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CONCEPT OF RESOURCE AND RESOURCE EXPOLITATION FOR ACHIEVING SUSTAINABILITY DEVELOPMENT GOAL 7 (AFFORDABLE AND CLEAN ENERGY) AND 12 (RESPONSIBLE CONSUMPTION AND PRODUCTION)

Nida tabassum khan [1]

Department of Biotechnology, Faculty of Life Sciences & Informatics, Balochistan University of Information Technology, Engineering and Management Sciences, Takatu Campus, Airport Road, Quetta, Balochistan

ABSTRACT

Resourcesare those elements of the planet that can contribute to human welfare.These are the naturally occurring, exploitable resources that civilization values for its material and socioeconomic well-being. However, overconsumption or uncontrolled utilization of these resources may cause depletion and deprivation for the future generation along with triggering harmful environmental impacts affecting the ecosystems and human communities regionally or globally.Thus, purpose of this review is to understand the notion of natural resources and its responsible exploitation to assess its crucial impact on the environment in order to conserve and sustain life on earth for achieving sustainability development goals including SDG goal 7 (affordable and clean energy) and SDG goal 12 (responsible consumption and production) in the future.

KEY WORDS: Resources; Exploitation; Sustainability; Environmental impact; Renewable.

[1]nidatabassumkhan@yahoo.com

INTRODUCTION

The word "resource" denotes free things, human centered use, and the commercialization of the environment [1]. Prior to the early 20th century, the term "Resource" received little specific emphasis. ErichW. Zimmermann, a renowned economics professor, did not make the concept well known until 1933, when he published his widely recognized book "Concept of Resource" [2]. The traditional school of thoughtheld that the word resource actually meant nature. Natural objects, regardless of their quality or
efficacy, were seen as resources [3]. Resources, according to Zimmermann and his followers, are those
elements of the planet that can contribute to human welfare [4]. These are the naturally occurring,exploitable resources that civilization values for its material and socioeconomic well-being [5]. Researchershave classified resources into three main groups: natural resources, human resources, and capitalresources [6].

Figure 1: SDG goal 7 and SDG goal 12

NATURAL RESOURCES

Any of the biological resources, mineral, that can be exploited for a purpose and yield benefits, whetherthey be immaterial or material [7]. Natural resources, however, are not dispersed equally among nations orregions of the world. Some countries might have large stocks of natural resources, whereas others mighthave few types, little reserves, or none at all [8]. Likewise. petrol, metals, soil, sand, wind, water, andeverything in between are natural resources [9].

RENEWABLE AND NON-RENEWABLE

Nearly all elements of nature possess the ability toself-renew, making them renewable resources [10]. Forinstance, the sun, wind, water, trees, and so forth.On the other hand, non-renewable resource availability is limitedsimilar to fossil fuels and minerals [11]. These resources take millions of years to produce, yet if we use them continuously throughout our lives, they will eventually run out [12].

HUMAN RESOURCES

Human skills are required to create, manufacture, and promote a product or service people used theirlabor along with natural resources to construct the roads, railroad, and buildings [13].

CAPITAL RESOURCES

Includes capital needed to launch a new company, equipment, structures, tools, and whatever elsehumans create in order to manufacture things and render services [14].

EXPOLITATION OF RESOURCES

The practice of acquiring and exploiting natural resources for financial or strategic reasons is known as
resource exploitation, and it usually requires government involvement to gain access to and control overthese resources [15].

Some of the resources are given below:

- **WATER RESOURCES:** Water is used by humans for almost all of their basic needs, including drinking, washing, irrigation,transportation, disposing of industrial waste, and cooling thermal

power plants [16]. The earth's surface isshaped by water, which also controls the climate [17]. Worldwide, 70% of water is used for agriculture and25% of water for industries. stations using hydropower to generate power, they will utilize turbines tocapture the energy contained in the forces of the water currents [18]. Since these stations don't produce anygarbage, they are environmentally benign [19].

