

## Redevelopment of Spaces under Flyovers

**Report of  
KHOJ  
(PS310)  
Autumn  
2019**

### **Group 3**

**Program:** B.Arch, B.Design, B.B.A

**Faculty Mentor:** Pinakin Jaiswal

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**November 19, 2019**  
**Navrachana University,**  
**Vasna-Bhayli Road, Vadodara**

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## Chapter 01: Community Visit

**Community Site:** Atladra Flyover

Details about the community visits					
Sr. No.	Date	Day	Time	Duration	Members
01.	03-08-19	Saturday	11:00-12:30	1hr 25min	Dhiraj, Manali, Mrunal
02.	11-08-19	Sunday	16:00-19:30	2hr 30min	Dhiraj, Manali, Mrunal, Himanshi



Atladra Flyover

Flyovers are infrastructural barrier or a potential opportunity for knitting the city fabric. The uniqueness of the flyover lies in its character of an overhead shelter with its huge longitudinal space beneath which is barrier free.

## Chapter 02: Problem Identified

- **Illegal Activities**

A number of illegal activities are carried out in under flyover spaces as they are often dark and unnoticed spaces by the citizens. Also, Abandoned vehicles are often parked under the spaces.

- **Home for under privileged people**

The poor people manage to live under the roof of flyovers which hinders and cancels on many possibilities that could be carried out under the longitudinal, barrier free spaces.

- **Garbage disposal and dumping below the flyover**

People treat the area under the flyover as dump yards which creates sanitation issues in the nearby localities and unhygienic living conditions.



## Chapter 03: Literature Survey

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<b>1</b>	<b>REVIEW OF SOCIAL INNOVATIONS</b>			
	<b>ID</b>	<b>Name of Student</b>	<b>Program</b>	<b>Title of social innovation presented/ quoted</b>
	17131044	Dhiraj Rao	BBA	1-Plaza and Recreational Spaces Matunga Flyover
	17131036	Mrunal Parekh	BBA	1-Beautification and artwork on pillars of the Ghaziabad flyover
	15191016	Manali Shah	B. ARCH	2-Skate Park under Burnside Park
	16192011	Himanshi Nathwani	B. Design	1- Service and goods stalls below freeway
	17102018	Helly bhatt	BCA	1-Car wash service provided by government to utilize thr space under flyover
	17163019	Sakshi Rathod	B.Sc.	1.Changing a metro pillars into vertical garden.
<b>2</b>	<b>IMPLICATIONS FOR PROPOSED SOCIAL INNOVATION</b>			

## **Social innovation 1- Plaza and Recreational Spaces Matunga Flyover, Mumbai**

**Developed by:** Residents of Matunga in collaboration with Bombay Municipal Corporation

**Place:** Mumbai, India.

**Site Source:** <https://www.thebetterindia.com/58845/matunga-flyover-garden-mumbai/>

### **Description of the social innovation:**

Soon after the flyover was made open to the public about four years ago, it started turning into a hangout zone for hawkers, gamblers, drug addicts, etc. It was then that the residents of Matunga took over the responsibility to prevent this from happening.

Once the area was barricaded, about 40 people crowd-sourced funds and hired 24X7 private security to look after it for two years. They also used to get 10-12 BMC sweepers to clean the stretch and ensure that it does not become a dumping ground.

In 2011, they started approaching various government authorities with the idea of developing a small garden in that space and got the final approval in 2014. After successful petitioning, the BMC began to redevelop the area in June 2015. Today, this is the only encroachment-free flyover in Mumbai.

The garden has been designed to look like the Narmada River. Engineers and architects studied the flow of the river and tried to replicate it on the garden pathway. The 600-metre pathway is blue in colour with a replication of rock formations as found on the banks of River Narmada. A granite block in the garden carries information about the landmarks on the way to the river, such as temples, and the region halfway through the stretch has been designed to look like the Narmada ghat where people can sit. The garden has 300 lights and 11 rotatable CCTV cameras to ensure safety. The garden is open from 8 am to 1 pm and 4 pm to 9.30 pm.



## **Implication for proposed social innovation by your group**

The space can be transformed into a public realm where there are seating spaces and a pedestrian friendly space under the flyover. This also makes the space useable for joggers and people to go for their evening walks. It also makes a space available for people to sit and meet and also becomes a recreation space which are lacking in most of our vicinity.

Dhiraj Rao  
17131044

## **Social innovation 2-Beautification and artwork on pillars of the Ghaziabad flyover**

**Developed by:** Local residents of Ghaziabad

**Place:** Ghaziabad flyover, NCR

**Site Source:** <https://www.hindustantimes.com/noida/residents-transform-flyover-pillars-into-a-work-of-art-to-beautify-city/story-V5a0Lnr8DQrU04vYYCfayK.html>

### **Description of the social innovation:**

A group of Ghaziabad residents under an initiative called 'Youth Network Ghaziabad' have turned the city's public spaces into their canvas. They are painting the pillars of flyovers on Sundays in a move to beautify the city. The pillars, earlier covered with paan stains and movie posters, are now covered in attractive abstract designs in bright colours and slogans aimed at motivating others to keep the city clean. The initiative started by Mayank Choudhary, a businessman who resides in K block of Kavi Nagar. The group has over 100 active members from the city, who are from all walks of life and are in the age group of 15-35. They came up with the idea in January as it was saddening to see the ugly condition of the city and the civic mess. They started by gathering a few friends and conducted a cleanliness drive in our colony and at the new Ghaziabad railway station," Mayank Chaudhary said. They gathered more volunteers solely through social media. The initiative has been given a go-ahead by the city administration and Ashu Verma, the city mayor, also participated in the painting drive. The first phase is to remove the numerous posters stuck on the pillars. Next, we cover the pillars in primer to conceal the paan stains. The third phase is creating an attractive design and painting it in bright colours. The volunteers, however, are dismayed as in various instances, posters have been pasted on the artwork created by them. All of them are working professionals and work all Sunday on the pillars. However, we have often seen that the artwork has been covered with more poster just a day after we paint the pillars. We hope that people can understand the idea behind the initiative and refrain from such activities.



## **Implication for proposed social innovation by your group**

The space under the flyover can be painted with designs. Also putting up motivational slogans or awareness issues on the pillars could be an interesting form of public awareness. This will not only make the space look clean but also beautify the city. This will also help in social activity engagement.

Mrunal Parekh  
17131036

### **Social innovation 3- Skate Park under Burnside Park US, Portland**

**Developed by:** Local Civic Authorities

**Place:** US, Portland

**Site Source**[https://en.wikipedia.org/wiki/Burnside\\_Skatepark](https://en.wikipedia.org/wiki/Burnside_Skatepark)

#### **Description of the social innovation:**

Burnside Skatepark is a skatepark located in Portland, Oregon, United States. Located under the east end of the Burnside Bridge, the skatepark was originally built by the skateboard community without permission and eventually the city approved the area as a public skatepark. Built without permission, by skateboarders and later sanctioned by the city, Burnside is the preeminent example of action. Burnside's unique growth and evolution -through the sweat and blood of a handful of dedicated individuals- have matured into one of the best skateparks in the world. Burnside and its creators are true pioneers, setting the stage for community built skateparks across the country. Burnside is public, free and has no pad requirements. It is also subject to periodic review by the city. Burnside is not permanent. The city can, at any time, with excuse of public nuisance, condemn and destroy it. Park on the street only, not in adjacent private parking lots.

Burnside skate park is a place which initiated by some skateboarders in Portland, United State. The need for a skate park at that time made them change an area under the Burnside bridge into a skate park which can be used every day. Initially, this area was a deserted place. No one dared to go into this area at night. However, some youths tried to change the place even without the permission of the government.

Apparently, this skate park from day to day continues to grow so a community formed. Finally, the government knew about the existence of this skate park and support the changes. Now, Burnside has become a famous public space. Not just for skateboarding, some events have also been carried out on the spot.



### **Implication for proposed social innovation by your group**

Such spaces if inculcated in our design there could be a great facility for sports and exercise. Just like this this case as there is a skating ring there could be any such sport which is commonly preferred by the community around the site.

Manali Shah (15191017)

#### **Social innovation 4- Service and goods stalls under flyover**

**Developed by:** Kuala Lumpur Gov.

**Place:** kuala lumpur, malaysia

#### **Site Source:**

[https://www.researchgate.net/publication/257718524\\_Opportunity\\_in\\_Leftover\\_Spaces\\_Activities\\_Under\\_the\\_Flyovers\\_of\\_Kuala\\_Lumpur](https://www.researchgate.net/publication/257718524_Opportunity_in_Leftover_Spaces_Activities_Under_the_Flyovers_of_Kuala_Lumpur)

#### **Description of the social innovation:**

Food stalls are seen in both case studies though varies in numbers, operation time and location. Under the MRR2 Jalan Kanan 1, the location of food stalls are scattered but still maintain a direct relationship to the roadside and operates only during day time selling banana fritters and local kuihs in the morning.

drinks and cendol during lunch; and lemang made on site from noon to the evening. Under the Penchala Link at Jalan Sungai Penchala, the food stalls are arranged in a linear pattern along the roadside some operates in the morning, some in the evening and continues until late night. The stalls offer variety of

food from finger foods, breakfast and lunch meals, cigarettes and candy as well as burgers and hotdogs.





### **Implication for proposed social innovation by your group**

Recreation of space that could be used to make place a market or selling good vendors can be an idea to utilize the place. Different Vendors will make that possible by making their stalls at the pace and create hygienic environment all around.

Himanshi nathwani

16192011

### **Social innovation 5- Car wash service**

**Developed by:** Kuala lumpur Gov.

**Place:** kuala lumpur, malaysia

#### **Site Source:**

[https://www.researchgate.net/publication/257718524\\_Opportunity\\_in\\_Leftover\\_Spaces\\_Activities\\_Under\\_the\\_Flyovers\\_of\\_Kuala\\_Lumpur](https://www.researchgate.net/publication/257718524_Opportunity_in_Leftover_Spaces_Activities_Under_the_Flyovers_of_Kuala_Lumpur)

#### **Description of the social innovation:**

Bussiness and service

Both case studies provide sites for business and services to operate where similarities found in both

case studies are the service of car wash but the operational times differs. Under the MRR2 flyover, the car wash service operates only after 6 o'clock in the evening to night time; where else under the Penchala

Link, the service operates during day time and is supported by a workshop next door the only service

available. Contrarily, under the flyover of MRR2, other types of business such as toy stall, used clothes

(bundle) and movers (lorry service) are found.



### **Implication for proposed social innovation by your group**

As it provides service of car washing, it might be good source of income as well as great utilization of an empty space. Approved facility of car washing space can make a positive change to develop commercial spaces in an useful utilizable space.

Helly bhatt

17102018

### **Overall Implications for the proposed social Innovation**

The implications have been derived based on the site visited in Vadodara of the Flyover of Atladara area. The following points has been noted as the issues:

- Undeveloped
- Commercial as well as residential (small communities live around the flyover)
- Parking issues for the commercial
- Under privileged people occupy the space below the flyover
- Unhygienic living conditions
- Temple not maintained
- Garbage disposal and dumping below the flyover
- No sanitation facilities
- Hawkers and fruit-sellers occupy certain spaces

The above-mentioned inferences have been derived by interviewing people who play a role in or around the flyovers. Therefore, the ideas to be adopted are differentiated by forming parameters based on the type of stakeholders involved.

- Villagers around the flyovers
  - Gardens for kids
  - Recreational Spaces for elders
  - Plazas with food stalls
  - Garbage disposal facilities
  - Walking and cycling tracks
- Commercial complexes around the flyover
  - Parking facilities
  - Plazas with food stalls
- Residential complexes around the flyover
  - Gardens for kids
  - Recreational spaces for elders
  - Gym areas
  - Sports facilities
  - Walking and cycling tracks
  - Market places

- The underprivileged
  - Schools for underprivileged kids
  - Housing schemes
  - Public Toilets
  - Waste disposal
  
- Vendors and markets
  - Parking
  - Public Toilets
  - Market places
  - Garbage disposal

### **Social innovation 6 - Vertical garden at the golden temple in Amritsar**

Developed by : Rohit mehra and its group

Place : Amritsar , punjab

Site source:

<https://www.google.com/url?sa=t&source=web&rct=j&url=https://m.tribuneindia.com/article/-rooftop-garden-to-enhance-greenery-at-golden-temple/792019/amp&ved=2ahUKEwjepf2u6ebkAhUES48KHX0zCtIQFjAPegQIBRAC&usg=AOvVaw2NzpnXpYfK-hpzxKpzWcQO&ampcf=1>

Description of the social innovation :

Greater Chennai Corporation turns flyover pillars into vertical garden

CHENNAI: With an aim to stop defacing of bridge pillars and increase green space, Greater Chennai Corporation has begun installing vertical gardens along pillars of the GN Chetty flyover in T Nagar.

In a pilot project, eight of the 20 pillars will be covered with vertical gardens of green and red-leaved plants. Work has been carried out and according to tender clauses, the contractor has to maintain the gardens for three months. The effort has been modelled on similar projects on Bengaluru and Nagpur where some metro rail pillars don vertical gardens

A metal frame has been fixed along the pillars of GN Chetty Road flyover which will hold the vertical garden frame. The corporation has begun installing pots of plants in it. All eight pillars will be covered with the vertical garden ..

The metal frame will ensure that the main structure of the flyover is not damaged by the growth of the plants. Besides, the frames and gardens can be dismantled .pump room, water and power equipment to water the plants.

Asked if the project will be extended to other bridges and flyovers in the city, an official said the corporation would study the feasibility of the installations

This work is been carried out to improve the infrastructure and to increase a green space and by these there will control in air pollution.



### **Implication for proposed social innovation by your group**

This will create an increase in green space . We can grow this through hydroponics method .Air quality will be improved and pollution will be controlled .it will like beauty of nature.

Sakshi rathore

17163029

## Chapter 04: Social Innovation

The area had the potential to develop in a public space that could cater to the needs of the people nearby. It could act as a commercial hub, a recreational space, a parking facility, a market place, etc for the nearby vicinity that has developed all around it. The space can be developed to attend the public demands.

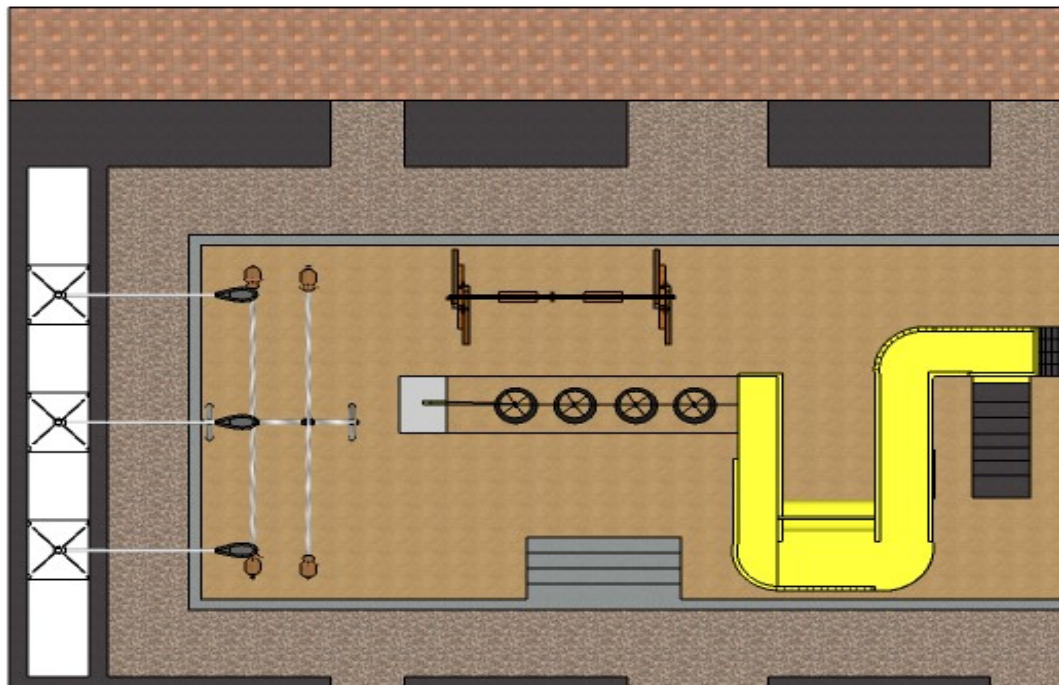
A play area with a sand pit for the underprivileged kids under the flyover space to eliminate the filthy, unhygienic conditions prevailing beneath it.

The addition of the sandpit in one of the segments of the under flyover bridge will bring liveliness to the dark, unutilized space along with a provision for a safe public play area connecting the neighborhood kids whilst creating pleasant experiences for the pedestrians.

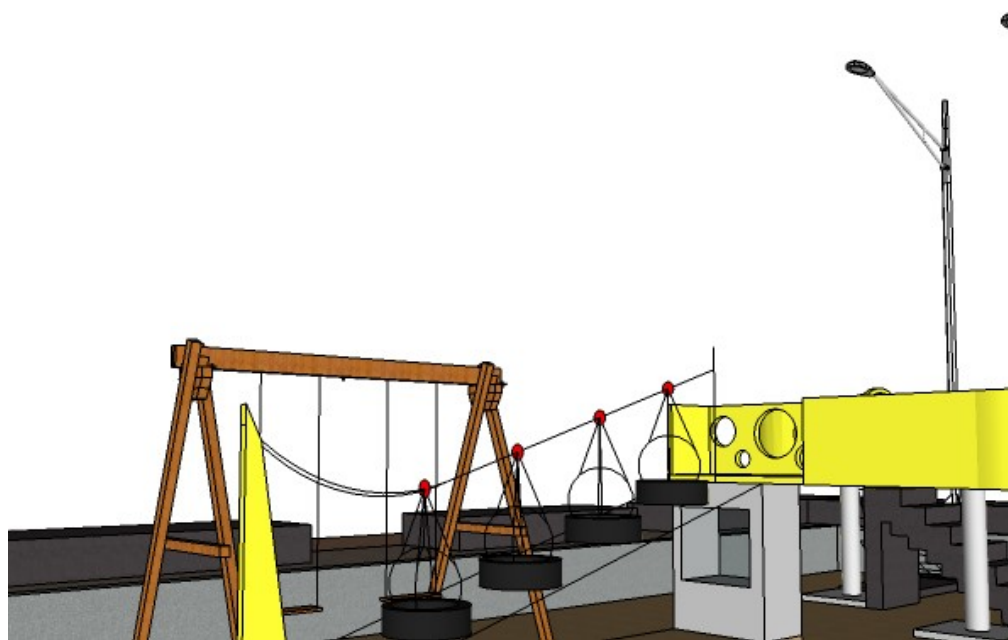
The concrete sand pit will have sitting spaces on the Periphery for the guardian/parent to participate along with their kids and to soak their feet in the sand.

It will also have swings, see saws and benches for the pedestrians to sit and relax while watching the kids having a blissful time.

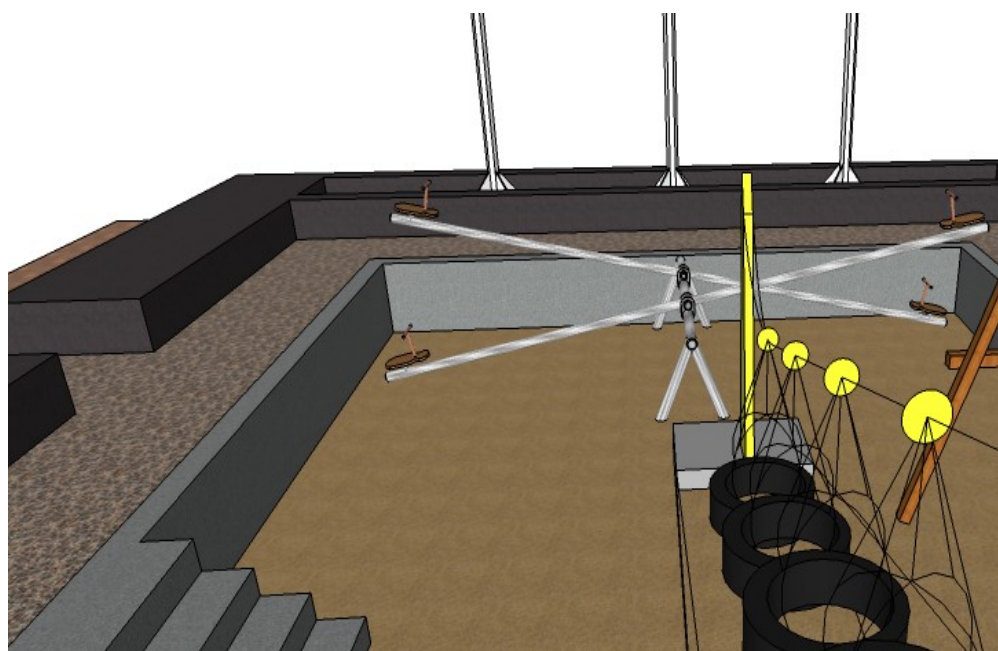
The power generating see saw will help produce and store the electrical energy which will help light up the play area at night when kids can continue having a merry time despite it being dark around.



