

The impact of green productivity on the foundry and mining industries

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The purpose of this study is to investigate the effect of total quality management on green productivity. Increasing productivity is the best tool to increase people's living standards and create national wealth. From a systemic point of view, by spreading this thinking in the economic resources of the society, it can be concluded that increasing the productivity of companies has increased national productivity, which also increases people's purchasing power, economic prosperity, increasing national income, reducing inflation and employment in it will lead in the long run.

The Asian Productivity Organization defines green productivity as a comprehensive strategy according to which the State can increase the welfare and achieve a better quality of life for its citizens by leveraging productivity dynamics and social justice. Green productivity is a strategy to increase productivity and protect the environment to achieve sustainable socio-economic development. The green productivity index is to measure and monitor the economic performance of the firm along with its environmental performance, while productivity shows only the economic performance. Productivity provides the framework for continuous improvement, while environmental protection is the foundation of sustainable development, and without preserving the environment, green productivity, and the continuity of development is challenged Strategies to increase environmental productivity and performance for overall social development and is economical to use environmentally friendly techniques, technologies, and management systems to produce environmentally friendly goods and services.¹

In this direction, several concepts have been proposed, including total quality management, which are used in companies and organizations with different activities.

Total quality management is a management philosophy that aims to use all the resources of the organization, including employees, as the most effective factor in achieving the company's goals. The main focus of the TQM is to increase customer satisfaction, whether internal or external. Total quality management combines the philosophy of participatory management, statistical techniques and staff collaboration through communication to improve the quality of goods and services, correct production schedule, meet customer needs and reduce costs.²

Total quality management is a substitute for some management concepts such as goal-based management, participatory management, quality circles, value added and evaluation. The management system is constantly evolving, including values, methods and tools, with the aim of increasing internal and external customer satisfaction with a small amount of resources. Inclusive quality management is an organizational strategy through the use of quality methods, services and quality products. Top offers to customers.³

Due to the increase in production volume in order to meet customer needs and increase the size of companies and increase the diversity of needs in customers of organizations and companies, in the process of production and environmental protection, the need for tools such as total quality management is tangible. Total quality management can play the role of a facilitator channel in sales by creating a competitive advantage in quality and price that leads to profit and productivity by applying management in order to use materials optimally, eliminate waste and reduce environmental pollutants. Comprehensive quality management with a green productivity approach is also referred to as inclusive environmental quality management.⁴

¹Asian Productivity Organization

²Abrunhosa, A., & Moura, P. (2008), Are TQM Principles Supporting Innovation in the Portuguese Footwear Industry Technovation. Journal of Technovation.

³Ahadi Nia, N. (2005), Solutions for Increasing Productivity.

⁴Baldwin, J., & Johnson, R. (1996), Business Strategies in more and less Innovation Firms in Canada.

Understanding the benefits of waste disposal or reducing the optimal use of resources is a comprehensive approach that helps all stakeholders and participants. However, some training is almost certainly necessary for this approach to be effective. Avoiding waste is equivalent to the resources used in its production. Implementing a waste minimization and reuse program and continuously improving consumption provides a strategy and competitive advantage in this area.

One of the world's largest gold mine projects has stalled due to environmental degradation.

A Chilean court has ruled that the world's largest gold mine project has been halted due to pre-operational environmental damage.

Of course like many other companies, Break Gold also denied the allegations in court.

The Chilean Environment Agency first decided to seek redress for the Canadian company by referring to a local court. The organization cited 33 violations of environmental principles, including the discharge of polluted water and the destruction of plants by the Canadian company. Therefore, the court, emphasizing the legitimacy of the complaint of the Environment Organization, ruled that it should be closed permanently and not temporarily and punished.

