Chapter-V
WASTE MANAGEMENT IN RURAL SANGLI DISTRICT

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5.1 Introduction

Environment has importance not less than blood in human being in particular, and bodies of all things in general. It is therefore protection, prevention of the environment and control of its pollution is important. There are various types of pollution likes noise pollution, soil pollution and waste generation. This demands to control environment four pollution of different types. Waste management has a special importance on various grounds. It enables to control environmental pollution on the one hand and on the other, more importantly that facilitates of prevention and conservation of natural resources and their recycling. Waste can be solid waste in the form of garbage and liquid waste also contributes to the pollution of the environment. Waste management is in its nature, extent and efficiency limited in India as well as in Maharashtra and also in the rural area. It is essential to study waste management practices in rural areas. The study is important because rural people are not much acquainted with the environmental knowledge and knowlecge of the waste management also. Sangli is a famous district in the state of Maharashtra and Western Maharashtra on various grounds. It is against this over all background. The present research study intends to explore waste management in the Sangli district. The environment is the aggregate of the total condition and surrounding in which man lives and interacts which including his way of life. The environment comprises of the surrounding in which man lives, works and plays. It compasses the air he breaths the water likes drink, the food he consumes, and the shelter he takes for his protection. It also includes the pollutants other detrimental environmental factors which adversely affect the life and health of all human beings.

Environment performs three function in relation to man first it provides living space and renewable and non renewable resources which make life qualitatively rich man, second it assimilates all the waste product and third it

provides life support services by maintaining ecological balance and genetic diversity. This life support balance service helps to covert high entropy back to low entropy. There are some specific objectives of waste management in rural area. These are as follows.

1. To explore the problem of waste management in the theoretical perspective.
2. To study a profile of villages in Sangli District selected for the study.
3. To examine nature and extent of solid waste management in the rural Sangli District.
4. To assess waste water management practices in rural areas of Sangli District.
5. To identify problems in the management of waste in the area under study and suggest measures on the some.

The present study is essential because in rural areas the management of waste is not planed and also it is not discarded in good way. It is also clear that waste water management is not good. Thus, the present research work is useful to make the management of waste and waste water in rural areas and it is helpful to maintain the health and the people.

5.2 Waste Management in Rural Sangli District

Compared to urban area, it is difficult to make arrangement of waste management plans for waste management. It collects the waste and discarded it away from the city. In Rural area waste collected by grampanchayat it is not disposed well so it causes the pollution and it also affects the health of the people. Waste water is connected to gutter. But there is not recycling of waste water and it is used for other work. There are various problems regarding waste management in rural area. There is shortage of dustbins, sweepers, various tools concerns with waste. In rural area, the waste is not collected every day. It is planed that after four days or in a week waste collected. There is not a planning of waste management so it is harmful to environment and health also.

5.2.1 Waste Management in Rampur Village (Jath Taluka)

5.2.1.1 Waste Water Management

Table 5.1

Waste Water Management

Year	No. of sanitation pits (%)	No. of families who uses waste water for gardening (%)	No. of families whose waste water attached to gutters (%)	Total no of families (%)
2006-07	20 (4.0)	10 (1.98)	280 (55.5)	504 (100)
2007-08	20 (4.0)	20 (4.0)	280 (55.5)	504 (100)
2008-09	38 (7.5)	27 (5.3)	280 (55.5)	504 (100)
2009-10	79 (15.7)	75 (14.9)	350 (69.44)	504 (100)
2010-11	83 (15.2)	80 (14.68)	351 (64.40)	545 (100)
2011-12	108 (12.16)	82 (9.23)	587 (66.10)	888 (100)
C.G.R.	46.78	56.61	14.05	9.16
C.V.	58.24	61.06	46.70	24.50
Mean	58.33	49	354.67	574.83

Source: - Sant Gadgebaba Gramsvachhata Abhiyan Report 2006-07 to 2011-12.

Graph No. 5.1
Waste Water Management

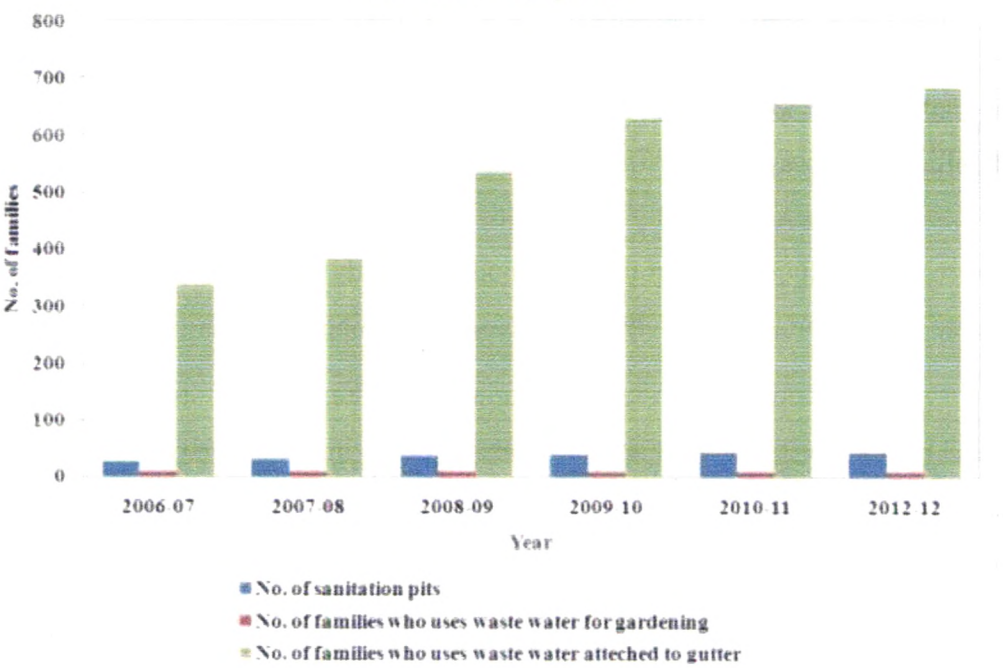


Table 5.1 and figure 5.1 shows that waste water management of Rampur village in Jath taluka. Village families use the various ways to dispose of wastewater like sanitation pits, waste water for gardening and last one is waste water attached to gutter. In 2006-07, 20 families out of 310 use the sanitation pits, 10 families used waste water for gardening and most of 280 families used waste water attached to gutters. It means most of families dispose their waste water through drainage and gutter facilities. But after 2007-08 gradually increase in three ways of waste water management is found. Finally, 2011-12 the number of sanitation pits is 108, 82 families uses the waste water for gardening and mostly gutter facility used for waste water disposal it mean 587 families waste water attached to gutter. It concludes that most of village families use the gutter facility to waste water disposal.

Form the above table 5.1 C.G.R of sanitation pits is 46.78 and C.V. is 58.24, C.G.R of families use waste water for gardening is 56.6 and C.V. is 61.06 and C.G.R of families uses waste water attached to gutter is 14.04 and C.V. is 30.61.

It is revealed that a majority of families in Rampur Village have attached their waste water to the gutter is a thing of appreciate. Its good waste water management practice. The number of sanitations pits is increasing in this village, initially it is good, but later on this picture should be changed. The number of families using waste water for gardening is increasing day by day is good thing, but it should increase rapidly and significantly because it facilitates recycling of waste water, which is very much demanded. Recently also the no of families uses waste water is attached to gutter is increased, is a thing of concerns.

The households waste and municipal waste, as well as waste on the outskirts of forest, orchards and pastures or worse, in lakes or rivers, represent a real hazard for the future of the society by influencing the quality of the environment and natural evolution. (Captina and Simonesous, 2008, p. 717)

The concepts of waste integrated management may be useful within the authorization of some treatment and removal waste equipment priorities, for prevention of waste formation before valorisation and ecological removal. (Captina and Simonesous, 2008, p. 718)

5.2.1.2 Water Supply Facility

Table 5.2

Water Supply Facility

Year	No. of public taps (%)	No. of private taps (%)	No. of Total families (%)
2006-07	9 (1.78)	125 (12.5)	504 (100)
2007-08	20 (3.97)	125 (24.80)	504 (100)
2008-09	28 (5.5)	138 (27.38)	504 (100)
2009-10	28 (5.5)	138 (27.38)	504 (100)
2010-11	40 (7.94)	320 (58.71)	545 (100)
2011-12	28 (3.15)	610 (68.69)	888 (100)
C.G.R	**24.8**	**35.94**	**9.16**
C.V.	**36.91**	**73.43**	**24.50**
Mean	**25.5**	**242.67**	**574.83**

Source: - Sant Gadgebaba Gramsvachhata Abhiyan Report 2006-07 to 2011-12.

Graph No. 5.2
Water Supply Facility

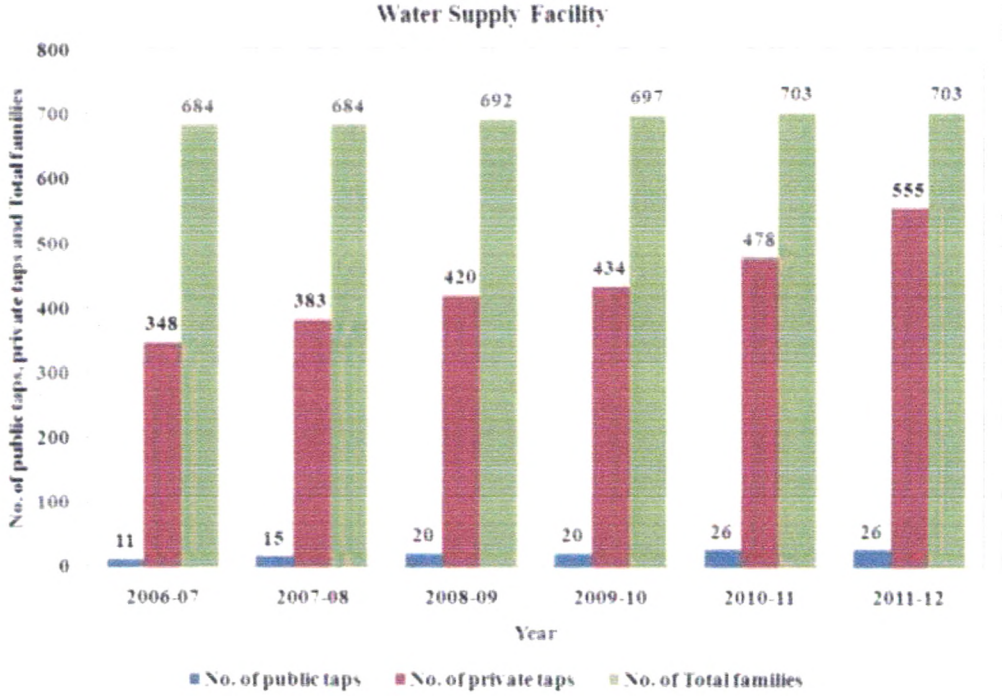


Table 5.2 and figure 5.2 shows that water supply management in Rampur village of Jath taluka. It is clear that during 2006-07 and 2011-12 more than number of families used the private taps facility. Number of public taps

increasing from 9 in 2006-07 to 28 in 2011-12, and number of private taps increased from 125 to 610 during the same period. In this way comparatively the availability of public taps is less. In above table C.G.R of public taps is 20.82 and C.V. is 36.91, C.G.R of private taps is 30.24 and C.V. is 73.43 and C.G.R of total families is 1.09 and C.V. is 24.50

It is found that the number of private taps is higher than public taps in Rampur is a good thing. But the number of households who don't use water supply facilities is also thing of serious concerns. It is because of their weak financial positions. Here at least water supply management public taps should be arranged. It is because water is the basic need of the human beings. This will effect on waste water management.

5.2.1.3 Toilet Facility

Table 5.3

Toilet facility

Year	No. of families use of public toilets (%)	No. of families use of private toilets (%)	Total No of Families (%)
2006-07	5 (1.0)	40 (7.94)	504 (100)
2007-08	15 (2.98)	197 (39.09)	504 (100)
2008-09	15 (2.98)	197 (39.09)	504 (100)
2009-10	29 (5.7)	455 (90.28)	504 (100)
2010-11	29 (5.7)	475 (90.28)	545 (100)
2011-12	81(9.12)	807 (90.88)	888 (100)
C.G.R	**60.51**	**69.65**	**9.16**
C.V.	**85.30**	**69.33**	**24.50**
Mean	**174**	**361.83**	**574.83**

Source: - Sant Gadgebaba Gramsvachhata Abhiyan Report 2006-07 to 2011-12.

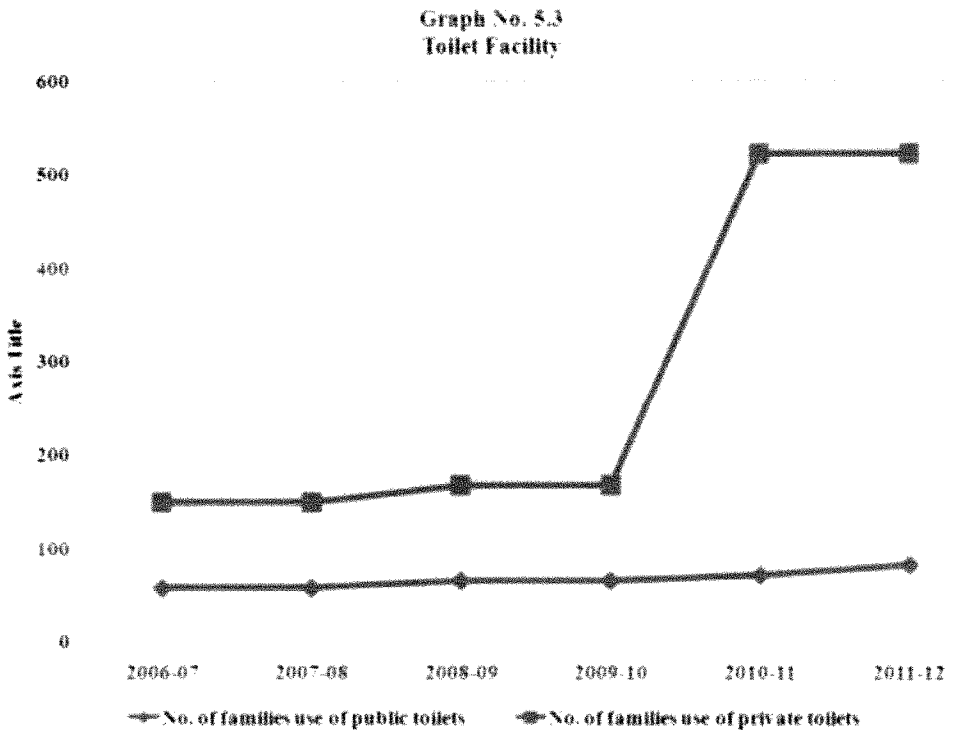


Table 5.3 and figure shows that toilet facility of Rampur village in Jath taluka. It shows clearly that the most of families are at using public toilets facilities. Survey finds the most of families gives the preference to construct private toilet. During the study period 2006-07 to 2011-12 No. of families uses public toilet increasing trend year by year. Form the 2006-07, 40 families' uses the of private toilets a has an is increasing and met to 807 in the year 2011-12. In above table C.G.R of families' use of public toilets is 60.51 and C.V. is 85.30 and C.G.R of families use private toilets is 69.65 C.V. is 69.33.

It is observed that the number of families using private toilets is increasing period under study. It has increased significant in the last year of study. Ever through the household using public latrines is lesser, but is increasing. It's increasing in higher in again in the last year of the study. But were importantly, the number of families who do not use public as well as public latrine facility is also considerate. It has a bad impact on an environmental states is also very much essential to take into considering. All household should be attached to the toilets, either private or public, is the need of hear.

5.2.1.4 Solid Waste Management

Table 5.4

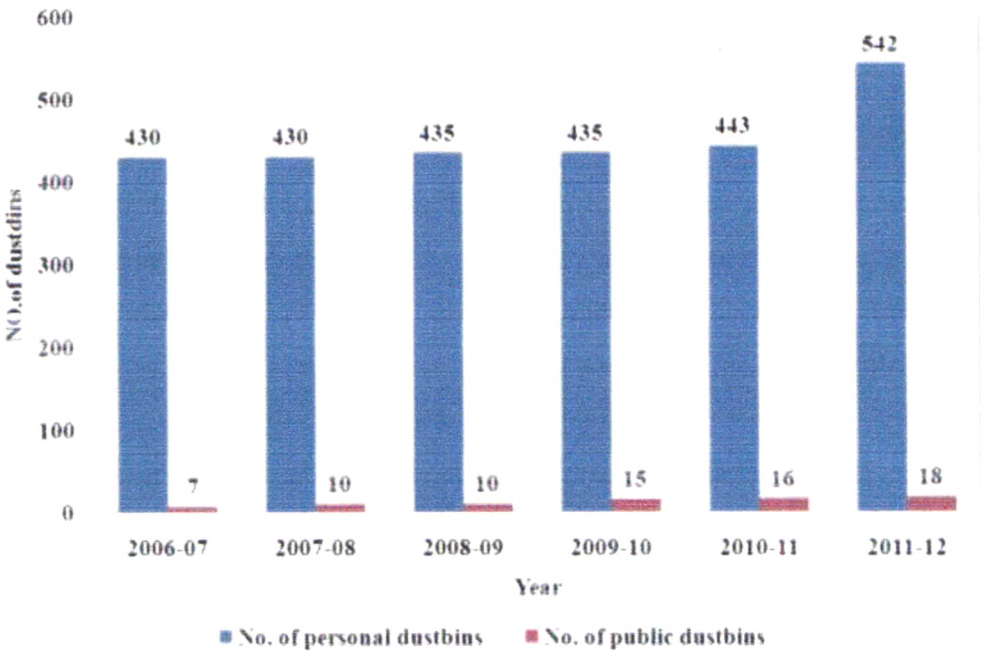
Solid Waste Management

Year	No. of Personal Dustbins (%)	Composting	No. of Public Dustbins (%)	Disposal	No. of Sweepers	No. of Total Families
2006-07	430 (85.12)	Yes	7 (1.39)	Yes	2	504 (100)
2007-08	430 (85.17)	Yes	10 (1.98)	Yes	2	504 (100)
2008-09	435 (86.31)	Yes	10 (1.98)	Yes	2	504 (100)
2009-10	435 (86.31)	Yes	15 (1.98)	Yes	2	504 (100)
2010-11	443 (81.38)	Yes	16 (2.93)	Yes	2	545 (100)
2011-12	542 (61.04)	Yes	18 (2.03)	Yes	2	888 (100)
C.G.R	**3.63**	-	**20.54**	-	-	**9.16**
C.V.	**8.90**	-	**30.91**	-	-	**24.50**
Mean	**452.**	-	**12.67**	-	-	**254.83**

Source: - Sant Gadgebaba Gramsvachhata Abhiyan Report 2006-07 to 2011-12.

The gathering of the domestic wastes represents a great present day issue because their volume increase with the increase the population and of its welfare the increase of the factors generate hazards and risk of environmental deterioration. The variety of the wastes composition makes the process of anaerobic degradation faster and more difficult follows, provoking in the case of a delaying and unsanitary gathering the pollution of the air and water. (Captina and Simonesous, 2008, p. 718)

Graph No. 5.4
Soild Waste Management



Above table 5.4 and Graph No. 5.4 shows that solid waste management of Rampur village in Jath taluka. In is noted in take true that how to dispose the solid waste generated day to day. In 2006-07, 430 families used the personal dustbins but after 2007-08 gradually increased number of personal dustbins for solid waste management and lastly available the figure of personal dustbins is 542 in 2011-12. Important thing is all families use the solid waste for composting. Remaining families use the public dustbins for solid waste management also increasing the number of public dustbins from 7 in 2006-07 to 18 in 2011-12. The C.G.R of personal dustbins is 3.62 and C.V. IS 8.90 and C.G.R of public dustbins is 20.54 and C.V. is 30.91.

It is observed that the number of private dustbins is significantly higher than the public dustbins. There is an urgent need for increasing the number of staff for solid waste management very few, and here negligible, is a thing of serious concerns. It is revealed that solid waste management practice in Rampur is not good. The role of village panchayat is not upto the mark, and expected extent. It is therefore, solid waste management is a serious thing of concerns in the Rampur Village.

Solid waste is the terms used to describe non liquid waste materials from domestic trade, commercial, agricultural and industrial activities and form public services. In Indian cities, it is combination of various heterogeneous waste materials. It is commonly known as garbage, refuse, rubbish or trash etc. A waste is revived as discarded materials which has no consumer value to the person abandoning it urban solid waste is defined as materials for which the primary generator or user abandoning the requires no compensation upon abandonment. It is generally perceived by society as being within the responsibility of the municipality to collect and disposed off. It is an important source of solid waste generation. It includes households waste, kitchen, house cleaning, old paper, pickings, Bottles, crockery wares, furnishing material, garden trimming etc. generated by residential people. (Mahamuni, 2002, pp. 211)

The term solid waste management implies storage, collection, transportation, processing and final disposal of solid waste in a manner that is accordance with the principles of economics, public health, engineering, conservation, aesthetics and other environmental consideration and that is also responsive to public attitude. (Mahamuni, 2002, p. 243)

5.2.2 Waste Management Kadepur Village

5.2.2.1 Waste Water Management

Table 5.5

Waste Water Management

Year	No. of sanitation pits (%)	No. of families who uses waste water for gardening (%)	No. of families whose waste water attached to gutters (%)	Total No. of Families (%)
2006-07	43 (10.49)	45 (10.97)	315 (76.83)	410 (100)
2007-08	70 (14.77)	75 (15.82)	315 (66.45)	474 (100)
2008-09	100 (18.90)	105 (19.85)	334 (63.14)	529 (100)
2009-10	109 (17.87)	80 (13.11)	434 (71.15)	610 (100)
2010-11	109 (12.27)	80 (9.00)	687 (77.36)	88 (100)
2011-12	109 (12.27)	80 (9.00)	687 (77.36)	88 (100)
C.G.R	**18.92**	**16.02**	**20.40**	**18.33**
C.V.	**23.90**	**6.64**	**33.34**	**30.02**
Mean	**90**	**77.5**	**462**	**633.17**

Source: - Sant Gadgebaba Gramsvachhata Abhiyan Report 2006-07 to 2011-12.

