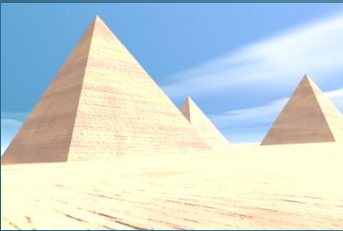


*The necessary sustainable development
of the Dimension Stone industry,.....
a very unique and particular industry
that is changing its old historical features*



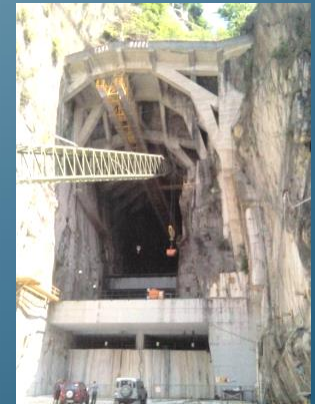
3000 b.c



XX century



present



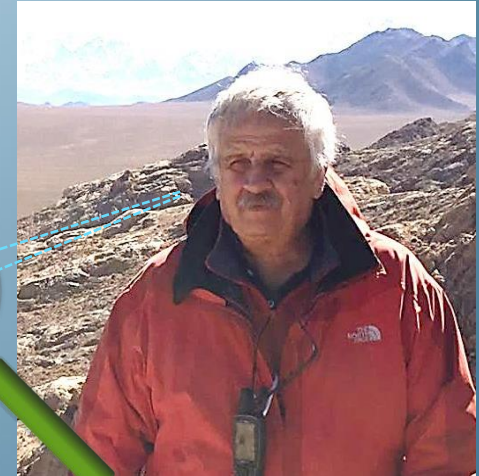
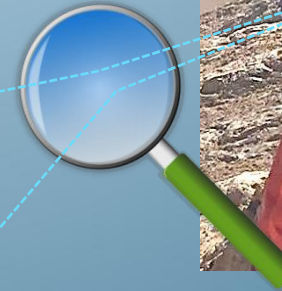
the future



THE DIMENSION STONE INDUSTRY IS UNDOUBTEDLY FAR BEHIND
OF MOST OF OTHER MINING SUB-SECTORS,
AS REGARDS LONG TERM VISION and STRATEGY
FOR ITS NECESSARY SUSTAINABLE DEVELOPMENT

ALTHOUGH SOME EQUIPMENT MANUFACTURERS (mainly EU, Italian)
IN THE PROCESSING and SOME MINING AREAS
ARE INVESTING IN INNOVATION,
THE SECTOR ITSELF IS REALLY “OBSOLETE” AND TRADITIONAL.

THE STONE INDUSTRY AS SEEN BY AN "OLD" EXPERIENCED CONSULTANT



Dimension Stone (DS) is a unique sector in the range of mining industries, with very particular characteristics and constraints, different from any other mineral sector. Thus DS projects, must be approached, managed and evaluated in a very particular different way.

The dimension stones mining sub-sector is very particular, with its own rules, features and driving factors. Consequently, the valuation of DS projects needs to be approached and evaluated using sector specific methodologies and tools, different from those used in other sectors. Resources- Reserve calculations of DS projects should also be made considering slightly different factors to those typically considered for general mining projects. In general most of Dimension Stone projects cannot be evaluated like all other mining projects. This is the reason why a specific paragraph for dimension stones is proposed in the PERC Standard, a first for the international set of CRIRSCO standards.

In a DS mining project, the mineral ore body is not a mineral assemblage contained within the rock mass (country rock). Instead, it is the rock mass itself! **QUALITY IS THE MOST IMPORTANT MODIFYING FACTOR**

Producing the best possible large and regular block, in terms of size, shape , quality (colour, grain and texture) and consistency, is the key to a successful DS mining project. This depends on:

- natural availability and geo-structural conditions (not changeable!);
- professional geological evaluation;
- good knowledge of the market demand;
- professional mining design in line with the target stone geo-structural features;
- appropriate mining methods and equipment

IN THE FUTURE ALL THIS MUST BE ACCOMPANIED BY A SUSTAINABLE DEVELOPMENT THAT TAKES CARE OF ENVIRONMENT, SOCIAL AND PRODUCTION ETHICAL ASPECTS, INNOVATION TECHNOLOGY AND ECONOMIC/FINANCIAL MATTERS

The DS Industry certainly does not involve any «officially recognised» STRATEGIC MATERIALS as defined by EU/EC.

