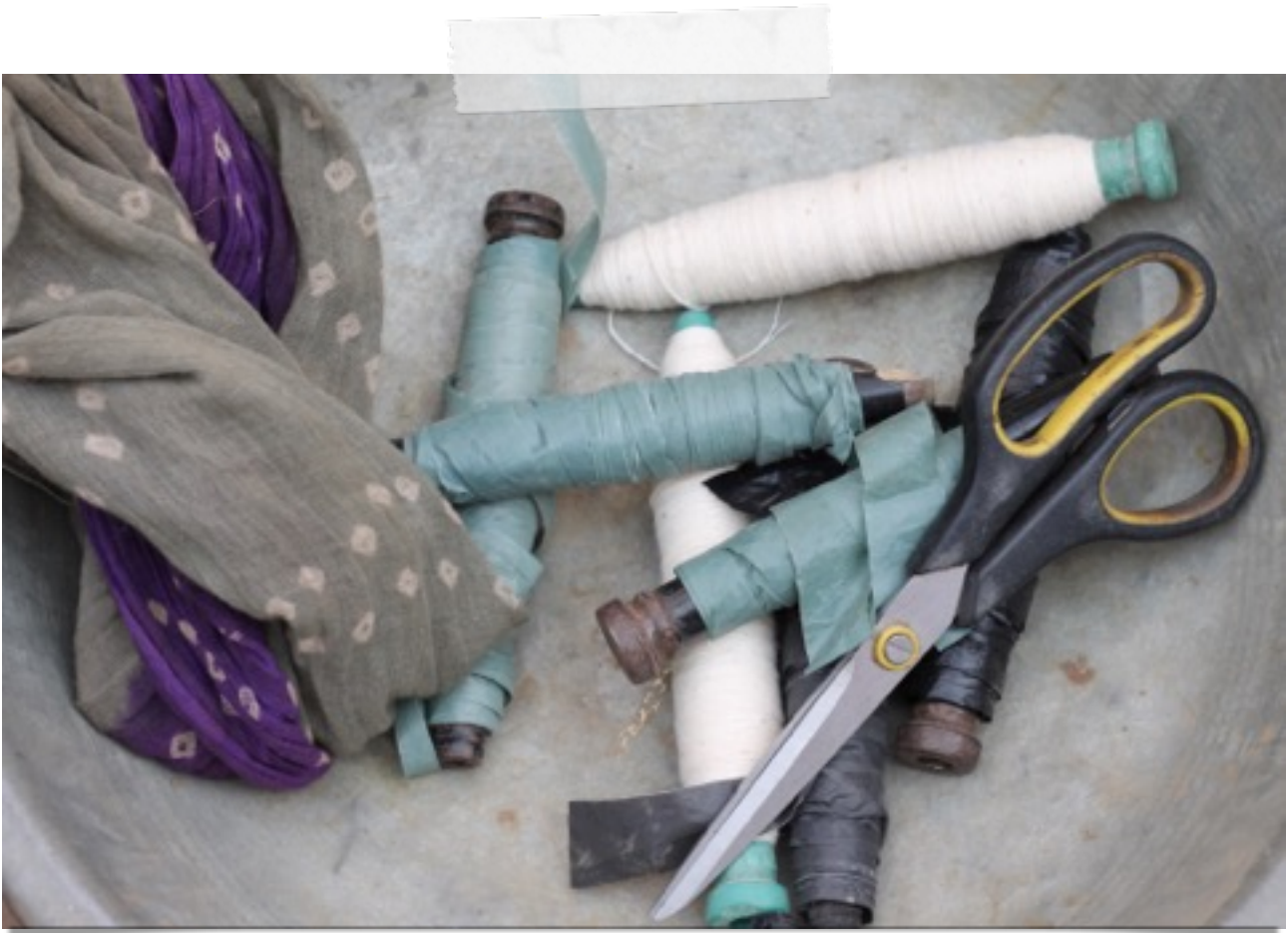


# Creating wealth out of waste: recycled plastic weaving

a project started at Khamir, Kachchh  
assisted by NABARD's SDC  
Rural Innovation Fund



In 2009, Recycled Plastic Weaving started off as an experiment at Khamir, an organisation that works with and for the artisans of Kachchh, but has since travelled across the state of Gujarat as a force that has the potential to tackle problems of the modern world. The journey of the Project is nowhere near over, and it is dotted with inspiring stories and novel ideas.

To appreciate this Project then, it is wise to trace its evolution, and that is what this document seeks to do



a document by  
Kasturi Gandhi

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# Introduction

The modern world brings with itself the hope for better lives for all. Each of us is trying to cut out a role for ourselves in the collective ambition of bringing development and growth. However, this ambition presents problems that are fast ruining the lives of our people, our planet and thereby, our chances of survival. Economies are transforming from traditional to modern, and the challenges for us are becoming more pronounced.



Bhuj, in Kachchh- a district in Western Gujarat, is one of the regions of India that has encountered such a shift. In 2001, a massive earthquake claimed thousands of lives and almost the entire landscape of Kachchh. After that, Bhuj was rebuilt as a city. In the spirit of resurgence and to secure the lives of the earthquake survivors, industrial growth was given an impetus. While this had its benefits, it rendered new problems.

In Kachchh, arts and crafts have been the mainstay for most of the rural communities. The earthquake destroyed their workshops; their tools were lost and their crafts that had travelled with them for centuries as traditions, were now put to a grinding halt.

Simultaneously, with the industrialisation of Bhuj, commercial machine made mass produced goods flooded the markets and homes. The goods crafted by the artisans started losing popularity, and unemployment and low income within these communities resulted. Rural Kachchh and its people found themselves at the mercy of the markets.

Even today, artisans face increasing pressure to sustain themselves, their families and importantly, their art. While this impacts financial stability, it also strikes a blow on the self esteem and morale of our traditional artisans, a significant bulk of the Indian population.



