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TECHNOLOGICAL OPPORTUNITIES FOR SUSTAINABLE DEVELOPMENT OF REGIONS

Abstract. Research covers study of old technologies and approaches towards sustainable building, plant/tree medicines and non-timber forest products, ways of maintaining water purity and harvesting rainwater, urban farming and energy efficient lifestyle. Knowing how to apply these in modern life is essential for the ecological economic growth of the future.

Key words: Technologies; sustainable economy; regions; development.

Introduction.

The overall sustainability of a city is encouraged and marked by its relation to its roads, harmony with nature and its structural organization. Tbilisi continues to inwardly expand centrally. Why, we must ask are the high-rise multi-story buildings continuing to be built, in close proximity to each other, with placement all around existing multi-story living apartments? This is due in part to bad long-term planning, as well as continual apartment projects placed in already overcrowded areas with narrow roads and minimal parking. This perpetual trend only causes more and more stagnation and less space for traffic flow for economic growth. The more time spent in traffic contributes to the overall slowdown of productivity and much wasted time and money. This stagnation causes also depression and decreased work ethic among those daily affected by this overcrowding. Also, the air is polluted more and more with the increased density and slowing traffic.

Christopher Alexander writes “The purpose of all architecture is to encourage and support life-giving activity, dreams, and playfulness. But in recent decades, while our buildings are technically better--more sturdy, more waterproof, more energy efficient-- they have also become progressively more sterile, rarely providing the kind of environment in which people are emotionally nourished, genuinely happy, and deeply contented” (Alexander, 1997).

Purpose. The concentration of population and wealth in capital cities across countries has become the common challenge especially for under developing countries, like Georgia. Fast population growth in the capital cities and high migration of population from the regions is widespread tendency. Over 30% of the population is concentrated in the capital and its share is increasing every year. Along with the population, the Georgian economy has been characterized by a concentration of economic activities. The biggest proportion of the country's GDP (53.5%) is derived from its capital city, as well as direct foreign investments (84%), business sector turnover (77%) and investments in fixed assets (61%).

Results. It is shown how the environment affects a people, for people can be too far removed from nature and environment of green and land that they mentally are exhausted, weighed down in the overbearing concrete walls with less and less of green and fresh air. Ancient Rome was laid out in patterns; this **old technology of geometrical design** can help alleviate our cities today. The Roman roads were lined with trees and beautiful artworks which gave a calm soothing ambience to the passers-by.

Rainwater catchment systems provide an important benefit for resource conservation. Tbilisi faces ever increasing water disruptions in multiple zones of the city. The questions must be asked what if there were ever water shortages here for extended periods of time. Or in other cities throughout Georgia, this problem exists not only in the city but also in the countryside as many rivers have overtime been diverted and dams built for energy projects like up in Svaneti. In Australia and New Zealand many people have these water catchment systems in place. Research would need to be conducted to see how much rainfall occurs in what parts of the country. This would help alleviate the strain on house to house or flat to flat consumption. Rainwater catchment systems have been in place for thousands of years in Asia, the Middle East, China and India. Thousands of large cisterns for rainwater storage have been in existence for many centuries around the Mediterranean and North Africa; some are still in use today in Egypt. Turkey also has many of the largest cisterns in the world for holding water. In Western Europe, records show that in Venice and other cities rooftop collection and storage of rainwater was the main source of water for 1300 years up to the sixteenth century. *“The rapid expansion in use of rainwater catchment systems technology worldwide has coincided with a period of growing interest in community-based, grassroots, self-help development.”* (Gould, D., Nissen-Petersen E., 1999).

In the ancient Sanskrit medical texts of the Ayura Veda, *“it is directed to heat foul water by boiling and exposing to sunlight and by dipping seven times into a piece of hot copper, then to filter and cool in an earthen vessel”*. (Baker. 1981) Also the keeping of water in copper vessels is recorded as well as filtering through charcoal and various types of sand and gravel. Copper was regarded as a disinfecting agent in ancient India. There has been research coming forward that the harmful chemicals found in water and for water treatment are a major source of disease and cancer. The older methods of water purification and storage can give us renewed health.

Ancient technology of **building materials** and usage of green energy can help with expensive housing costs in both city and rural villages for both natural and modern design and also for better environmental outcomes. Earth materials can be used to build housing using raw materials like straw-bale, rammed earth, adobe and clay. We must ask all of this over processing of building materials is it really necessary? The caves of Vardzia were vast living spaces of ecological thought etched into the rock. Here high up in the cliffs people lived in the mountain itself, providing a very nourishing environment. Not only here but also in Turkey, China, and many other places of the world there are remains of caves and natural dwellings built into the landscape both of stone and earth. In Iran there are many cities that were built almost entirely of earth such as Yazd. On the Iranian plateau lies the city of Yazd, it lies close to the ancient Silk Road. The way this ancient city was constructed is of earthen architecture is a living witness to the use of limited resources for building materials. Re-education in the use of these types of building with earth and clay and natural green elements will provide not only new jobs but new elemental landscapes to various regions of the world with expensive housing. Traditional adobe houses are made from the earthen bricks that have dried in the sun and are laid in courses to form walls. Both adobe and rammed earth are made from soil and are therefore truly sustainable and provide cheaper alternatives than the expenses of mainstream modern building materials.

