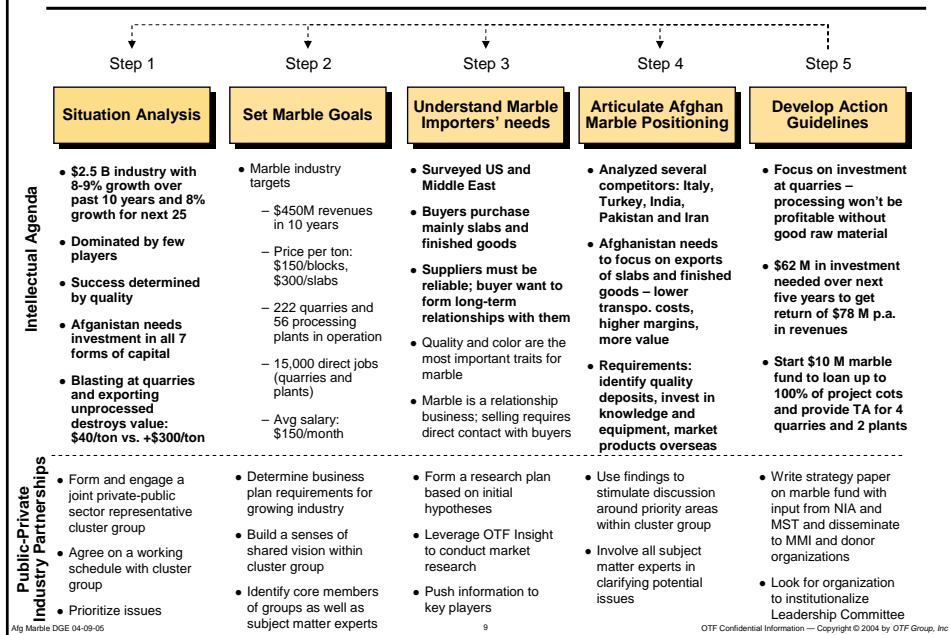
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8

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## The OTF Five Step Change Process

### The way forward for Marble



## Agenda

Introduction to the OTF Group & the Afghanistan Competitiveness Project

### Step 1: Situation Analysis

#### • International Marble Market

- Afghanistan's Marble Industry

Step 2: Setting Goals

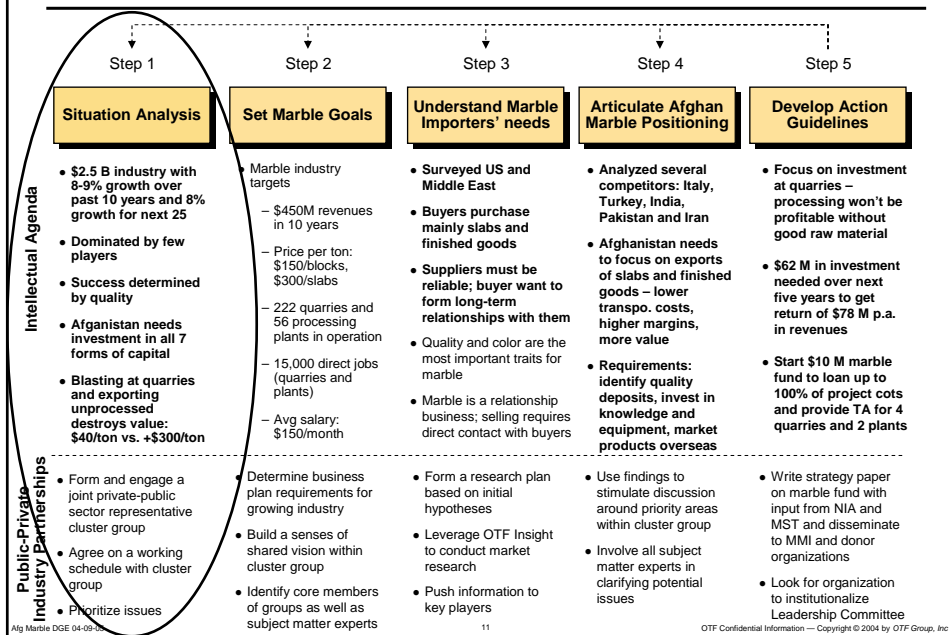
Step 3: Understanding Marble Buyers' & Importers' Needs

Step 4: Articulate Afghan Marble Positioning

Step 5: Develop Action Guidelines

## The OTF Five Step Change Process

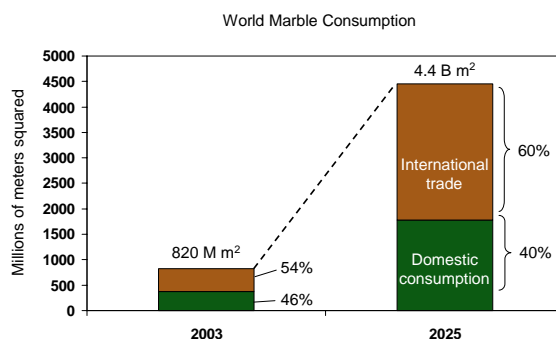
### The way forward for Marble



## Situation Analysis

### International Marble Market – Market Breakdown

The marble industry has expanded rapidly since the 1990s and is expected to grow at more than 8% per year in the future. International trade is an increasing component of the marble market, however, high shipping costs will ensure that domestic consumption remains important.



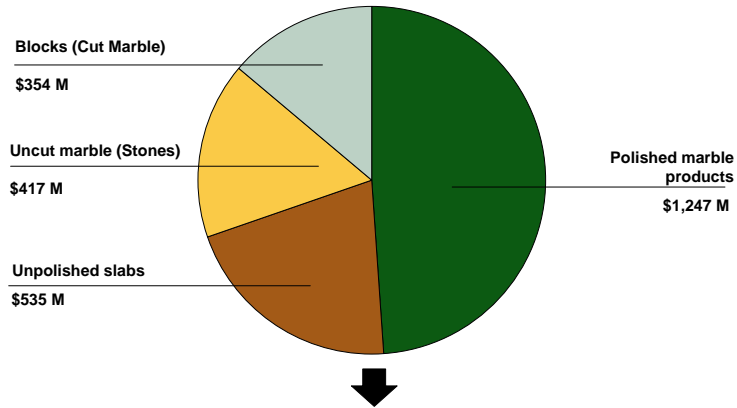
Marble is a large and growing market, with most global producers focused on international trade. Countries with large deposits and small internal markets should be able to export much of their production.

\*Source: World Stone Industry Data 2004  
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## Situation Analysis

### International Marble Market – Market Breakdown

World Marble Imports  
US\$ 2.5 Billion



Although greater volumes of block and uncut marble are imported, slabs and polished marble are much higher value.

Source: USAID Trade Map 2003  
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13

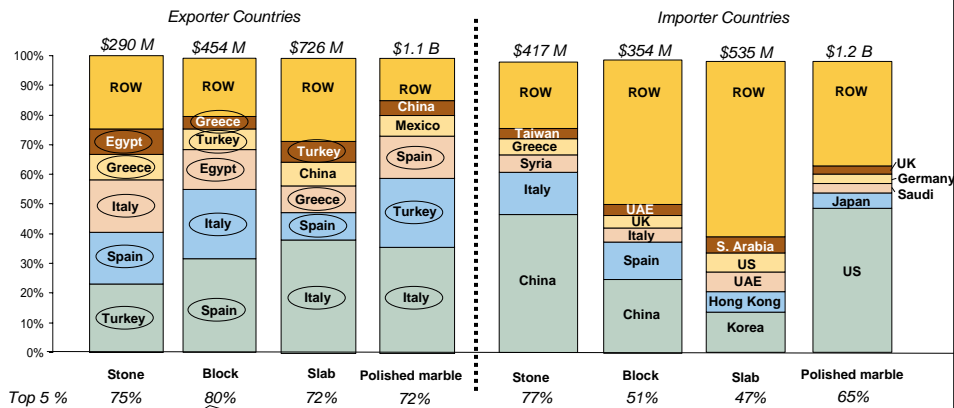
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## Situation Analysis

### International Marble Market – Leading Exporters & Importers

Exports for Afghanistan's products are dominated by a few countries.

Top 5 Exporters & Importers of Marble by Value, 2003



India is a large producer but does little export or import

Successful exporting countries offer a full range of products while Afghanistan exports over 80% of all marble as stone.

Source: OTF Interviews; USAID Trade Map, export vs import discrepancies due to ???  
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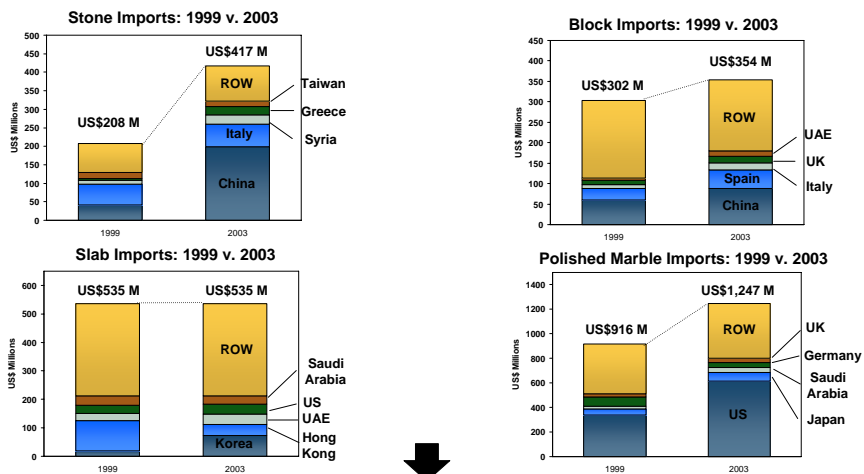
14

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## Situation Analysis

### International Marble Market – Trends in Imports

Market growth is led by the US and China in finished goods and raw materials respectively.



Although imports of stone have shown the greatest growth by value, this is only half the story...

Source: USAID Trade Data  
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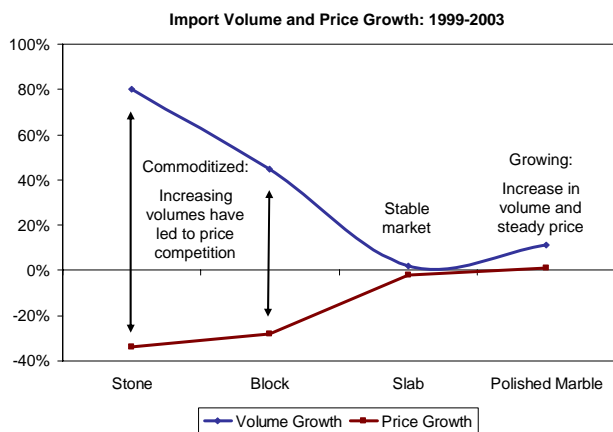
15

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## Situation Analysis

### International Marble Market – Trends in Imports

Product types can be categorized as commoditized, stable or growing.



...though imports of non-value added products are growing, prices are dropping due to a glut of supply. In which categories can Afghanistan compete?

Source: USAID Trade Data – data for polished marble is estimated  
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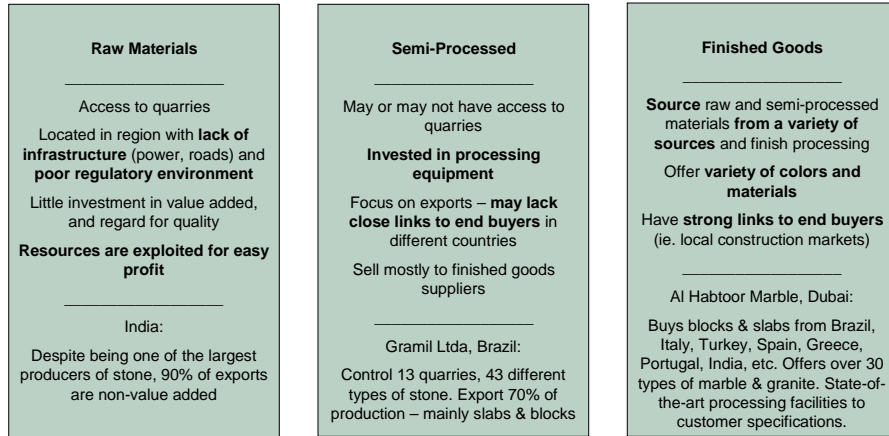
16

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## Situation Analysis

### International Marble Market – Types of Suppliers



Providing finished goods requires close links to end users, but blocks and slabs are standard products and easily exported.

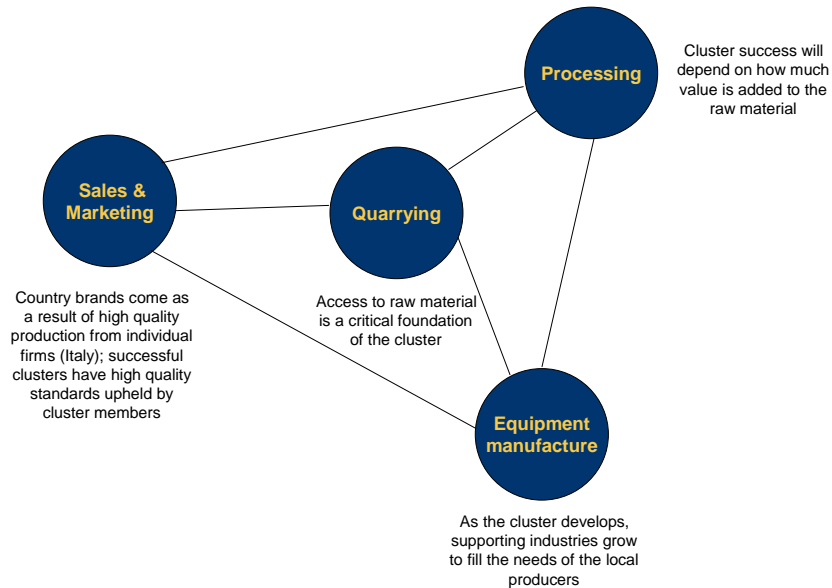
Sources: OTF Research  
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17

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## Situation Analysis

### International Marble Market – Key Factors of Successful Clusters



Sources: OTF Research  
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18

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## Situation Analysis

### International Marble Market – Cluster Case Studies

	Quarrying	Processing	Sales & Marketing	Equipment Manufacture
<b>Italy:</b> Standard Setter	Best raw materials in the world; best quality quarrying; 3000 year history	High-tech, high-quality, high-value: products get a premium over world prices	Best brand, top 5 exporter in every product, top exporter of slabs and finished marble products	High-tech, high-quality, high-value: Italian equipment is the best and most expensive
<b>India:</b> Mid-market Player	Many quarries; poor quarrying techniques due to poor government regulations and infrastructure	Some problems with quality and efficiency have hindered industry but leverage low cost and availability of raw materials	Compete on price – 90% of sales are non-branded and non-value added (stones & blocks)	Inexpensive equipment, good enough for blocks and slabs, but finished goods?
<b>Turkey:</b> Gateway to the World	Many quarries; export quality quarrying; good government support & infrastructure	High-tech, high-quality, reasonable cost; top Turkish companies can compete anywhere in the world	Access to Europe and Asia; top 5 exporter in every product category	Close links to Italian manufacturers has decreased the need of manufacturing equipment locally
<b>Palestine:</b> The Little Industry That Could	Many quarries, export quality quarrying, strong self-imposed industry standards	Processing to international standards; focused on exports	Cohesive marketing and branding efforts led by Union of Stone & Marble	Developed manufacturing base of basic cutting & polishing equipment
<b>China:</b> Value-added Monster of Tomorrow	Many quarries but few relative to production - the only case where this is so	Imported raw materials processed cheaply and well – mostly for local market	Known for low-cost and good quality, beginning to increase exports (are taking Japanese market from India)	Low-cost, good quality equipment that can make low-cost, good quality finished products

Sources: OTF Research  
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19

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## Situation Analysis

### International Marble Market – Cluster Case Studies Palestine & India

*Palestine and India offer opposite approaches to competing globally. Palestine focuses on marketing and value add, while India, which contains some of the largest marble reserves in the world, competes on price.*

	Palestine	India
Workers:	15,000	500,000+
Production Volume:	720,000 tons	4.28 M tons
Production Value:	\$430 M	\$770 M (approx.)
Price per ton:	\$300-600	\$180
Tons per employee:	48	9
Exports (% of production):	8%	2.5%
Export mix:	Mostly slabs & tiles	Mostly blocks
Employee Annual salary:	\$6,000	Less than \$2000

Smaller players have to learn to compete on more than price, "it'll always be cheaper in China" and increasingly, India as well. India's choice on how to compete, keeps Indians poor.

