

CONTAINMENT

EMPTYING

TRANSPORTATION

TREATMENT/ REUSE

Off-site Sanitation

On-site Sanitation

Sewer (21.32%)



Sep tanks (74.44%)

Andhra Pradesh

Twin Pit Toilets (1.55%)

FS mechanically emptied (safe)

FS mechanically emptied (unsafe)

FS mechanically emptied (unsafe)

Safe transport practice

Unsafe transport practice

Unsafe transport practice

Not treated

Not treated

Not treated

Towards ODF+ Shit Flow Diagrams of Towns in Andhra Pradesh



Desludging truck dumping in open area



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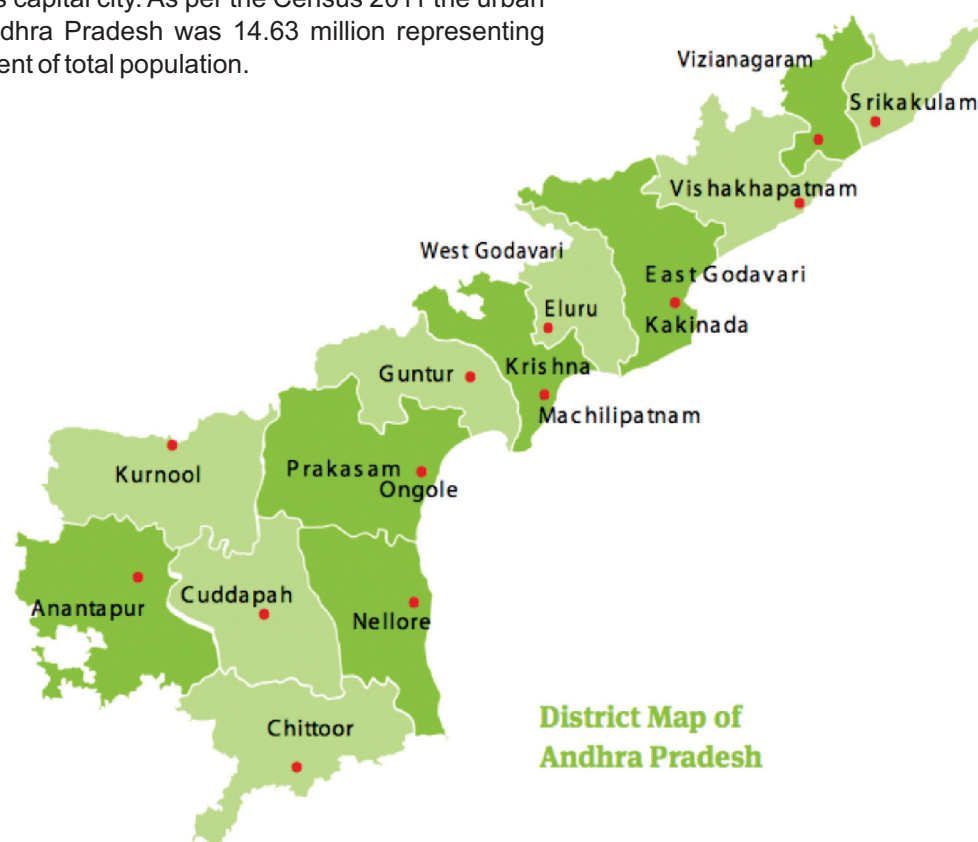
e-Toilet-Guntur

- ❧ **Excreta:** Faeces and urine.
- ❧ **Faecal Sludge:** includes the liquids, solids, as well as the fats, oils and grease (scum) that accumulate in containment units over time
- ❧ **Faecal Sludge & Septage Management:** Faecal sludge and septage management (FSSM) includes the entire process of design, collection, safe treatment & disposal of faecal sludge/septage based on generation of waste. It is a comprehensive program that regulates periodic cleaning of on-site containment, as well as septage transport, treatment, re-use, and disposal.
- ❧ **Insanitary Toilet:** A latrine/toilet that does not have a containment system and directly discharges into an open drain, open grounds or water body.
- ❧ **S3 Andhra:** A Consortium working on sanitation in Andhra Pradesh comprised of Administrative Staff College of India, Ernst Young and International Innovation Corps - a part of University of Chicago.
- ❧ **Septage:** Is the excrement and other waste material contained in and removed from a septic tank.
- ❧ **Septic tank:** A form of on-site sanitation for the anaerobic treatment of sewage/blackwater.
- ❧ **Sewer:** A conduit, usually a pipe, which is used to collect and convey wastewater away from its point of production to its point of disposal.
- ❧ **Sewerage:** A network of interconnected sewers in an area, district or town.
- ❧ **Sludge:** Sludge is a mixture of solids and liquids, containing mostly excreta and water in combination with sand, grit, metals, trash and/or various chemical compounds.
- ❧ **Treatment:** Means the method, technique or process designed to modify physical, chemical or biological characteristics or composition of any waste so as to reduce its volume and potential to cause harm.
- ❧ **Twin Pit Latrines:** A toilet/latrine that is connected to two chambers of treatment units. The two underground chambers/pits are provided to hold fecal sludge. A single pipe leads from the toilet to a small diversion chamber, from which separate pipes lead to the two underground chambers. Each pit should be designed to hold at least 12 months accumulation of fecal sludge. Wastewater is discharged to one chamber until it is full of fecal sludge. Discharge is then switched to the second chamber. Just before the second chamber is full of fecal sludge, the contents of the first pit are dug out. During the time of storage, digestion should ensure that it is odourless and free of pathogens.
- ❧ **Wastewater:** Liquid waste from households or commercial or industrial operations, along with any surface water/storm water.

Andhra Pradesh is situated on the southeastern coast of the country. The state is the eighth largest state in India covering an area of 1,60,205 km². The state of Andhra Pradesh comprises 13 districts namely Anantapur, Chittoor, Guntur, East Godavari, Krishna, Kurnool, Nellore, Prakasam, Srikakulam, Vizianagaram, Vishakhapatnam, West Godavari and Y.S.R. Andhra Pradesh ranks tenth of all Indian States in the Human Development Index scores with a score of 0.416. The urban population is spread across 110 Urban Local Bodies consisting of 14 Corporations, 71 Municipalities of all grades and 25 Nagar Panchayats.

Andhra Pradesh is now the tenth largest state in India with 49.38 million as total population. The state has planned to develop “Amaravati” as its capital city. As per the Census 2011 the urban population of Andhra Pradesh was 14.63 million representing about 29.58 percent of total population.

The net increase of urban population between 2001 and 2011 is approximately 5.4 percent. Vijayawada and Vishakhapatnam are major cities in the state. The urban areas contribute close to 65 percent of the economic growth in the state. The secondary sector contributed 24.72 percent to the State Gross Domestic Product (SGDP) while primary sector contributed about 21.51 percent in 2010-11. If the trends on the economic growth are to be maintained or increased, it is imperative to focus attention on the urban areas for their robust sanitation infrastructure.

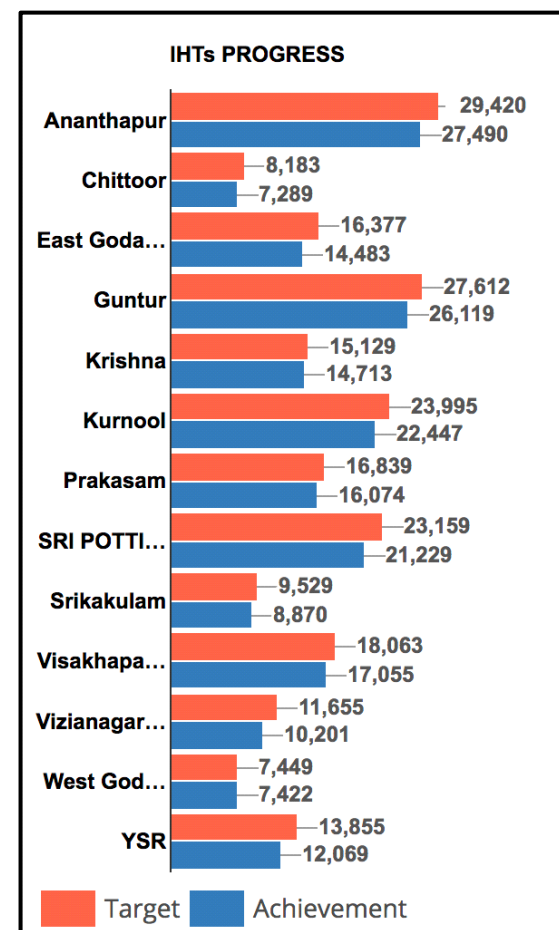


The Hon'ble Chief Minister, **Shri. Chandrababu Naidu** who is also the Chairperson of the Niti Aayog Chief Minister's sub group on Swachh Bharat, was the driving force behind Andhra Pradesh's early initiative in innovatively addressing the state's sanitation problems in a holistic manner. The Swachh Andhra Corporation was founded by Chief Minister Chandrababu Naidu in May 2015, in order to further the goals of the Swachh Bharat Mission within Andhra Pradesh and to strengthen the statewide capacity for sanitation improvement. The state under the Chief Minister's able guidance and support intervened through construction and conversion of individual household toilets, construction of community and public toilets, capacity building within local governments and non-government entities and behavioural change campaigns. On October 2, 2016, the Chief Minister declared that the 110 urban local bodies of Andhra Pradesh were free of open defecation.