Plan Of the proposed play area (12.4 m x 19 m)



View 1



View 2

## Interdisciplinary Feedback

Sr. No.	Suggestions asked on the following points / aspects	Accepted / Not accepted Reason for accepting or not accepting
1)	Using merry go rounds , cycle pumps to produce energy instead of using solar panels which are high maintenance	Accepted- Low maintenance and can easily produce energy during kids active participation.
2)	Tie-ups with NGO's which can organize fun activities.	Accepted-.Activities are always fun And To attract kids can also help kids from different neighborhoods to bond with each other.
3)	Planting a row of bushes to use it as a natural boundary to stop kids running around on the road	Accepted. Helps spread the message of planting more trees and also will help replace the amount of trees cut during the construction of the flyover.

- **What have you learned from community visit?**
  - It has helped me understand on how to better communicate with people from different walks of life
  - It has taught me great communication skills and time management
  - Also KHOJ has really helped me understand on how to reach the middle ground to various problems; one which is wholly accepted by all.
- **What have you learned in the process of developing social innovation?**
  - Finding the middle ground
  - Parallel thinking
- **Name some skills that you got to know about and learned as you worked on KHOJ.**
  - Interaction & Communication Skill,
  - Project management skill,
  - Costing
- **Name some challenges that you faced and how you overcame the challenges.**
  - Unmet need of Time was challenge faced but we overcame by efficient Team Work and with the help of the interdisciplinary knowledge of the team mates.
- **How will such social engagement help you and the society?**
  - Social engagements like this will help us think innovatively and creatively, taking into consideration the problem and viewing with a multi-faceted point of view, having interacted with different disciplines .

-Manali Shah (15191017)

### **What have you learned from community visit ?**

- We visited Atladra underbridge, the space is currently utilised as a dump yard. We asked the nearby residents and the commercial complex owners, also the stall owners about their views upon making it a useful place. While doing the survey we found that all the groups have a different need and by combining all their needs we made a layout which will cater all the groups.

### **What have you learned in the process of developing social innovation?**

- While identifying and discussing the issue I felt there are some common problems of people which can be solved with a small initiative. One of the problems which everyone faced was – cleanliness, so we decided the resources by which cleanliness will automatically be accompanied. The space can be used as parking, small vendors can own a permanent space, jogging track, play area for kids residing nearby and public toilets so that cleanliness is maintained.

### **Name some skills that you got to know about and learned as you worked on Khoj.**

- Some of the skills that I have learned from this project are that teamwork and communication are important in order to interact and come up with a proper solution. Also to interact and engage in a constructive discussion can lead to better solutions.

### **Name some challenges that you faced and how you overcame the challenges?**

- As such no major challenges were faced during the project the only one which I felt was that everyone could not gather at one place at a time. Though everyone was cooperative thus we were able to complete all of our tasks with the time period given to us.

### **How will such social engagement help you and the society?**

- We got an opportunity to work with communities and individuals to understand their perspective. I have learnt that not everyone has the same perspective. We can solve an issue by many ways, it just needs right hands and mind. The initiative by the general public would lead to the development of the society. This project taught me that collaborating different ideas can make a huge difference in society. The root problem will cure all the other ones.

-Dhiraj Rao(17131044)

### **What you have learnt from community visit?**

- there are lot of people in India who needs an accommodation to live in. and as we went there for getting measurement and how our social innovation will take place in unoccupied place like under bridge, I learnt how to manage all the work in community and how to handle such situation, where we had to communicate with the society and we came to know how people will react on our innovation perspective.

### **What have you learnt in the process of developing social innovation?**

- Developing a social innovation is quiet challenging yet very interesting. It gave me another vision to work for your surroundings and society. And as a social innovation is something that related to work with society and for society we needed a lot of patience during process but at the end it was worth.

### **Name some challenges you faced during khoj and how you overcome the challenges?**

- Biggest challenge for me was communicating with team and the time management. As it was little bit difficult to cope up with all new and unknown faces and when there were community visit time, we couldn't manage to go together as all were from different educational background and a timing of university was different for all khoj team members.

### **How will social engagement help you and the society?**

- It will help me to expand my horizon socially and it gave me vision to work more for society. Being socially engaged will give me the strength and capacity to learn not only technically but also practically. Being a BCA student, the connection with society is almost lost, as I have to work on computer and less with people around, so it was quite different experience overall which gave me different perspective.

-Helly Bhatt (17102018)

### **What have you learnt from community visit?**

- We observed and learnt that there are many places which are still not utilized completely.
- These places can be utilized for a better use.
- Discovered loopholes which were still not discovered.
- **What have you learnt in the in the process of developing social innovaton?**
- We have learnt how actually the things are done.

- Met different people for different things.
- Met with different problems and learnt how to solve it.

**Name some skills that you got to know about and learnt as you worked on KHOJ?**

- It improved my communication.
- It helped me to think 'outside-the-box'.
- It helped me to think other way round.
- Improved my observation skills.

**Name some challenges that you faced and how you overcome the challenges?**

- Finding the concern person to meet and discuss about the plan.
- Time management.
- Convincing people for the plan.
- Explaining people about the plan.

**How will such social engagement help you and the society?**

- Social engagement helped me to come up with different perspectives to a problem.
- It will help society to have different opportunities.
- It will give offer society something new which was still not introduced.
- It will provide the quality of life to unprivileged people.

-Mrunal Parekh (17131036)

**What have you learnt from community visit?**

- We visited the space under Atladra flyover. Underprivileged people were staying in some of the empty space under there illegally. Our main idea was to clean up that space and use that empty space in some better way also for those underprivileged kids playing there.

### **What have you learnt in the process of developing social innovation?**

- We had an idea to create some sandpit for kids playing there. And also some waiting area for bus which will be surrounding the sandpit.

### **Name some skills that you learned as you worked on Khoj.**

- We had used concrete seatings around the sandpit area which can be maintained in low cost and also learnt about the properties of concrete.

### **Name some challenges you faced during khoj and how you overcome the challenges?**

- As our selected site is under the flyover, the main issue there is of light. So we had an idea to generate electrical power through seesaw and swings installed that in sandpit. Through which the power generated can be used for the light poles under there.

### **How will social engagement help you and the society?**

- Social engagement will help spreading the word for the idea proposed and also help those underprivileged people

-Himanshi Nathwani (16192011)

### **What you have learnt from community visit?**

By community visit I came to know that there are many places which should be utilised in proper use. Community visit was the most important step in developing a social innovation. It help me to develop my observation things and have multiple outlook towards anything for the betterment of the space under flyover.

### **What have you learnt in the process of developing social innovation?**

I have learned that social innovation are not just simple innovation but basically, there are some new ideas, some education some strategies that are beneficial for the development and betterment of the space under flyover.

### **Name some challenges you faced during khoj and how you overcome the challenges?**

Some challenges that I faced was how can we utilised these place for an public sector . In some areas under flyover , garbage was been gathered. In some space the slums people were living , preparing there food , which was illegal.By interacting with the vmss, putting our point of view

for social innovation under flyover.

### **How will social engagement help you and the society?**

From our social engagement , the good environment and place will be provided to the public sector. Social engagement will bring to work creatively for betterment of society , will help us to think innovatively.

-Sakshi rathore(17163029)

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# DRESS FOR A CAUSE

## KHOJ Report

2019

### Group 1

**Program:** B.Arch., BCA, B.Sc., BBA, Mass Com.

**Faculty Mentor:** Itee Pattani

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### Chapter 01: Community Visit

Community site visited: Slum area, Near Nilamber Circle.

Date and Day: Tuesday, 13<sup>th</sup> August 2019

Duration of visit: 2 hours

Number of times site is visited: Twice

Roles and responsibility of each member:

- Aayush Amin & Devendra Sonavane- Interviewed the people
- Divya Tewani & Abhishek Mistry- Photography & Observation
- Devansh Gajjar & Abhimanyusinh Gohil- Noted the points from the interview



Conduct of community visit:

1. Questionnaire-

- Name and Age of the interviewee
- No. of members in the family
- Source of income
- Problems faced due to climatic conditions (Rainfall, winters)
  - I. Do they have warm clothes to protect themselves from winter?
  - II. Do they have enough pair of clothes to ensure hygiene?
  - III. Do they spend any amount of their income on buying clothes?
- Are they able to meet the food requirements of their family?
- Do they have access to healthy drinking water?

2. No. of people interviewed- 10

3. Duration of the interview- 10 to 15 minutes per interview

4. Particular stakeholders observed- Our main focus was on women, kids and elderly.

## Chapter 02: Problem Identified

Problems identified:

I. Unhygienic Clothing-

- Through the questions asked during the interview, we found out that the families living in that area hardly have clothes to cover themselves up; which is why they fail to maintain the hygiene.

- The income earned barely provides for food; thus, they do not prefer to spend even a single rupee on clothes. Which forces them to wear torn, unwashed clothes.
- II. Lack of warm clothes-
1. Adults and children in slums do not have adequate clothing for harsh climate extremes, frequently exposing them to many illnesses and diseases. Winters are the toughest for these people; since they do not have any warm clothes or blankets to protect themselves from the cold weather. Lack of warm clothes especially causes illness amongst the kids and elderly living in these slums.
- III. Inability to meet the daily food requirements-
- Some of the families do not earn enough to provide for 2 meals a day. The residents in these slums generally eat for bare survival, with little/no concern for quality.
  - The heavy rainfall this year caused them to lose the little food stock that they had with them.

Problem selected:

➤ Inadequate clothing-

Reason:

Amongst the other problems identified; the problem of inadequate clothing appealed to us the most. Knowing that the residents of the slums do not prefer to spend on clothing; made us select this problem above all because though they feel that the minimum clothes they have to cover themselves up are sufficient, we believe that lack of proper clothing can have adverse effects on their health.

Instead of throwing away our old clothing, passing them on to the poor is a beneficial way to help them. Giving them to these people assures that our unwanted clothing will be put to use to serve others. Donating costs us almost no effort and is far more constructive than throwing away our clothes or letting them sit in our closet.

### Chapter 03: Literature Survey

<b>1</b>	<b>REVIEW OF SOCIAL INNOVATIONS</b>
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	<b>ID</b>	<b>Name of Student</b>	<b>Program</b>	<b>Title of social innovation presented/ quoted</b>
	<b>17131001</b>	<b>Aayush Amin</b>	<b>BBA</b>	<b>Importance of clothing resale to sustainable fashion.</b>
	<b>17131002</b>	<b>Divya Tewani</b>	<b>BBA</b>	<b>The Better India- Initiative by Goonj</b>
	<b>15191001</b>	<b>Abhishek Mistry</b>	<b>BArch.</b>	<b>The recycling journey</b>
	<b>17165007</b>	<b>Dev Shah</b>	<b>Mass Com.</b>	<b>Blame fast fashion</b>
	<b>17163002</b>	<b>Abhimanyusinh Gohil</b>	<b>B.Sc.</b>	<b>Warm clothing to children in slums</b>
	<b>17163001</b>	<b>Devendra Sonavane</b>	<b>B.Sc.</b>	<b>Clothes distribution to constructions worker</b>
	<b>17102001</b>	<b>Devansh Gajjar</b>	<b>BCA</b>	<b>Fashion studio that believes in “no new clothes”</b>
<b>2</b>	<b>IMPLICATIONS FOR PROPOSED SOCIAL INNOVATION</b> <b>Selling redesigned used clothes and using the profit earned to buy and distribute clothes to the needy.</b>			

## Case Studies

**1)**

B.Sc.

ABHIMANYUSINH GOHIL

17163002

a. The 2016th of January, some of the students of the Department of Pharmacy, under the banner of BUPS (BRAC University Pharma Society) took an initiative to reduce the sufferings of few of these people. A campaign was run in Buildings on January, 2016 for this purpose. The students also persuaded the students, staff and faculty of the department to donate their unused winter clothes and any amount of money they could generously give for this noble cause.

After the collection period, the donated clothes were initially selected for distribution in the unprivileged areas, such as Kamalapur slum and Korail slum.

After collection , eight students of Department of Pharmacy went to those areas for distributing the clothes. Permission for distributing the clothes was taken initially from the local police. The local police also helped the students distribute the clothes and prevented the crowd from creating a chaos.

Apart from these, the collected money will be used soon to buy blankets for them. It was really a blissful moment for the students to bring a smile on their faces. This attempt might not alleviate all their problems, but may decrease their sufferings to a little extent.

<https://www.bracu.ac.bd/news/winter-clothes-distribution-poor>

b. Due to lack of warm clothing children are suffering from common cold and other effects of cold. Major group of children are below 16 years. Serve organization has planned to provide them warm clothing and blankets along with medicine in the shape of winter kit. This kit will help them to survive in this cold winter. This initiative will save the life of 230 children living in slums of Faisalabad, Pakistan.

<https://www.globalgiving.org/projects/warm-clothing-to-children-in-slums/>

2)

B.Sc.

DEVENDRA SONAVANE

17163001

a.

<http://emaar-india.com/press-releases/Emaar-India-conducts-Clothes-Distribution-Drive-to-ensure-warmth-for-its-construction-workers>

Emaar India, country's leading real estate developer, today conducted a winter social initiative at its **Palm Terraces site in Gurugram**, to bring warmth and happiness in the lives of its construction workers and their children. The company distributed clothes to the site labourers, in collaboration with Clothes Box Foundation and Pick My Laundry. The initiative is part of Emaar India's CSR wing **EMCARE** that believes in 'Welfare for All', similar to Clothes Box Foundation's philosophy 'Clothing for All'.

While the Clothes Box Foundation supported the collection of used clothes, Pick My Laundry provided subsidized dry cleaning for these clothes. Emaar India subsequently distributed the dry-cleaned clothes to its **1600 construction labourers** employed across various projects of

the developer, including **The Palm Drive, Palm Terraces, Palm Terraces Select, etc**, located on the Golf Course Extension Road in Gurugram.

**b.**

<http://www.bankuraattoran.org/ClothDistribution.aspx>

*Speaking on the occasion, Mr. Arman Chaudhary, Chief of Human Resources, Emaar India said, “The construction workforce comprises the bedrock that supports the growth of a real estate entity. At Emaar India, we believe in giving back to the people who are our most valued partners in growth. It further reaffirms our philosophy of thinking beyond bottom-line parameters while contributing to society. This is a small step towards helping our site labourers combat the weather elements, particularly during the harsh winter months. We also express our sincere gratitude to the Clothes Box Foundation and Pick My Laundry for joining hands with us in this noble cause.”*

**3)**

**BBA**

**DIVYA TEWANI**

**17131002**

a. TBI Blogs: Here’s How You Can Help India’s Poor Survive the Bitter Cold in the Heart of Winter: Link- <https://www.thebetterindia.com/79787/winter-discarded-clothes-help-save-someone-life/>

By- Goonj December 28, 2016, 5:29 pm

For over 18 years, Goonj has highlighted winters as an annual preventable disaster and constantly worked on it under the ‘Rahat Winters’ campaign, now called ‘Odha Do Zindagi’. This is why it is asking people living in the warm comforts of city homes to donate their woolens and blankets. The campaign collects urban under-utilized woolens, clothes, and other basics from the cities, and after a rigorous process of value addition, reaches rural India as ‘winter kits’. Each winter kit – comprising of clothes, woolens, sujnis/blankets, etc. is meant for one family’s needs. The interesting bit is that people in villages don’t receive these

kits as charity. Instead, they take up work on wide-ranging community development issues and then get these kits as a reward for their efforts. In the process, the community also becomes cloth-rich.

b. The story behind SADS:

Link- <https://sadsindia.org/how-we-work/>

“When I was a kid, my mom used to donate clothes on my birthday. I used to wonder why we do this just once a year. I figured out that there is a gap between donors and NGOs as donors were not aware of the requirements of NGOs, had trust issues or were too busy to drive to the NGO. To fill this gap, SADS was born” – Anushka, Founder SADS India

Share At Door Step makes it super easy for you to make non-cash donations. Don't we all have a lot of clothes, books, and other household goods just lying at some corner and getting dusted. It's time to give them a new life by donating them to those who in need and bring smiles on their faces!! Just schedule a pickup and get the donations picked up from your doorstep.

**4)**

**BBA**

**AYUSH AMIN**

**17131001**

<https://qz.com/quartz/1670729/the-importance-of-clothing-resale-to-sustainable-fashion-in-2019/>

**Solution to problem of clothing using recycle and remake them**

- 1) The fashion industry produces huge amounts of cloth waste and it isn't slowing down so need for recycling clothes and selling at nominal prices to poor people.**
- 2) To take cloth waste from company and give to designers as they make innovative designs from clothing waste which can be sold to poor people for nominal price.**

**5)**

**ABHISHEK MISTRY**

**6)**

**DEVANSH**

7)

**DEV**

a. <https://youtu.be/rEkSkvt9BLs>

Innovations from across India and Europe, and the people who make them possible. Our top story this week is how a sustainable brand, Doodlage, provides the perfect antidote to fast fashion by making chic garments with scraps of waste cloth.

b. <https://youtu.be/bOOI5LbQ9B8>

When people in the West throw their clothes away, their cast-offs often go on a journey east, across the oceans, to India's industrial interior. From the Kutch District of western India to the northern city of Panipat, garment recyclers turn into yarn the huge bales of clothes that come from people and places distinctly strange. With little exposure to Western culture other than the Discovery Channel, the garment recyclers rely on their imagination and the rumours that travel with the cast-offs to create an an intriguing perspective on the West.

**Chapter 04: Peer Feedback**

<b>Sr. No.</b>	<b>Suggestions given on the following points / aspects</b>	<b>Reasons for giving the suggestion (How will the project benefit?)</b>
1)	Name of the student: Gohil Abhimanyusinh (B.Sc.)17163002 Suggestion – They can go for a permission of government with an idea that whosoever wants to promote their company can initiate to build the cabins.	By this , the company itself will bare the cost of production of the cabins.
2)	Name of the student: - Devendra Sonavane (B.Sc.)17163001 Suggestion- To give the information about traffic police problems through digital medium like emails, government websites.	To give this suggestion because it's very easy and fastest route to provide the information to the government.

3)	Name of the student: - Devansh Gajjar (BCA)17102001 Suggestion- Contact studios (architecture studios) to build the cabins for traffic police.	By contacting the studios it will be easier to build cabins because they know how to build light construction.
4)	Name of the student:- Divya Tewani (BBA)17131002 Suggestion- They can create awareness and gather donations from public to help build cabins. They can also collaborate with security cabins manufacturers for the causes.	I will suggest written idea because it will help reduce cost and increase efficiency.
5)	Name of the student:- Aayush Amin (BBA)17131001 Suggestion- In their innovation they can make changes in their material used they make cabin of temporary structure from mud but this will not be safe so they should use aluminium to make security cabin so traffic police life can be saved in case of accident as these cabin will be at roads .	So I suggest they should change this minor thing.

## **Chapter 05: Social Innovation**

### **Title: Providing clothes to the needy**

**Place:** Slums near Vadodara, Gujarat

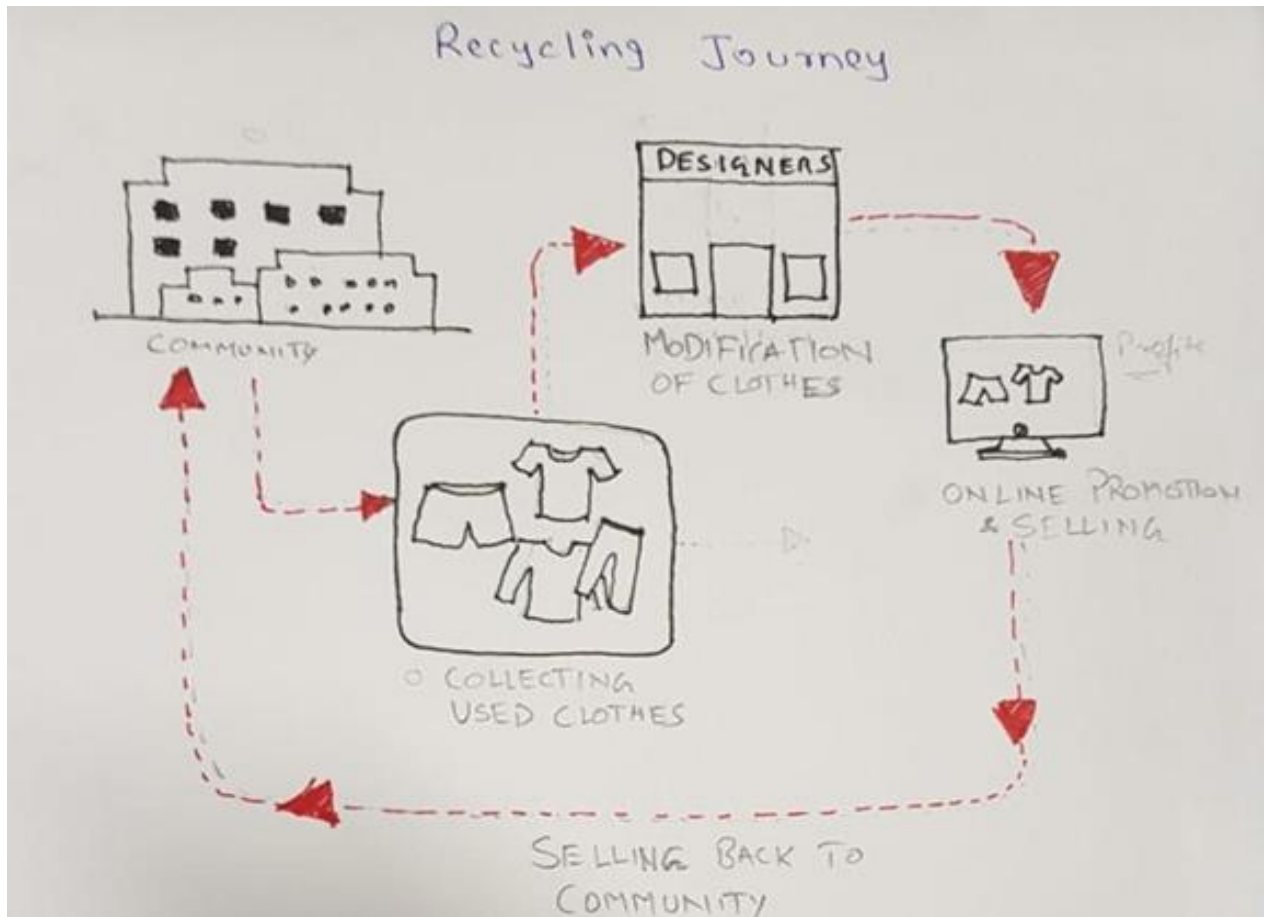
**Description of the social innovation:**

Amongst the other problems identified; the problem of inadequate clothing appealed to us the most. Knowing that the residents of the slums do not prefer to spend on clothing; made us select this problem above all because though they feel that the minimum clothes they have to cover themselves up are sufficient, we believe that lack of proper clothing can have adverse effects on their health.