Note: Data is from 2000  
Sources: OTF Research; Palestine Union of Stone and Marble; Indian Industry reports  
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20

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## Situation Analysis

### Summary – International Markets

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- The most successful marble industries offer full ranges of colors and product lines. Industries that simply rely on natural resources tend to struggle.
- Industry growth has been highly dependent on China's consumption of raw materials and US consumption of finished goods.
- Stones and blocks have commoditized with a surge in volume and plunge in prices; slabs have been stable and finished marble product exports have shown strong growth while maintaining their value.
- Prosperous industries (industries that provide profits to investors and good wages to employees) focus on value added goods.
- Prosperous industries have clusters made up of firms that can cooperate and support each other, and engage in positive competition.
- Poor industries rely on natural factors of advantage, suffer from mistrust and compete against each other mainly on price.

## Agenda

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Introduction to the OTF Group & the Afghanistan Competitiveness Project

Step 1: Situation Analysis

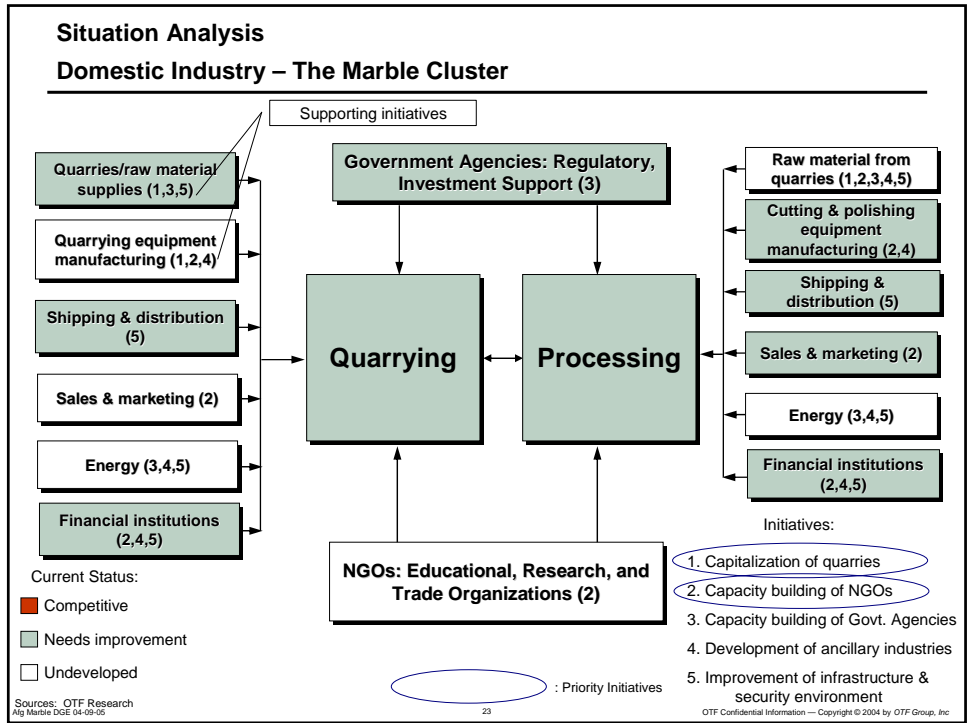
- International Marble Market
- **Afghanistan's Marble Industry**

Step 2: Setting Goals

Step 3: Understanding Marble Buyers' & Importers' Needs

Step 4: Articulate Afghan Marble Positioning

Step 5: Develop Action Guidelines



### Situation Analysis Domestic Industry – The Marble Cluster

Sector	Issue	Initiative
Quarries/Raw material supplies	Lack of proper equipment and knowledge leads to extraction methods that ruin the value of the marble	1. Capitalization of quarries: investment into knowledge and equipment. 3. Capacity building of gov. agencies: secure, transparent, long-term leasing is needed to encourage investment. 5. Improvement of infrastructure and security environment: quarries are in remote and dangerous regions.
Equipment manufacturing	No capacity for equipment manufacturing and intensive equipment repairs exists in Afghanistan.	1. Capitalization of quarries: investments into proper equipment will create the need for local manufacture and repairs of quarrying equipment. 2. Capacity building of NGOs: an equipment manufacturing industry will require engineering expertise, in turn requiring good engineering schools and other training institutions. 4. Development of ancillary industries: a new manufacturing industry will need finance and power – both industries need to be developed.
Shipping & distribution	Poor roads make shipping marble expensive relative to other countries	5. Improvement of infrastructure and security environment: better roads will mean cheaper transportation costs for the industry.

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## Situation Analysis

### Domestic Industry – The Marble Cluster

Sector	Issue	Initiative
Sales & marketing	Little knowledge exists of world markets and marketing techniques	2. Capacity building of NGOs: marketing professionals are needed for the future success of the industry, this will require training for students and for business professionals.
Energy	Power is sporadic and most factories and quarries are forced to rely on expensive generators	3. Capacity building of govt. agencies: rebuilding and expanding power grids has to be coordinated by the government at a national level. 4. Development of ancillary industries: any focus on developing ancillary industries should include the energy industry as critical to the success of other industries. 5. Improvement of infrastructure and security environment: security & infrastructure improvements will benefit investment in energy production and distribution.
Financial institutions	Little capacity exists in the business community for business plan writing, credit is difficult to access and expensive	2. Capacity building of NGOs: finance professionals needed both at banks and enterprises, this will require training for students and for business professionals and writing first business plan to showcase opportunities. 4. Development of ancillary industries: along with energy, the financial industry needs special focus since improvements here help many other industries. 5. Improvement of infrastructure and security environment: risk of investments and loans will decrease as the security situation improves.

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26

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## Situation Analysis

### Domestic Industry – The Marble Cluster

Sector	Issue	Initiative
Government agencies	The Ministry of Mines and Industry has limited capacity to survey, enforce quarry leases, or inspect quarrying operations	3. Capacity building of govt. agencies: capacity building must continue to include passage and enforcement of new mining law, and investment in surveying equipment and knowledge.
NGOs: Educational, Research and Trade Organizations	A successful stone industry will require knowledge of geology, engineering, marketing, etc. This knowledge is limited in Afghanistan.	2. Capacity building of NGOs: establish a marble association to identify and communicate the issues of the industry, work with educational and research organizations to invest in industry knowledge, etc.

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26

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## Situation Analysis

### Domestic Industry – 7 Forms of Capital for Afghan Marble

*Addressing the constraints faced by the cluster requires addressing short-comings or a lack of investment in both physical and social capital. Understanding the cluster's current position across seven key forms of capital can help to guide the choice of near-term initiatives to begin undertaking.*

Category	Current State	Desired State	Initiatives
<b>Cultural</b>	<ul style="list-style-type: none"> <li>Lack of trust and cooperation between Afghans outside of clans.</li> <li>High levels of entrepreneurship.</li> <li>Appreciation for the importance of knowledge.</li> </ul>	<ul style="list-style-type: none"> <li>Industry competes and collaborates.</li> </ul>	<ul style="list-style-type: none"> <li>Build cluster with representation from different regions and ethnic groups. (2)</li> </ul>
<b>Human</b>	<ul style="list-style-type: none"> <li>Lack of health care, and social infrastructure.</li> </ul>	<ul style="list-style-type: none"> <li>Access to clinics &amp; education for workers in cities and remote quarrying locations.</li> </ul>	<ul style="list-style-type: none"> <li>Provide safety standards for marble industry. (2,3)</li> </ul>
<b>Knowledge</b>	<ul style="list-style-type: none"> <li>Virtually no knowledge of markets, equipment, latest processing techniques, etc.</li> <li>Limited links to Pakistan &amp; Iran only.</li> </ul>	<ul style="list-style-type: none"> <li>Defined ideas about market segments, distribution channels, and how to access them.</li> <li>Links to buyers and equipment manufacturers around the world.</li> <li>Strong knowledge base of latest techniques and products.</li> </ul>	<ul style="list-style-type: none"> <li>Research on world markets, selection of target markets, pricing study of Afghan marble, best equipment mix and equipment sources for producing to target market specifications. (2)</li> </ul>

Initiatives:

1. Capitalization of quarries
2. Capacity building of NGOs
3. Capacity building of Govt. Agencies
4. Development of ancillary industries
5. Improvement of infrastructure & security environment

 : Priority Initiatives

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27

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## Situation Analysis

### Domestic Industry – 7 Forms of Capital for Afghan Marble

Category	Current State	Desired State	Initiatives
<b>Institutional</b>	<ul style="list-style-type: none"> <li>Ministry of Mines &amp; Industry is slowly building capacity to support the industry.</li> <li>Lack of security an issue in remote quarries – some are inaccessible, others require payments to warlords.</li> <li>No cohesive association to focus on the industry's needs.</li> </ul>	<ul style="list-style-type: none"> <li>Ministry that can carry out surveys, provide transparent bidding process for quarries, etc.</li> <li>Associations that bring together actors throughout the value chain to share information and increase collaboration, particularly supporting producer-market linkage.</li> </ul>	<ul style="list-style-type: none"> <li>Develop a association to represent Afghan marble in the example of Palestine's USM. (2)</li> <li>Establish leadership council to begin forming association. (2)</li> <li>Support capacity building initiatives at ministry. (3)</li> </ul>
<b>Financial</b>	<ul style="list-style-type: none"> <li>Lack of capital is stifling investment in processing equipment.</li> <li>Lack of working capital prevents many processors from operating, leaving quarries to sell stone cheaply to Pakistan.</li> <li>Few donor programs look at the marble industry.</li> </ul>	<ul style="list-style-type: none"> <li>Variety of lending instruments available to suit needs of different size investments.</li> <li>Bank credit available for working capital.</li> </ul>	<ul style="list-style-type: none"> <li>Engage financial institutions with specific business opportunities. (1)</li> <li>Assist donors and the commercial banking sector to design appropriate financing mechanisms.(4)</li> </ul>
<b>Manmade</b>	<ul style="list-style-type: none"> <li>Poor roads and no power make quarrying and processing difficult.</li> <li>Lack of investment in up-to-date quarrying &amp; processing technologies.</li> </ul>	<ul style="list-style-type: none"> <li>Adequate roads for transporting goods.</li> <li>Factories and quarries connected to power grid.</li> <li>Cessation of all blasting at quarries, replaced by equipment to make blocks.</li> </ul>	<ul style="list-style-type: none"> <li>Develop investment plan and source financing for equipment.(1)</li> <li>Through CCA prioritize infrastructure investments into roads and power.(5)</li> </ul>
<b>Natural Endowments</b>	<ul style="list-style-type: none"> <li>High quality raw material in demand from foreign buyers.</li> <li>Little knowledge of available resources exists.</li> </ul>	<ul style="list-style-type: none"> <li>Accurate surveys of all marble sites.</li> </ul>	<ul style="list-style-type: none"> <li>Support initiative to undertake extensive surveying of Afghan mineral resources.(2,3)</li> </ul>

 : Priority Initiatives

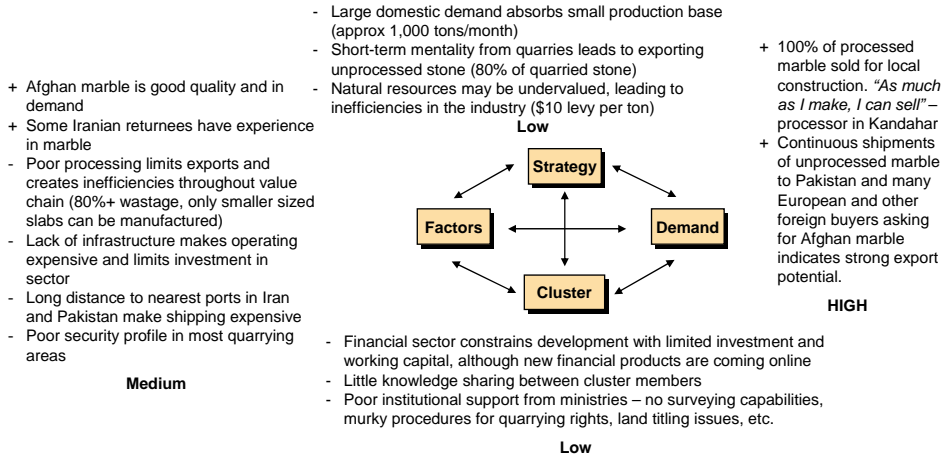
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28

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## Situation Analysis

### Domestic Industry – Afghan Marble Competitive Diamond



Lack of investment due to a variety of factors has retarded industry development and competitiveness.

Source: Framework, Michael Porter "Competitive Advantage of Nations", OTF Group Analysis  
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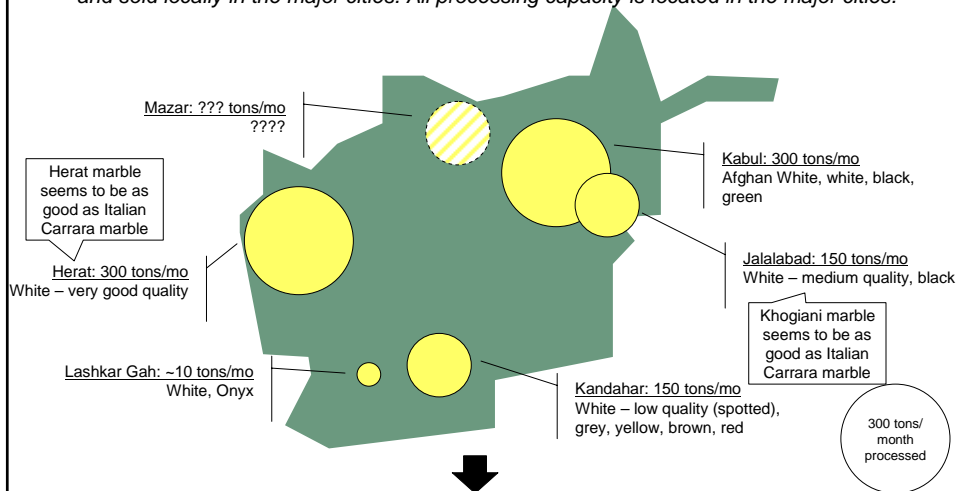
29

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## Situation Analysis

### Domestic Industry – Estimates of Marble Processing

Roughly 80% of marble quarried is exported as stone; most processed marble is sourced and sold locally in the major cities. All processing capacity is located in the major cities.



Afghan marble production is for local markets, will the industry be able to shift focus to exploit international markets?

Source: OTF interviews; note – these are only estimates, some data from interviews is contradictory  
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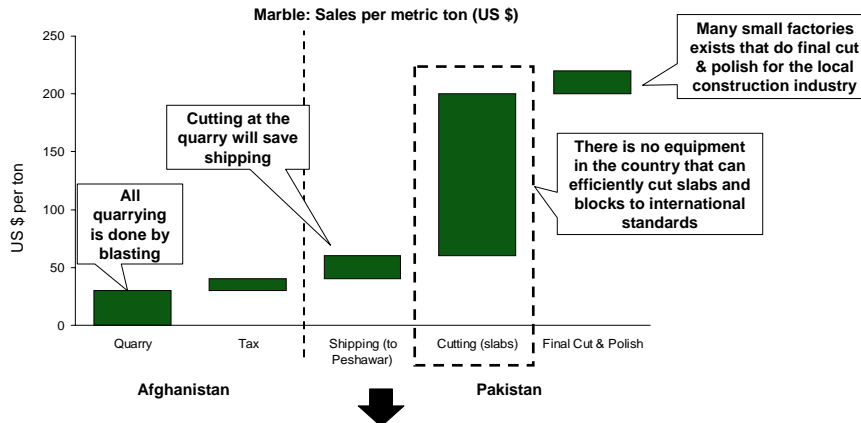
30

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### Situation Analysis

#### Domestic Industry – Value chain for marble exports to Pakistan<sup>1</sup>

Afghanistan exports only uncut marble and imports cut tiles for final cutting and polish for use in local construction.