The industrial boom, and the urbanisation that accompanied it to Bhuj also created a problem for the urban habitat. Bhuj saw an increased dependence on plastic in industries and households. More than ten years later, today, indiscriminate disposal of plastic on a daily basis has not only ruined the beauty of Bhuj's landscape, but is also harming stray animals that find food

in garbage dumps littered with plastic.

The urban plastic waste has impacted even the pastoral Maldhari community. When their apparently healthy cows started dying premature deaths, it was found that these were cows bought from the city and on further investigation, large amounts of undigested plastic bags were found clogging their stomachs and intestines. This fact is revealed by several



operations carried out on animals by animal welfare organisations. Therefore, even rural communities who don't have much to do with plastic are bearing the consequences of excessive plastic waste.

Plastic takes thousands of years to decompose, depleting the land we live on completely. Unemployment and poverty, on the other hand also ruin the wellbeing of our own people and the consequences are harsh.



If we look at the bigger picture, these problems are not specific to Kachchh only. Across the world, people are trying to find solutions that can battle issues of rapid industrialisation and the shifts it brings in our consumption patterns, our lives and the environment.

# The Intervention

Khamir, which was founded by the Nehru Foundation and Kachchh Nav Nirman Abhiyaan, works on the philosophy of preserving the traditions, the cultures and the ecosystems of the various artisan communities. This idea, in fact, is one of their mandates. Therefore, the growing ills of plastic waste pushed Khamir to seek a creative intervention. The solution sprung from a humble, powerful source: the traditional handloom.

In the December of 2009, Ms. Katell Gilbert, a French Designer, was visiting Khamir from Dastkar (Delhi). She had been working in various parts of India with waste materials, turning them into craft. Her assignment at Khamir was to implement traditional craft skills to design products made of locally available waste material.

Gilbert worked with the local artisans and Khamir's design team, experimenting with waste plastic, paper, left over threads and other stitching waste. Khamir helped her procure waste generated from their own activities first; she was then able to conceptualise and implement her ideas,



collaborating with the artisans. After much trial and error, Gilbert discovered that a product range could actually be developed from most of this waste using traditional craft skills. Along with the master weavers of the 'Vankar' or weaver community associated with Khamir, Gilbert studied the local weaving traditions and realised that cleaned, cut plastic from waste polythene bags could be used for weaving. She found that plastic worked just as well in the looms that the weavers of Kachchh used.

Moreover, weaving has been the principal occupation in several areas of Kachchh. The weaver community has grown here and almost every household has an in-house weaving unit. Gilbert collaborated with the weavers at Khamir, Raji *ben* and Keshav *kaka*, and after working together, they came up with hand woven carpets



that could be stitched into bags, covers, anything really- all with recycled plastic bags. The only thing they thought was wise to tweak about the old loom was its cotton warp. Nylon threads worked much better with plastic, and nylon was thus introduced to the loom.

In keeping with their original philosophy, which is to better the lives of the rural masses while keeping the environment healthy, Khamir decided to extend the innovation to the neighbouring villages. It was a conscious decision to take this project forward with the women of the Vankar community.

This was due to several reasons. Firstly, although women played an important role in setting up the loom before weaving, the actual weaving was always done by men. This would be a good intervention then, to make an identity for the Vankar women as established weavers.

Secondly, there was a danger of affecting traditional weaving if plastic started dominating the sphere. By letting the men continue traditional weaving and opening plastic weaving to women, a healthy continuation of weaving would be ensured, with no harm to traditional weaving.

Thirdly, plastic weaving didn't require unrealistically high weaving skills, and could be learnt easily, so the women who hadn't ever woven before could also do it easily.

## The First Steps: Creating Weavers

In the beginning, Khamir collaborated with Keshavji Dhanji and Rajiben. On observing Gilbert clean and cut the plastic waste she'd collected herself, both Rajiben and Keshavji joined her. Together, they were able to weave several samples which were greatly appreciated by visitors at Khamir. One such visitor, the owner of a cafeteria in Auroville (Pondicherry) was highly impressed with the idea and the end product. He placed an order for table mats made from recycled plastic for his cafeteria.

This, Khamir realised, was a good opportunity to get more people involved in the project. They would be needed to pull the order off, and simultaneously, a kind of training in the new craft could be carried out.

A training program was flagged off for non traditional weavers, mostly women, who were



familiar with the loom but didn't have experience working with it. Few women from Awadhnagar, a small village near the Khamir Craft Facility, attended the program and under the careful guidance of the three teachers, picked up weaving skills. These were women from the Vankar community that settled in Awadhnagar after the 2001 earthquake. By the end of twenty five days, beautiful mats were produced and sent to

Pondicherry and the women had become expert recycled plastic weavers.

Four women continued the practice. Two of them already owned a loom and those who didn't were given one by Khamir. Seeing them, the community started expressing an interest in learning the practice. The new project found support and soon, Khamir started receiving orders for recycled plastic products.





## Modifications in the loom:

Traditional weaving in the fly shuttle uses a 'fadku', a handheld control on the bobbin, which makes weaving very easy. This cannot be used when the weaving material is plastic, because plastic is not evenly cut or strong enough.

Therefore, the width of the warp had to be reduced, so that shifting the shuttle back and forth by hand would be easy for the weavers.

## Developing easier cutting technology:

Plastic cutting can become a tedious process. To ensure ease and efficiency, and also to increase the amount of plastic that could be cut in a day, Khamir started working towards developing technology to cut plastic.



## Going further: Collaborations for Plastic Collection

Where employment generation was picking up at the weavers' side, waste collection needed work. Initially, the plastic bags were brought by the Khamir staff from their homes. As the demand for recycled plastic products increased and more women started weaving with the material, a need was felt to set up a system of collecting the plastic.

Therefore, Khamir met with Sakhi Mandal, a group of urban waste collector women brought together by the Kachchh Mahila Vikas Sangathan in Bhuj. KMVS works principally for women empowerment and gender equality. The waste collectors had been organised under a project that was a collaboration between Bhuj Municipal Corporation, KMVS and Sahjeevan. The women had been given a uniform and necessary equipment to be used for waste collection. They collected waste from various commercial and non commercial properties in Bhuj.



