

**Project: ANTINOMOS**  
**Report on Indigenous Technologies**

**Case No: 4**

**Step 1 – Description**

**Name of Technology to be evaluated:** Under ground sanitation system.

**Location where technology is being evaluated:** Hadmatiya Village (Taluka-Gadhara, District- Bhawnagar).

**Number of people approximately being served by the technology:** 2200

**Since when it is in operation?** 2002.

**Who Designed / Planned and who implemented / constructed the technology?**

: Mr. Chhaganbhai D. Dhola (Gram Panchayat Sarpanch, Hadmatiya), Mr. Mansukha Lal Pandit and Mr. Omkarbhai Giri, three members committee designed the sanitation system on the bases of Vikaliya village.

**Who is taking care of the technology now?** Village Development Committee.

**Are there any standards available which need to be fulfilled by the technology?**

**If yes which?** Sanitation.

**Are operations and maintenance data records available?** Yes.

**Please provide a brief summary of the history/evolution of this technology in the selected case study:**

Due to the rocky structure, this area suffered from low level of water percolation as a result of which the streets used to permanently remain muddy as all the water from the domestic use was channeled out in the street by all the households and as a result the need of underground drainage system was felt. After the success story of such a system in a nearby village, Vikaliya, people of Hadmatiya too decided to opt for community participation in this regard. The idea was executed successfully in 2002 and the system has been running without any hitches so far and people are quite proud and happy about their community participation venture. The people had collected Rs. 1000 per household. Nearly 60% of the households have adopted while on the other side are the rest of 40% who cannot avail this facility because of their weak financial position and are waiting for the govt. to help them out in this case. They have to go out far away from the village to answer the nature's call which is particularly problematic in monsoon season or at nights

and for women. This place becomes swampy after some time and is mosquito infested leading to spread of diseases. There was also this case of one poor woman with very small kid who cannot afford to go out the whole day because her husband goes out to work and she can't leave the child alone.



**(A). Latrine in the house.**



**(B). Septic tank in the street out side house.**



**(C). Sewage outlet out side the village.**

## **Step 2 – Evaluation**

**Date of visit:** September 26<sup>th</sup> to September 29<sup>th</sup>, 2008.

**Name of the expert(s) making the visit:** Dr Suboodh Kumar Bishnoi

**1. Preliminary performance indicators for accessing whether the intended direct benefits have been fulfilled:**



<b>Intended Benefit</b>	<b>Indicator</b>	<b>Method of Verification</b>
Sanitation facilities	No more muddy mosquito ridden streets and construction of latrines in the houses	
Technical functioning	Performance in last 6 years	Experts visit
Acceptance by local community		




<b>Unintended Benefit</b>	<b>Indicator</b>	<b>Method of verification</b>
Family health improvement	Less water borne diseases due to the absence of domestic use waste water	
Lesser disputes among villagers leading to a more cordial environment.		
Ecologically beneficial as ground water level has come up		




**2. Results of Assessment:**

Intended Benefit	Indicator	Fulfilled Yes/no	Comments (with reference to the used indicators)
Sanitation		Yes	
Technical functioning	Yes		System is working extremely well irrespective of minor cases of pipe leakages, etc.
Acceptance by the local community	Yes		Users are mainly satisfied with the system and consider it a success.
Water conservation		Yes	
Less mosquito breeding		Yes	

### Comments from the local peoples:

User Group	Results/ Comments
<p>1. Smt. Rakhuben Manubhai (28 Years)</p> 	<p>We are facing a lot many problems due to unavailability of any proper disposal system. Due to lack of proper place to do it, we have to manage a lot when there is a nature's call in the middle of the night, which might sometimes could land us in a difficult situation. Our financial condition is weak at this time. We don't even have money to reconstruct our house-wall, which had collapsed during monsoon. We have lot of expectations from the government to help us out in this situation of crisis.</p>
<p>2. Mr. Omkarbhai Giri (50Years)</p> 	<p>Situations when there were no toilets: Had to go out for nature's call. Faced problems during midnights, during rainy season. Untimely disposal could even lead to certain diseases. But now we are relieved. After construction of a toilet in our house, we are comforted and don't find anymore problems.</p>

