

# AVAILABILITY OF DRINKING WATER IN GARIBRATH TRAINS OF INDIAN RAILWAYS: A POLICY PERSPECTIVE

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**ABSTRACT:** Today, to cope with raising inflation, people spend excessive money whatsoever may be the need. Out of every single rupee, 19 paise is from debt. Ignorant of this fact, many people spend for everything. Unlike this, the paper aims at passive earning in the name of reduced consumption of canned food, a policy to make drinking water available in garibrath trains, thereby reducing PET recycling to a major extent.

**KEYWORDS:** reduce, recycle, PET, water

**INTRODUCTION:** Policy is a government decision or an organization decision to implement a kind of activity or to set a kind of process flow. Policy making could be done in two ways: top down approach and bottom up approach. In top down approach, the amount of water needed as a whole on all the sixty garibrath trains would be taken as a criterion. Depending upon the availability, a certain amount of drinking water would be filled. While in bottom up approach, amount of water needed per passenger at the grass root level would be considered first. While policy making, one should consider sustainability into the policy framework. Sustainability is the efficient use of resources by the mankind without compromising the needs of future generations[1].

**LITERATURE SURVEY:** Rebecca et al [2] attempted to study water sustainable themes of two cities San francisco and San jose and compared them but for the effectiveness of policies. Duncan et al [3] described the techno-economic challenges of sustainability implementation processes in a society. As per Duncan, effect and its feedback is very much important for socio-technical change in a sustainability policy implementation. Angeliki et al [4] worked extensively on the construction sector of european countries and described policy trends to bring in sustainability into the sector and minimise waste generation. Leyre et al [5] demonstrated the need of specific objectives in fisheries sector to make more sustainable policies taking input from different stake holders. Since recession, the US has been widely discussing the fiscal policy. The constant parameter fiscal rule has not generated enough results. So, Pierre et al [6] estimated a markov-switching rule to identify unsustainable and sustainable fiscal policies. Aichi targets ensure sustainable development including human well being index and nature conservation. Most of the monitoring information on sustainable policies is biased towards supply services and little information is available on social indicators. Socio-economic indicators must be integrated with ecological observations on natural heritage and diversity, aquaculture, water purification, livestock etc. Ilse et al [7] worked and fulfilled the gap to a much extent. Peter john [8] considered aviation industry to give a practical approach to sustainability in policy making. He interviewed 28 stakeholders and identified long term strategic planning, stakeholder dialogue, government support and public education as four key areas to bring in sustainability into aviation industry.

**POLICY-DEFINITION:** In Indian railways, passengers are habituated to buy drinking water either on railway platforms or in trains during journey. It generates a lot of waste and the PET waste needs huge resources to recycle. So, here, the policy is to make available drinking water free of cost inside the garibrath trains. Any policy implementation to be successful, needs participation of people. In this policy implementation, railway passengers are expected to bring a water bottle from their households, not to be thrown away during or after the journey.

**METHODOLOGY-BOTTOMUP APPROACH:** Indian railways has a variety of products to its credit and is a very large network of 8500 railway stations. To implement a policy in such a big network is a cumbersome task and must be done carefully. Among these railway stations, junctions are 189[9].

For this paper, garibrath train is considered. Garibrath trains are launched by then railway minister Lalu Prasad yadav to benefit the poor of the country. These trains are completely air conditioned at the fare of sleeper class [9]. There are sixty garibrath trains running on different routes between different junctions. There are 23 to 26 compartments in each garibrath train. Each bogie has got a mini refrigerator and this space is seldom used.