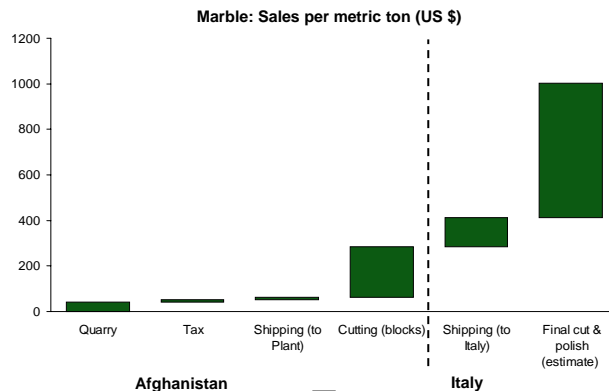
Investments in cutting equipment are necessary to capture more value. Cutting and polishing firms receive the most money for selling marble.

1. Information from Pakistan is estimated  
Source: OTF interviews, USAID Trade Data, Price lists – [www.findstone.com](http://www.findstone.com), OTF estimate  
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### Situation Analysis

#### Domestic Industry – Value chain for marble export to Italy

Two containers of marble blocks were shipped to Italy in the last year representing 100% of Afghanistan's value added marble exports.



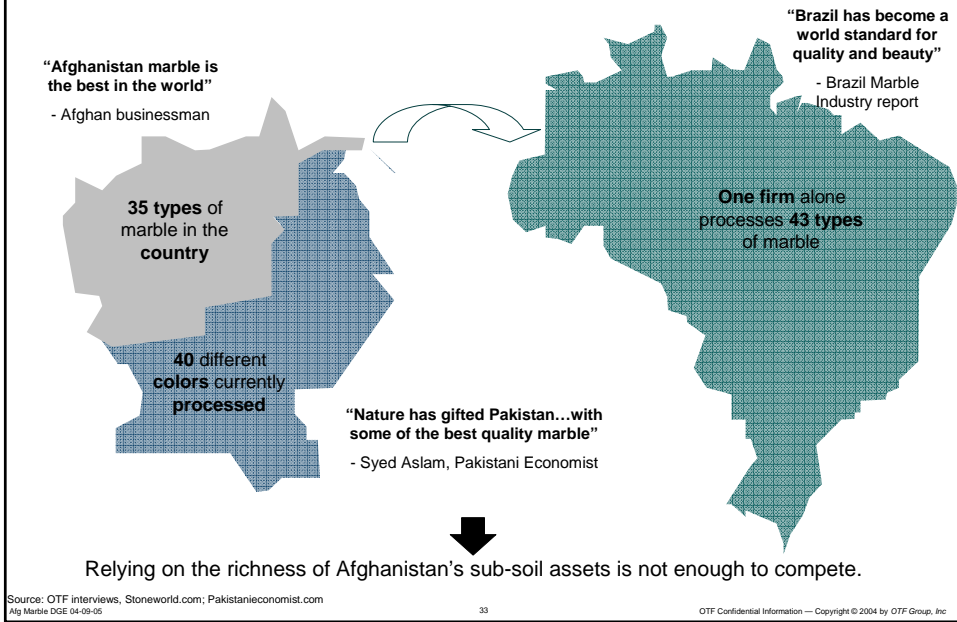
\$200/ton of value was kept in Afghanistan by exporting blocks vs. \$40/ton from stone. Improving quality & efficiency & moving down the value chain should allow Afghanistan to capture even more value.

Assumes 100% efficiency, data for Italy estimated from similar products.  
Source: OTF interviews, USAID Trade Data, Price lists – [www.findstone.com](http://www.findstone.com)  
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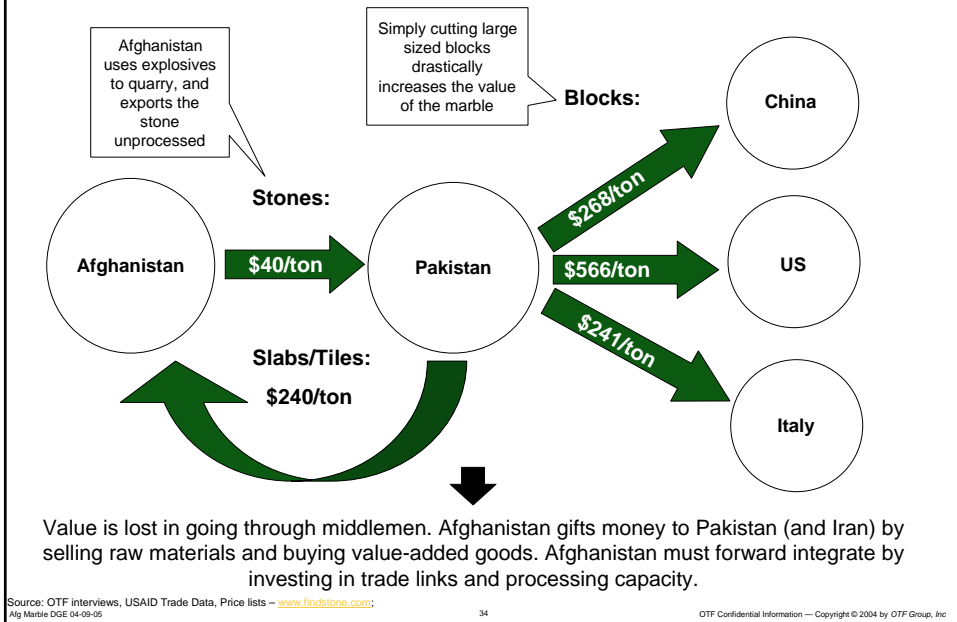
### Situation Analysis

#### Domestic Industry – Obstacles: Over-reliance on Natural Factors



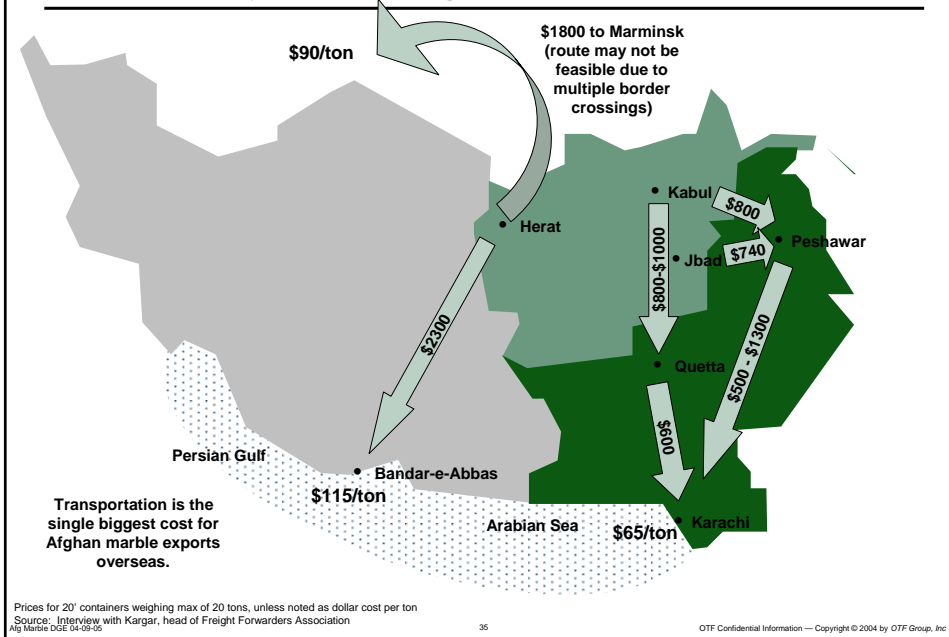
### Situation Analysis

#### Domestic Industry – Obstacles: Lack of forward integration



### Situation Analysis

#### Domestic Industry – Obstacles: High cost of transportation

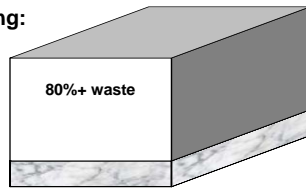


### Situation Analysis

#### Domestic Industry – Obstacles: Over-reliance on natural factors

Wastage is the main efficiency indicator in the industry - blasting in Afghanistan can lead to wastage of over 80% (over 50% at the quarry and again well over 50% of the remainder at the plant), while using wire saws can reduce wastage to around 44% (7% at the quarry and 40% of the remainder at the plant).

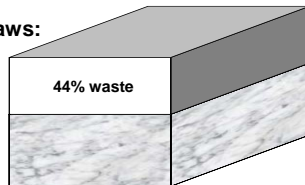
**Blasting:**



\$100/ton<sup>1</sup>



**Wire saws:**



\$280/ton



Eliminating blasting will eliminate the greatest source of value destruction of marble resources.

1. Figure is for example purposes only meant to indicate the hypothetical value of a ton of marble in the quarry.  
 Source: OTF research: Pakistaneconomist.com, OTF Interviews  
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## Situation Analysis

### Domestic Industry – Obstacles: Over-reliance on natural factors

*Capital investments can be high and equipment should be carefully chosen to ensure maximum return. An investment is required to realize the value of the natural resource.*

Equipment List	Euros	Dollars
<b>Quarrying (10,000 m<sup>3</sup> p.a.)</b>		
Diamond wire saws x2	76,000	98,800
Drills	51,900	67,470
Electronic Chainsaw	127,350	165,555
Other	11,918	15,493
<b>Tilting and splitting</b>		
Hydraulic jacking	7,650	9,945
Hydraulic splitting	20,300	26,390
Spare parts & other	106,793	138,831
<b>Block squaring</b>		
Wire sawing machine & trolley	67,614	87,898
Crane 40 tons	119,975	155,968
<b>Air compression &amp; power</b>		
Compressor & generator	98,506	128,058
<b>Total</b>	<b>689,606</b>	<b>896,488</b>

“Blasting can “kill” the quarry by causing micro-fractures throughout the entire quarry; that’s why we prefer to work at virgin quarries”  
- Charles Rudd, marble & granite quarrier and processor in Uzbekistan

The high cost of equipment means that the marble must be of good quality in order to justify the investment.

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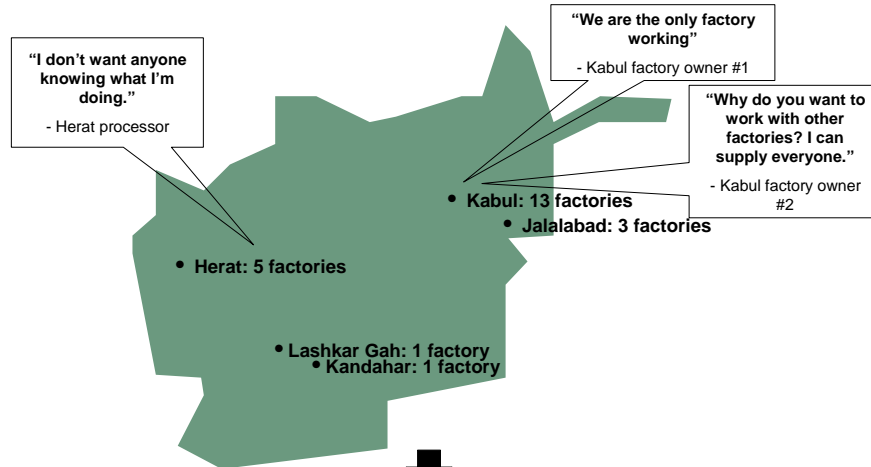
37

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## Situation Analysis

### Domestic Industry – Obstacles: Lack of inter-firm cooperation

*Trust among Afghans is a scarce commodity.*



Afghan businessmen must learn to compete and **collaborate** in order to achieve the full potential of their industries.

Source: OTF interviews

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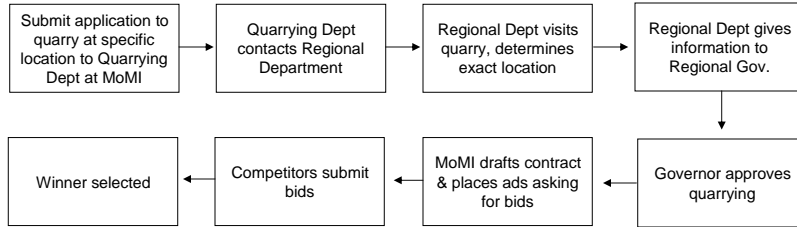
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### Situation Analysis

#### Domestic Industry – Obstacles: Paternalism

*Although there is a process for obtaining leases...*



*...the real process is behind the scenes:*

*"I got the lease because no one else could provide security – the competitors in the area don't have the money or connections, and the competitors with money and connections wouldn't dare go there."*

*"Even if the ministry gave someone else the contract, they could never implement it."*

*"I know the guy in charge of that quarry, I'm the only one who can get access."*



Winning a contract has more to do with politics than who can do the best job. Is investment allocated properly? Will people invest in quarrying equipment in an uncertain environment?

Source: OTF Interviews  
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39

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### Situation Analysis

#### Domestic Industry – Pricing according to color

*Price is determined mainly by color and supply and is susceptible to fashion.*

Origin	Type	Price (per m <sup>2</sup> ) polished tile
Italy	Statuarietto	\$41
Iran	Yazd Leopard	\$40
Egypt	Goldi	\$30
India	Forest Green	\$25.5
Egypt	Rose	\$20

Afghanistan	Bamyan Green	\$27?
Afghanistan	Afghan White	????



Afghanistan has not developed an efficient export market, how much is Afghan marble worth?

Source: Stonecontact.com  
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40

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## Situation Analysis

### Domestic Industry – Pricing according to size

*The ability to make large tiles and slabs starts at the quarry with the production of large blocks free of cracks.*

Type	Price per m <sup>2</sup> slabs	Price per m <sup>2</sup> tiles 60x30	Price per m <sup>2</sup> tiles 30x30
Emperador	\$33	\$27	\$26
Bursa Beige	\$31	\$25	\$24
Statuarietto	\$48	\$51	\$41
Venatino	\$32	\$32	\$27



Bigger is better, and larger sized pieces command a price premium due to the versatility of their use.

Source: Stonecontact.com  
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41

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## Situation Analysis

### SWOT – Marble Industry

<p><b>Strengths</b></p> <ul style="list-style-type: none"> <li>• Good variety of raw material and colors seem to be in demand</li> <li>• High local demand for products at strong prices will allow processors to transition to exports</li> </ul>	<p><b>Weaknesses</b></p> <ul style="list-style-type: none"> <li>• Shipping is expensive relative to many countries</li> <li>• Insecurity and corruption make it difficult to gain and maintain access to quarries</li> <li>• Lack of knowledge of latest quarrying and processing techniques &amp; equipment</li> </ul>
<p><b>Opportunities</b></p> <ul style="list-style-type: none"> <li>• Basic quarrying and cutting will vastly increase export revenues while substituting imports</li> <li>• Stopping blasting and smuggling of stone will prevent destruction of valuable Afghan resources</li> <li>• Foreign partnering will facilitate learning and developing resources</li> </ul>	<p><b>Threats</b></p> <ul style="list-style-type: none"> <li>• Sudden change in security profile could mean losses of investments at rural quarries</li> <li>• The China Factor – currently China imports a lot of raw material and exports a little processed material, a slowdown in Chinese construction will force the legion of Chinese processors to look for markets abroad</li> </ul>

Source: OTF Group Analysis  
Alg Marble DGE 04-09-05

42

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## Situation Analysis

### Summary – Afghanistan's Marble Sector

- Investments are required across most forms of capital: man-made (roads and power), financing, institutions, knowledge, human and cultural capital – however Afghanistan is endowed with good deposits from which to build an industry.
- 80% of marble quarried in Afghanistan is smuggled out for a fraction of its value.
- There is no adequate quarrying equipment in the country. Blasting destroys the value of the stone quarried as well as the deposit and makes it difficult to invest profitably in further processing of future quarrying.
- As a landlocked country, transportation costs make exports of stone and block unprofitable (or barely profitable).
- A great deal of mistrust and poor cooperation exists between firms.
- Bidding for quarries is an uncertain process that requires good connections and careful navigation through different powerful factions in the government.
- No Afghan marble is traded in world markets making pricing an unknown.
- There is strong demand for marble locally, but markets are regional and have little knowledge of how to export.
- Some of Afghanistan's potential stone quarries could be highly lucrative after making the proper investments.

