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What is required to have a responsible and efficient national aggregates industry?

The nature of the industry

An aggregate is simply put “as a batch of many crystals of a single mineral”. Crushed stone, sand, and gravel are the main sources of natural aggregate. These are granular materials composed of rock fragments that are mined or quarried and used in their natural state except for such operations as crushing, washing, and sizing. These materials are commonly used construction materials and are used with a binding medium to form concrete, mortar, and asphalt, or alone as in highway base courses, railroad ballast, and other similar applications. Crushed stone, sand, and gravel are widely distributed, used throughout the world, and together comprise the principal nonenergy mineral resource in the world, both in terms of value and volume. The aggregate rocks are high volume, granular, materials used to provide bulk, strength or, in some cases, protection from erosion/corrosion. In theory aggregates can be any material which is hard, resistant to loading or weathering, and chemically inert. In practice, the greatest proportion of aggregates used different countries (and most other countries) are natural materials derived from sand and gravel; limestone, igneous and metamorphic rocks, and sandstone. There is also a limited trade in artificial aggregates, frequently manufactured from blast furnace slags. Construction aggregates are a broad category of granular materials such as crushed stone, stone, and gravel etc., which find application in construction. Aggregates are the world’s most mined materials. Aggregates offer resistance to wear and erosion, volume stability, and other physical properties suitable to construction. In the USA, the aggregate industry commonly refers to four general groups of crushed stone: limestone, granite, trap rock, and sandstone. Industry usage of these terms is only loosely tied to common petrologic classifications. “Limestone” may refer to any carbonate rock including limestone, dolomite, and marble. “Granite” refers to coarse-grained igneous or metamorphic rocks including true granite as well as other light-colored rocks such as syenite, gneiss, and the dark-colored gabbro. “Trap rock” is dark-colored, fine-grained volcanic rock including basalt and

diabase. Light-colored, fine-grained volcanic rock may be called either granite or trap rock by different producers. “Sandstone” may refer to sandstone, conglomerate, breccia, and metamorphic quartzite.

The size of the industry

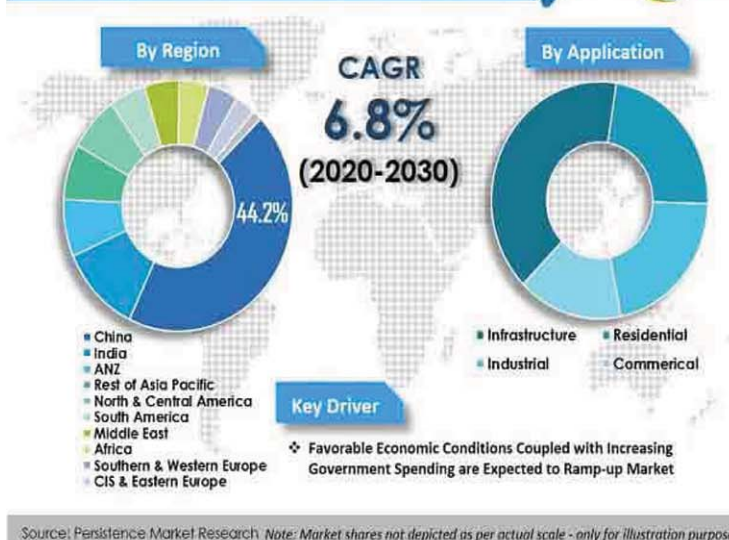
The global aggregates market size was valued at USD 463.3 billion in 2019 and is expected to grow at a compound annual growth rate (CAGR) of 3.3% from 2020 to 2027. Expanding at a CAGR of 6.0% from 2015 to 2021, to reach a market value of USD 468.2 billion by 2021. In terms of volume, the global construction aggregates market is estimated to register a CAGR of 4.6% over the forecast period. The rapid growth of the construction industry, particularly in emerging economies of Asia Pacific and the middle East and Africa, is expected to drive the aggregates market over the coming years. By areas of application they are used for commercial, residential, industrial and infrastructure. By product types they are mostly known as crushed stone, sand, gravel and other aggregates.

How the governments can help build this industry

Globally, the aggregate industry is dependent on the local economic activity. An increase in current economic activity often signals a future increase in aggregate demand, signaling a need to increase capacity at present and vice versa. There are two primary ways in which firms may increase capacity to meet the expected future demand: internal investment or mergers. Similarly, they part ways when the economic activity is down, de-merge or one acquires the other to cut cost. So to expect a large aggregate company to take shape for a long time is unrealistic.

How to make this industry responsible, a few suggestions:

1. Recognize aggregates mining as an industry. Appoint both state and central ministers to look into the affairs of aggregates mining.



2. Create a best practice standard operating practice (SOP), taking examples from the Europe and the USA.
3. Incentivize good environmental and socially acceptable practices
4. Encourage open competition in leasing the aggregates. Encourage big business to be part of it.
5. Educate and train the local administrative functionaries controlling the operations.
6. Encourage open market participation and encourage fast exchange/handover of the stressed properties to the new owner.
7. Natural materials, aggregates being a class in them, are

scarce and they should be treated with conservation in mind. Research and innovation in the aggregates hold a lot of promise.

What is in it for the Private Sector and Investors?

Private sector mining and construction industry has the best alignment to enter in this sector. These are small properties either segregated or in clusters. An organization must be built to respond to the changing industry and market. Learning, focus, commitment, competence, value chain and flexibility remain the key for success, as in other industries. This is a business where acquiring right property and good trading competence is a good start.

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