

ECOLOGICAL AND ECONOMICAL IMPACT OF SANDMINING IN NILA

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Abstract

Sand mining is an important activity related to economic development in both developed and developing world. Ecologists consider sand mining as detrimental to environment and stresses on the need for sustainable development. The issue of striking the correct balance is being widely debated. There is a need for cautious approach as rivers like Bharatha puzha are cradles of culture and civilization. The situation acquires gravity in the wake of frequent floods and landslides in Kerala. Along with vanishing rivers there is also the problem of growing nexus of law breaking activities

Keywords - Responsible growth, Sustainable development

Introduction

Economic development need to be ecologically sustainable to ensure true welfare of people. As sand and gravel are the primary ingredient for the construction projects, there is excessive mining of soil components for construction for both rural and urban development. The rapid globalisation and development leads to the scarcity of the natural resources like sand. Quarrying of river sand is an important economic activity in the country with river sand forming a crucial raw material to the construction industry. The annual quantity of river sand that is being quarried from the rivers is far greater than that can be naturally generated.

In India, sand mining is a legal activity subject to state control and licencing. Even though substitutes like rock sand, vitrified sand are available, demand for natural sand is ever on the rise. This in turn stimulates uncontrolled illegal sand mining causing environmental imbalance

Bharatha puzha river or Nila is the second longest river in Kerala. Nila used to gush vibrantly with water along its 209 km length. But at present it is reduced to desert like bushy patches of sand with a thin silver thread of water running in between. If the present pathetic situation continues, Nila itself will soon become part of history

Over exploitation of the river and its basin disrupts the diverse flora and fauna which depend on the river for its survival. Drastic climatic variations has affected the forest eco system. Many natural fish varieties are facing the threat of extinction.

Excessive sand mining leaves deep and wide pits in the river. This destroys the base for ground water recharging. This gravely affect the strength of bridges and nearby structures. Often these pits cause drowning of unsuspecting swimmers

Research Gap

Pereira (2012) stated that as global demand for sand is exploding and rising rapidly, the sources of sand and gravel such as riverbeds, beaches, creeks are being mined faster than nature can replenish. This creates a highly skewed supply-demand situation. India has the third largest construction business in the world after USA and China, so sand and gravel are required in large quantities. Mining is done both legally and illegally. The country did not have a regulatory and monitoring framework for excavation of sand sustainably which increased the illegal mining rampantly.

As per the reports of Expert Committee appointed by the Government of Kerala ,Bharathapuzha river system is faces threat due to unsustainable exploitation of its resources and over utilisation of its surface and ground water resources, The uncontrolled sand-mining has damaged the river's ecosystem as well, destroying the habitat of organisms living on the river bed. Native aquatic species in stream and rivers are face threats to their survival .This leads to loss of fisheries productivity and affect livelihood of fisher men

In Bharathapuzha River, Sand mining is made legal by the government through Auctioning and Permit System. Auctioning is done at 48 Kadavus by village panchayats and permit is given by 10 Government Centers. Average legal mining allowed through auctioning at 48 Kadavus is 33570 loads.Sand mining far exceeds this permissible limit due to illegal mining. The estimate of quantum and worth of sand mining are few and irregular .Regular updates are crucial for alerting the authorities so that they can protect this eco sensitive area

Objectives.

1. To assess economic reasons for sand mining and ecological and social consequences
2. To understand the occupational hazards of sandmining and its social impacts

Data base and Methodology

The study utilises both secondary and primary data .Sampling technique used was purposive sampling of 40 residents in the river banks in Ottapalam Palakkad,Kerala to assess the understanding of common people about sand mining A survey in Thrangali, Kondazhi,Thiruvilwamala, Mayannur, Meetna ,Ottapalam and near areas was conducted in a well scheduled questionnaire .To analyse economic impacts, Snowball sampling technique was used to identify 33 people employed in sand mining

Study relies on secondary data from census of India , Kerala government , various reports from the internet and reports of news papers

Review of Literature.

Bagchi (2010) stated that communities in Palakkad and Goa expressed dissatisfaction with the uncontrolled illegal mining . The miners created one hundred feet long by fifty feet deep tunnels across their farmland as well as

creating deep pits through crop fields. According to villagers' reports, approximately eighty trucks were seen passing through villages on daily basis. Their reports to authorities seemed not to be heard. In some cases there is depletion of water resources leading to food shortages and hardships for people.

Bagchi (2010) further noted that the state government exempted mining of sand through Minor Minerals Rules of 1996 but this increased illegal extraction of sand. Many leases were issued by the Indian Mining Cooperation of Madhya Pradesh to excavate sand from state land, disregarding environmental regulations.

Draggan (2008) noted that development is a process of gradually becoming bigger, better, more advanced in business, trade and industrial activities. Growth of towns and cities demands much more infrastructure and construction of strong structures such as tarred roads, commercial shopping malls and accommodation for the ever increasing population. As urban areas develop, there is likely to be a disturbance of the environment.