<p>3. Mrs. Rekhaben Dhirubhai (55 Years)</p> 	<p>Our monthly income is Rs 1500 only. Our financial conditions being weak we find it to difficult to construct a toilet of our own. We have to go out for the nature's call. At times of monsoon and during midnights we find it even more dangerous to go out for it. We are ready to construct a toilet if provided with a help from the government.</p>
<p>4. Mr. Kishorbhai Pandit (37 Years) (9925406640)</p> 	<p>Situations before the availability of toilets: Were required to go far away for it, where the place would be mucky/swampy providing a refuge to lots of mosquitoes; leading to spread of contagious diseases; this was also quite inconvenient for the women kind to go out for it after the sunset.</p>
<p>5. Mr. Chhaganbhai D. Dhola (48 Years) (<i>'Gram Panchayat Sarpanch'</i>, Hadmatiya) (09925707202)</p> 	<p>There were problems before construction of sewage pipes. Outskirts of the village were covered with lots of waste. Now that the sewage pipes and the in-house toilets having been constructed, our problems are now sorted out and cleanliness could be maintained now.</p>
<p>6. Mr. Mansukha Lal Pandit (63 years)</p>	<p>Before the toilets were constructed, we were required to go out. Untimely disposal could even lead to certain diseases. But now we are relieved.</p>


	
<p>7. Mr Hamabhai Boliya (Maldar family) (70 Years)</p> 	<p>We don't have toilet in our house, so our family faces a lot many problems. We are forced to go out and situations become even worse during monsoons. There is no fixed time for it. There are chances of various diseases, which might be caused due to being in contact with dirty/swampy place. We cannot afford to construct a toilet since our family income is very low. Hence we need some help relating to this matter.</p>
<p>8. Mr. Damjibhai Monjibhai Gujarati (34 Years)</p> 	<p>At a time when there were no toilets in our village, we were forced to move over far-far distance towards the outskirts of the village in order to address the nature's call. Due to the place being poachy/ swampy, it was a house to a large number of disease causing mosquitoes/insects. But now that the toilets have been constructed, we are almost relieved since the cleanliness in the village can now be maintained.</p>


## Summary of User Perceptions

Both Individual Interviews and group Discussions



### Questions (Q):


(Group 1):-

S. No.	User Name	Questions	Results/ Comments
1.	Mr. Omkarbhai Giri (50 Years) 	<b>Q1: Are You Happy with the technology? IF Yes why, if no why not?</b>	Yes, earlier we had to go out for nature's call and faced problems during midnights, during rainy season. Untimely disposal could even lead to certain diseases. But now we are relieved. After construction of a toilet in our house, we are happy.
		<b>Q2: Are you using the technology (regularly)?</b>	Yes
		<b>Q3: Is there anything which may prevent you from using the technology (regularly), if yes what?</b>	No
		<b>Q4: Is there anything which you may not like with the technology or which could be improved (if yes, what and how)?</b>	No.
		<b>Q5: Do you have equal access and pay a fair price?</b>	We were only charged initially and now in case of any damage/choking we will be charged.
		<b>Q6: Are you aware of any misuse of the service?</b>	No


2.	<p>Mr. Chhaganbhai D. Dhola (48 Years) ('Gram Panchayat Sarpanch', Hadmatiya)</p> 	<p><b>Q1: Are You Happy with the technology? IF Yes why, if no why not?</b></p>	<p>Yes, it has benefited all who have adopted it. There were problems before construction of sewage pipes. Outskirts of the village were covered with lots of waste. Now that the sewage pipes and the in-house toilets having been constructed, our problems are now sorted out and cleanliness is maintained now.</p>
		<p><b>Q2: Are you using the technology (regularly)?</b></p>	<p>Yes</p>
		<p><b>Q3: Is there anything which may prevent you from using the technology (regularly), if yes what?</b></p>	<p>No</p>
		<p><b>Q4: Is there anything which you may not like with the technology or which could be improved (if yes, what and how)?</b></p>	<p>Govt. should fund more money to compensate for poor families.</p>
		<p><b>Q5: Do you have equal access and pay a fair price?</b></p>	<p>Yes, but I think not everybody can afford it.</p>
		<p><b>Q6: Are you aware of any misuse of the service?</b></p>	<p>No</p>
3.	<p>Mr. Kishorbhai Pandit (37 Years) (9925406640)</p>	<p><b>Q1: Are You Happy with the technology? IF Yes why, if no why not?</b></p>	<p>Yes, it has changed our lives for the better. We were required to go far away for it, where the place would be mucky/swampy providing a refuge to lots of mosquitoes;</p>





