



T R A C T

REPORT

ASSESSMENT OF BENEFITS TO LOCAL COMMUNITIES

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TIGER RESEARCH AND CONSERVATION TRUST

Tigers beyond Boundaries

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Executive Summary

This project report focuses on the impact of Dr. Shyama Prasad Mukherjee Jan Van Vikas Yojana scheme of the Maharashtra State Government, implemented from 2015 in 50 villages in the buffer of Tadoba Andhari tiger reserve (TATR), Chandrapur. Benefits under this scheme address integrated development of these villages, increased options for livelihood and reduction on their dependence on the forest habitat.

We conducted a survey in 13 of these villages, focussing on the distribution of the Liquefied Petroleum Gas (LPG) and assessing the change in the quantum of firewood extraction from the forest.

The collection of firewood has reduced considerably with most of the families using the LPG for cooking instead of firewood.

Introduction

TRACT has been working towards human – large carnivore conflict and our study indicates that attacks on people have largely happened in fringe forest areas and in certain situations.

Most of the attacks have happened when victims are crouching or sitting in the bush, during collection of firewood, minor forest produce or open defecation in the fringes outside village precincts.

Open defecation also is a large threat to hygiene of these locals, with contamination of ground water and pollution in the air.

In order to mitigate this conflict between humans and large carnivores, it was imperative to reduce the conditions and circumstances that were responsible for these attack situations. It was important to address the problem of open defecation and firewood collection, to bring a level of security to these communities and to bring them livelihood options to ensure a reduction in their dependence on the forest habitat.

1. Integrated development of villages

Dr. Shyama Prasad Mukherjee Jan Van Vikas Yojana (SPM), which is financed and implemented by the Maharashtra State Government in the buffer villages of Tadoba-Andhari tiger reserve and the other tiger reserves of the State has addressed these circumstances that result in conflict, through the following benefits:

- Liquefied Petroleum Gas (LPG) cylinder connection to every households
- Toilets for all houses (in most of the villages)
- Installation of solar street lamps
- Water filter facilities for all houses
- E-learning facilities in the schools
- Solar fencing for fields

Each village in the buffer area has an Eco Development Committee (EDC) with representation from village and the forest department. This committee is responsible for utilising the development funds from the SPM.

The TRACT teams have been monitoring the benefits from this scheme to the villages along with educating the communities about these benefits.

In order to assess the benefits of the distribution of the LPG connection, the TRACT team conducted a survey in July 2016 in 14 villages in buffer of Tadoba-Andhari tiger reserve. Questionnaire was framed to get input from villagers and the data on benefits of SPM was recorded. Please refer to the **exhibit-5.1** for the data of survey conducted by TRACT team. The data was analysed further on the following criteria:

- Reduction in firewood collection from the forest
- Frequency of LPG cylinder refill
- Usage of toilets by locals
- Collection of Minor Forest Produce

Villages surveyed:

1. Adegaoon
2. Agarzari
3. Bhamdeli
4. Katwal
5. Khuwanda
6. Kondegaon
7. Moharli

8. Ghosri
9. Dewada
10. Sitarampeth
11. Mudholi
12. Junona
13. Wadala

The following observations were made:

- More than 90% of the households have got LPG cylinder gas connection. All these beneficiaries are using it for cooking.
- People are very sceptical about the use of LPG for heating water. They were not ready to use LPG for heating water even if the LPG was provided at half the current rate.
- Visit to jungle has been limited to twice or thrice in a month to collect firewood for heating water.
- Frequency of refill is 3-4 times a year. Major reason behind this was the unemployment among villagers. Whenever people have money, they will refill the cylinder but due to unemployment, they have to use firewood for cooking at times.
- Toilets have been built in all of the villages except Dewada and Mudholi. Every villager now uses these toilets and nobody goes to jungle now.
- Water filter have been provided in each household.
- We asked villagers whether they are ready to pay for the hot water if some community solar heater are provided to villages. Most of them were ready to pay Rs. 50-100 per month for a bucket of water daily. This will reduce the collection of firewood from jungle by more than 90%.