Saviour (2012) discussed direct and indirect impacts of mining to the environment in Kerala region of India. The activity has increased since 1990s due to the boom of construction industry. River Bharathapuzha has become a victim of indiscriminate sand mining which has lowered the water table and reduced rice harvest.

Results of Data analysis

A primary survey in Thrangali, Kondazhi, Thiruvilwamala, Mayannur, Meetna, Ottapalam and near areas revealed that on an average about 2 members on a family went for sand mining works.. Gender wise, 74% percentage of males and 26% of females are engaged in sand mining

Nearly 82% of the sand miners belong to the age group 40 to 65. 18% of people belong to the age of 20-49. 35% of the people surveyed are educated up to primary level and remaining 45% have education up to secondary level. Nearly 80% of the people do not have education beyond secondary level. This points towards sand mining as a fallback option for people.

40% of the respondents take up sand mining as a part time job as sand mining occurs between 5 am – 10 am or in between 4 pm- 12pm.

Nearly 63% of the respondents are residing within 0-500 metre from mining area 27% are staying within the 500-1000 m area and only 7% are residing beyond 1500m from sand mining site. Thus along with lack of alternative employment opportunities, proximity to the site is yet another factor responsible for resorting to sand mining

Economic reasons

Ranks

	Mean Rank
LACK OF ALTERNATIVE EMPLOYMENT OPPORTUNITIES	2.56
PROXIMITY TO RIVER BANK	2.08
HIGH REMUNERATION	3.11
PART TIME WORK	2.26

Test Statistics^a

N	33
Chi-Square	17.474
df	3
Asymp. Sig.	.001

a. Friedman Test

74% of the respondents are working for 25 to 30 days a month. 26% of the respondents worked for 10-20 days a month. Wages are about Rs 50-60 per sack.. Women mine about 10- 25sacks per day while men mine about 30- 50 sacks per day

Average daily income of the family ranged between 1000-2000. 34% of the sand miner receives a monthly income in the range of 35000- 500000 .14% of the respondents received an income above 60,000

Health issues

Ranks

	Mean Rank
BACK PAIN	2.80
WHEEZING	2.20
HEADACHE	2.86
LEG PAIN	2.14

Test Statistics^a

N	33
Chi-Square	17.854
df	3
Asymp. Sig.	.000

a. Friedman Test

100% of the people surveyed agreed that they are facing health problems like Back pain, Body pain, Headache, Leg pain, Bronchitis, Eye pain. Some times children are engaged and this effects their growth. Accidents like, breaking back bone, neck are part of these jobs

Ecological impact

Sand mining has led to shrinking of river shores. Sand auditing (2016) Erosion of soil causes the growth of bushes. Growth of sandy patches is continuously reducing the breadth of Nila.

In its uppercourse, Bharathapuzha river is steeply inclined. This inclination decreases from Pattambi to Kuttipuram Region. Due to illegal sand mining, sand level has decreased considerably in the downstream of the river from Pattambi to Kuttipuram. As a result, river water reaches the sea faster. Water scarcity has seriously affected paddy cultivation in Palakkad which is other wise known as the granary of Kerala.

In summer the near by wells and ponds drain out the ground water. This causes water security. As a remedy, bore wells are dug in the banks of Nila. But this is a threat to the ground water resources.

Sand mining has hampered the Riverine Ecosystem and endangered its biodiversity. Sand mining has caused declining percolation of water through the river beds and its subsequent recharge into the ground water supply.

Indiscriminate sand mining has resulted in large scale soil erosion and has threatened the stability of bridges across Bharathapuzha river. Water quality is also adversely affected due to chemical and fuel spills from machinery used for dredging and sand mining activities and by the vehicles used for transportation of sand.

Social impacts

Sand Mining is done indiscriminately in Bharathapuzha River and legal allowance is exploited. It has become a day and night activity along the down course of the river. As a result, replacement rate of Sand in the River Basin is lower than the rate of sand mining.

Sand mafia drags unemployed youth into illegal activities. They offer attractive payments and this diverts students away from their studies

Suggestions

An awareness campaign on river sand mining and its impacts on rivers is essential to make people understand the serious problems facing in this regard.

Strict enforcement of law against excessive and illegal sand mining. Search information is often leaked out through corrupt officers. Govt should increase the salaries and take strict actions against corruption. Due to lobbying

pressure of sand mafia, lorries are released after capture and no actions are taken against concerned officials. A special mobile squad for observing sand mining may be assigned under a riverbank authority. Government should encourage local residents to come forward reporting the illegal mining of sand in their areas, by giving them benefits either in terms of job opportunities for their family members, or subsidies in certain matters. Funds may be allocated for the research on discovering sand alternatives in construction similar to rock grains.

Conclusion .

Bharata puzha River in the Kerala has become a sand mining hub . Uncontrolled illegal sand mining is destroying the riverine ecosystem and is now threatening the existence of the river. Reckless destruction of nature causes manmade ecological disasters like floods and landslide. Excessive sand mining is affecting the health of workers . Illegal sand mining has increased the activities of sand mafia in the region and disrupting the social life. Appropriate government policy interventions becomes the dire need of the hour.

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