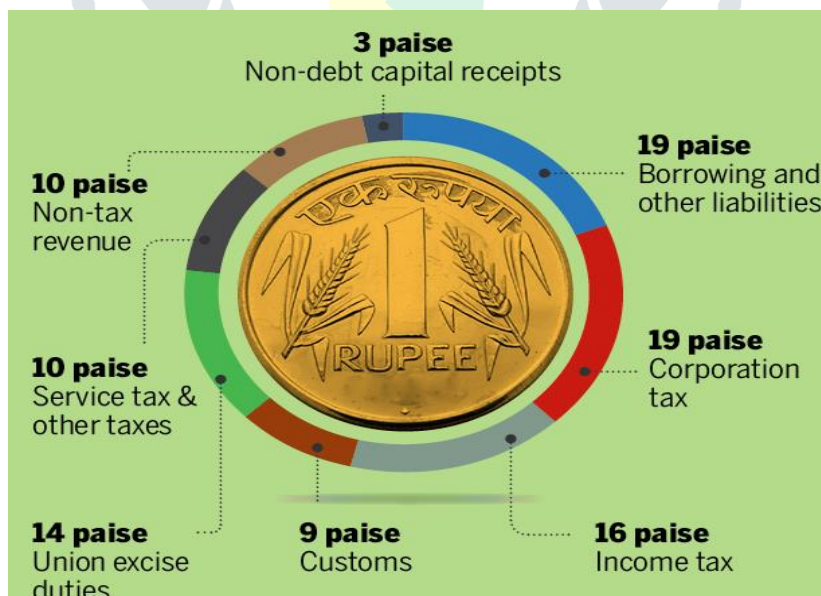
Each compartment has 72 passenger berths. On an average, a human being should drink 3 to 5 liters of water per day. depending upon the journey timings, let a passenger drink 2liters on an average. Because, people drink less water at nights than day. So, each compartment requires 144 liters of water in a journey from the origin to destination. Let passengers bring one liter bottle full of water to ease the load on railways and also they need a container to tap water. So, the general requirement in a bogie comes down to 72 liters in 24 hours journey. Let us make the policy sustainable by using indicators as said below.

**Table 1:** sustainability indicators

Indicator	Measurement
<b>Input</b>	
no of garibrath trains per week	60
no of passenger compartments in a train	25
no of garibrath passengers per week	$60 \times 25 \times 72 = 1,08,000$
no of plastic bottles consumed	$1,08,000 \times 2 = 2,16,000$
quantity of water per passenger	2 liters on average per day in a journey
<b>Output</b>	
no of plastic bottle reduction in use(per week)	2,16,000
utilization of compartment refrigerator space	100%
amount of money into the pocket of consumer per journey	$20 \times 2 = 40$

**CASE STUDY:** Consider the route 12569 between jaynagar and anandvihar terminal, delhi. The journey is covered in 2 days[9]. As per the calculation, the first day, passenger consumes water brought along with him and on the second day, the passenger consumes water from the railway bogie of garibrath train. Because of the less ticket fare, the train runs full capacity. 72 liters of water takes a cube of dimension 4.65m. Due to space restriction in the railway compartment, the water tank of cube shape of dimension 2.3m, should be refilled at intermediate stations. This could be done by the contractual staff who clean the bogies at junctions. In the given example, garibrath train stops ten minutes at patna junction. This gives an ample of time to refill water tanks of size of a cube with dimension 2.3m.

This eliminates the need to buy water bottles during the journey. This reduces the journey expenditure by Rs 40 per passenger which amounts to a total of 43,20,000 INR per week, when multiplied by 52, gives an annual estimated saving of 22,46,40,000 INR. This is a huge boon to the indian economy because with low income groups, reducing expenditure is a kind of passive earning into the pocket of the individual. Moreover, the effort required in generating the amount is negligible. From the point of view of economy, generating a rupee is very important. Every earning individual should know- where does rupee come from and where does rupee go?



**fig1:** where does rupee come from[10]

This policy reduces the need of attendants selling water bottles and other beverages inside the garibrath trains. It reduces the expenditure of indian railways. This cost saving could be utilised in refilling the water containers at specified railway junctions where the halt is for more than 5 minutes.

The consumption of plastic bottles and thereby recycling of these plastic bottles is greatly reduced. On an average, each passenger buys a couple of plastic bottles. These plastic bottles are either thrown on the track or left away in the train after the journey. These plastics are collected and recycled. As a matter of sustainability, reduced consumption is given importance over

recycling among the four Rs-reduction, recycling, reuse, remanufacture[1].Reduced consumption of PET benefits in the form of reduced recycling. Annually, the number of PETs in garibrath trains counts to be  $8,64,000 \times 12 = 1,03,68,000$ .

**CONCLUSION:** In the present day world, recycling is given paramount importance among the four R s. However, reduced consumption of PET is more beneficial to the society as it eliminates the need to recycle. Because, resources are spent in recycling PET even though its almost 100 percent recyclable. Moreover, the policy discussed in the paper proves beneficial to the economy without any extra effort. Its a goodwill gesture to the government which implements the policy. So, it has a huge political impact among the lower middle class of indian economy. It could be implemented in rest of the trains also. But not recommended. Because, in rest of the trains, extra space needs to made for the cube of dimension 2.3m.In garibrath trains, it is already available lying unused. Out of every rupee, an indian earns, there is a debt of 19 paise. So until this debt is nullified, such policies are very much required.

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