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Study on Economic, Sustainable Development, and Fuel Consumption

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ABSTRACTS

The purpose of this study was to review economic, sustainable development, and fuel consumption. We focused our study on India. In India, households use more than one fuel for the fulfillment of energy requirements. So, they have to decide not only how much of a particular fuel to use, but also which fuel to choose. Energy is a necessity for a household. The demand for energy for cooking and lighting is increasing rapidly in India. Presently, India faces a dual challenge of providing clean fuel for the vast majority of households and also taking measures to reduce greenhouse gas emissions. If India adopts a carbon tax to reduce the carbon emissions to affect the price of fossil fuels, then this carbon tax may create a considerable effect on the fuel choice of households. In general, many fuels can serve the same purpose as cooking and lighting. These are mainly firewood, dung cake, chips, kerosene, LPG, electricity, etc. These fuels may differ in terms of emissions, ease of use, prices, etc. Thus, it is important to understand household fuel choice behavior and adopt policies to shift households toward cleaner fuels.

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1. INTRODUCTION

Sustainable development is the practice of using guidelines for environmentally responsible and energy savings to create new development projects and to maintain and retrofit older projects (Hwang & Tan, 2012). It can include using green materials in new construction, designing projects that can harvest their energy to reduce the load on a power grid, or incorporating green space to counterbalance the green space removed to build the onsite facilities. Sustainable development is a development that satisfies the wants of the present without hampering the ability of future generations to meet their needs (Xia *et al*., 2018). It is all about creating a balance between meeting developmental goals and sustaining the ecosystem of the economy and society by large. Sustainable communities that put the environment and civil society first are becoming a rarity today (Cosgrove & Loucks, 2015).

Reaching the targets for sustainable development requires actions from all fronts-businesses, governments, and societies (Militaru *et al*., 2021). People across all classes have a role to play. Sustainability goals address well-known global. Now, challenges like poverty, inequality, climate change, and environmental degradation. Sustainable development can be visualized in three dimensions: economy, environment, and society (Dhahri & Omri, 2018). While developed nations can fully explore various sustainable business models to achieve sustainability, this might not be easy for developing nations because of poor governance systems, characterized by inequality, corruption, and other challenges.

The purpose of this study was to review economic, sustainable development, and fuel consumption. We focused our study on India. In India, households use more than one fuel for the fulfillment of energy requirements. So, they have to decide not only how much of a particular fuel to use, but also which fuel to choose. Energy is a necessity for a household. The demand for energy for cooking and lighting is increasing rapidly in India. Presently, India faces a dual challenge of providing clean fuel for the vast majority of households and also taking measures to reduce greenhouse gas emissions. If India adopts a carbon tax to reduce the carbon emissions to affect the price of fossil fuels, then this carbon tax may create a considerable effect on the fuel choice of households. In general, many fuels can serve the same purpose as cooking and lighting. These are mainly firewood, dung cake, chips, kerosene, LPG, electricity, etc. These fuels may differ in terms of emissions, ease of use, prices, etc. Thus, it is important to understand household fuel choice behavior and adopt policies to shift households toward cleaner fuels.

2. METHODS

This study used a systematic literature review, in which we got data and literature from some references from 2000 to 2021. We also adopted from several websites:

(i) https://www.conserve-energy-future.com/what-is-sustainable-development-and-its-goals.php
(ii) https://www.un.org/en/chronicle/article/role-fossil-fuels-sustainable- energy-system
(iii) https://okcredit.in/blog/what-is-sustainable-development/
(iv) https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3282774
(v) https://en.unesco.org/themes/education-sustainable- development/what-is-esd/sd

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3. RESULTS AND DISCUSSION

Figure 1 shows the concept of sustainability. It contains society, environment, economy, traffic, power, CO2 emission, and recycling process. **Figure 2** shows the factors relating to sustainability. Sustainability itself is an integrated approach, involving social, economic, and environment. That is why we understand the definition of socio-economic and socio-environmental.

Figure 1. The concept of sustainability.

Figure 2. Factors relating to sustainability.

Fuels comprise 80 percent of current global primary energy demand, and the energy system is the source of approximately two-thirds of global CO2 emissions. In as much as methane and other short-lived climate pollutants (SLCP), emissions are believed to be severely underestimated, energy production and use are likely the sources of an even greater share of emissions. Further, much of the biomass fuels are currently used around the world in small-scale heating and cooking. These are highly inefficient and polluting, especially for indoor air quality in many less-developed countries. Renewable biomass used in this way is a problem for sustainable development.

If current trends continue, in other words, if the current share of fossil fuels is maintained and energy demand nearly doubles by 2050, emissions will greatly surpass the amount of carbon that can be emitted if the global average temperature rise is to be limited to 2□C. That level of emissions would have disastrous climate consequences for the planet. There are many emission reduction opportunities for the energy sector, notably reducing the amount of energy consumed and reducing the net carbon intensity of the energy sector by fuel switching and by controlling

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CO_2 emissions.