This was a great achievement for the State of Andhra Pradesh but the issue of treatment of faecal sludge remains to be dealt with, due to the discharge of human excreta into water bodies and open grounds, polluting the ground and water as well as being a major health hazard. Proper and sustainable treatment and management of excreta requires city level oversight and an enabling environment that allows for coordination at all levels of the sanitation service chain from containment, emptying, transport, treatment and reuse.

Andhra Pradesh has already taken a step in this direction and has started working on setting up Faecal Sludge Treatment Plants to treat human excreta throughout the state. Andhra Pradesh's very first Faecal Sludge Treatment Plant is currently being set up at Narsapur, a city in the West Godavari district. The state is also taking up a variety of innovative initiatives to address this issue, one of which is the development of a hybrid model of treatment, also known as co-treatment model in 28 Amrut towns. This model is based on the treatment of both wastewater and faecal sludge by setting up a Sewerage Treatment Plant as well as a Faecal Sludge Treatment Plant in one place.

Given all the developments in this sector, it is important to analyse the flow of human excreta throughout the sanitation service chain and understand how much of it is safely managed and how much of it is not through Shit Flow Diagrams. This exercise will be able to determine the next steps that will be required to be taken to improve Andhra Pradesh's sanitation landscape.



The progress that AP has made in toilet construction

A Shit Flow Diagram (SFD) is a diagram which shows the pathways all excreta generated by a city's population takes from defecation to final fate - either unsafe discharge to the environment, or safe reuse/disposal. It clearly demarcates the flow of human excreta through all stages of the sanitation service chain and depicts whether the excreta is being safely (marked in green) or unsafely (marked in red) managed at each particular stage.

The SFD presents a clear picture of how wastewater and faecal sludge management services are delivered in a city and the resulting challenges; these can then be linked to aspects of service delivery where improvements are needed. Primarily it provides technical and non-technical stakeholders with an easily understood advocacy tool that can be used to support decision-making on urban sanitation planning and programming.

SFDs are developed on the basis of population connected to different toilet typologies



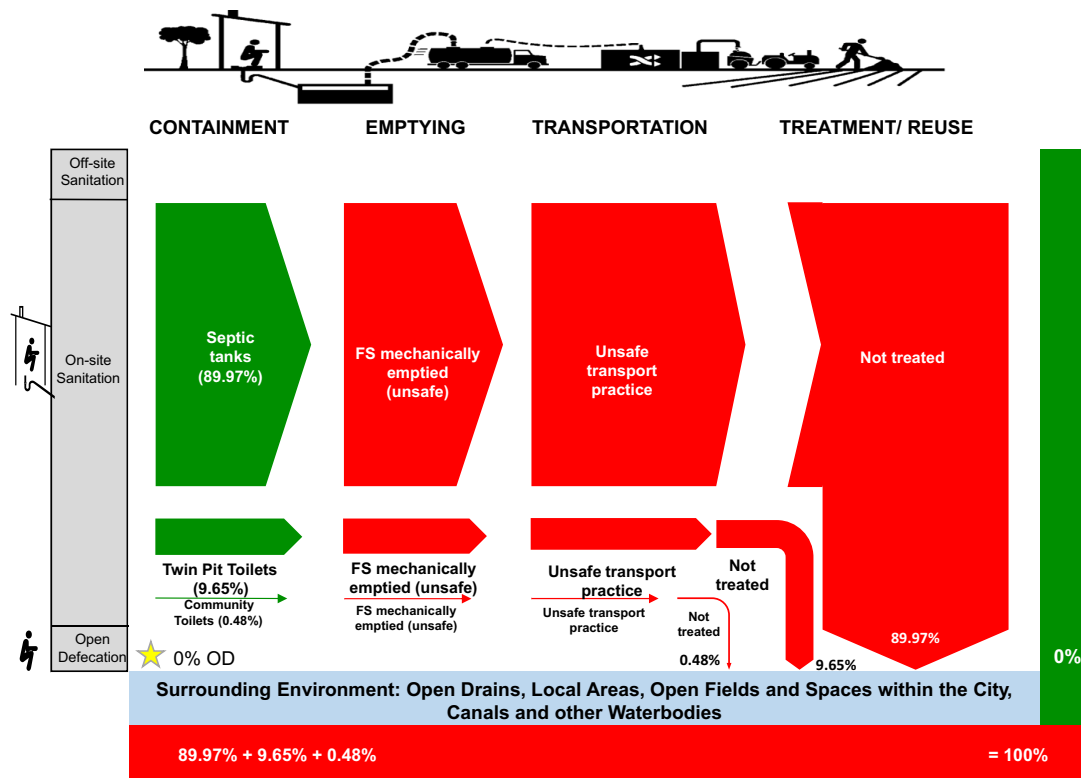
Shit Flow Diagrams (SFD)

- ❖ The data used in making the SFDs is the Faecal Sludge and Septage Management 2017 data collected from the ULBs to operationalize G.O. No. 134. It was collected by way of a questionnaire developed by the S3 Andhra Team to gather information on the status of Faecal Sludge Management in the state of Andhra Pradesh.
- ❖ The questionnaire contained questions pertaining only households connected to different containment/ sanitation systems such as septic tanks, twin pits toilets, insanitary toilets and sewerage systems in the urban local bodies.
- ❖ A sum of the households connected to different sanitation systems gives us the total number of households in each urban local body. Multiplying the total number of households with 4.5 (the average size of a household) provides the total population of each urban local body in 2017.
- ❖ Thereafter, each set of households connected to a particular sanitation system was converted into the population connected to that particular containment system by multiplying the number of households into 4.5 and then the population connected to the various systems were converted into percentages.
- ❖ The percentages were used as a reference point to making the SFD on Microsoft Powerpoint.

SFD Assumptions

- ❖ All septic tanks are safe containment systems.
- ❖ 20% of the septic tanks are connected to soak pits.
- ❖ Emptying and transportation without using proper personal protective gear is unconsidered an unsafe practice. Hence is shown as red in the SFD.