2. Findings

TRACT conducted a survey in Jul 2016 to check whether all villages have been benefitted by SPM. Please refer to **exhibit-4.1** for survey data summary. Under this survey, they collected the data regarding following parameters:

- Awareness of the SPM
- LPG connection provided or not under SPM
- Number of LPG connections per household
- LPG is being used for cooking or not
- Number of refills of LPG gas cylinder in a year
- Number of headloads of firewood collected pre SPM and post SPM
- Reason for firewood collection

- Collection of Minor Forest Produce from the forest
- Toilets have been provided or not yet
- Installation of water filters in houses

Following are the main focus of data analysis.

- What is the percentage change in firewood collection after SPM Yojana?
- What is the average number of refills in a year?
- Which minor forest produce are being collected most by the villagers?
- Whether toilets are made or not and they are being used by villagers or not.

2.1 Reduction in firewood usage

Data of firewood collected was in terms of number of ‘headloads’ collected from forest per household. Headload is defined as number of woodblocks that can be carried by one person in one visit to forest. Typically one headload have 4-6 woodblocks. Now the use of firewood has been limited to heating water after the LPG gas connection.

Based on the data collected, we found that fire wood collection has been reduced by more than 60% in most of the villages. People are using LPG for cooking purpose and now the fire wood usage has been limited to heating water. According to the villagers, now they only go to the forest once or twice in a month for collecting firewood. Among the surveyed villages, **Bhamdeli** shows the highest reduction in firewood collection (**91%**) whereas **Adegaon** shows the least reduction (**46%**). Please refer to the **exhibit-4.2** for headload collection data pre and post SPM.

2.2 Refills of LPG gas cylinder per year

As per SPM, each house will be provided with LPG gas connection. The rates of LPG cylinder was subsidized to 200 INR for first 2 refills. After 2nd refill, price of a cylinder should be in range of 350-500 INR but during field visit we found that villagers are getting cylinder at the rates of 600-800 INR.

Out of the 13 villages, LPG connection has been provided in more than 90% of the households in 11 villages except for **Adegaon** and **Dewada** where the LPG penetration is 79% and 88% respectively. Also, LPG usage was more than 90% in all villages except **Adegaon**, **Agarzari** and **Junona** where it was 77%, 84% and 85% respectively. We also found that annual refill frequency for villages were in the range of 2.01-3.66. **Ghosri** has the highest number of annual refills and **Kondegaon** has the lowest number of annual refills.

Please refer to the **exhibit-4.3** for LPG connections and usage of LPG data and **exhibit-4.4** for average annual refill numbers.

2.3 Collection of Minor Forest Produce (MFP)

Non timber forest produce are also known as minor forest produce (MFP). Majorly two minor forest produce are being collected by villagers in Tadoba Andhari region, Mahua and Tendu.

Adegaon comes ahead in all 13 villages in terms of Mahua collection and **Katwal** in terms of Tendu collection. Minor Forest Produce are being collected majorly in **Adegaon, Agarzari, Dewada, Junona** and **Katwal** out of the 13 villages. Out of the 2175 survey population, 229 are collecting Mahua and 465 are collecting Tendu from the forest. These MFP collection is second source of income for the villagers. If the villagers are getting daily wages then they will not go for the collection.

2.4 Number of Toilets constructed

Toilets have been constructed in all the villages through the scheme with the aim of reducing the entry of people into the forests for their basic needs. The photograph of such a toilet is provided on page 1. From the data collected through the survey it is evident that whoever is provided with a toilet is using it. The construction of toilets is still in progress in a few of the villages.

- **Sitarampeth** stands top in the possession percentage of toilets by the villagers at 100%.
- Construction of toilets in **Dewada** is yet to be started. Otherwise **Kondegaon** has the lowest percentage of population with toilets as of now. **Khutwanda, Mudholi** and **Ghosri** are other villages where toilet penetration is low.
- On the whole, around 32% of the villagers have toilets.