In recent years, many locals as well as animals have contracted various diseases due to the consumption of water containing dangerous and sometimes carcinogenic substances.⁵ We believe that the reconstruction of the environment of the mines or the process of reconstruction of the mines begins when the mining activity starts, but unfortunately it is a common misconception that we assume that we issue an exploitation license for mining and say that the operation has started. Now, to extract, exploit, extract, process and produce the brush product, and whenever the mining license for that mine expires, if the environment gets stuck in this problem, an environmental work will solve this issue, which is a misconception.

Environmental activity a mining activity begins from the time of mine exploration, that is, from the time an exploration permit is issued to a mine applicant and the mine begins construction of access roads, trenches, wells, canopy workshop equipment, or possibly construction.

This must happen at the same time as the exploration period and after the exploration and operation period of the reconstruction and rehabilitation activities around the mine and within the permitted area.

Of course, during the exploration period, this area is wider and about forty square kilometers of butterflies are discovered, in which the miner may build a road or a trench in that forty square kilometers, or it may cause damage to the environment. Rehabilitate the rehabilitated areas by granting an exploitation license.

During the operation phase, reconstruction and rehabilitation should be done simultaneously with the operation, while after the termination of mining activities and completion of mineral reserves and dismantling of workshops, camps, waste equipment and machinery, a reconstruction and rehabilitation activity should be done in the area. Reconstruction of the mine environment should continue from the start of exploration to the closure and closure of the mine.

An example from financial institution to encourage European Organization for green sustainable projects.

We must rapidly transform our energy production to achieve net-zero emissions by 2050 and limit the impact of climate change.⁶

The EIB Energy Lending Policy

In line with EU energy policy, which aims to ensure that all Europeans have access to secure, affordable and sustainable energy, the European Investment Bank (EIB) financed energy infrastructure with some €60 billion between 2016 and 2020. This included over €3 billion for renewable energy, energy efficiency and electricity grid projects in Europe and around the world.

⁵ Euro News.

⁶ European Investment Bank

In November 2019, the EIB adopted a new ambitious energy lending policy. The Bank will phase out the financing of traditional fossil fuel energy projects, including natural gas, by the end of 2021. Specifically, the energy lending policy calls for:⁷

- 1- Unlocking energy efficiency investments
- 2- Decarbonizing energy supply
- 3- Supporting innovative low-carbon technologies
- 4- Investing in a more secure enabling infrastructure

Our Offers to founders CEOs and Managing Directors of Companies which are active in foundry and mining industries:

- 1- Senior managers of the organization to the tool of comprehensive quality management through directives and goals Strategic and operational, pay special attention.
- 2- As employee participation increases effectiveness and their training and empowerment in preventing energy waste reduces consumption costs, the importance of specialized training and collective morale should have a special place.
- 3- The organization should pay attention to the use of green materials and use recyclable materials that do not have environmental consequences for society and the future.
- 4- Organization officials should pay attention to the use of green energy and include the use of renewable energy in macro planning.
- 5- Senior managers should strive to use and attract capital and green resources that play an important role in the field of production.
- 6- Seriously pursue practical and general education at various levels to create, maintain and maintain green staff who consider environmental protection as a public duty.

Sources

- 1- Asian Productivity Organization; The APO is an intergovernmental organization established in 1961 to increase productivity in the Asia-Pacific region through mutual cooperation. The APO contributes to the sustainable socioeconomic development of the region through policy advisory services and institutional capacity-building efforts.
- 2- European Investment Bank; the European Investment Bank is the European Union's investment bank and is owned by the EU Member States. It is one of the largest supranational lenders in the world
- 3- Abrunhosa, A., & Moura, P. (2008), Are TQM Principles Supporting Innovation in the Portuguese Footwear Industry Technovation. Journal of Technovation.
- 4- Ahadi Nia, N. (2005), Solutions for Increasing Productivity.
- 5- Baldwin, J., & Johnson, R. (1996), Business Strategies in more and less Innovation Firms in Canada.
- 6- Euro News; television news network.

⁷THE EIB CLIMATE SURVEY 2019-2020