

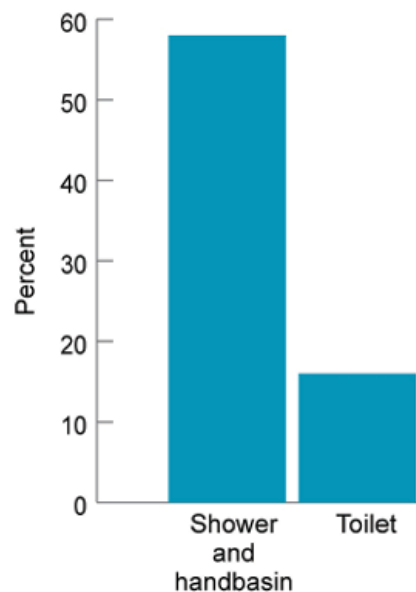
# **SMART WASH BASIN**

***Earth provides enough to satisfy every man's needs, but not every man's greed.***

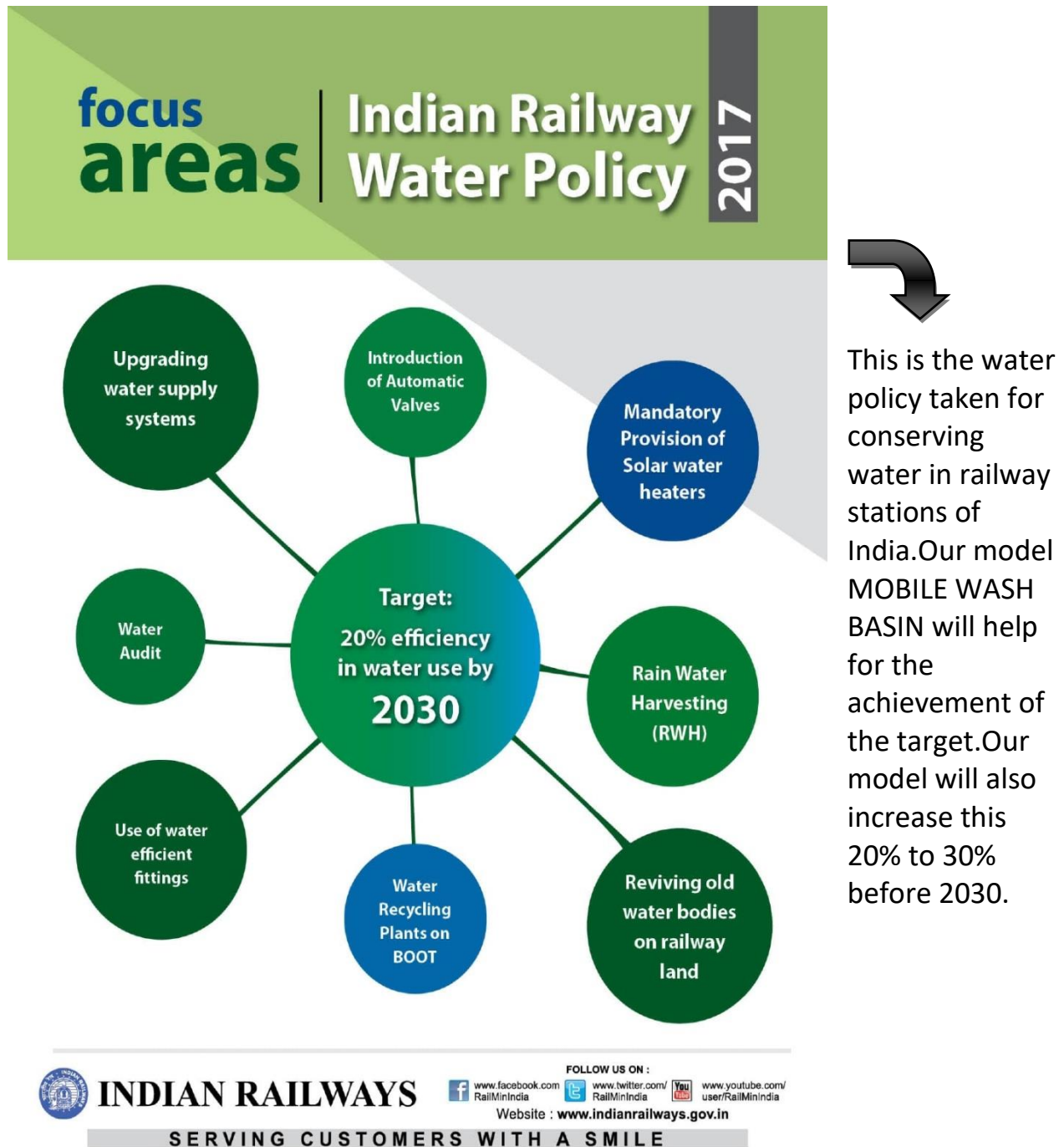
***-Mahatma Gandhi.***

This is one of the famous quotes told by our father of our nation Mahatma Gandhi. By this quote Gandhiji wants to convey to the people that resources should be used wisely and by everyone but not for fulfilling the needs of few greed individuals. Today in 21<sup>st</sup> century each and every resource should be sustainably used so that they can be used forever. Water is one such resource which we are using constantly in our everyday life. From cleaning utensils to bathroom we use water.

Water is being used without a limit this causes water scarcity in our society. We have done a research to know where the water is over used. And then we came to know that public places like railway station, bus stands etc. People waste water in public places like opening the tap without closing, flushing the toilets many times and many more such activities.



From the above graph, we can conclude that water is wasted more during the usage in handbasin/wash basin. So we came with an innovation in wash basin present in the public places. We have decided to implant this innovation in railway stations of India.