Instead of throwing away our old clothing, passing them on to the poor is a beneficial way to help them. Giving them to these people assures that our unwanted clothing will

be put to use to serve others. Donating costs us almost no effort and is far more constructive than throwing away our clothes or letting them sit in our closet.

### Overall Implications for the proposed social Innovation:



Our group will be collecting the used clothes from the donators through our Instagram business page and these used clothes will be further given to a designer for redesigning.

We will sell these redesigned clothes on the Instagram page and the earnings earned from selling the clothes will be used to buy and distribute the clothes to the needy.

We will first be focusing on the slum areas near Bhayli, Vadodara and shift our focus once the people living in the slums in Bhayli have adequate clothing.

## Chapter 07: Learning from KHOJ

a. Abhimanyusinh jagdishsinh Gohil  
17163002 (BSc)

**1.What have you learned from community visit?**

- Through the community visit I learned how to interact with people and to know their point of view regarding the problem they are facing in their locality.
- It helped me in increasing my observation skills and multiple outlooks towards a problem and also how to work in a team.

**2.What have you learned in the process of developing a social innovation?**

- I learned how we can reuse and redesign used cloths for welfare of the community.

**3.Name some skills that you got to know about and learned as you worked on KHOJ.**

- Communicative skills, team work, time management and implication of theoretical knowledge practically.

**4.Name some challenges that you faced and how you overcame the challenge.**

- Time management with the team members was a challenge but we overcome it with team work and cooperation.
- The other challenge we faced was to make our social innovation cost-effective.
- Another main challenge was the time constraint due to which we not able to go further in depth.

**5.How will such social engagement help you and the society?**

- It helped me to implement my skills, knowledge and abilities.

**b. Ayush Amin**

**1. What have you learned from community visit?**

- In this community visit I saw closely how poor people live in limited means to be kind enough to help poor in solving their problem. It also made me understand how their problem gave us idea of social innovation. This visit made us considerate and to think of poor people's happiness.

**2. What have you learned in the process of developing a social innovation?**

- In this process of developing so-called innovation was thinking out of the box. We had many idea which we thought before finalising this idea. We also understood how to keep social welfare and maximise profits together.

**3. Name some skills that you got to know about and learned as you worked on KHOJ.**

➤ **Some skills I learned are**

1. Coordinating of work as a team to achieve expected goal.
2. Communicating properly with poor people to understand and help them without innovation.
3. Delegation of work according to our strength
4. Motivations to other members is to work every class with a positive attitude, or maybe you encourage your other teammates with positive feedback.
5. Identifying the Strengths and Weaknesses of Team Members.

4. **Name some challenges that you faced and how you overcame the challenge.**

- Challenges that I faced was finishing task on given deadlines. Sometimes s and discussion of group progress was a challenge due to schedule of group members in college.

5. **How will such social engagement help you and the society?**

- This project has increased my social engagement with poor as well as other team members I had a extensive talk with many people for this project . It made my communication skill better.

**c. Divya Tewani (17131002-BBA)**

1. **What have you learned from community visit?**

The community visit inspired me to come up with the idea of Dress for a cause. I genuinely wanted to help the people out and come up with something that could help them in the long term.

2. **What have you learned in the process of developing a social innovation?**

While developing the innovation, following are the things I got to learn:

- Team work
- Business skills
- Time Management

3. **Name some skills that you got to know about and learned as you worked on KHOJ.**

While working on Khoj, I had the opportunity to learn how to convert and idea into practical working model. This helped me learn business skills and also team work.

4. **Name some challenges that you faced and how you overcame the challenge.**

The major challenge faced was of time management, since all the members were from different streams it was very difficult to manage the work and complete the task together in time.

5. **How will such social engagement help you and the society?**

Being an introvert, this engagement with students from different streams helped me enhance my skills and knowledge. Also, interacting with people living in the slums helped me gain a new perspective about the society.

**d. Abhishek Mistry**

1. **What have you learned from community visit?**

In this community visit I saw closely how poor people live in limited means to be kind enough to help poor in solving their problem. It also made me understand how their problem gave us idea of social innovation. This visit made us considerate and to think of poor people's happiness.

2. **What have you learned in the process of developing a social innovation?**

I learned how we can reuse and redesign used cloths for welfare of the community.

3. **Name some skills that you got to know about and learned as you worked on KHOJ.**

- a. Coordinating of work as a team to achieve expected goal.
- b. Communicating properly with poor people to understand and help them without innovation.
- c. Delegation of work according to our strength

4. **Name some challenges that you faced and how you overcame the challenge.**

The major challenge faced was of time management, since all the members were from different streams it was very difficult to manage the work and complete the task together in time.

5. **How will such social engagement help you and the society?**

This project has increased my social engagement with poor as well as other team members I had an extensive talk with many people for this project. It made my communication skill better.

**e. Dev shah**

1. **What have you learned from community visit?**

I learned how much they needed changes and not just from the sector we were working from but in a whole. It was insight full as we were able to clarify what we were to work on

2. **What have you learned in the process of developing a social innovation?**

- First, it is not easy and requires time to get an idea and harder it is to furbish the idea and make it work.
  - How we need to coordinate being from versatile courses, it also helped with different problems as everyone one was from different fields
3. **Name some skills that you got to know about and learned as you worked on KHOJ.**  
Coordination, leadership, communication and integrity.
  4. **Name some challenges that you faced and how you overcame the challenge.**  
I did not have any business knowledge but my fellow group mate helped me understand how to make and idea into and business model
  5. **How will such social engagement help you and the society?**  
Social engagement clarifies the ideas between two different parties and communities.

#### **f. Devansh Gajjar**

1. **What have you learned from community visit?**
  - I learned how much they needed changes and not just from the sector we were working from but in a whole. It was insight full as we were able to clarify what we were to work on
2. **What have you learned in the process of developing a social innovation?**
  - First, it is not easy and requires time to get an idea and harder it is to furbish the idea and make it work.
  - How we need to coordinate being from versatile courses, it also helped with different problems as everyone one was from different fields
3. **Name some skills that you got to know about and learned as you worked on KHOJ.**
  - Coordination, leadership, communication and integrity.
4. **Name some challenges that you faced and how you overcame the challenge.**
  - I did not have any business knowledge but my fellow group mate helped me understand how to make and idea into and business model
5. **How will such social engagement help you and the society?**
  - Social engagement clarifies the ideas between two different parties and communities.

#### **g. Devendra Sonavane B.Sc. (17163001)**

1. **What have you learned from community visit?**
  - Community visit was the most important step in developing a social innovation. It helped me to develop my observational things and have multiple outlooks towards anything.

- 2. What have you learned in the process of developing a social innovation?**
  - I have learned that Social innovations are not just simple innovations but basically, they are some new ideas some education, some strategies that are beneficial for the development and betterment of a community.
- 3. Name some skills that you got to know about and learned as you worked on KHOJ.**
  - I learned during my work on KHOJ is team work, time management and moreover how to identify the problem which we cannot see but is a problem to the people living out there just by talking to them.
- 4. Name some challenges that you faced and how you overcame the challenge.**
  - Challenges we faced is time, finding the right solutions of our problems,
- 5. How will such social engagement help you and the society?**
  - It will improve the my knowledge & best thing is how to solve any problem in life in any situation.



# **lakhsya**

## **Providing Resources to NGOs**

Report Of

KHOJ-

2019 Spring

Group no: 3

Faculty Mentor: Itti Patani

Name of group members

No	ID	Name of Student	Program
1	17131006	CHARVIN SHAH	BBA
2	17131007	KAISH ALI TINWALA	BBA
3	17163005	KARAN PANCHAL	BSc
4	17163006	PAVAN SOLANKI	BSc
5	17102004	JAIMIT PATEL	BCA
6	16192001	AARSH BHATT	B.Design
7	15191002	AKSHAY SHAH	B.Arch

November 17, 2019

Navrachana University

Vasna-Bhaily Road, Vadodara

## Table of Content

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# Chapter 1

## Community Visit

- **Community site visited:** gotri, subhanpura, gorwa
- **Date and Day:** 7<sup>th</sup> august 2019(Wednesday)
- **Duration of visit:** total 4 hours
- **Number of times site is visited:** 3

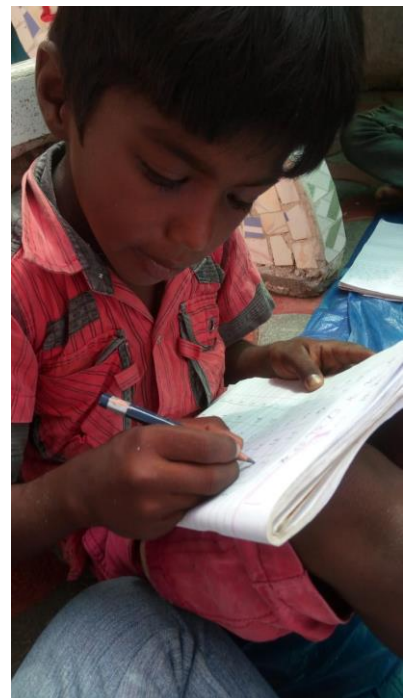
### Roles and responsibility of each member

1. Charvin shah - Interview
2. Karan panchal - Interview
3. Jaimit patel - Photograph
4. Pavan Solanki - noting the points from interview
5. Kaish Ali Tinwala - Observation
6. Aarsh Bhatt – Observation
7. Akshay shah - Observation

## Problems identified:

### 1 Illiteracy

- (i) no proper education facilities available
- (ii) they are not aware of government scheme



### 2 unhygienic food

- (i) their food resources are not unhygienic
- (ii) no awareness of cleanness and hygiene

### 3 no financial support

- (i) they have no financial support for important work
- (ii) bank and private organizations are not helping them because of their loss in profit



## **Chapter 2**

### **Description of the Problem Identified**

#### **Illiteracy**

The root of the major problems in India is somewhere is illiteracy. If we can solve that problem in society with the small start. It can affect on very large scale. When we visited the slum areas and the different NGOs, we saw those children. We spent some time with them. At that time, we realised that those children have many dreams, many ambitions for their future but lac of education, knowledge and awareness is holding them back and not allowing them to achieve their dreams.

We talked to many parents and asked them about their perspective and they said we always work hard and earning money to feed their children and to educate them as much as possible. They never wanted their kids to be like them in future. They want to see their children archiving their goals.

Many organizations, government agencies are working to help these people. But at some point, they are not progressing and the reason is lac of citizen's support. If every citizen can help only one child, so there will be 0 illiteracy in India. The support can be anything. It's not necessary to support financially. There are many ways to help. Our platform will provide information about this and spread the awareness.

## Chapter 3

### Literature survey

1	REVIEW OF SOCIAL INNOVATIONS			
	ID	Name of Student	Program	Title of social innovation presented/ quoted
	17102004	JAIMIT PATEL	BCA	<ul style="list-style-type: none"><li>• Government education schemes</li><li>• Awareness through digital platform</li></ul>
	17131006	CHARVIN SHAH	BBA	<ul style="list-style-type: none"><li>• Six Ways NGO Sites Can Increase Membership and Donations</li></ul>
	17163005	KARAN PANCHAL	BSc	<ul style="list-style-type: none"><li>• Support the NGO's in India</li></ul>
	17163006	PAVAN SOLANKI	BSc	<ul style="list-style-type: none"><li>• Donors providing Non-Financial Support for NGOs dedicated towards Improving Education Worldwide</li></ul>
	17131007	Kaish Ali	BBA	<ul style="list-style-type: none"><li>• Increase awareness amongst people to donate more and more to NGO'S to help needy one.</li><li>• Encouragement amongst the young youth to become volunteer in participation.</li><li>• Connecting to the various NGO'S</li></ul>

	15191002	Akshay Shah	B.Arch	<ul style="list-style-type: none"> <li>• Encourage donors providing them with certificates, giving them ratings on the basis of participation, giving awards to top donors (doing this will allow more and more people to aim to win the award), etc</li> <li>• Awareness through advertisements in radio, newspapers, hoardings, etc where maximum people get chance to see it and participate.</li> </ul>
2	<p><b>IMPLICATIONS FOR PROPOSED SOCIAL INNOVATION</b></p> <p><b>Solution:</b> providing different types of resources to NGOs through a social app</p> <p><b>Process:</b></p> <ul style="list-style-type: none"> <li>• This process will begin with the one social app for every citizen which will be marketed through different social media platform like Facebook, Instagram, etc</li> <li>• Different platform will attract people to join the Lakshya App family. Our non-profit organization will interact with different NGOs of different cities to join with us.</li> <li>• When people join the Lakshya App they can see the different NGOs near by and also can see the required resources for them. With that they can relate their self and provide different things according to their comfort.</li> <li>• To show people how the organization work and how the volunteers are working with us there will be work gallery to show people our work and our achievements.</li> <li>• For funding and financial support our organization will take help from the different business-like hotels, shops, e-commerce to provide us vouchers for our volunteers to keep them motivated.</li> <li>• For other resources like clothes, books, food our organization will take help from the NGOs. With collaboration of them there will be different pick-up points in</li> </ul>			

	<p>different areas in weekends. Information of that will be provided on the app. People can come on that time and give things to NGO people.</p>
--	--

**Social innovation Motivating People to work for NGO**

**Developed by:** ACQUIA Pvt. Ltd. (US based company)

**Place:** Boston

**Cite Source:** ACQUIA.com

## Chapter 4

### Peer feedback

Feedback from other group for our social innovation

No	Suggestion	Reason for accepting / not accepting
1	Poster ta dmart, big bazaar or other big brands for marketing	Accepted Beneficial and easy for marketing
2	Discount for similar exchange item	Not accepted Not beneficial for organization
3	Upload events in prior	Not accepted Already exists in our website
4	Leader board for best donor	Not accepted Confidential identity
5	Members can choose their NGO	Accepted Depends on volunteers
6	What is the way for emergency contact	Accepted Emergency contact via Whatsapp group

Our feedback to another group on their social innovation

No	Name	Suggestion	Reason
1	Jaimit Patel	For marketing they can use prototypes and free samples. Like if there are different local vegetables markets in one city. If this team contact one vegetable vendor from every market and give them free sample for trial purpose. So other vendors can see the product and explore more about it.	If there is no awareness about the product in the market so product, finance and time will be wasted. Also local vendors don't use social media platforms, etc. So local market or offline marketing will be helpful.
2	Karan Panchal	Permission from VMC	They may not get permission from VMC as it might create traffic on road side Reason giving the suggestion: already vmc is not allowing vendors to stand road side so how will the model help in space
3	Pavan Solanki	durability of the model	Material are used fabric, bamboo, sticks may not be durable in harsh weather conditions Might create problems to vendors during harsh conditions. Ex heavy rains

4	Akshay Shah	carriage build-up for carrying luggage is limited in size, it can carry only 20kgs. what if the vendor wants to carry more??	vendors cannot sell more than 20kgs.
5	Charvin Shah	cost incurred for this can be asked form government under any govt. schemes	group did not had any idea or planning of cost and form where money would be infused for this solution
6	Kaish ali	Using the space available under the bridges rather than this umbrella type model. It will help in using the space available as well not create traffic and caos on the roadside. Getting permission from the municipal corporation would also be easy.	They have to use high quality of material for the model as they told they would be using bamboo sticks and all other things to make the model but I think it won't work in harsh weather conditions.

## **Chapter 5**

### **Expert feedback**

## Chapter 6

### Social innovation to solve the problem identified

#### Description of the social innovation:

This will include motivating people for helping and giving their time to work for NGO or help in Any ways in any Kind

E.g. If one representative from society can collect newspaper or old used clothes or any thing that could help the underprivileged people and can give it to the NGO than NGO can use it to help the people

And in return the representative Can be given and monitory benefits like gift card or a discount voucher by collaborating with brand, restaurant, store

#### implication for proposed social innovation by your group

This idea will motivate people to help NGO if greed of any discounts or gift cards

This will also help the underprivileged people to get help,

i.e. if people will donate the things they don't need it could be helpful for the other people instead of keeping it or throwing it and also the people donating would also be motivated to donate it again because not only he is getting benefits rather he is also helping people in an indirect way

#### Overall Implications for the proposed social Innovation

We asked NGO like lions club who donates food and clothes every Sunday at particular location so we asked them if we could get them money for buying food and clothes for the people

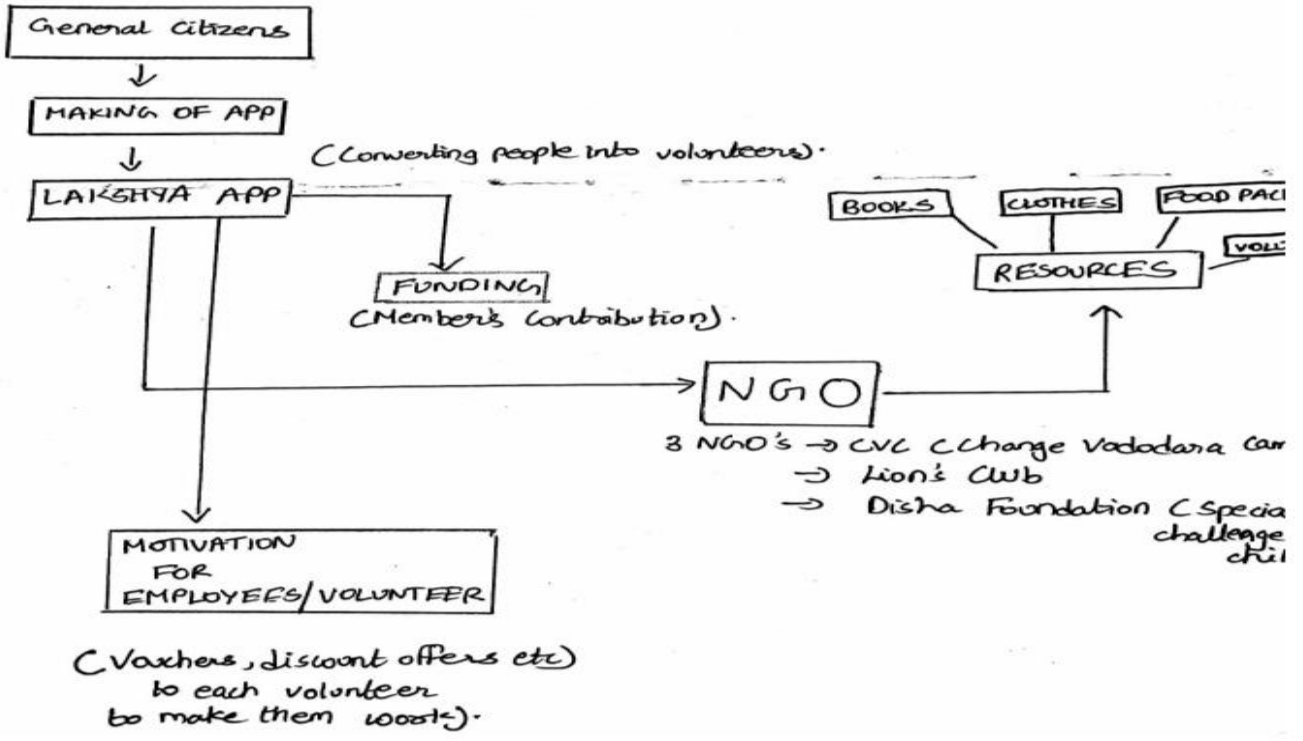
And we went to tie up with the restaurant who could provide us with the discount vouchers for such social cause that we can motivate the people to come forward to donate the things

PROBLEM STATEMENT

HELPING NGO'S BY PROVIDING RESOURCES SUCH AS BOOKS, CLOTHES, ETC.

CHALLENGES FACED

- Create funding for the programme.
- Reaching out people who are willing to help. Accomodating volunteers.
- Create interest within the people/volunteers.
- Lack of professional Experience of working in a Particular Area.