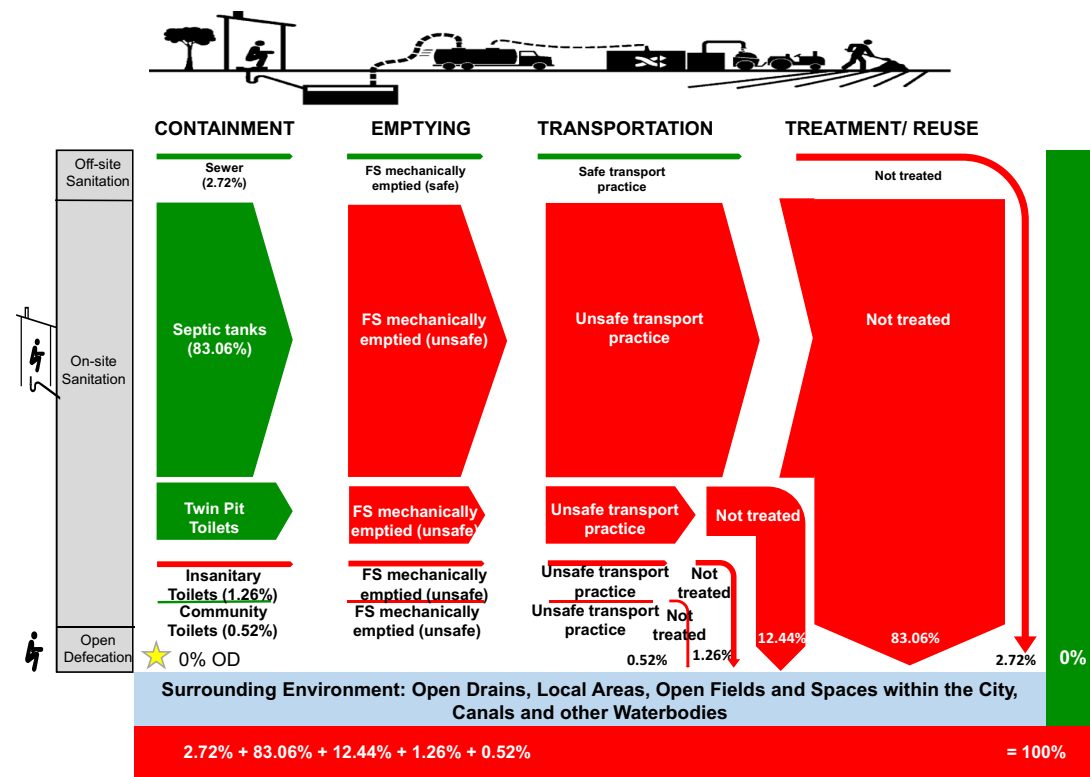




Shit Flow Diagram of Addanki

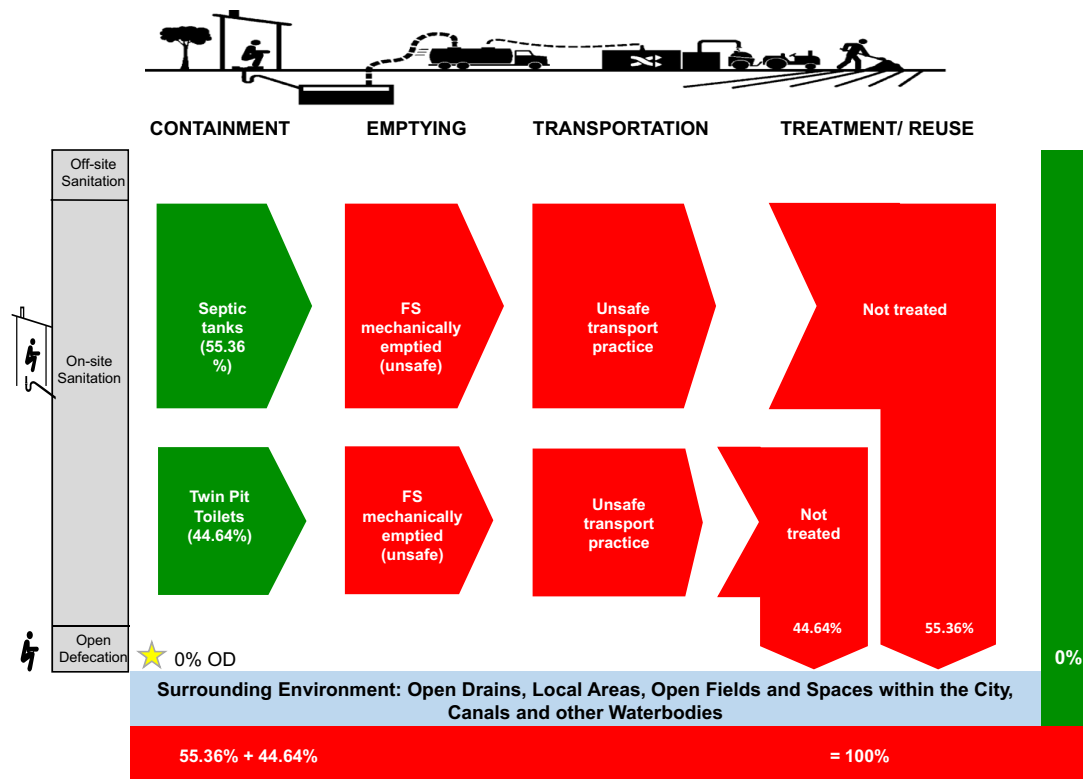
Population in 2017:	46,760
Area (Sq Km):	25.00
Total No. of Wards:	20
No. of Households (2017):	10,391
No. of Households connected to Sewerage System:	0
No of Households with Septic Tanks:	9,338
No. of Households with Twin Pit Toilets:	1,003
No. of Households with Insanitary Toilets:	0
No. of Households dependent on Community Toilets:	50

Sanitation Situation at Adoni



Shit Flow Diagram of Adoni

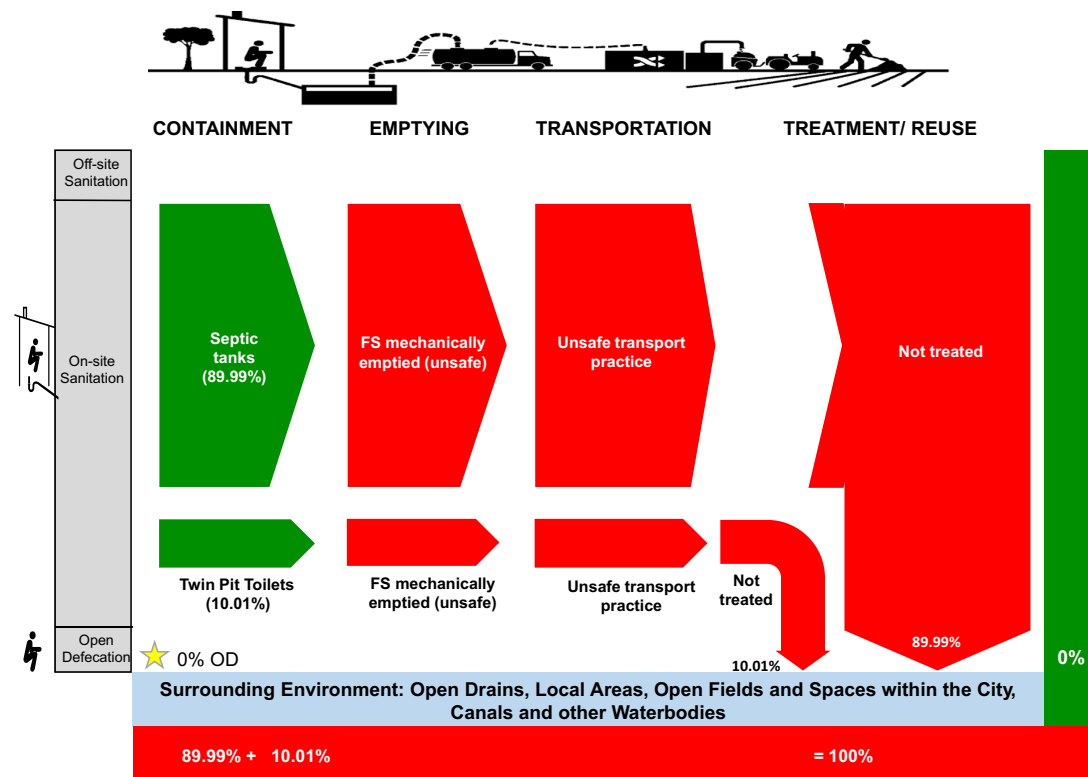
Population in 2017:	1,65,510
Area (Sq Km):	32.16
Total No. of Wards:	41
No. of Households (2017):	36,780
No. of Households connected to Sewerage System:	1,000
No of Households with Septic Tanks:	30,548
No. of Households with Twin Pit Toilets:	4,576
No. of Households with Insanitary Toilets:	465
No. of Households dependent on Community Toilets:	191



Shit Flow Diagram of Allagadda

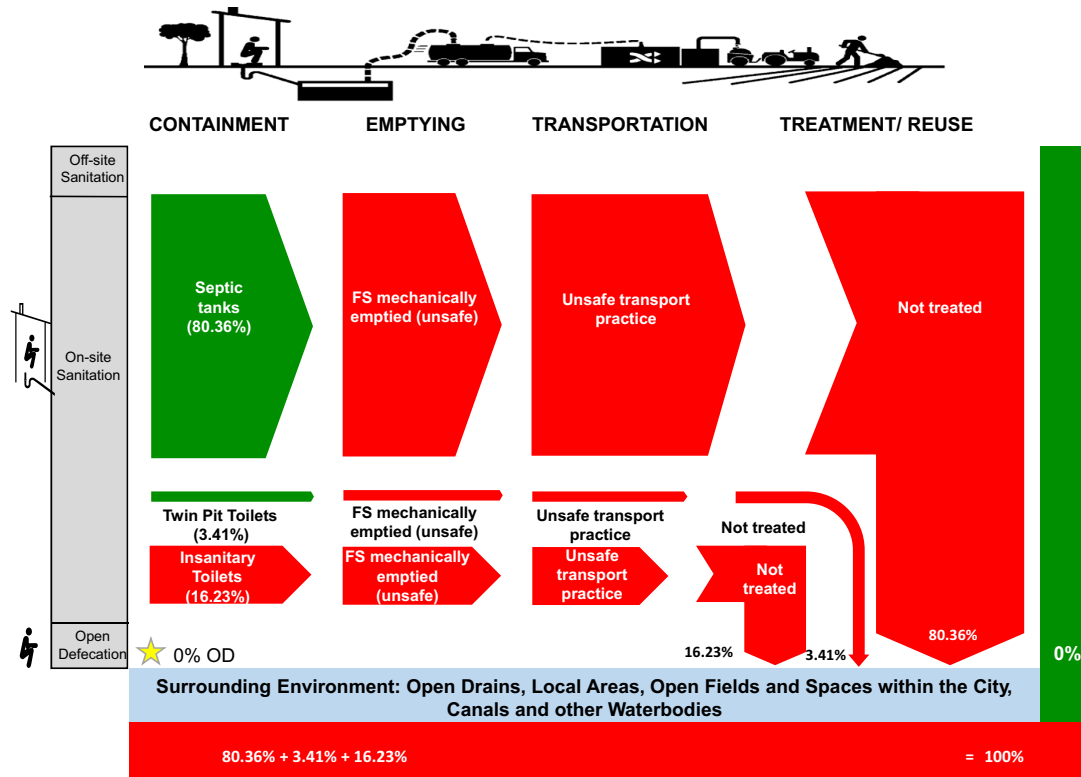
Population in 2017:	60,228
Area (Sq Km):	62.30
Total No. of Wards	20
No. of Households (2017):	13,384
No. of Households connected to Sewerage System:	0
No of Households with Septic Tanks:	7,410
No. of Households with Twin Pit Toilets:	5,974
No. of Households with Insanitary Toilets:	0
No. of Households dependent on Community Toilets:	0