3. Recommendations

- **Solar water heaters to be installed at common places for villagers to heat water**
- **A minimum payment per family per month can be collected so that the villagers feel responsible for the installed heaters.**
- **Use of toilets to be monitored by EDC's or Sarpanch per village with cash penalty for open defecation**
- **Refills to be made available with subsidy agreed upon**

4. Exhibits

4.1 Survey Data Summary

Demographics							
Village	Survey Population	Male	Female	Farmer	Labour	Tourism	Others
Adegaon	97	90	7	8	89		
Agarzari	67	53	14	23	44		
Bhamdeli	114	93	21	15	98		1
Dewada	57	45	12	9	48	1	
Ghosri	119	104	15	37	74		8
Junona	41	34	7	9	32		
Katwal	315	253	60	37	278		
Khutwanda	148	117	30	44	100		4
Kondegaon	148	121	27	11	137	1	
Moharli	279	215	62	10	267		
Mudholi	491	363	128	63	415		13
Sitarampeth	73	56	17		73		
Wadala	226	210	16	95	131	2	
Total	2175	1754	416	361	1786		26

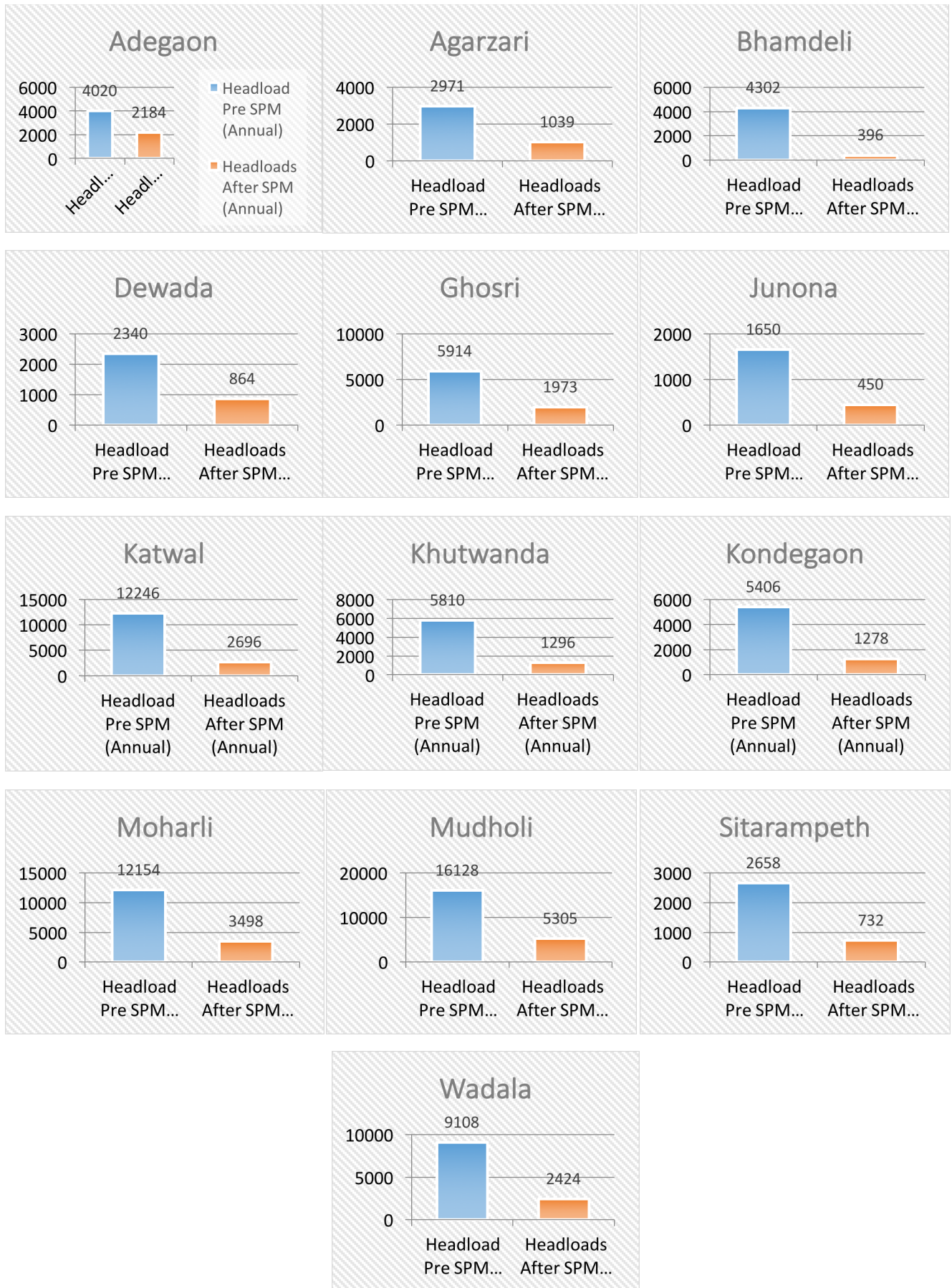
Village	SPM Yojana						
	Aware of SPM	Benefitted from SPM	No LPG Connection	Got LPG Connection	% LPG Connection	Through SPM	Through EDC
Adegaon	97	78	20	77	79%		78
Agarzari	67	67	0	67	100%	7	65
Bhamdeli	114	114	1	113	99%	4	109
Dewada	57	50	7	50	88%	4	45
Ghosri	119	119	3	116	97%	16	104
Junona	41	41	0	41	100%	4	36
Katwal	315	314	1	314	100%	95	249
Khutwanda	147	146	3	145	99%	1	145
Kondegaon	148	146	2	146	99%	1	145
Moharli	274	259	19	260	95%	71	224
Mudholi	490	479	12	479	98%		478
Sitarampeth	73	73	4	70	95%	65	53
Wadala	226	226	1	225	100%	133	191
Grand Total	2168	2112	73	2102	97%	401	1922

