

SUSTAINABLE CONSUMPTION AND PRODUCTION OF PAPER PRODUCTS AND PAPER IN INDIA

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ABSTRACT

Paper and paper products are important consumer products that offer benefits to the mankind, and they have been critical in satisfying important human needs, and thus paper has been produced and consumed worldwide. sustainable production and usage of paper are one important topic that has been featured prominently in recent discussions. An alternative source of raw material, improvement in production procedures, and ecological stability are the need of the hour. Paper and paper production underwent a lot of interventive actions recently. But in India challenge associated with paper production consumption and their environmental impacts have not effectively considered. This article sought to analyse challenges and opportunities associated in the production, consumption and disposal of paper and paper products in India.

KEYWORDS: *Paper, Paper, Products, Paper Consumptin, Recycling, Indian Paper Industry, Paper Production*

INTRODUCTION

Paper and paper products are useful consumer product to satisfy the needs of mankind. Paper and paper products were first developed in China, and after that the production and consumption have steadily increased worldwide. There are two important factors which are responsible for the increased growth of paper and paper products in India, they are -Increased world population, improved technology and prosperous global economy and secondly paper and paper products have important properties such as durability and flexibility that enable paper materials can be converted into various forms.

According to the Food and Agricultural Organization of the United Nations, the forestry sector contributes immensely in national economies in which paper and pulp industry accounts half of the total forestry sector contribution. This sector also contributes immensely towards creating employment opportunities. These statistics point towards the importance of this sector, and also this data is against the popular perception that the fortune of pulp and paper industry across the globe would upturn following the discovery of computers and other electronic devices reduced the usage paper and paper products in world. The improved and increased usage of electronic methods cannot reduce the adverse environmental impacts, high energy and water consumption, and other variables of cost, associated with paper industry. Therefore, there is a need for sustainable production and consumption of paper and paper products to ensure sustainable development.

STATUS OF PAPERINDUSTRYAND ALLIED SECTORS

Resources are vital for developmental activity. Conservation of natural resources are important for attaining sustainable development of the country. In the past, there was little attempts to attain economic development and environmental preservation. The chaos resulted from the neglect of sustainable development led to two schools of thought; with one

argue for cautious use of natural resource and its exploitation, on the other hand others argued for absolute economic pursuit without attaching additional costs to environment. However, debates and discussions in the late 20th century led to the emphasis of sustainability concepts to strike a balance between the two ideologies. Environmental management tools such as cost benefit analysis (CBA), dismal theorem risk analysis (RA) have been used in analysing the trade-off between the development and environmental costs.

Felling of trees is necessary for acquiring virgin pulp. Data from various sources shows that, 40% all harvested trees are used in paper industry. This figure shows that paper industry plays an important role in increased occurrence of deforestation and droughts. Presence of paper industry led to increased emission of carbon and increased presence of greenhouse gases. This has a cascading effect in the form of increasing global warming, this concerns dominated the debates on global environmental challenges and was impetus for various economic and development summits since 1972. The summits of Stockholm, Riode Janeiro, and Johannesburg also emphasised need for preserving environment. But the fact remains that, deforestation as a result of irrational felling of trees still persists around the world, especially underdeveloped regions. Recently efforts were being made to replace forest material with more eco-friendly raw materials. Increased use of recyclable paper, non-wood fibre materials, and agriculture residues are some of the important initiatives adopted to reduce ecological damage.

Paper is a composite of fibre and chemicals. Production of paper results in the creation of by products which need to be effectively disposed. There are various methods for this waste management. However traditional method of waste disposal methods will result in pollution of ground water sources, landfill. gas emissions, and increasing shortage of land space, air pollution and other health hazards. The viable alternative is recycling. The emphasis on increased importance for environmental quality has not drastically reduced the rate of paper consumption. Global usage of paper and paper product is still remained over 300 million tons, a year; The steady increase of paper consumption is due to increased population, consumer-based life style and infinite demand for finished goods.

RESEARCH METHODOLOGY

(a) Source of data: The data are collected from secondary source like website, journals and magazines. Etc. The study is on production, consumption and waste management of paper products in India.

ANALYSIS OF PAPER INDUSTRY IN INDIA

Wood based, Waste paper based and Agri based are the three categories of paper industry in India. This classification is made on the basis of raw materials consumed by the industry. The Indian paper industry produces a meagre 4% of the total world production of paperboard and newsprint. Countries, like USA, China, Russia, Japan, and Indonesia are the major players in the pulp and paper industry. These countries have modern technology and adequate raw materials. According to Indian Paper Mills Association, paper mill industry turnover is approximately Rs 50000crore in 2015. The domestic demand in India in the year 2016 was at 15.3 million tonnes. Even though there were sustained efforts to expand the industry, the per capita paper consumption remains at an average of over 13 kg, which is less, compared to the global average of 57 kg. Major paper mills are in the states of, Tamil Nadu, Andhra Pradesh Punjab Maharashtra, Gujarat and Madhya Pradesh. There are variety of raw materials used by these mills. The raw materials include wood, bamboo, bagasse, rice husk. recycled fibre etc. The raw materials used are different based upon the geographical location of the mill. Out of the total raw materials 35% is wood, 40% is recycled fibre and 25% is agriculture residues.