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43

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## Situation Analysis

### Domestic Industry - Priorities

Quarrying:



*8 – 10 ton irregular shaped stones from the Khogiani quarry in Nangahar, the result of quarrying with explosives. In addition to the small size, the stones will be filled with micro-fractures that lead to further wastage downstream.*

vs



*Quarry in Rajasthan preparing to lever 250 ton block from quarry face onto a bed of sand. The block will then be cut into 15-20 ton blocks as per customer specs. Wire cutting leaves the blocks "dressed" and export ready*

Blasting produces small pieces, well over 50% of which is wasted in further processing. Using wire saws can reduce wastage to around 40% at the factory, while producing blocks to customer specifications and allowing for greater efficiency and economies of scale.

Source: OTF research, OTF Interviews  
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44

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## Situation Analysis

### Domestic Industry - Priorities

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Processing:



*A plant in Jalalabad cuts narrow strips singly using a gangsaw. These strips are limited in their usefulness for tiles and cladding.*

vs



*Large multiblade block cutter in Udaipur, India can cut an entire block into 50+ slabs at once, each as wide and long as the block and between 2-3 cm thick. These slabs can be made into tiles, cladding, countertops, tables, etc.*



Not only does multiblade saw have higher output, it also makes larger slabs which can command a price premium of 15% over the smaller strips.

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45

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## Situation Analysis

### Domestic Industry - Priorities

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Opportunities:

- Production cost in Herat is \$12-13 m<sup>2</sup> vs \$3.5-\$4.5 m<sup>2</sup> in India for slabs
  - Quarries in Herat and in India both run on generator power
  - Marble in both is transported roughly 120 km from quarry to plant
  - Quarries from both operate only 9-10 months of the year
  - Plants in Herat have cheaper power \$0.07 kWh vs. \$0.09 kWh
  - India has higher throughput and less waste; Herat plants are shutdown for long periods due to lack of stone
- Price of unprocessed stone exports is \$40-\$50/ton vs \$400/ton for Herat marble processed into slabs (based on quote from potential buyer)

Needs:

- Investment at quarries and processing plants to purchase wire saws and multi-blade saws (large multi-blade saws are not needed if the quarries use blasting, but will be very profitable with adequate raw material inputs)
- Transparent, secure and long-term quarry licensing in order to attract investors at the quarries
- Financing support is required to facilitate investment

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46

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## Agenda

Introduction to the OTF Group & the Afghanistan Competitiveness Project

Step 1: Situation Analysis

### Step 2: Setting Goals

- Cluster Goals
- Project Goals

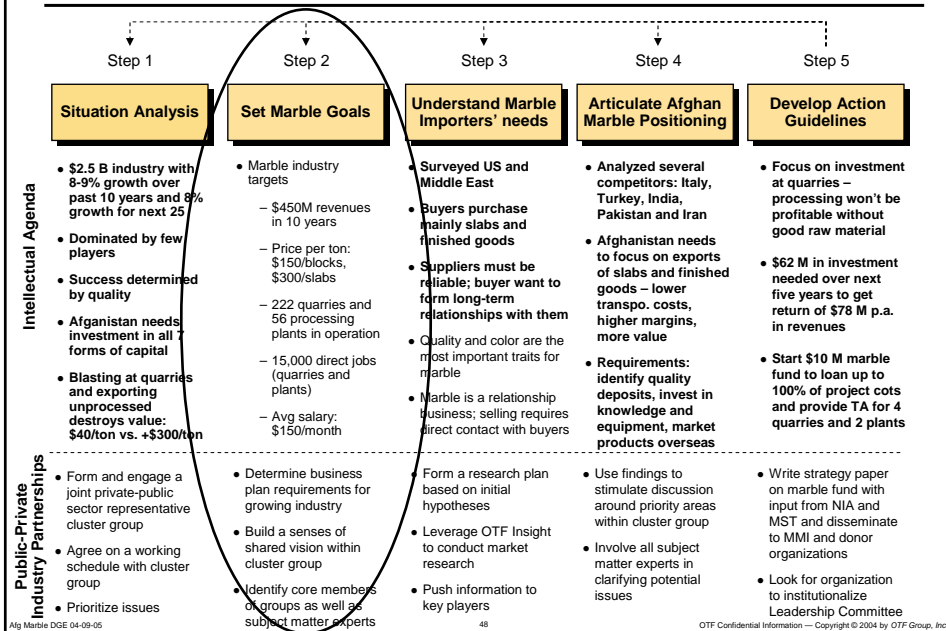
Step 3: Understanding Marble Buyers' & Importers' Needs

Step 4: Articulate Afghan Marble Positioning

Step 5: Develop Action Guidelines

## The OTF Five Step Change Process

### The way forward for Marble





## Goals for Afghanistan Marble

### Why Set Goals?

- Why set goals?
  - Goals maintain focus and direction for the whole cluster.
  - Goals establish growth and other targets towards which the cluster can aspire.
  - Goal setting identifies areas that require particular focus, of both effort and resources. It also highlights areas that may not be receiving sufficient attention.
  - Goal setting initiates at an early stage the process of tracking strategy progress and the need for establishing data gathering and monitoring and evaluation processes.
  
- There are two levels of goals:
  1. *Cluster-wide Afghanistan Marble goals*
    - These are goals that the whole cluster, working together, will achieve.
    - They are achieved through the implementation of a comprehensive strategy and investment plan, that guides effort and resource allocation throughout the value chain.
    - Time horizons for their achievement are typically from 5-10 years.
  2. *Short-term ACP -- Project goals*
    - These are goals that guide the implementation of a limited number of quick win initiatives.
    - The initiatives begin *some* of the work required to achieve the larger cluster-wide objectives.
    - They have shorter time horizons of one to two years.

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49

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## Goals for Afghanistan Marble

### Benchmarking Potential Industry Size

*Although world consumption of marble has been growing by 8% since the late 1990s, not all countries have been able to capitalize on export markets*

Palestine	Egypt	Pakistan	India
<p><b>\$450M market in 2000 with approx \$380M in exports</b></p> <p>Volume of 1.5M tons (est.)</p> <p>1/100<sup>th</sup> the size of Afghanistan</p> <p>Focused on exports of value added products</p> <p>Excellent coordination of the industry through Union of Stone and Marble</p>	<p><b>\$100M in exports in 2003</b></p> <p>80% of exports are lower margin blocks and rough slabs</p> <p>A lot of blasting at quarries, selling marble cheap, little investment in processing plants</p> <p>Chinese buy cheap Egyptian marble, process and resell cheaper than the Egyptians can sell it</p> <p>No coordination in industry, a great deal of undercutting occurs</p>	<p><b>\$20-30M in exports in 2004</b></p> <p>Little growth in exports despite growing world markets</p> <p>Blasting at quarries results in 61-73% wastage</p> <p>Lack of power at plants, poor roads prevent large shipments</p> <p>Lack of training and poor technology</p> <p>Lack of cooperation within industry and with government</p>	<p><b>\$1.7B market in 2001 but only \$39M in exports</b></p> <p>Largest known marble reserves in the world</p> <p>Both good and bad quarrying techniques</p> <p>Both good and bad quality processing</p> <p>Lack of cooperation within industry</p> <p>Rampant underselling has decreased value of exports</p>

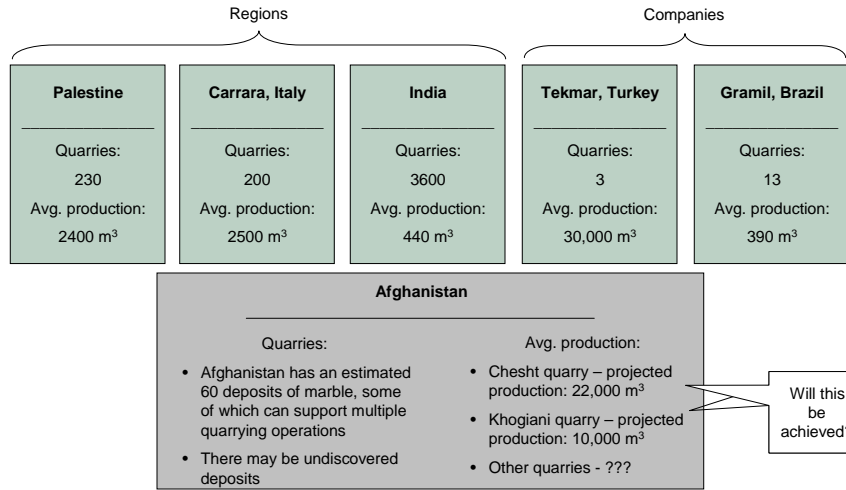


Palestine in 1/100<sup>th</sup> the size of Afghanistan; although aggressive, Afghanistan's projected growth to \$450M by 2015 is not unreasonable as it would put Afghanistan 15 years behind Palestine in a rapidly growing market. Afghanistan will have to invest in proper quarrying and processing as well as infrastructure in order to achieve this and avoid the pitfalls of Egypt, Pakistan, and India.

Sources: OTF Research  
Afg Marble DGE 04-09-05

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## Goals for Afghanistan Marble Benchmarking Quarrying Capacity



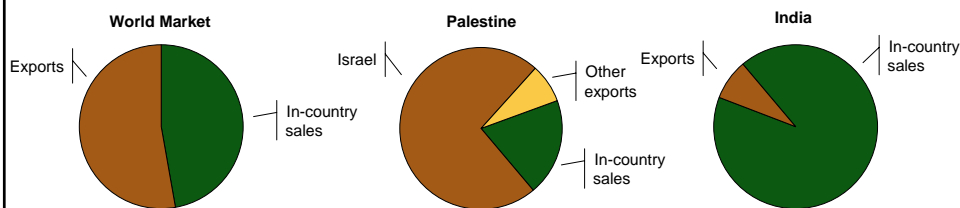
Production varies greatly between regions and companies, a conservative goal for Afghanistan will an average production of 2500 m<sup>3</sup> per quarry.

Source: OTF Research  
Alg Marble DGE 04-09-05

51

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## Goals for Afghanistan Marble Exports vs. Domestic Sales



- Slab and tile production in Afghanistan is roughly estimated at 900 tons/month, with 100% sold in the local market.
- Local demand may be as high as 1800 tons/month, all other production will have to be exported.

Local demand will not be able to support strong industry growth, the Afghan industry will have to focus on exports.

Source: OTF Research  
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52

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## Goals for Afghanistan Marble

### Product Mix

Most of the value is in blocks and slabs. Tiles are easy to cut and polish from slabs and hence only command a premium in the larger sizes.

Prices for Emperador Light & Dark marble from Turkey

	Price per ton*	Price per m <sup>2</sup> *	Equipment required
Blocks	\$210	\$7	Wire saws
Slabs	\$366	\$33	Wire saws, multiblade block cutter, slab polishing line
Tiles (45cmx45cm)	\$350-\$395	\$30-\$35	Wire saws, Tile cutting and polishing line



Afghanistan should focus on slabs for exports and produce tiles for the local market.

\* Assumes 30 m<sup>2</sup> per m<sup>3</sup>  
Source: OTF Research, Stonecontact.com  
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53

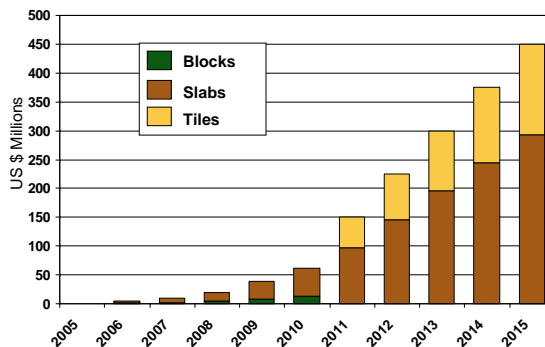
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## Goals for Afghanistan Marble

### Industry Value

Current Afghan marble exports are probably under \$1M. Private sector investment into quarries and plants of \$107 M could help the industry grow to \$450 M by 2015. Government investment into roads and power will be needed to help the industry achieve its goals.

Proposed Industry Revenue Growth



Total revenues 2015	\$450 M
Total required investment	\$107M
Estimated employment (quarry & plant)	15,000
Estimated quarries/plants opened	222/56



#### Assumes:

- World growth continues at 8% p.a. for the foreseeable future.
- Adding 250,000 tons total capacity per year from through 2010 and 250,000 tons per year from 2011 to 2015. Total capacity in 2015 will be 1.5 M tons per year, about 0.6% of estimated world production.
- Price per quarried ton of around \$300 for slabs and tiles and \$150 for blocks – no core drilling has been done at key quarries and many deposits are of unknown size and quality, will that price be possible?
- In-country sales of no more than 20,000 tons per year

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54

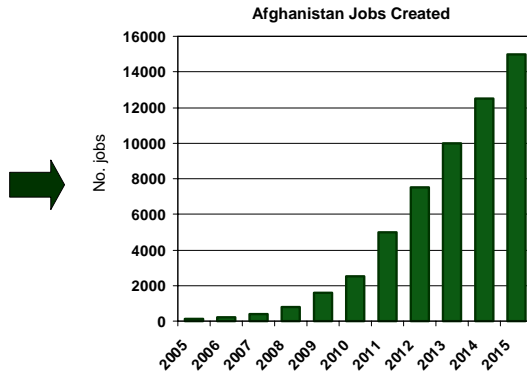
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## Goals for Afghanistan Marble

### Job Creation

Based on its growth targets the industry should be able to create up to 15,000 jobs in the next 10 years.

Palestine Marble Industry Benchmark	
Workers:	15,000
Total production:	1.5M tons
Production per worker:	100 tons
Avg. salary:	\$6,000



With most quarries located in remote areas, marble represents a good source of rural development by providing thousands of good-paying jobs (avg. salary \$150/mo).

Source: OTF Research  
Alg Marble DGE 04-09-06

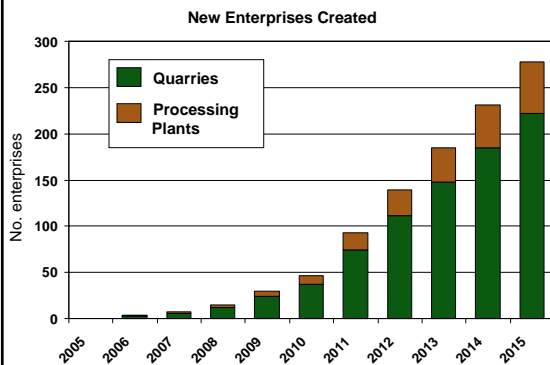
56

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## Goals for Afghanistan Marble

### Enterprise Creation

\$107 M in private sector investment will go towards 222 quarries and 56 processing plants in order to boost production of value added marble goods.



Assumes:

- Avg. production per quarry of 2,500 m<sup>3</sup> per year – based on benchmarking
- Avg. production per plant of 10,000 m<sup>3</sup> per year – based on initial business plans developed by OTF Group.

Quarries and plants will be supported by GoA infrastructure projects such as roads and power and increased security throughout the country.

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56

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## Goals for Afghanistan Marble

### Summary

- Afghanistan can follow the example of Palestine and become a **provider of high-quality, value added marble products to the world market**. To achieve this the private sector must invest in knowledge and equipment to conduct proper quarrying and processing, while the government must invest in roads, power and security.
- Under the current plan, exports of marble could grow from less than **\$1M today to \$450M by 2015**.
- **\$107M in private sector investment** will be required over the 10 year period in order to achieve these results. Investment will be in block, slab and tile cutting systems, cranes and earth moving equipment, compressors, generators, etc.
- 222 quarries at an average capacity of 2,500 m<sup>3</sup> per year will have to be opened, as well as 56 factories with a capacity of 10,000 m<sup>3</sup> per year.
- Over 90% of production will be targeted for the export market, requiring coordinated marketing efforts including
  - acquiring market knowledge
  - attending international trade shows; and
  - establishing foreign showrooms and distribution centers.