Sanitation Situation in Amadalavalasa



Shit Flow Diagram of Amadalavalasa

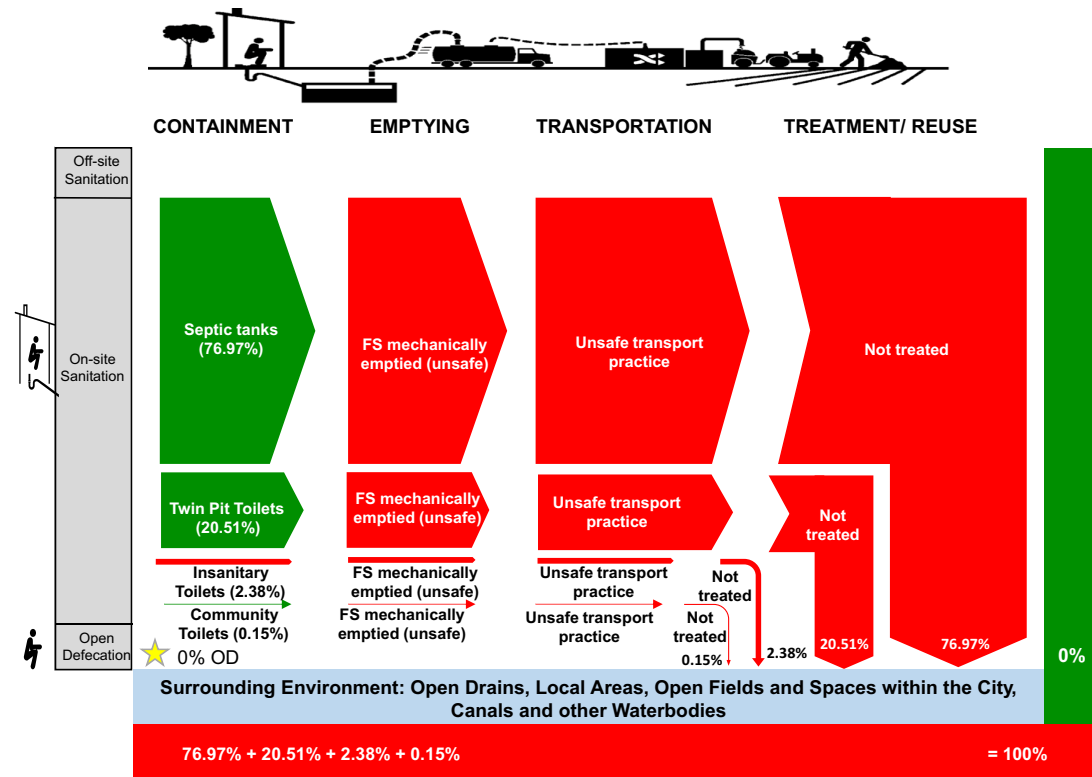
Population in 2017:	48,686
Area (Sq Km):	27.30
Total No. of Wards	23
No. of Households (2017):	10,819
No. of Households connected to Sewerage System:	0
No of Households with Septic Tanks:	9,736
No. of Households with Twin Pit Toilets:	1,083
No. of Households with Insanitary Toilets:	0
No. of Households dependent on Community Toilets:	0



Shit Flow Diagram of Amalapuram

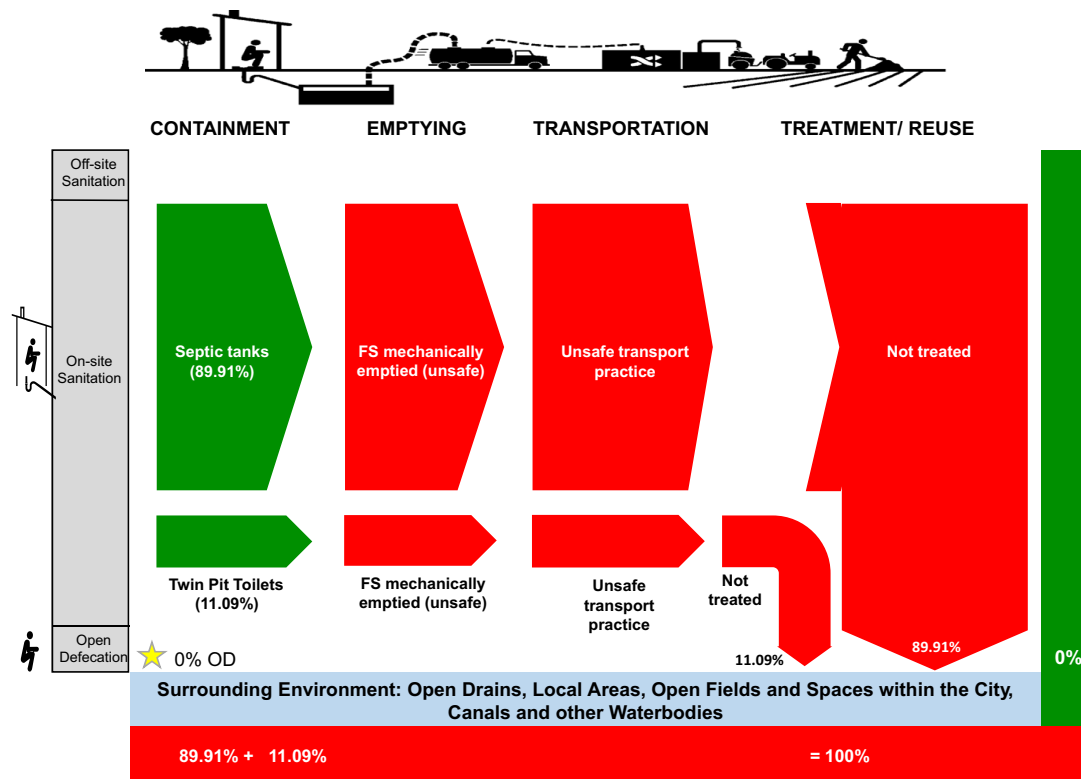
Population in 2017:	63,540
Area (Sq Km):	7.02
Total No. of Wards	30
No. of Households (2017):	14,120
No. of Households connected to Sewerage System:	0
No of Households with Septic Tanks:	11,347
No. of Households with Twin Pit Toilets:	481
No. of Households with Insanitary Toilets:	2,292
No. of Households dependent on Community Toilets:	0

Sanitation Situation in Anantapur



Shit Flow Diagram of Anantapur

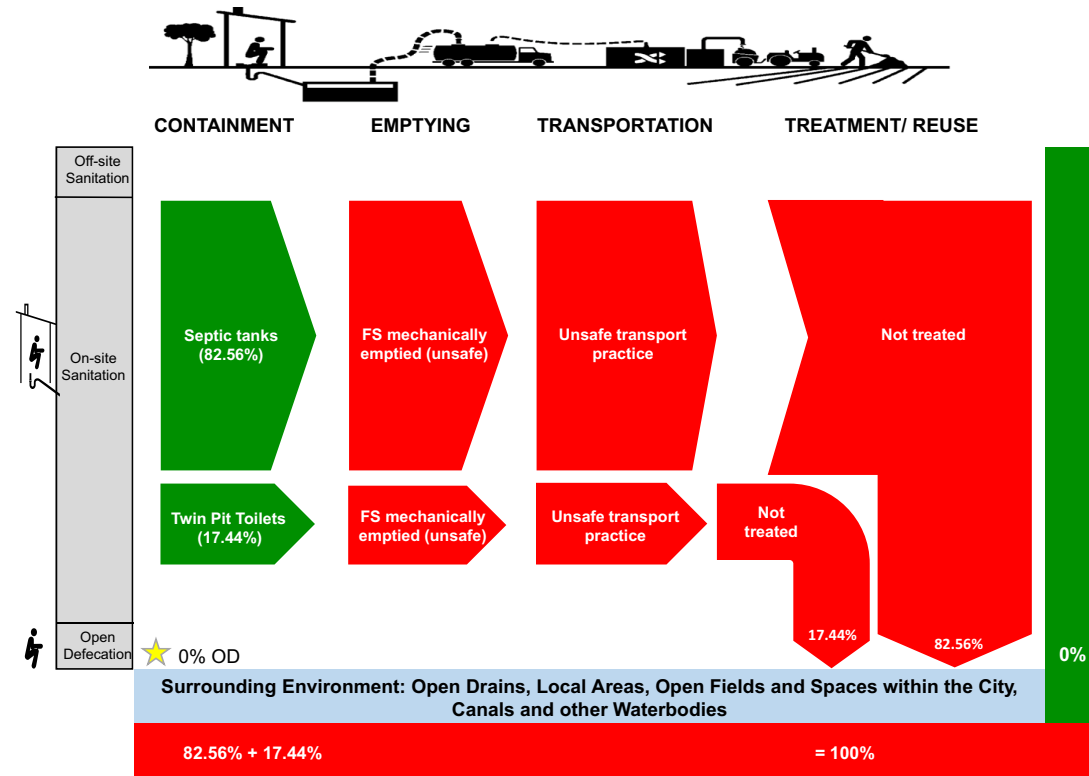
Population in 2017:	3,02,850
Area (Sq Km):	16.35
Total No. of Wards	50
No. of Households (2017):	67,300
No. of Households connected to Sewerage System:	0
No of Households with Septic Tanks:	51,800
No. of Households with Twin Pit Toilets:	13,800
No. of Households with Insanitary Toilets:	1,600
No. of Households dependent on Community Toilets:	100