Graph No. 5.5
Waste Water Managment

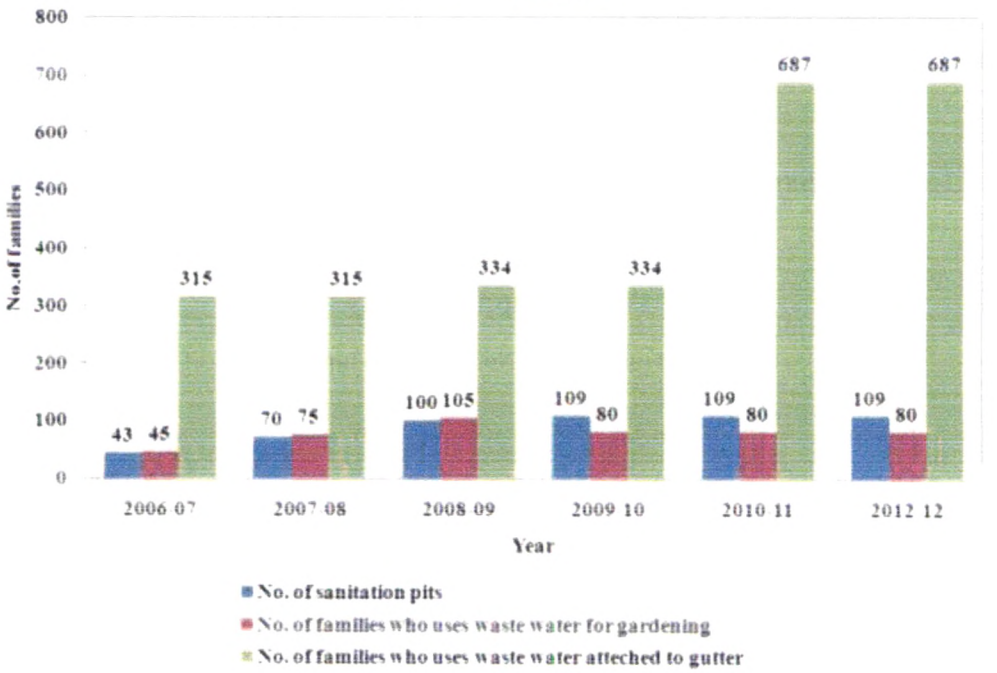


Table 5.5 and Graph No. 5.5 shows that waste water management of Kadepur village in Kadegaon taluka. This data is about the various ways of simply waste management. We can tell simply, there are three ways essential for waste disposal. First is sanitation pits, second waste water use for gardening and last one is waste water attached to gutter. In 2006-07, 43 families used sanitation pits, 45 families used waste water for gardening and most of families used to gutter facilities to waste water disposal. Then gradually increase in the sanitation pits and garden for waste water disposal but after 2008-09 decreasing the trend of use of the waste water for gardening is observed. Although reaming most of families mange draw their waste water through gutter facility. Last enrolment of three way of waste water disposal is 109 of sanitation pits, 80 families use waste water for gardening and 787 families attached waste water to gutter. In above table 5.1 it is sees that C.G.R of sanitation pits is 18.92 and C.V. is 23.90, C.G.R of families uses waste water for gardening is 16.02 and C.V. is 6.64 and C.G.R of families uses waste water attached to gutter is 20.40 and C.V. is 33.34.

It is revealed that the number of families whose waste water attached to gutter is higher, and it is increasing, is a good thing. The families using pits is growing day by day, and it is in considerate number. The house hold using waste

water for gardening is fluctuations, but it has a dealing trend. It is also a noteworthy thing that, the families who do not have use of either gutter or sanitation pits is also a considerate, that cannot be negligible availing for them is very much necessary on various grounds.

5.2.2.2 Water Supply Management

Table 5.6

Water Supply Facility

Year	No. of public taps (%)	No. of private taps (%)	No. of Total families (%)
2006-07	1 (0.24)	275 (67.07)	410 (100)
2007-08	1 (0.21)	436 (91.98)	474 (100)
2008-09	1 (0.18)	512 (96.77)	529 (100)
2009-10	0	664 (108.8)	610 (100)
2010-11	0	705 (79.39)	888 (100)
2011-12	0	705 (79.39)	888 (100)
C.G.R	-	**20.09**	**18.33**
C.V.	**70.71**	**29.25**	**30.02**
Mean	**0.5**	**549.5**	633.17

Source: - Sant Gadgebaba Gramsvachhata Abhiyan Report 2006-07 to 2011-12.

Graph No. 5.6
Water Supply Facility

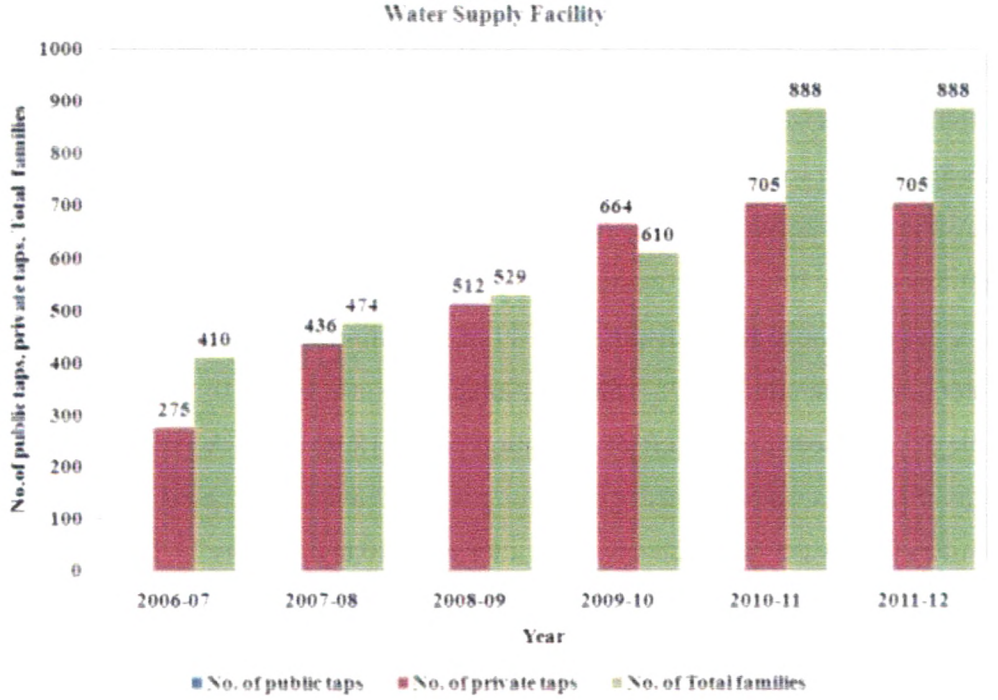


Table 5.6 and Graph No. 5.6 shows that water supply facility of Kadepur village in Kadegaon taluka of Sangli district. It may be display the data about water supply to families use in the form of public taps and private taps. Above statistical dada shows the most of families used the private taps for water use and remained families used other sources for taking water use in day to day life increased the number of private taps from 275 in 2006-07 to 705 in 2011-12 but in 2011-12, available the number of public taps is zero. It means local government give the preference to distribute private water connections to each and needful families due to their demand. Hence, automatically all families and members take care about water use. In above table C.G.R of public taps is o and C.V. is 0, C.G.R of private taps is 20.09 and C.V. is 29.25 and C.G.R of total families is 18.33 and C.V. is 30.02.

The drinking water supply facility is good in Kadepur village of Kadegaon tehsil of Sangli district. It is observed that the number of public taps is meagre, and no growth in it has taken place. The drinking water supply in the village is dominated by the private tap connections also. And it is a good thing that the number of private taps is higher and it increased at the significant rate of 20 % p.a. during the period under study. But the thing of concerns is that, there is considerable number of families who do not have access to drinking water either in the form of private tap or public tap. They should be provided with the access to drinking water supply.

Natural water in contact with foreign matters during either industrial process or domestic use becomes polluted. Such polluted water is called domestic waste water. Whereas the effluent discharged from the industry is called waste water. The removal of excessively accumulated matter incorporated into the waste water may be either organic or on organic in nature depending upon the sources of the wastes. The effluents generated from industries like, dairies, distilleries, tanneries, paper manufacturing units, sugar industries. Vegetable and fruit processing units are rich in organic contents the wastes produced from municipalities and corporations are also rich in organic matter. The industries manufacturing cement, steel, alkali, generate effluents which contain relatively higher proportion inorganic matters. (Trivedi, 2008, p. 7)

5.2.2.3 Toilet Facility

Table 5.7

Toilet Facility

Year	No. of Families Use of Public Toilets (%)	No. of Families Use of Private Toilets (%)	Total No. of Families (%)
2006-07	38 (9.27)	372 (90.73)	410 (100)
2007-08	38 (8.02)	436 (91.98)	474 (100)
2008-09	52 (9.82)	448 (84.69)	529 (100)
2009-10	81 (13.28)	529 (86.72)	610 (100)
2010-11	81 (9.12)	807 (90.88)	888 (100)
2011-12	81 (9.12)	807 (90.88)	888 (100)
C.G.R	**20.40**	**18.30**	**18.33**
C.V.	**34.32**	**31.10**	**30.02**
Mean	**61.83**	**566.5**	**633.17**

Source: - Sant Gadgebaba Gramsvachhata Abhiyan Report 2006-07 to 2011-12.

Graph No. 5.7
Toilet Facility

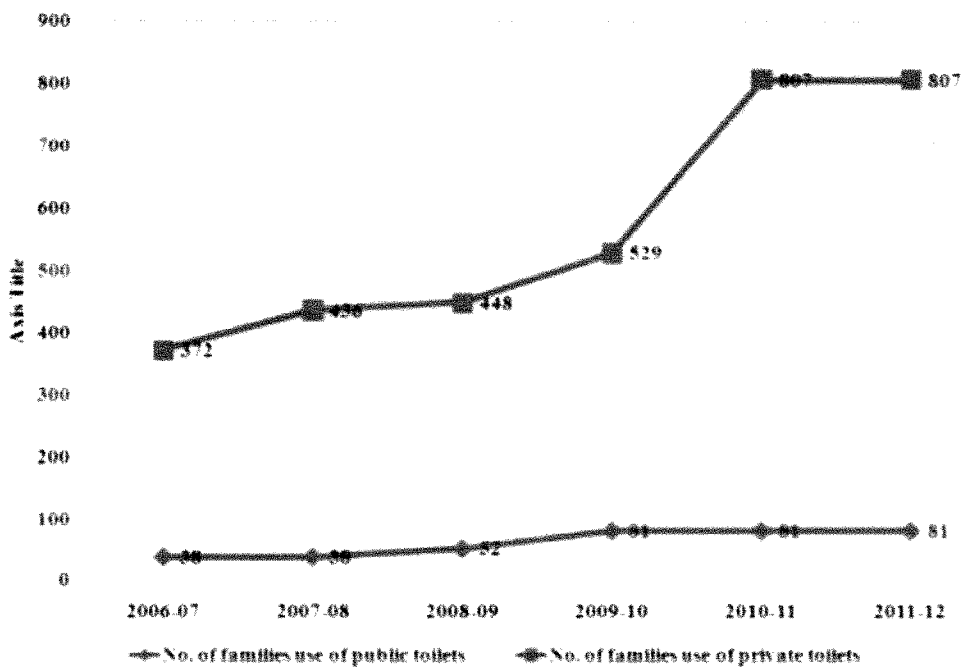


Table 5.7 and Graph No. 5.7 indicate that toilet facility of Kadepur village in Kadegaon taluka. It is clear that most of families use the self toilet and few remaining families used public toilet facilities in the village. In 2006-, 38 families used public toilet and at that same time 372 families used private toilets. After this year, both number of toilet rapidly increased but after 2007-08 not changed the figure of availability of public toilets, it means from 2007-08 to 2011-12 number of toilets figure is constant at 81 but during this same period increased the number of private toilets from 436 to 807. In above table C.G.R of families' use public toilets is 20.40 and C.V. is 34.35 and C.G.R of families use private toilets is 18.30 C.V. is 31.10.

It is revealed that the number of families having private toilets is higher, and also increasing day by day with a significant growth rate of 18% p.a., is a thing of appreciations. But at the same time, households using public latrines is also considerable one, it is increasing. Thus. the toilet facility available in this village is thing of significance and appreciable. If efforts are made to families depending on public toilets to private is desirable and conducive for the qualitative environment of the village.

In developing countries the ventilated pit latrine is the cheapest, simplest sanitary method, which can be afforded by most rural dwellers. VIP latrine is an improved pit latrine that gives convenience to the users and does not small or attracts files due to vent pipe attached to it, therefore it can be built close to houses and road in this modern era a large percentage of the people in the rural

Areas can still afford it is as well as its simple and functional method of operation. It has a great advantage over the traditional pit latrine, especially as it controls the usual bad odour and flies that are attached to the odour. Also, other disease carrying insect is bred in the pit and container. Their product of this process is carried into the soil by the liquid portion of the excreta and the gases procedure removed by the vent. Generally this decomposition of sewage by bacteria reaction is anaerobic process of biological treatment, which involves bacterial attacking complex organic in the sewage and converts them into solid and gases, humus, ammonia, methane by hydrogen sulphides, carbon dioxide and nitrogen etc. (Otti, 2011, pp. 142-144)

5.2.2.3 Solid Waste Management

Table 5.8

Solid Waste Management

Year	No. of personal dustbins (%)	composting	No. of public dustbins (%)	Disposal	No. of sweepers	Total No. of Families (%)
2006-07	308 (75.12)	Yes	5 (1.22)	Yes	2	410 (100)
2007-08	448 (94.51)	Yes	9 (1.90)	Yes	2	47 (100)
2008-09	520 (98.30)	Yes	15 (2.94)	Yes	2	529 (100)
2009-10	520 (85.24)	Yes	15 (2.46)	Yes	2	610 (100)
2010-11	542 (61.04)	Yes	18 (2.03)	Yes	2	888 (100)
2011-12	542 (61.04)	Yes	18 (2.03)	Yes	2	888 (100)
C.G.R	**10.19**	**-**	**27.43**	**-**	**-**	**18.32**
C.V.	**17.32**	**-**	**35.63**	**-**	**-**	**30.02**
Mean	**480**	**-**	**13.33**	**-**	**-**	**633.17**

Source: - Sant Gadgebaba Gramsvachhata Abhiyan Report 2006- 07 to 2011-12.

The recycling of organic matter by decaying organisms produces humus. The controlled and accelerated biodegradation of moist organic matter to humus like product can be used as fertilizer or soil conditioner is known as composting. this process is a practical method of recycling of organic waste almost any plant or animal matter such as food, scraps and old new paper, sawdust, leaves or grass clippings an excellent base composting operations. (Mahamuni, 2002, p. 243)

Graph No. 5.8
Solid Waste Management

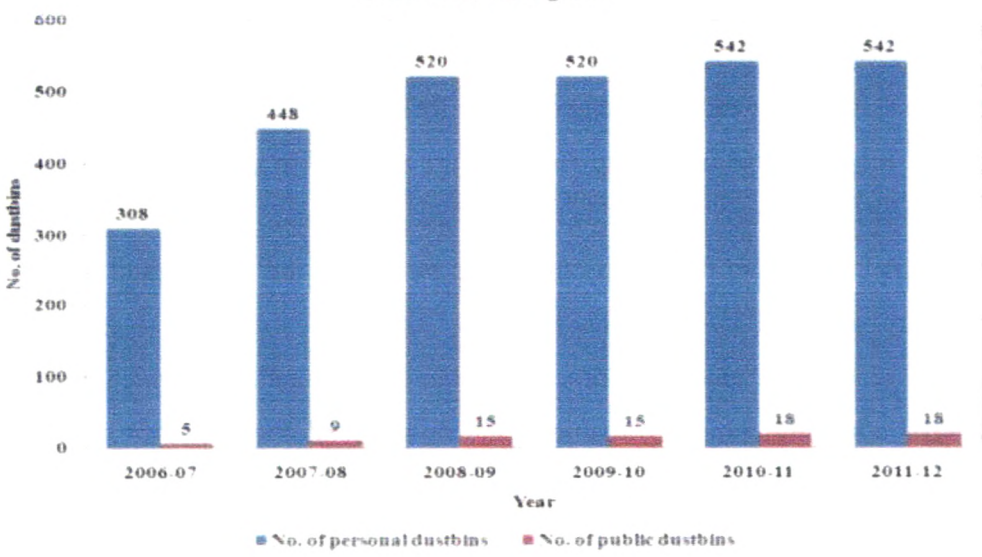


Table 5.8 and Graph No. 5.8 shows soild waste management of Kadegaon village in Kadegaon taluka. During the study period 2006-07 to 2011-12, no of persoal dustbins showing increasing trend . In form the year 2006-07, 308 families used the personal dustbins but after 2007-08 gradually increseed number of personal dustbins for solid waste management. Lastly available fig of prrsonal dustbins is 542. Important thing is that all families use soild waste for composting. form the 2006-07, 5 public dutbins it is increasing goes up 18 to in the year 2011-12. In above table C.G.R of personal dustbins is 10.19 and C.V. is 17.32 and C.G.R of public dustbins is 27.43 and C.V. is 35.63.

It is revealed that the number of personal dustbins is higher than the public dustbins. This is an indicator of people's participations in solid waste management. But to that extent the local government is not active and aware of the responsibility of the solid waste management in its area. The number of public dustbins is lower, and the number of sweepers also is meragre. It is good that people are composting their sloid waste. But it is clearly revealed that it is need of the hour that village panchyat should be active and dynamic in the management of the solid waste in the area under its jurisdiction.

5.2.3 Waste Management in Yedenipani Village

5.2.3.1 Waste Water Management

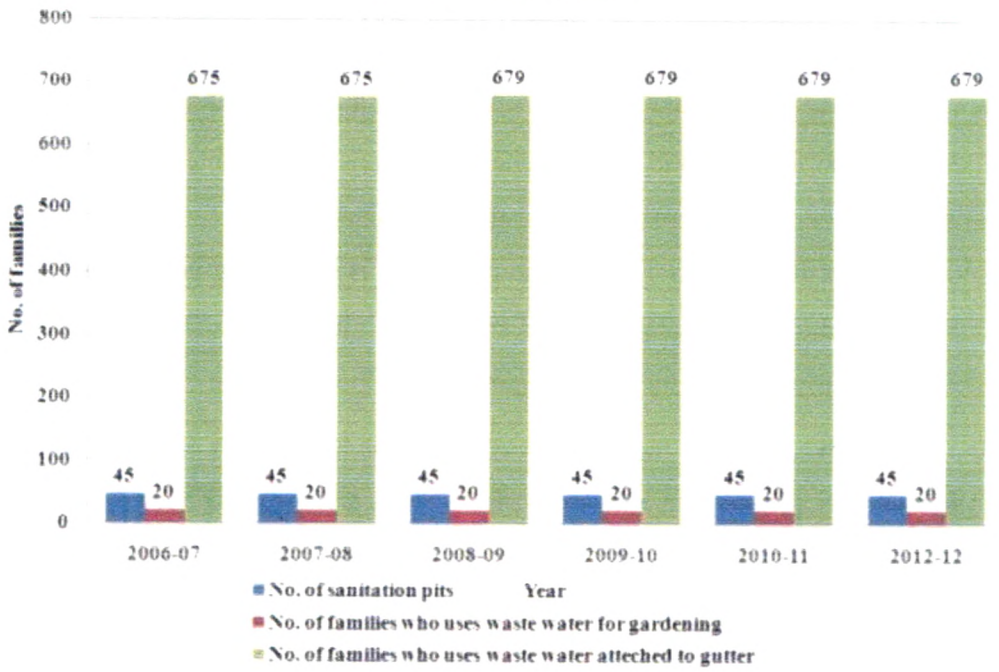
Table 5.9

Waste Water Management

Year	No. of Sanitation Pits (%)	No. of Families Who Uses Waste Water for Gardening (%)	No. of Families Whose Waste Water Attached to Gutters (%)	Total No. of Families (%)
2006-07	45 (4.01)	20 (1.78)	675 (60.11)	1123 (100)
2007-08	45 (3.33)	20 (1.78)	675 (49.93)	1352 (100)
2008-09	45 (3.33)	20 (1.48)	679 (30.22)	1352 (100)
2009-10	45 (3.32)	20 (1.47)	679 (50.04)	1357 (100)
2010-11	45 (3.32)	20 (1.47)	679 (50.03)	1357 (100)
2011-12	45 (3.20)	20 (1.42)	679 (48.32)	1407 (100)
C.G.R	-	-	**0.13**	**3.30**
C.V.	-	-	**0.28**	**6.94**
Mean	**45**	**20**	**677.67**	**1324.67**

Source: Sant Gadgebaba Gramsvachhata Abhiyan Report 2006-07 to 2011-12.

Graph No. 5.9
Waste Water Management



Above table 5.9 and Graph No. 5.9 indicate waste water manageement of Ydenipani village in Walwa taluka. During 2006-07 to2011-12 the data is given in the this chart which are divided into three categories like number of sanitation pits, number of families use waste water for gardening and numberof families who waste water attached to gutter. During the study period 2006-07 to 2011-12 no of sanitation pits showing the ratio is the same respectively. In 2006-07, 675 families used wste water attached to gutter it is increasing and next to 679 in the year 2011-12. From the table, 5.9 C.G.R of sanitation pits is 0 and C.V. is 0, C.G.R of families uses waste water for gardening is 0 and C.V. is 0 and C.G.R of families uses waste water attached to gutter is 0.13 and C.V. is 0.28.

The foregoing analysis reveals that, there is no change in the number of families using sanitations pits for the waste water management during period under study. Likewise, the number of families using waste water for gardening purpose is the same during the period under study, which is necessary to increase for the recycling of the waste water. It is good that the number of families who have attached their waste water to gutters is higher, but the growth is insignificant. More importantly, there is significant number of families who do not have sanitations pits and waste water attached to gutters, is a thing of serious

concerns, and it is not the proper management of the waste water in this village panchayat.

The economic growth process has delivered enormous increase in economic welfare. Material wealth per capita has increased significantly and thee range of choice for consumer has been widened, because of laws of Thermodynamic, economic production and consumption activities the always generates some pollution and waste that requires proper disposal. Further, it is not possible to have 100 per cent recycling systems. (Prasad, 2008, p. 151)

5.2.3.2 Water Supply Facility

Table 5.10

Water Supply Facility

Year	No. of public taps (%)	No. of private taps (%)	No. of Total families (%)
2006-07	1 (0.09)	410 (36.51)	1123 (100)
2007-08	1 (0.07)	410 (30.32)	1352 (100)
2008-09	1 (0.07)	417(34.84)	1352 (100)
2009-10	1 (0.07)	417 (30.73)	1357 (100)
2010-11	1 (0.07)	488 (35.96)	1357 (100)
2011-12	1 (0.07)	615 (43.77)	1405 (100)
C.G.R	-	**7.56**	**3.30**
C.V.	-	**16.26**	**6.94**
Mean	**1**	**459.5**	**1324.67**

Source: - Sant Gadgebaba Gramsvachhata Abhiyan Report 2006-07 to 2011-12.