			<p>leading to spread of contagious diseases; this was also quite inconvenient for the women kind to go out for it after the sunset.</p>
		<p><b>Q2: Are you using the technology (regularly)?</b></p>	<p>Yes</p>
		<p><b>Q3: Is there anything which may prevent you from using the technology (regularly), if yes what?</b></p>	<p>No</p>
		<p><b>Q4: Is there anything which you may not like with the technology or which could be improved (if yes, what and how)?</b></p>	<p>No but hygiene can only be maintained when whole village adopts it.</p>
		<p><b>Q5: Do you have equal access and pay a fair price?</b></p>	<p>Yes to both</p>
		<p><b>Q6: Are you aware of any misuse of the service?</b></p>	<p>No</p>
<p>4.</p>	<p>Mr. Mansukha Lal Pandit (63 years)</p> 	<p><b>Q1: Are You Happy with the technology? IF Yes why, if no why not?</b></p>	<p>Yes. Before the toilets were constructed, we were required to go out. Untimely disposal could even lead to certain diseases. But now we are relieved.</p>
		<p><b>Q2: Are you using the technology (regularly)?</b></p>	<p>Yes</p>
		<p><b>Q3: Is there anything which may prevent you from using the technology (regularly), if yes what?</b></p>	<p>No</p>
		<p><b>Q4: Is there anything which you may not like with the technology or which could be improved (if yes, what and</b></p>	<p>If the whole village comes together and</p>

		how)?	govt. helps we wish to get a sewerage treatment plant in our village.
		<b>Q5: Do you have equal access and pay a fair price?</b>	Yes
		<b>Q6: Are you aware of any misuse of the service?</b>	No
5.	<p>Mr. Damjibhai Monjibhai Gujarati (34 Years)</p> 	<b>Q1: Are You Happy with the technology? IF Yes why, if no why not?</b>	Yes, it is a good technology. Earlier, we were forced to go towards the swampy insect ridden outskirts of the village in order to address the nature's call. But now that the toilets have been constructed, the cleanliness in the village can now be maintained.
		<b>Q2: Are you using the technology (regularly)?</b>	Yes
		<b>Q3: Is there anything which may prevent you from using the technology (regularly), if yes what?</b>	No
		<b>Q4: Is there anything which you may not like with the technology or which could be improved (if yes, what and how)?</b>	It has made people more cleanliness conscious and willing to participate in community works.
		<b>Q5: Do you have equal access and pay a fair price?</b>	Yes
		<b>Q6: Are you aware of any misuse of the service?</b>	No

**(Group 2):-**

1.	Smt. Rakhuben Manubhai (28 Years) 	<b>Q1: Are You Happy with the technology? IF Yes why, if no why not?</b>	We are facing a lot many problems due to unavailability of any proper disposal system. Particularly at night which might sometimes could land us in a difficult situation. Our financial condition is weak at this time. We don't even have money to reconstruct our house-wall, which had collapsed during monsoon.
		<b>Q2: Are you using the technology (regularly)?</b>	No
		<b>Q3: Is there anything which may prevent you from using the technology (regularly), if yes what?</b>	Cost factor. Otherwise who would not wish for a proper toilet in house.
		<b>Q4: Is there anything which you may not like with the technology or which could be improved (if yes, what and how)?</b>	We have lot of expectations from the government to help us out in this situation of crisis.
		<b>Q5: Do you have equal access and pay a fair price?</b>	No
		<b>Q6: Are you aware of any misuse of the service?</b>	No idea.
2.	Mrs. Rekhaben Dhirubhai (55 Years)	<b>Q1: Are You Happy with the technology? IF Yes why, if no why not?</b>	Our monthly income is Rs 1500 only. Our financial conditions are very weak .At times of monsoon and during midnights we find it

			even more dangerous to go out for toilet.
		<b>Q2: Are you using the technology (regularly)?</b>	No
		<b>Q3: Is there anything which may prevent you from using the technology (regularly), if yes what?</b>	Cost factor
		<b>Q4: Is there anything which you may not like with the technology or which could be improved (if yes, what and how)?</b>	It looks like it is meant only for well off. We are ready to construct a toilet if provided with a help from the government.
		<b>Q5: Do you have equal access and pay a fair price?</b>	Poor people do not have access to it
		<b>Q6: Are you aware of any misuse of the service?</b>	Not aware since I am not using it.
3.	<p>Mr Hamabhai Boliya (Maldar family) (70 Years)</p> 	<b>Q1: Are You Happy with the technology? If Yes why, if no why not?</b>	We don't have toilet in our house. We are forced to go out and situations become even worse during monsoons. There are chances of various diseases, which might be caused due to being in contact with dirty/swampy place.
		<b>Q2: Are you using the technology (regularly)?</b>	No
		<b>Q3: Is there anything which may prevent you from using the technology (regularly), if yes what?</b>	Cost factor

		<p><b>Q4: Is there anything which you may not like with the technology or which could be improved (if yes, what and how)?</b></p>	<p>It would have been a better idea to charge people according to their economic status. A better off person can compensate for the loss incurred in case of a poor family not in a position to pay. We cannot afford to construct a toilet since our family income is very low. Hence we need some help relating to this matter.</p>
		<p><b>Q5: Do you have equal access and pay a fair price?</b></p>	<p>No</p>
		<p><b>Q6: Are you aware of any misuse of the service?</b></p>	<p>No idea</p>