Four categories of paper industries can be found among industrial sectors in India, they are, Printing & Writing, Packaging, Paper & Board, Specialty Papers and Others, and Newsprint. For the Indian paper industry, strong economic growth has been accompanied by surging demand for paper. A combination of factors such as rising income levels, growing per capita expenditure, rapid urbanization and a larger proportion of earning population which is expected to enhance consumption and there is huge potential for the paper industry in the country. The overall papers demand is growing at an average rate of 6.6%, and is likely to increase by the end of in 2019. The individual segments are also expected to grow at a faster rate.

It is expected that the demand for Printing and Writing segment will grow at the rate of 4.2% and may reach a total demand of 5.3 million tonnes in 2019. The demand from food and beverage, pharmaceutical, textiles, sectors are met by Packaging paper & board segment of the industry This segment is expected to grow at the rate of 8.9% and may reach 9.7 million tonnes in 2019. This may be due increased urbanization, requirement of better-quality packaging of fast moving consumer goods etc.

The growth in newsprint demand is facilitated by improved literacy rates, increasing number of newspapers and magazines and rising circulation. Demand from this sector may reach 2.7 million tonnes in 2019. Banning of import of several varieties of waste paper by Chinese government, is expected to hamper paper production in China. This may provide some relief to Indian industry.

Due to rapid economic development India's per capita GDP has increased from Rs 71,607 in 2012 to Rs. 117,406 in 2016 at an average growth rate of 10.4%. This resulted in boom in consumption good industry. There is a corresponding surge in the per capita personal disposable income, and it increased to Rs 119,296 in 2016 at an average growth rate of 10.2%. The per capita private final consumption expenditure also increased to Rs.68,049 in 2016 at an average growth rate of 11.1%. The growth in per capita GDP resulted in the increase of disposable income of the people. This led to increased consumption. Considering the lower median age of Indian population implies a higher number of work force and increased level of consumption. The circulation of print media reached 63 million copies a day in 2016.

In the urban cities there are large concentration of population, this result in waste management problem, many materials found in municipal solid waste are recyclable. So conscious effort must be made by waste managers to extract gains from used products. Due to increased awareness of the public, paper recycling which is highly ranked among the wastepaper disposal alternative received popular attention. Paper recycling may provide additional benefits like pollution minimization, cost reduction, increase in job opportunities etc. Increased demand for waste paper as preferable raw material source for paper production, is the result of alarming ecological dangers of virgin pulp-based production method. Supplementary source of raw material is created because large volume of paper waste is being generated daily in the cities of the world. Sustainable economic development goals also favour the use of recycled fibre as raw material which can drastically reduce energy consumed by the paper and pulp industry. Thus, for ensuring sustainable production, there is a need for promoting energy saving potential like recycling.

Recently modern market instruments are employed to reduce emission and carbon footprints such as carbon finance; carbon credit, which have a clear mission by propagating clean manufacture methods. Kyoto protocol also enabled buyers from developed countries to purchase greenhouse gas emission reduction projects in developing countries. World Bank also recognized the paper recycling projects as an important source of foreign exchange for the underdeveloped countries.

Indian context a bit different there is a lack of dichotomy between paper waste and urban waste. Recycling is a tool for retrieving value from waste and also a waste handling technique. In India recycling is an activity mostly practiced by poor people and often labelled as informal activity. Poor people in cities use more environmentally friendly activity like recycling because of the reasons that they are more vulnerable to environmental externalities such as floods and droughts. Waste picking and sorting by scavengers also contribute to urban sustainable development.

SUGGESTIONS

There are a number of suggestions. First and foremost is ensuring fibre recovery as the important method for sustainable paper production and consumption in India. There must be deliberate effort to follow the path of sustainable forestry. Increased a forestation process will help in increase in local production and reduced import of paper and paper raw materials. It is important to follow the policy of recycling as a means of wealth creation and sustainable waste management process. Sustainable development of a country is depended upon legislative and institutional frame work related to the environment and proper implementation of policies and plans. India having large population, there is a high demand for paper and paper products there should be optimal recovery of paper waste and proper recycling of waste by adopting reverse logistic model sin supply-chain management. Proper financial support must be given by providing investment opportunities and liberal fiscal supports like soft loans, rebates, or grants to encourage small and medium industries in harnessing effort in paper production and recycling. Strong campaign to create public awareness on environmental and economic advantages of recycling and global incentive of clean technology mechanism may be capable of turning the fortune of paper production in India.

CONCLUSIONS

Paper and paper products are important commodity and its production and consumption have ecological and economic aspects that need a careful analysis for ensuring sustainability of production and consumption. This study found that the future of paper production in India will be promising and sustainable when issues relating to sources of raw material, energy sources supply of water, and problem of environmental pollution are tackled properly. Revisiting and remodelling of the current waste management and raw material policies and practices in the country in tune with internationally accepted standards is necessary for ensuring optimal availability and utilization of wastepaper in paper production process. This article analysed the development, challenges, and prospects of paper and paper production in India. The new world is dominated by the technological progress that has occurred in computer science and information technology, that resulted in a complete change in society's private communication process, commercial and information behaviour. The fact that there is a huge amount of data being generated electronically, but the issue of preservation of these data poses a lot question. This does reduce the importance of paper in the society. The paper industry in India is still growing at a rapid pace with increased demand and entry of international investors.

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