An initial agreement was made with the sakhis; they agreed to sell plastic bags below forty microns to Khamir at ten rupees per kilogram. These were plastic bags collected in the different suburbs of urban Bhuj every Thursday at nine in the morning.

The sakhis were even brought to Khamir to see how the recycled plastic was used by the weavers. This gave them a clear idea about the project and they were able to collect good quality waste for the project.

As the word about this project spread, more organisations started coming forward to partner with Khamir. An organisation called Sahjeevan who used to run their own cleanliness projects, started supplying Khamir with the plastic waste they had accumulated from residential areas like Sahyognagar in Bhuj.

Khamir also visited the Parle and Suzlon factories, both having large amounts of plastic waste. Parle uses a lot of plastic, therefore it was potentially a steady source for plastic, whereas Suzlon, a brand that dealt with the production of windmills, also had large amounts of plastic waste. These two, however, didn't remain viable options for long because there were issues regarding the disposal of plastic waste at Parle and Suzlon shut down.

Bal Sanskar Kendra, a group that meets in Kailash Nagar in Bhuj to spread spiritual teachings to children also came into collaboration with Khamir. They involved the young children in the project by getting them to bring waste plastic from their neighbourhoods to school. This plastic was then handed over to Khamir for weaving.

Bhuj's Jhaverjyot Apartment Complex also volunteered to send waste plastic bags from their home to Khamir.

Collaborations were made with waste dealers. The Recycled Plastic Weaving team from Khamir would visit dumping grounds in various areas of Bhuj to purchase waste plastic. Nagor GIDC is an area where a lot of the plastic is sourced from. Additionally, ties have been made with Mayur bhai and Bharat Bhai; they both collect industrial and domestic waste and sell the usable plastic waste to Khamir for the project.

Surya Bhai, another scrap dealer, gathers waste from the roads of Bhuj, and Khamir collects usable plastic waste from him too. Around 100-120 kilos of waste plastic are sourced from these dealers every month.

Below is a table describing the collection details of waste plastic from a report by Khamir titled 'Khamir-Plastic Weaving Project'

Process	Source	Quantity		Time	Cost Factor
Collection of plastic waste	<b>Current Sources:</b>	<b>Input</b>	<b>Wastage</b>	Monthly	Currently free. But may start charging soon.
	1. Matruchaya School	4 - 5 Kg	40%		
	2. Kailash nagar society	4 Kg	40%		
	3. Hariyat Nagar	3 Kg	40%		
	4. Sajivan Nagar	2 Kg	40%		
	<b>Previous Sources :</b> 1. Suzlon	Up to 40 Kg		As and when needed	Free
	<b>Other possible sources:</b> 1. Kabadwala	No limit and minimal wastage		As and when needed	Rs. 12 to Rs.25
	2. Random donators	Varies		Varies	Free
	<b>Average Cost incurred Per Kg</b>				<b>Rs. 18</b>
Transportation Cost	Self conveyance or Khamir transport	10 Kg on average		Weekly once	Rs. 200
		<b>Average Cost incurred Per Kg</b>			<b>Rs. 20</b>

# The Process of Recycled Plastic Weaving

Once the bags are collected and brought to Khamir from the city, the plastic goes through four integral processes before it meets the loom.

## Sorting

First, the plastic is inspected. Usable bags are kept aside while the rest are sent off to the dumping ground. Bags that are too ripped, too thick or those that have been exposed to the harsh sun cannot be used for weaving.

The ones that are saved are further sorted into two piles- ones that need to be cleaned and the ones that don't.

## Cleaning

Next, the pile that needs cleaning is hand washed in a tank of water mixed with washing powder. Once cleaned, the bags are hung on a line for drying.

## Cutting

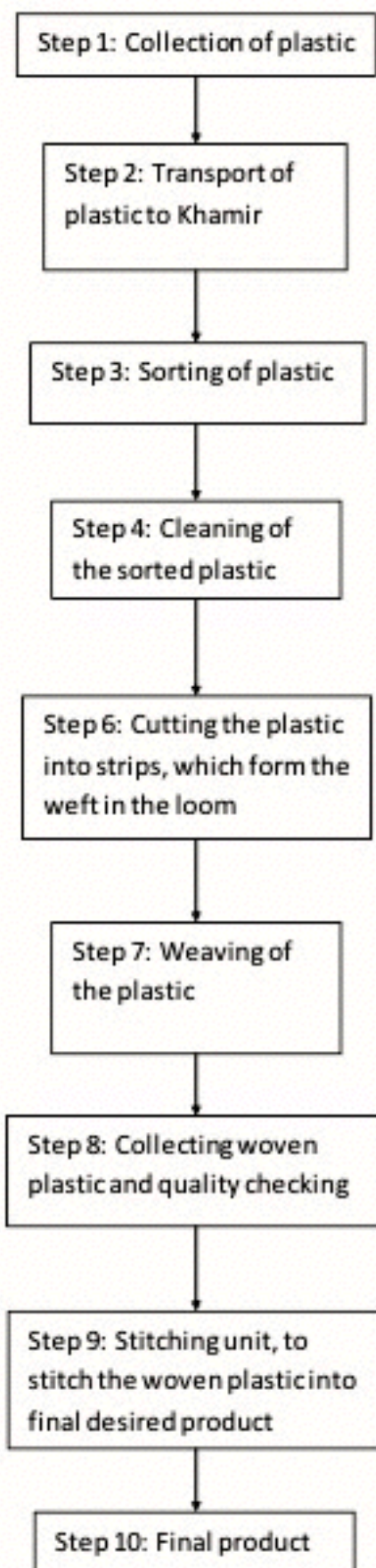
The clean and dry plastic bags are systematically cut by hand, using scissors or a cutter, into ribbons.

## Winding

The long plastic ribbons are stuck together at the ends, to make long strips of plastic and these are then rolled into bobbins with the help of a spinning wheel.

After these steps, the plastic is ready to be woven into sheets.