Anyway, It largely supplies key sectors, like construction and urban landscaping, all over the world and secures millions of jobs with a total annual turnover of around 25 bl. Euro, and in addition at least ten times more for the turnover of satellite production services and industries

Differently from most of other Mining industry sectors, DS quarry projects have a lower hazardous impact on the environment (Visual Pollution!).



PRESENT SITUATION OF THE DS INDUSTRY IN WESTERN and DEVELOPED COUNTRIES AT DIFFERENT LEVELS

Negative and positive factors and behaviour & attitudes of Industry Stakeholders
that could slow and accelerate the future Sustainable Development of the DS Industry

- Individual Mining Consultants, QPs and CPs
- Large Mining Consulting Companies
- DS Companies
- DS Equipment manufacturers
- DS Centres and Associations
- Large Investors
- Local Regulators and Control Authorities
- Central Governance Representatives and Legislators
- International Institutions
- Social – Ethical Organisations and Institutions

(Idh-Sustainable Trade Initiative for NS, Ethical Trade Initiative- ETI by ILO, Natural Stone Council and Green Building Council in USA, Private Companies and Organizations.)

- Gaps and problems in AIM. **New positive trends mainly in Far East , BUT MANY GAPS and PROBLEMS!!**

PERSONAL
EXPERIENCE





➤ Individual Mining Consultants

- Very few with real wide and deep experience and skill in DS, including Processing & Market
- Lack of experience and knowledge of International Mining Standards/Codes and in Project Valuation
- To be an expert mining or structural geologist is not enough. Market knowledge and dialogue with Regulators
- Often lack of pragmatic, business, economic approach (quite developed in other mining areas)
- Lack of knowledge of Institutional programs and tools to support the private Sustainable Development initiatives.

➤ Large Mining Consulting Companies

- Interested in entering into the DS industry business, BUT low experience and skill
- They could play an important role for future Development of the sector, due to their high credibility and level of trust in the Mining and Institutional Community
- Good knowledge of exploration methodologies and tools for Mine evaluation and representation

➤ DS Equipment manufacturers

- Often, some of them are very innovative and technologically advanced (mainly the processing ones), OFTEN more advanced than the sector itself!! They think obviously more about market expansion than Sustainable Development. ANYWAY DUE TO SOME TECHNICAL INNOVATIONS OF EU EQUIPMENT MANUFACTURERS, NOWADAYS SUSTAINABILITY IS MUCH CLOSER!!

➤ DS Centers and Associations

- Very few really active on Sustainability Issues. Mostly interested in lobbying and business



➤ DS Companies

- Most of them have very low knowledge and interest in the Sustainable Development issues..... that is the SOLE WAY to improve and «survive», to respond to the increasing obstacles and restrictions made by Regulators and Society.
- Low or no investment and skill in exploration and quarry evaluation on long term basis, differently from other mining sectors
- No medium-long term vision; this has been erroneously accentuated by last global economic crisis
- Innovation and technology in Quarrying and Processing areas often available only for few large companies
- Most DS companies have still very old and obsolete company and management structure, not in line with the requirements of the modern market and society :
 - ✓ no investment in exploration, modern evaluation and, in general, in research (technical and marketing)
 - ✓ no trust in mining-marketing consultants; this is also due to widespread lack of skill, experience and knowledge of concrete-real gaps and problems by the consultant themselves. A better knowledge of standards and methodologies utilised in other mining industries should be needed!!
 - ✓ no trust and confidence at all on expertise and know how of technical and marketing consultants
 - ✓ pyramidal , still «one man» company structure; lack of strategic differentiated departments with modern vision and technical –marketing skills
 - ✓ poor capability and skill in dialoguing with Governance and Society representatives
 - ✓ all efforts devoted to sell as much as possible without any market and developmet medium term vision !!
 - ✓ employment reduction. Lack of new young dynamic workforce.
 - ✓ no policy for management/staff training and in general capacity/capability building
 - ✓ lack of new ideas (investment in reserach) for the re-use of waste material
 - ✓ Poor knowledge and confidence on Sustainable Development and on Standard Reporting for Project/Company evaluation and or Resources-reserves estimation and valorization. It could be also a good instrument to positively dialogue with Regulators

An increasing number of quarry companies in Turkey and EU (mainly in Spain, Portugal, Northern EU countries) that concluded or are in process to finalize partnership or sale agreements with overseas large and reliable investors and DS Groups. The second are generally demanded by local regulators and civil society to carry on or start the new activity in a full Sustainable Manner (see some examples in UK and Scandinavian area).