Shit Flow Diagram of Atmakur (K)

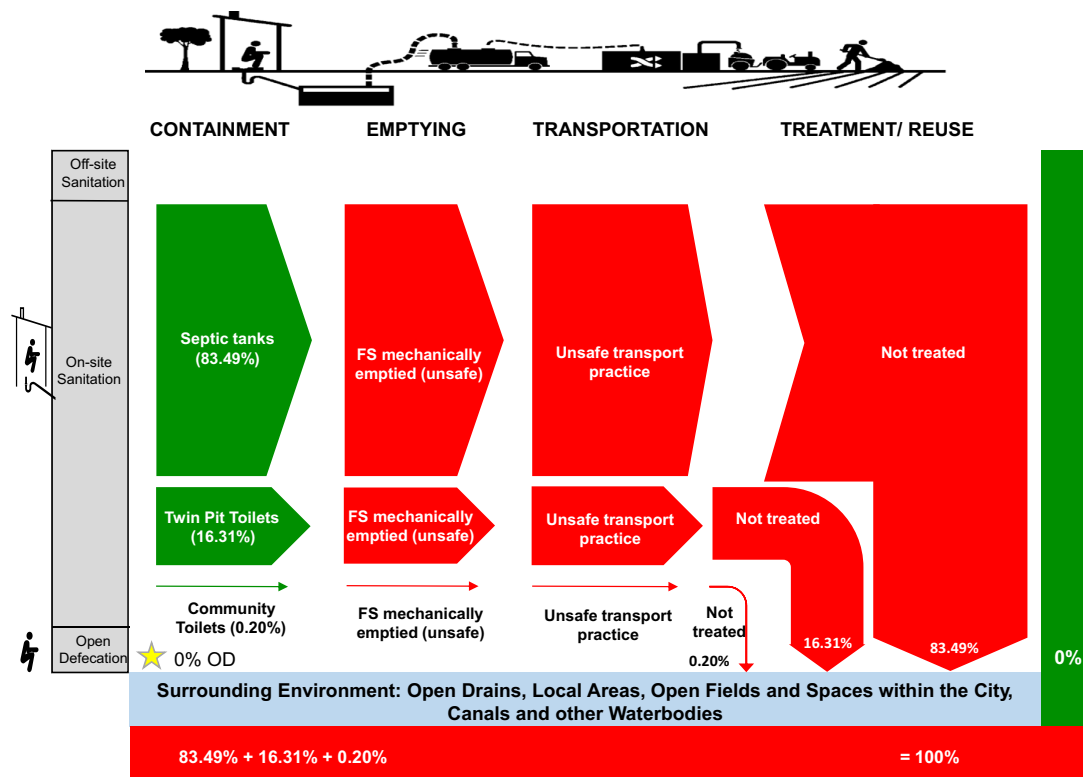
Population in 2017:	49,289
Area (Sq Km):	8.86
Total No. of Wards	20
No. of Households (2017):	10,953
No. of Households connected to Sewerage System:	0
No of Households with Septic Tanks:	9,738
No. of Households with Twin Pit Toilets:	1,215
No. of Households with Insanitary Toilets:	0
No. of Households dependent on Community Toilets:	0

Sanitation Situation in Atmakur (N)



Shit Flow Diagram of Atmakur (N)

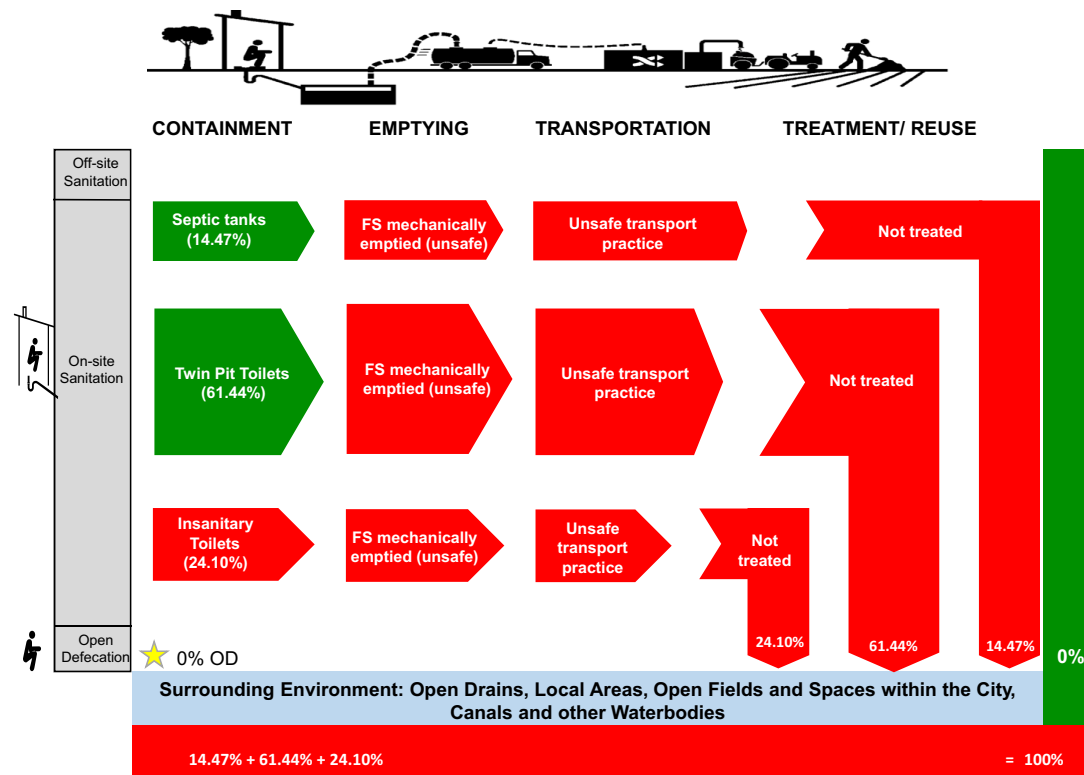
Population in 2017:	35,847
Area (Sq Km):	58.65
Total No. of Wards	23
No. of Households (2017):	7,966
No. of Households connected to Sewerage System:	0
No of Households with Septic Tanks:	6,577
No. of Households with Twin Pit Toilets:	1,389
No. of Households with Insanitary Toilets:	0
No. of Households dependent on Community Toilets:	0



Shit Flow Diagram of Badvel

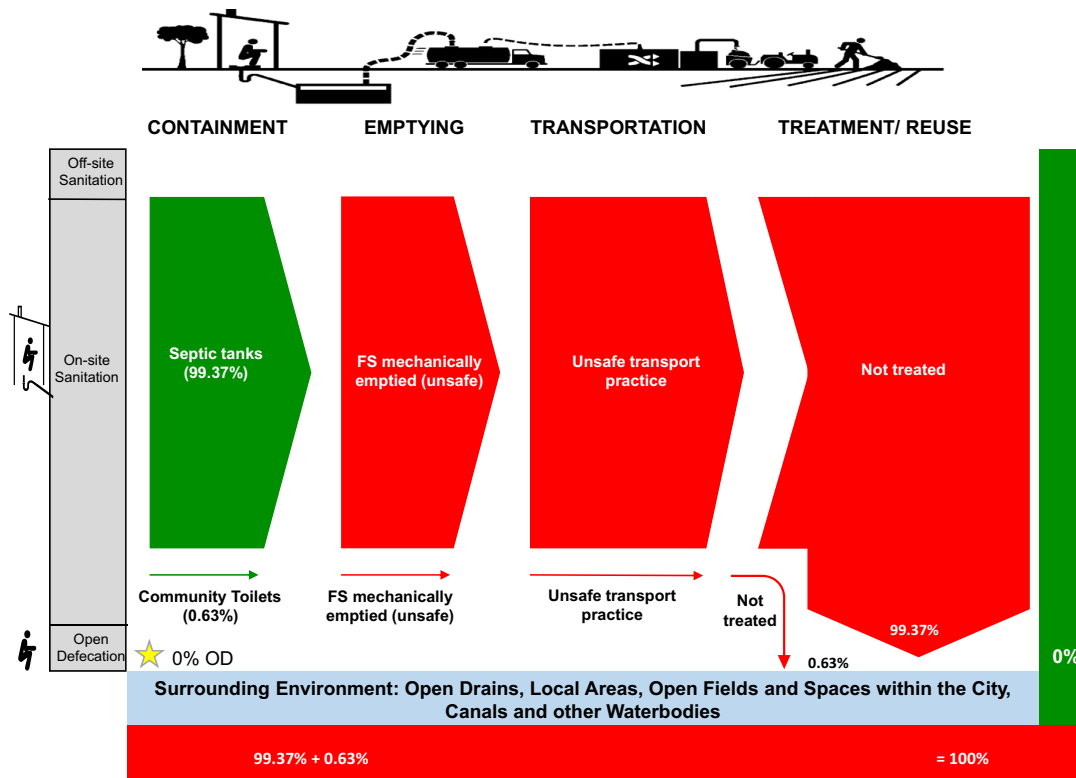
Population in 2017:	1,10,331
Area (Sq Km):	42.15
Total No. of Wards	26
No. of Households (2017):	24,518
No. of Households connected to Sewerage System:	0
No of Households with Septic Tanks:	20,470
No. of Households with Twin Pit Toilets:	3,998
No. of Households with Insanitary Toilets:	0
No. of Households dependent on Community Toilets:	50