**Process Flow chart:** The flow chart below shows the process involved from collecting plastic to final product



## Finding its way into the market

As the project progressed, more plastic was sourced, more women were weaving. Khamir started receiving meters and meters of woven plastic from the women and designers from various corners of the world that were visiting Khamir or Kachchh were instantly drawn to the new material.

### Quality Control

It was very important now, to ensure that the quality of the product was great. With input from Himadri Ghosh, a designer and professor from the National Institute of Design, Ahmedabad, Khamir's team developed ways to ensure that each step of recycled plastic weaving was done perfectly to render top quality.

Colour combinations were paid attention to, to make the product aesthetically appealing. Each plastic bag was examined before being used, if the bag was too damaged by heat or too ripped, it wouldn't be used for weaving.

Additionally, the process of stitching the woven plastic into bags and so on was a bit challenging at first. Careful attention was paid to make sure the stitching was done well.

Himadri Ghosh assisted these steps by acknowledging the principle of recycling and minimising waste. She ensured, that at each step, no plastic went waste and more importantly, no further waste was created. Khamir used several waste products from other crafts to create handles and lining for the bags that were being designed out of waste plastic.

Bags, office curtains, laundry bags, bean bags, cushions, bathroom curtains, mobile covers, laptop cases, iPad covers, diary covers, table mats, floor mats, bathroom mats were designed.

## Design Collaborations

Eleven Eleven, a Delhi based organisation that works in the sale of hand made products, also collaborated with Khamir on designs to make products of recycled plastic carpets. A designer from 'Love is Mighty' made shoes out of the material and these shoes were showcased at New York Fashion Week.

In 2012, a designer named Chandni Kumari from Banasthali College of Design in Jaipur visited Khamir on a college project and designed several products out of the recycled plastic carpets. She developed plastic curtains, bean bags, laundry bags and she also worked to incorporate traditional weaving motifs in plastic.

Kirit Dave, a designer and architect from Kachchh, has been creating designs for bags from waste plastic too. He developed a storage bin, file holder, several bags and pouches out of the waste plastic.

## Challenges

The one challenge that crept up while catering to orders for recycled plastic woven products, was the non availability of any particular colour that designers demanded. The plastic waste that came to Khamir was mixed and there was no uniformity, so such orders could not be entertained.

On the brighter side, there were designers that were keen on working with environmentally sustainable materials, with alternative materials and with hand made materials. These designers became the chief buyers of woven plastic.

The sustainability factor of this practice therefore became its chief selling point, captivating every buyer with its story and method.

Today, products from recycled plastic weaving are sold at the Khamir outlet store in Kachchh, they are sold to wholesale dealers and through exhibitions all over India.





Below is a representation of the product details from a report titled 'Khamir-Recycled Plastic Weaving'.

Product	Production Capacity Per weaver	Costing
 <p>Beach bag</p>	Production capacity per weaver: 3 pieces / day	Operation expenses(till pre-weaving): Rs. 28 Weaving charges : Rs. 60 Stitching Cost: Rs. 50 Grey fabric Cost : 0.45 m * Rs. 50 = Rs.22.5 Belt Cost : 1.5 m * 2 = Rs. 3 <b>Cost price(sum of above charges) : Rs. 163.5</b> Rejection Rate : 20% Rejection cost : 0.20 * 163.5 = Rs. 32.7 <b>Final cost price(including rejection) = Rs. 196.2</b> <b>Ideal selling price (CP + overhead charges*) =</b> $1.4 * 196.2 = Rs.275$ <b>Actual Selling Price: Rs. 260</b>
 <p>Black and white stripe sling bae</p>	Production capacity per weaver: 3 pieces / day	Operation expenses(till pre-weaving): Rs. 28 Weaving charges : Rs. 60 Stitching Cost : Rs. 65 Red Cotton Belt Cost : 0.15 m * Rs.40 =Rs.6 Dog hook 2 pieces : 2 * Rs 8 = Rs. 16 1 Adjustor : Rs. 5 Middle stitching by Hand : Rs. 15 Hand Stitching cotton thread : Rs. 5 <b>Cost price : Rs. 200</b> Rejection Rate : 40% Rejection cost : 0.40 * 200 = Rs. 80 <b>Final cost price(including rejection) = Rs. 280</b> <b>Ideal selling price (CP + overhead charges*) =</b> $1.4 * 280 = Rs.392$ <b>Actual Selling Price: Rs. 325</b>
 <p>Fumka Bag</p>	Production capacity per weaver: 4pieces / day	Operation expenses(till pre-weaving): Rs. 28 Weaving charges : Rs. 55 Stitching Cost : Rs. 35 Cotton Belt Cost : 2.30 m * Rs. 2 = Rs.4.60 <b>Cost price : Rs. 122.6</b> Rejection Rate : 25% Rejection cost : 0.25 * 122.6 = Rs. 30.65 <b>Final cost price(including rejection) =Rs. 153.25</b> <b>Ideal selling price (CP + overhead charges*) =</b> $1.4 * 153.25 = Rs.214.55$ <b>Actual Selling Price: Rs.210</b>

\*Overhead Charges include : HR costs, salaries, electricity bill, floor space and margin

Below is a table charting product wise sales figures in Rupees from the Khamir Outlet in Kukma, through Wholesale and through sales at Exhibitions up until April 2015

Product	Outlet	Wholesale	Exhibition
Carpets			
14x19	1695		
13x19	1210	13880	
17x54	210		
19x36	8320	5510	
22x45	990		
30x30	2925	29,900	
3x5	355		1800
Bags			
KD	12095		1760
KD1	3900		1400
KD2	9350	1350	2100
KD3	2450	1050	350
KD4	1400		1400
Beach bag	14560	16973	10800
Buchki bag	18700	1800	31410
Flap bag	6530	23570	
Fumka bag	500		
Shopping bag	50385	1,20,627	36300
Storage bin	780	1750	1340
Water bottle cover		10626	
Diary	5500	6010	7000
File folder			1000
iPad cover	7500		4750
Bracelet pouch	13780	20680	28440