Village	Two LPG Connections	Three LPG Connections	Use LPG Connection	Don't Use LPG	Number of Refill of LPG Gas Cylinder								
					Total	1	2	3	4	5	6	7	8
Adegaon	1		59	18	64	5	6	24	22	4	2		
Agarzari	6		56	11	63	12	9	22	19		3		
Bhamdeli	2	1	113	0	112	11	24	42	28	4	1		1
Dewada	3		46	4	49	11	7	20	11	1			
Ghosri	23	5	108	8	107	8	17	38	10	8	24		1
Junona			35	6	40	7	4	18	10				
Katwal			305	9	307	62	126	99	20			1	
Khutwanda	24		143	2	144	14	53	54	15	6			
Kondegaon			145	1	146	42	67	30	5	1			
Moharli	14		251	9	254	28	79	101	30	8	6	2	
Mudholi	7	1	477	2	476	146	265	51	9	1	1	2	
Sitarampeth			70	0	70	18	24	20	5	1	1		
Wadala		3	212	13	213	37	27	59	75	17	2	1	1
Grand Total	80	10	2020	82	2045	401	708	578	259	51	40	6	3

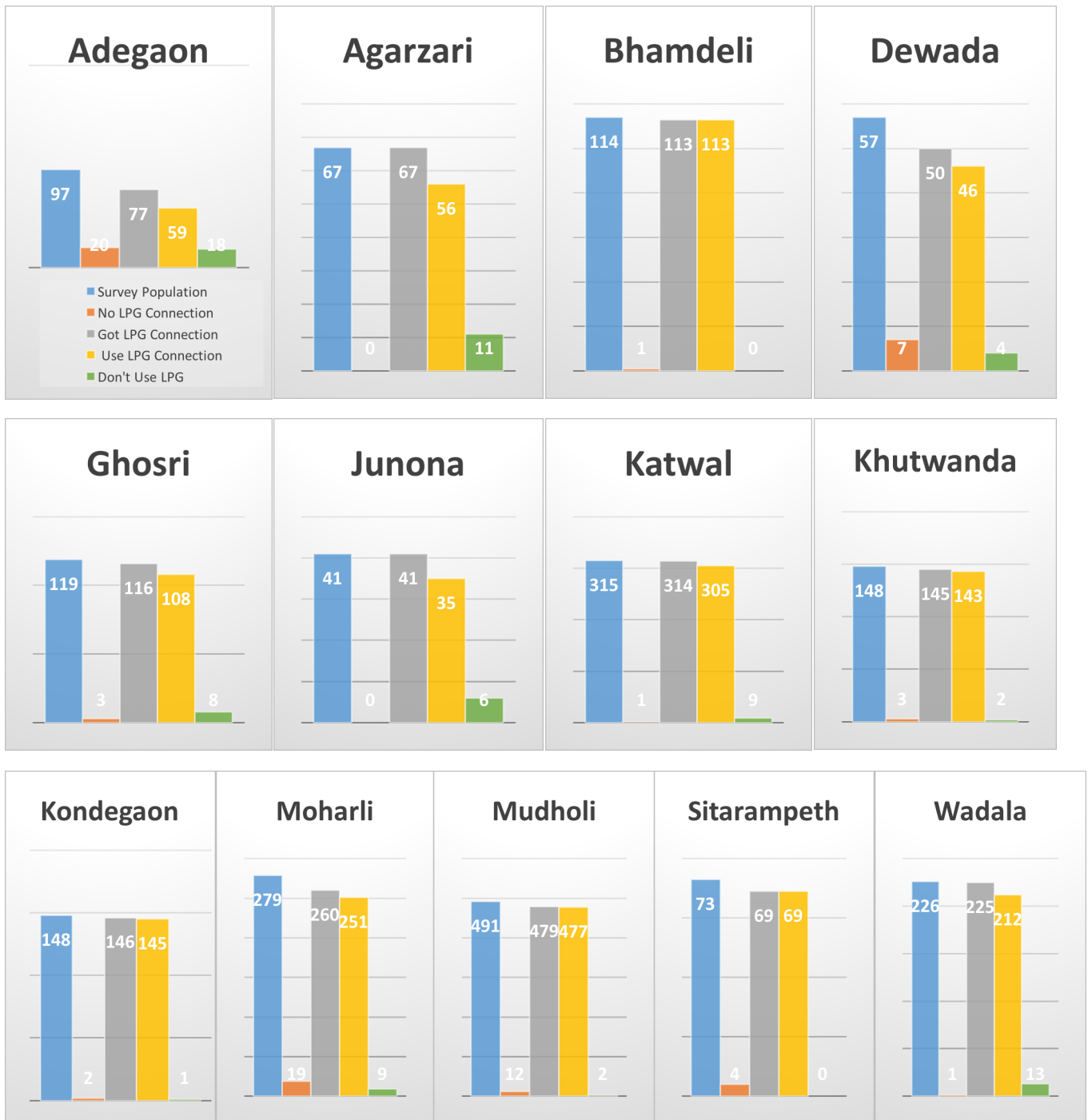
Village	Firewood				Reason for Firewood Collection			
	Use Firewood	Headload Pre SPM (Annual)	Headloads After SPM (Annual)	% reduction	Heat water	Sell	Cook	Other
Adegaon	97	4020	2184	45.7	97		24	
Agarzari	67	2971	1039	65.0	67		14	
Bhamdeli	111	4302	396	90.8	114			
Dewada	57	2340	864	63.1	57		8	
Ghosri	116	5914	1973	66.6	117	1	23	25
Junona	40	1650	450	72.7	40		2	
Katwal	315	12246	2696	78.0	315		4	
Khutwanda	139	5810	1296	77.7	140		5	
Kondegaon	147	5406	1278	76.4	147		2	
Moharli	276	12154	3498	71.2	278		11	3
Mudholi	482	16128	5305	67.1	484		10	
Sitarampeth	72	2658	732	72.5	73		3	
Wadala	225	9108	2424	73.4	226		6	
Grand Total	2144	84707	24135	71.5	2155	1	112	28