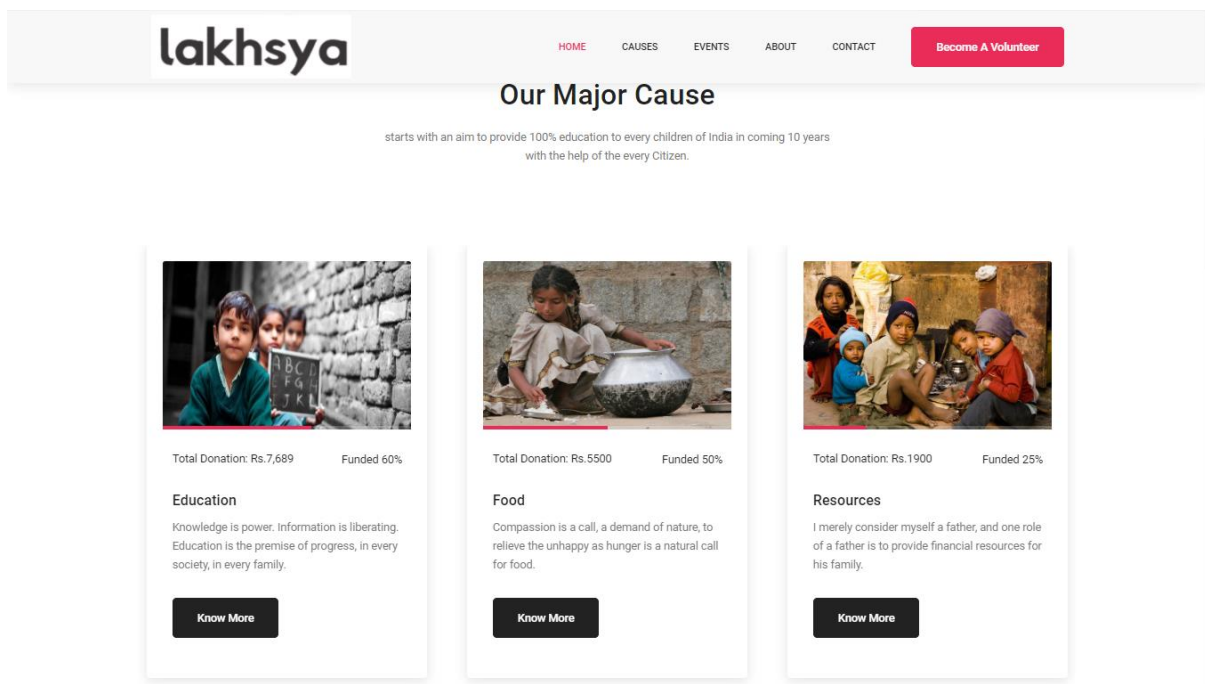
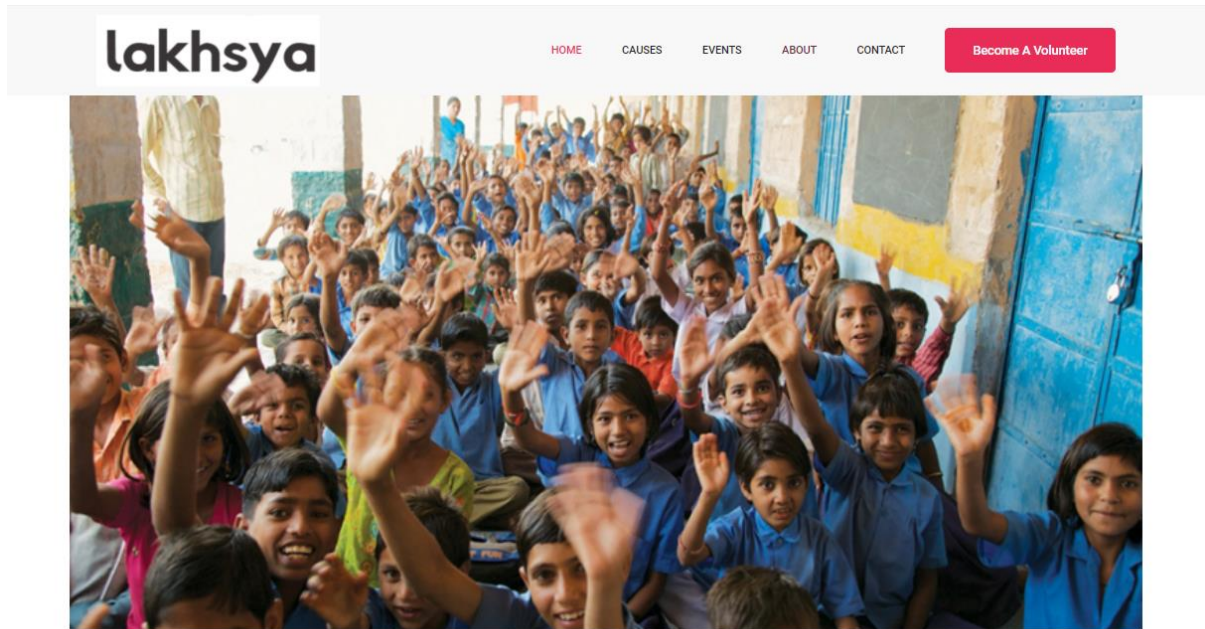


And at last we went home to home society to society to make awareness about this innovation the lions club is donating food and clothes at this particular location people interested and come at this point to donate against they will be provide with discounts coupons of restaurants

Further we are in process of designing a app that will be helpful for us in marketing our idea

# Website Designed to Support Our Social Innovation

## 1. Home



## Become A Volunteer Today

As a volunteer leader, it's you who can change this. You can encourage your volunteers, engage and motivate them to grow, and become a source of inspiration!

Increases Socializing

Develops Emotional Stability

Improve Self-Esteem

Develops Corporate Communities

Learning Something New

Be A Volunteer

# lakhsya

HOME

CAUSES

EVENTS

ABOUT

CONTACT

Become A Volunteer

## Make a Donation Today

There are many ways to push for much-needed reforms: One way is to make a donation. It doesn't matter much whether you contribute publicly or in a private way - either way is good. What matters is your true intention.

10.00

INR

50.00

INR

100.00

INR

250.00

INR

Others

INR

Donate Now



Total Donation



Fund Raised




Highest Donation



Total Donation

## Volunteer

HOME CAUSES EVENTS ABOUT CONTACT [Become A Volunteer](#)

### Become A Volunteer Today

As a volunteer leader, it's you who can change this. You can encourage your volunteers, engage and motivate them to grow, and become a source of inspiration!


### User Information

[Send Request](#)

## Events

**lakhsya** [HOME](#) [CAUSES](#) [EVENTS](#) [ABOUT](#) [CONTACT](#) [Become A Volunteer](#)



## Recent Events

[Home](#) → [Events](#)



15th Nov, 2019  
**Health check-up camp conducted for students of Mission Education centers**



20th Nov, 2019  
**Celebrity singer Tulsi Kumar celebrates her birthday with Mission Education children**



24th Jan, 2020  
**National Girl Child Day celebrated in all Mission Education centres**



26th Jan, 2020  
**Teachers' Training Workshop**

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India

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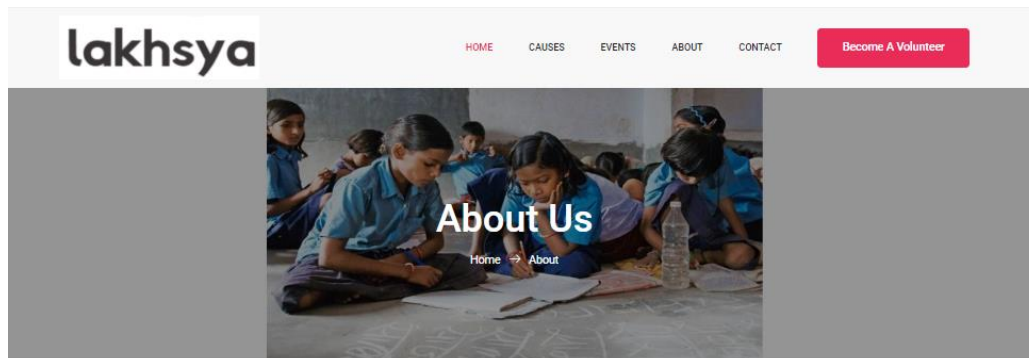
Enter email address

Enter Subject

Enter Message

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## About Us



### Welcome to LAKSHYA

in navrchana universit there was a course called khoj in which students are suppose to indentify the loophole in scoiety related to social problem. also they have to provide specific solution for that.

Lakhsya was idea of one studnet from BCA deaprtment named Jaimit Patel. he took help from other stdents to complete this project and convert this idea into reality to help those children who cant afford everything in their life.

[View More Details](#)

## **Chapter 7**

### **Stakeholder feedback**

## Chapter 8

### Learning from KHOJ

**Name of the Student: Karan panchal**

**Id:17163005**

Program: bsc

(1) For community visit I learned how to interact with unknown or different people, know about the problem they are facing near to their house. Also I learned how to work in the group. We visited some NGOs near gotri to know how they help the homeless children.

(2) When we start the process of social innovation, I learned how we can make possible resources for NGOs' children.

(3) From Khoj class I know how to work with different people with different streams. How to put my point in front of them without any hesitation. How to talk with people who face problems.

**Name of the Student: pavan solanki**

**ID:17163005 Program:**

B.Sc.

1) In KHOJ, we explore and navigate in small crews. The idea is to help children learn how to build on each other's strengths and create a synergy in the group. They need to experience the power of diversity and inclusivity – and how it dramatically increases the richness of ideas, ability to solve problems and capacity to act in crew.

2) Through community visit I learned how to interact with unknown person and know about the problem they are facing in their locality (about the NGOs' facing problems in India). Also how to work in team and co-operate with other team members and manage the functioning of our work properly.

3) From the process of developing social innovation I learned that how we can solve this problem by helping NGOs and providing resources with the help of an app.

4) The problem was how to perform the innovation, we had innovation in theory but to apply it was a bit of a problem. Later on we had some help from faculty to do the experiment for the innovation.

5) One of the skills that I learned is how to work in a group of 6-7 members. Many a times there had been differences in the opinion, but I learned to adjust with all, and learned to choose the correct opinion.

6) By visiting different NGOs I came to know that how the children are facing the problems so to overcome this we have developed an app by which we can collect every possible fundings and also many resources. This encouraged us more towards removing illiteracy from NGOs.

**Name of the Student: Akshay Shah**

**ID:15191002 Program:**

**B.Arch**

1) Through community visit I learned the importance of NGO and how well they function and how they are directly connected to the sentiments of the poor people. I also learned that how the barrier between rich and poor can be broken through helping them.

2) I also learned the importance of happiness one can bring on others face by just doing small things. Just distributing old clothes and seeing joy on their face can give feel of satisfaction ourself.

3) I also noticed that there is a serious issue that NGOs are facing due to lack of active participating members. So helping NGO is also a part of our citizenship which one needs to follow for betterment of our country.

4) I also learned that how important it is to learn from each other and how one can work in a group and collectively participate in providing solution to a problem through the skill set one has.

5) One of the important thing is that the opportunity one gets to deal with a real life problem on a very small scale and how that small solution can help in the betterment of lots of people.

**Name of student Charvin M Shah.**

**ID 17131006.**

**Program BBA**

Learning form khoj Learning form khoj was very enlightening part for me to perform in the t form the different department form the group it's self i got much knowledge of other fields and departments and also made many new friends form different departments

Further at the field visit was very fascinating for me as i had to talk with complete strangers and know or explain about our innovation was a hard task in it self as they were some were not open to us in communication but as we explained what we are doing and gradually gained their trust, we could know about there problems

Further i learnt about many new social innovation that can help the society like water purification model, waste management etc while interacting with other groups

Khoj helped me to get knowledge about social problems society is facing and as a responsible citizen we also should contribute to our society in any ways as being part of the society and it also help me to get open up in conversation with strangers, how to convince people,how to gain their trust,how to present ourselves are some things i got to know from this khoj project

**Name of the Student: Jaimit Patel**

**ID: 17102004**

**Program:**

**BCA**

Being the part of the KHOJ program was priceless for me. In this semester during the KHOJ program I learned so many things from unexpected places and people. To complete the different task of KHOJ somewhere I explored the other side the society which was not known by me. Because of that I got a chance to see the dark side of society where people are suffering from many problems which was never faced by us. I got a chance to see those problems very closely and I got an opportunity to solve those problem from my side.

Most important thing which I learned during this time period was that if someone is getting his/her smile back because of you, is the best feeling in the world. When me and my teammates were trying to reach the core of the problem in society, which guided me to different NGOs. In those NGOs people are helping those poor children without any selfishness. That day was one the biggest life lesion for me.

After seeing all these I decided one thing that I will also help those children whenever I got some time. I also started volunteering in those NGO camps once a month. In that I learned how to communicate and express your thoughts.

Chapter 9

Bibliography

# Waste Recycling

**Be clean, Be green, Be a Recycling Machine**

Report

Of

KHOJ- Course Code (PS207)

2019 Spring

Group no: 2

Faculty Mentor: Itee Pattani

Program : KHOJ

Name of group members

<b>ID</b>	<b>Name of Student</b>	<b>Program</b>
17131003	Dhruv Jiwan	BBA
17131004	Tirth Patel	BBA
17131005	Payal Parmar	BBA
17163003	Pratik Gohil	Bsc
17163004	Yashraj Rathod	Bsc
17102002	Harsh Mehta	BCA
15192010	Jahnvi Trivedi	B.Design
17165011	Khushi Desai	BA. JMC

April 15, 2019  
Navrachana University  
Vasna Bhaily Road, Vadodara

**Table of Content**

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## Chapter 1

### Community Visit

#### **IDENTIFICATION OF PROBLEM**

The process of identification of social problem started with a community visit. Detailed description of community visit is given below.

#### **COMMUNITY VISIT**

Community site visited: Garbage Dump near Hanuman Temple, Vasna

Date and Day : 4th August, 2019

Duration of visit: 3 hours

Number of times site is visited: 2

Roles and responsibility of each member:

1. Harsh Mehta, BCA  
Roles: Interviewing nearby people and noting points regarding interview and the site.
2. Payal Parmar, BBA  
Roles: Analysing the site and interviewing nearby vendors.
3. Jahnvi Trivedi, B.Design  
Roles: Interviewing people, proposed and took initiatives for discussions on the topic and the site visit, some photographs.
3. Yashraj Rathod, Bsc  
Roles: Interviewing people, taking notes and taking photos.
4. Dhruv Jiwan, BBA  
Roles: Taking photos of site, analysing site.
5. Tirth Patel, BBA  
Roles: Taking photos, noting points.
6. Pratik Gohil, Bsc  
Roles: Keeping notes, Interviewing.

**Conduct of community visit:**

Around 8-9 people and 2-3 businesses running near the site were interviewed. Most of the questions asked to these people were:

1. How long have you been living/doing business here?
2. How long has this problem been existing
3. Have you tried complaining to the Corporate or Government?
4. Have you been facing health issues? If so, how frequent are the health issues?
5. Have you been suffering loss in your business due to this garbage dump?
6. Does anyone come to pick up the garbage daily?
7. How does the garbage dump become so populated with the garbage?
8. What are your suggestions on this garbage dump? What change do you want to see?

## Chapter 2

### Description of the Problem Identified

#### **Problems identified:**

#### **1. Unhygienic living condition**

Bases for identification of this problem

- (i) Very foul smell in a radius of around 100m. Lot of problems regarding health. It has been noticed that businesses around the garbage dump have employees and stakeholders facing serious issues regarding sickness and health.
- (ii) (ii) This hygiene problem seems to be occurring due to garbage getting stacked. All the trash from nearby areas is thrown in one particular spot, leaving the site unbearable to stand. However businesses cannot move from this place and have to work in the area for entire day, thereby causing health problems to the employees and stakeholders of these businesses.
- (iii) Photographs to support



## 2. Overloading of garbage

Bases for identification of this problem

- (i) This area seems to be the only place where there are garbage bins. Lot of people from nearby areas throw their garbage over here. There are only 2 garbage bins located. Due to this, excess amount of garbage is collected everyday and is thrown around the bins since the bins are already full.
- (ii) (ii) This overloading seems to be a major cause of most of the problems faced by citizens and businesses in the area. It is noticed that due to less garbage bins at the site as well as in the Vasna region causing the site to overload.
- (iii) Photographs to support



## 3. Government unable to take action

Bases for identification of this problem

- (i) From the interviews, it looked like despite complaining to the government, they did not seem to take any action regarding this matter. Even if they did, but it wasn't a regular activity. The garbage trucks from VMC would sometimes dump the garbage in the area.
- (ii) (ii) This may happen due to Vasna-Bhayli being a bit on the outskirts of Vadodara. A panchayat runs majority of this area thereby creating problems with the Municipals. Another issue might have been that VMC is unable to keep track of all complaints coming from all the areas. It is possible that the complaints about the garbage at the site might have gone unnoticed.
- (iii) Photographs to support



### **Problem selected**

#### **1. Overloading of Garbage**

Reason :

This overloading seems to be a major cause of most of the problems faced by citizens and businesses in the area. It is noticed that due to less garbage bins at the site as well as in the Vasna region causing the site to overload. This problem seems to have feasible solutions and also this is the root problem that causes other problems stated earlier. Solving this problem would eradicate most of the problems faced by businesses and citizens of the area.

### Chapter 3

### LITERATURE SURVEY

<b>1 REVIEW OF SOCIAL INNOVATIONS</b>				
<b>No.</b>	<b>ID</b>	<b>Name of Student</b>	<b>Program</b>	<b>Title of social innovation presented/quoted</b>
1	17131003	Dhruv Jiwan	BBA	1.Stylish Bamboo Dustbins 2. landfills
2	17131004	Tirth Patel	BBA	1.Waste Segregation Machine 2. '3R formula' - reduce, reuse and recycle
3	17131005	Payal Parmar	BBA	1.Thermal Waste Treatment 2.Bioreactor Landfills
4	17163003	Pratik Gohil	BSC	1.Turning plastic waste into oil 2.Waste Segregation
5	17163004	Yashraj Rathod	BSC	1.Open Window Composting 2.Vermicomposting
6	17102002	Harsh Mehta	BCA	1.Solar Powered Trash Can 2.Trash Level Sensor
7	1715192010	Jahnvi Trivedi	B.Design	1.To attach net or fishing mash on mouth of gutters 2. To Stop The Plastic Entering In Deep Seas
8	17165011	Khushi Desai	Ba.JMC	1.Trash Wheel In Usa 2.Converting Garbage Into Useable Energy In Sweden
<b>2</b>	<b>IMPLICATIONS FOR PROPOSED SOCIAL INNOVATION</b>			

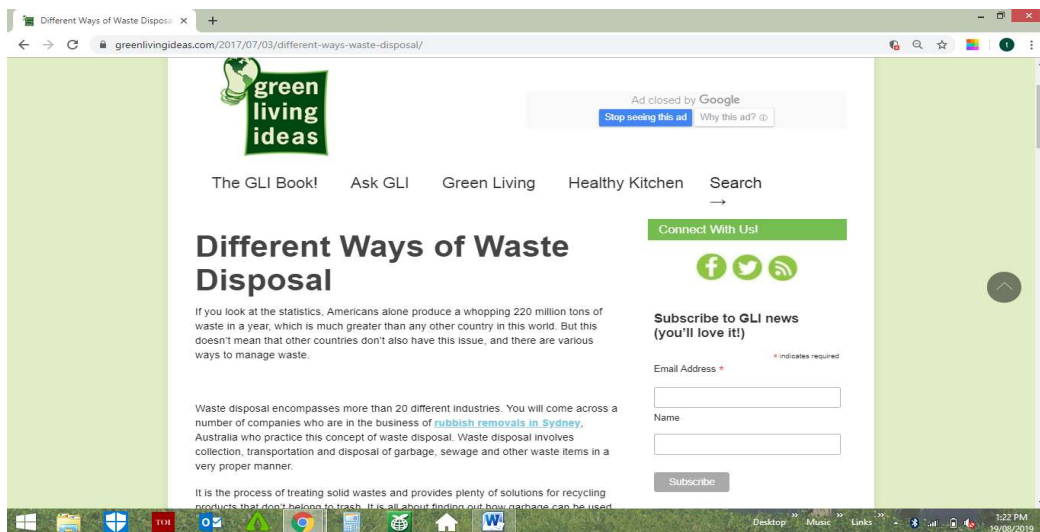
	<p>1. We will Make a process to Segregate the garbage for further use</p> <ul style="list-style-type: none"> <li>• We will convert food waste into manure and give it to farmers.</li> <li>• For plastic waste, we will further segregate it for further use. We will reuse plastic bottles by making decorative flower pots. For plastic bags, we can use unused plastic bags to fill pillow cases.</li> </ul> <p>2. We will plants trees in that area with aim of creating awareness among people to not throw waste there and also keep some dustbins over there</p>
--	---

**Name** : Dhruv Jiwan  
**ID** : 17131003

#### Solution 1:

There are stylish bamboo dustbins everywhere and separate compost pits in various pockets of the village for organic and inorganic wastes. Not only this, smoking and use of polythene is strictly banned here. Villagers maintain the public toilets and make sure they take care of the regular sweeping, weeding and watering of the gardens. You can read the complete story about this village here.

Mawlynnong village in East Khasi Hills of Meghalaya is the "Cleanest Village in Asia"  
Mawlynnong village in East Khasi Hills of Meghalaya is the "Cleanest Village in Asia"  
If modern cities replicate this village's model, with better technology and resources, the mission of "garbage-free" India can be achieved in a very short span of time.