Below is a table listing all the exhibitions where this project has had a presence:

DATE	EVENT NAME	PLACE
1to9 feb 2014	Kala ghoda exhibition	Mumbai
8to9 feb 2014	SECOM green fair	Anand
21to27 feb 2014	Garvi gurjari summit	Ahmedabad
6to7 jun 2014	Eco fair	Ahmedabad
23-Sep-14	JIWO	Mumbai
14to23 nov 2014	Potli arts	Mumbai
17to19 dec. 2014	SNDT university	Mumbai
18to20 dec 2014	Concern india	Ahmedabad
2to4 jan 2015	KKU	Mumbai
5to10 feb 2015	Plast india	Gandhinagar
14/2/2015	Vasant utsav	Ahmedabad
17/2/2015	Kaleshwari Mela	Lunawada
27to28 feb 2015	Vibrant kutch	

# Spreading the practice

Seeing the positive reception of this project, Khamir felt it was a practice that should be decentralised and spread to other villages of India as an alternative, sustainable source of income and employment.

Through research and experience, Khamir understood that this was a craft that required medium or low level skill work, i.e. with practice and focus, it would be an easy craft to perfect for anyone. Another motive was to extend this innovation to women particularly, as they could occupy themselves with this without hampering their day to day domestic chores.

## Training

In order to expose as many women to this new practice, the trainings were planned to be carried out in the afternoons, when the women would be relatively free from their household chores. Each woman would be paid rupees fifty per day for their time and involvement.

Each training session begins with a brief introduction to the work of Khamir, followed by an ice breaker between the women and the Khamir staff. One member the household is allowed to participate- it could be the mother or her daughter. This way, the one member who has learnt the skill can then pass it on to others at home.

The first lesson at the training is warping. The nylon thread is unrolled and hoisted for warping in a specific shape to be later inserted into the loom. The women take turns trying it out, until they have got the hang of it. This takes around two days. This is usually time consuming and has to be done perfectly, without letting the thread tangle or break. Most of the weavers feel this task is challenging, and usually this session is repeated at the end of the training.

Next, the loom is brought in. The warp is systematically loaded onto the loom, and each part of the loom is examined, so that it can run perfectly. Meanwhile the women are familiarised with the workings of the loom.

On the third day, the waste plastic is brought in. Then, the trainer, usually Raji ben or Bhawna ben, who are both adept at plastic weaving demonstrations, show the women how to best cut plastic. While one group of the women sits cutting, another is taught how to wind it. These are relatively easy tasks and once comfortable, the women can easily carry them out without assistance.

Finally, the weaving begins. All the women take turns and take their time learning how to weave. Simultaneously, those who aren't sitting at the loom sit cutting or winding the plastic.

The atmosphere at these trainings is often informal and puts the women at ease. In a way, it becomes a community building exercise, where the women gather every afternoon for two hours, bringing their children along. Very often, the children also pick up a few skills.

To conclude the training on the last day, Khamir brings in snacks and sweets to be eaten together. The women speak about their experience at the training and whether or not they would like to take it up independently. This way, Khamir has conducted four trainings as of March 2015 in different parts of Gujarat.

## Aatapi Seva Foundation- March 2014

Meera Goradia, Director, and Ghatit Laheru, Program Manager at Khamir, first visited with an organisation called Aatapi in Bharuch, Gujarat. Aatapi Seva Foundation is a CSR\* associate with TML Industries, and it works for community development through inclusion, sustainable livelihood programs and by enabling access to information about rights.



Aatapi also works closely with widows to help them earn for their families, since very often, they are the only earning members of the household. Khamir sent some of the weavers of Awadhnagar to Jambusar, where Aatapi runs its programs, to train these widows and other women in recycled plastic weaving.

This was a fascinating collaboration and a challenging one because the women from Jambusar didn't have any background in weaving, they were primarily an agricultural community. Yet, through cooperation, interest and strong motivation, the women picked up the skill. Khamir provided the women with two looms to continue the practice.



Today, two women weave regularly and three others are training under them. The women here feel this is a good alternative to toiling on the fields and are motivating more women to take up the practice.

Jyoti of Aatapi says that the women who have taken up the practice are doing so sincerely, and have even come up with a name for their little group- Sugati Utpadak Mandli.

The Vankar community of Kachchh does not weave on *beej*- or no moon day. This is a mark of affiliation to an ancient tradition that the vankars have been following for centuries. Having learnt from the vankar women first hand, the Darbar women of Jambusar, although belonging to another belief system and tradition, also take a break from weaving on *beej*. Jyoti has also noticed the Darbar women using kachchhi words when it comes to weaving. This way, a training in recycled plastic weaving has transcended from a professional exchange to a cultural one.

\*Corporate Social Responsibility

## Kukma- 2014

Khamir required someone to commit themselves to the cutting of plastic. Therefore, it conducted a training for women from a village called Kukma, where the Khamir Craft Facility is. A part of the cut plastic that goes to Awadh Nagar for weaving comes from Kukma.





## Varnora- February 2015

Varnora, a village in Kachchh, is home to some of the Vankar community. Here, the women have been used to working on fields as labourers and also helping the men with some processes of weaving. Varnora also happens to be home to some of Raji ben's cousins.



The twenty three women present at the trainings were a mixed bunch- there were women from ages fifteen to fifty. Some of the women were homemakers, one of the women was an Anaganwadi (primary school) teacher at Varnora, some of the young girls were students, but were familiar with weaving because they've always had looms at home.



The training spanned six days. At the end of the training, twelve women affirmed that they will take up recycled plastic weaving. Most of them also said that if they aren't able to do it, their daughters or mothers will do it. The women plan on sitting with their daughters and think this will be easy to carry out in the afternoons.

Some of the women admitted to having collected stray plastic bags thrown around in their village after they had started training. They will use that plastic for weaving and also plastic that will be sent from Khamir. The women even offered to train other women in recycled plastic weaving, in order to spread this practice.