## Goals for Afghanistan Marble

### Summary Targets

<i>Goals</i>	<i>Targets</i>
General	<ul style="list-style-type: none"> <li>• Increase export value from less than \$1 M to \$450 M in 10 years</li> </ul>
Increase capacity: Open new quarries	<ul style="list-style-type: none"> <li>• 222 quarries to be opened with an average annual capacity of 2,500 m<sup>3</sup></li> </ul>
Capture more value: Upgrade processing	<ul style="list-style-type: none"> <li>• All quarries will manufacture blocks, 56 processing plants will process slabs and tiles</li> <li>• Form JVs with experienced foreign companies</li> <li>• Total investment of \$107 M</li> </ul>
Capture more value: Focus on exports of value added goods	<ul style="list-style-type: none"> <li>• Export to Middle East and USA – largest markets for value added goods</li> <li>• Avoid selling blocks and raw stone</li> </ul>

## Agenda

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Introduction to the OTF Group & the Afghanistan Competitiveness Project

Step 1: Situation Analysis

Step 2: Setting Goals

- Cluster Goals

- **Project Goals**

Step 3: Understanding Marble Buyers' and Importers' Needs

Step 4: Articulate Afghan Marble Positioning

Step 5: Develop Action Guidelines

## Goals for ACP

### Cluster Strategy Development

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*Establishing goals for the cluster is one of 5 core deliverables of the OTF project that culminate in the development of a strategy and investment plan for the marble cluster.*

Strategy development process

- Strategy development for the cluster is driven by OTF's 5-step process. Each of the main deliverables are listed below with expected completion dates:

Step 1	Conduct Situation Analysis	Q2 2005
Step 2	Establish Marble Cluster Goals	Q2 2005
Step 3	Understand Marble Buyer Needs	Q4 2005
Step 4	Articulate Afghan Marble Market Positioning	Q4 2005
Step 5	Develop Action Guidelines	Q1 2006

'Quick-win'/short-term initiatives

- Three initiatives will be undertaken to address immediate business barriers faced by the marble and dimension stone cluster and to partially begin the implementation of some elements of the cluster strategy.
- Ensuring active cluster involvement in these initiatives is central to how they are developed and implemented.

## Goals for ACP

### Cluster Strategy Development – Initiatives

<i>Current Project Initiatives</i>	<i>Relevance to Cluster Goals</i>
<p>Develop marble ventures</p> <ul style="list-style-type: none"><li>• Survey quarries, send samples to overseas buyers, develop business plans, examine financing options, find customers, partner with AISA on trade missions and market activity</li></ul>	<ul style="list-style-type: none"><li>• Serve as example for future ventures to invest \$107 M into 222 quarries and 56 processing plants</li><li>• Begin to establish distribution networks and accumulate market knowledge</li><li>• Capture up to 10x more value for marble and expand exports to \$450 M</li></ul>
<p>Invest in knowledge of sales and operations</p> <ul style="list-style-type: none"><li>• Develop SOW for quarrying and processing experts to train employees and supervise start up ventures</li><li>• Find experienced foreign partners for joint ventures</li></ul>	<ul style="list-style-type: none"><li>• Ensure success of initial ventures so further investment takes place</li><li>• Jump-start industry knowledge necessary for the success of the industry</li></ul>
<p>Formation of marble association</p> <ul style="list-style-type: none"><li>• Create organization that will represent the industry at home and internationally and make cluster activities sustainable</li></ul>	<ul style="list-style-type: none"><li>• Improve cooperation among industry players to help establish purchasing and sales consortia, and avoid destructive business practices</li><li>• Disseminate knowledge and provide support to new ventures</li></ul>

## Goals for ACP

### Institution Development and Outreach

*The long-term sustainability of the OTF project and the implementation of the marble cluster strategy is dependent on a strong and active marble cluster, and an institution that serves as a leadership body for the cluster.*

#### Institution Development

- OTF will work with existing institutions – or create new ones should no suitable ones exist – to help them play a key leadership role for the marble cluster. To this end, the Marble Cluster Leadership Council has been established, with members from all the regions of Afghanistan.
- The Leadership Council will spearhead initiatives that bring both near-term and longer-term benefit to the cluster. The Council will work closely with Commercial Competition Commission of Afghanistan (CCCA), established by OTF.
- OTF also has initiated regular marble cluster meetings, facilitating the cluster to participate in the strategy development process and to address business barriers faced by the cluster.
- Work teams of cluster members have been established for each of the three initiatives that OTF is spearheading. Others will be developed to address other issues, led by members of the cluster.

#### Outreach

- OTF is conducting a number of outreach initiatives to encourage debate and understanding among the Afghan business community and the general public about competitiveness.
- This includes media briefings and placements, and seminars throughout the country.

## Establishing Goals

### Summary

---

	<i>Project Objectives</i>	<i>Date</i>
STRATEGY	Comprehensive strategy and investment plan for marble cluster complete	Q1 2006
	Implementation of 3 initiatives underway, led by OTF	Q3 2005
INSTITUTION BUILDING	Marble Cluster Leadership Council established	Q3 2005
	Work groups established for all initiatives	Q3 2005
OUTREACH	Marble association formed	Q1 2006
	Cluster summit in Kabul at Ministry of Mines and Industry, 2 outreach seminars in Jalalabad and one in Kandahar	Q3-4 2005
	2 articles on the marble industry published in Afghan media	Q1 2006

## Agenda

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Introduction to the OTF Group & the Afghanistan Competitiveness Project

Step 1: Situation Analysis

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**Step 3: Understanding Marble Buyers' and Importers' Needs**

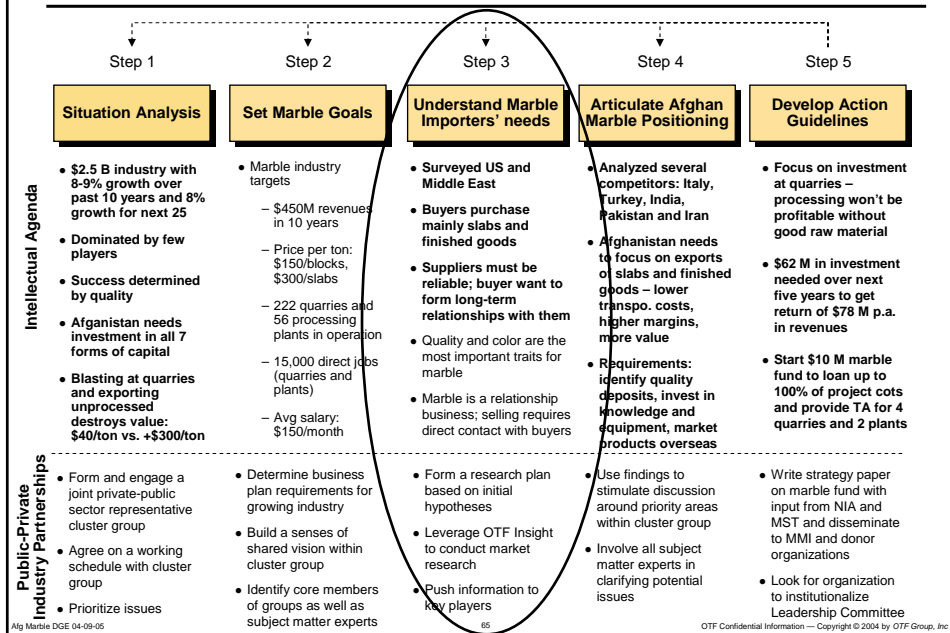
Step 4: Articulate Afghan Marble Positioning

Step 5: Develop Action Guidelines



## The OTF Five Step Change Process

### The way forward for Marble



## Marble Survey Results: US and Middle East

### Overview

The Customer Survey allows the Marble Industry to understand the requirements for entering foreign markets.

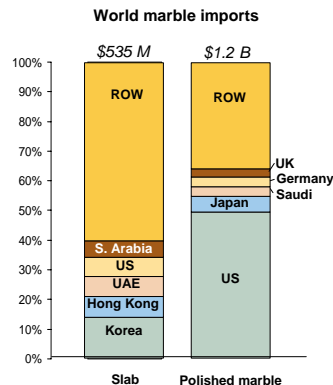
**Markets surveyed: US and Middle East (UAE, Bahrain and Saudi Arabia)**

**US: 54 respondents**

**Middle East: 295 respondents**

**Enterprises ranged in size from less than \$500,000 to over \$25 M in sales**

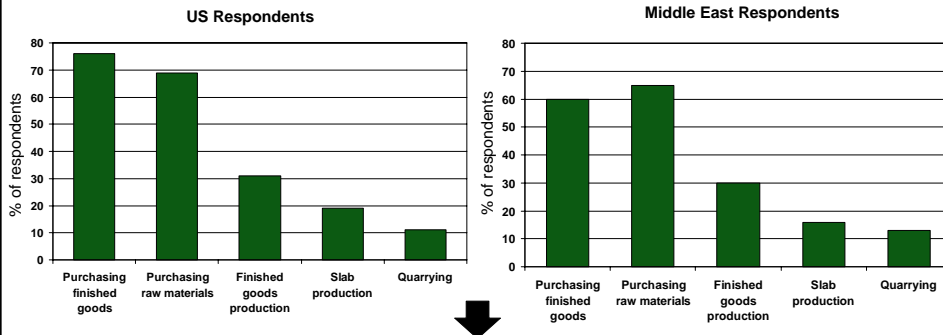
**Target markets chosen due to propensity for purchasing value added marble products**



## Marble Survey Results: US and Middle East Demographics

*Customers in both regions buy a great deal of both finished goods and raw materials.*

### What operations does your firm engage in?



This is a good customer base for Afghan producers who will have a variety of products to offer and verifies the trade data.

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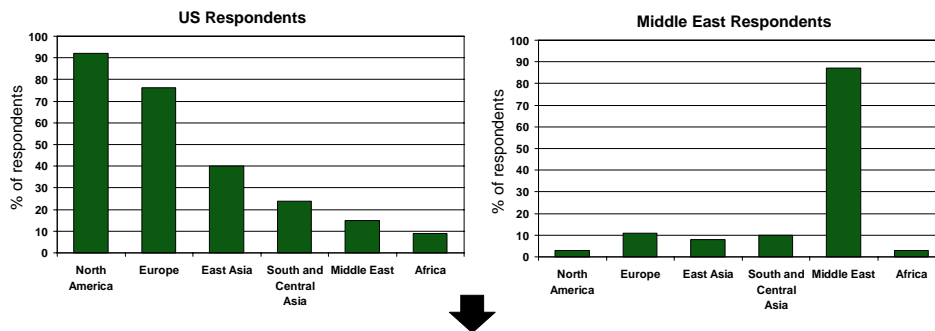
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## Marble Survey Results: US and Middle East Demographics

*US firms tend to operate globally, but little in the Middle East. Middle Eastern firms tend to have a strong regional focus and work little elsewhere.*

### In which region(s) of the world do you currently operate?



- Is there something unique about the Middle East market that makes it difficult for outsiders to operate there?
- To penetrate both markets will require a two-pronged approach based on the regional strategies of a more enclosed environment (Middle East) and an open environment (U.S.).

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68

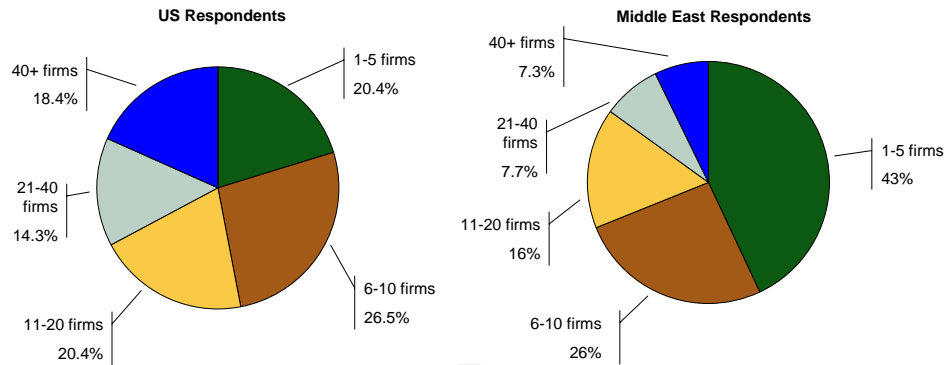
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## Marble Survey Results: US and Middle East

### Purchase Behavior

*US firms tend to buy from many more suppliers than Middle Eastern firms.*

#### How many firms do you purchase from?



- With fewer suppliers, the Middle East market may be tougher to break into; possibly the Middle Eastern markets rely more on relationships than US markets.
- Size of firm is a poor predictor of number of suppliers, Both markets still have a large proportion of firms who buy from numerous suppliers, so opportunities to supply these markets exist.

Ally Marble DGE 04-09-05

69

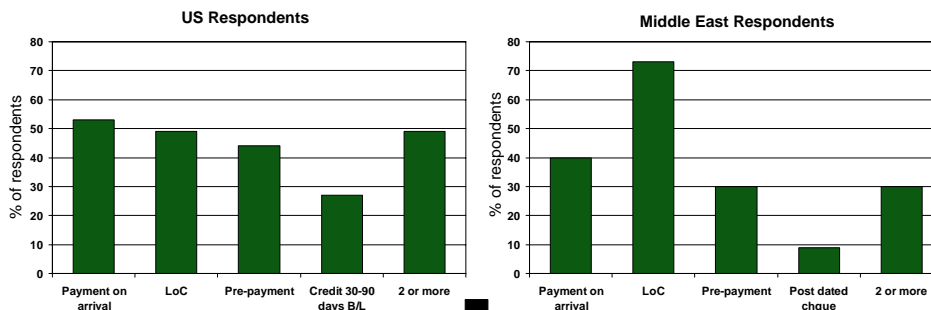
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## Marble Survey Results: US and Middle East

### Purchase Behavior

*Payment terms are generally flexible with many respondents choosing several options. Terms in the US tend to favor the buyer, with payment on arrival being the most popular and many buyers preferring 30-90 days credit terms while the Middle East tends towards LoC.*

#### What purchase terms do you prefer?



- In a follow up question, 48% of US respondents chose either credit or payment on arrival as their preferred terms.
- LoC terms in the Middle East seem better for suppliers, however it is unclear who bears the expense.
- **Working capital will be a factor for processors in Afghanistan given the difficulty in obtaining financing, but sellers may require more capital when selling in the US than in the Middle East.**
- Due diligence of buyers is important - some American companies claim that buyers may fail to pay, and it winds up being more expensive for the seller to try to recoup the money in court than to let it go.

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70

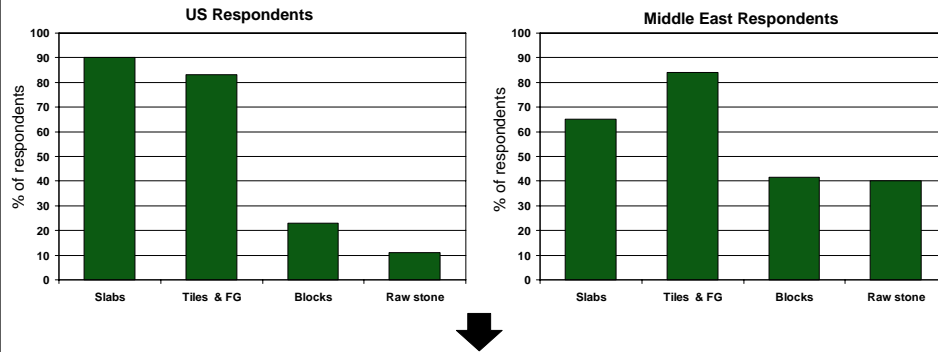
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## Marble Survey Results: US and Middle East

### Purchase Behavior

*Most buyers purchase slabs and tiles, although in the Middle East they purchase significant amounts of blocks and raw stone as well.*

What products did you buy in the past year?