Sanitation Situation in Bapatla



Shit Flow Diagram of Bapatla

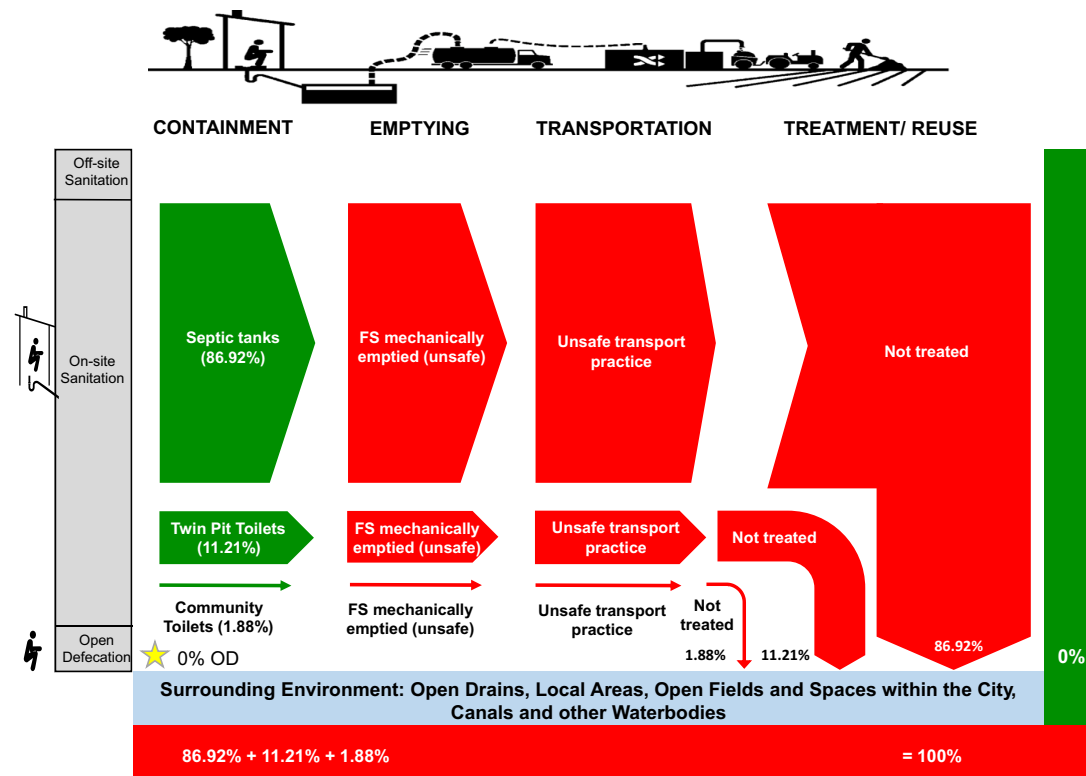
Population in 2017:	1,01,088
Area (Sq Km):	17.92
Total No. of Wards	34
No. of Households (2017):	22,464
No. of Households connected to Sewerage System:	0
No of Households with Septic Tanks:	3,250
No. of Households with Twin Pit Toilets:	13,801
No. of Households with Insanitary Toilets:	5,413
No. of Households dependent on Community Toilets:	0



Shit Flow Diagram of Bhimavaram

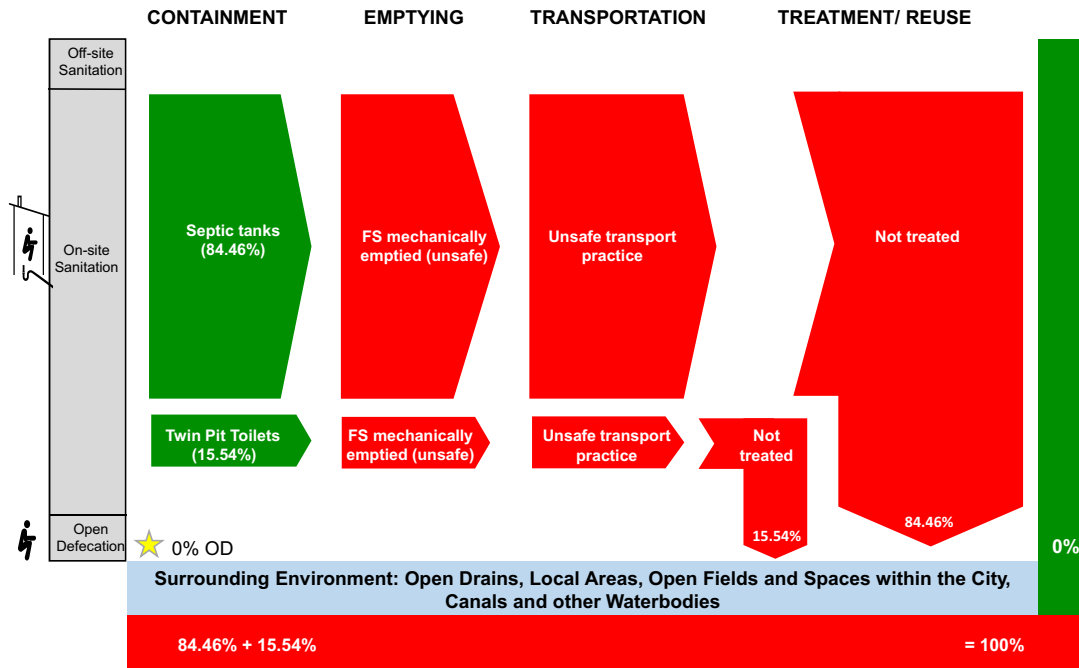
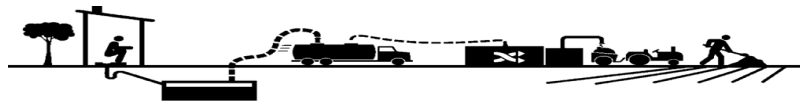
Population in 2017:	1,70,271
Area (Sq Km):	25.64
Total No. of Wards	39
No. of Households (2017):	37,838
No. of Households connected to Sewerage System:	0
No of Households with Septic Tanks:	37,600
No. of Households with Twin Pit Toilets:	0
No. of Households with Insanitary Toilets:	0
No. of Households dependent on Community Toilets:	238