Graph No. 5.10
Water Supply Facility

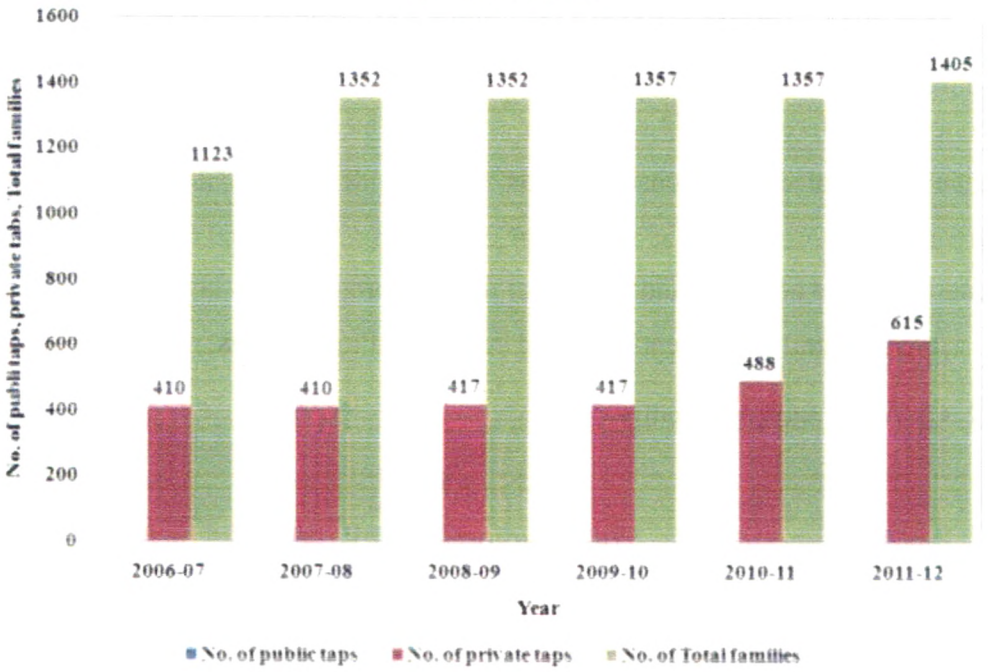


Table 5.10 and Graph No. 5.10 show that water supply facility of Yedenipani village of Walwa taluka. The above table water supply facility in the form of public taps, private taps and total families during shows year 2006-07 to 2011-12. In year 2006-07, number of public taps is the same. In year 2011-12 number of private taps was 615 which was high as compared with years 2006-07 to 2007-08. It concludes that number of public taps is very low and number of private taps is higher as compared to number of total families. In above table, C.G.R of public taps is o and C.V. is 0, C.G.R of private taps is 7.56 and C.V. is 16.26 and C.G.R of total families is 3.3 and C.V. is 6.94.

It is observed that the village panchayat of Yedenipani is different, it did not provide for the public taps in adequate number. It stands constant throughout the period. The number of private taps is higher comparatively, and also shows a considerable growth, it is inadequate. It is because the number of households without the facility of drinking water either through public tap or private tap is significantly higher, is a thing of serious concerns. This demands the active role of the management as well as households to inculcate access to the drinking water.

Water is a chemical compound and may occur in a liquid from or in a solid or gaseous form. All these forms of water are extremely useful to man providing the luxuries and comforts in addition to fulfilling his basic necessities of life. Every one of us known how important and precious the water is whenever there is no water in our precious the water in our taps, we become helpless. No life can exist without water since water is an essential for life as air is. It has been estimated that two third of human being but also for animals, plants and all other living beings. The provision of such a schemes shall other living beings. The provision of such a scheme shall ensure a constant and a reliable for which it has been designed. Such a scheme shall not only help in supplying safe wholesome water to the people for, drinking, cooking, bathing, washing, etc. so as to keep the disease away and there by promoting better, but would also help in supplying in maintaining better sanitation and beautification of surroundings, thereby reducing environmental pollution. (Trivedi, 2008, p. 87)

5.2.3.3 Toilet Facility

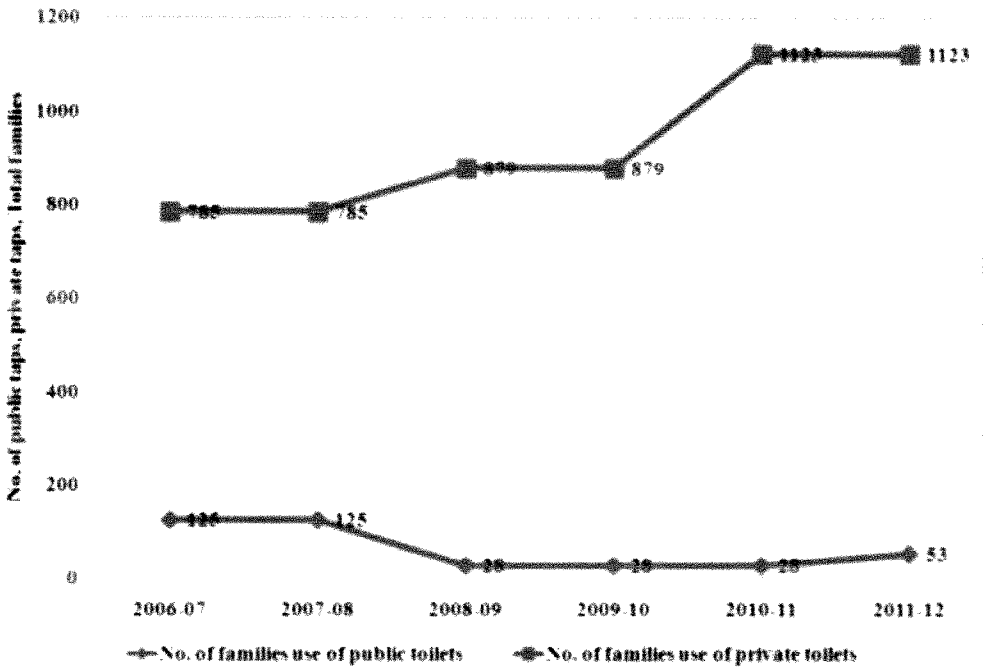
Table 5.11

Toilet facility

Year	No. of families use of public toilets (%)	No. of families use of private toilets (%)	Total No. of Families (%)
2006-07	125 (11.13)	785 (69.90)	1123 (100)
2007-08	125 (9.24)	785 (58.06)	1352 (100)
2008-09	28 (2.07)	879 (65.01)	1352 (100)
2009-10	28 (2.06)	87 (64.77)	1357 (100)
2010-11	28(2.06)	1123 (82.76)	1357 (100)
2011-12	53 (2.77)	1123 (79.92)	1405 (100)
C.G.R	**-22.18**	**8.53**	**3.30**
C.V.	67.72	15.32	6.94
Mean	**64.5**	**929**	**1324.67**

Source: - Sant Gadgebaba Gramsvachhata Abhiyan Report 2006-07 to 2011-12.

Graph No. 5.11
Toilet Facility



Above table 5.11 and Graph No. 5.11 indicate that toilet facility of Yedenipani village of Walwa taluka. During the study period 2006-07 to 2011-12 no of families use of public toilets is showing decreasing trend year by year. Form the year 2006-07, 785 families' used of private toilets, it is increasing and next to 1123 in the year 2011-12. In above table C.G.R of families' use public toilets is 22.18 and C.V. is 67.72 and C.G.R of families use private toilets is 8.57 C.V. is 15.32.

It is revealed from the above data analysis that, the number of families using public toilets is considerable, but it is decreasing. At the same times the families having private toilets is higher. But at the same time, the households using public latrine is also considerable one, it is increasing. Thus, toilet facility available in this village is a thing of satisfaction and appreciable. If efforts are made to families depending on public toilets is desirable and conducive for the qualitative environment of the village.

Within healthcare facilities is a wide spectrum of unique and diverse operations, producers, and practices to ensure the provision of medical in sanitary and comfortable environment. Form internal utility plants to clinical laboratories, from instrument sterilization to custodial work practices, many of the activates

and processes involve the use of chemical reagents, solvent, cleansing solutions, pharmaceutical, and other potentially harmful substances and may generate waste materials demand to be hazardous solutions. (Wagner, 1998, p. 57)

As obvious as it may seem, waste management begins with understanding what a waste is. From there it can be determined if a given material generated at the healthcare facility is, in fact, a waste and ,as such, potentially subject to legal requirement. The material is not reclaimed prior to recycling. The material is used or reused as a substitute for commercial products. The material is returned to its original process without being reclaimed. Considering the fact a well-designed hazardous waste management program should first emphasize pollution prevention and waste minimization, this component of the hazardous waste laws could have a certain utility. The less restrictive language may provide, in certain cases, the program flexibility needed to reuse some products and reduce waste at its source. (Wagner, 1998, p. 63)

5.2.3.4 Solid Waste Management

Table 5.12

Solid Waste Management

Year	No. of personal dustbins (%)	Composting	No. of public dustbins (%)	Disposal	No. of sweepers	Total No. of Families
2006-07	672 (59.84)	Yes	21 (1.81)	Yes	4	1123 (100)
2007-08	678 (50.15)	Yes	23 (1.70)	Yes	4	1352 (100)
2008-09	711 (52.59)	Yes	27 (1.99)	Yes	4	1352 (100)
2009-10	711 (52.39)	Yes	27 (1.94)	Yes	4	1357 (100)
2010-11	748 (55.12)	Yes	29 (2.01)	Yes	4	1357 (100)
2011-12	809 (57.58)	Yes	29 (2.06)	Yes	4	1405 (100)
C.G.R	**3.55**	-	**6.82**	-	-	**3.30**
C.V.	**6.43**	-	**12.16**	-	-	**6.94**
Mean	**721.17**	-	**26**	-	-	**1324.67**

Source: - Sant Gadgebaba Gramsvachhata Abhiyan Report 2006-07 to 2011-12.

Graph No. 5.12
Solid Waste Management

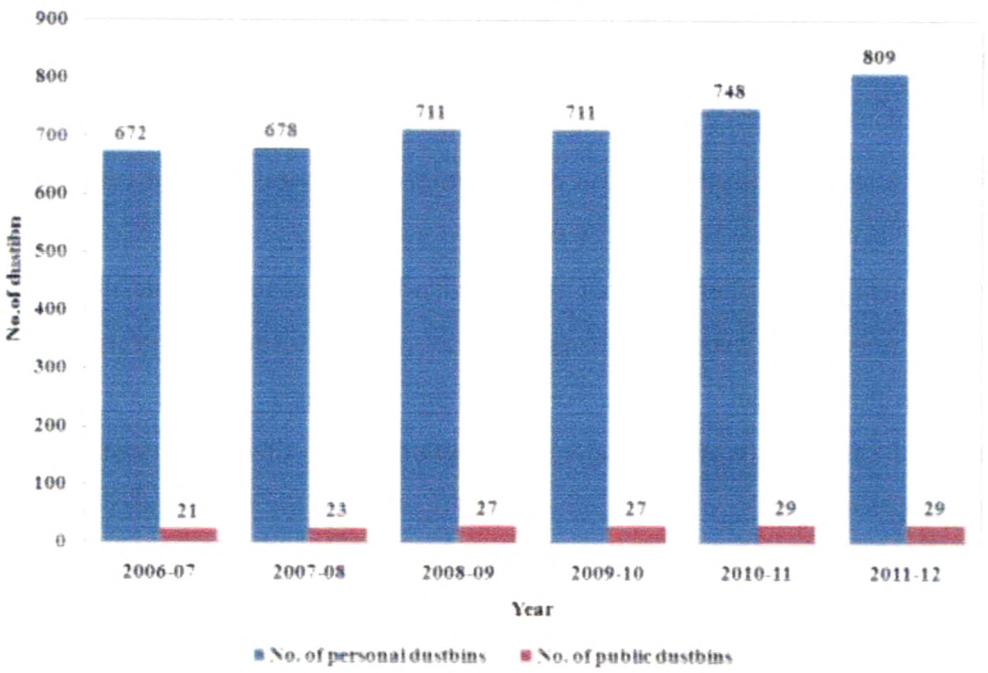


Table 5.12 and Graph No. 5.12 shows the solid waste management of Yedenipani village in Walwa taluka. Table gives us an idea of how they the management of solid waste. Means we can understand that how many families use the personal dustbins and how many families use the public dustbins. This all statistical data is useful for village panchayats for doing planning of how to dispose of it. Actually in 2006-07, 672 families used personal dustbins and only 21 families used public dustbins, but after the 2007-08 both types of families increasing the uses of public and private dustbins. But compound growth rate is very sallow. It gives gradually increase for 3.55 to 6.82. % also the constant number of sweeper compared to growth of village families is a thing of concerns. Important things of this village are all collected solid waste used for composting and dispose by various ways. In above table C.G.R of personal dustbins is 3.55 and C.V. is 6.43 and C.G.R of public dustbins is 6.82 and C.V. is 12.16.

Municipal solid waste includes refuse from households, non-hazardous solid waste from industrial, commercial and institutional establishment, market waste, yard waste and street sweepings. Municipal solid management includes various factions as; collection transfer, treatment, recycling, resource recovery

and disposal of municipal solid waste. Solid waste management is a process which includes various aspects as waste generation, waste collection methods, transportation schedule, landfill, dumping of waste, disposal of waste, recycling of waste etc. households waste this waste is generated mainly from residential and commercial complexes. With rising urbanization and change in life style and food habits. Households waste generated by households, food centres and commercial primes such as hotels, restaurants, food malls, shops, market etc. the amount of municipal solid waste has been increasing rapidly and its composition changing. Agricultural waste the wastes generated from companied of animals manure from the farmers houses, crop residues and residues of agro-chemicals. Solid waste generation is based on the economic development, density of population, size of the urban habitation and consumption rate of commercial goods. Industrial waste this waste generated mainly from the industries. It includes the industrial waste which is not toxic and hazardous. (Deshmukh, Sawant and Shinde, 2013, pp. 2461 & 2462)

5.2.4 Waste Management in Ghatnandre Village

5.2.4.1 Waste Water Management

Table 5.13

Waste Water Management

Year	No. of Sanitation Pits (%)	No. of Families Who Uses Waste Water or Gardening (%)	No. of Families Whose Waste Water Attached To Gutters (%)	Total No. of Families (%)
2006-07	69 (15.57)	12 (2.71)	245 (55.30)	443 (100)
2007-08	74 (16.70)	14 (3.16)	260 (58.69)	443 (100)
2008-09	74 (16.70)	14 (3.16)	260 (58.69)	445 (100)
2009-10	76 (17.08)	20 (4.49)	286 (64.27)	445 (100)
2010-11	78 (17.53)	20 (4.49)	345 (64.27)	445 (100)
2011-12	78 (17.5)	22 (4.94)	345 (77.53)	445 (100)
C.G.R	**2.30**	**13.58**	**7.88**	**0.10**
C.V.	**8.25**	**22.27**	**13.99**	**1.20**
Mean	**74.83**	**17**	**290.17**	**444.33**

Source: - Sant Gadgebaba Gramsvachhata Abhiyan Report 2006-07 to 2011-12.

Graph No. 5.13
Waste Water Management

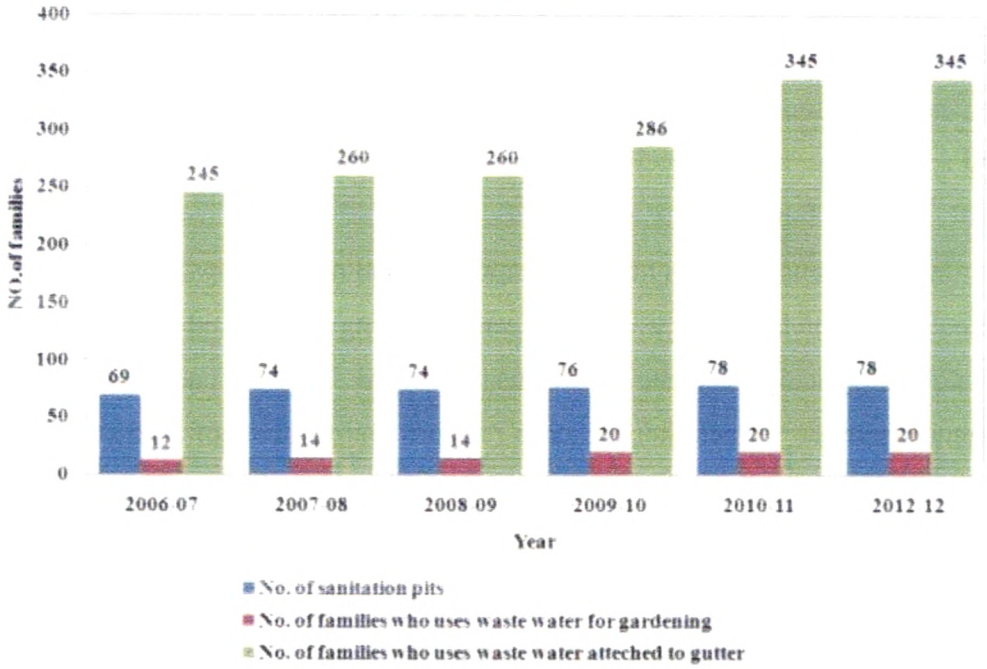


Table 5.13 and Graph No. 5.13 shows the waste water management of Ghatnandre village in Kavathe Mahankal taluka. The large numbers of families dispose of their waste water through gutter facilities. During the study period 2006-07 to 2011-12 the trend of year by year increasing from 245 families in 2006-07 to 345 families in 2011-12 is observed. And compound growth rate is 7.88 percent. Less number of families used the waste water for garden that type of families number increasing from 12 in 200-07 to 22 in 2011-12. Its C.G.R. is 13.58% but very less C.G.R. is 2.30% for use of sanitation pits for waste water management

It is observed that the number of households using sanitations pits is considerable one, but increasing at the marginal rate during the period under study. The households using waste water for gardening purpose is meagre. It is good that the families whose waste water attached are higher and increasing also. But it is inadequate, because still the families which do not have access to pits as well as gutter is in significant number. It is not an indicator of the proper management of the waste water in the village panchayat under a study.

The study of solid waste management and waste water treatment process incorporates scientific, technical, and environmental principles. All are emphasized in this book along with economic, social, political and legal aspects, scientific concepts are needed in order to understand how waste management and treatment processes work and the nature of impact resulting from waste disposal and dispersal in the environment. However, scientific and technical insights by themselves are insufficient because the established of effective and efficient waste management policies requires knowledge form the social sciences including economic, political science. (Rhyer, Schwartz, Wagner, 1995, p. 5)

Changes in the nature of wastes concerns for environmental protection and the desire to recover resources from the waste stream have stimulated the development of new waste management technologies and processes. Carefully engineered sanitary landfills have replaced open dumps., incinerator technology has been greatly improved over the initial designs of a century ago now includes the possibility of heat recovery, and large scale system have been developed to recover a variety of materials from municipal solid waste. Waste water treatment systems now include secondary and tertiary treatment, in addition to primary treatment. (Rhyer, Schwartz, Wagner, 1995, p. 6)

5.2.4.2 Water Supply Facility

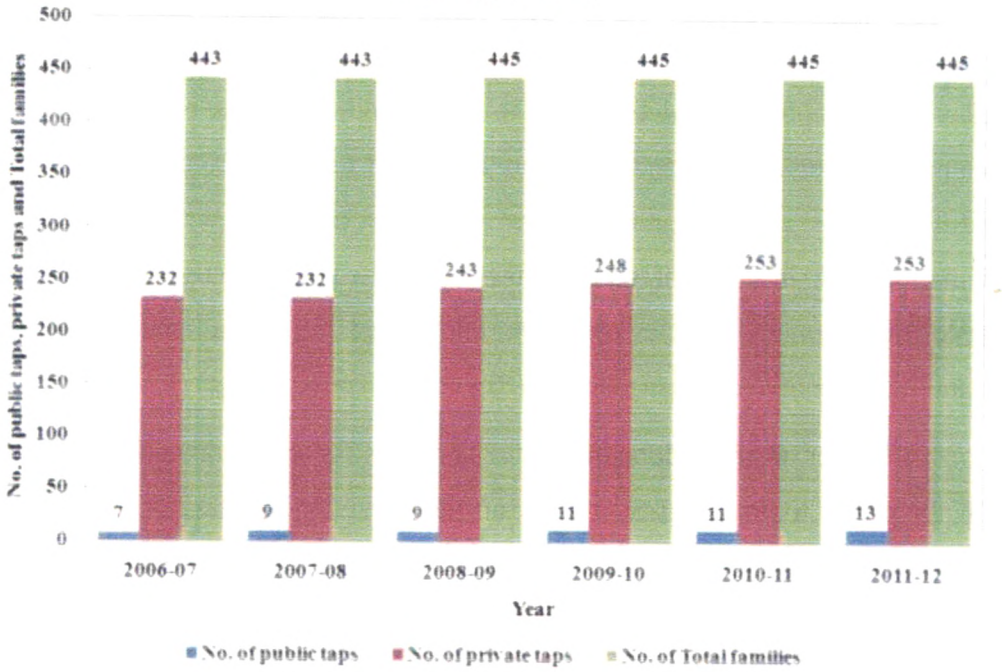
Table 5.14

Water Supply Facility

Year	No. of Public Taps (%)	No. of Private Taps (%)	No. of Total Families (%)
2006-07	07 (1.58)	232 (52.37)	443 (100)
2007-08	09 (2.03)	232 (52.37)	443 (100)
2008-09	09 (2.02)	243 (54.61)	445(100)
2009-10	11 (2.47)	248 (55.73)	445 (100)
2010-11	1 (2.47)	253 (56.85)	445 (100)
2011-12	13 (2.92)	253 (56.85)	445 (100)
C.G.R	**11.78**	**2.06**	**0.10**
C.V.	**19.15**	**3.54**	**1.20**
Mean	**10**	**243.5**	**444.33**

Source: - Sant Gadgebaba Gramsvachhata Abhiyan Report 2006-07 to 2011-12.

Graph No. 5.14
Water supply Facility



Above the Table No. 5.14 and Graph No. 5.14 shows water supply facility in Gatnandre village of Kavathe Mahankal taluka. Fig shows Water supply facility through public taps, private taps and total families during 2006-07 to 2011-12. During 2006-07 to 2011-12 public taps are increased. During the period 2006-07 private taps were 232 it is ruse to 253 in the year 2011-12. It is concluded that total number of families is more than private taps. In the above table C.G.R of public taps is 11.78 and C.V. is 19.15, C.G.R of private taps is 2.06 and C.V. is 3.54 and C.G.R of total families is 6.1 and C.V. is 1.20.

Drinking water is essential in absence of which no human beings can live. It is therefore of vital importance to provide for the drinking water to the citizens of the village. This water supply has an impact on the waste water management; therefore it is of vital importance to study. The foregoing analysis reveals that the number of public taps is very much meagre. The families having private taps are significant. It is because the number of households who do not have access to private taps as a well as public tap is significant one. This is a serious thing of concerns.