Solution 2:

Landfills:

The idea of throwing daily waste directly in the landfills is the most common method of waste disposal used today. This method concentrates on burying the waste in the land. Landfills are very popular in developing countries.

<https://www.greenlivingideas.com/2017/07/03/different-ways-waste-disposal/>

**Name** : Tirth Patel

**ID** : 17131004

Solution 1:

The screenshot shows a web browser window with the URL <http://thebetterindia.com/180745/bengaluru-woman-innovation-waste-segregation-minutes-recycling-india/>. The article is from 'THE BETTER INDIA' and is titled '23-YO Bengaluru Woman Invents Machine That Segregates Waste Within Minutes!'. The author is Jovita Aranha, and the article was published on May 2, 2019, at 4:52 pm. The article text reads: 'Nivedha was in her third year of chemical engineering at Bengaluru's R V College of Engineering when she made headlines in a local magazine. She and a group of friends had cleared a lane near their college that had been piled with waste for months. In an exclusive interview with The Better India, she recalls, "We saw people scrunching their noses and complaining about the unbearable stench and how the area was becoming a breeding ground for mosquitoes. They couldn't even keep their windows open. Yet, no one wanted to change anything. We decided to clear the area. Though it garnered us a lot of praise, it was heartbreaking to see the area dumped with the same amount of waste in less than a week."' The browser's taskbar at the bottom shows the time as 12:44 PM on 19/08/2019.

For managing waste and to destroy the waste people used to burn it and spread harm to environment, by inspiring from that Nividha invented a machine which work as when a bag of mixed waste is put into the dumping bin in the machine, it is torn open, and the contents are sent into a magnetic separation system where batteries, contaminants and other metals are removed. The rest of the material is taken up by a loading conveyor and sent to a shredding unit, and that's the machine segregate the waste, by that recycling of waste will be more easier.



<https://www.thebetterindia.com/180745/bengaluru-woman-innovation-waste-segregation-minutes-recycling-india/>

### Solution 2:



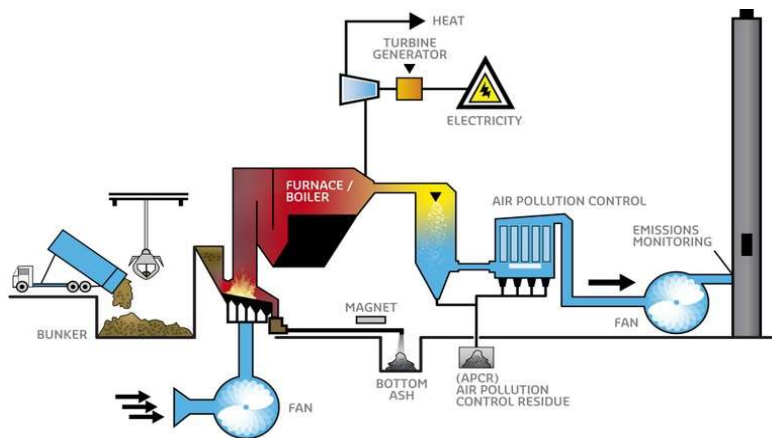
In a bid to make the Millennium City clean and green, the Cuttack Municipal Corporation (CMC) has decided to adopt a '3R formula' - reduce, reuse and recycle - to deal with garbage which is growing in heaps and mounds.

<http://www.newindianexpress.com/states/odisha/2018/dec/20/3r-formula-to-deal-with-garbage-in-cuttack-1914095.html>

**Name :** Payal Parmar  
**ID :** 17131005

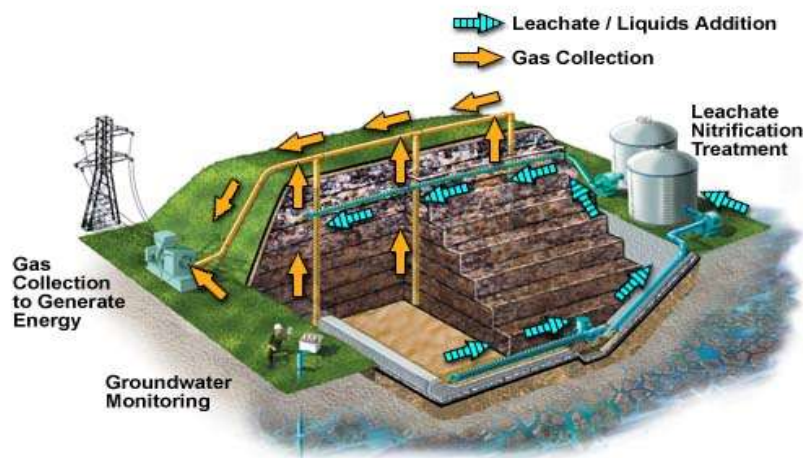
### **Solution 1 :- Thermal Waste Treatment**

Thermal waste treatment refers to the processes that use heat to treat waste materials. Following are some of the most commonly used thermal waste treatment techniques: Incineration is one of the most common waste treatments. This approach involves the combustion of waste material in the presence of oxygen.



### **Solution 2 :- Bioreactor Landfills**

These landfills use superior microbiological processes to speed up waste decomposition. The controlling feature is the continuous addition of liquid to sustain optimal moisture for microbial digestion. The liquid is added by re-circulating the landfill leachate. When the amount of leachate is not adequate, liquid waste such as sewage sludge is used.



<https://www.fcc-group.eu/en/austria/technologies/treatment/thermal-waste-treatment.html>

<https://www.conserve-energy-future.com/various-waste-disposal-problems-and-solutions.php>

---

**Name** : Pratik Gohil

**ID** : 17163003

#### Solution 1: Turning plastic waste into oil

A machine, about the size of a tennis court, churns all sorts of petroleum-based products -- cling wrap, polyester clothing, carpets, and electronics -- back into oil. It takes less than a second and the resulting fuel, called Plaxx, can be used to make plastic again or power ship engines.

<https://www.bloomberg.com/news/articles/2017-05-05/turning-plastic-to-oil-u-k-startup-sees-money-in-saving-oceans>



#### Solution 2: Waste Segregation

Waste can be classified into five types of waste which is all commonly found around the house. These include liquid waste, solid rubbish, organic waste, recyclable rubbish and hazardous waste. These types of wastes can be segregated and decomposed accordingly. This ensures proper waste removal. This reduces garbage density at one particular area. Out of this, recycled waste can then be separated and used later on. Recyclable rubbish includes all waste items that can be converted into products that can be used again. Solid items such as paper, metals, furniture and organic waste can all be recycled.



<https://4waste.com.au/rubbish-removal/5-types-waste-know/amp/>

---

**Name :** Yashraj Rathod

**ID :** 17163004

**Solution 1:**

**Open Window Composting** Open window composting is equipped by 1.5m high and 2m wide at about 60% moisture content. At the bottom of pit Joamy soil is placed to neutralize the acidic medium in component and provide alkaline medium for microorganisms. Heat buildup in pile due to biological activity, temperature rises up about 70 degree C to enrich the compost add cow dung, night soli, etc. The pile is filled with alternate layer of refuse (laid in layers of depth of 30-40cm) and night soli or cow dung (laid over it in thin layer). Eleven in 5days. After a few days (7-10 weeks) temperature drops down to atmospheric temperature indication of stabilization of compost.

**Solution 2:**

**Vermicomposting** A vessel is 45 cm deep and 1x0.60 m. A hole shall be provided at the one end in bottom draining the Jeachate out into the vessel. Lay 1 m thick layer of baby metal or gravel at the bottom of the tray. Above it lay gummy bag or coconut husk upside down over it and above that a 2 layer of dry leaves or dry cow dung. Lay biodegradable waste over it. Enter good quality earthworms into it. Sprinkle water daily. Rainwater should not fall on vessel. Keep it closed; if box is kept under the sunlight earthworms go down and compost can

be taken from top. Compost can dried and stored. Continue putting waste in it and add little cow dung at intervals. Do not use vermiwash directly.

<https://theconstructor.org>

---

**Name** : Harsh Mehta

**ID** : 17102002-

### **Solution 1** : Solar Powered Trash Can

Solar Powered trash cans are equipped with solar panels to power their working. They generally come in 110 liters, 120 liters and 240 liters bin sizes. Solar energy is used to compress the contents inside the bin and reduce it by almost eight times. After these are full they communicate through wireless transmission to the waste management platforms, signaling them for a clean-up. The whole of the real-time data can be monitored through apps.



### **Solution 2** : Trash Level Sensor

Trash sensors are designed to reliably report trash levels when the sensors are properly mounted. Real-time data gives the necessary feedback which reduces scheduling costs so trash bins are only collected when full. This real-time monitoring and historic monitoring allows for better route planning and scheduling.



<https://www.ecubelabs.com/solar-powered-trash-compactor/>

<https://www.smartbin.com/solutions/iot-level-sensors/>

---

**Name :** Jahnvi Trivedi

**ID :** 15192010

#### Solution 1

To stop blocking the pipes of gutters and also to recycle them the net or fishing mash is being used. It is attached to the mouth of tunnel and so all the solid waste will be collected in it and the entire liquid dunk will be segregated. That solid waste that can be recycled.

#### Solution 2

To stop the plastic entering in deep seas or clean water of ponds and rivers, metal fencing used to be done so that the garbage will stay in that fencing area of water and will not enter in entire river or sea.



<https://images.app.goo.gl/mRz89dYjJowMuQ2G9>

---

**Name** : Khushi Desai

**ID** : 17165001

**Solution 1** : MR. TRASH WHEEL IN USA

This is solar and water powered trash cleaner that collects litter and debris flowing down the Baltimore River. In last 3 years this wonder machine has removed 1.1 million pounds of garbage from the river, which includes 372,650 bottles and 8.9 million cigarette buds.

How does it work?

The river's current provides power to turn the water wheel of this machine that then acts as a robot to pick up trash and debris from the water. Once collected, the trash is deposited into a dumpster barge which is built into this machine. When the water current isn't strong enough to power the machine, an attached solar panel provides solar power.



**Solution 2 : CONVERTING GARBAGE INTO USEABLE ENERGY IN SWEDEN**

Sweden is well known for its progressive environmental strides- the Scandinavian country's waste-to-energy system efficiently provides direct heating to 950,000 Swedish households and electricity to 260,000 homes. Sweden recycles and sorts its trash so effectively that less than 1% ends up in landfills. Seeing garbage as a commodity, Sweden imports trash from other European countries to fuel its power needs, with 700kg (1543 lbs) of rubbish translating into up to 250kg (551 lbs) of energy and fuel.

**Chapter 4**  
**PEER FEEDBACK**

**Suggestions Asked (Group Work)**

<b>Suggestions asked on the following points/aspects</b>	<b>Accepted/not accepted, reason for the same</b>
Grow plants that have fragrance instead of cacti, creating good environment as cacti may hurt people.	<b>Accepted</b> We will add plants /flowers in middle as it is difficult to grow them
Make awareness for throwing garbage in dry and wet waste by themselves so the waste will be reduced.	<b>Accepted</b> Such an awareness program will help individual themselves
Make a compound wall out of plastic-concrete and plastic bottles.	<b>Accepted</b> A wall can stop cattle and other animals from entering the area

**Suggestions given (Individual Work but noted in one sheet)**

<b>Suggestions</b>	<b>Reasons</b>
<p>Name: harsh Mehta</p> <p>Contact other places that may have steam distillations since it takes a long time to create fragmented water. This will produce more water simultaneously across multiple locations. It can then be collected later.</p>	<p>4-5 hours of processing will be distributed and eventually lot of fragrance water will be created.</p>
<p>Name: Jahnvi trivedi</p> <p>You can use semi routed flower petals to make paper (flower made handmade papers) which will support mature as well because papers are been made from waste and not trees.</p>	<p>The waste after making perfume will be waste and it will be used with this.</p>
<p>Name: Payal Parmar</p> <p>So, basically they are only going to produce fragrance as their product, instead they can also go for making fragrant color. As they are better used in festivals and will be natural.</p>	<p>Making fragrance is like wasting the By- product produced while doing the process. Thus use the waste for making other useful things.</p>
<p>Name: Pratik Gohil</p> <p>Using the semi rotten flowers, for producing organic color after extracting flower waste and it can also be used to produce intense sticks.</p>	<p>To make it generate economy</p>
<p>Name: Yashraj Rathod</p> <p>With the help of bee-wax and flower petals soaps can be made.</p>	<p>To generate economy by not causing any harm to environment</p>
<p>Name: Khushi Desai</p> <p>Making bio-leathers out of it.</p>	<p>It will attract more youngsters in the sense of eco-friendly leathers</p>
<p>Name: dhruv jiwan</p> <p>Making natural dye's</p>	<p>It can be launched as new product in the market</p>
<p>Name: Tirth Patel</p> <p>With the fragrant liquid of flowers you can mix it with wax and make candles</p>	<p>It will help to generate better revenue.</p>

## Chapter 5

### EXPERT/STAKEHOLDER FEEDBACK

After coming up with the idea of Social innovation, we went back to the site and explained our idea to the nearby stakeholders who will be benefitted. We got feedbacks from 2 Stakeholders.

Following are the feedbacks that we received

Stakeholder 1:-

So From the first stakeholder we got this Feedback , He said , it was Good idea that we have such a good intension for helping them , they liked the idea , and they wanted to see the change happening there , And keeping environment clean. He also said that it should priority of the individuals to keep that area clean but they did not understand their responsibility and we being the outsiders are doing such a good work by helping them. Improvement would be essential for them to work and hygiene is important for keeping the health good, and they also intend to help in us this. They also expect the change to happen as soon as possible and they thus were eager to help

Stakeholder 2:-

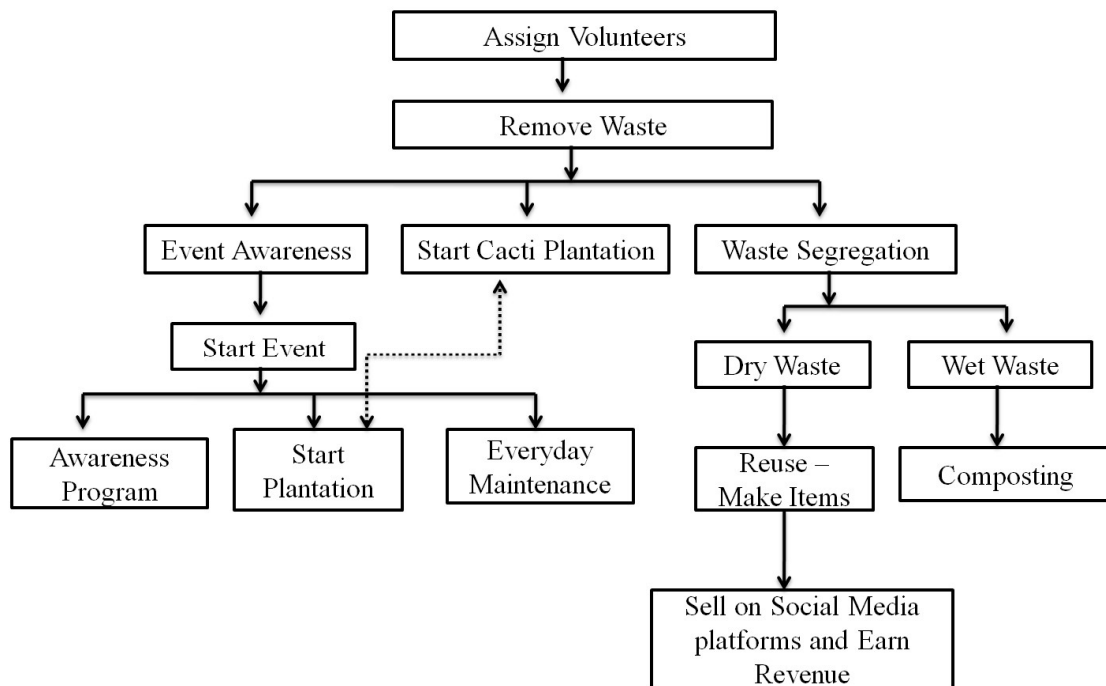
From the second stakeholder we got this Feedback, he also said that, were doing a great job especially for them. If the garbage is removed, a lot of the problems will be solved. Even he was ready to help us for this idea and he also said he will bring people with him to help us with the volunteering part.

## Chapter 6

### SOCIAL INNOVATION TO SOLVE THE PROBLEM IDENTIFIED

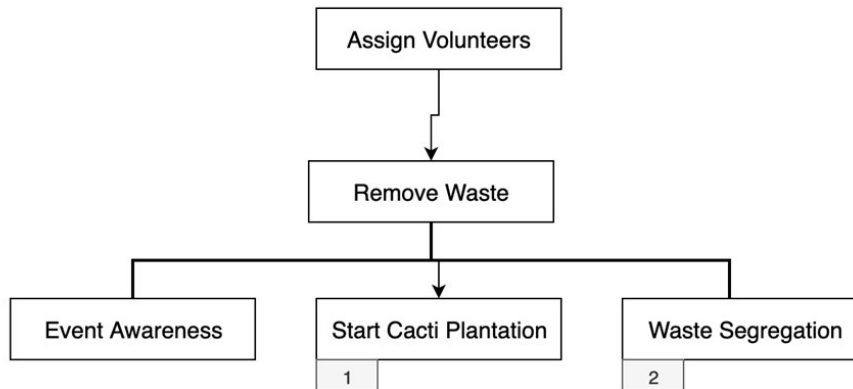
The Problem Identified by us and chose by us to work on is Overloading of Garbage. So Basically we identifies that all the major Problems that are being occurring is because of Garbage bin get overload. Thus we came up with this social innovation idea to solve the problem that has been identified by us.

Following the Master Process Flowchart of our Social Innovative idea. This is the exact process that we will be following. Further we have divided the process into parts to explain them in detail.



## Waste Removal Flow

### Removing Waste



### Waste Removal Structure

A. Firstly, volunteers will be assigned by the Group Members (Group members will also be volunteers).

B. After that, they will be given the task to clear the waste in the particular area. This waste removal process will then further be divided to the volunteers into groups of two. 1. Those who remove the waste

2. Those that collect the removed waste and segregate it for further process.

C. During the removal process of the waste, it will be segregated into dry and wet forms. The structure will then move to the Waste Segregation Flow.

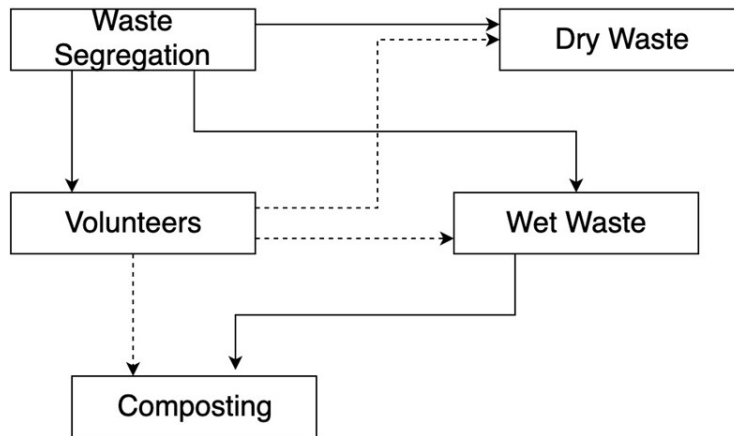
## Cacti Plantation

- Cacti will be planted once all the waste is removed
- These cacti will be planted by the volunteers and group members themselves. Cacti take around a month to grow so in order for the cacti to grow, an Event will be hosted so that no waste is thrown during the time.
- Cacti grow even in the most infertile land and live on small amount for water for a long amount of time.
- The area is about 10,000 sq ft, in this specified area, around 2000 Cacti will be planted on an area of ~ 6500 sq feet.

- The rest of the area will be used for the Awareness Event and later, the Event Awareness Structure will be started.

## Waste Segregation Flow

### 2. Waste Segregation



Waste Segregation will be done in 2 parts:-

1. Wet Waste
2. Dry Waste

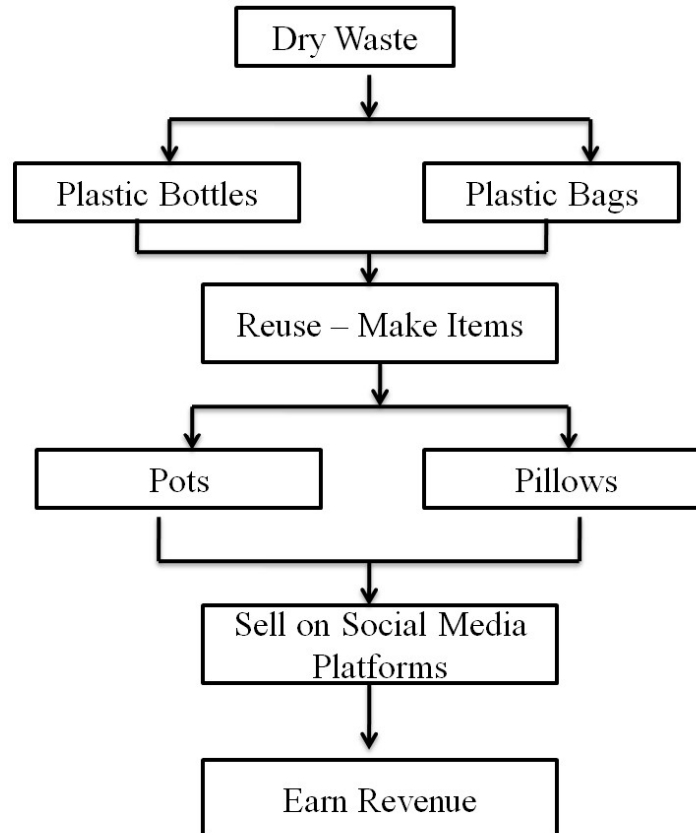
Both the waste will be further used for processing and will be used for different Purposes.

