

## **Brief description of the proposal**

Solid waste management is a big problem for all municipal corporation. Solid waste disposal into land-fills and dumping grounds also poses a big threat to the environment as tonnes of top-soil has to be dug up to make space for the land-fills. In this case, the natural diversity of the place – the flora and fauna both suffer the brunt of human inventions and advancement. 'Kabaad se jugaad' aims to utilise the principle of 3 R's- Reduce, Reuse and Recycle.

The idea of 'Kabaad se jugaad' is a novelty in itself as the waste scrap and E-waste is used for the beautification of the city instead of being dumped in the land or on open grounds. Indian are well known for –jugaad – making makeshift and innovative arrangements out of useless things. This quality is ingrained in us as all of us have attended craft workshops where we are asked to reuse the things that are in good condition.

In order to implement the programme in the city, the Bhopal Municipal Corporation collaborated with the NGO Sanidhya Samiti, Red FM and start-ups Kabadiwala.com and R1 creations. The four organizations worked collectively to make the project a success among Bhopalis. Mayor ALok Sharma personally came down to support the idea and became a 'kabadiwala' for the people for a day, asking them to contribute in the beautification of the city.

The programme began with Red FM popularizing the idea of 'Kabaad Se Jugaad' Kabadaiwala.com – a start-up that collects kabbad at good rates, came out for door-to-door collection of the scrap and E-waste from households. The gained impetus in the city and people supported the idea. Once the scrap was collected, the people were given their due and a gift voucher form Red FM.

Tonnes of scrap metal was collected by the members of the start-up who then approached R1 creations, a group that specialises in making innovative artefacts from scrap metal and plastic waste. The group has also designed its office in the same way and invented ideas to make a huge 'saxophone' and the model of a 'giant working radio' to be installed in the city.

The two artefacts made the project a hit among the people as they realised that they had made some contribution to the city and also made them proud of giving out the waste to kabadiwala.com. The two giant installations became the talk of the town and attracted a number of visitors to click pictures that were posted on social media.

The proposal has been able to tackle the problem of E-waste management in the city and added to the beauty of the city. Along with the start-ups and NGOs, the proposal was also executed in schools and colleges to cultivate the habit of re-using old stuff and making them aware about the big problem of waste disposal that the country is dealing with. Many students also came up with new ideas like making swings out of old tyres, etc., ensuring the participation of education centres.

## **Context of implementation**

The proposal is a plan to find an innovative solution to solid waste management. The idea behind the proposal is to ensure public participation in 'Kabaad se jugaad' to encourage them to sell the E-waste and scrap to Kabaliwala.com instead of normal kabadis.

The kabadis of the city have been found to be unorganised. The idea was to organise the collection of metal scrap and E-waste. Once the collection of waste became easier, the process of designing new things out of scrap was initiated.

Apart from the problem of waste management, the idea is also used to beautify the city and promote public participation in the same. The programme began with door-to-door collection of E-waste and metal waste from public at good prices and was expanded to schools and colleges.

The first installation – a saxophone- was loved by the people and encouraged them to sell E-waste only to an organised collector who could put it to good use. The second installation- a giant working radio- further became a major attraction.

As a result of the 'kabaad se jugaad' programme, and the convenient process of waste collection, the kabadiwala.com is able to collect 300 kg of scrap metal every day to be reused and recycled in to more such attractive models to be installed at major squares of the city.

The programme is now in the second stage where the NGO volunteers with the help of the two start-ups and BMC will conduct two-day workshops of 'kabbad se jugaad' in schools and will install selfi-points in educational institutes. This is being done in order to make the students more aware and encourage them to utilize their creativity in reusing and recycling waste. The second stage will also ensure the cooperation of schools in taking the project further.

After the scone stage has been completes and all schools of Bhopal have a 'kabaad se jugaad' selfie-booth, the programme will move on to its third stage which is to light up and beatify all the 'Garbage Vulnerable Points' or GVPs.

These are the few areas that unintentionally become dumping areas for local and household wastes, because of the carelessness of the citizens and the accessibility of the point. Once someone throws a paper wrapper or kitchen waste, others follow and slowly the area become a big-open dustbin that then houses pigs, flies and mosquitoes along with giving birth to disease causing germs.

The third stage of the 'Kabaad se jugga' will be to turn these GVPs into tourist attractions and making them beautiful for the locals. The idea will require a large team of BMC workers to clean the area before the R1 creations start their work. Here also, the 'jugaadus' of R1 creations will use their innovative ideas to create something spectacular at an old dumping site so that the people may stop littering the area.