Waste disposal and management are qualitatively different from each other. Waste disposal means simply removing the waste from one place, disposing it off at another without proper treatment, whereas waste management has larger connotation, it not only includes proper treatments to the waste before disposal on order to check environmental hazards, but also segregating different kinds of wastes, treating and disposal off toxic wastes, recycling non- degradable wastes, converting, bio-degradable wastes into compost or Energy and so on. (Kumar, 2009, p.1)

In the differentiation of the municipal waste the waste mainly distributed destinations mentioned above. Rubber, glass, metals, aluminium, can be directly sold to merchants and industries. In this process municipality should get money directly. Vegetables, wood, bone, textiles can be transported to waste composting plant municipality can make the compost. This compost can be packed in different bags. There should be an outlet of municipality for selling the compost. In this process municipality should be earn money. Proper dispose of plastic and other remaining material is the problem for municipality. Municipality can the plastic bags it will help to decrease the plastic waste. (Deshmukh, Sawant, Shinde, 2013, p. 2464)

5.2.4.3 Toilet Facility

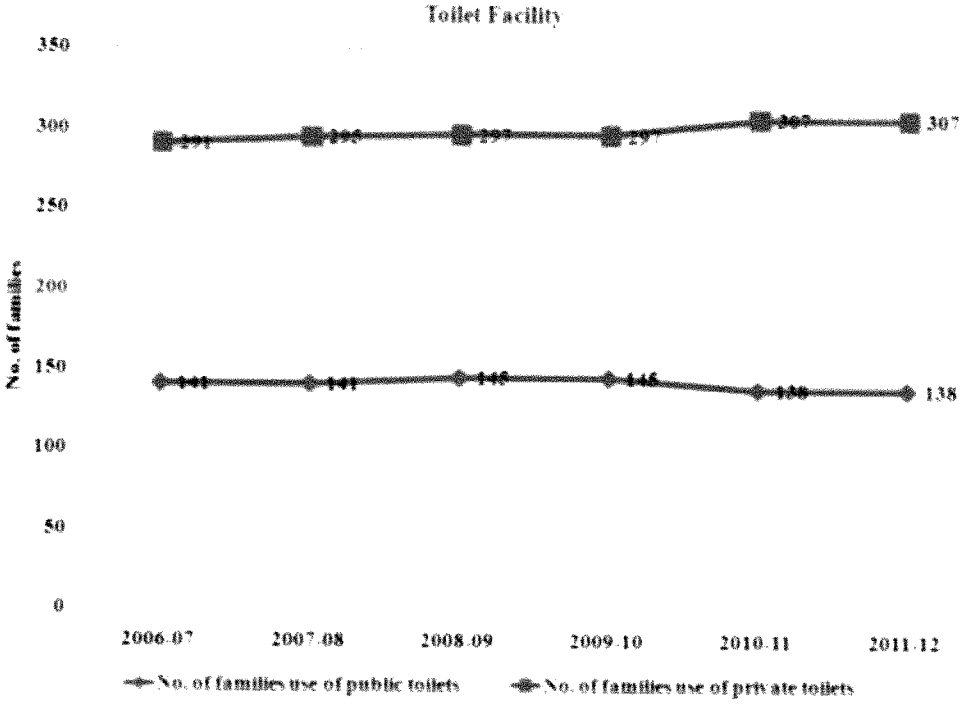
Table 5.15

Toilet Facility

Year	No. of Families Use of Public Toilets (%)	No. of Families Use of Private Toilets (%)	Total No. of Families (%)
2006-07	141 (31.83)	291 (65.69)	443 (97.52)
2007-08	141 (31.83)	295 (66.59)	443 (98.52)
2008-09	145 (32.58)	297 (66.74)	445 (99.32)
2009-10	145 (32.58)	297 (66.74)	445 (99.32)
2010-11	138 (31.01)	307 (68.74)	445 (100)
2011-12	138 (31.01)	307 (68.99)	445 (100)
C.G.R	**-0.49**	**1.11**	**0.10**
C.V.	**30.42**	**2.01**	**1.20**
Mean	**141.33**	**299**	**444.33**

Source: - Sant Gadgebaba Gramsvachhata Abhiyan Report 2006-07 to 2011- 12.

Graph No. 5.15
Toilet Facility



Above Table No. 5.15 and Graph No. 5.15 indicate the toilet management of Yedenipani village Walwa taluka. During the study period 2006-07 to 2011-12 no of families use of public toilets showing decreasing trend year by year. Form the 2006-07 785 families' use of private toilets it is increasing goes up 1123 in the year 2011-12. In above table C.G.R of families use of public toilets is -0.49 and C.V. is 30.42 and C.G.R of families use private toilets is 1.11 C.V. is 2.01.

It is revealed from the above data analysis that, even though the number of families using public toilets is decreasing, it is considerable one. The families having private toilets is higher and increasing, it is not adequate, so for as the total number of families in this village is concerned. It is therefore, the families do not have access to both the public and private toilets is significantly higher. Here it is not a proper disposal of the waste generated in the village into considerations.

5.2.4.4 Solid Waste Management

Table 5.16

Solid Waste Management

Year	No. of Personal Dustbins (%)	Composting	No. of Public Dustbins (%)	Disposal	No. of Sweepers	Total No. of Families (%)
2006-07	230 (51.92)	Yes	3 (0.67)	Yes	2	443 (100)
2007-08	271 (61.17)	Yes	5 (1.13)	Yes	2	443 (100)
2008-09	285 (64.04)	Yes	5 ()1.13	Yes	2	445 (100)
2009-10	320 (71.91)	Yes	8 (1.79)	Yes	2	445 (100)
2010-11	333 (74.83)	Yes	8 (1.79)	Yes	2	445 (100)
2011-12	337 (75.73)	Yes	8 (1.79)	Yes	2	445 (100)
C.G.R	**7.85**	-	**21.39**	-	-	**0.10**
C.V.	**12.88**	-	**31.62**	-	-	**1.20**
Mean	**296**	-	**6.17**	-	-	**444.33**

Source: - Sant Gadgebaba Gramsvachhata Abhiyan Report 2006-07 to 2011-12.

Graph No. 5.16
Soild Waste Management

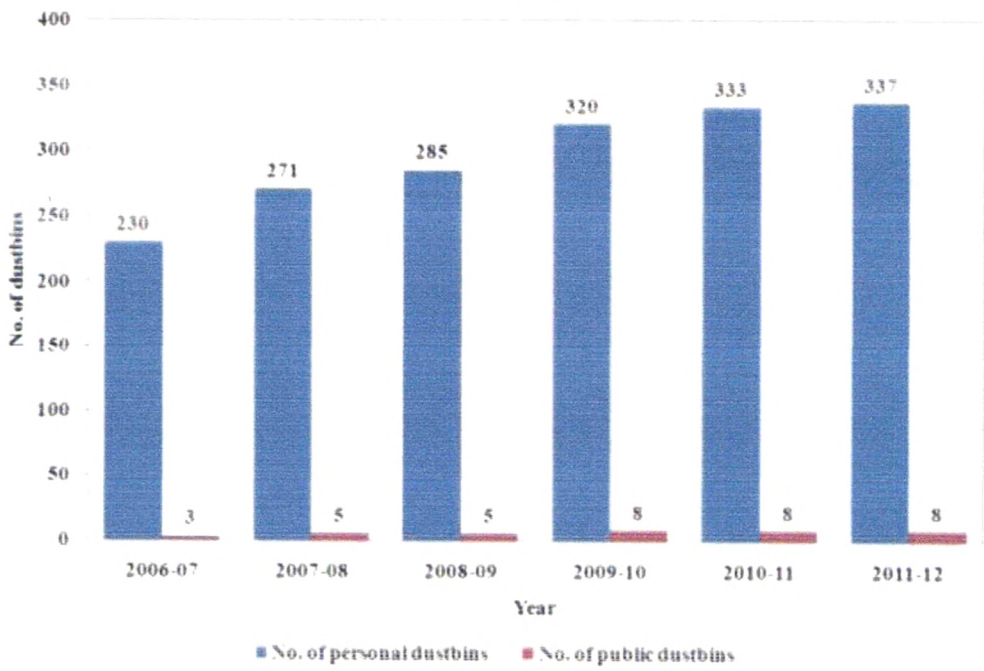


Table No. 5.16 and Graph No. 5.16 show that solid waste management of Ghatnandre village in Kavathe Mahankal taluka. During the study period of 2006-07 to 2011-12 families use of number of personal dustbins showing increasing trend year by year. Important things of all families use the solid waste for composting. From the 2006-07, 3 number of public dustbins it is increasing goes up in the year 2011-12. During the study period of 2006-07 to 2011-12 number of sweepers is not increased or not decreased the number of two. In above table C.G.R of personal dustbins is 7.85 and C.V. is 12.88 and C.G.R of public dustbins is 21.39 and C.V. is 31.62.

The foregoing analysis reveals that the number of personal dustbins is higher and increasing during the study period in the village into consideration, is a thing of appreciations. But it is not correct, because the number of public dustbins is meagre compared to their requirements. It is because, the concerned government of this village is passive; it could not provide the dustbins in adequate number. Likewise the sanitation staff in this village is also very much inadequate. It is satisfactory thing that people are composting the solid waste and also engaged in in the disposal of the solid waste generated. Here the urgent need is of the active role of the village panchayat in solid waste management.

The municipal waste is collected through the different transporting vehicles. These vehicles are specially modified for waste collection purpose. These vehicles are specially modified for waste collection purpose. People generally known as "ghantagadi". (Deshmukh, Sawant, Shinde, 2013, p. 2463)

5.2.5 Waste Management in Radewadi Village

5.2.5.1 Waste Water Management

Table 5.17

Waste Water Management

Year	No. of sanitation pits (%)	No. of families who uses waste water for gardening (%)	No. of families whose waste water attached to gutters (%)	Total No. of Families (%)
2006-07	10 (9.09)	25 (22.72)	79 (71.81)	110 (100)
2007-08	12 (10.52)	25 (21.92)	79 (69.29)	114 (100)
2008-09	12 (9.23)	30 (23.07)	84 (64.61)	130 (100)
2009-10	14 (10.76)	30 (23.07)	84 (64.61)	130 (100)
2010-11	18 (13.79)	34 (26.15)	89 (68.46)	130 (100)
2011-12	25 (19.23)	34 (26.15)	89 (68.46)	130 (100)
C.G.R	**18.53**	**7.28**	**2.76**	**3.57**
C.V.	33.27	29.67	4.86	6.91
Mean	**15.16**	**29.66**	**84**	**124**

Source: - Sant Gadgebaba Gramsvachhata Abhiyan Report 2006-07 to 2011-12

Graph No. 5.17
Waste Water Management

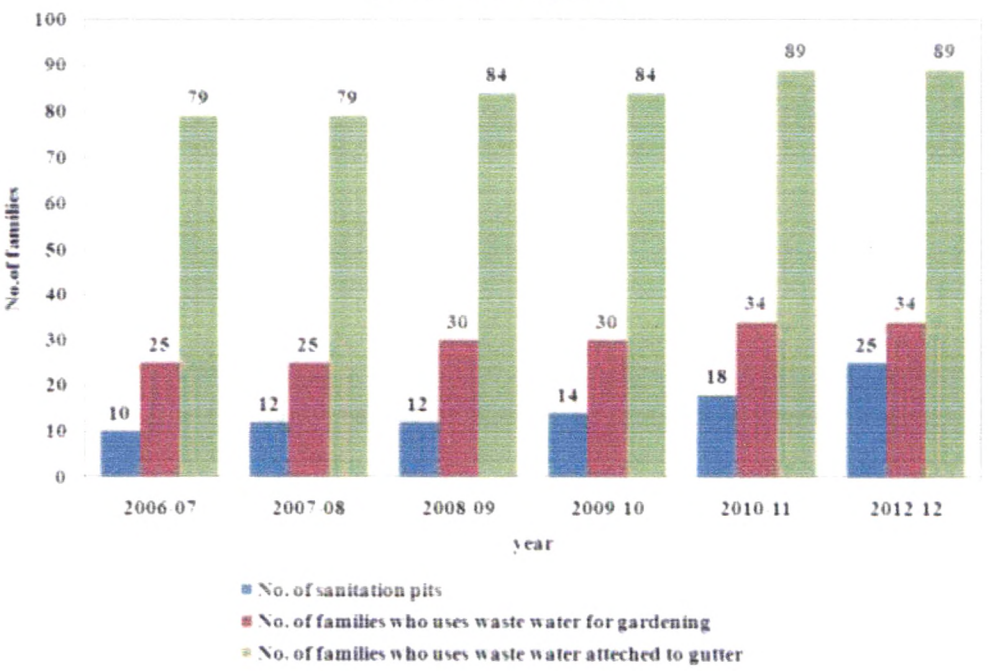


Table 5.17 and Graph No. 5.17 shows solid waste management Radewadi village of Palus taluka. Waste water management is studies with number of sanitation pits; number of families uses waste water for gardening and number of families waste water attached to gutters. During the study period 2006-07 to 2011-12 number of sanitation pits is showing increasing trend year by year. In 2006-07, 25 families used waste water for gardening it increasing goes up 34 in the year 2011-12. During 2006-07 to 2011-12 number of families whose waste water attached to gutters is increased. In above table 5.17 C.G.R of sanitation pits is 18.53 and C.V. is 33.27, C.G.R of families uses waste water for gardening is 7.28 and C.V. is 29.67 and C.G.R of families uses waste water attached to gutter is 2.76 and C.V. is 4.86.

5.2.5.2 Water Supply Facility

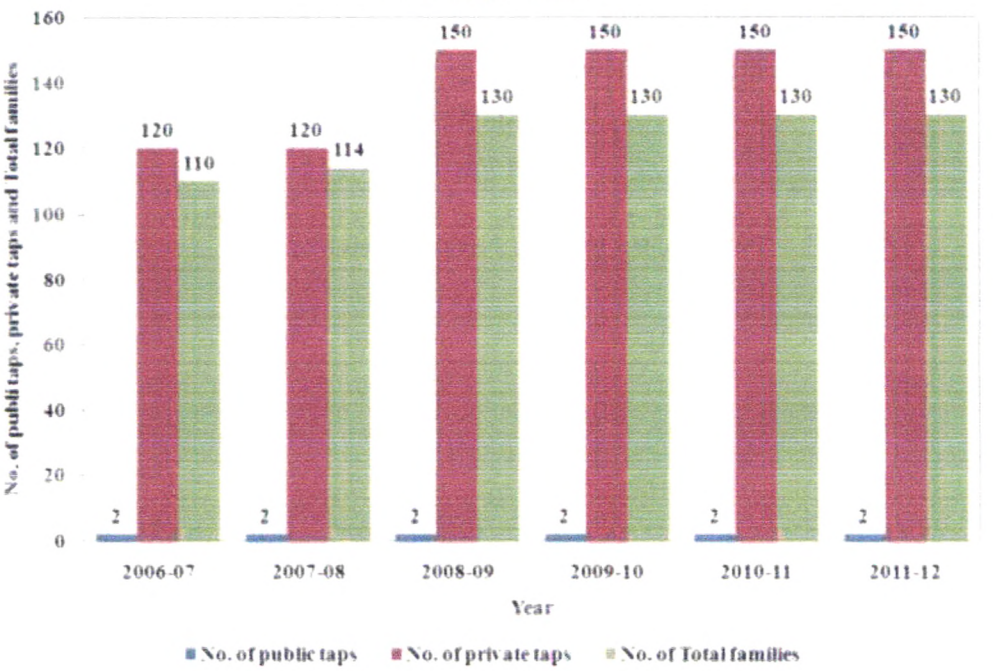
Table 5.18

Water Supply Facility

Year	No. of Public Taps (%)	No. of Private Taps (%)	No. of Total Families (%)
2006-07	2 (1.82)	120 (19.09)	110 (100)
2007-08	2 (1.75)	120 (105.26)	114 (100)
2008-09	2 (1.54)	150 (115.38)	130 (100)
2009-10	2 (1.51)	150 (115.38)	130 (100)
2010-11	2 (1.54)	150 (115.38)	130 (100)
2011-12	2 (1.54)	150 (115.38)	130 (100)
C.G.R	-	**5.23**	**3.57**
C.V.	-	**10.10**	**6.91**
Mean			

Source: - Sant Gadgebaba Gramsvachhata Abhiyan Report 2006-07 to 2011-12.

Graph No. 5.18
Water supply Facility



Above table 5.18 and Graph No. 5.18 is shows that water supply facility in Radewadi of Palus taluka. Above data shows water supply management in public taps, private taps and total families during 2006-07 to 2011-12. In during 2006-07 to 2011-12 number of public taps is not changed. In 2006-07 private taps were 120 it is increasing next up to 150 in the year 2011-12. It is concluded that total number of families 'is more than private taps. In above table C.G.R of public taps is 0 and C.V. is 0, C.G.R of private taps is 5.23 and C.V. is 10.10 and C.G.R of total families is 2.57 and C.V. is 6.91.

The above analysis reveals that the government has not played any important role in providing drinking water supply through public taps. Even though, the no of private taps is high and it is also increasing, but it is not adequate to all the households in this village. The no of households is significant that do not have drinking water facility either through public taps or private taps which is a thing of serious concern.

The term waste refers to any discarded materials whose use potential has been diminished or unintended consequence of some other primary activity. The definition is intentionally board such that in incorporates both products that have

lost their primary value and by products that may ultimately be recycled. (Dawson and Mercer, 1985, p. 9)

5.2.5.3 Toilet Facility in Radewadi village

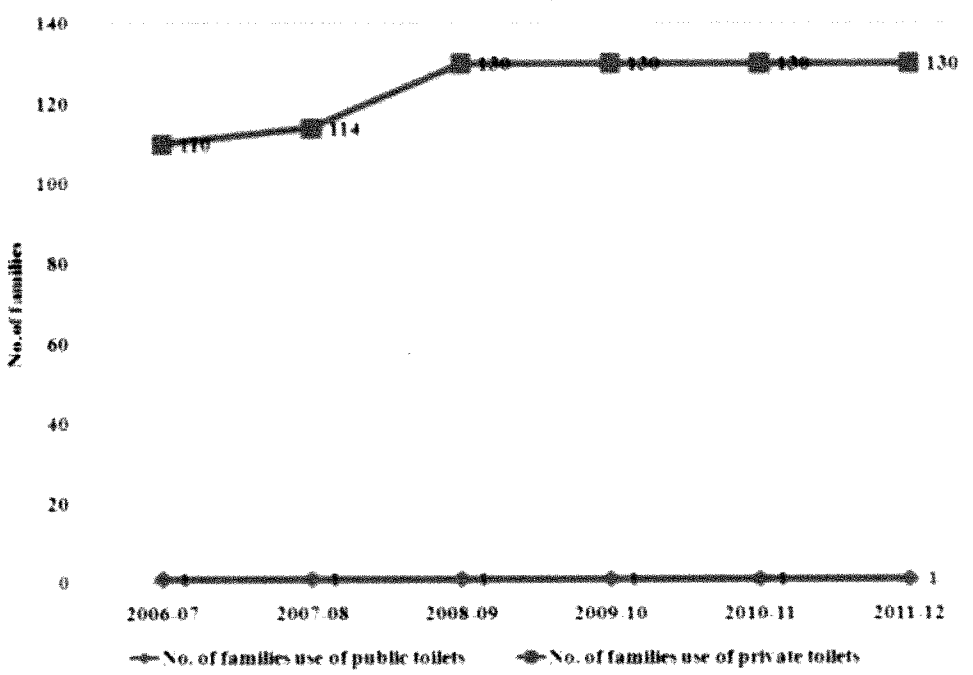
Table 5.19

Toilet Facility

Year	No. of Families Use of Public Toilets (5)	No. of Families Use of Private Toilets (%)	Total No. of Families (%)
2006-07	1 (1)	110 (100)	110 (100)
2007-08	1(1)	114 (100)	114 (100)
2008-09	1 (1)	130 (100)	130 (100)
2009-10	1 (1)	130 (100)	130 (100)
2010-11	1(1)	130 (100)	130 (100)
2011-12	1 (1)	130 (100)	130 (100)
C.G.R	-	-	3.57
C.V.	-	-	
Mean	**1**	**130**	**124**

Source: - Sant Gadgebaba Gramsvachhata Abhiyan Report 2006-07 to 2011-12.

Graph No. 5.19
Toilet Facility



Above Table No. 5.19 and Graph No. 5.19 shows that toilet facility on Radewadi village of Palus taluka. Toilet facility is families' use of public toilets and families use of private toilets. During the study period 2006-07 to 2011-12

families use of public toilets is not increased or not decreased, the number is two. During the 2006-07 no of public toilets 110 and period 2008-09 to 2011-12 families use of private toilets 130 there are no change.

It is observed that the number of public toilets is meagre highly lesser and have negligible. At the same time the number private toilets is higher but not adequate compared to the total number of households in the village. It is a thing of serious concern, and not a proper management of liquid waste. This demands to take into consideration seriously.

5.2.5.4 Solid Waste Management in Radewadi Village

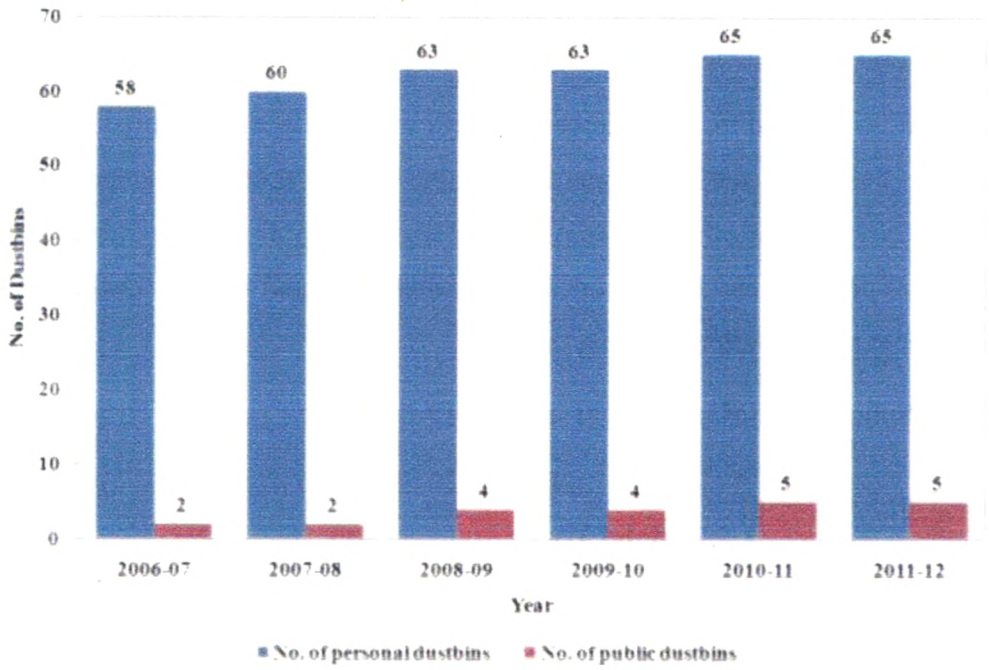
Table 5.20

Solid Waste Management

Year	No. of Personal Dustbins (%)	Composting	No. of Public Dustbins (%)	Disposal	No. of Sweepers	Total No. of Families (%)
2006-07	58 (52.73)	Yes	2 (1.81)	Yes	2	110 (100)
2007-08	60 (52.63)	Yes	2 (1.75)	Yes	2	114 (100)
2008-09	63 (48.46)	Yes	4 (3.08)	Yes	2	130 (100)
2009-10	63 ()48.46	Yes	4 (3.08)	Yes	2	130 (100)
2010-11	65 (50)	Yes	5 (3.85)	Yes	2	130 (100)
2011-12	65 (50)	Yes	5 (3.85)	Yes	2	130 (100)
C.G.R	**2.34**	-	**23.30**	-	-	**3.57**
C.V.	**4.11**	-	**33.96**	-	-	**6.91**
Mean	**62.33**	-	**3.67**	-	-	**124**

Source: - Sant Gadgebaba Gramsvachhata Abhiyan Report 2006-07 to 2011-12.