In Iran **wind catchers** were also used to cool down the inner dwellings by means of high towers with windows where the wind could flow down to the corridors below. Such means of air conditioning is environmental and works in harmony with nature than against it. Also, ancient civilizations and even in modern times used root cellars to store their vegetables and food without the need for refrigerators. Surely there are much more efficient ways of keeping food cold, washing clothes, clothes drying, and electric or gas cooking. Solar cooking has been around for centuries, using the rays of the sun to cook food, as well as, the use of solar dehydrators for food preservation throughout winter or famines (Jibuti, 2021).

There could be vast areas of food by the planting of trees and orchards throughout the country, creating free food on the sides of the road, wherever people travel. If apartments and flats

had more integrated green houses and areas for growing vegetables, fruits, herbs, and plants, this creates more connection to the land. This brings forth much more abundance, than importing food from far away countries using large amounts of fuel and energy, instead of sourcing local production and or free food areas. The pharmacies of old were using vast amounts of **natural plants and herbs** to heal people, whereas today much of these chemicals use quite energy consumption in their manufacturing process.

People and children in education should be inspired to create their own home herbs and vegetable gardens, to plant trees, to live sustainably in order to preserve the society in which they live.

Conclusions. There are implementations to consider such as geometrical layout of new green eco villages, natural architecture, sustainable energy, herbalism, rainwater catchment systems, vertical gardening, water purification etc. Because there is less and less water available in the ever-global market it is wise to develop this ancient technology of harvesting and collecting water for personal use. Not only should we encourage the production and development projects with these systems put in place but also the returning of communities and villages back to independent wells with a better communal understanding of water purification and how to cleanse and maintain their individual systems.

We have before us an open door to change our societies for the betterment of human development and health by the technologies and innovations we use from daily use. We can learn from the ancients in their craftsmanship and skill, earth architecture, solar designs, housing, medicines, agricultural and handicrafts. Not everything should be shipped on a boat and imported from far away, when you can get right in your local market or countryside village. We are at a crossroads; we cannot sustain this current trend of consumption with pollution unchecked. We must change course and consciously think about these things more intently with vision because there is devastating consequences if we do not. This is a call to return to nature to have cities and societies that are built in a green ecological way with more sustainable technology.

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INTEGRATED REPORTING AS A MANAGEMENT TOOL FOR A COMPANY SUSTAINABLE PERFORMANCE

Abstract

This article reveals the importance of integrated reporting in the context of a company sustainable development. Integrated reporting is an extension of traditional corporate reporting, providing interested users with information about how an organization creates value over time using all types of capital involved. Integrated reporting, which includes all aspects of corporate governance and performance, provides a real reflection of the company's performance and ensures transparency of information disclosure for the users. Thus, integrated reporting is an effective management tool of the company in the contemporary economy.

Key words: integrated reporting, corporate, performance, sustainability

Introduction

International Integrated Reporting, IR Framework was launched in December 2013. This was done in order to make corporate reporting more complete, more reflective of the real challenges organizations face, and therefore, more useful for investors. The IR Framework is now part of the International Financial Reporting Standards, IFRS Foundation.

In early 2022, IFRS Foundation staff conducted a research project to determine where and how the Integrated Reporting Framework is being implemented worldwide. The results of the study showed that more than 2,500 enterprises in more than 70 countries have implemented integrated reporting. Based on the regional classification system used and the available data, it was observed that integrated reporting is practiced widely in Asia Pacific 43.1%; Europe 25.1%; Middle East and Africa 23.1%; North America 3.2%; and Latin America 5.4%. Within the regions there are some countries that are leaders in adopting integrated reporting. For instance, Japanese companies make up a large portion of the sampled reports in the Asia Pacific region. Sector analysis indicated that companies across shows that the majority of the reports came from companies in the infrastructure (16.7%), financials (16.6%) and resource transformation (32%) sectors [1].

The integrated report embodies the natural development of a traditional corporate financial report, the models of which could not adapt to an unstable economy and cannot explain the increasing role of intangible assets in creating the corporate value. Traditional metrics for measuring corporate value and economic progress no longer provide a complete picture and cannot provide a company's comprehensive accountability. A traditional financial report contains historical financial information; this information can be used as a basis for making forecasts. However, it does not disclosure the internal and external factors that create the company's value and are the drivers of its growth. This makes it necessary to prepare an integrated report in the context of digital changes in the economy and society.