The Sanidhya Samiti has already conducted more than 200 campaigns to popularize the idea among masses that have received huge support from the people of all age groups.

## **Details of Solutions**

Idea of 'Kabaad se Jugaad' found a great success in Bhopal, with the help of BMC, start-up, educational institutes and Sanidhya Samiti NGO.

The proposal is an idea to utilize the three R's in a simple, convenient, practical and innovative method that ensures public participation. The project has spread awareness about recycling of E-waste and also found a solution to solid waste management to some extent.

It is well known that people do not throw out E-waste and metal scrap as 'trash' to the door-to-door trash collectors as they know that even scrap metal has some market value. So they often sell the scrap and old, discarded electronic items to 'Kabadiwalas' who sell it further and make money. Though this has been practiced in India since decades, their system is yet not organised.

'Kabaad se jugaad' made the waste-collection system more systematic and organised for the people. Educated people running 'Kabadiwala.com' go for the collection of discarded electronic items and metal scrap, giving the public the right amount for their kabaad- creating a win-win situation.

The team of 'kabadiwala.com' then segregates the metal scrap from plastic waste and pass it to R1 creations who recycle and reuse the metal to make something creative and attractive like the saxophone and radio. Team of R1 creations who call themselves 'jugadu' are also credited with making a working model of a dining-table train out of old brass faucets.

Once the models are installed the public also feels a sense of belongingness towards the city and its beautification and come out to contribute further.

## **Scope of implementation**

'Kabaad se jugaad' is easy to implement and has practical benefits that can be seen and admired then and there. In the light of the current problems of solid waste management that poses a threat to the environment as well as the limited space for dumping, 'Kabaad se jugaad' brings an innovative idea for using recycled metal scrap for the beautification of the city.

This way the municipal corporation does not have to worry about the large scale disposal of E-waste as something interesting and creative is made out of it by the designers.

The idea can also deploy school and college students after they are given the list of market rates for scrap. Involvement of youth is a big advantage of the programme as it gives them a fair idea of reusing, recycling and reducing waste along with the right kind of knowledge about the value of scrap.

Once the scrap is collected metal-smiths can be roped in and asked to design models to beautify the city. The project not only benefits the scrap collectors and modellers, but also instils a sense of belongingness among the public towards their city.

The project can be implemented at a small level and then expanded to a bigger level with support from the municipal corporation of the city.

'Kabaad se jugaad' creates a win-win situation for the collectors, the designers, the public as well as the municipal corporation. While it makes the scrap collection easy and organised for the public, it provides employment to those collecting the E-waste and metal scrap along with the designers. It also solves the problem of solid waste disposal for the municipal corporation.

### **Innovative characteristics of the proposal – 501 words**

The idea of 'Kabaad se jugaad' is innovative in the sense that it poses a simple, practical and hassle free solution to the problem of solid waste management. The problem of solid waste disposal is an alarming one as land pollution caused due to it has hazardous impact on nature.

As a fast growing city, Bhopal, the historic towns of Begums is now taking the leap to be at par with the metros and other smart cities of India. For this, it was the need of the hour to beautify the city further, encourage public participation as well as solve the solid-waste disposal problem. 'Kabaad se jugaad' caters to all three issues.

While land is limited, a lot of it goes into disposing off solid waste by making landfills and dumping the waste in the ground. Lot of time, money, labour and energy goes into digging up a vast portion of land to create a dumping site away from the city for the disposal of tonnes of E-waste and metal scrap.

Tonnes of metal dumped into the landfills, take millions of years to degenerate and go back into the soil as minerals and the pile of waste only keeps on growing higher with each passing year. This is where 'Kabaad se jugaad' comes into play.

While the problem of garbage disposal and utilization of kitchen waste and separation of plastic and glass has been taken care of, 'Kabaad se jugaad' adds a feather to the cap of the second cleanest city of India by putting an novel solution -to solid waste management, in motion in a short span of time.

Innovative technique of recycling metallic waste to build beautiful metal sculptures for the city is like a gift to the city from the citizens. The sculptures like the saxophone and working model of the radio act as tourist attractions for the citizens who love to click selfies near them.

The re-use of scrap metal and E-waste like magnets and other spare parts is a prime example of making the best out of waste. Designers spend enough time racking their brains to create something new and different from the collected metal scrap. The 'jugaadus' from R1 creations have been successful in making Bhopal more attractive by adding their two creations to the city in the backdrop of greenery and nature.