➤ Large Investors

- Several Far East and Arab Groups and Companies are interested in investing in well known quarries in EU and Western countries. Sustainable and Ethical management of these assets must be officially requested by local Authorities and Regulators before approval of the investment operation
- These large Groups are generally supported by large international Consulting companies, used to operate in the Mining and Financial areas (Valuation Reports, CPRs and QPRs based on International Codes and Standards).
- Increasing role of CPs and QPs will greatly improve their operations

➤ Local and Central Regulators and Control Authorities

- In general they are totally not informed and not aware of the trends and opportunities of the EU and International Quarrying Industry
- In EU (mainly in UK and Scandinavian countries), they begin dialogue and collaboration with private mining companies that adopt new modern sustainable management strategies and use international recognized mining standard reporting (estimation of Resources-Reserves, etc.).
- **The use of Standard Reporting for project Valuation and estimation of Resources-Reserves and of Sustainability Management practices and certifications, will be hopefully adopted also by Regulators to monitor & control the mining activities**
- **Local Associations and Councils (see national Geologist councils) do not take care at all of DS sector**

➤ International Institutions

- EU Institutions have launched supporting and financial programmes and initiatives for Natural Raw Materials, Sustainable Mining, Environmental and Heritage projects and Technical Innovation (Horizon 2020, EIP and others).
- International Financial Institutions nowadays operate **ONLY** with clients that adopt Sustainable Standards and International Mining Standard Reporting.



➤ Social – Ethical Organizations and Institutions

(Idh-Sustainable Trade Initiative for NS, Ethical Trade Initiative- ETI by ILO, Natural Stone Council and Green Building Council in USA, Private Companies and Organizations.)



Natural DS Standard
ANSI/NSC 373



- Responsible Sourcing
- Sustainable Raw Material Extraction
- Material Ingredient Reporting

 www.ecolabel.eu	<p>ISO 14024</p> <p>Environmental labels and declarations (Type I environmental labelling)</p>	<p>ISO14020 classification of environmental labels</p>
 www.recycle-more.co.uk	<p>ISO 14021</p> <p>Self-declared environmental claims (Type II environmental labelling)</p>	
 www.environdec.com	<p>ISO 14025</p> <p>Environmental labels and declarations (Type III environmental declarations)</p>	



European Technology Platform
on Sustainable Mineral Resources

➤ Gaps and problem in AIM and in International Stock Exchanges.

New positive tends mainly in Far East , BUT STILL MANY GAPS and PROBLEMS!!

- Very few DS companies are listed (mainly in HK)
- SEx and related financial authorities, sponsors and main registered Consulting companies, have not any skill and experience of Dimension Stones Industry and related Market.
- Moreover, among CRIRSCO Members (Codes & Standards), at present only EU-PERC is adopting a specific text for Dimension Stones.....**good starting point for future positive developments**





MOST OF FACTORS LISTED ABOVE CONTRIBUTE TO SLOWING DOWN and OBSTACLE THE EXPECTED NECESSARY SUSTAINABLE DEVELOPMENT and MODERNIZATION OF THE NATURAL STONE INDUSTRY

Sustainable Economy is a new “entry” in the economical studies , mainly regarding the concept of “sustainable development”.

The development of an Industry, mainly primary and secondary as the natural construction materials and dimension stone ones, **MUST BECOME fully sustainable** on a short-medium term, to avoid its collapse and end, under the pressure of Civil Society, Governance Institutions, and Social and Environmental requirements.

Fulfillment of this Goal , together with improvement of production quality (not quantity!!) will also ensure future competitiveness to EU and Western companies, and also to companies of developing countries with long term high profile VISION

SUSTAINABILITY

A. ECONOMICAL-FINANCIAL ➡ ↔ TECHNICAL INNOVATION

Any DS project must be financially sound and viable, with official public documents that prove this “status”

B. SOCIAL and ETHICAL

Particular attention must be paid not only to labour, employment and safety, but also to local social communities living in the region/district. The concept of Social Responsibility and Ethical Conduct, already considered in other mining areas in some countries, must also enter in the mentality and code of conduct of any DS company that wish to survive in the western worlds. The same must be required for developing and in transition countries.