The goals of sustainable development are

(i) To minimize the depletion of natural resources when creating new developments.
(ii) To create a development that can be maintained and sustained without causing further harm to the environment.
(iii) To provide methods for retrofitting existing developments to make them environmentally friendly facilities and projects.

The importance of sustainable development is

(i) Provides Essential Human Needs. The explosion of population means people will have to scramble for the limited life essentials like food, shelter, and water. Adequate provision of these basic needs almost entirely hinges on infrastructure capable of sustaining them for a long time.
(ii) Financial Stability. Sustainable development practices can create more financially sustainable economies across the globe. Developing countries that can't access fossil fuels can leverage renewable forms of energy to power their economies. With the development of renewable energy technologies, these countries can create sustainable jobs as opposed to finite jobs based on fossil fuel technologies.

The sustainability impacts of fuels include several factors:

(i) Transportation fuel creates significant sustainability impacts that include greenhouse gas and other emissions that result from combustion. Fuels also create an array of wider environmental, social, and economic impacts associated with the production, distribution, and disposal of fuels throughout the whole value chain.
(ii) The aim is to build an understanding of the total comparative value chain sustainability impact of different fuels to enable more holistic considerations and decision-making about the sustainability of fuels in considering total impacts, we examine the breadth of sustainability issues, which include greenhouse gas emissions as well as wider environmental, social, and economic impacts.
(iii) Sustainability impacts have multiple dimensions: They can be negative or positive, probable or actual, objective or relative, direct or wide, frequent or infrequent, and scientifically validated or reflective of credible stakeholder concern.
(iv) All impacts create costs-and in some cases benefits for society that often do not factor into the costs that producers bear or the market prices that buyers will pay.

The advantages of sustainability are

(i) Economies. We have to create a level playing field so that all sections of society can prosper. Sustainable development helps us to reduce waste and cut costs. For example, sustainable agriculture will help us to reduce the wastage of farm produce, which can be as high as 40 percent. Sustainable economies discourage centralized manufacturing and suggest local production due to the latter's environmental benefits. These are reduced pollution, emission, and waste. Localized small-scale production boosts the local economy and creates jobs. So, the entire society benefits.
(ii) Eco-Cities. As the adverse environmental effect on our polluted megacities rises and population pressures are felt everywhere, some communities are rising to face these challenges. Urban neighborhoods or eco-districts that use sustainable development to create prosperous communities with low negative impacts are coming up in many places. Here, real estate firms work with city planners to construct buildings in such a manner that it serves the core needs of the community. These include access to amenities and businesses, affordable housing, health and wellness, quality schools, etc., with minimum environmental impact. New real estate is built to follow strict environmental laws that

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include air, soil, and water quality. These developments of the future will have lots of demand because people want sustainable options to live, play, and work.

(iii) Sustainable Infrastructure. The concept of sustainable infrastructure refers to systems and equipment that are designed to meet the people's essential service needs. These included bridges, hydroelectric power stations, roads, etc. Through sustainable infrastructure, we can plan and build public operations and systems that don't threaten ecological processes. One such example of sustainable infrastructure is the modern transit system. They carry more commuters on a lesser number of vehicles, with cheap fares, decreased congestion, and reduced fuel consumption.

(iv) Nuclear Technology. The benefits of nuclear science can solve some of our most complex challenges like stagnant economies, environmental harm, hunger, etc. The international development sector is using sustainable nuclear technology in areas like agriculture, ecology, energy, food preservation, hydrology, and medicine.

(v) Energy. Today our main conventional sources of energy are coal and oil. A time will come when we will run out of these resources. Renewable sources of energy are the Sun, wind, and water. And these will remain for eternity. So, to preserve our future, we have to tap into these non-conventional sources of energy. Also, these will create more jobs in the process.

The disadvantages of sustainability are

(i) One of the main obstacles that the application of sustainable policies finds itself in is the duality that exists between the need for solutions and strategies that transcend borders

(ii) Unemployment - Changes to preserve and care for ecosystems and biodiversity can cause several industries to reduce their activities or, in the last case, stop them altogether. This can bring unemployment for many people who have dedicated their whole lives to work in a single sector, such as the coal industry

(iii) Need more requirements.

The challenges for sustainable development are

(i) Good Governance, such as the political will to transform development programs into sustainable long-term practices.

(ii) Implementation, such as ensuring the program fit the local context.

(iii) Instability, such as the conflict between nations, climate change, energy consumption, waste production, threats to public health, poverty, social exclusion, management of natural resources, loss of biodiversity, and land use.

4. CONCLUSION

Sustainable development involves many global actions-from the development of concepts, capacity, operational activity, and monitoring. Therefore, for Indian society to continue to prosper in an increasingly resource-constrained world, business and government leaders must work actively to protect the natural capital on which India's economy, and all human life, depend. Sustainable development can be achieved only if the environment is conserved and improved.

5. AUTHORS' NOTE

The authors declare that there is no conflict of interest regarding the publication of this article. The authors confirmed that the paper was free of plagiarism.

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