#### 1. Wet Waste

- Wet waste is basically the waste thrown by the residential people living near the area and which is biodegradable in nature.
- Most of the waste that we observed in the garbage was Leftover food, Leftover vegetables, Liquid Waste Etc. So basically we can make a compost of that biodegradable waste and convert it into Compost.
- Wet waste will be separated from the waste collected and will be sent for further processing.

## 2. Dry Waste

- Dry waste is basically the waste which is not biodegradable in nature and will not disintegrate over the period of time. Dry waste generally includes Plastic.
- So the Dry Waste we found in garbage is mostly related to plastic like Water bottles, bags etc.
- Dry waste will be separated from the waste collected and will be sent for further for Reuse.
- So basically further we will make Pots and pillows out of the waste that we found i.e. Bottles and Bags. We particularly selected these items because we observed that the quantity of plastic was more In comparison to other waste in the garbage area. After making those items, we will sell them on social media platforms and earn revenue.
- Following is Process of Making Items, Cost Revenue Model and selling them Online on social media Platforms.



Following are the items that we will make out of the Dry Waste.



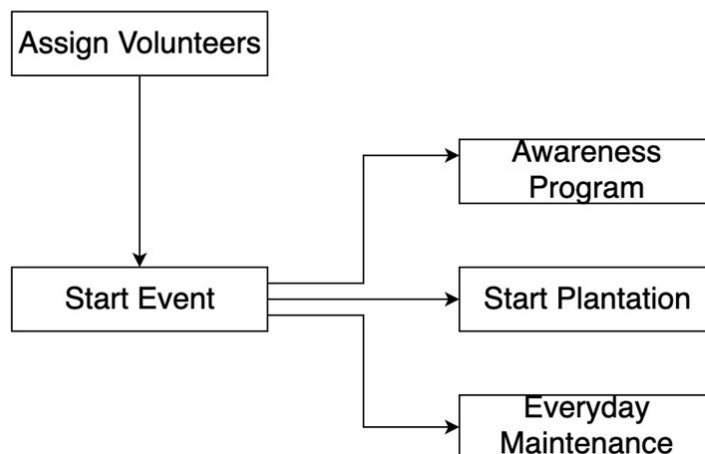
## Cost and Revenue Model

Cost	Revenue
<p>The Cost we will incur will be of decorating items that we will use and Delivery.</p> <p>Following are the items That we will use for Decorating:-</p> <ul style="list-style-type: none"> <li>• Colors</li> <li>• Jute rope</li> <li>• Brushes</li> </ul> <p>Deliver Will Include Fuel Cost.</p>	<p>The Revenue will be Generated By Selling those Items on Social Media Platform.</p> <p>We will Keep 20% Margin for our Profit in starting.</p>

In Starting, We will put our own fund for the cost that we will incur as this will not require a huge Investment. Once we will reach our breakeven point, we can add selling items made of other waste as well by using the fund that we earned as profit.

## Event Awareness Flow

### 3. Event Awareness



## Event Awareness Structure

- Having an Event for Awareness mainly brings two things to the table:

1) The Cacti need some time to grow and no waste must be thrown in the area. An event at the geographical area can be conducted so that people do not throw garbage and cacti get time to grow.

2) An open event is a good way to aware people in the area about waste, waste segregation, problems of waste and how to control waste. This will help in bringing a sustainable change among the residents living in nearby areas.

A. Firstly, volunteers will be assigned by the Group Members (Group members will also be volunteers).

B. Later on, with help from NGOs and hopefully sponsorships, a proper event planning will start

C. This event will have stalls, booths for awareness. Awareness can be done with the help of game booths, interactive booths, news article shows, showcasing problems, etc.

D. This event will last around a month (time it takes for cacti to grow) and awareness will be spread around the area.

## Chapter 7

### LEARNING FROM KHOJ

Name : Dhruv Jiwan  
ID 17131003

The course Khoj provided by the Navrachana university , is defiantly a very decorated course , introduced by the university , it made me learn many things , it also made me think about the environmental issues , apart from the personal issues. It helped me to think wider and broader and in depth on any topic. To think about the environment should be first priority for everyone and it is an important aspect for an individual. And the Course Khoj has helped a lot in making it a priority to think about the environment. We have to think about the place we live in, as we understand to keep our houses clean, as for same we should think about our own environment.

Name : Tirth Patel  
ID 17131005

From the subject 'khoj' I learned many things including social welfare, team work, unity efforts and how youth can make a change with the help of social awareness and existing technologies, I also being able to meet people in our society from the category who are not getting basic features of human life such as clean water, quality environment, proper medicines or food hygiene, with the help of research I also being able to find many issues in society which are important to being solved and need to spread awareness for it among public. 'Khoj' project also gave me an opportunity to make new friends with the background of different streams in university, which will be helpful not only in 'khoj' but even after project relations will be helpful to each other. With brainstorm sessions and group discussion with the help of respected mentor all of the group found proper issue which needs to solved in social welfare and we developed many innovative ideas and solutions which can solve them with less cost and better results. Overall experience of 'khoj' was very knowledgeable and with the help of supportive group members and our mentor Ms.Itee ma'am it was very learning and interesting subject.

Name : Payal Parmar

ID 17131005

### **1. In General Learning:-**

KHOJ was a really good Experience for me in terms of both, knowledge of what is going on in our society, what kind of problems are being faced by people and Field Work. Also I Learned skills like Team work, Time Management, How to communicate with people as well. If I talk about team work, it was really a good experience as I was Dealing with people from 7 Different Discipline and I got an opportunity to learn a lot of things from them. Time management was one the major challenge for us because a team of 7 different disciplines, all the members had different timings but gladly we were able to manage that. Apart from all those learning's, I also learned the art of communication as how to communicate with group mates as well as our stake holders on the site. It was important to communicate in local language with stakeholders as most of them were not familiar with Hindi and English. Overall KHOJ was a truly learning Experience for us and we also learned that it is also important to help our society grow as well.

### **2. Learning in Contribution from my Discipline (BBA)**

Being a student of Bachelor of Business Administration (BBA), my task in KHOJ was more focussed on communicating people and to find out how I can turn our Social Innovation Idea into a Revenue Earning Stream as well. In Starting, I faced some problem as it was difficult for me to figure out Revenue generation stream from a social innovative idea but later on with some Research, I was Successful in coming up with a revenue model for our social innovative idea. Overall the KHOJ helped me to think in diversified way and coming up with alternatives as one option never works.

Name : Pratik Gohil

ID 17163003

Some skills which I learned from KHOJ are; how to do work in a team and also how can we make use of another alternative of something which is expensive for normal people. One of the skills that I learned is how to work in a group of 6-7 members. Many a times there had been differences in the opinion, but I learned to adjust with all, and learned to choose the correct opinion. From khoj I get an idea how to interact with people, how to react in the every possible situation from my point view or I personally believe that this subject is very helpful for social issues. And I also learn how to manage time with other group members. And I also learned how to attentive in any group discussion

Name : Yashraj Rathod

ID 17163004

In khoj we identify the social problem and study them and give solutions to that. It helps us to develop to various skills like to work in team. People get to explore their ideas and implement it in real. It had helped to interact with different people of different courses. Interaction with mentor had also helped us to guide us towards working on the ideas. In site visits we get to interact with the people around us. This will help in future when we enter in real world

Name : Harsh Mehta

ID 17102002

Here's a list of things I've learnt from KHOJ.

**1. Collaboration:**

Collaboration with a diverse group of people in life is very important. I have always worked on projects with people I am either friends with or people whom I know well. However, coming into KHOJ, I have learnt collaboration as a team with people I have not met before. This has prepared for an outside experience of the world.

**2. Out of the Book Learning:**

I've learnt a lot of things that are outside my core curriculum. For an instance, I learnt how recycling works, how degradation works, how plantation works, etc. I've gained a lot of knowledge related to environmental science and social work in KHOJ.

**3. Interacting with stakeholders:**

I have never actually experienced or interacted with any stakeholders of some sort during my course so far. However, I am glad I got to experience it. Knowing others' point of view is very important as sometimes it changes the whole game and it's really important to make sure everyone involved(directly or indirectly) is having some kind of social profit.

**4. Brainstorming:**

Brainstorming is something which I've always wanted to do but had no context for it. KHOJ gave me a wonderful opportunity to brainstorm ideas and innovation. Not only that I also learnt how to appreciate ideas of others and also give negative feedbacks in such a way that

the opposition does not get demotivated. Brainstorming is something I wouldn't have learnt if it weren't for KHOJ.

Name : Jahnvi Trivedi

ID 15192010

In khoj we identify the social problems and study them and give solutions. So this subject is very helpful for society to get lots of solutions. The variety of solutions will give better opportunity to explore and solve particular problem. Also it is good for students because students will know different social problems. As khoj is in last year so after program students are going to step in real world and it will help them to know society more. Also it gives opportunity to interact with different people from different programs. Mind set and ideas of different people and understanding also it is about working together managing time of each student's from different programs so it teaches us time management too.

Name : Khushi Desai

ID 17165011

Khoj was a very different and new experience for me. It is very easy to talk about solving problems related to environment, but when it comes to practically applying, it is very difficult to find new ideas to solve these problems. Khoj helped me to develop myself in those criteria. As it is group work and all the students are from different departments, it also helped me in accepting different ideology and making one common decision.

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# **Sanitation and hygiene issues**

## **report of KHOJ AUTUMN, 2019**

### **Group 5**

**Program :Bsc, BBA, BA JMC**

**FACULTY MENTOR: Prof. Pinakin Jaiswal**

<b>Sr.No</b>	<b>Name</b>	<b>ID</b>	<b>Program</b>
1	Akash Shukla	17131040	BBA
2	Janvi Mulwani	17165010	BA JMC

3	Juhie Shamdasani	17165026	BA JMC
4	Krusha Gandhi	17163032	BSc
5	Purvi patel	17163035	BSc
6	Saloni bhatt	17163038	BSc

**November 11, 2019**

**Navrachana University,**

**Vasna-Bhayli Road, Vadodara**

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### **chapter1 : COMMUNITY VISIT**

Community site visited: Vasna bhayli road near waves club

Date and Day :20<sup>th</sup> August 2019

Duration of visit : 1 hour 30 minutes.

Number of times site is visited : 1

Roles and responsibility of each member :

- Interview : Akash Shukla
- Photograph : Juhie Shamdasani, Keisha Gandhi, Purvi Patel.
- Observation : Saloni Bhatt, Janvi Mulwani
- Noting the points from interview : Akash Shukla and Juhie Shamdasani.

Conduct of community visit:

- List of questions asked :
  - What was the daily routine of the people ?
  - Do they get proper food ?
  - Do they get proper facility in their area ?
  - Is the area where they live is cleaned or not ?
- How many stakeholders (persons) were interviewed : 10

- What was the duration of interview : 5 to 10 mins
- Particular sites/stakeholders observed : No
- Duration of observation : 30 minutes
- Site : Rural area
- Photographed : Yes



## **Chapter 2 : IDENTIFICATION OF PROBLEM**

The process of identification of social problem started with a community visit. Detailed description of community visit is given below.

Problems identified:

1 Unhygienic living conditions

Bases for identification of this problem

(i) Points drawn from interview :

The people out there weren't living in a hygienic conditions.

They complained about their filthy environment and how the same can cause them several diseases.

Problem selected:

## 1. Sanitation and hygiene issues in the slums of Vasna-Bhayli

Due to insufficient supply of water, people of the Vasna-Bhayli fail to look after their personal hygiene and become the subjects of chronic diseases. Even though they are well aware about the basic sanitation mannerisms, they do not have the option to implement the same and thus suffer due to no fault of their own.



2 Not proper facilities available for them.

Basis for identification of this problem

(i) Points drawn from interview :

They do not have proper facilities to fulfil their basic needs like water, good quality of food, clothes etc.

(ii) Points drawn from observation :

There is an inadequate supply of water which is used for cooking and for using the washroom. Therefore they aren't habituated to washing their hands after using the washroom hence consume food and water in the same unclean and unhygienic way

(iii) Photographs to support







## **Chapter 3 : LITERATURE SURVEY**

### **TITLE: SANITISING BHAYLI**

#### **Introduction**

We will be addressing the hygiene problems in Bhayli area. During the field visit, we discovered many problems but the one that sought our attention and concern was hygiene issues. And by discussions, we have concluded to a particular solution.

#### **Problem**

Now that we have chosen hygiene issues, the main concern of ours is their cleanliness status and how due to the scarcity of water supply, there are many diseases spreading.

## **individual LITERATURE REVIEW**

### **JANVI MULWANI**

1) <https://globalhandwashing.org/innovations-in-combating-the-hand-hygiene-crisis-a-lesson-in-getting-creative/>

Washing hands is just as important as everything related to a person's health is. On an everyday basis, washing your hands itself kills 40% of the germs that are there. This absence of hand washing facilities inside healthcare facilities puts entire communities at risk of health epidemics and the spread of infectious diseases. These people in Cambodia detected that there was no facility to wash hands frequently in a hospital, so they creatively prepared a portable wash basin which two boxes attached together, and a tap fixed in the front side. The water had to be filled every day, so there was labour work that was needed. As the experiment says, it was effective for the healthcare workers in the hospital, thus making this social innovation sustainable.

2) <https://www.reactgroup.org/news-and-views/news-and-opinions/year-2017/hand-hygiene-saves-lives/>

Hand hygiene has been a major issue in almost all the countries, especially in the rural areas. Various organizations and social worker groups have been trying to eradicate this issue by providing water, soaps, low cost sanitizers, wet wipes and much more. As such, hand hygiene is

not only about preventing infections, but also controlling antibiotic resistance. Hand hygiene is the single most important – and most cost-effective – measure to control spread of pathogens whether resistant to antibiotics or not. In the community, the sanitary solutions needed are similar to the ones in health-care. There are several studies on how hand-washing rates can be improved in the community.

### **JUHIE SHAMDASANI**

1) Show Me the Science – When & How to Use Hand Sanitizer in Community Settings | Hand washing | CDC

In this article, apart from the benefits and usage, they've also give the demerits of it and what if it is not used properly. Wean use this article in our project, in a positive way by restricting all the things that they've mentioned. The “do nots” can be stated clearly with the help of this. The advantages and disadvantages of all the ingredients used are also stated.

2) <https://timesofindia.indiatimes.com/life-style/health-fitness/home-remedies/make-your-own-homemade-hand-sanitizer-with-just-3-ingredients/articleshow/71151672.cms>

In this article they've talked about everything relating to our project. From the usage to making to its benefits. With this article, we'll be able to improvise our making of sanitizers. Also, the benefits listed can be helpful to prove our research right. At the end a paragraph of "how to apply" is given, which can be included and can make the slum people understand better about the usage about it.

### **PURVI PATEL**

1) <https://wholefully.com/homemade-hand-sanitizer/>

Whenever we heard the word sanitizer we always think about antibacterial, germ free, viruses free etc.

So we took a review of article by **Cassie Johnson** related to the home made sanitizer and their experiences are as under. As per her experience Handmade sanitizer is awesome because it includes natural ingredients like lemon, orange and tea tree. It is also helpful for sensitive skin because it includes only natural things not a single chemical in it. It is totally safe for small kids because their skin is so much sensitive. It

includes countless essential oils which is helpful in photosensitivity issues.

2) <https://aim2flourish.com/innovations/using-hand-sanitizer-can-help-the-world-go-green>

Overview

- 1) This innovation helps with using less paper made product.
- 2) This innovation could replace the traditional hygiene product in most circumstance and become a trend in near future.
- 3) This innovation produces less garbage than traditional paper-made products such as wet wipes.

## **KRUSHA GANDHI**

1) <https://cleanmyspace.com/make-your-ownhand-sanitizer/>.

It's in the shape of a tiny bird: You twist the top and push down for a spritz of antibacterial, essential-oil infused spray. It's designed by Oleic, a start-up that wants to bring beautiful design to mundane products.

2) <https://cleanmyspace.com/make-your-own-handsanitizer/>.

- Combine all ingredients together, stir well, and pour into the bottle with a funnel.
- You need to use a minimum of 60% rubbing alcohol for this to be an effective germ-fighter.

- Be forewarned: essential oils that are known to have anti-microbial properties can be a skin irritant.
- Use less drops, or combine with soothing oils for a more balanced recipe (i.e. camomile). This keeps for about 6 months.

### **SALONI BHATT**

1) <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2825992/>

The ethanol hand sanitizers removed detectable virus from at least 80% of hands. All ethanol treatments were significantly more effective than no treatment, water alone, or soap and water for removal of detectable rhinovirus from the hands. Soap and water removed detectable virus from 5 (31%) of 16 hands (P = 0.04 compared to the no-treatment control).

There was no difference detected among the various hand sanitizer regimens.

2) <https://www.sciencedirect.com/science/article/pii/S016041201830638>

X

Data for sanitation research from year of 1900 to 2016 have been collected and analyzed. Hotspots for sanitation research have been discussed for future work based on the keywords data. The constraints for global sanitation have been identified. Promising technologies have been evaluated and proposed.

## **Chapter 4 : social innovation**

**TITLE: SANITISING BHAYLI**

### **Introduction**

We will be addressing the hygiene problems in Bhayli area. During the field visit, we discovered many problems but the one that sought our attention and concern was hygiene issues. And by discussions, we have concluded to a particular solution.

## **Problem**

Now that we have chosen hygiene issues, the main concern of ours is their cleanliness status and how due to the scarcity of water supply, there are many diseases spreading.

## **Solution**

- As per the solution, we decided to make sanitizers and wet wipes for the areas. The rationale behind the same is, as there's not enough supply of water, we'll be providing sanitizers which can be used to clean their hands without any usage of water.
- Our sanitizer bottle will be 50 ml which will continue for 3-4 weeks and the bottles will be refilled every month.
- The components involved will be all pure and natural such as aloe vera gel, clove essential oil ( anti-germs oil), etc. As it will be made by us students.

## **Operation process**

- Sample sanitizer bottle will be processed as soon as possible in college lab itself.
- Once it is made, it will be tested by college students itself.
- The process will go steadily and all the bottles will be distributed at once.
- Once the results are positive and the villages are also used to it, the actual distributed at once.

## **Benefits**

- The main concern was hygiene issues and that will be covered.
- The usage of water will be also less, comparatively.
- It is easy to use, hence, convincing them to use often.

## **Sustainability**

- As all the ingredients used are pure and natural. No environment will be harmed and water will be saved too.
- The materials won't cost much as it will be brought in wholesale.
- If the sample gets approved will try to spread the learning process, making  
feasible for anyone to make.

## Chapter 06 : Learning from KHOJ

1 ) Name of the Student: purvi patel

ID: 17163035

Program: B. Sc.

1. What have you learned from community visit?

Keen observation skills, To Interact with people & know their point of view regarding the problem Observed.

2. What have you learned in the process of developing social innovation?

Generating Ideas by Understanding Needs and Identifying Potential Solutions, Prototyping & Developing Model.

3. Name some skills that you got to know about and learned as you worked on KHOJ.

Interaction & Communication Skill, Project management skill, Prototyping & Developing Model.

4. Name some challenges that you faced and how you overcame the challenges.

Unmet need of Time was challenge faced but we overcame by efficient Team Work.

5. How will such social engagement help you and the society?

Social engagements like this will help us think innovatively, Work Creatively for betterment of society & As a part of society such social engagement will encourage us (youth) to solve social problems, Society will be Helped in a way that problems will be solved.

2 ) Name of the Student: saloni bhatt

ID: 17163038

Program: B.Sc.

1. Through community visit I learned how to interact with unknown person and know about the problem they are facing in their locality. Also how to work in team and co-operate with other team members and manage the functioning of our work properly.

2. Through the process of social innovation, I learned how can we make best from the resources which are available to us in a reasonable price.

3. Some skills which I learned from KHOJ are; how to do work in a team and also how can we make use of another alternative of something which is expensive for normal people.

4. Some challenges that I faced are; during community visit I was not

exactly able to understand what are the problems of the people and also how to deal with their respective problems. After interaction with some people I was able to communicate with them and was able to understand their problems.

5. This innovation helps us and society by purifying the water at a reasonable scale of TDS in the range which is safe for animals, water bodies and also environment.

3 ) Name of the Student: krusha Gandhi

Program: B.Sc.

ID: 17163032

□ From the community visit, I learned that the lakes in Baroda, especially the Gotri lake is completely full of sewage wastes. People dump their household wastes and all into the lake which makes the lake water not good for anything. And the negative side of this is that the same water is being used by nearby houses for the household uses such as washing clothes etc. which can even cause many health related problems.

□ From the process of developing social innovation I learned that how we can solve this problem not by harming or causing damage to nature by using the Eichhornia which is an excellent source of biomass and also the roots of Eichhornia naturally absorb pollutants which is the best way to solve this problem.

□ One of the skill that I learned is how to work in a group of 6-7 members. Many a times there had been differences in the opinion, but I learned to adjust with all, and learned to choose the correct opinion.