Sanitation Situation in Bobbili



Shit Flow Diagram of Bobbili

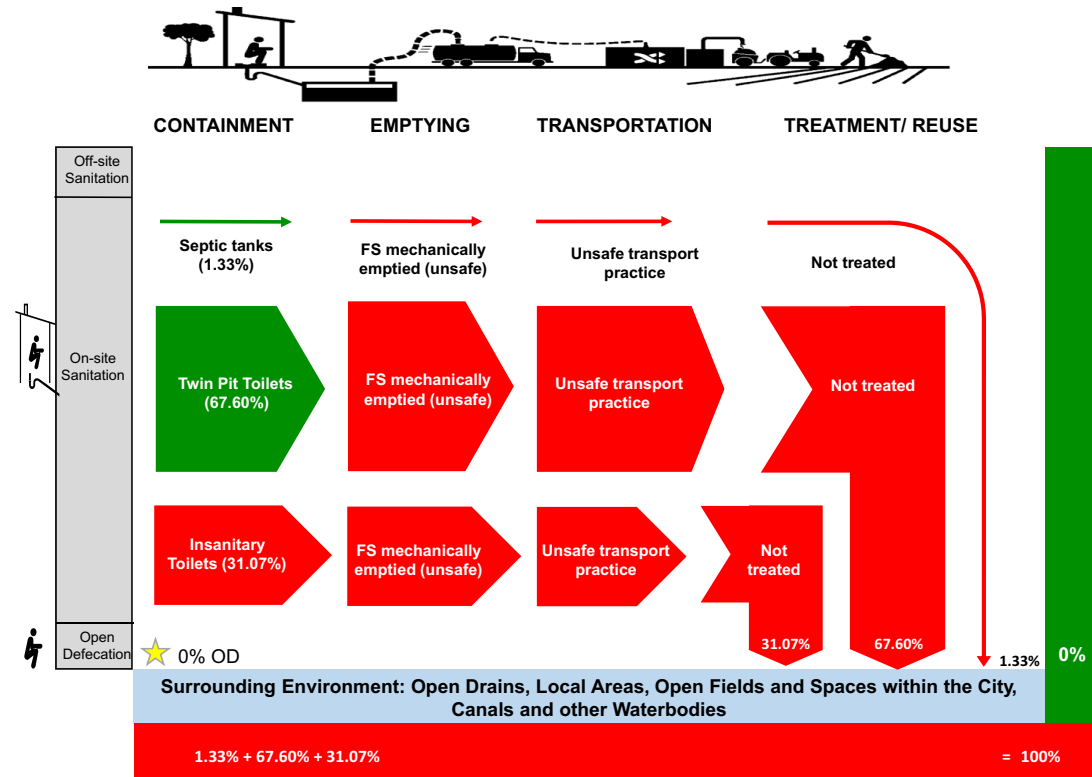
Population in 2017:	69,512
Area (Sq Km):	25.60
Total No. of Wards	30
No. of Households (2017):	15,447
No. of Households connected to Sewerage System:	0
No of Households with Septic Tanks:	13,426
No. of Households with Twin Pit Toilets:	1,731
No. of Households with Insanitary Toilets:	0
No. of Households dependent on Community Toilets:	290



Shit Flow Diagram of Chilakaluripet

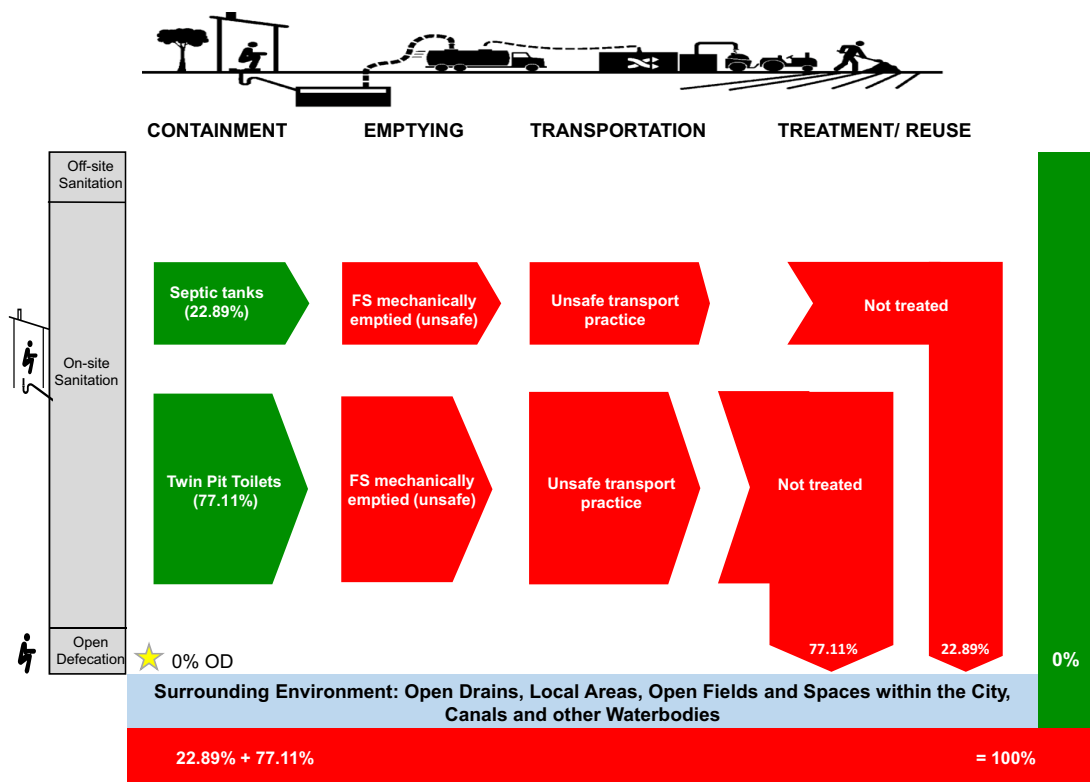
Population in 2017:	1,21,374
Area (Sq Km):	18.13
Total No. of Wards:	34
No. of Households (2017):	26,972
No. of Households connected to Sewerage System:	0
No of Households with Septic Tanks:	22,780
No. of Households with Twin Pit Toilets:	4,192
No. of Households with Insanitary Toilets:	0
No. of Households dependent on Community Toilets:	0

Sanitation Situation in Chimakurthy



Shit Flow Diagram of Chimakurthy

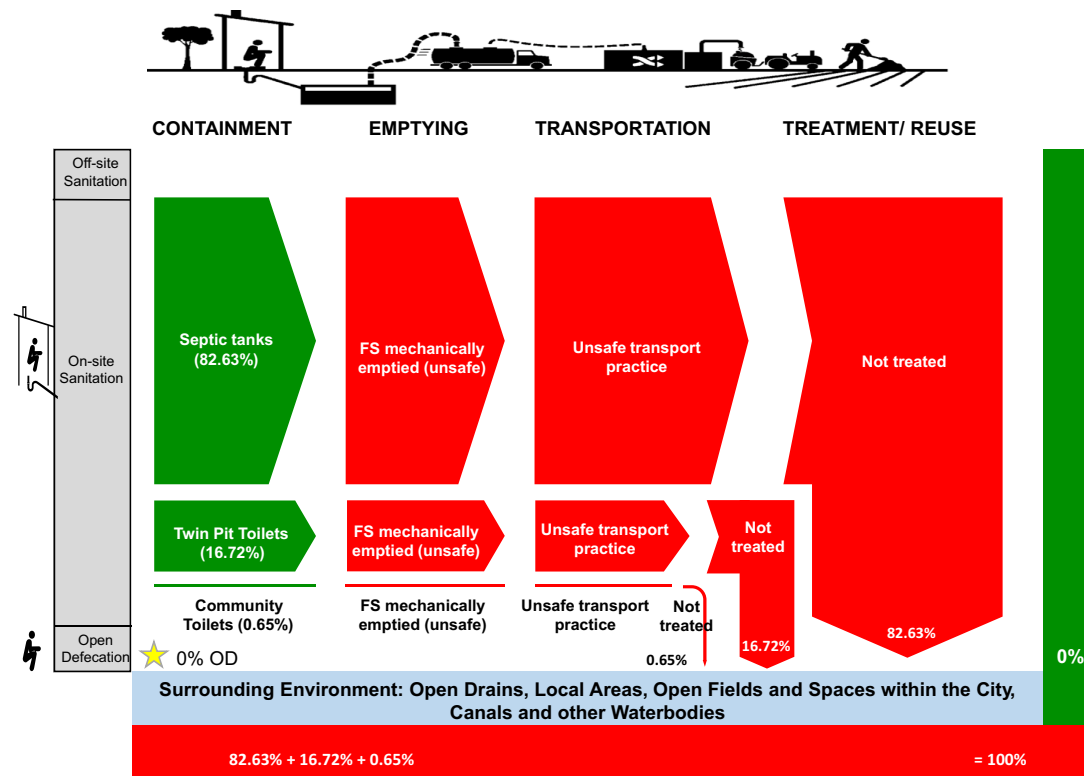
Population in 2017:	33,948
Area (Sq Km):	27.92
Total No. of Wards	20
No. of Households (2017):	7,544
No. of Households connected to Sewerage System:	0
No of Households with Septic Tanks:	100
No. of Households with Twin Pit Toilets:	5,100
No. of Households with Insanitary Toilets:	2,344
No. of Households dependent on Community Toilets:	0