Graph No. 5.20
Solid Waste Management



Above Table No. 5.20 and Graph No. 5.20 shows that solid waste management in Radewadi in Palus taluka. During the study period 2006-07, 2 public dustbins it is increasing goes up 5 in the year 2011-12. During 2006-07 to 2011-12 number of sweepers is not increased. Above table C.G.R. of personnel dustbins is 2.34 and C.V. is 4.11 and C.G.R. of public dustbins is 23.3 and C.V. is 33.96.

It is revealed that the solid waste management is carried out through composting and disposal of the solid waste in the village, but the number of public dustbins is meagre and increasing but inadequate. Even though the number of private dustbins is higher and increasing the rate is marginal. More importantly, it is also inadequate in number compared to the total number of families in the village is taken into consideration. This presents unsatisfactory pictures of the solid waste management in the village taken into consideration.

The term solid waste as employed here goes beyond the confines of what the delimiter solid normally conveys. Common usage associates solid waste with refuse and garbage, as generated by households and commercial enterprises. Current legislative language, however, incorporates much non-solid waste from

such as liquids, slurries and contained gases. This convention is in part is in part a result of the historical development of effluent regulation controls designed to product air and atmospheric emissions and continuous waste water discharge. When it was recognized that this created incentives for disposing of residuals on the land, lawmakers, associated of solid waste as presented in Resource Conservation and Act of 1976. (Dawson, Mercer, 1985, p. 9)

5.2.6. Waste management in Belanki village

5.2.6.1 Waste Water Management

Table 5.21

Waste Water Management

Year	No. of Sanitation Pits (%)	No. of Families Who Uses Waste Water For Gardening (%)	No. f Families Whose Waste Water Attached To Gutters (%)	Total No of Families (%)
2006-07	15 (1.71)	38 (4.32)	385 (43.80)	879 (100)
2007-08	35 (3.91)	40 (4.47)	389 (43.46)	895 (100)
2008-09	35 (3.87)	42 (4.64)	389 (42.90)	905 (100)
2009-10	40 (4.25)	43 (4.57)	392 (41.70)	94 (100)
2010-11	45 (4.78)	45 (4.78)	395 (41.70)	942 (100)
2011-12	45 (4.78)	45 (4.78)	395 (41.93)	942 (100)
C.G.R	**20.00**	**3.55**	**0.52**	**1.55**
C.V.	**29.39**	**6.03**	**0.91**	**2.76**

Source: - Sant Gadgebaba Gramsvachhata Abhiyan Report 2006-07 to 2011-12.

Graph No. 5.21
Waste Water Management

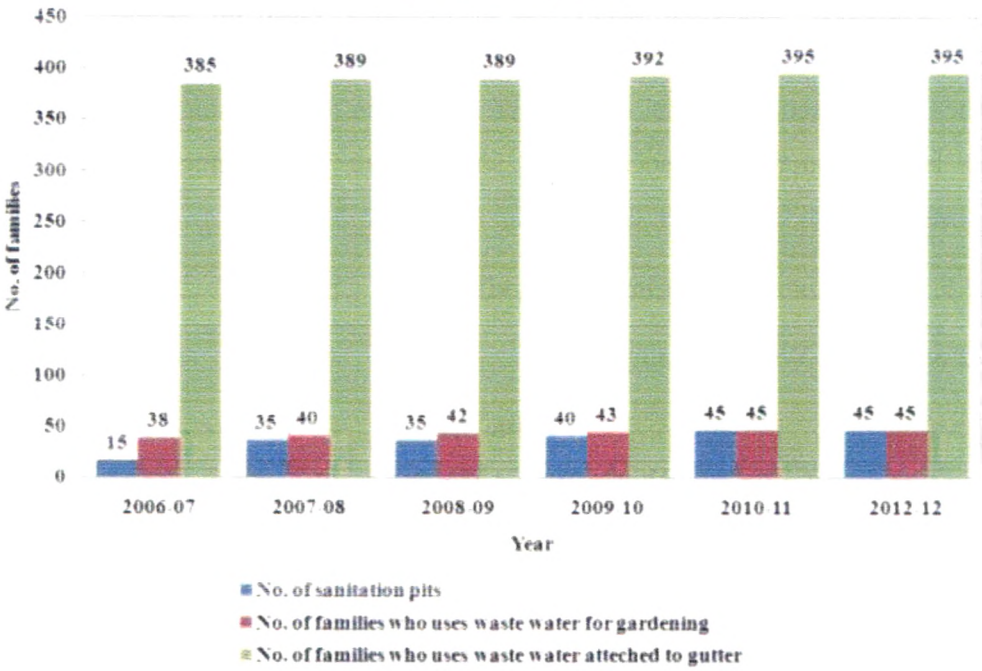


Table No.5.21 and Graph No. 5.21 shows that waste water management of belanki village. During 2006-07 to 2011-12 the data is given in this chart which is divided into three catggories like number of sanitation pits, number of families uses waste water for gardening and numberof famililes uses waste water atteached to gutters. In the 2006-07, there are 15 sanitation pits, 38 families uses waster water for gardening and 385 families atteched waste water to gutter. In 2007-08 families and 2008-09 the ratio is same like 35, 40,and 389 respectively. Only 2 families added to use waste water for gardening. In 2009-10, 40 sanitation pits are used and 392 families uses gutter. Form 2010-11 the ratio is same like 45, 45 and 395 respectivly thus the table shows the icreasing number of families who successfully planned how to use waste water. It conculde that numberof families uses waste water atteched to gutter is high and numberof sanitation pits number of families use waste water for gardening is low. Table 5.21 C.G.R of sanitation pits is 20.00 and C.V. is 29.39, C.G.R of families' uses waste water for gardening is 3.55 and C.V. is 6.03 and C.G.R of families' uses waste water attached to gutter is 0.52 and C.V. is 0.52.

It is observed that the number of sanitation pits is increasing in this village. Likewise, the number of families using waste water for gardening is good and increasing also. At the same time, the number of families whose waste water is attached to gutters is higher, and increasing considerately during the period under study. But the fact is that, the total number of households in this village is significantly higher than the availability of the total facility of waste water management in the village. This reveals that, there is an urgent need to provide for the waste water management in this village.

Solid wastes include all materials resulting from human, animal, resulting and economic activities that are normally solid and discarded as useless or unwanted. They include all discarded materials ranging from the heterogeneous mass of garbage from urban communities to the homogenous accumulation of unwanted residuals from agricultural, industrial, and mining operations. However, for the purpose of this book, only the heterogeneous mass of solid material and industrial or garbage will be considered. Exclude are agricultural wastes such as rice and coconut husks and mining wastes such as tailings and from the manufacturing operation. These wastes normally require separate handling, treatment and disposal. (Uriarte, 2007, pp. 2 & 3)

5.2.6.2 Water Supply Facility in Belanki Village

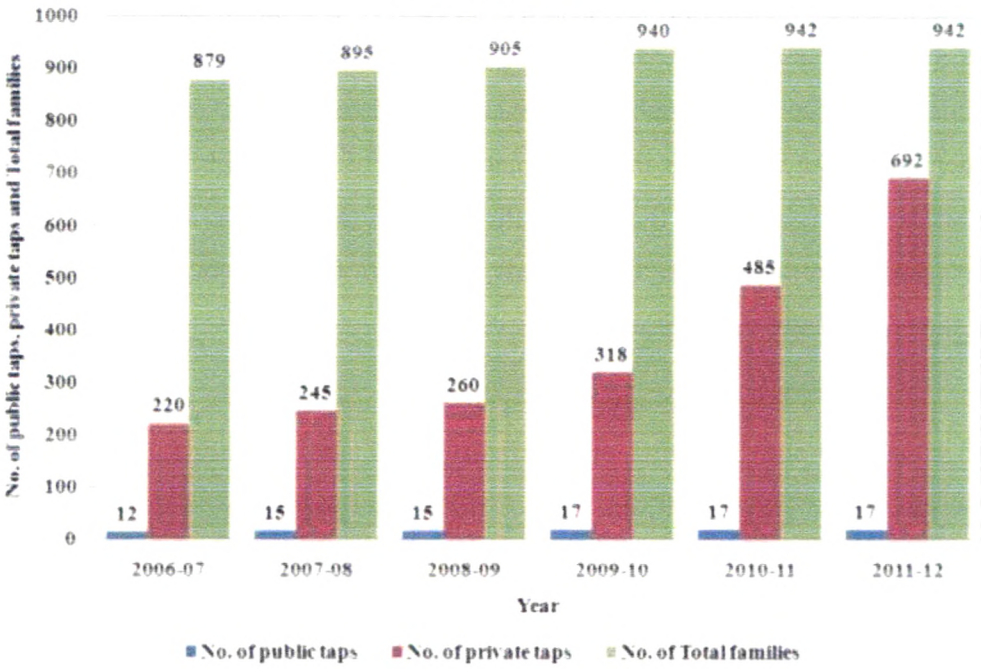
Table 5.22

Water Supply Facility

Year	No. of Public Taps (%)	No. of Private Taps (%)	No. of Total Families (%)
2006-07	12 (1.36)	220 (25.02)	879 (100)
2007-08	15 (1.67)	245 (27.37)	895 (100)
2008-09	15 (1.66)	260 (28.73)	905 (100)
2009-10	17 (1.81)	318 (33.83)	940 (100)
2010-11	17 (1.08)	485 (51.49)	942 (100)
2011-12	17 (1.80)	692 (73.46)	942 (100)
C.G.R	**06.61**	**25.61**	**1.55**
C.V.	**11.63**	**45.47**	**2.76**
Mean	**15.5**	**370**	**917.17**

Source: - Sant Gadgebaba Gramsvachhata Abhiyan Report 2006-07 to 2011-12.

Graph No. 5.22
Water Supply Facility



Above Table 5.22 Graph No. 5.22 shows that water supply facility in public taps, private taps and number of families in year 2006 07 to 2011-12. In year 2006-07 number of public taps as 12 respectively, which are very low as compared with the 2007-08 to 2011-12, was same that is 905, 940, 942, 942. It concluded that number of public taps is low and number of private taps is high compared to number of total families. In above table 4.22% C.G.R. of number of taps, number of private taps and number of total families is 6.61, 25.61 and 1.55. In above table 4.22 C.V. of number of public taps, number of private taps and number of total families is 11.63, 45.47 and 2.76.

The foregoing analysis reveals that number of public toilets in Belanki village is low and also falling under study period. Even though, the number of private toilets is comparatively higher; it shows a marginal growth during the period into our consideration. But it is inadequate compared to the total number of households in the village. Naturally, this adversely affects the liquid waste management in the village. This demands for the increase in the number of toilets in the village

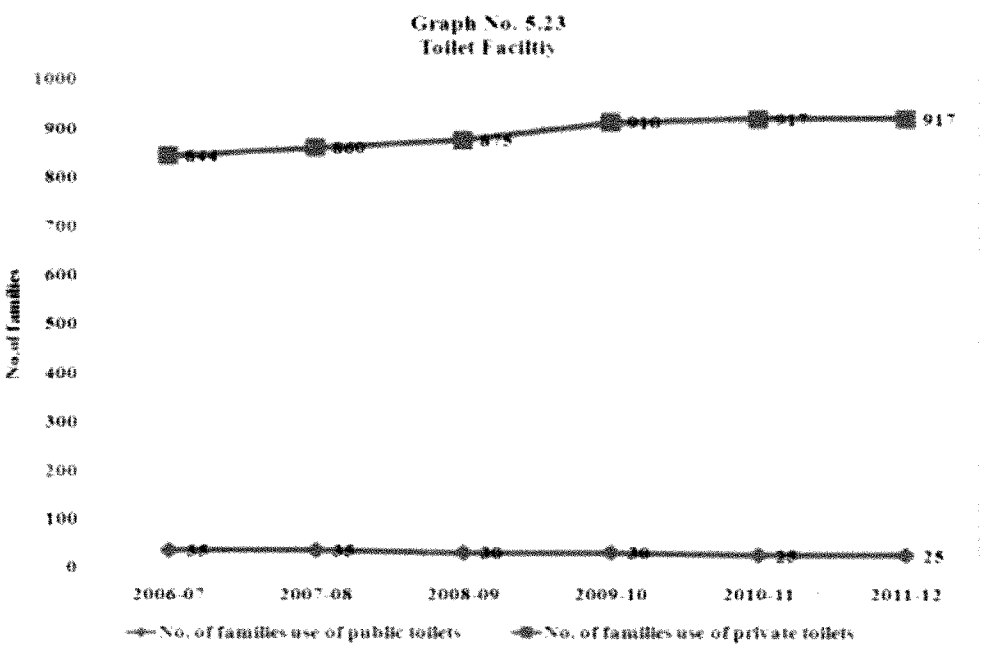
5.2.6.3 Toilet Facility in Belanki Village

Table 5.23

Facility

Year	No. of Families Use of Public Toilets (%)	No. of Families Use of Private Toilets (%)	Total No. of Families (%)
2006-07	35 (3.98)	844 (96.02)	879 (100)
2007-08	35 (3.92)	**860 (96.08)**	895 (100)
2008-09	30 (3.32)	875 (96.68)	905(100)
2009-10	30 (3.19)	**910 (96.81)**	940 (100)
2010-11	25 (2.65)	917 (97.35)	942 (100)
2011-12	25 (2.65)	**917 (97.35)**	942 (100)
C.G.R	**-7.40**	**1.86**	**1.55**
C.V.	**13.61**	**3.27**	**2.76**
Mean	**30**	**888.17**	**917.17**

Source: - Sant Gadgebaba Gramsvachhata Abhiyan Report 2006-07 to 2011-12



Above Table No. 5.23 and Graph No. 5.23 indicates that toilet facility in public toilets and private toilets. During 2006-07 to 2011-12 number of families' use of public toilet was very low as compared to number of families' use of private toilets. It concludes that most of the families use private toilets. In above

table 4.23 C.G.R. of number of families use public toilets and number of families use private toilets is 7.4 and 1.86 and C.V. is 13.61, 3.27.

The foregoing analysis reveals that the number of public toilets in Belanki village is lower, and also falling during the period under study. Even though, the number of private toilets is comparatively higher, it shows a marginal growth during the period into our consideration. But it is inadequate compared to the total number of households in the village. Naturally, this adversely affects the liquid waste management in the village. This demands for the increase in the number of toilets in the village.

Waste is one of the most obvious consequences of modern civilisation and increased standard of living. The growing population of the planed and the rising levels of human behaviour, especially in terms of comfort and luxury, have led to an outburst of manufacturing activity in all spheres, and waste is a major by-product of this. There is waste both in terms of materials and in terms of energy, and both take a heavy toll of the environment. With such a large amount of waste, it is but natural that ways have to be found of it, without polluting the environment further. It is in this context that the management of waste and its safe disposal becomes a matter of great concern to safe environmentalists and the corporate world. (Prasad, 2008, p. 151)

5.2.6.4 Solid Waste Management

Table 5.24

Solid Waste Management

Year	No. of personal dustbins (%)	Composting	No. of public dustbins (%)	Disposal	No. of sweepers	Total No. of Families (%)
2006-07	688 (78.27)	Yes	5 (0.63)	Yes	4	879 (100)
2007-08	703 (78.55)	Yes	7 (0.78)	Yes	4	895 (100)
2008-09	758 (83.76)	Yes	11 (1.21)	Yes	4	905 (100)
2009-10	767 (81.59)	Yes	15 (1.59)	Yes	4	940 (100)
2010-11	777 (82.48)	Yes	20 (2.12)	Yes	4	942 (100)
2011-12	782 (83.01)	Yes	20 (2.12)	Yes	4	942 (100)
C.G.R	2.76	-	34.57	-	-	1.55
C.V.	**5.20**	-	**63.74**	-	-	**2.76**
Mean	**745.83**	-	**13**	-	-	**917.17**

Source: - Sant Gadgebaba Gramsvachhata Abhiyan Report 2006-07 to 2011-12

Graph No. 5.24
Solid waste management

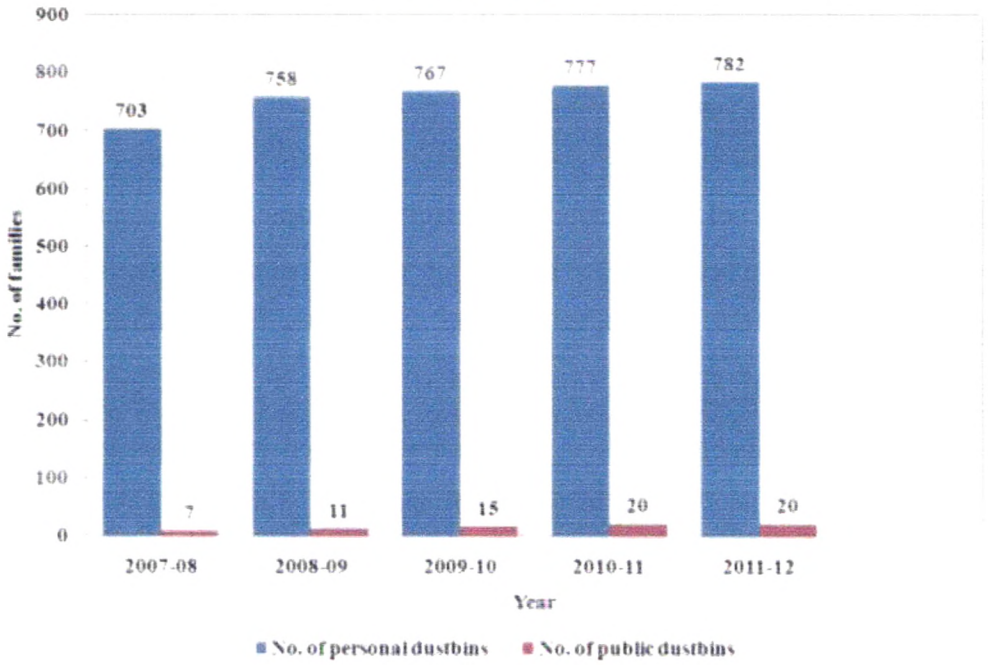


Table No. 5.24 and Graph No. 5.24 shows that solid waste management of Belanki village in Miraj taluka. During period 2006-07 to 2011-12 no of personal dustbins is showing increasing trend year by year. During the study period 2006-07 to 2011-12 number of public dustbins in 2006-07, was 5 public dustbin it increasingly next up to 20, but during period 2010-11 and 2011-12 it was same. Likewise, during 2006 to 2012 number of sweepers is not changed. It concludes that number of personal dustbins is high and number of public dustbins is low and number of personal dustbins C.G.R. IS 2.76 and C.V. is 5.20 and C.G.R of public dustbins is 34.57 and C.V. is 63.74.

It is observed that the activity of solid waste management is carried out in this village through composting as well as disposal. But the number of public dustbins is significantly lower than that of private dustbins during the period under study. Even though the number of private dustbins is higher and increasing, the total facility of solid waste management is inadequate in the village is higher, and there are some families who do not have access to the solid waste management facility. This clearly reveals that solid waste management in this village is inadequate and inefficient as well as.

Composting is the process of aerobic biological decomposition of organic materials under controlled conditions of temperature, humidity, and pH, So that the results is a soil conditioner that can be used in landscaping, agriculture, and horticultural project consideration the high proportion of organic matter in the waste generated in developing country cities, composting can be an option to reduce the amount of waste that is currently disposed of as landfill, thus extending the lifespan of dumps. When composting is conducted under controlled conditions, it does not generate odours and does attract flies or other animals. Composting recycles nutrients by returning them to the soil.

Ones the waste prevention programme has been implemented, the next priority in an integrated waste management approach is promoting the reuse of products and materials. Reuse consists of the recovery of items to be used again, perhaps after some cleaning and refurbishing. Reusing materials and products saves energy and water, reduces pollution, and lessens society consumption of natural resources resources compared with the use of single application products and materials. (Medina, 2010, pp. 7 to 9)

5.2.7 Waste Management in Nelkaraji Village

5.2.7.1 Waste Water Management

Table 5.25

Waste Water Management

Year	No. of Sanitation Pits (%)	No. of Families Who Uses Waste Water For Gardening (%)	No. of Families Whose Waste Water Attached To Gutters	Total No. of Families (%)
2006-07	15 (2.75)	9 1.65	150 (27.52)	545 (100)
2007-08	15 (2.75)	9 (1.65)	150 (27.52)	545 (100)
2008-09	25 (4.59)	20 (3.67)	320 (58.71)	545 (100)
2009-10	25(4.59)	20 (3.67)	338 (62.02)	545 (100)
2010-11	30 (4.10)	25 (3.41)	345 (47.13)	732 (100)
2011-12	30 (4.10)	30 (4.10)	357 (48.77)	732 (100)
C.G.R	**17.17**	**29.64**	**21.75**	**6.97**
C.V.	**26.73**	**39.96**	**35.38**	**14.51**
Mean	**23.33**	**18.83**	**276.67**	**607.33**

Source: - Sant Gadgebaba Gramsvachhata Abhiyan Report 2006-07 -2011-12

Graph No. 5.25
Waste Water Management

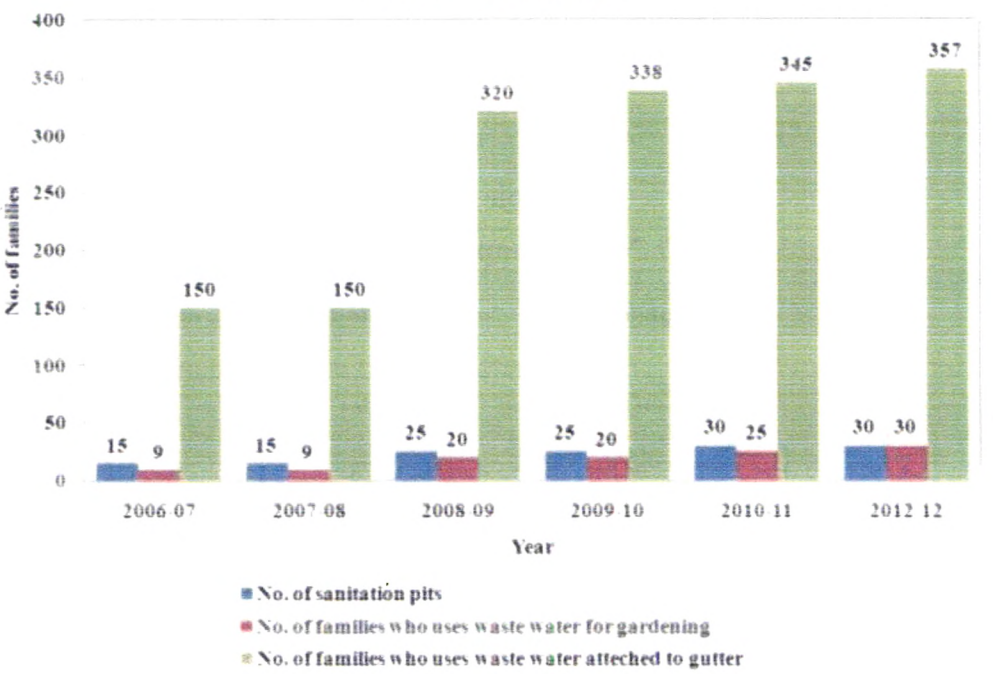


Table No.5.25 and Graph No. 5.25 shows that waste water management in Belanki village of Jath taluka. During study period of 2006-07 to 2011-12 numberof sanitation pits is showing increasing trend year by year. During study period 2006-07 to2011-12 number of families use waste water for gardening is increasing and next in the year 2011-12. In the 2006-07, 9 families used waste water for gardening, it increasingly next up 30 in the year 2011-12. During 2006-07 to 2007-08 150 families waste water was attached to gutter. In year 2009- 10 to 2011-12 it showing is increasing trend. It a concluded that number of sanitation pits and number of families used an waste water for gardening is low and number of families whose waste water attached to gutter is high. In table 5.25 C.G.R of sanitation pits is 17.17 and its C.V. is 26.73, C.G.R of families' uses waste water for gardening is 29.63 and its C.V. is 39.96 and C.G.R of families' uses waste water attached to gutter is 21.75 and its C.V. is 35.38.