- In a follow up question 93% of respondents in the US and 74% in the Middle East selected either slabs or tiles as their largest purchase in terms of volume.
- **Both markets are good for Afghan producers seeking to sell value added products.**

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71

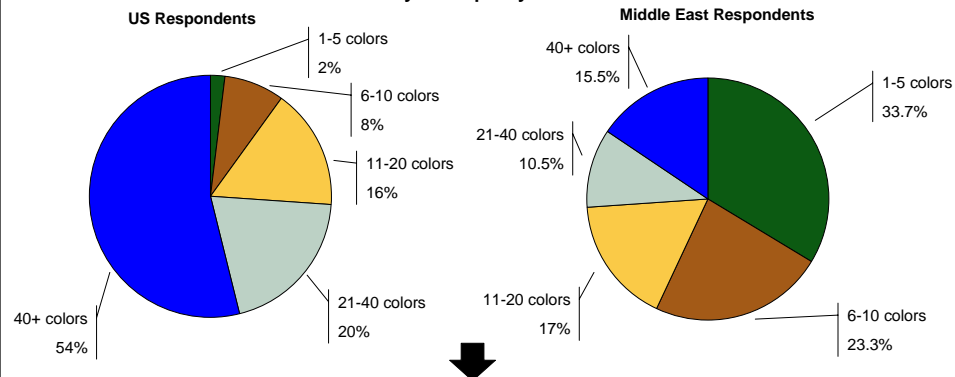
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## Marble Survey Results: US and Middle East

### Purchase Behavior

*Firms tend to purchase a wide variety of colors, although the Middle East buys much fewer colors than the US.*

How many different colors did you buy in the past year?



- Why does the Middle East buy fewer colors? Is there a difference in the buying pattern of the end customer?
- Follow on question found beiges and whites are the most popular colors, but with fewer colors purchased, the concentration of buyers who prefer beige and white is higher in the Middle East.
- **Afghanistan's deposits of white marble should be popular in both markets, but will be especially popular in the Middle East.**

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72

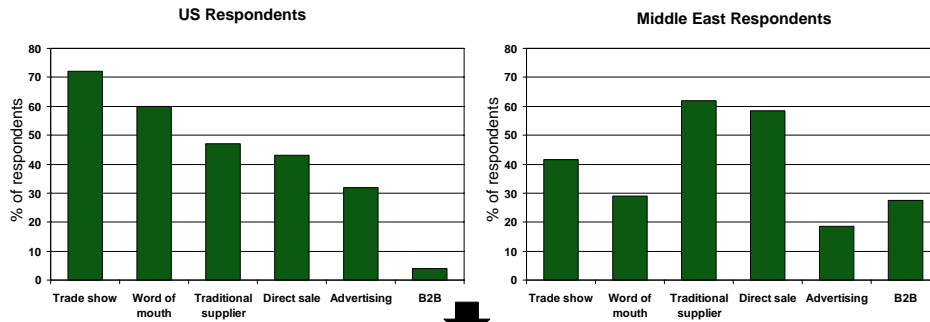
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## Marble Survey Results: US and Middle East

### Supplier Selection

Most firms find new suppliers through trade shows, word of mouth and direct sales with the US preferring trade shows and the Middle East direct sales. Few buyers use B2B sites or advertising.

#### Which methods do you use to find suppliers?



- This is a relationship business where face to face meetings are key - a follow on question revealed that, in the US only one respondent felt advertising was the most important method of finding suppliers, while none felt B2B was important<sup>1</sup>. In the Middle East only 7% of respondents felt either method was the most important for finding suppliers, although 27% of respondents did use B2B sites to find suppliers.
- Keeping a customer happy is critical for future business in the US the word of mouth effect makes building a good reputation even more critical.

<sup>1</sup> Interviews in the US revealed that some construction companies do use B2B sites for smaller orders, however construction companies were not directly surveyed in the US.  
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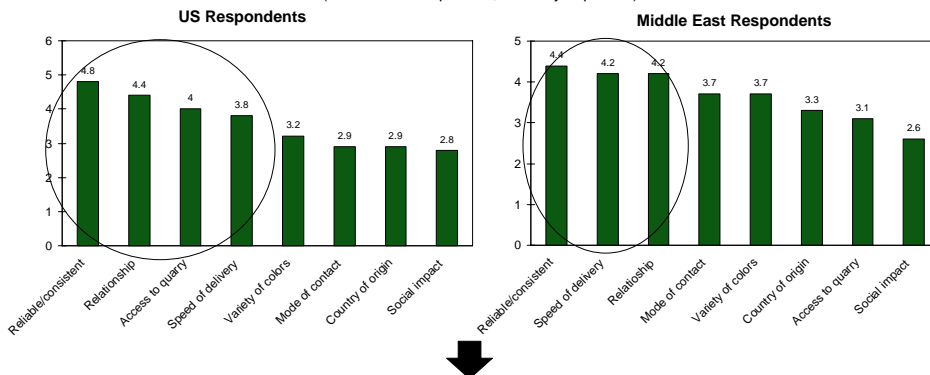
## Marble Survey Results: US and Middle East

### Supplier Selection

Both markets tended to rate suppliers' traits similarly. Reliability and consistency, speed and relationship were the most important factors in selecting a supplier.

#### How important are the following in selecting a supplier?

(1 = Not at all important ; 5 = Very important)



- Good suppliers are reliable and consistent, and buyers tend to form long term relationships with them. Many respondents said honesty and integrity and reliability were key factors they look for in suppliers.
- US buyers prefer suppliers who have access to a quarry in order to guarantee supply, however, it is not as important for Middle Eastern firms.
- Country of origin is only moderately important, buyers deal with firms not countries.

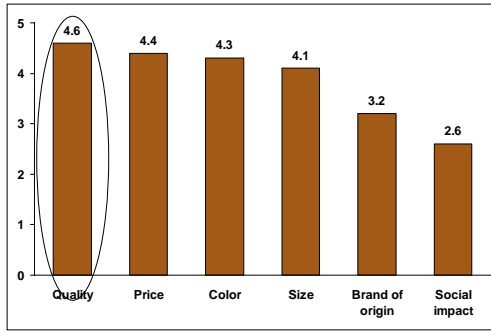
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## Marble Survey Results: US and Middle East

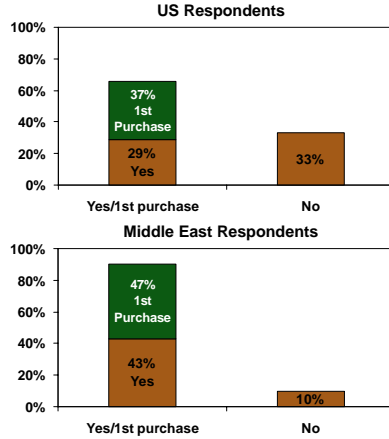
### Product Selection

*Quality is king, with color, price and size are also important. 66% and 90% of US and Middle East buyers respectively require specs from the supplier.*

How important are the following in selecting a product? (US and ME)  
(1 = Not at all important ; 5 = Very important)



Do you require test results by the supplier?



- Suppliers who can deliver on quality, color and size can get price premiums, while those who can't will have their products discounted.
- Suppliers have to prove their quality with samples and specs – a testing lab will be required.

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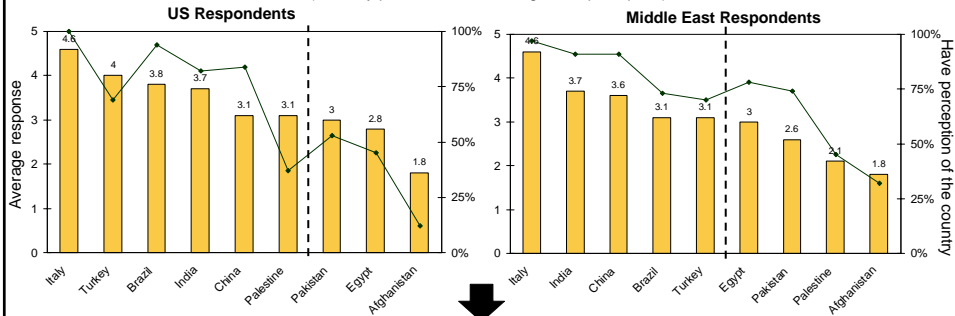
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## Marble Survey Results: US and Middle East

### Perception of Supplier Country Quality

*There is a strong correlation between how well known and how well regarded a country is. Almost all respondents knew Italy and had a very favorable perception, very few respondents had a perception of Afghanistan, and that perception is bad.*

Perception of supplier country quality  
(1 = Very poor ; 5 = Outstanding; or no perception)



- Where does causality in the correlation between how well regarded and how well known a country is?
- Palestine is rated poorly, perhaps because the bulk of its exports go to Israel and they are relatively unknown, or perhaps they have low quality products and that has led to them being unknown. With Palestine's market size at \$450 M and a focus on value added goods, the former is more likely.
- In Afghanistan it is poor quality that prevents exports, hence both the poor perception and lack of perception of Afghanistan are probably indicators of how current quality in Afghanistan is regarded.
- Perception of a country's quality should be tempered by the knowledge that most buyers do consider it an important criteria for customer selection. In the aggregate however, it may indicate the general level of quality of the firms in an industry.

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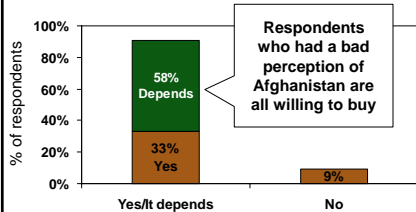
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## Marble Survey Results: US and Middle East

### Perception of Afghanistan - US

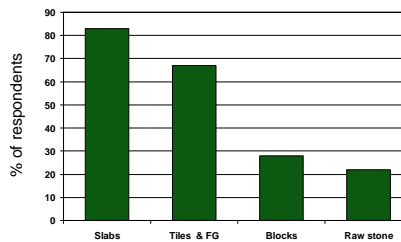
91% of respondents are willing to buy Afghan marble if the conditions are right. Having good samples is the most important condition, but getting to know suppliers and credit terms are also important.

Would you buy directly from an Afghan processor?

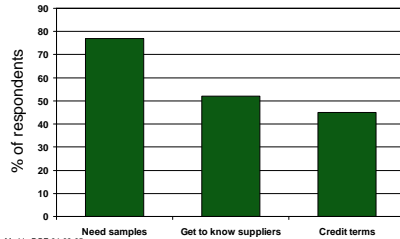


Respondents who had a bad perception of Afghanistan are all willing to buy

What products would you buy?



On what does it depend?



- As long as quality and color are good, Afghan marble will sell – the price will cover any inefficiencies in production.
- US buyers in general source from many places and seem willing to try new suppliers.

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77

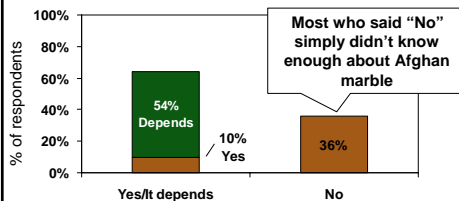
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## Marble Survey Results: US and Middle East

### Perception of Afghanistan – Middle East

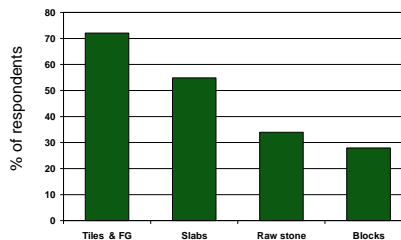
64% of respondents are willing to buy Afghan marble if the conditions are right. Again having good samples is the most important condition, but getting to know suppliers and credit terms are also important. Quality is an issue for Middle Eastern buyers as well.

Would you buy directly from an Afghan processor?

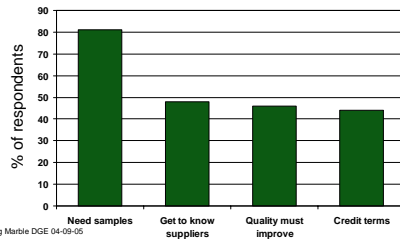


Most who said "No" simply didn't know enough about Afghan marble

What products would you buy?



On what does it depend?



- Compared to the US, fewer buyers in the Middle East are willing to purchase Afghan marble.
- Middle East buyers are more familiar with Afghan marble and its low quality than their US counterparts, so quality improvement is an issue for them.
- Middle East buyers tend to deal with fewer companies, many may not want to deal with new suppliers.

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78

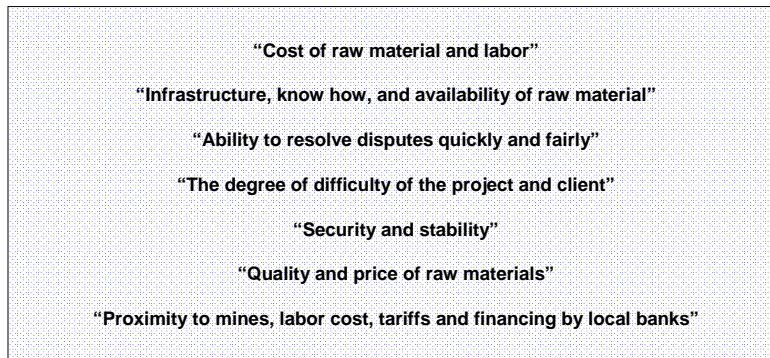
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## Marble Survey Results: US and Middle East

### Perception of Afghanistan

*Only 6% of US respondents and 22% of Middle East respondents were willing to invest in Afghanistan citing the probable return on investment and market proximity, cost of production and access to a specific type of stone.*

What is important for you when deciding where to manufacture?



- Getting investment into Afghanistan will be difficult due to the lack of trained workforce and infrastructure, but high quality quarries will still draw more intrepid entrepreneurs.

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79

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## Marble Survey Results:

### Key Findings

*In a highly competitive but growing industry, Afghan marble producers can win by developing relations based on reliability and speed and providing a high quality and reasonably priced product.*

- All firms **import slabs and tiles** – the products Afghanistan wants to sell.
- Business is done on the strength of relationships. Face-to-face meetings are important.
- The most important criteria for a supplier is **reliability and consistency**, while the most important criteria for marble is **quality then color and price** – if you have good quality marble of the right color, you can set your price.
- Over 50% of respondents in both markets, would consider purchasing Afghan marble, with some degree of conditionality – so understanding an individual customer’s needs is important.
- **Testing lab will be needed** in Afghanistan for necessary quality reassurances.
- While country of origin is not an important criteria for selecting suppliers, how a country’s quality is perceived should indicate to an industry how its firms operate.

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80

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## Marble Survey Results: US and Middle East

### Summary - US

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- American firms **import mainly slabs and tiles** – the products Afghanistan wants to sell.
- Over 30% of US buyers state that they will consider buying Afghan marble, and another 58% would conditionally.
- Business is done on the strength of relationships, with **most suppliers found at trade shows**. Word of mouth also counts for a great deal.
- Buyers source many colors from many suppliers – US customers are used to choices – and operate all over the world.
- US firms buy on credit, but will also use Letters of Credit – with long transit times from Afghanistan **working capital will be an issue** for processors.
- **Few buyers know Afghanistan**, the few who do, do not have a good perception – however, most buyers are willing to try Afghan marble.
- How to sell in the US: **Go to a trade show, take high quality samples, meet and greet different buyers.**

## Marble Survey Results: US and Middle East

### Summary – Middle East

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- Middle East firms buy mainly slabs and tiles, but much more blocks and raw stone than the US buyers.
- Approximately 10% of Middle East buyers state they would buy Afghan marble, with an additional 54% would conditionally
- Business is done on the strength of relationships, with **most suppliers found by the supplier's sales efforts**. Suppliers have to make extra effort to enter the market.
- Strong regional focus with most firms working mainly in Middle East.
- Buy relatively few colors and like to deal with relatively few suppliers.
- Overwhelmingly prefer LoC, much better for Afghanistan than selling on credit, but it is unclear on who pays the fees.
- Much more squeamish than Americans about trying new suppliers, persistence will be key in the selling process, Afghans who want to sell in the Middle East may have to make repeated trips to the region to develop realtions.
- How to sell in the Middle East: Make appointments to see different buyers, take good quality samples, and follow up. They buy from few people, can you be one of them?