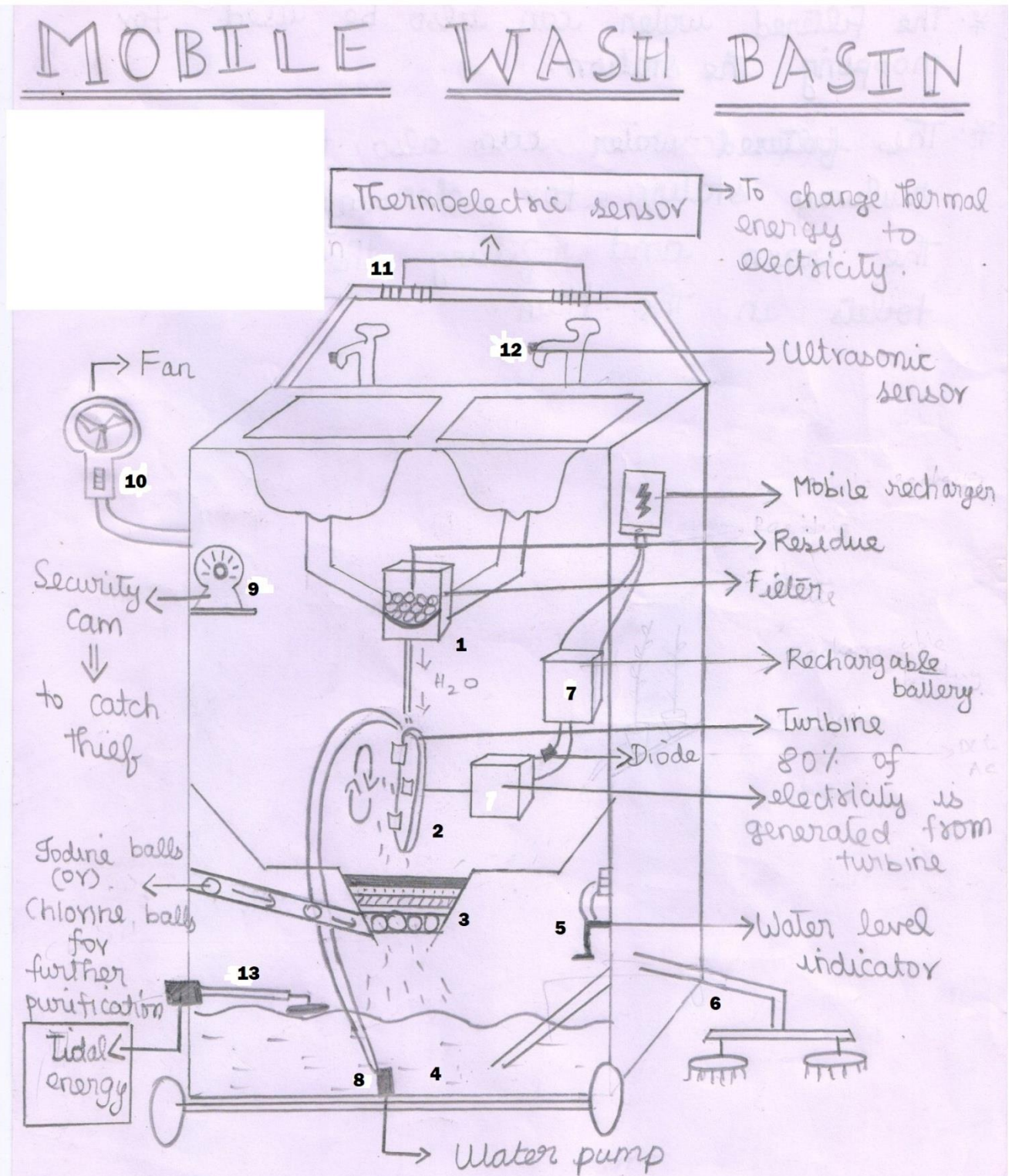


# MOBILE WASH BASIN

The diagram illustrates a mobile wash basin system with the following components and functions:

- 11**: Thermoelectric sensor → To change thermal energies to electricity.
- 12**: Ultrasonic sensor
- 10**: Fan
- 9**: Security cam → to catch thief
- 7**: Rechargeable battery
- 6**: Water level indicator
- 5**: Diode
- 4**: Water pump
- 3**: Turbine → 80% of electricity is generated from turbine
- 2**: Residue
- 1**: Filter
- 8**: Mobile recharger
- 13**: Iodine balls (or) Chlorine balls for further purification
- 1**: Tidal energy

The system includes two basins at the top, a central water pump (4) connected to a turbine (3) for power generation, and a filtration system (1) with residue collection (2). It also features a security camera (9), a fan (10), and a thermoelectric sensor (11) for energy conversion. The entire unit is powered by a rechargeable battery (7) and includes a water level indicator (6).



### 1.Filtration box:

The water will bring the particles from the hands. This is a box which filters the larger particles. These larger particles will be cleared for every one week. The filtrates cleared will be segregated as biodegradable and non-biodegradable waste. Then, the biodegradable waste will be converted into manures and can be used in the agricultural land in the remote villages.

### 2.Bhaskara wheel with cup:

The water after filtration will come out and spins the turbine to generate electricity. Since it is a Bhaskara wheel it will be spinning all time with production of electricity.

### 3.Sedimentation tank:

This is the tank where the water falls after it spins the turbine. This tank filters the smaller particles in the water. This sedimentation tank contains 5 layers of filtration:

- Rocks
- Coarse sand
- Charcoal
- Iodine (or) chlorine balls --> 3 to 4 balls for day. This will replenish the water quality and purify the water the best way. The people should put balls each day newly.

### 4.Pure water tank:

This is the tank which collects the purified water.

### 5.Water level indicator:

This indicates the amount of purified water in the tank so that if it is more then it can be used wisely.