□ As we needed to collect the Eichhornia plant and as I was assigned to collect it, I faced the most challenge in this. Because at the time of our KHOJ most of the lakes does not contained Eichhornia especially lakes

nearby of our university. And the only option left was now to collect Eichhornia from the Bhayli lake which is now a home of the crocodiles. But I was successful in collecting Eichhornia from the Bhayli lake itself.

□ From our social engagement people will get to use the clear water for their household works. It will create an awareness among the people that not again to dump waste into the lake water so that the future doesn't have to suffer. And they will also get to know how we can solve this type of problems without harming the nature.

4 ) Name of the Student: Janvi mulwani

ID: 17165010

Program: BA JMC

1. What have you learned from community visit?

I learned that the people go through many problems which arise in the community in which they are living especially in rural areas. There were many problems along with the one on which we are working such as mosquitoes, cow dung everywhere, etc.

2. What have you learned in the process of developing a social innovation?

I learned that how some plants which we think are of no use and just increasing the biomass can actually be helpful in some ways or other. The plant which we used Eichhornia is basically an invader specie which rapidly grows in water bodies and is a problem to aquatic forms but we found out that actually that plant is very helpful.

3. Name some skills that you got to know about and learned as you worked on KHOJ.

Some skills that I learned during my work on KHOJ is team work, time

management and moreover how to identify the problem which we cannot see but is a problem to the people living out there just by talking to them.

4. Name some challenges that you faced and how you overcame the challenge.

We faced some challenges during our experimentation. The first problem was where do we put our setup. This problem was overcome by talking to our faculties as they suggested us places where we can put our setup. The second and main problem was that we needed young Eichhornia plants for our experiment but we were not getting as they were inside the lake exactly in between and we could not just simply go out there and take them out so this problem was solved by the people who were living over there as they took out some plant by going inside the lake by their boats and then plucking them out.

5. How will such social engagement help you and the society?

Such kind of social engagement will be helpful to me as I will feel good that my ideas were helpful to the people living there and to the society it will be very much helpful as they will be able to have clean water and clean environment for their living which will I turn help them out as they will not frequently fall ill.

5 ) Name of the Student: akash shukla

ID: 17131040

Program: BBA

1. What have you learned from community visit?

I learned from community visit that there are many urban areas where people suffer from so many problems. Their life is very critical from no proper water resource, waste garbage problem, other waste material, mosquito etc.

2. What have you learned in the process of developing a social innovation?

I learned to solve the poor people problem from our skills, knowledge, and through abilities. And they spend their life tension free, and I am happy

to solve the people problem.

3. Name some skills that you got to know about and learned as you worked on KHOJ.

I have learned the phytoremediation of waste water and treating other materials.

4. Name some challenges that you faced and how you overcame the challenge.

Removal of heavy metals and solving the problem of other wastes.

5. How will such social engagement help you and the society?

It will help to create a green environment and treat similar problems in and around the city.

6 ) Name of the Student:Juhie shamdasani

ID: 17165026

Program: BA JMC

I have learned that Communities often share a sense of place that is situated in a given area and keeping that area clean and productive.

By keeping such thoughts in mind they can suffer less instead of contaminating or polluting that place.

If their own area is pollution free they themselves can get benefits from that.

I have learned that Social innovations are not just simple innovations but basically, they are some new ideas some education, some strategies that are beneficial for the development and betterment of a community.

Keeping the loopholes identified from the community visit innovation should be in the favor of the community crowd at the respective area.

Innovation should be affordable for the locals.

Implementing your present skills and developing some skills.

From KHOJ, I personally have developed a skill for creating something best from your present which should be beneficial to others at a cheaper rate.

The challenges faced by me was basically asking someone for some other problems. Though the personals were living in that area they were

telling that we are not living in this area.

So to overcome this, we called a person that was in the temple beside the area of the visit and asked, he told that ask this person he will give the details you want.

- Such social engagement will help me in many ways such as:
- Greater satisfaction with community.
- Feel more supportive by community, family, team members.
- More opportunities to implement my skills and abilities.
- Will get both mental and physical support.
- Will get benefits from the project developed by the team which were not previously available

before the development of the project.

- They themselves will develop a habit of maintaining their own area so that in future they

would face fewer problems created by themselves.

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2015



KHOJ- PS342

Spring-2019

Group no: 22

Faculty Mentor: Ms. Prakruti Shah

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# Chapter 1

## Community Visit

### IDENTIFICATION OF PROBLEM

The process of identification of social problem started with a community visit. Detailed description of community visit is given below.

### COMMUNITY VISIT

#### **SITE 1 : Ganesh Pasti Bhandar, Hafiz Scrap Traders**

Date and Day : 19/1/2019 (Saturday)

20/1/2019 (Sunday)

Duration of visit: 2 hr

Number of times site is visited: 2

Roles and responsibility of each member:

INTERVIEW:- Taken by each member of group.

PHOTOGRAPHS:- Anas Patel and Aakash Patel

OBSERVATION:- Trupti Shah and Harshal Prajapati

NOTING POINTS:- Zainab Fatima

DRAFTING THE LITERATURE SURVEY:- Sivam Bist and Zainab Fatima

Conduct of community visit:

Lists of questions asked:-

1. What approximate amount of scraps do u buy daily?
2. Approximately how many kg of plastics are sold to you on a daily basis?
3. What is done by that plastic at your centre?
4. Do you have any idea what are done by the plastics u sell to a dealer?
5. Which kinds of plastic are accepted for recycling?
6. What do you do from the low grade plastics which are not sold for recycling purpose?
7. Do you bear the costs for transporting low grade plastics from your centre to the dump yard?
8. What is approximate cost of transportation?

#### **Problems identified:**

- The plastics of low grade were sent at dump yard.

-Bases for identification of this problem

(i) Points drawn from interview:

1. High grade plastics were separated manually and sent to dump yard.
2. Tedious work to separate them manually for long hours.
3. The costs for transporting low grade plastics to dump yard is to be beared by owner fetching him nothing in return.

(ii) Points drawn from observation:

1. Plastics being non-degradable, the un-recycled plastics remain on Earth forever and thus destroying our Mother Earth.



### **Tentative solution:**

We can make a marble from some grades of plastic by performing some operations which is not that costlier.

## **SITE 2 : Street Vendors (Hand Cart)**

Date and Day : 19/1/2019 (Saturday)

20/1/2019 (Sunday)

Duration of visit: 2 hr

Number of times site is visited: 3

Roles and responsibility of each member:

INTERVIEW:- Taken by each member of group.

PHOTOGRAPHS:- Anas Patel and Zainab Fatima

OBSERVATION:- Trupti Shah and Harshal Prajapati

NOTING POINTS:- Harshal Prajapati

DRAFTING THE LITERATURE SURVEY:- Sivam Bist and Zainab Fatima

Conduct of community visit:

Lists of questions asked:-

1. For how many hours do you ride the cart?
2. Duration of ride during day and at night
3. Why don't you install a battery bank so you can light up the cart at night?
4. How do you take turns at edges?
5. Is it difficult for u to take turns at sharp edges?
6. What if we provide you with battery bank? Would u accept it?

### **Problems identified:**

- Unable to sell food at night and faced difficulty while turning
- Bases for identification of this problem

- (i) Points drawn from interview:
  1. Some people do not buy an item because of the lack of electricity.
  2. Some have a problem because of unhygienic issue.
  3. They faced difficulty while turning the cart.
- (ii) Point drawn from observation:
  1. If they lift the cart while turning, some foods are drop down.
  2. Electricity is a main issue at some places.
  3. They do not trust on technology, they think it might be expensive.



**Tentative solution:**

We can make a flywheel mechanism for a hand cart thus power can be generated while they run the cart during the day time and charge battery which can be later used during the night. Second, we can also build a mechanism for easy turning.

**SITE 3 : Street Vendors ( Tricycle )**

Date and Day : 19/1/2019 (Saturday)

20/1/2019 (Sunday)

Duration of visit: 1 hr

Number of times site is visited: 2

Roles and responsibility of each member:

INTERVIEW:- Taken by each member of group.

PHOTOGRAPHS:- Anas Patel and Zainab Fatima

OBSERVATION:- Trupti Shah and Harshal Prajapati

NOTING POINTS:- Harshal Prajapati

DRAFTING THE LITERATURE SURVEY:- Sivam Bist and Zainab Fatima

Conduct of community visit:

Lists of questions asked:-

1. For how many hours do you ride the tricycle?
2. Duration of ride during day and at night
3. Have you faced any difficulties?
4. Why don't you use electric cycles?

**Problems identified:**

- > They have an issue of climbing steep ways like bridges.
- Bases for identification of this problem
- (iii) Points drawn from interview:
    1. They run the tricycle approximately 20 km per day.
    2. They transport something or selling a food on tricycle.
    3. Faced difficulty while climbing on bridges.
  - (iv) Point drawn from observation:
    1. They are exhausted while climbing on bridges.
    2. Enough space in tricycle to build a mechanism.



**Tentative Solution:**

Accelerator can be attached and the power generated from battery can be used to accelerate the vehicle. Power can be generated while they run cart during day time and charge battery which can be used to store energy to battery.\

**SITE 4 : Public toilets in Akota**

Date and Day : 19/1/2019 (Saturday)

20/1/2019 (Sunday)

Duration of visit: 2 hours

Number of times site is visited: 2

Roles and responsibility of each member:

INTERVIEW:- Aakash Patel and Harshal S Prajapati

PHOTOGRAPHS:- By Anas Patel

OBSERVATION:- Trupti Shah

NOTING POINTS:- Zainab Fatima

DRAFTING THE LITERATURE SURVEY:- By Sivam Bist and Zainab Fatima

Conduct of community visit:

Lists of questions asked:-

1. Approximately how many people use toilets daily?
2. At the toilets and bathrooms cleaned regularly?
3. How often are these toilets cleaned then?
4. Why are the workers assigned to clean toilets don't perform their duty?
5. How often do you use public toilets?
6. What rating would you give in terms of cleanliness of toilets?
7. Do you think pay and use system is right?
8. Do you think the VMC is fulfilling its duty?
9. Why do you think government is responsible for this scenario?
10. What are your demands from government?
11. Do you think automatic flush system in public toilets will contribute to solve these problems?
12. Are you aware of the government schemes?



Problems identified:

- Unhygienic.

Bases for identification of this problem

(i) Points drawn from interview:-

1. The money collector sits in very dirty place filled with bad smell and heavily infected with mosquitoes.
2. The people using toilets are concerned for their health as the toilets are very dirty and no one bothers to flush it after use.
3. The toilet harms the people residing in nearby locality.

4. Unaware of modern technologies which can ease their work.
- (ii) Points drawn from observation:-
1. The people who cleans the toilet without gloves and masks which infects other people as well as affects their health.
  2. The place where they were working was full of mosquitoes and other insects.
  3. Polluted and Stinky Environment results in Open Urination Defecation.
  4. More importantly High risk to Public Health & Life



- Leakage of water creating problems like inadequate water for flushing

Bases for identification of this problem

- (i) Points drawn from interview:-
1. Sometimes water is also not available as some people leaves the flush and water tap open and leave.
- (ii) Points drawn from observation
1. There was leakage of water also from the washbasins and bathrooms.
  2. Higher water usage: Conventional water flush urinals use approximately 4 liters (approx. 1 gallon) of water for flushing, which goes up to 10 to 15 liters (approx. 3-4 gallons) when a toilet pan with flush is used for urinating.



## Chapter 2

### Problems identified

- **Street Vendors (Hand Cart)**

Unable to sell food at night and faced difficulty while turning

-Bases for identification of this problem

(i) Points drawn from interview:

1. Some people do not buy an item because of the lack of electricity.
2. Some have a problem because of unhygienic issue.
3. They faced difficulty while turning the cart.

(ii) Point drawn from observation:

1. If they lift the cart while turning, some foods are drop down.
2. Electricity is a main issue at some places.
3. They do not trust on technology, they think it might be expensive.

Identification of the problem was identified after interviewing 7 to 8 hand cart vendors.

The vendors faced problem of standing and selling substances at night due to lack of electricity. They also informed us that due to this problem, they have to work during the peak hours of afternoon in scorching heat and then also they were unable to earn enough money as compared to their labour. They also faced problem while turning the vehicle. They had to lift the whole cart and turn the vehicle on the front two wheels. These caused the substances to fall down and moreover at that time they have to lift the whole vehicle causing pain in their arms by increasing the load of the vehicle.

## Chapter 3

### Literature Survey

**Social innovation 1- Modified hand-cart with steering mechanism and brakes.**

**Developed by:** Md. Usman Hanif Patel

**Place:** Maharashtra

**Cite Source:**

<http://nif.org.in>

**Description of the social innovation:**

He saw a street vendor struggling with his hand cart while negotiating a turn on an incline, which led to this idea. He also thought of adding a braking system. He suggested incorporating easy steering mechanism and brakes to make turning hand-carts easy and arrest slide on inclines respectively.



**Implication for proposed social innovation by your group**

We are focusing on easy turning. We suggested to create a flywheel mechanism which utilize kinetic energy. For turning purpose, we also thought of adding steering mechanism.

**Name of the Student**

Harshal Prajapati

**Social innovation 2-** Solar powered cart for street vendors.

**Developed by:** Karthik.Pai, Laxman.P, Mallikarjun.T, Laxman.Y, Manjunath.H, Kiran.H, Laxmi.Y, Dadarao.P, Guruprasad.S, Kallapa.H.

**Place:** Belgaum, Karnataka

**Cite Source:** <https://allaboutbelgaum.com>

**Description of the social innovation:**

The main source of this cart is solar panel, Which Produces required electric power to charge the battery which in turn drives the motor, to give extra torque to the vendor to pull or push his cart during steep roads. This cart is just a model, which consists of cooling fan, led lights to increase the working hours of the vendor at night time.



**Implication for proposed social innovation by your group**

We have thought about creating a flywheel mechanism instead of solar plates. Flywheel mechanism produced electric power to charge the battery which is used as a reservoir at night for lights.

**Name of the Student**

Harshal Prajapati

### Social innovation 3- Real Time Vehicle Theft Identity and Control

**Developed by:** Anup Kamat, Sonali Devtarse, S.R.Nibe

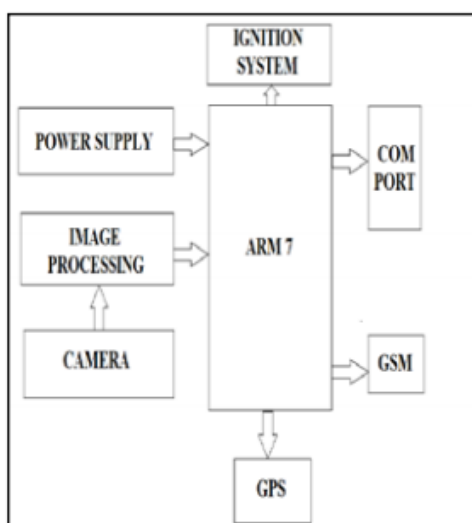
**Place:** Dept. of E&TC, S.C.S.C.O.E, Ahmednagar, Savitribai Phule Pune University, Maharashtra, India

**Cite Source:**

<http://ijaret.com/wp-content/themes/felicity/issues/vol2issue1/anup.pdf>

#### Description of the social innovation:

In today's world the amount of vehicles theft is increasing day by day. Each year more than a million vehicles are stolen in the U.S. – that's one vehicle every 30 seconds. Vehicle theft occurs not only in metropolitan areas but it can occur in seedy areas of town. Theft is one of the most common and oldest criminal activities. So the manufacturers of the vehicle are attempting to improve the security features of the car. In their project FDS (Face Detection System) is used, where they can compare the image of the driver with the predefined images. If the image of the driver does not match with the owner of the vehicle then the image of the thief is send to the user. So the owner of the vehicle can get the clear image of the thief through the hidden camera set inside the car. Also can get the exact location of vehicle using GPS system. The address of the location of vehicle is send through SMS using GSM module.



### **Implication for proposed social innovation by your group**

We are focussing on preparing this system for handcart owners but at comparatively lower prices. We will implement this project on aurdino or 8051 processor for making it much cheaper. Instead of image processing we will put a biometric fingerprint sensor so camera can be avoided as camera is fragile and get damaged easily.

### **Name of the Student**

Zainab Fatima

### **Social innovation 4-Development of Battery powered Hand cart**

**Developed by:** Lakiswaran A, L Samurgam

**Place:** Belgaum, Karnataka

### **Cite Source:**

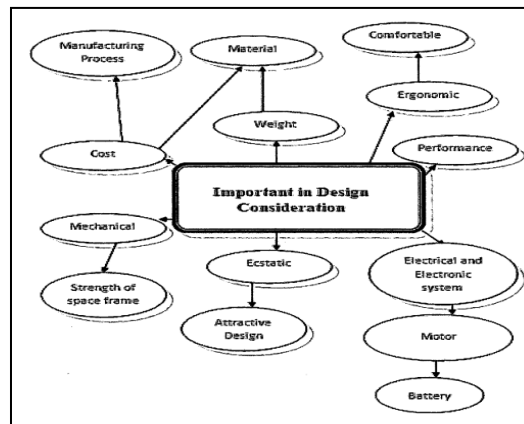
[http://umpir.ump.edu.my/id/eprint/2345/1/TILAKISWARAN\\_ANAK\\_LELAKI\\_SAMURGAM.PDF](http://umpir.ump.edu.my/id/eprint/2345/1/TILAKISWARAN_ANAK_LELAKI_SAMURGAM.PDF)

### **Description of thesocial innovation:**

A motorized tricycle is a three wheeled bicycle with an attached motor used to assist with pedalling. Generally considered as a vehicle, tricycles are usually powered by electric motors or small internal combustion engines and have function as electric bicycles. Some can be propelled by the motor alone if the rider chooses not to pedal; while in others the motor will only run if the rider pedals. Electric bicycles are generally powered by rechargeable batteries. These are normally charged from the utility supply (mains), with perhaps the option of using the motor to effect regenerative braking or charging while being pedalled or rolling downhill. Electric motorized bicycles are either power-on-demand, where the motor is activated by a handlebar mounted throttle, or pedelec (from pedal electric), where the electric motor is regulated by pedalling. These may have a mechanism such as a crank sensor to detect when the user is pedalling, or a more sophisticated torque Sensor. But, for this project, no pedal is used to run the tricycle and fully powered by battery and electric.

## Implication for proposed social innovation by your group

We have thought about creating this mechanism for hand cart vendors, as when we discussed their problems, this was their biggest problems. When cart is pushed during day time the kinetic energy produced will be converted into electrical energy and this will be stored in battery. Thus, during night time this power can be used at night.



## Name of the Student

Zainab Fatima

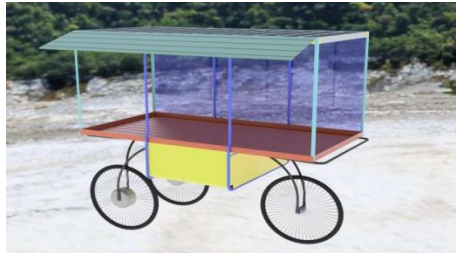
**Social innovation: 5** Electric Assisted Pushcart and Mobile App for connecting vendor and customer.

- **Developed by :** Sanjay Godbole
- **Cite Source :**  
<https://www.linkedin.com/in/srgodbole/>
- Mobility-Transportation
- Rural Support Innovation
- Social Support Innovation

## DESCRIPTION OF SOCIAL INNOVATION:

A life changer for street hawkers Walk on any street and you will come across vendors both young and old, hawkers selling vegetables, food and other wares on rickety push carts. These vendors travel a long distance to the wholesale market to load their carts

and push to commercial centres or through residential areas to sell. The coverage area of these vendors are limited due to age, health, and fatigue in pushing loaded carts. They may not be able to sell all these perishable items. Most of the vendors are poor and cannot afford to own one and usually hire one on a daily basis paying anywhere between ₹75 to ₹100 per day. A new push cart costs more than ₹9500.



#### **DESCRIPTION FOR PROPOSED SOCIAL INNOVATION BY GROUP:**

We are focusing on that better mobility can be achieved by an improved design of a lighter and stronger push cart. Design to cost by appropriate use of material and variants for fruits, vegetables, food, wares, and so on. Finally providing assisted electric drive to the push carts. This will assist the vendor to walk along the push cart on the streets. This will improve his mobility and will be able to quickly sell his items. The vendor who is mobile will be able to make more than one trip and increase his income. The second is the development of a pushcart mobile app for vendor and customers. The vendor app will enable the vendor to

1. Share his location,
2. Enter the items for sale and prices,
3. Receive orders from customers,
4. Get electronic payment through BHIM,
5. Do a door delivery to the customers.
6. Receive \* ratings from satisfied customers and much more. The user app will show the customer all the vendors nearby and identify the produce that is being sold. Place order on the vendor and either pick up the items are asking for delivery. Make electronic payment through BHIM app. Customer can give Star ratings to the vendor, this will encourage the vendor to provide good service, fresh and quality items at a good price.