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Step 1: Situation Analysis

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**Step 4: Articulate Afghan Marble Positioning**

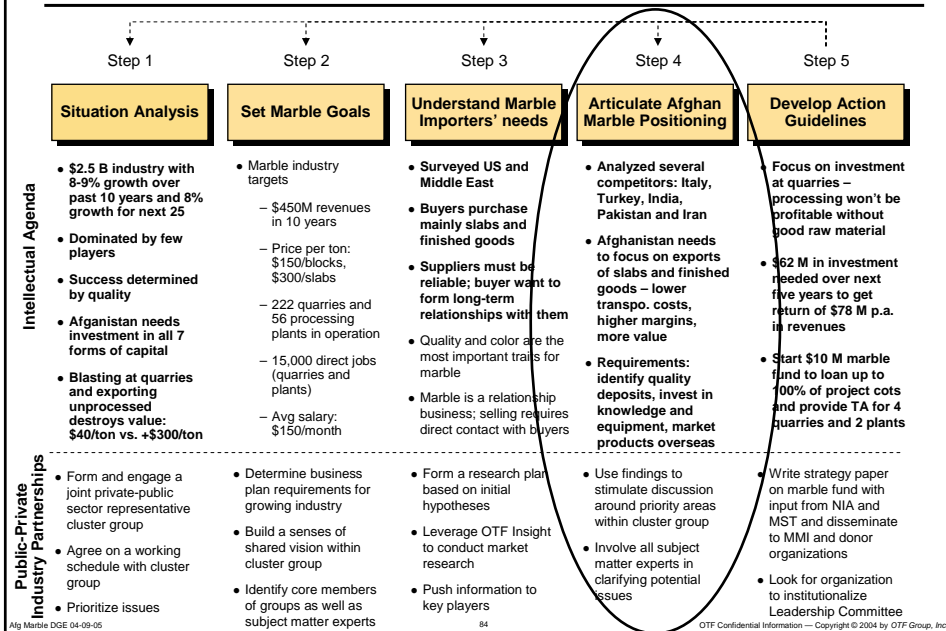
- **Competitor Analysis**

- Afghan Marble Positioning

Step 5: Develop Action Guidelines

## The OTF Five Step Change Process

The way forward for Marble

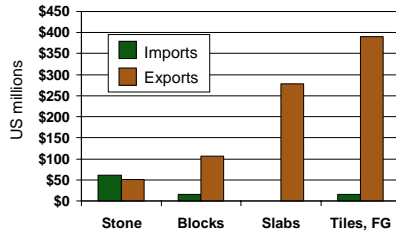


## Competitor Analysis

### Profile - Italy

*Italy is the world leader in marble. Gifted with some of the best quality deposits in the world, Italy has invested in knowledge and equipment and parlayed its comparative advantage to a massive competitive advantage. The recent decline of the Italian marble industry (3-5% p.a. over the past few years) is due to increased exports of Italian equipment to other marble producing countries.*

Italian exports and imports of key marble products



Italy especially dominates the value added categories where their equipment and experience give them a strong competitive advantage. Italy imports mainly raw materials for further processing in Italy.



Italian cutting line (by Simec). This kind of operation has allowed Italy to reign at the top of the industry for decades. Italian marble is the proxy for quality.

Italy will be tough to beat in terms of quality, but Italian processors and equipment vendors are aggressively looking for opportunities overseas. Afghanistan can "join them" instead of trying to "beat them".

Source: 2003 Trademap data  
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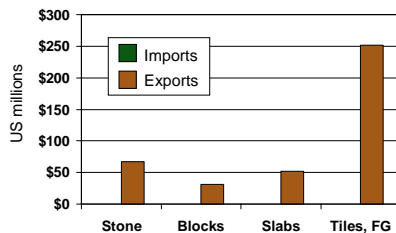
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## Competitor Analysis

### Profile - Turkey

*Turkey has the largest marble deposits in the world and is now the largest producer in the world while proximity to both Europe and Asia gives it access to large markets. However, it is Turkey's use of European technology that has allowed it to leverage its natural resources to become one of the dominant exporters of the industry.*

Turkish exports and imports of key marble products



Turkey is second only to Italy in exports of finished marble goods. Its vast resources mean that imports of marble are negligible.



A perfect example of Turkey's recent rise, the Tekmar marble company has two plants with a combined capacity of 2.5 M m<sup>2</sup> per year. 99% of production is exported as finished goods. Almost all equipment is imported from Italy. It has only been in operation since 1991.

If anyone takes the number one spot from Italy, it will be Turkey - and they will do it with Italian equipment. Turkey is testament to the strategy of sourcing the best equipment and expertise in the world to unlock the value of natural resources.

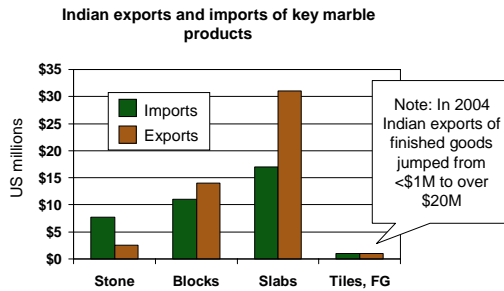
Source: 2003 Trademap data  
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## Competitor Analysis

### Profile – India I

The strongest regional competitor, the Indian industry is plagued by lack of investment. High tariffs limit imports, while large local markets focus mainly on price; a protected local industry may be hindered from capturing international markets due to lack of quality.



Despite being the second largest producer of marble in the world, India exports very little, and much is non-value added.

The industry relies on Indian equipment. While many quarries are well run and supply the local industry with cheap material, processors have not been able to hit the quality standards for world markets.



Despite being the giant next-door, India's potential as a customer or competitor seems limited. However, their quarrying expertise is perhaps the best in the region.

Source: 2003 Trademap data  
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87

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## Competitor Analysis

### Profile – India II

Although their export markets are small, the Indian industry, based in Rajasthan, can serve as an example of the possible pitfalls and potential of the Afghanistan marble industry.

#### Advantages and disadvantages

Area	Description	Afghan potential
<b>Industry advantages</b>		
Vast deposits	Second largest deposits in the world	Substantial deposits exist
Trained workforce	Historical skill transfer from Iran honed locally over the years	Lack of skills will require knowledge transfer
Entrepreneurship	Strong regional focus has led to development of clusters of businesses running the industry country wide	Regionally dispersed industry makes cooperation more difficult
<b>Industry disadvantages</b>		
Location	Far from ports and markets	Far from ports and markets
Government policies	Protectionist (import tariffs), uninformed (, unsupportive (difficult lease process)	Minerals Law good in theory, but ability to implement unknown
Quality control	Local customers have low quality standards insufficient for export markets	

#### Lessons for Afghanistan

Potential
- 500,000 employed directly (quarries & processing plants); more employed indirectly in ancillary industries
- Ancillary industries include: <ul style="list-style-type: none"> <li>- Dolomite for paint, plastics, concrete, etc.</li> <li>- Marble articles</li> <li>- Manufacturing of machines, cutting tools, abrasives</li> <li>- Transportation</li> </ul>
- Rural development & <i>in situ</i> employment
Pitfalls
- Few exports, industry is uncompetitive globally
- Compete mainly on price
- Low wages

Source: Viability of the Marble Industry in Rajasthan, Dr. Goyal; OTF Research  
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88

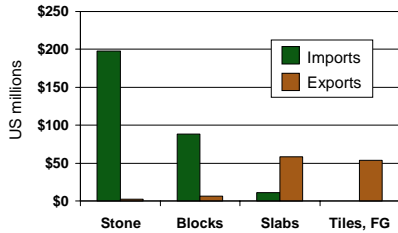
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## Competitor Analysis

### Profile - China

China's industry is centered in the port city of Xiamen, where most of the raw marble is processed into value added goods for re-export and local consumption. A growing exporter of value added goods with a strong price advantage, Egyptian processors complain that the Chinese buy Egyptian raw materials and beat out Egyptian finished goods with the Egypt's own marble.

Chinese exports and imports of key marble products



China buys raw materials both for its booming construction industry and for further processing and export. Their combination of quality and price allows them out-compete other industries in value added goods with the nation's own raw materials.

Many Chinese companies import, export, quarry and process. They sell a wide range of marble goods made with marble from all over the world.

China will continue to grow in importance; a slow down in the Chinese economy could push more aggressive growth of export markets as plants find themselves with excess capacity.

Source: 2003 Trademap data  
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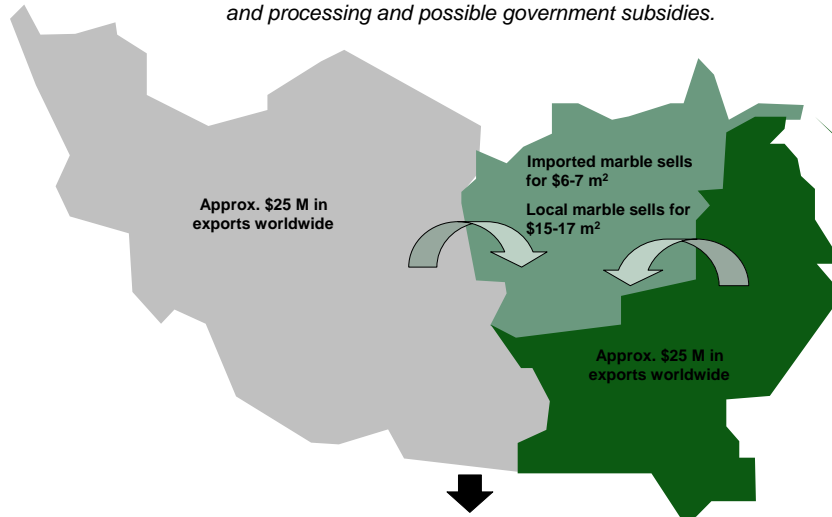
89

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## Competitor Analysis

### Profile – Pakistan & Iran

Strong competition from Pakistani and Iranian imports is due to more efficient quarrying and processing and possible government subsidies.



Pakistan and Iran are not big players internationally, but are strong in Afghanistan itself. Upgrading Afghan production should eliminate their competitive advantage within Afghanistan.

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90

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- **Afghan Marble Positioning**

Step 5: Develop Action Guidelines

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91

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## Afghan Marble Positioning

### The Importance of Value Addition

*High transportation costs mean that value-addition in Afghanistan has a great effect on the profitability of a project.*

	Block Export	Slab Export
Price:	\$185/ton	\$42/m <sup>2</sup>
Annual volume quarried (tons):	28,800	28,800
Revenues:	\$5,300,000	\$9,400,000
Operation costs:	\$730,000	\$1,400,000
Royalty payments:	\$290,000	\$290,000
Transportation costs:	\$3,300,000	\$2,100,000
Profit:	\$980,000	\$5,600,000
Profit margin:	18%	60%
Transportation as % of revenue:	62%	22%

Approx. 40% of the marble cut away during processing leading to lower transportation cost.



High quality marble can be profitable even when exported as block, but a great deal of value is lost. Cheaper marble will have to be processed if it is to be exported.

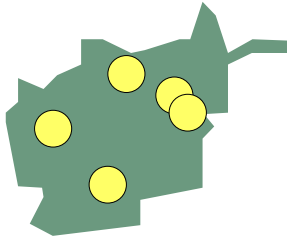
Source: Price data from Stonecontact.com based on the average of Turkish Emperador and Bursa Beige marbles. Income statement from OTF estimates of quarrying in Herat and shipping through Iran — does not include financing costs or income tax.

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92

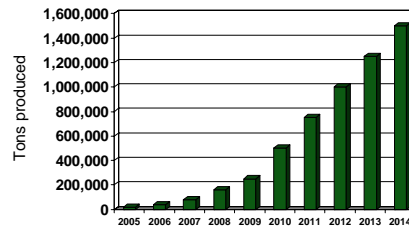
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## Afghan Marble Positioning The Importance of Exports



Afghanistan marble consumption is roughly 20,000 tons/year

Growth Estimates for Afghan Marble Industry



	Local Price (m <sup>2</sup> )	Export Price (m <sup>2</sup> )
Afghan White (Khogiani)	\$15	\$30+
Spotless White (Chesht)	\$15	\$30+

The local market is very price sensitive, price is set by production costs with strong competition from imports.



For the industry to grow it will have to focus on exports. Only export volumes and prices will sustain aggressive growth.

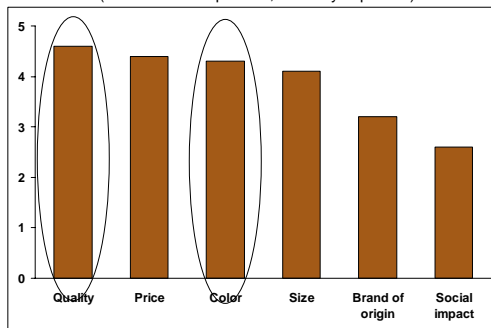
Source: OTF research, OTF estimates  
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93

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## Afghan Marble Positioning The Importance of Quality and Color

How important are the following in selecting a product? (US and ME)  
(1 = Not at all important ; 5 = Very important)



### Quality:

- All markets rated quality as the single most important factor in selecting a product.
- All markets ranked Afghanistan as the lowest in perception with generally a "poor" perception of the industry.

### Color:

- Color is nearly tied with price in terms of product selection.
- Afghanistan may enjoy a comparative advantage due to the type of marble it has. Is there another source of good quality white marble and onyx in the region?
- Afghanistan competes in white marble with Italy, not China or India — nearness to the Middle East and Asia may give Afghan marble a comparative advantage over Italy in those markets.



Quality improvements are critical to success in global markets, but Afghanistan possesses deposits of marble that are highly sought after and provide a comparative advantage which can form the base for building a competitive advantage.

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94

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## **Afghan Marble Positioning**

### **Vision Statement**

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The Afghan marble industry will bring prosperity to Afghanistan by exporting quality, value added products to top-tier markets willing to pay a premium for Afghan stone. This will require:

- Identifying high quality deposits
- Investing in proper quarrying and processing equipment for exploitation
- Marketing Afghan finished marble goods overseas, especially in the Middle East, Europe and the US

## **Afghan Marble Positioning**

### **Summary**

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- Afghanistan must focus on exports in order to grow the industry; and exports should be value added products in order to overcome high transportation costs and obtain the most value/highest incomes for their products.
- With the current worldwide annual growth predictions of 8%, a boom in the Afghan industry to the \$450 million goal will be easily absorbed in world markets.
- Dominant exporting countries use top technology to produce quality goods: Italy, China and Turkey all dominate due to their investment in technology to produce quality value added products.
- Afghan quality will have to improve drastically, through purchase of technology and knowledge. Afghanistan's marble resources will be very valuable for the country when processed correctly.
- Many countries, industries and firms are both competitors and customers; however Afghanistan can use this to help grow its industry – for example, it may partner with Italian firms to produce high quality Afghan marble that competes with Italian marble in the Middle East.
- Lack of investment interest in Afghanistan by foreign firms (6% in US and 22% in Middle East) means that first movers will likely be Afghans who can mobilize sufficient resources to initiate multi-million dollar projects.