The programme is being expanded to schools and colleges in order to involve the new generation in the project and make them realise their duties towards the city and the environment. After the project gets implemented in schools and colleges and selfie-points made entirely out of waste metal are installed in the campuses of schools and colleges the project will be taken to beautify the Garbage Vulnerable points of the city.

Because of the 'Kabaad se jugaad' initiation in the city, people have realised that they are doing something for the city. As much as 300 kg of E-waste and metal is collected by the members of kabadiwala.com from Bhopal every day.

### **Results / impact of the proposal – 276 words**

'Kabaad se jugaad' - a novelty in itself has created a number of positive changes in the City of Lakes. Apart from making best out of waste, awareness about the three R's was spread among the people at a large scale.

**Awareness-** The campaign created a mass awareness towards solid waste disposal and management among the citizens of Bhopal. They were motivated to sell their E-waste to an organised start-up who could make better use of the metal scrap and electronics instead of tossing them out to the local kabadis. It also encouraged public participation in the beautification of the city.

**Beautification-** The City of Lakes which continues to enjoy a lot of tourist inflow because of the beautiful Upper Lake and many incredible museums of the city and historic places was taken up a notch by adding 'scrap metal sculptures' to the landscape. Creative use of discarded metal was much appreciated by the locals as well as tourists.

**Solution to Solid Waste Management-** This is a novel experiment, and a successful one at that, in the field of solid waste management. While the landfills create more problems for humans due to the lack of space and fertile land, creating new models with old waste electronics has to an extent curbed dumping of E-waste in landfills.

**Environment Protection-** With lesser metal being dumped in landfills, the threat to polluting land and water and large scale deforestation to clear land for dumping sites can be solved in the long-run. While one city can only make a drop of an impact, the implementation of the idea in the whole country can lead to a sea change in environmental conditions.

### **Replicability / Scalability of the proposal**

The idea of 'Kabaad se jugaad' can be implemented in any city, town and district of India. Solid waste is causing a major threat to the environment and the lack of open land is another major issue for the country. This idea had multiple benefits that can solve some of the most crucial issues of India.

In order to tackle the two major issues- environmental degradation and solid waste management- that raise alarm in the country, best out of waste idea can easily be implemented.

The concentration of metals causes a lot of pollution of land and when these minerals reach the ground water in such high doses, the results can be dangerous, many a time, even fatal. This is a grave issue that needs to be solved before it is too late.

The depletion of natural resources and pollution of the land and ground-water because of the large-scale dumping of wastes can create some grave problems, like those of the 'Cancer Belt' of Punjab where uranium contamination in the ground water has increased the risk of cancer in the region. If the problem of solid-waste management is taken lightly, the day is not far when the whole country will have disease belts labelled as - Cancer Belt, Congenital Defect Belt, Specially-Abled Belt, Blindness Belt and etc.

The rising pile of metallic waste is a threat to nature because of the limited land available to our disposal. Many times when no open area is found, such a site is made by razing a part of a green-forest. Once the natural balance of the forest is disrupted, the trees are unable to grow-back, which leads to more global warming.

'Kabaad se jugaad' offers the citizen of the country an alternative to dumping metallic waste in the ground. Instead of digging up large hectares of land to make a dumping site, citizens can take the

initiative and sell their scrap metal and E-waste to start-ups who can put the metal to some good use and it does not need to be dumped in the ground. This will also reduce mining to a reasonable extent.

If the plan is replicated in every city of India, thousands of hectares of land will be saved from becoming dumping sites.

The metal can be used to make swings for a children's park, they can be melted and made into bathroom fixtures or turned into metal sculptures like in Bhopal. Creative designers like the 'jugaadus' of R1 creations can use their creativity to make something good for their city.

They will thus help in solving some major problems like environmental degradation, land pollution, wastage of good and re-usable metal and will also create more facilities for the people of their city.

### **Benefits of 'Kabaad se Jugaad'**

- Saving large plots of land from turning into dumping sites
- Reducing land and water pollution
- Ensuring clean and pure natural resources to future generations
- Preventing the developments of more 'Cancer belts' in India
- Putting re-usable metal to better use instead of discarding
- Saving large scale mining of metals
- Reducing deforestation
- Ensuring public participation
- Spreading awareness about – 3 Rs's- Reduce, Reuse and Recycle