## Rampar-vekra- March 2015

Khamir collaborated with a group at Rampar-vekra called 'Maa Chamunda Mahila Mandal'. They brought together sixteen women above twenty years old to train them in recycled plastic weaving. Raji ben and Bhavna ben conducted this training for six days. This was conducted as a group training in all the processes of plastic collecting, cleaning and weaving. Therefore the women have pledged to organise their own plastic weaving unit. To aid this, Khamir will pay them for each process they will carry out.



## School visits to spread awareness

The recycled plastic weaving team from Khamir conducts awareness drives at schools, demonstrating the workings of the loom and spreading the ideal of recycling and upscaling waste plastic.



Short films made on the project and on cleanliness are also shown to the students during the session, following which the staff and the students play games that propagate good values and principles.

At the end of the session, Khamir representatives hand over dustbins to the school as a motivation to collect waste plastic for the project, and to also reduce the levels of plastic waste that reach the public garbage dumps.

An impact of these campaigns was seen when Matruchhaya, Atalnagar and Ashapura schools in Kachchh started sending Khamir waste plastic collected by the students.



These collaborations ensure that a sensible value system with regards to plastic waste is being enshrined in various social groups.



Several schools also visit the Khamir campus to see the project. When this happens, the staff at Khamir gives the students a tour and a detailed demonstration of how recycled plastic weaving functions.

Below is a table representing the details of school visits and Khamir visits so far:

DATE	NAME	PLACE	NO. OF PARTICIPANTS
8/3/14	Kailash nagar group	khamir	30
14/3/2014	Kukma school visit	khamir	150
11/6/14	Sahyog nagar mahila Mandal	khamir	15
13/6/2014	CEPT University	khamir	26
16/6/2014	Kukma awareness programme	khamir	250
11/7/14	Ajarkhpur School	Ajarakhpur	60
17/7/2014	SOS School	Ghada	200
29/7/2-14	Aadarsh School	khamir	90
30/7/2014	Inspire Kutch university	khamir	170
22/8/2014	Ashapura school	Ashapura colony	40
28/9/2014	Aditi School Bangalore	khamir	60
30/9/2014	Maska high school	Maska	300
30/9/2014	Maska primary school	Maska	250
8/10/14	Atma group visit	khamir	49
9/12/14	Bhujodi school	khamir	70
2/1/15	Paddhar school	Paddhar	120
5/1/15	Lakhond school	Lakhond	250
5/1/15	Shishuvan school mumbai	khamir	175
7/1/15	Swastik foundation school	khamir	80
5/2/15	Atalnagar school	Atalnagar	300
17/2/2015	Shivaratri procession	khamir	
10/3/15	Mankuva school	Mankuva	250
18/3/2015	Samtra school	Samtra	200
9/12/15	Singapore design school	khamir	18

Another way that Khamir promotes this movement is through exhibitions. At the exhibition, the various products made from recycled plastic weaving are displayed and sold. They also have one weaver sit at the stall to demonstrate the weaving process. Therefore, it is a live and interactive process.



# Stories from Awadhangar's Weavers

The story of recycled plastic weaving would be incomplete without a chapter on Awadhnagar's weavers. Awadhnagar is a little hamlet in Kachchh. It is a couple of kilometres from The Khamir Craft Facility in Kukma.

The community that calls Awadhnagar home is the Vankar community. Vankar is the kachchhi name for Weavers, and is affixed to everyone's name here. The Vankars came to Awadhangar after the 2001 earthquake claimed their homes in Mandra. After the earthquake, the Government gave each family a handloom, so that they could keep their skill and practice alive.

As tradition dictated, the Vankar men would sit at the loom to weave and the women would help with setting up the warp and filling bobbins. The Vankar women were more concerned with carrying out household chores.

Over the years, as life became more expensive, the women began to find work in the fields as labourers. Therefore, they were never weavers as such, but were always in proximity with the loom.

When the Project was started at Khamir, these very women were roped in by Keshav kaka and Raji ben. After training, some of the women went back to Awadhnagar and continued till they became experts. Slowly, other women in the village became interested and took it up too.

Awadhnagar, therefore, in the past five years, has played host to a revolution of sorts. The homes of the Vankars, usually equipped with cotton and wools for weaving, made room for recycled plastic and nylon threads. Several families built new looms for recycled plastic weaving and a new source of income was born.

The narrow roads were no longer littered with plastic bags. Most strikingly, Awadhnagar now saw women sitting at the loom, alongside their father in law and husband, weaving and bringing money while also caring for the children.

This revolution, like all others, created inspiring stories- stories of the women that are running the project. It is fitting, therefore, to document their narratives.

Raji ben Vankar was born into the Vankar community in Kotai thirty six years ago. She was the eldest amongst three sisters and one brother. "Like our human family, we had a family of animals too; three buffalos and two cows," she says.

Her father preferred working on the farm and the other sisters followed suit, attending to the farm regularly. But Raji ben was more taken by the handloom that sat in their home, and she decided to devote her time to learning the craft. "During those times, weaving was the man's job, the women would work on warping and filling bobbins," she says, "but I was keen and my parents were supportive and didn't mind if I sat weaving instead of working on the farm."

From a young age, Raji ben was used to sharing the responsibilities of the household. "My sisters and I were like sons, we worked for the house and tried to bring income too, since our brother was the youngest child and we wanted to help our parents," she recalls. When she was still quite young, the family was forced to move to Jura, another village since their's hadn't received rainfall in three to four years. The farm had become a mess and wasn't viable anymore.

"Around my fifteenth birthday, my family arranged a match for me and I was engaged. At seventeen I was married," she says. Her in laws were relatively well to do and it was enough for Raji ben to work around the household, without much pressure to bring income. Two years after getting married, Raji ben and her husband Murji bhai had their first child and a couple of years later, two more followed.

"I was happy after I got married, I enjoyed my household chores and my family," says Raji ben, "sometimes I would stitch quilts for the house, or shawls for my children and that would take up my time."