#### 6.Sweeping tech:

The purified water should be used wisely.This water is connected to a sweeping model.The water is used to sweep the railway station platform and make it a clean platform.

#### 7.Storage modules:

These are the modules which store the energy.These store the energy as AC current.The DC current generated is converted to AC current by diode.

#### 8.Mini water pump:

This is a water pump which pump the filtered water continuously.It pumps and pours the filtered water into the turbine. So it makes the water spin the turbine continuously for generating electricity.

#### 9.Security camera:

It is the security device used for catching thieves.This also safeguards the wash basin also.

#### 10.Electro fan:

It is the fan which rotates during particular time that is during the fast train comes to platform.The speed of the fast train will make this fan rotate.Rotation of this fan leads to production of electricity.

#### 12.Ultrasonic taps:

To reduce the wastage of water,ultrasonic sensors are fitted with it.When the person shows his/her hand in front of the tap,then water comes out.This is the upgrade water supply system.

➡ People wash the hands. The impurities present in their hands are removed as well as the water is saved. We are generating energy by various instruments because to make this MOBILE WASH BASIN sustainable one and making it survive without conventional sources of energy. So we are using non-conventional sources of energy to make it an efficient model. Even if we need some external electricity, it does not consume much voltage and it SAVES ELECTRICITY.

## **WHAT DOES THE FILTERED WATER GOING TO DO ?**

The filtered water will be used for various purposes in the railway station. The uses of it are listed below.

- ◆ The filtered water is used as refilling the water in the train. By refilling they can utilise it for flushing in toilets.
- ◆ It is also used for watering plants in the railway station.
- ◆ It is also used for sweeping the platform and keeping it clean and hygienic.

**THANK YOU !!**

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