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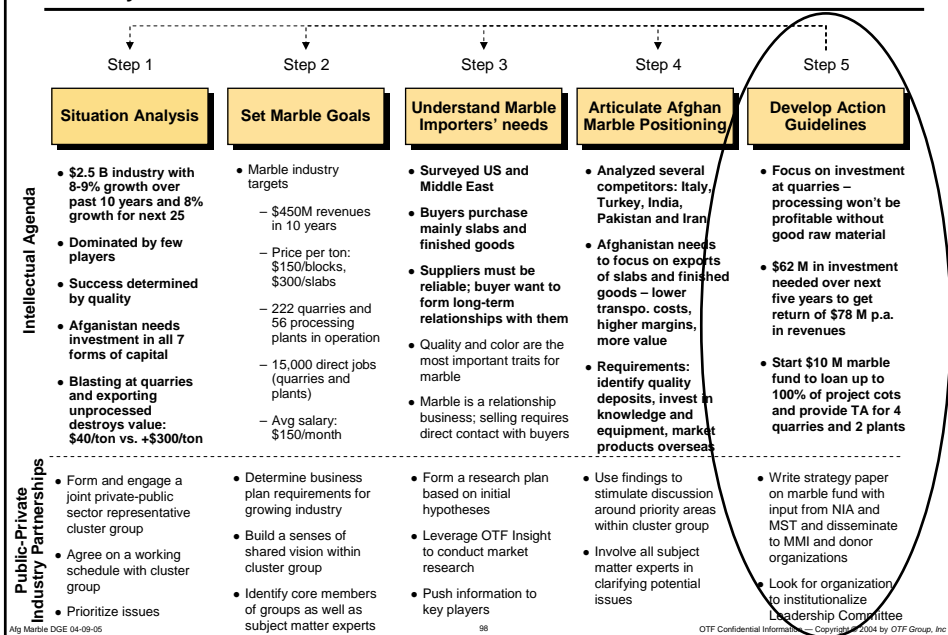
Step 3: Understanding Marble Buyers' and Importers' Needs

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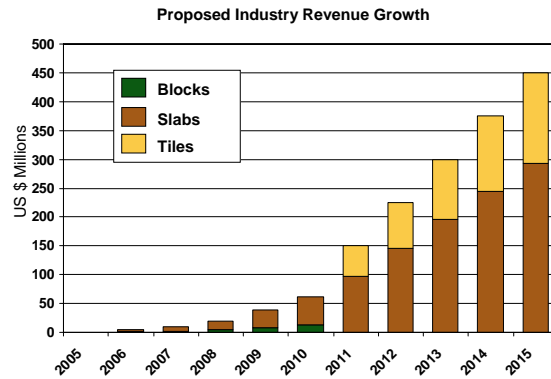
**Step 5: Develop Action Guidelines**

## The OTF Five Step Change Process

### The way forward for Marble



## Goals for Afghanistan Marble Summary Targets



Revenues	\$450 M p.a. in 10 years
Investment required	\$107 M
Direct employment created	15,000
Quarries operating	222 with an average annual capacity of 2,500 m <sup>3</sup>
Processing facilities operating	56 plants will process slabs and tiles

Alg Marble DGE 04-09-05

99

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## Action and Investment Plan Sample Investment - Quarry

### Sample quarrying operation

Quarrying Equipment	No.	Total
Air compressor 750cfm @ 135 psi	1	\$ 23,000
Drilling and cutting set	2	320,000
Pneumatic drill	2	
Diamond saw (60 hp)	2	
Splitting bag set	2	
150 kva diesel generator	2	\$ 35,000
6" high pressure water pump	2	\$ 32,000
3" high pressure water pump	2	\$ 15,000
50,000 liter steel water tank	1	\$ 9,000
6" steel pipes with fittings	2500 meters	\$ 79,680
3" steel pipes with fittings	1500 meters	\$ 31,500
60 ton crawler crane w/ 60' boom	1	\$ 160,000
Cat 977 payloader	1	\$ 98,000
Flood lights	6	\$ 2,000
<b>Total equipment cost</b>		<b>\$ 805,180</b>
<b>Road improvements</b>		<b>\$ 35,000</b>
<b>Working Capital</b>		<b>\$ 200,000</b>
<b>Total cost</b>		<b>\$ 1,040,180</b>

Assumptions:  
 Local price: \$94/ton (based on international prices)  
 Transportation cost: \$12/ton  
 Loan for 65% of project cost: 10 years @ 10%  
 Corporate tax rate: 20%  
 Quarry is at full operation by month 5

Proper quarrying can be profitable if blocks are sold locally to processing plants who can realize the full value of the marble in world markets.

Source: OTF business plans based on OTF research, note that sample operation does not include upper management salaries or other SG&A costs

Note: Figures in income statement are due to rounding

100

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Income Statement	Year 1	Year 2
<b>Revenues</b>		
Blocks		
Quantity (m3)	7,980	10,080
Price/m3	\$ 254	\$ 254
Gross Revenues	\$ 2,025,324	\$ 2,558,304
<b>Costs - Quarry</b>		
Labor	\$ 225,000	\$ 225,000
Levy	\$ 247,779	\$ 312,984
Fuel	\$ 195,000	\$ 195,000
Spare parts & maint.	\$ 134,518	\$ 134,518
Depreciation	\$ 100,518	\$ 100,518
Operating Expenses	\$ 902,815	\$ 968,020
Transportation	\$ 258,552	\$ 326,592
EBIT	\$ 863,957	\$ 1,263,692
Interest Expense	\$ 67,705	\$ 63,136
EBT	\$ 796,252	\$ 1,200,556
Taxes	\$ 159,250	\$ 240,111
Net Income	\$ 637,002	\$ 960,445
Profit Margin	31.5%	37.5%

## Action and Investment Plan

### Sample Investment – Processing Plant

#### Sample processing operation

Slab Processing Plant	No.	Total
Infrastructure		
Land (m2)	5000	\$ -
Building (m2)	750	\$ 100,000
Carts for stone	10	\$ -
Tracks (meters)	100	\$ 10,000
Wheeled crane 40 tons	1	\$ 40,000
Equipment		
Gang saw (70-80 blades)	1	\$ 300,000
Slab Polishing line	1	\$ 150,000
Multiblade disc cutter	1	\$ 40,000
Mono blade block cutting machine	1	\$ 40,000
250 KVA generator	1	\$ 50,000
Equipment installation (10% of cost)		\$ 58,000
<b>Equipment total:</b>		<b>\$ 638,000</b>
<b>Infrastructure total:</b>		<b>\$ 270,000</b>
<b>Working Capital</b>		<b>\$ 1,500,000</b>
<b>Total Investment</b>		<b>\$ 2,408,000</b>

Assumptions:

Export price: \$39/m<sup>2</sup> @ 3 cm (based on world prices)

Transportation cost: \$80/ton

Loan for 65% of project cost: 10 years @ 10%

Corporate tax rate: 20%

Income Statement	Year 1	Year 2
<b>Revenues</b>		
Quantity (m3)	224,000	224,000
Price/m2	\$ 39	\$ 39
Gross Revenues	\$ 8,736,000	\$ 8,736,000
<b>Costs - Plant</b>		
Raw materials (blocks)	\$ 2,707,200	\$ 2,707,200
Labor	\$ 216,000	\$ 216,000
Fuel	\$ 195,000	\$ 195,000
Maintenance & Spares	\$ 117,800	\$ 117,800
Abrasives (for polishing)	\$ 67,200	\$ 67,200
Packaging	\$ 44,800	\$ 44,800
Depreciation	\$ 240,800	\$ 240,800
Operating Expenses	\$ 3,588,800	\$ 3,588,800
Transportation	\$ 1,451,520	\$ 1,451,520
EBIT	\$ 3,695,680	\$ 3,695,680
Interest Expense	\$ 95,815	\$ 85,229
EBT	\$ 3,599,865	\$ 3,610,451
Taxes	\$ 719,973	\$ 722,090
Net Income	\$ 2,879,892	\$ 2,888,361
Profit Margin	33.0%	33.1%

Processing for export should be done only if a steady supply of quality raw material is available, which is not the case in Afghanistan.

Source: OTF business plans based on OTF research, note that sample operation does not include upper management salaries or other SG&A costs  
 Note: Some figures in the income statement are due to rounding

## Action and Investment Plan

### Sample Investment – Quarry & Processing Plant

#### Sample processing & quarrying operation

<b>Equipment total:</b>	<b>\$ 1,710,500</b>
<b>Infrastructure total:</b>	<b>\$ 270,000</b>
<b>Working Capital:</b>	<b>\$ 700,000</b>
<b>Total Investment:</b>	<b>\$ 2,680,500</b>

Only \$200k more than just the processing plant due to the lower working capital needs.

Assumptions:

Export price: \$39/m<sup>2</sup> @ 3 cm (based on world prices)

Transportation cost: \$80/ton

Loan for 65% of project cost: 10 years @ 10%

Corporate tax rate: 20%

Quarry is at full operation by month 5

Income Statement	Year 1	Year 2
<b>Revenues</b>		
Quantity (m2 @ 3 cm thick)	177,333	224,000
Price/m2	\$ 39	\$ 39
Gross Revenues	\$ 6,916,000	\$ 8,736,000
<b>Costs - Quarry and Plant</b>		
Labor	\$ 441,000	\$ 441,000
Levy	\$ 228,000	\$ 288,000
Fuel	\$ 390,000	\$ 390,000
Maintenance & spare parts	\$ 279,050	\$ 279,050
Abrasives	\$ 53,200	\$ 67,200
Packaging	\$ 35,467	\$ 44,800
Depreciation	\$ 268,050	\$ 268,050
Operating expenses	\$ 1,694,767	\$ 1,778,100
Transportation	\$ 1,422,720	\$ 1,797,120
Operating + Transportation	\$ 3,117,487	\$ 3,575,220
Interest Expense	\$ 146,991	\$ 130,751
EBT	\$ 3,651,522	\$ 5,030,029
Taxes	\$ 730,304	\$ 1,006,006
Net Income	\$ 2,921,218	\$ 4,024,023
Profit Margin	42.2%	46.1%

Controlling both the raw material and the export is the most profitable business model, and requires much less working capital than just processing.

Source: OTF business plans based on OTF research, note that sample operation does not include upper management salaries or other SG&A costs  
 Note: Some figures in the income statement are due to rounding

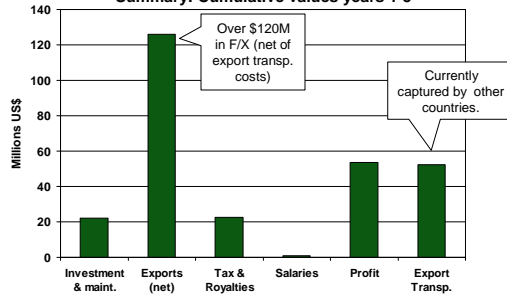
## Action and Investment Plan

### Country Model

Marble Industry Projections – Value to Afghanistan

	2006	2007	2008	2009	2010
Afghan revenues (net of export transp)	\$ 6,277,000	\$ 12,494,000	\$ 24,928,000	\$ 49,796,000	\$ 77,772,500
Afghan exports (net of export transp)	\$ 2,795,000	\$ 7,790,000	\$ 17,780,000	\$ 37,760,000	\$ 60,237,500
Royalty	\$ 200,000	\$ 400,000	\$ 800,000	\$ 1,600,000	\$ 2,500,000
Export tax	\$ 81,000	\$ 222,000	\$ 504,000	\$ 1,068,000	\$ 1,702,500
Income tax	\$ 679,200	\$ 1,518,400	\$ 3,196,800	\$ 6,553,600	\$ 10,330,000
Salaries paid	\$ 30,000	\$ 60,000	\$ 120,000	\$ 240,000	\$ 375,000
Profit to investors	\$ 2,716,800	\$ 6,073,600	\$ 12,787,200	\$ 26,214,400	\$ 41,320,000
Total investment PP&E	\$ 1,440,000	\$ 2,880,000	\$ 5,760,000	\$ 11,520,000	\$ 18,000,000
Annual maintenance	\$ 144,000	\$ 288,000	\$ 576,000	\$ 1,152,000	\$ 1,800,000
Total investment W/C	\$ 1,332,540	\$ 2,665,081	\$ 5,330,162	\$ 10,660,323	\$ 16,656,755

Summary: Cumulative values years 1-5



#### Assumptions:

Export tax: 2%

Income tax: 20%

Export price, blocks: \$150/ton

Export price, slabs: \$39/m<sup>2</sup> @ 3 cm thick

Export transportation cost is to nearest port

Avg. salary per employee: \$150/mo

No core drilling has been done and the quality and size of most deposits is unknown, is there enough quality marble (size, color, etc.) to support this kind of growth?

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103

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## Action and Investment Plan

### Capitalizing the Industry – Assessing the Current Market Failure

Why can't businesses invest on their own?

- Minimum project cost for quarrying blocks is around \$500,000 - equity is \$125,000
- Poor business plan writing skills
- Inability to operate equipment properly
- Lack of market knowledge of foreign markets
- Therefore: no investment

Why can't other businesses take advantage of these weaknesses?

- Security is a big issue – whether real or perceived, many regions are believed to be dangerous, especially among foreign investors but also true for Afghan investors who are not native to that particular region.
- Current operators have access to the quarries through ties to the communities, can other's get access? Herat probably, Khogiani, Badakhshan, Maymana probably not, Kandahar and Helmand definitely not.

*"I have the lease because no one else can provide security...competitors with money don't dare go there."*

*"I know the person in charge of that region, I'm the only one who can get access."*

Alg Marble DGE 04-09-05

104

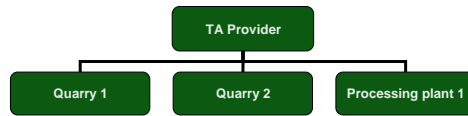
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## Action and Investment Plan

### Capitalizing the Industry – Possible Solution

Initiative to create Investment Role-Model(s):

- Identify quarries and investors with success records and current operations -- who can show need. Initial project will work with two quarries and one processing plant
- Develop RFP for TA to work closely at the quarries and factory as manager of operations.



- The project will own the equipment and the quarry licenses and can take both away in case of non-performance or non-compliance.
- The project funds loans of up to 100% of project cost (as determined by need), and provides TA service for three years. Interest (10% p.a.) will help pay for TA. The firm will pay back 35% of debt in the first three years from revenues, and the rest long term 10+ years.
- Expand project based on success from interest revenues of initial project.

## Action and Investment Plan

### Capitalizing the Industry – Possible Solution

*For under \$5 M, two quarries and one plant could be capitalized, with the fund essentially paying for itself. The project is easily scalable.*

#### Marble Fund Financials

	Year 1	Year 2	Year 3	....	Year 10	
<b>Quarry x2</b>						
Investment x2	\$ 2,080,360					
Revenues x2	\$ 4,050,648	\$ 4,050,648	\$ 4,050,648	....	\$ 4,050,648	
EBIT x2	\$ 1,648,714	\$ 2,448,184	\$ 2,448,184	....	\$ 2,448,184	
<b>Processing Plant</b>						
Investment	\$ 2,408,000					
Revenues	\$ 8,736,000	\$ 8,736,000	\$ 8,736,000	....	\$ 8,736,000	
EBIT	\$ 3,695,680	\$ 3,695,680	\$ 3,695,680	....	\$ 3,695,680	
<b>Marble Fund</b>						
Total Capital Investment	\$ 4,488,360					
Feasibility study	\$ 150,000					
TA cost	\$ (238,000)	\$ (238,000)	\$ (238,000)	....		
Interest income	\$ 448,836	\$ 388,442	\$ 322,009	....	\$ 46,484	
Principal payments	\$ 603,937	\$ 664,330	\$ 730,763	....	\$ 464,838	
Cash to fund	\$ (4,638,360)	\$ 814,773	\$ 814,773	\$ 814,773	....	\$ 511,322
IRR	6%					



A fund to invest in marble could address all the problems of market failure and spur growth in the sector.

## Action and Investment Plan

### Detailed Summary of Key Initiatives – 5 year plan

#### Specific Actions

Key Areas	Detailed Activities	Estimated Budget (US M)	Responsibility	Timeline	Priority
<b>Product &amp; Production</b>					
Investment into quarries	Wire cutting equipment, cranes & earth moving equipment, etc.	\$ 7.2	Private Sector	2006-10	1
Investment into processing plants	Block cutters, gang saws, polishing lines, cranes, etc.	\$ 18.4	Private Sector	2006-10	1
Marble fund	Investment into quarries and plants along with TA - two regions	\$ 10.0	Donors & GOA	2006-10	1
Testing lab	Lab for testing marble quality for specifications	\$ 0.5	Donors & GOA	2007	4
Core drilling	Rigs for core drilling for exploration purposes	\$ 0.2	Donors & GOA	2007	3
Training support	Training for testing lab and core drilling	\$ 0.2	Donors & GOA	2007	3/4
<b>Marketing &amp; Promotion</b>					
Trade show attendance	Attending international trade shows	\$ 0.3	Private Sector, Associations & Donors	2006-10	2
Marketing trips	Trips abroad for sales and research purposes	\$ 0.2	Private Sector, Associations & Donors	2006-10	2
Dubai showroom and warehouses	Showroom and logistics depot in key Middle East market	\$ 5.0	Private Sector, Associations & Donors	2010	5
<b>Institutionalization</b>					
Association capacity building	Enhancing capacity of key associations	\$ 0.2	Private Sector, Associations & Donors	2006-10	4
MMI capacity building	Enhancing capacity of key operations at Ministry of Mines and Industries	\$ 20.0	World Bank	2006	1
<b>Total</b>		<b>\$ 62.2</b>			

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107

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