Raji ben's story took a sharp, unexpected turn one afternoon. "It was a sweltering afternoon during the month of May, and my husband had been working under the sun at a construction site in; he never did well in the heat," she explains, "I received a phone call that afternoon, that my husband had suffered a stroke and had died there.

“My two children, not only had they lost their father, they almost lost me too,” she narrates, “I went into a shell, didn’t eat well, couldn’t look after the well being of my own children.” Her younger sister took her and her family in, and the children were looked after, but twenty eight year old Raji ben was too depressed to function.

It was then, that the women from her village encouraged her to go work in the fields with them, to make whatever little she could to support her children. “They were paid labourers and persuaded their superiors to pay me,” says Raji ben, “I couldn’t work much, I was like a vegetable, and they’d finish off my share of the work too.”

Fortunately for Raji ben, Keshavji kaka, one of the elder weavers of her village and community, recommended that she work for Khamir in Kukma nearby. “I went along, and Meera ben asked me how I could contribute to the organisation. I said I could weave, that I used to weave when I was younger.”

Meera ben was pleased enough and gave her a chance. Raji ben began to work on arranging the warp, spinning yarn, making bobbins and slowly took up weaving too. She began to recover mentally and physically. She says, “this was better than the heavy and intensive work in the



fields and it brought me some income; I was pleased that the other women didn’t have to work double for me.”

Raji ben had been in Khamir for two years when Katell Gilbert arrived and introduced the concept of recycled plastic weaving to them. It was after watching her work with waste that Raji ben felt drawn into the novel art. This way, Raji ben became the forerunner of the Recycled Plastic Weaving Project at Khamir. She also began to train other women from her village. These were women who had never woven.



“I feel happy knowing that I was able to introduce a means to bring income to the women of my village, especially after how those women helped me after my husband’s passing,” she says. Since the inception of Recycled Plastic Weaving, Raji ben has become a legend almost, and has travelled across Gujarat and to Mumbai to conduct demonstrations and trainings.



“When I look at life before and after this project, I see many differences,” she says. “Before, when I was younger, it was difficult for me to talk to people, I was shy; I was apprehensive when it came to leaving the house to run errands without my husband; today, I can interact with people effortlessly.”

When I’m at Khamir, people from all over the world come and they are full of praise for my work and I feel comfortable, yet humbled by all their admiration,” she says, “but, the most important impact of this project is that I am sustaining myself and my children with my income.”

Today, Raji ben’s three children go to school with the money that their mother earns through weaving, cutting and filling bobbins. “I have three savings accounts for my children, and it brings me great joy to be able to spend money on buying them good clothes.”



Raji ben looks forward to buying her own handloom; currently, she is using one that her uncle lent her. “I want my son to work on this too, I believe weaving is a great means to earn a livelihood. I would much rather that my children work on it, rather than in factories, where there are accidents so often,” she says.

Raji ben feels this is a lifelong occupation, and can be practiced when one is old too. And so she continues weaving, satisfied that her work makes a positive difference.

Puri ben Vankar routinely begins her day by cleaning her house. “I like things to be neat, clean and organised,” she smiles. Perhaps that is one of the reasons she enjoys the Project so much, the idea of reducing the amount of plastic garbage that has begun to accumulate in her village, Awadhnagar. “That is a plus point, but I weave to support my husband to bring income for our home,” she says. For Puri ben, sending her son to school is of primary importance. After that, her husband’s and father in law’s health is important. “I enjoy everything- cooking, farming, looking after the house and our courtyard vegetable patch,” she says animatedly.

“Most of the days, I cannot wait to finish my household chores and sit at my loom. My husband comes from a line of weavers, so we’ve always had two handlooms at home, where my husband and father in law weave shawls and mats.” After attending the workshop at Khamir and with help from Keshavji kaka and Raji ben, a third loom was set up at her home, for Puri ben.

Now, she sits there after lunch, weaving recycled plastic late into the evening. “When my son comes back from school, he sits next to me, keen on trying this out,” she says, “I don’t discourage him, but I insist that he finishes his homework and some studying first.” Puri ben has one son, eight years old. Her daughter passed away almost ten years ago, and she lost another baby to a miscarriage a few years after her son was born.

According to Puri ben, this line of work is not only novel, but it is something that women like her should take up. Puri ben feels that this project helps her creativity. “Sitting by myself at my loom, working, it helps me think and imagine,” she says. “That is how I come up with designs and colour combinations for the weaving.”

And she believes this is rewarding. “Another option for us is to work as labourers on someone else’s field or in someone else’s factory,” she says, “where we will be told what to do, often reprimanded, and it is intense work for very little money.” In weaving, there is a sense of ownership, she feels. “You are your own boss, you can use your own mind to make something beautiful.”

She has also woven and stitched mats for her house, for guests to sit on when they come calling. “I’ve also woven a diary cover out of recycled plastic,” says Puri ben. In this diary, she plans on keeping a written record of her daily expenses. She says that this is a very important and good habit to keep, since it helps her spend money wisely, on necessary things. It also reminds her to save money and keep accounts.

Puri ben has her day filled with activity. After dinner, when the dishes are done and when the rest of the family is asleep, Puri ben fills bobbins with plastic for the next day. “It is a very easy exercise and I do it while watching television, so I can do many without feeling bored,” she says.

After that, she can fall asleep, having spent the day productively, secure in the knowledge that she helps her household in so many ways.



Just where the little village of Awadhnagar meets the highway, is Bhawna ben Vankar's home. Her home is similar to most of the other houses of Awadhnagar, with a large courtyard housing three handlooms. She lives here with her parents in law, husband and two children. "I have attended classes for craft and design," she says, "and that is really helping me with my weaving." She loves the fact that there is so much potential for all kinds of designs in plastic weaving, and she feels proud to be one of its pioneers. Her fridge is covered with a recycled plastic cover, with pockets for other storage. She's even made mobile phone covers with woven plastic.



Her children love what their mother does. "They pick up stray strands of plastic and sit by themselves, making little trinkets on their own." Bhawna ben seems to enjoy recycled plastic weaving, and feels it's been worth it, taking the chance and learning the practice. Like most others of the community, Bhawna ben's family also owns looms and her husband's and father in law have been weavers. So, the tools used for weaving were easily accessible.