A ***Code of Ethical Conduct*** together with a professional responsible public production-market line must be made available using International Standard Codes, currently under preparation and testing (see UK, The Netherlands and Northern EU and American countries)

C. ENVIRONMENTAL (more efforts and investment in recycling and waste minimization)

As all other primary and secondary industries, also the DS Sector must pay attention to its environmental impact in all phases of the project, from mining to processing. This , not only theoretically on paper or feasibility studies, but carrying out and promoting concrete actions, to make any project sustainable as regards the environment. This process **MUST BE PUBLIC and DEMONSTRATED BY FOLLOWING OFFICIAL INTERNATIONAL STANDARDS.**

Sustainability of dimension stone Industry

Dimension stone is one of the most potentially sustainable of the industrial minerals and construction materials.

Dimension stone rates very well in terms of the criteria on the ASTM checklist for SUSTAINABILITY of building products: there are no toxic materials used in its processing, there are no direct greenhouse gas emissions during processing, the dust created is controlled, the water used is almost completely recycled (per OSHA/MSHA regulation), and it is a perpetual resource (virtually inexhaustible in a human time scale).



SOLUTIONS – CURRENT AND POSSIBLE FOR THE DESIRABLE SUSTAINABLE DEVELOPMENT OF THE INDUSTRY

The GOAL for the desirable, absolutely necessary sustainable development can be finally reached by carrying out some actions and strategies by DS companies:

- Invest in modernisation and Innovation (as regards, expl., evaluation, mining, processing and trading)
- Take advantage of instruments made available by EU and other Institutions
- Use new exploration and evaluation technologies and methods
- Stop mining without any long term professional mining-environmental-social responsibility plan
- Professional Mineral Standard evaluation and estimation of projects made by Competen Experts (CP) recognized by official mInstitutions
- Utilisation of any possible innovative technical and management solutions to carry out selective mining for waste minimization and quality improvement. This action will increase the value of the product and its potential demand
- Change and renewal of the company structure and management. New forces and strategies with modern innovative vision are necessary.
- Start application of new required official environmental and social-ethical standards
- Apply most of actions mentioned above also in Processing
- Invest in social- ethical production and trading
- Invest in a professional awareness campaign toward Regulatrors and Legislators, to inform them about the new trends of the Industry and in particular of the will and plan to invest in a sustainable developmet
- Regular professional dialogue between Private Sector and Regulators



All actions must be supported by proper professional traceable documentation, based on International Standards, drafted by professional CPs and QPs , accompanied by regular contacts, dialogue and partnerships with Government Institutions at any level.

On the other hand, the EU and Western Legislators, Regulators and Institutional Controllers , **MUST** be informed and trained with the main objectives to:

- Better understand the still very large importance of the DS industry (in many EU countries) that grants a large employment, highly contribute to the Construction sector GDP and has a very long Historical tradition often required by International Market demand.
- Improve their skill and knowledge concerning the Industry, its characteristics, needs, opportunities and new technological and market up dated trends and news. They **MUST KNOW** that Industry is seriously turning to a new **SUSTAINABLE DEVELOPMENT** (see before)
- Know **IN DETAIL** what is happening in the DS Industry in EU, Developed and undeveloped countries
- Know the large opportunities that the DS Industry still have in the World Market, mainly for historical materials still highly demanded by the International Market.

Note: *All non-energy mining industries consume natural solid materials and minerals, that all respond to market demand . Although, most of them are not fully recyclable, any mining and related secondary industries are largely investing not only in sustainable mining and waste minimization, but also in new innovative recycling projects (see Circular economy). This is easier and cheaper for the DS industry than for most of other mining ones. DS industry, till nowadays, did not concentrate on this issue as required by the present global situation.*

**POTENTIAL LOW ENVIRONMENTAL IMPACT and HIGH RECYCLING
ETHICAL PRODUCTION- MARKET LINE**

THE DS SECTOR IN DEVELOPPING and IN-TRANSITION COUNTRIES

The role of developing and in transition countries and of the local Private Sector for the Development of the necessary future world SUSTAINABLE STONE INDUSTRY.

Some local companies are already changing their development strategy to turn toward a Sustainable Ethical Conduct to be in position to successfully approach Western Markets in the near future.

In particular AFRICA will be the next future geographical area to finally undergo a very rapid growth phase, favoured by its huge almost undevelopped mining potential, the high potential of the local Private Sector, and the future world investment

THANK YOU ALL



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Exploration, Geology & Mining
Geothermal and Hydropower Energy
Dimension Stones, IM , Construction Materials
SME & Community Development
Institutional Capacity Building
Training & Event Organization