Village	MFP			Benefits of SPM					
	Total	Mahua	Tendu	Toilets Provided	Person/Toilet	Use Toilets	Filter Installed	Person /Filter	Use Filter
Adegaon	97	97	97	32	3	32	62	1.6	62
Agarzari	59	40	60	65	1	65	67	1.0	67
Bhamdeli				55	2	55	113	1.0	113
Dewada	56	55	55				57	1.0	57
Ghosri				17	7	17	117	1.0	117
Junona	31	33		40	1	40	40	1.0	40
Katwal	242	2	245	138	2	138	312	1.0	312
Khutwanda				8	19	8			
Kondegaon			2	4	37	4	135	1.1	135
Moharli	1		1	203	1	201			
Mudholi	4	1	4	23	21	23			
Sitarampeth		1	1	73	1	73	72	1.0	72
Wadala				39	6	38	224	1.0	224
Grand Total	490	229	465	697	3	694	1199	1.8	1199

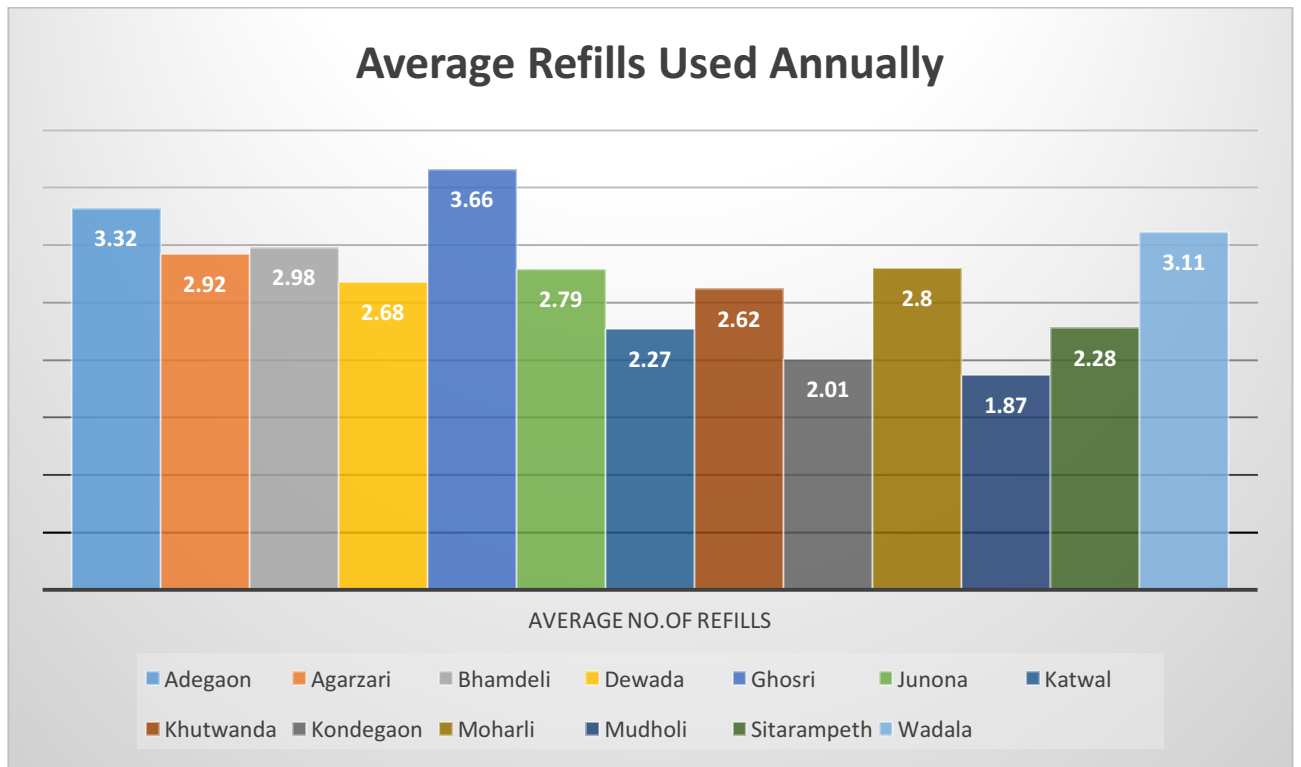
4.2 Headload collection Pre and Post SPM



4.3 LPG connections and Usage of LPG



4.4 Average Annual Refill Numbers



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