It is observed that the number of sanitation pits in this village is lesser, but it is increasing, likewise, the families using waste water for gardening purpose is also lower, but it is increasing, is a thing of satisfaction. The families who have attached their waste water to gutter are higher and also increasing at significant

rate, also is a thing of appreciation. But all these activities of the waste water management are inadequate in comparison with the total families in the village. This is not a proper management of the waste water.

5.2.7.2 Water supply Facility

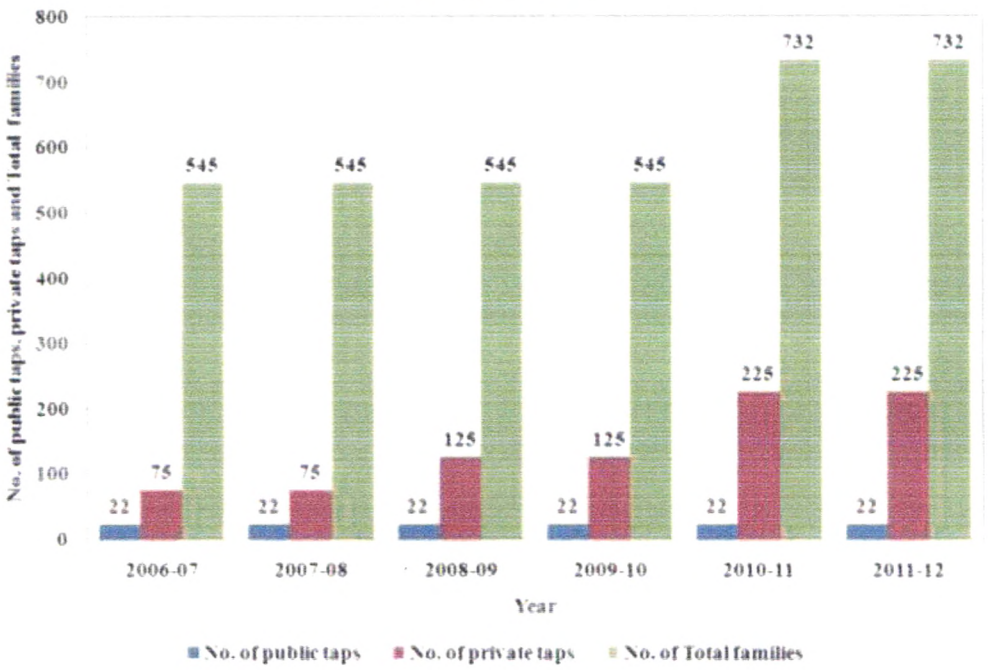
Table 5.26

Water Supply Facility

Year	No. of Public Taps (%)	No. of Private Taps (%)	No. of Total Families (%)
2006-07	22(4.04)	75 (13.76)	545 (100)
2007-08	22 (4.04)	75 (13.76)	545 (100)
2008-09	22 (4.04)	125 (22.93)	545 (100)
2009-10	22 (4.04)	125 (22.93)	545 (100)
2010-11	22 (3.00)	225 (30.74)	732 (100)
2011-12	22 (3.00)	225 (30.74)	732 (100)
C.G.R	-	**28.54**	**6.97**
C.V.	-	**44.02**	**14.51**
Mean	**22**	**141.67**	**607.33**

Source: - Sant Gadgebaba Gramsvachhata Abhiyan Report 2006-07 to 2011-12.

Graph No. 5.26
Waste Supply Facility



Above Table No. 5.26 and Graph No. 5.26 shows that water supply facility in the form of public taps, private taps and the total number of families of Belanki village of Miraj taluka. In the year the 2006-07 number of public taps was 22 and 2011-12 number of public taps remained same 22 not changed. It is clear that between 2006-07 and 2011-12 more number of families used the private taps facilities. Increase in the number of private taps is observed from 75 in 2006-07 to 225 in the year of 2011-12. In the above table C.G.R. of private taps is 28.54 and its C.V. is 44.02 and number of total families C.G.R is 6.97 and its C. V is 14.51.

It is clear from the above analysis that the drinking water facility available in this village is inadequate compared to the number of total families. The number of taps is limited but constant during the study period. The number of private taps is increasing, but limited compared to the total number of households in the village. This urgently demands to increase the facility of drinking water, which will further affect the waste water management in the economy.

5.2.7.3 Toilet Facility

Table 5.27

Toilet Facility

Year	No. of Families Use of Public Toilets (%)	No. of Families Use of Private Toilets (%)	Total No. of Families (%)
2006-07	58 (10.64)	150 (27.52)	545 (100)
2007-08	58 (10.64)	150 (27.52)	545 (100)
2008-09	66 (12.11)	168 (30.82)	545 (100)
2009-10	66 (12.11)	168 (30.82)	545 (100)
2010-11	72 (9.84)	522 (71.31)	732 (100)
2011-12	83 (11.34)	522 (71.31)	732 (100)
C.G.R	7.16	32.98	6.97
C.V.	**12.82**	**61.17**	**14.51**
Mean	**67.17**	**280**	**607.33**

Source: - Sant Gadgebaba Gramsvachhata Abhiyan Report 2006-07 to 2011-12

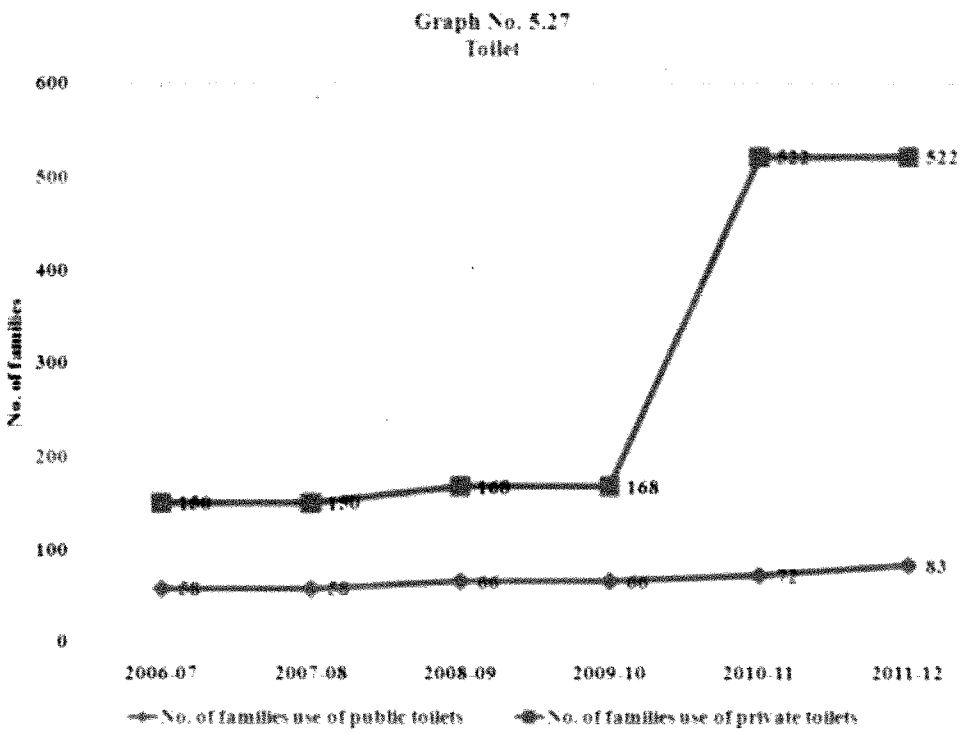


Table No. 5.27 and Graph No. 5.27 shows the toilet facility in number of public toilets and number of use of private toilets in Belanki village of Miraj

taluka. In year 2006-07, 58 families used public toilets and in year 2011-12, 83 number of families use in public toilets. During the study period 2006-07 to 2011-12 number of families use of public toilets is increasing year by year. During the study period 2006-07 to 2011-12 number of families use private toilets in the 2006-07, 150 was families use private toilets, it increasingly next up to 522 in the year 2011-12. Form above table C.G.R of public toilets is 7.20 and C. V is 12.82 and C.G.R. families use of private toilets 32.98 and C. V is 61.17.

From the above analysis, it is revealed that the number of public toilets is increasing, but it is insignificant in number. Likewise, the number of private toilets is higher and also increasing, but it is also inadequate, if the number of total families is taken into consideration. Thus, the toilet facility available in this village is inadequate; here it is not the proper management of the waste, like night soil and urine. This demands to attempt for increasing the facility of toilet for the proper management of waste.

Anthropogenic actives in society generate large quantities of waste posing a problem for their disposal. Improper, Disposal leads to spreading of diseases of diseases and unhygienic condition soling the aesthetics. The municipal solid waste is heterogeneous in nature and contains paper, plastic, rag, metal, glass piece, ash and compostable matter, in addition, other substances like scrap materials, waste paper, dead animals, discarded chemical, plants, hazardous hospital waste and agricultural residue are categorized under MSW. (Jain, 2012, p. 177)

5.2.7.4 Solid Waste Management

Table 5.28

Solid Waste Management

Year	No. of personal dustbins (%)	Composting	No. of public dustbins (%)	Disposal	No. of sweepers	Total No. of Families (%)
2006-07	323 (59.27)	Yes	4 (0.73)	Yes	3	545 (100)
2007-08	323 (59.57)	Yes	4 (0.73)	Yes	3	545 (100)
2008-09	355 (65.14)	Yes	4 (0.73)	Yes	3	545 (100)
2009-10	367 (67.34)	Yes	10 (1.83)	Yes	3	545 (100)
2010-11	373 (50.96)	Yes	10 (1.67)	Yes	3	732 (100)
2011-12	378 (51.64)	Yes	10 (1.67)	Yes	3	732 (100)
C.G.R	**3.68**	-	**26.57**	-	-	**6.97**
C.V.	**8.22**	-	**42.86**	-	-	**14.51**
Mean	**353.17**	-	7	-	-	**607.33**

Source: - Sant Gadgebaba Gramsvachhata Abhiyan Report 2006-07 to 2011-12.

Graph No. 5.28

'Solid Waste Management

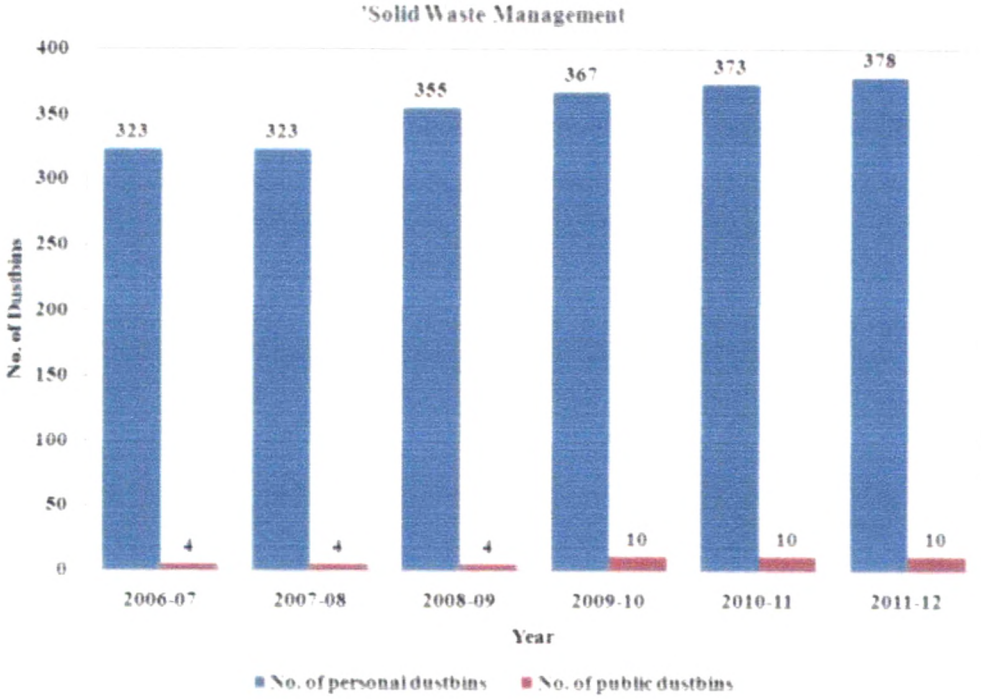


Table 5.28 and Graph No. 5.28 indicate that solid waste management of Nelkaranji village in Atpadi taluka. In 2006-07, 323 families used the personnel dustbins and 378 families used the personnel dustbin in year 2011-12. During the study period of 2006-07 to 2011-12 families uses number of public dustbin showing increasing trend. During 2006-07 to 2011-12 number of sweepers are not increased. Above table shows C.G.R. of number of personnel dustbins 3.68 and C.V. is 8.22 and number of public dustbins C.G.R is 26.57 and C.V. is 42.86.

From the foregoing analysis it is revealed that the composting and disposal of waste is carried out in this village, the number of personal dustbins is greater, but increasing at the marginal rate, the number of sanitary staff is inadequate, and it reminded constant there during the period into consideration. The role of this village panchayat is insufficient. Thus solid waste management in this village is inadequate and is not to the extent expected. This demands the due attempts for the proper management of the solid waste in this village.

Waste disposal and management are qualitatively different from each other. Waste disposal means simply removing the waste from one place, disposing it off at another proper treatment, whereas waste management has larger connotation. It not only includes proper treatment to the waste before disposal in order to check disposal in environmental hazardous but also segregating different kinds of wastes, treating and disposal off toxic wastes, recycling non degradable wastes, converting, degradable wastes , converting, bio-degradable wastes into compost or energy and so on. (Kumer, 2009, p.1)

5.2.8 Waste Management in Jarandi village

5.2.8.1 Waste water Management

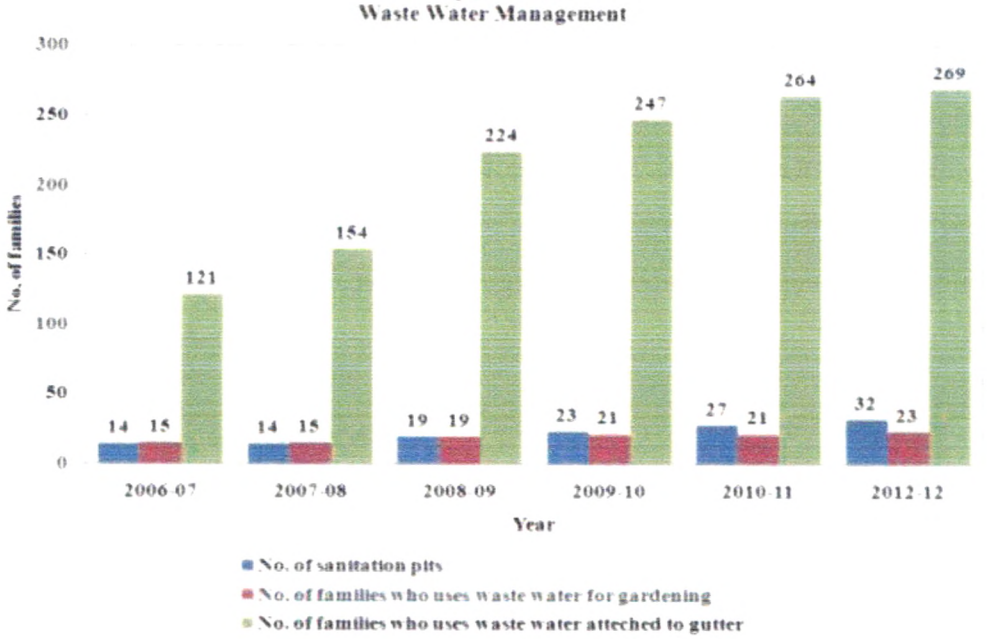
Table 5.29

Waste Water Management

Year	No. of sanitation pits (%)	No. of families who uses waste water for gardening (%)	No. of families whose waste water attached to gutters (%)	Total No. of families (%)
2006-07	14 (2.87)	15 (3.08)	121 (24.84)	487 (100)
2007-08	14(2.87)	15 (3.08)	154 (31.62)	487 (100)
2008-09	19 (3.90)	19 (3.90)	224 (45.99)	87 (100)
2009-10	23 (4.08)	21 (3.72)	247 (43.79)	564 (100)
2010-11	27 (4.78)	21 (3.12)	264 (46.81)	564 (100)
2011-12	32 (5.37)	23 (4.08)	269 (47.69)	564 (100)
C.G.R	**19.70**	**9.72**	**17.71**	**3.85**
C.V.	**52.47**	**16.08**	**26.58**	**7.33**
Mean	**21.5**	**15.5**	**213.17**	**812.61**

Source: - Sant Gadgebaba Gramsvachhata Abhiyan Report 2006-07 to 2011-12.

Graph No. 5.29
Waste Water Management



Above Table No. 5.29 and Graph No. 5.29 indicate that waste water management of Jarandi village in Tasgaon taluka. Above table shows during the study period 2006-07 to 2011-12 increasing trend year by year. In 2006-07 there are 14 sanitation pits, 15 families used waste water for gardening, waste water

attached to gutter. In 2011-12 the number 32, 23, and 269 respectively. Thus the table shows the increasing no .of families who successfully planned how to use waste water. It concludes that number of families use waste water attached to gutter is high and number of sanitation pits and number of families uses waste water for gardening is low. From table 5.29 C.G.R of sanitation pits is 19.7 C.V. is 52.47, C.G.R of families' use waste water for gardening is 9.72% and C.V.% is 16.08 and C.G.R of families' use waste water attached to gutter is 17.17 and C.V. is 26.58.

The foregoing analysis indicates that the number of households having sanitation pits is lesser. The same is the case of the families who use waste water for gardening purpose. Even though, the number of families whose waste water is attached to the gutter is higher and showing a rising trend, but it is inadequate. This clearly shows incorrect and unsatisfactory management of the waste water in this village. This urgently demands to provide for the adequate facilities of waste water management in the village.

The transformation of surface water of a surface water in a drinking water calls, on a various treatment process allowing to provide a product compliant to norms of drinking water. The coagulation process is one of the most important stages in the production of drinking water, allowing him removal of colloidal particles. The automatic control of this process is essential to reach the following objectives maintains of satisfactory treated water, quality, control of the residual coagulant in out lent plant and economic plant operation. A certain number of variables can be measured on line with simple physical sensors. In contract the assess to certain information requires a long and expensive analysis in the laboratory that cannot be executed on line. Nevertheless the possession of this information is generally a key point for surveillance and monitoring of these processes. (Singh and Yadavo, 2003, pp. 245 & 246)

5.2.8.2 Water Supply Facility

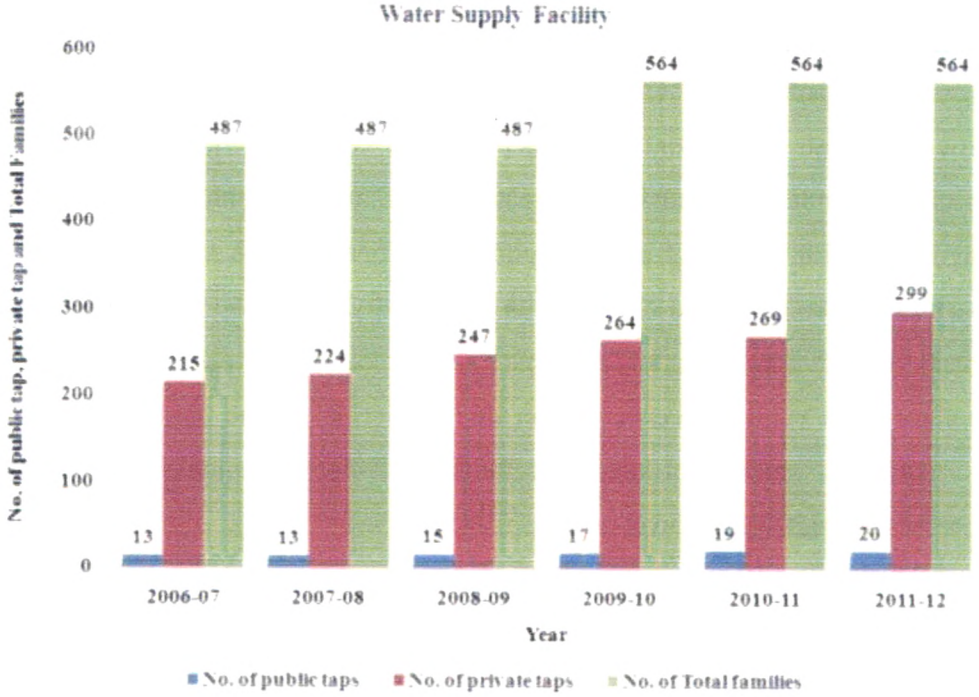
Table 5.30

Water Supply Facility

Year	No. of Public Taps (%)	No. of Private Taps (%)	No. of Total Families (%)
2006-07	13 (2.67)	215 (44.15)	487 (100)
2007-08	13 (2.67)	224 (45.9)	487 (100)
2008-09	15 (3.08)	247 (5.72)	487 (100)
2009-10	17 (3.01)	264 (46.80)	564 (100)
2010-11	19 (3.37)	269 (43.69)	564 (100)
2011-12	20 (3.55)	299 (53.01)	564 (100)
C.G.R	10.26	6.68	3.85
C.V.	**16.67**	**11.05**	**7.33**
Mean	**16.97**	**253**	**812.61**

Source: - Sant Gadgebaba Gramsvachhata Abhiyan Report 2006-07 to 2011-12

Graph No. 5.20
Water Supply Facility



Above Table No. 5.30 and Graph No. 5.30 shows that water supply facility of Jarandi village in Tasgaon taluka. Above water supply management of

public taps, private taps and total families during 2006-07 to 2011-12. In year 2006-07 number of public taps was 13 which very low as compared to number of private taps in 2006-07. During the study period 2006-07 to 2011-12 number of private taps and number of public taps is showing increasing trend year by year. Form above table C.G.R. of public taps 10.26 and C.V. is 16.67, C.G.R. of private taps 22.71 and C.V. is 11.05, and number of total families C.G.R is 3.85 and C. V 7.33.