For Bhawna ben, this is indeed an enjoyable practice, because she loves art work of any kind. Growing up, her sisters and mother used to spend their free time making mud paintings, embroidering and stitching. "My favourite part of this craft is the different colours and their combinations, it is such a lively craft," she beams. "The different designs we weave on shawls can be done with plastic too."

Bhawna ben accompanied Puri ben and Raji ben to Baroda where they trained women from a village called Jambusar in weaving. “Those were such delightful women, so sweet,” she says. This project has been the means for Bhawna ben to travel and meet all sorts of people. She has picked up bits of the English language too, as travellers to Kachchh often visit her home to watch her weave and appreciate her work. She has conducted demonstrations at exhibitions in Bhuj. “This has given me a sense of confidence and I feel encouraged to take myself and my work forward,” she says.

To take the project forward, Bhawna ben believes, it is important for the women of the community to come together and commit themselves to the project. “I want our products to reflect our identities and our stories,” she says, “I want us to make our own group and find ways to conduct all the processes of plastic weaving at our own village, and sell it ourselves. This project has the potential to be great for us, even more than it is right now. I think all the women who engage in recycled plastic weaving must see how plastic is collected, cleaned and cut, it is a good awareness to have and imagine if we had all these units in our own village, we would be truly self sustaining then.”

Bhawna ben has tried to bring the women together, but it seems like a difficult task for many reasons. Some of the women feel reluctant to come together. Till this dream can come true, Bhawna ben continues to weave for Khamir, delighting in new designs. Her efforts to spread the practice can be seen through her new pupil, Ramilla ben.

“Ramilla ben used to stop by regularly while returning home from school and intently watch me weave,” explains Bhawna ben. “Unfortunately, her mother became paralysed and Ramilla ben had to drop out to look after the house.



“I told her to come help me, because warping and filling bobbins is better done when there are two people. Ever since, she has been coming over and working diligently, and I give her a share from my income too. Soon, she will be able to work independently,” says Bhawna ben.

Bhawna ben continues this way, hoping to use her entrepreneur skills to make this a larger project in Awadhnagar.

“I attended the training when I was two months pregnant,” says Lakhi ben Vankar, one of the recycled plastic weavers from Awadhnagar. “Now my child, my son, is three years old, and I still continue to weave.” She has a four pedal loom at her home and produces several meters of woven plastic for Khamir regularly. “When there is plastic, I work on the loom,” she says.

Lakhi ben has a stern demeanour, but her happiness is evident when she comes to collect her payment at Khamir at the end of the month. “My children are small, my husband goes to work,” she explains, “I think it is necessary for someone to stay home and look after the children and our elders.” That is the reason she likes this project, like most other married women of Awadhnagar.

Before this, Lakhi ben used to work as a labourer on the fields. “Who would like toiling out under the sun all day? For very long, it was the only means to add income to our home and we had to do it, whether we liked it or not. This new occupation is better.



“It is something I can juggle my household duties with quite comfortably,” she says. From where she sits at her loom, she can see her home and keep a watchful eye on her children. Her loom sits under a large old tree in their courtyard. She sits to weave in the afternoon, shaded by the great tree from the harsh sun, and goes on till evening.

“I watch the news at night with my family and they often cover topics like improper waste disposal, especially plastic,” she says. “When they talk about how the cows and other stray animals end up eating plastic bags thrown away, my heart goes out to them. The fact that my work helps reduce plastic waste from the streets makes me feel proud.”

So, along with the other women of Awadhnagar, Lakhi ben spends her days weaving plastic and taking care of her children the way she pleases.

Nanu *masi* Vankar has an endearing smile, with a gaping hole where she is missing her front teeth. When someone asks her her age, she begins to count on her fingers but isn't able to give an exact number. "Somewhere around fifty seven, I think," she grins.

She used to work at the dying unit at Khamir when the Recycled Plastic Weaving project began. "When I had some time off from dying, I used to go over to where Raji ben worked with plastic and I would help her with the cutting and cleaning," she recalls. Nanu masi hates sitting idle. "I become dizzy in the head if I don't have something to keep me occupied," she laughs.

Over the past four years, Nanu masi has mastered the art of cutting. "I was taught how to cut the plastic by my husband, a weaver himself," she says. "Once I got used to it, I tried to come up with a more efficient method." Therefore on her own, Nanu masi improvised, and today, she can comfortably cut up to five kilos of plastic a day. Her hand is wrinkled with age, but is steady as she immaculately cuts the plastic into uniform ribbons to be filled into bobbins later.



"I come to Khamir and if there is plastic to sort, I do that," she says. "Sometimes, there is so much dirt in all that plastic, all kinds of dirt." To wash it thoroughly is Nanu masi's responsibility. "If there's someone to help out, I do it with them, otherwise I do it on my own."

Nanu masi's life has been full of work. She's worked as a labourer on the fields and on construction sites. "We have to bring money to the house, some way or the other," she says, "these days, everyone at home needs to work and bring money, that is the only way to keep up."



To Nanu masi, rest feels like a distant dream. “There is no relief for me, I feel anxious all the time, my grandchildren will have to be looked after; my husband and I, we are old. I feel it is my duty to keep working for myself and for my family. We are all working, and that is the only way.” But, working in this project does make her feel good and purposeful.

Nanu masi and her husband moved to Awadhnagar after she lost her twenty year old son. “I felt deeply disturbed, I didn’t feel like staying there anymore.” After shifting, she got her younger son married to young Bhawna ben.

Therefore, at Nanu masi’s house, there is plastic everywhere, being cut, filled into bobbins or being woven- like a mini recycled plastic weaving unit. It is through Nanu masi, that Bhawna ben came into this project.

“I can weave too, if I have to!” Nanu masi laughs, true to her tireless spirit. Nanu masi, who is known to possess several skills and qualities, will certainly be remembered as the best plastic cutter at Khamir.