**NAME OF THE STUDENT:**

Trupti Shah

**Social innovation 6-** Modified hand-cart with breaking system for handcart.

**Developed by:** Yogesh S. Patil, Ganesh H. Kawade

**Place:** Sakharale, Maharashtra, India

**Cite Source:**

<http://nif.org.in>

**Description of the social innovation:**

India is a country where the main occupation is agriculture. More than 3/5th of India's population is employed in this sector. Sugarcane is the largest crop cultivated in Indian farms. hand cart is the one of the two main transportation media used to transport vegetable from market to the peoples. Bullocks used for this purpose suffer various problems. The main problem related with hand cart is speed control. It is observed that to control speed of cart, cart riders do dangerous experiments like application of brake manually by directly putting wood in front of wheels, Because of such unscientific methods major accident happens which causes major casualties. The purpose of present work is to provide scientific solution to control speed of cart.



**Implication for proposed social innovation by your group**

In this study effective braking system for pneumatic tyre carts used for transportation of hand cart is designed developed. We are providing them a mechanism of breaking as same as bicycle has now a days by that they can easily stop their cart.

**Social innovation 7- Weather challenges.**

**Developed by:** Kaberere Peter Maina

**Place:** NAIROBI

**Cite Source:**

<https://urbanplanning.uonbi.ac.ke>

**Description of the social innovation:**

On the effects of sunny conditions 39% supported that high temperatures increases the rate of getting tired especially since they do not have places to shelter, 3% said they cause tyre bursts. A fraction of the operators claimed not to be affected by the wet weather while another 11% indicated that their health is negatively affected by the wet season since there are no shelters both at the market Andon roads where they can shelter in case of rain.



**Implication for proposed social innovation by your group**

We have thought about creating a roof for handcart which is mounted on and moving towards with handcart. We also suggested to make a roof of solar plates so that we can also get electricity from it. By this they can protect from direct sun light and monsoon condition.

**Name of the Student**

Aakash patel

**Social innovation 8-Refrigerator vented cart**

**Developed by:** Sameer Khandekar

**Place:** Refrigeration & Air-conditioning Laboratory of the Department of Mechanical Engineering, IIT Kanpur

**Cite Source:**

<https://dora.iitk.ac.in/funds/spa-vending-cart.php>

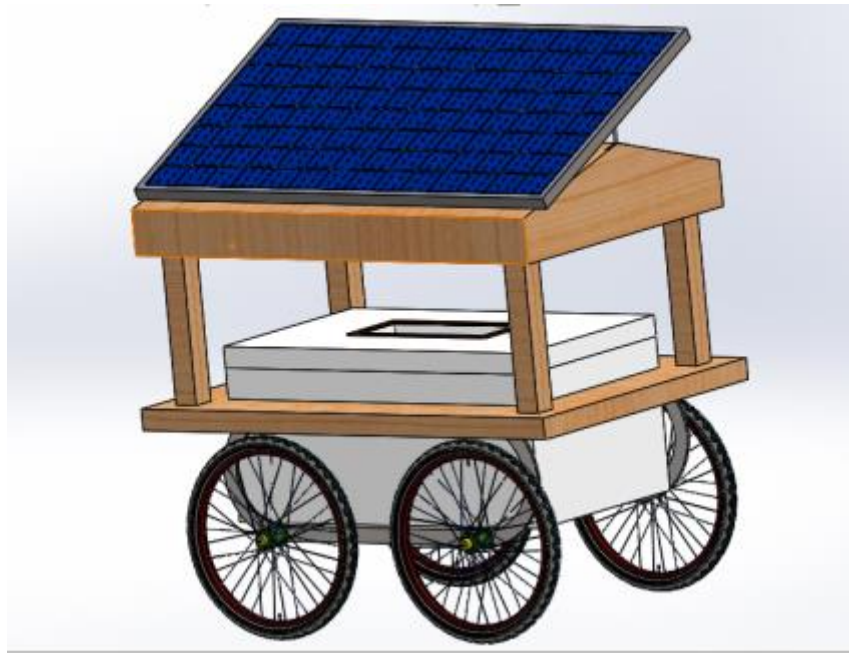
**Description of the social innovation:**

At present there is no provision available for the preservation of perishable items by means of refrigeration system for street vendors, which results in spoilage of large quantities of eatables/fruits/vegetables. It also hampers the business prospects and growth of street vendors. Remote areas in India also do not have cheap availability of solar powered refrigeration systems. Irregular or no power supply in remote areas in India is a major challenge for storage and distribution of perishable items including vaccines. The application of the prototype can be easily extended in preservation of lifesaving vaccines and drugs, as per WHO guidelines, in remote areas having erratic power supply. The concept can also be extremely useful for military applications in far flung border districts/fronts where defence personnel are deployed.

Recently an off-grid autonomous solar powered refrigerated vending cart (a thela) for Indian conditions have been developed in the as shown below:



Current situation of vendors in India



Developed model

### **Implication for proposed social innovation by your group**

A fully functional prototype has been proposed for the efficient usage of solar energy and to reduce dependence on fossil fuels by means of solar PV based energy self-sufficient smart cart with inbuilt DC compressor operated refrigeration system for preserving perishable items, specifically for the street vendors. Some preliminary results are shown below wherein the system is seen to operate at negative temperatures continuously completely on solar power. The cart is powered directly by the power received from a top mounted solar PV system without using any interface like an inverter.

### **Name of the Student**

Anas Patel

**Social innovation 9-** Eco friendly food vending cart

**Developedby:** Huma Pervez, Faiza Jamal and Faraz Khan.

**Place:** Jamia Millia Islamia,  
Aligarh.

**Cite source:** <https://yourstory.com/2016/03/students-jamia-eco-friendly-food-vending-cart/>

**Description of work:**

Students of Jamia Millia Islamia have built an eco-friendly food vending cart which has provisions for waste disposal and solar power generation. The product named 'Innokart' is an economical food vending cart that provides proper storage, shelter and hygiene. The cart promises to transform street food selling in India for the better. Besides the storage drawers, the cart has two sections for waste disposal-for dry and wet waste each. The top panel has been kept free for advertisements while there is a plan to set up solar panel on the rooftop. The cart can be used by people for selling food in streets inside a small campus.

**Implication for innovation by our group:**

We are planning to make a cart which is eco friendly. That is the the disposal of food is properly done and also install solar panels to it which will save electricity.

**Name of the Student**

Anas  
Patel

**Social innovation 10** – Hybrid electric handcart project.

**Developed by-** Vivek Kumar  
dubey

**Place-**  
Avcoesangamner

**Cite source** – Resin cap international journal of science & engineering.

### **Description of social innovation**

Goal of the Hybrid Electrical Tricycle is to reduce the effort of labours in bridges or any incline roads. The aim of this project is to add an electric power train and control system to the current hand-powered tricycle to provide tricycle users with improved levels of mobility, facilitating freedom in travel and contribution to the community. The design objectives required a simple and affordable design for the power train and controls, design that needed to be reliable, sustainable, functional. In order to achieve it an electric motor powered assembly is added to current tricycle design.

### **Implication for innovation by our group:**

The battery range of many Electrical Vehicles is limited, meaning that such methods of transportation can only be used for short trips. However Extended range electric vehicles or plug-in hybrids, Manufacturer include an internal combustion engine that uses conventional fuels to recharge batteries in motion and hence extend their range. The need remains for the cleaner power generation technique that allows maximum range extension with minimum environmental consequences.

### **Name of the Student**

Sivam Singh bist

### **Overall Implications for the proposed social Innovation:**

What ideas/ materials have generally been tried out? Which of those can be adopted or adapted?

These ideas generally been adopted for tricycles and not for hand cart vendors. In addition the ideas generally are of huge cost and cannot be afforded by local and poor vendors. The electricity idea is being implemented for tricycle riders only till now and not for hand cart vendors. Though fly wheel mechanism has been discovered but the costs are huge and not yet implemented in reality. Moreover, the fly wheel mechanism has been proposed to run on battery thus by increasing the cost.

What aspects in your social innovation needs to be different in the local context of the community site ?

We are focusing on easy turning and electricity generation at night lighting purpose. We suggested to create a flywheel mechanism which utilizes kinetic energy. KE stored in battery through motor generator then we can use this battery as an electricity source at night. For turning purpose, we also thought of adding steering mechanism. Also, we are planning to educate the vendors about usage of wireless tyres in place of normal tube tyres as they can be repaired easily and also cost of repairing is less. Moreover, the hand cart needs to be run on various planes which can be uneven thus, the use of tubeless tyres will be cheaper in long run.

## **Overall Implications for the proposed social Innovation**

What ideas/ materials have generally been tried out? Which of those can be adopted or adapted?

These ideas generally been adopted for tricycles and not for hand cart vendors. In addition the ideas generally are of huge cost and cannot be afforded by local and poor vendors. The electricity idea is being implemented for tricycle riders only till now and not for hand cart vendors. Though fly wheel mechanism has been discovered but the costs are huge and not yet implemented in reality. Moreover, the fly wheel mechanism has been proposed to run on battery thus by increasing the cost.

What aspects in your social innovation needs to be different in the local context of the community site ?

We are focusing on easy turning and electricity generation at night lighting purpose. We suggested to create a flywheel mechanism which is utilized kinetic energy. KE stored in battery through motor generator then we can use this battery as an electricity source at night. For turning purpose, we also thought of adding steering mechanism.

## Chapter 4

### Peer Feedback

Suggestions asked on the following points / aspects	Accepted / Not accepted Reason for accepting or not accepting
1. Introduce belt drive mechanism and increase gear ratio.	Accepted Reason- It increases the torque because of which the electricity produced will be more.
2. The rain water can be accumulated in a tank.	Not Accepted Reason- Rains are seasonal, moreover if tank is filled the weight of cart will be increased tremendously and it also increases the cost of whole system.
3. Use aluminium pulleys to reduce weight	Not Accepted Reason- Material is not a constraint. Moreover, the weight of overall material is not too heavy.
4. Sometimes the person driving cart may feel tired, so all the mechanism like turning and braking should be automatic.	Not Accepted All mechanisms cannot be automatic.

Suggestions given on the following points / aspects	Reasons for giving the suggestion (How will the project benefit?)
Name of student- Shivam Singh Bisht Suggestion- Two way brick lifter There was a problem while lifting bricks and climbing up the stairs, the lifter will incline and the weight on back will increase.	Reduce the chances of accidents by minimising the unbalancing of load.
Name of student- Harshal Prajapati Suggestion- Additional fillet support Provide extra support on forehead.	The weight will be more evenly distributed and reduces unbalancing of load.
Name of student- Anas Patel Suggestion- Reduce distance between back support and vertical surface.	Reduce stress on back
Name of student- Aakash Patel Suggestion- Use of chain belt instead of fibre belts	To increase strength of overall structure
Name of student- Zainab Fatima Suggestion- Instead of hinged support use rigid support, such that the fibre belts can also be used instead of chain belts.	Reduces the cost of project and can also provide more balancing.
Name of student- Trupti Shah (FOR GROUP 38) Suggestion- While theft of fuel, alarm should ring. One passcode needs to be entered before opening the tank of the fuel.	Inorder to avoid theft of fuel

## Chapter 5 Expert Feedback

Name of Expert: Dr. Kedar Pathak

Specific suggestions asked on the following points / aspects	
<ul style="list-style-type: none"> <li>• What improvements can be made in design?</li> <li>• What improvement can be made with respect to turning mechanism?</li> <li>• What additional things can be added in the project?</li> </ul>	
Expert's suggestions given overall and other than specifically asked	Accepted / Not accepted Reason for accepting or not accepting
<ul style="list-style-type: none"> <li>• The partition pipes can be used to enclose the wires to avoid short circuit of two terminals and extend the life of wire and also prevent it from water during rains. It will also be inevitable to avoid electric shock to user and humans.</li> </ul>	Accepted To increase safety and reliability
<ul style="list-style-type: none"> <li>• Suggested to use 4 wire mechanism with rack and pinion.</li> </ul>	Accepted Due to simplicity and cheaper
<ul style="list-style-type: none"> <li>• Arrangement to disperse light</li> </ul>	Accepted In order to increase luminous intensity, increase life of LEDs as it will prevent it from dust and moisture
<ul style="list-style-type: none"> <li>• Theoretical calculation</li> </ul>	Not Accepted

Name of Expert: Ms. Shalini Amin

Specific suggestions asked on the following points / aspects	
<ul style="list-style-type: none"><li>• What improvements can be made in design?</li><li>• Which materials can be used?</li><li>• What additional things can be added in the project?</li><li>• Any improvement that can be done in prototype?</li></ul>	
Expert's suggestions given overall and other than specifically asked	Accepted / Not accepted Reason for accepting or not accepting
<ul style="list-style-type: none"><li>• Suggested to use wood instead of MS.</li></ul>	Not Accepted Strength and reliability is less. More chances of failure and more prone to breakage.
<ul style="list-style-type: none"><li>• Prototype can be shown on a cycle</li></ul>	Not Accepted Will make a prototype.

## Chapter 6

### Social Innovation to solve problem identified



Fig-6.1 Thrust Bearing

- Thrust bearings are entirely designed to take the axially loaded system. These are used in places where axial thrust predominate such as the propellor of ships' turn and push the ship forward massive thrust is acting on the propeller shaft.
- To keep motion and wit extremely low friction these bearings are used. When the loads are moderate, ball bearings are used.
- When it's heavy roller thrust bearings are used. When there the load is a combination of radial and axial taper roller bearings are used and moderate loads taper ball bearings are used.
- Some of the applications are Boat and Ship propulsion, axle boxer, of wagons, Coaches, Engines, Big machines that like centrifuges, Automobile differential, Gear boxes. Looms where are loads are reversing
- In the proposed system, it is used to turn the hand cart.
- This is the solution for the problem that was faced during the turning.
- It is used to bear the heavy load, thus it prevents the falling of objects also and the load on hand while turning is also reduced.

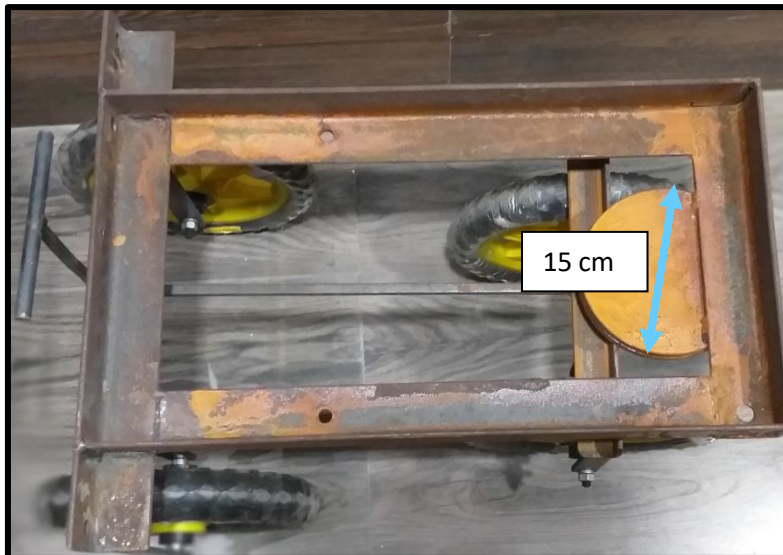


Fig-6.2 Top View

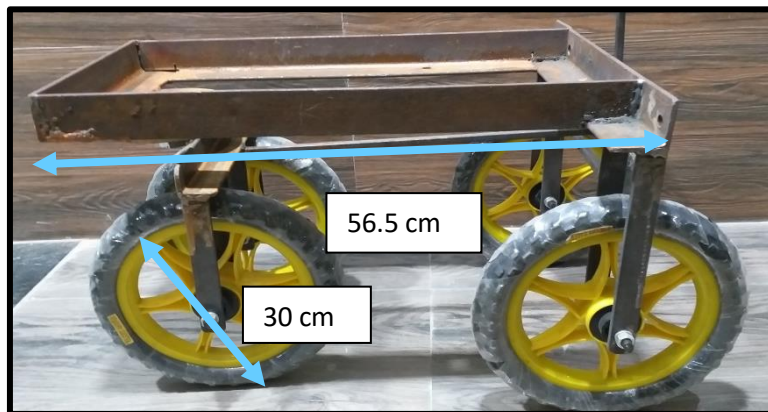


Fig-6.3 Side View

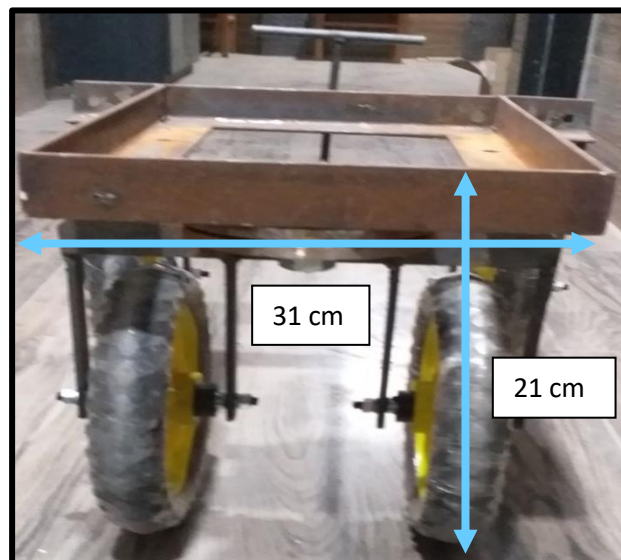


Fig-6.4 Front View

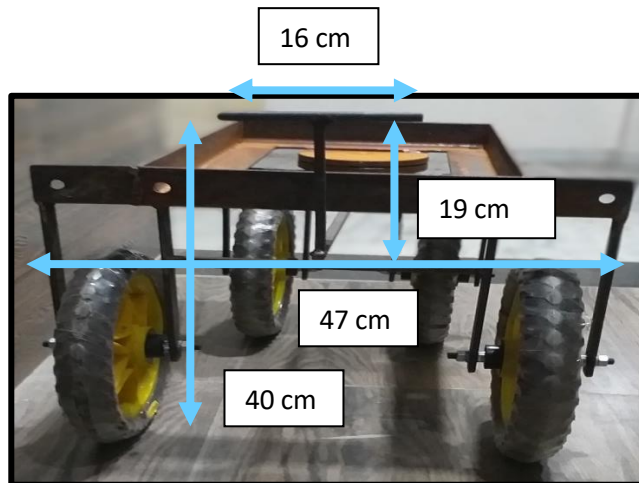


Fig-6.5 Rear View

### Flywheel Mechanism



Fig-6.6 Flywheel Mechanism

- A flywheel energy storage system can be described as a mechanical battery, in that it does not create electricity, it simply converts and stores the energy as kinetic energy until it is needed. In a matter of seconds, the electricity can be

created from the spinning flywheel making it the ideal solution to help regulate supply in the battery.

- A flywheel is a heavy shaft-mounted rotating disc that speeds up when electrical energy is applied to it. When energy is needed, the flywheel is slowed and the kinetic energy is converted back to electrical energy, where it can be transmitted to where it is required.
- The energy a flywheel contains is a function of the speed that it is spinning multiplied by the moment of inertia.
- The moment of inertia states that the effective mass of a spinning object is not dependent on how much actual mass the spinning object contains. Instead, it is dependent on where the mass is located in relation to the central point that it is rotating around.
- For example, if spinning at the same speed, a solid flywheel will store less energy than a flywheel of the same mass that has spokes and its weight situated around the rim of the wheel.

#### **A high moment of inertia is good, but speed of rotation is better**

- The speed that the flywheel rotates has a larger effect on the energy stored within it compared to the moment of inertia. If you have a flywheel with a rim weighing 1kg and replace it with a flywheel with a 2kg rim, it has the potential to store double the energy. If you take the original flywheel and double the speed at which it spins, you quadruple the potential energy that it can store.
- In the proposed project, hand cart is driven using hands and thus high speed is not possible, therefore it is proposed to have a belt drive mechanism in order to multiply the speed.
- For eg:- if the cart wheel is rotating around 20 to 25 rpm, and the gear ratio is kept to be 10, then speed of flywheel will be around 200 to 250 rpm.
- Initially, the battery will not be charged in one or two days, therefore at start battery will be charged for 10 days and it should not be used till it is fully charged.
- Once the cart will run for 10 days and battery will be fully charged, then it can be used for lighting the LED bank.

- After that as the cart will run daily the battery will keep on charging and it will not be discharged fully.

## Chapter 7

### Stakeholder Feedback

- Most of the vendors were having a positive feedback regarding the proposed model.
- Most of the vendors were finding the turning mechanism useful.
- They told us that this mechanism is useful for them as it requires less effort to turn the cart.
- Moreover the mechanical effort required to turn the cart caused pain in their hands and shoulders, thus it would be convenient for them.
- The flywheel mechanism was also proposed before them.
- They told us that though light is not a major issue, but with less investment they could get a permanent solution for standing below a light.
- Fights also take place to stand near and under the street light.
- Thus, this mechanism could help solve this problem.
- We also informed them about the total costing of the project.
- They also found it affordable and they could easily save some money for this mechanism

## Chapter 8

### Learning from KHOI

We learn so much from this approach for the street vendors. We interacted with the vendors and we identified hidden problems which they faced, but not visible to all. We learnt how to see the things from their perspectives. In the duration of the designing of modified street vendor hand cart we found many mechanisms like Four bar mechanism, Rack and Pinion mechanism, Car turning mechanism, etc. But we want to make economical and easy for the vendors so we design Thrust bearing mechanism for turning which used for the applications of Boat and Ship propulsion, axle boxer, of wagons, Coaches, Engines, Big machines that like centrifuges, Automobile differential, and Gear boxes. By just the application of the thrust bearing we design for this hand cart which is economical and easy to maintain. So this is also learning phase that how we should have to look things economically.