It is observed that increasing with the total number of families in this village, the available water supply facility is very much inadequate and insufficient. The number of private taps is higher, it is increasing marginally only. Likewise, the number of public taps is lower even with considerable growth, it is very much inadequate. This urgently poses the need for providing for the drinking water in the village. This further will affect the waste water management in the village under study.

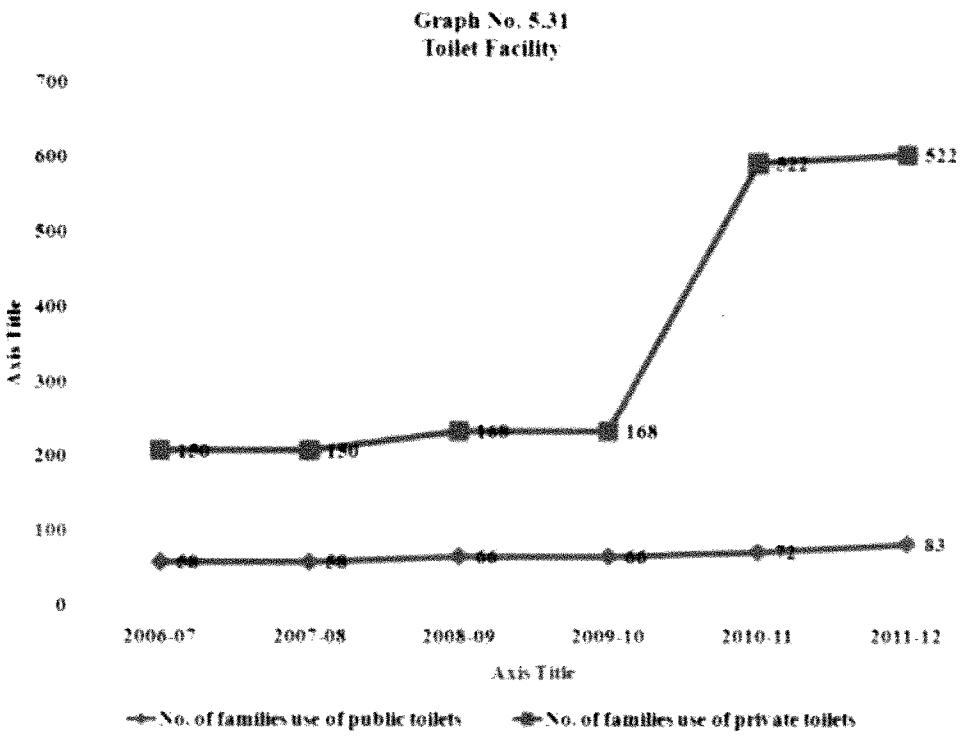
5.2.8.3 Toilet Facility

Table 5.31

Toilet Facility

Year	No. of Families Use of Public Toilets (%)	No. of Families Use of Private Toilets (%)	Total No. of Families (%)
2006-07	58 (11.91)	150 (30.80)	487 (100)
2007-08	58 (11.91)	150 (30.80)	487 (100)
2008-09	66 (13.55)	163 (34.97)	487 (100)
2009-10	66 (11.70)	163 (29.79)	564 (100)
2010-11	72 (12.76)	522 (92.55)	564 (100)
2011-12	83 (14.72)	522 (92.55)	564 (100)
C.G.R	**7.22**	**32.98**	**3.85**
C.V.	**12.82**	**61.17**	**7.33**
Mean	**67.17**	**280**	**812.61**

Source: - Sant Gadgebaba Gramsvachhata Abhiyan Report 2006-07 to 2011-12



Above Table No. 5.31 and Graph No. 5.31 shows the toilet facility in Jarandi village of Tasgaon taluka. It shows clear that the most of families' have private toilets and public toilet facilities. In 2006-07, 58 families used public toilets at the same time other families used private toilets. After this year both number of toilets rapidly increased but after 2007-08 and 2009-10 no change in the figure e of public toilets is observed. In last enrolment shows is the 522 families used private toilets. It is concluded that number of public toilets is lower than number of private toilets. In above table C.G.R of public toilets is 7.22% and C. V is 12.82% and of C.G.R. families use private toilets is 32.98 and C. V is 61.17.

It is observed that the number of public toilets is considerable but not adequate in this village. The number of private toilets is higher, and it is also increasing at the significant rate, is not adequate. The reason is true, the number of families who do not have either public or private toilets facility, and they make use of open defections, which is not environmentally conducive. This is clear that management of the waste, especially night soil and urine it not proper.

Solid wastes are those which arise from human and are usually discarded as useless or unwanted. The term as used in this context is all inclusive, and it encompasses the heterogeneous mass of throwaways from the urban community as well as the more homogenous accumulations of agricultural industrial and mineral wastes. (Syed, 2006, p. 23)

5.2.8.4 Solid Waste Management

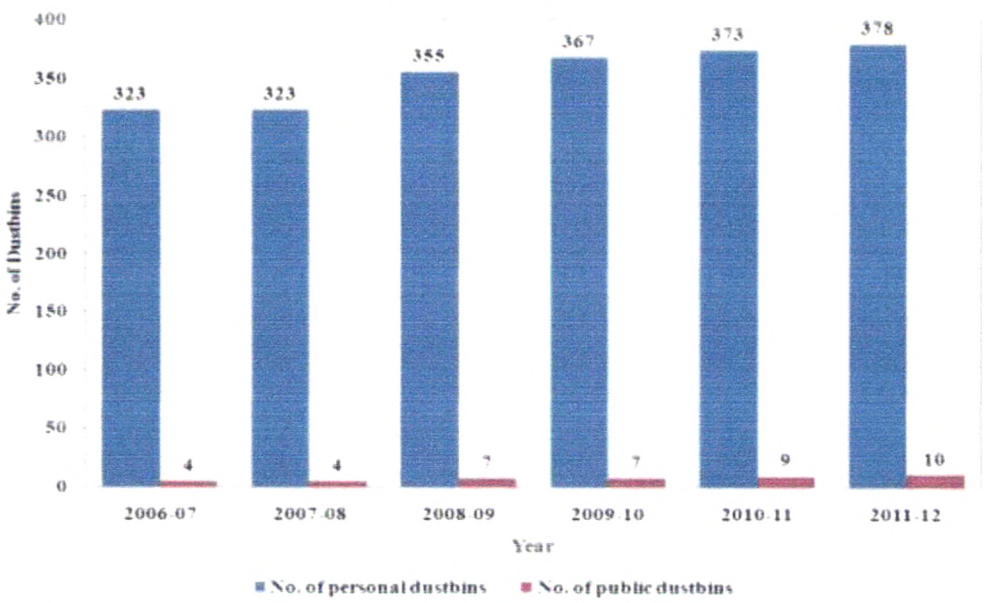
Table 5.32

Solid Waste Management

Year	No. of personal dustbins (%)	Composting	No. of public dustbins (%)	Disposal	No. of sweepers	Total No. of Families (%)
2006-07	323 (66.32)	Yes	4 (0.82)	Yes	2	487 (100)
2007-08	323 (66.32)	Yes	4 (0.82)	Yes	2	487 (100)
2008-09	355 (2.89)	Yes	7(1.44)	Yes	2	487 (100)
2009-10	367 (65.07)	Yes	7 (1.24)	Yes	2	564 (100)
2010-11	373 (66.13)	Yes	9 (1.59)	Yes	2	564 (100)
2011-12	378 (37.02)	Yes	10 (1.77)	Yes	2	564 (100)
C.G.R	**3.64**	-	**22.19**	-	-	-
C.V.	**40.48**	-	**31.87**	-	-	**3.85**
Mean	**353.17**	-	**6.67**	-	-	**7.33**

Source: - Sant Gadgebaba Gramsvachhata Abhiyan Report 2006-07 to 2011-12.

Graph No. 5.32
Solid Waste management



Above Table No. 5.32 and Graph No. 5.32 indicate the solid waste management of Jarandi village in Tasgaon taluka. In 2006-07, 323 families used the personal dustbins, but after 2007-08 gradually increased the number of personal dustbins for solid waste management. Remaining families used private dustbins for solid waste management. Also it is observed that increasing number of private dustbins and families use the public for dustbins waste solid management from the 2006-07, 4 number of private dustbins increasingly next up to 10 in the year 2011-12. During 2006-07 to 2011-12 number of sweepers not increased the number of two. For above table 4.32% C.G.R. of number of personnel dustbins 4.34% and is C.V. is 40.48, and number of public dustbins is 22.19 and c. v. 31.87.

It is adequately clear from the data results that the number of public dustbins is meagre. More importantly, the sanitary staff is very much insignificant. This reveals that the government of the village is passive, defunct so for as solid waste management is concerned. Even though, the number of private dustbins is higher, and increasing it is also not sufficient for the proper and effective management of the solid waste in this village. This poses the need for providing for proper management of the solid waste in this village.

5.2.9 Waste Management in Hivare Village

5.2.9.1 Waste Water Management

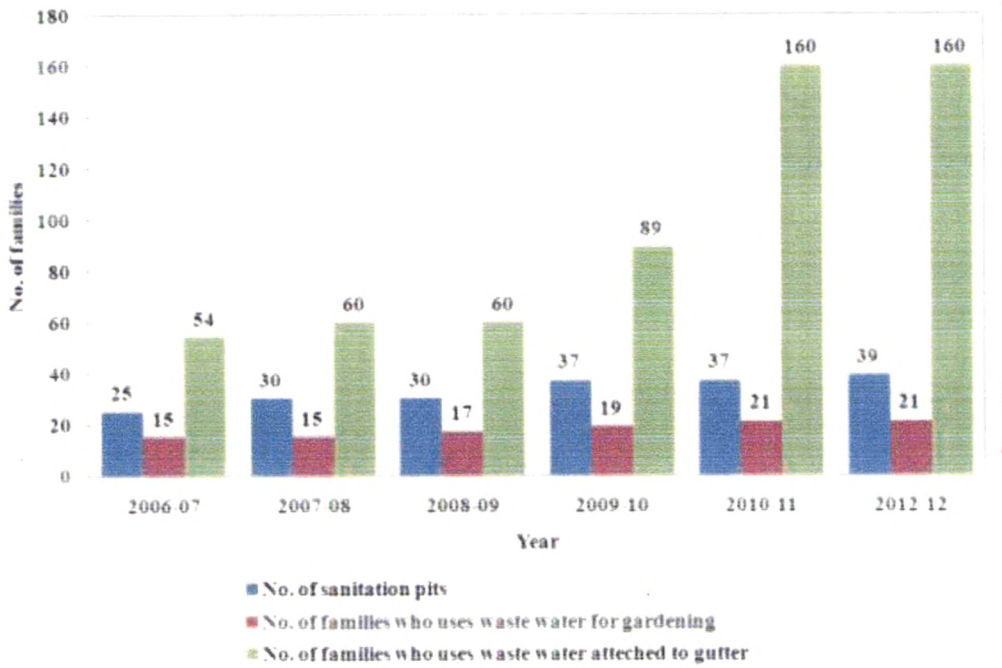
Table 5.33

Waste Water Management

Year	No. of Sanitation Pits (%)	No. of Families Who Uses Waste Water For Gardening (%)	No. of Families Whose Waste Water Attached To Gutters (%)	Total No. of Families (%)
2006-07	25 (7.10)	15 (4.26)	54 (15.34)	352 (100)
2007-08	30 (8.40)	15 (4.20)	60 (16.81)	352 (100)
2008-09	30 (8.36)	17 (4.73)	60 (16.71)	359 (100)
2009-10	37 (10.22)	19 (5.25)	89 (24.58)	362 (100)
2010-11	37 (10.05)	21 (5.25)	160 (43.8)	362 (100)
2011-12	39 (10.60)	21 (5.71)	160 (43.48)	368 (100)
C.G.R	**9.14**	**8.33**	**28.47**	**0.92**
C.V.	**15.15**	**14.52**	**47.14**	**1.60**
Mean	**33**	**18**	**97.67**	**361**

Source: - Sant Gadgebaba Gramsvachhata Abhiyan Report 2006-07 to 2011-12.

Graph No. 5.33
Waste Water Management



Above Table No. 5.33 and Graph No. 5.33 show the waste water management of Hivare village in Khanapur taluka. During period 2006-07 to 2011-12 number of sanitation pits show in increasing trend year by year. During the study period 2006-07 to 2011-12 number of families use waste water for gardening in 2006-07, was 15 families trend wise 21 in the year 2011-12. During the 2006-07 to 2011-12 number of families whose waste water attached the gutter is showing increasing trend. Table 5.33 shows C.G.R of sanitation pits is 9.14% C.V. is 15.15%, C.G.R of families' use waste water for gardening is 8.33% and C.V. is 14.52% and C.G.R of families' use waste water attached to gutter is 28.47% and C.V. is 47.14%.

It is observed from the above data analysis that, there are sanitation pits, but the number is meagre even it is increasing. There are some cases of families use waste water for gardening purpose. The families whose waste water is attached to gutter is higher comparatively, and increasing significantly, it is also inadequate and insufficient. This poses the need for adequate supply of waste management facility. It is not the proper management of the waste water in this village.

Water is finite but present resource. It is a good solvent. This makes it highly vulnerable to pollution. Despite its wide presence, water available and demand at many places have high degrees of mismatch spatial and temporal. Many a times, it is a challenge to provide water of desires quality at a desired place. This lead too much water and often floods in the wet season and too little water and often droughts in the dry season. At times, enough water may available but the quality may be poor that it is of no use without treatment. (Prasad S. N., 2008, p. 151)

5.2.9.2 Water Supply Facility

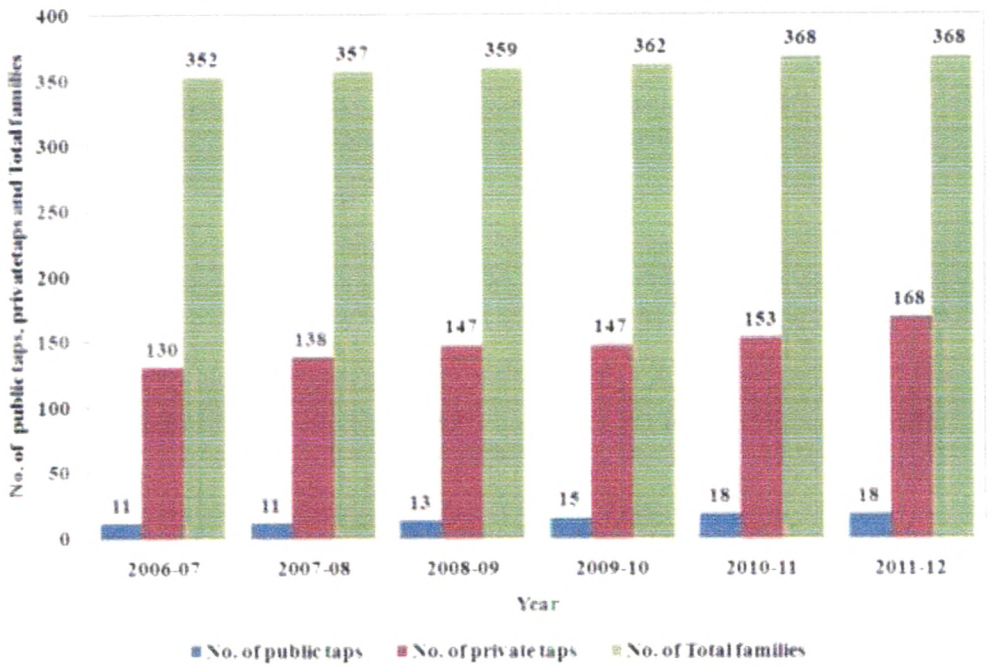
Table 5.34

Water Supply Facility

Year	No. of Public Taps (%)	No. of Private Taps (%)	No. of Total Families (%)
2006-07	11 (3.12)	130 (36.93)	352 (100)
2007-08	11 (3.08)	138 (38.65)	357 (100)
2008-09	13 (3.62)	147 (40.95)	359 (100)
2009-10	15 (4.14)	147 (40.61)	362 (100)
2010-11	18 (4.89)	153 (41.58)	368 (100)
2011-12	18 (4.89)	168 (45.65)	368 (100)
C.G.R	**12.37**	**4.65**	**0.92**
C.V.	**20.41**	**8.07**	**1.60**
Mean	**14.33**	**147.17**	**36.1**

Source: - Sant Gadgebaba Gramsvachhata Abhiyan Report 2006-07 to 2011-12.

Graph No. 5.34
Waste Supply Facility



Above Table No. 5.34 and Graph No. 5.34 shows that water supply facility of Hivare village in Khanapur taluka. For 2006-07 to 2011-12 the data is given in this chart divided into three categories like number of public taps, number of private taps and total number of families. In year 2006-07 number of public taps was 11 which is very low as compared with total families, in year 2007-08 to 2011-12 also During the study period 2006-07 to 2011-12 number of private taps in 2006-07, was 130 private taps, it increasingly next up to 168 in the year 2011-12. From above table C.G.R. of public taps 12.37 and C.V. 20.41, C.G.R. of private taps is 4.65 and C.V. is 8.07 and number of total families C.G.R is 0.92 and C. V is 1.90.

It is clear from the foregoing analysis that the drinking water facility in this village is inadequate. It is because the number of public taps is a few, and here inadequate, even though it shows a significant growth during the study period. The number of private taps is higher, and also it is increasing, is not sufficient when total families in the village is taken into account. This demands for the adequate pricing of drinking water facility in the village, it can affect the waste water management.

5.2.9.3 Toilet Facility

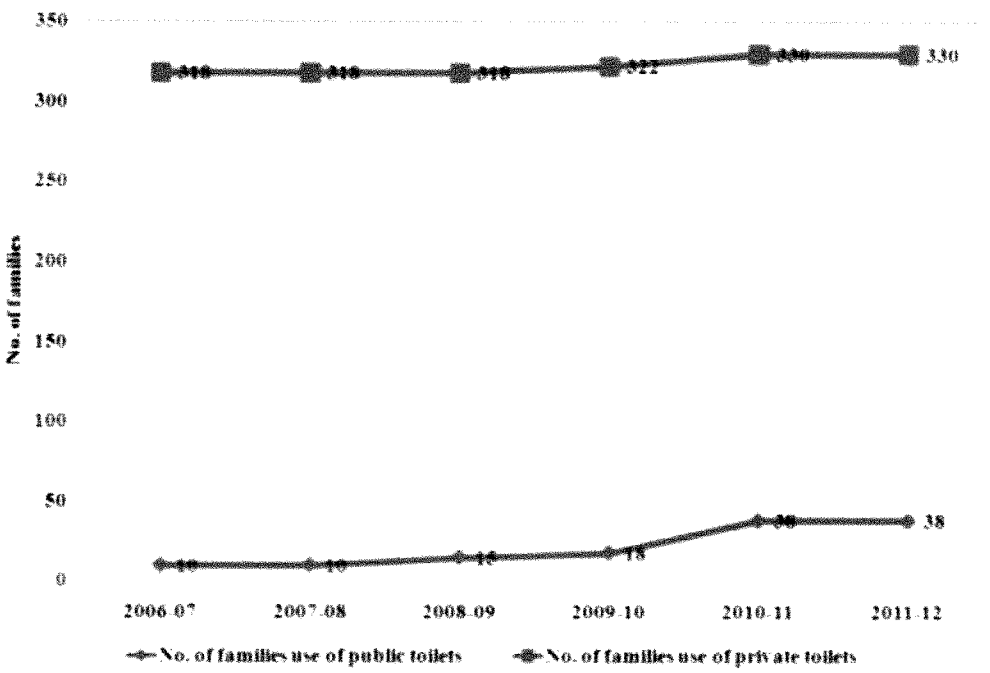
Table 5.35

Toilet Facility

Year	No. of Families Use of Public Toilets (%)	No. of Families Use of Private Toilets (%)	Total No. of Families (%)
2006-07	10 (2.84)	318 (90.34)	352 (100)
2007-08	10 (2.80)	318 (89.07)	357 (100)
2008-09	15 (4.18)	318 (88.58)	359 (100)
2009-10	18 (4.97)	322 (88.55)	362 (100)
2010-11	38 (10.33)	330 (89.87)	368 (100)
2011-12	38 (10.3)	330 (89.87	368 (100)
C.G.R	**36.39**	**0.88**	**0.92**
C.V.	**55.80**	**1.66**	**1.60**
Mean	**21.5**	**322.67**	**361**

Source: - Sant Gadgebaba Gramsvachhata Abhiyan Report 2006-07 to 2011-12

Graph No. 5.35
Toilet Facility



Above Table No. 5.35 and Graph No. 5.35 indicates the toilet facility of Hivare village in Khanapur taluka. During the study period 2006-07 to 2011-12 number of families use of public toilets and number of families use of private

toilets is show in above table. During 2006-07 to 2011-12 number of families' use public toilets is very low as compared to number of families' use of private toilets. It is concluded that most of the families use private toilets. In above table C.G.R of public toilets is 36.39 and C. V is 55.80 and C.G.R. families use of private toilets is 0.88 and C. V is 1.66.

It is revealed that initially the number of public toilets and private toilet was very much inadequate compared to the households in this village. But later on this picture has changed especially in the last two years under study. The adequate toilets facility is attempted to provide in this village, and has helped in the proper management of the waste like night soil and urine.

5.2.9.4 Solid Waste Management

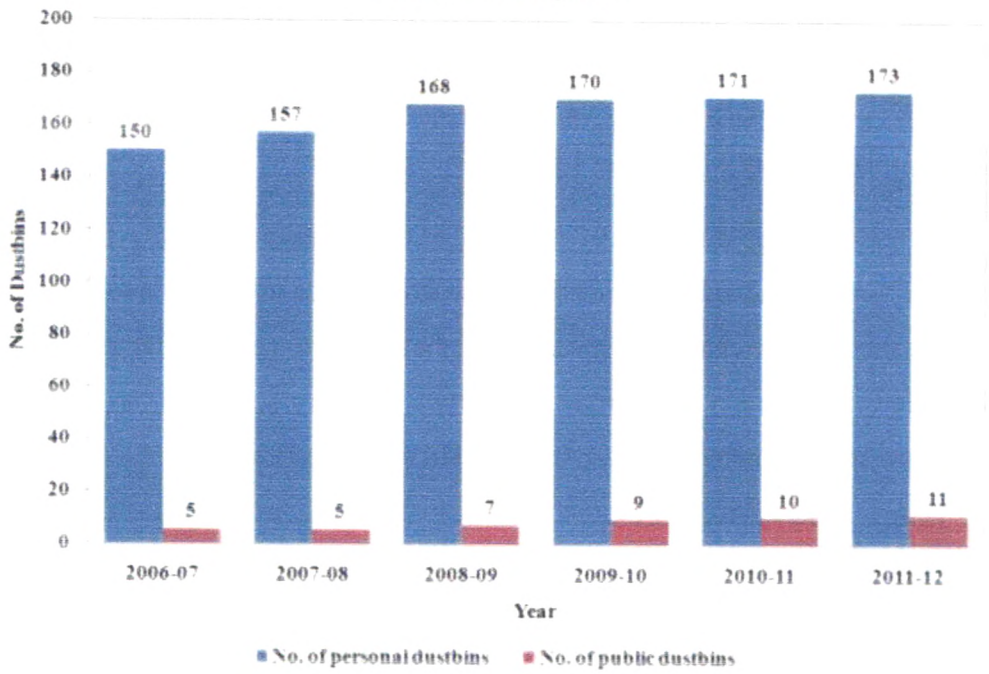
Table 5.36

Solid Waste Management

Year	No. of personal dusthins	Composting	No. of public dustbins	Disposal	No. of sweepers	Total No of Families
2006-07	150 (42.61)	Yes	5 (1.42)	Yes	2	352 (100)
2007-08	157 (43.98)	Yes	5 (1.0)	Yes	2	357 (100)
2008-09	168 (46.0)	Yes	7 (1.95)	Yes	2	359 (100)
2009-10	170 (49.96)	Yes	9 (2.49)	Yes	2	362 (100)
2010-11	171 (46.47)	Yes	10 (2.72)	Yes	2	368 (100)
2011-12	173 (47.01)	Yes	11 (2.99)	Yes	2	368 (100)
C.G.R	**2.84**	-	**19.63**	-	-	**0.92**
C.V.	**5.09**	-	**29.88**	-	-	**1.60**
Mean	**164.83**	-	**7**	-	-	**361**

Source: - Sant Gadgebaba Gramsvachhata Abhiyan Report 2006-07 to 2011-12.