- **FOREST EXPLOITATION:** Over the ages, people have used forests as a supply of wood and to acquire land for farming [20]. Forest isfrequently cut down for their valuable timber, which is used to make paper, build things, and otherthings [21]. Many people in underdeveloped nations depend on trees to provide fuel [22].
- **OIL, GAS, COAL RESOURCES:**With their enormous oil reserves, Middle Eastern nations are extraordinarily wealthy due to anunderground resource called oil [23]. However, because technological advancements have made it possiblefor organizations to locate oil sources in even the most remote locations, the world's oil reserves arebeing actively exploited [24]. Humans are able to travel the world because of gas. Petroleum gas is a fuelthat is used by the majority of cars, trains, and airplanes and is an integral part of most people's lives,particularly in industrialized nations [25]. One such fossil fuel that can be discovered underground on land iscoal. Coal is an extremely affordable and basic energy source [26].
- **MINERALS AND METALS:**Industrial minerals (limestone, iron), basic metals (copper, aluminum), and precious metals (gold, silver).utilized in many industries, including electronics, manufacturing, and construction [27].
- **SOLAR POWER AND WIND ENERGY:** Solar power is energy that is captured from the sun's radiation and can be transformed into heat orelectricity. It is a clean, renewable energy source that is gaining popularity as a vital component of asustainable energy production system [28]. With the use of wind turbines, the wind's force can betransformed into useful energy. Because they don't generate any waste and, with regular maintenance,can last for decades, these devices are incredibly environmentally friendly [29].
- **ANIMAL RESOURCES:**Animals are raised at farms to provide a source of food, a source for clothing (leather, feathers, fur,wool), and a tool for agriculture, laboratory tools for many purposes [30].
- **SOIL RESOURCES:** The thin layer of material that covers land and contains organic matter, living things, air, and water iscalled soil. good plant development, human nourishment, and water filtering all depend on good soils [31]. More carbon is stored in soil than in all of the world's forests combined, and soil plays a major role inclimate regulation [32].

ENVIRONMENTAL IMPACT

- As a byproduct of burning fossil fuels, carbon dioxide (CO2) is released. Since CO2 is agreenhouse gas, it will increase the atmosphere's ability to retain heat and warm the surface ofthe Earth [33]. The effects of global warming on individuals and ecosystems are extensive. Increasedtemperatures cause droughts, heavier precipitation, rising sea levels, melting ice sheets, andmore frequent extreme weather [34].
- One renewable resource is soil. However, it regenerates very slowly 2.5 cm of soil every 200– 1000 years [35]. When the rate of erosion exceeds the

rate of renewal, soil ceases to be a renewableresource which lead to the desertification, declining quality of the soil [36]. Deforestation and miningcan cause soil instability, exacerbate erosion, and lower the amount of nutrients in terrestrialecosystems [37]. The world's croplands are losing one-third of their fertility. Across Asia and Africa,two thirds of degraded land are found [38].

- Because of overpopulation, surface water is overutilized by man, drought conditions thereforeprevail [39].Approximately 41% of the world's population, or 2.4 billion people, experience severe drought andhave very little access to water [40]. By 2025, it will rise to 48% (3.5 billion), and by 2050, it will reach9 billion [41]. Washing away loose items from landfills close to nearby water sources pollutes thewater [42]. Water pollution is also caused by coal washing processes and mine drainage [43]. Acidcontaminates surface water which effect the aquatic life [44].
- Loss of habitats, which has an impact on biodiversity, ranges, populations, and relationshipsbetween different creatures [45]. But the degree to which we disturb a habitat depends on thetechnique we choose to harvest a resource. For instance, extensive deforestation usually causesecosystems to become fragmented, which can lead to the loss of species [46].
- Mining operations frequently have significant negative effects on the local ecosystem as well aslarger implications for the planet's environmental health [47]. Such as erosion, sinkholes, biodiversityloss, or chemical pollution of surface water, groundwater, and soil from mining operations [48].Through carbon emissions, these processes also have an impact on the atmosphere andcontribute to climate change [49].
- The world's leading cause of the degradation of wildlife habitats is the livestock sector [50]. Thedemand for animal products has increased over the past 50 years due to the more than doubledhuman population and the more than quadrupling land area used to produce animal feed, suchas soy [51]. The animals contaminate our air and streams with harmful amounts of CO2, methanegas, and excrement. According to scientists, methane traps heat in our atmosphere more than84 times more effectively than carbon dioxide does [52].

CONCLUSION

Thus, it is important to acknowledge the wealth of exsisting natural resources and their controlled exploitation for achieving sustainability for future generations.

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