Graph No. 5.26
Solid Waste Management



The Table No. 5.36 and Graph No. 5.36 shows solid waste management of Hivare village in Khanapur taluka. During the study period 2006-07 to 2011-12 number of personal dustbins is showing increasing trend year by year. From the 5 public dustbins it is increasing next up to 11 in the year 2011-12. During 2006-07 to 2011-12 the number of sweepers is not increased as well as not decreased the number was two. For above table 5.36 C.G.R. of number of personal dustbins is 2.84 and C.V. 5.09 and number of public dustbins is 19.63 and is C. V. 29.88.

It is observed that the composting and disposal of the solid waste is carried out in this village. But this local government has failed in providing for the proper management of the solid waste. It is because the number of public dustbins is lower and sanitary employees are also in a few numbers only. The number of personal dustbins is good, increasing but not adequate compared to the total number of families in the village. Thus, it is clear that proper management of the solid waste is not being carried out in this village.

5.2.10 Waste Management in Bilashi Village

5.2.10.1 Waste Water Management

Table 5.37

Waste Water Management

Year	No. of Sanitation Pits (%)	No. of Families Who Uses Waste Water For Gardening (%)	No. of Families Whose Waste Water Attached To Gutters (%)	Total No. of Families (%)
2006-07	25 (3.65)	7 (1.02)	337 (49.27)	684 (100)
2007-08	30 (4.38)	7 (1.02)	384 (56.14)	684 (100)
2008-09	35 (5.06)	8 (1.16)	535 (77.31)	692 (100)
2009-10	37 (5.31)	8 (1.15)	630 (90.39)	697 (100)
2010-11	42 (5.97)	8 (1.14)	655 (93.17)	703 (100)
2011-12	42 (5.97)	8 (1.14)	683 (97.15)	703 (100)
C.G.R	**11.02**	**3.10**	**16.34**	**0.65**
C.V.	**17.48**	**6.16**	**24.89**	**1.13**
Mean	**42.17**	**7.67**	**537.33**	**693.83**

Source:- Sant Gadgebaba Gramsvachhata Abhiyan Report 2006-07 to 2011-12.

Graph No. 5.37
Waste Water Management

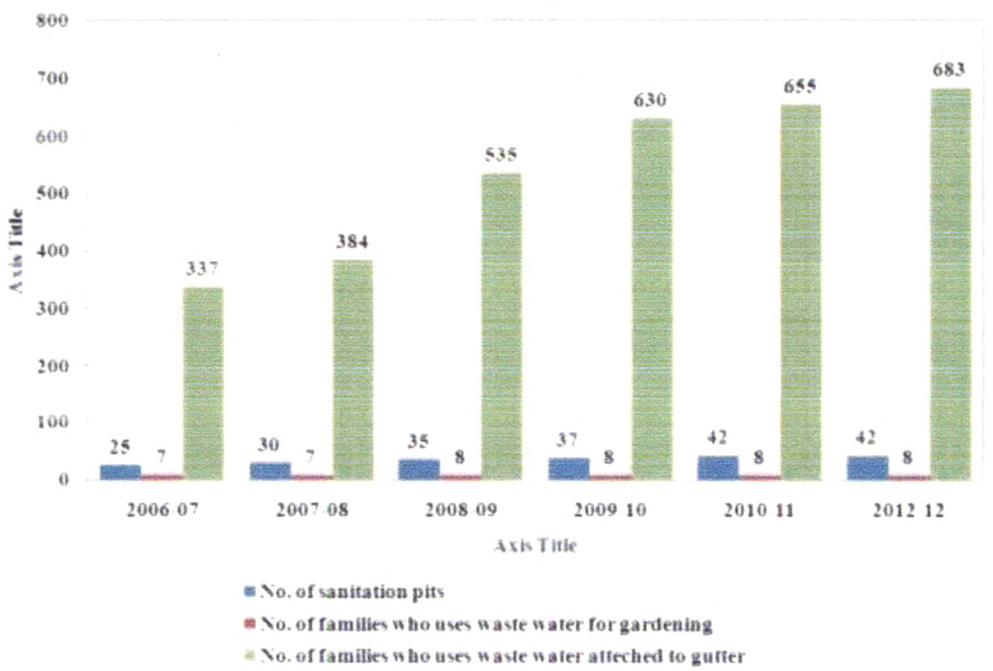


Table No. 5.37 and Graph No. 5.37 show the waste water management of Bilashi village in Jath taluka. During the study period 2006-07 to 2011-12 number of sanitation pits show increasing trend year by year. During the study period 2006-07 to 2011-12 number of families use waste water for gardening is increasing and is next up to 8 in the year 2011-12. During 2006-07 to 2011-12 families whose waste water attached to gutters is showing increasing trend. Form table 5.37 C.G.R of sanitation pits is 11.02 C.V. is 17.48, C.G.R of families' use waste water for gardening is 3.09 and C.V. is 6.16 and C.G.R of families' whose waste water attached to gutter is 16.34 and C.V. is 24.89.

The above data analysis reveals that the number of families having sanitation pits is lesser, even though it is increasing. The families using their waste water for gardening is very insignificant, and also shows a meagre growth. It is a thing of satisfaction that families whose waste water is attached to gutter is higher and also shows a considerable growth during the study period, it is not adequate so for as total number of families is taken into consideration. Thus, this village has no proper management of the waste water.

5.2.9.2 Water Supply Facility

Table 5.38

Water Supply Facility

Year	No. of Public Taps (%)	No. of Private Taps (%)	No. of Total Families (%)
2006-07	11 (1.61)	348 (50.88)	684 (100)
2007-08	15 (2.19)	383 (55.99)	684 (100)
2008-09	20 (2.89)	420 (60.79)	692 (100)
2009-10	20 (2.87)	434 (62.27)	697 (100)
2010-11	26 (3.70)	478 (67.99)	703 (100)
2011-12	26 (3.70)	555 (68.98)	703 (100)
C.G.R	**18.53**	**9.05**	**0.65**
C.V.	**27.64**	**15.30**	**1.13**
Mean	**1.67**	**436.33**	**693.83**

Source: - Sant Gadgebaba Gramsvachhata Abhiyan Report 2006-07 to 2011-12.

Graph No. 5.38
Water Supply Facility

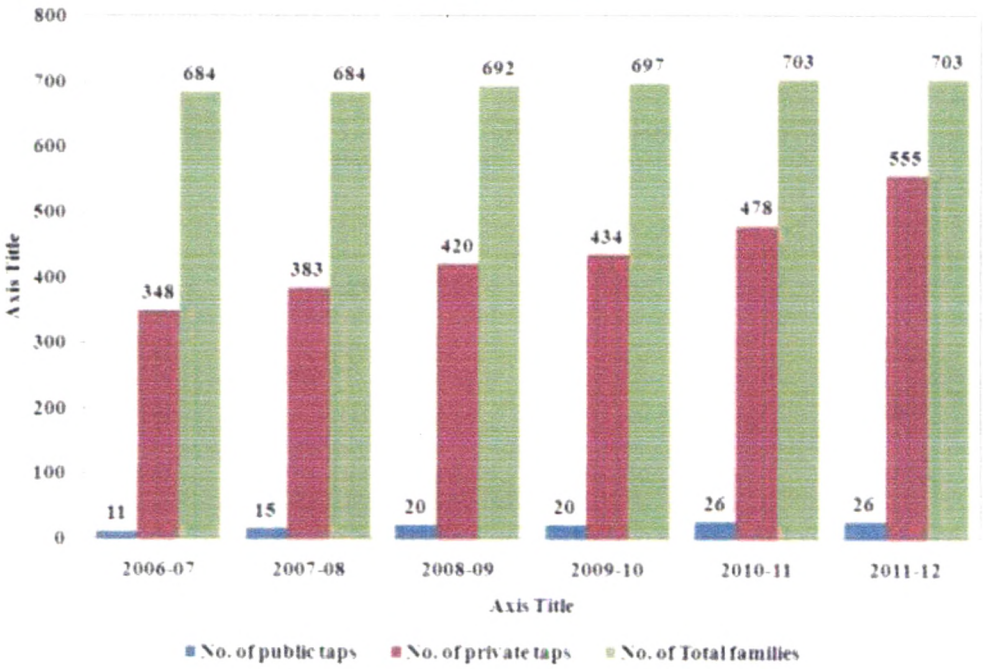


Table No. 5.38 and Graph No. 5.38 show water supply facility of Belashi village in Shirala taluka. For the study period 2006-07 to 2011-12 the data is given in this chart which is divided in to three categories like number on public taps, number of private taps and total number of families. During the study period 2006-07 to 2011-12 families use public taps showing is increasing trend year by year. From the 2006-07,348 private taps it is increasingly next up to 555 in the year 2011-12. For above table C.G.R. of public taps 18.53 and C.V. is 27.64, C.G.R. of private taps is 9.04 and C.V. is 15.30 and number of total families C.G.R is 0.65 and C. V is 1.13.

The above analysis reveals the drinking water facility in this village is inadequate compared to the number of total households. The number of public taps is very much few, even though it is increasing at the significant rate. Number of private taps is higher and also increasing considerably. It is not adequate compared to the number of total families in this village. Thus, the drinking water supply facility is inadequate in this village; this further can affect the waste water management.

5.2.10.3 Toilet Facility

Table 5.39

Toilet Facility

Year	No. of Families Use of Public Toilets (%)	No. of Families Use of Private Toilets (%)	Total No. of Families (%)
2006-07	83 (12.13)	243 (35.53)	684 (100)
2007-08	87 (12.72)	253 (36.99)	684 (100)
2008-09	87 (12.57)	402 (8.09)	692 (100)
2009-10	105 (15.06)	557 (69.91)	697 (100)
2010-11	146 (17.07)	583 (82.93)	703 (100)
2011-12	146 (17.07)	583 (82.93)	703 (100)
C.G.R	**13.93**	**22.86**	**0.65**
C.V.	**24.84**	**38.10**	**1.13**
Mean	**109**	**436.83**	**693.83**

Source: - Sant Gadgebaba Gramsvachhata Abhiyan Report 2006-07 to 2011-12

Graph No. 5.39
Toilet Facility

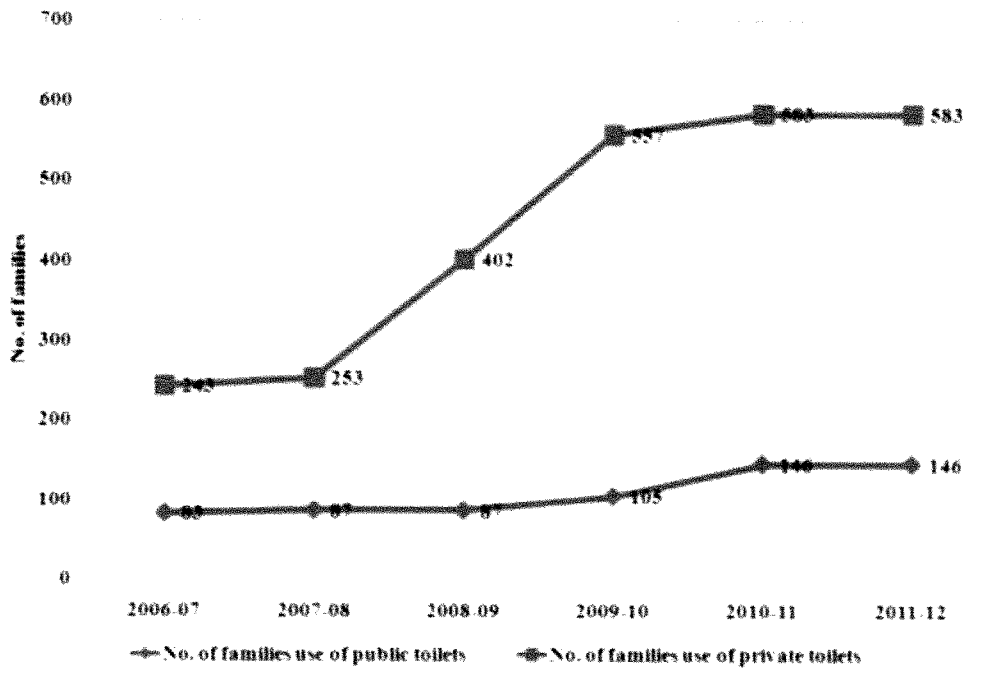


Table No. 5.39 and Graph No. 5.39 indicate the toilet facility in public toilets and private toilets of Bilashi village in Shirala taluka. During 2006-07 to 2011-12 number of families' use public toilets was very low as compared to use of private toilets. It concludes that most of families use private toilets. From above table C.G.R of public toilets is 13.93 and C. V is 24.84 and C.G.R. families use of private toilets 22.86 and C. V is 38.10.

It is observed that in the initial years of the present study the toilet facility was insufficient, because the number of public as well as private toilets was inadequate compared to the total number of total families in the village. But in the last three years of the study a considerable increase in the toilet facility is achieved in this village, which has enabled the proper management of specially the waste like night soil and urine. It is a thing of appreciation that this village is serious in availing toilet facility and truly proper management of the waste, which can have the number of evil can consequences.

Solid waste constitutes a huge challenge for local governments due to it its constant increase and majority of the municipalities do not keep records on waste generation, origin and characteristic. This lack of information causes that the decision regarding proper waste management are on assumption and inferences, which brings about its mishandling with serious, which brings about it. Examples there are river and groundwater contamination by landfill leachates, soil pollution, and greenhouse gas emissions and fauna mortality. It is necessary to know the intrinsic qualities and quantitative of SW as its increase demands alternatives of handling and treatment. (Gonzalez, Vega, Virgen and Benitez , 2010, p. 167)

In the long run, absence of waste trading should guide developing countries to develop an internal recover and recycling mechanism depending too much on harmful import. And with strict enforcement of environmental standards in the economy, it could eventually lead to setting up of an integrated, environmentally sound waste management system. It may also induce economic agents to discarded their profligate production and consumption behaviour. And in the absence of large scale supply of traditional products the consumers may be

motivated to embrace more environment friendly goods and services. (Ray, 2008, p. 19)

5.2.10.4 Solid Waste Management

Table 5.40

Solid Waste Management

Year	No. of Personal Dustbins (%)	Composting	No. of Public Dustbins (%)	Disposal	No. of Sweepers	Total No. of Families (%)
2006-07	210 (30.70)	Yes	2 (0.29)	Yes	3	684 (100)
2007-08	247 (36.11)	Yes	4 (0.58)	Yes	3	684 (100)
2008-09	289 (41.76)	Yes	6 (0.87)	Yes	3	692 (100)
2009-10	383 (54.95)	Yes	6 (0.86)	Yes	3	697 (100)
2010-11	438 (62.30)	Yes	8 (1.14)	Yes	3	703 (100)
2011-12	438 (62.30)	Yes	8 (1.14)	Yes	3	703 (100)
C.G.R	**17.60**	-	**29.36**	-	-	**0.65**
C.V.	**27.04**	-	**38.10**	-	-	**1.13**
Mean	**334.17**	-	**5.67**	-	-	**693.83**

Source: - Sant Gadgebaba Gramsvachhata Abhiyan Report 2006-07 to 2011-12

Graph No. 5.40

Solid Waste Mangement

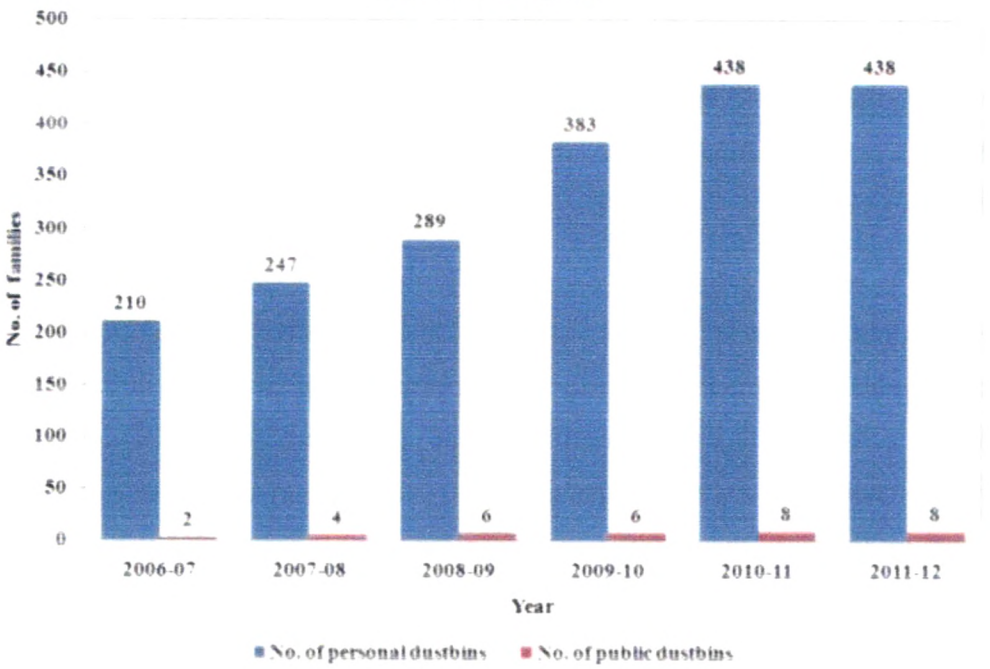


Table No. 4.40 and Graph No. 4.40 indicate the solid waste management of Bilashi village in Shirala taluka. In 2006-07, 210 families used personal dustbins but after 2007-08 gradually increased number of personal dustbins for solid waste management during the study period 2006-07 to 2011-12 number of public dustbins is showing increasing trend. During 2011-12 number of sweepers is not increased as well as decreased. For above table 5.40 C.G.R. of number of personnel dustbins is 187.06 and C.V. is 27.04 and number of public dustbins is 29.36 and is C. V. 38.10.

The activities of composting and disposal of solid waste is carried out in this village. But it is not the proper and efficient management of the solid waste, the reason is the number of public dustbins is very much inadequate. The sanitary staff is meagre only. The only noteworthy thing is the number of personal dustbins is good, but it is not sufficient. This demands to take due care of the solid waste management in this village.

5.4 Concluding Remarks

The proper management of the waste is very much important on various grounds. This demands to study in the context of rural areas is of very much necessary, because it is a neglected element in the rural areas. The present chapter analyses is the waste management practices with reference to the rural areas of Sangli district, which reveals a unsatisfactory picture of waste management, which is not the proper and efficient management of the waste in Rural Sangli District. The important role of the government only with due participation of the people is urgently demanded in proper management of the waste.

5.5 References

1. Dawson and Mercer (1985), "Hazardous Waste Management" A Wiley Interscience Publication, Canada, p. 9.

2. Rhymer, Schwartz and Wenger (1995), "Waste Management and Resource Recovery, Library of Congress Cataloguing in Publication, united states of America, p. 2

3. Wagner K. D. (1998) "Environmental Management in Healthcare Facilities, W. B. Saunders Company, Pennsylvania, pp. 58 & 63.

4. Mahamuni V. V. (2002), "Economic Analysis of Solid Wastes Management in Kolhapur Municipal Area: An Environment Perspective", Ph.D. thesis Shivaji university Kolhapur, pp. 213&243

5. Singh and Yadavo (2003), "Water and Environment Wastewater Treatment and Waste Management", Allied Publisher Pvt. Limited, New Delhi, pp. 245 & 246.

6. Sirbhate and Malode (2004), "Municipal Solid Waste Management: A Survey and Physicochemical Analysis of Contaminated Soil from Sukali Compost and Landfill Depot, Bathuli Road, Amravati", Global Journal of Bio- Science and Biotechnology, Amravati, p. 215.

7. Syed S. (2006), "Solid and Liquid Waste Management." Emirates Journal for Engineering Research, Riyadh (Saudi Arebia), pp. 19-36.

8. Uriarte Filemon A. (2007), "Solid Waste Management Principle and Practices", National Academy of Science and Technology, Quezon, pp. 1&2

9. Prasad S. N. (2008), "Environmental Hazards Challenges and Management", Avishkar Publication Distributers, Jaipur (India), pp. 151

10. Capatina C. and Simonescu Claudia Maria (2008), "Management of Waste in Rural Areas of Gorj Country, Romania", Environmental Engineering and Management Journal, Lasi (Romania) pp. 717-723.

11. Trivedi P. R. (2008), "Environmental Pollution and Control", A.P.H. Publishing Corporation, New Delhi, pp. 70 & 87

12. Ray Amit (2009), "Waste Management in Developing Asia Can Trade and Cooperation Help?" The Journal of Environment and Development, New Delhi (India), p. 19

13. Kumar Surendra (2009), "Solid Waste Management", Northern Book Centre, New Delhi, p. 1

14. Medina Matrin (2010), "Solid Wastes, Poverty and the Environment in Developing Country cities Challenges and Opportunities", World Institute for Development Economics Research, Helsinki (Finland), pp. 1-15.

15. Taboada-Gonzalez Paul, Armijo-de-vega Aguilar-Virgen Carolina, Quetzalli and Sara Ojeda-Benitez (2010), "Household Solid Waste Characteristics and Management in Rural Communities.", The Open Waste Management Journal, California (Mexico), p. 167.

16. Otti V. I. (2011), "Prospects and Processes of Human Management in the Rural Area of Nigeria." Journal of Toxicology and Environmental Health Sciences, Oko (Nigeria), pp. 142-144.

17. Jain (2012), "sustainable water management in India considering likely climate and other changes", current science, Germany, pp. 177.

18. Deshmukh, Sawant and Shinde (2013), "Solid Waste Management: Managing Waste to Best", International Journal of Computer Science and Management Research, Pune, pp. 2461-2464.