Shit Flow Diagram of Chirala

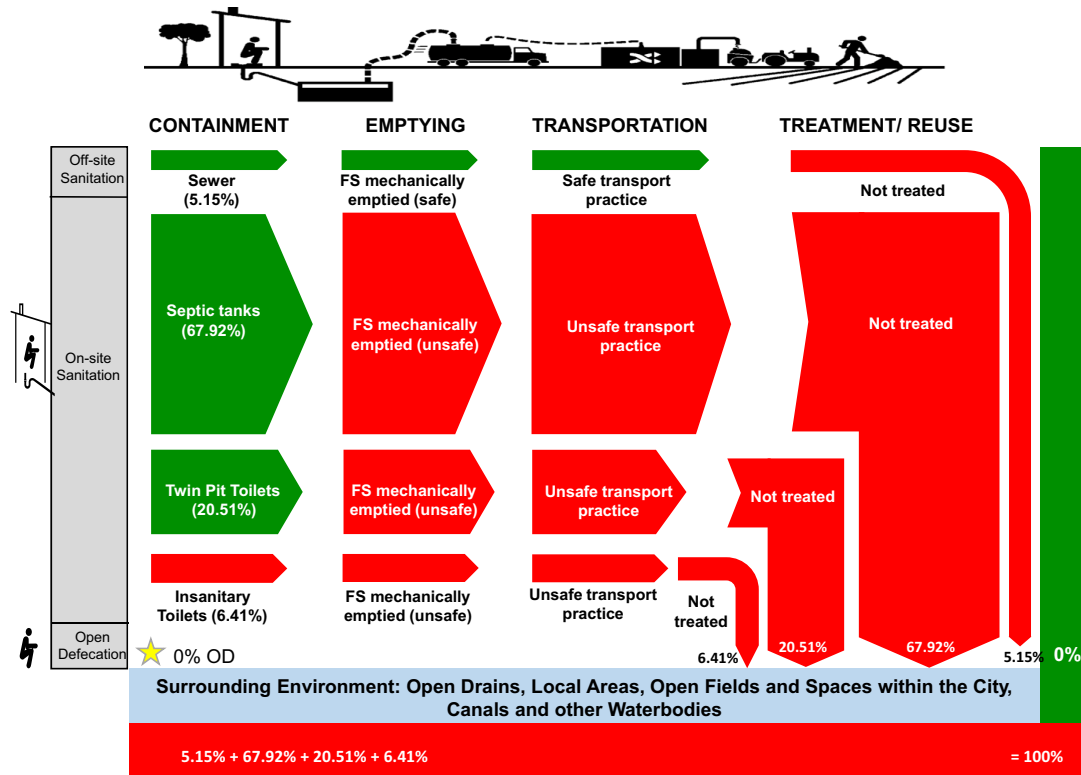
Population in 2017:	1,06,430
Area (Sq Km):	13.57
Total No. of Wards	33
No. of Households (2017):	23,651
No. of Households connected to Sewerage System:	0
No of Households with Septic Tanks:	5,413
No. of Households with Twin Pit Toilets:	18,238
No. of Households with Insanitary Toilets:	0
No. of Households dependent on Community Toilets:	0

Sanitation Situation in Chittoor



Shit Flow Diagram of Chittoor

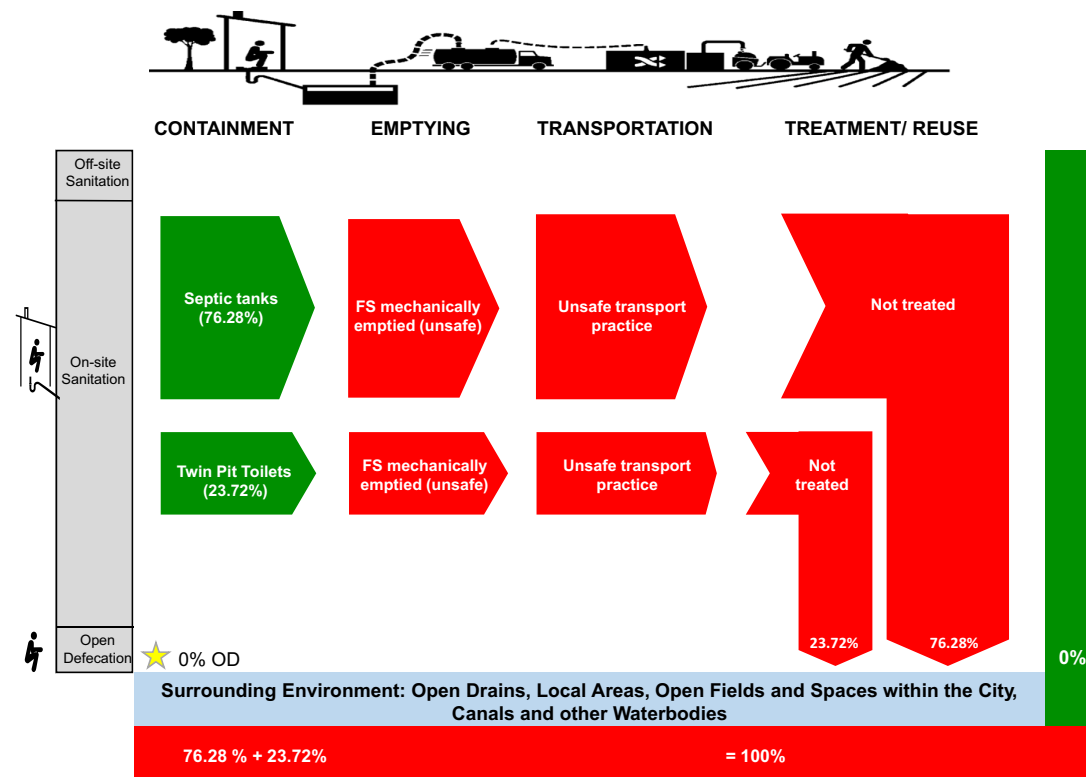
Population in 2017:	2,18,462
Area (Sq Km):	97.57
Total No. of Wards	50
No. of Households (2017):	48,547
No. of Households connected to Sewerage System:	0
No of Households with Septic Tanks:	40,114
No. of Households with Twin Pit Toilets:	8,116
No. of Households with Insanitary Toilets:	0
No. of Households dependent on Community Toilets:	317



Shit Flow Diagram of Dharmavaram

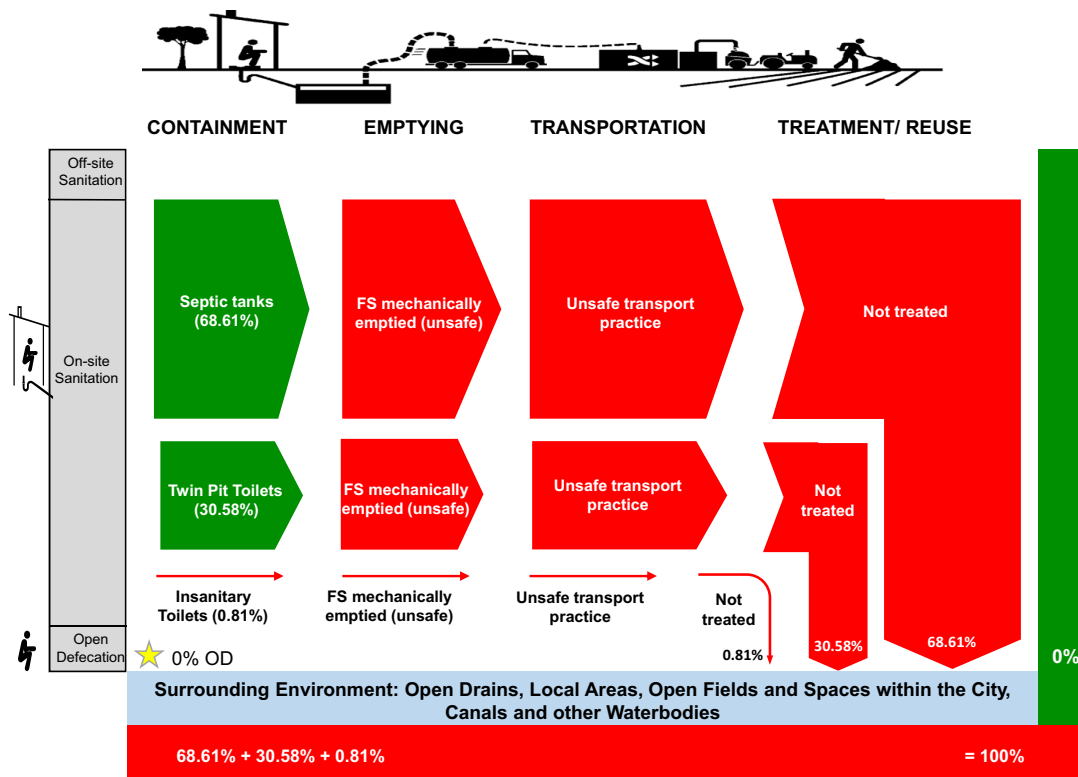
Population in 2017:	1,49,261
Area (Sq Km):	41.25
Total No. of Wards	40
No. of Households (2017):	33,169
No. of Households connected to Sewerage System:	1,709
No of Households with Septic Tanks:	22,530
No. of Households with Twin Pit Toilets:	6,803
No. of Households with Insanitary Toilets:	2,127
No. of Households dependent on Community Toilets:	0

Sanitation Situation in Dhone



Shit Flow Diagram of Dhone

Population in 2017:	60,750
Area (Sq Km):	9.85
Total No. of Wards	20
No. of Households (2017):	13,500
No. of Households connected to Sewerage System:	0
No of Households with Septic Tanks:	10,298
No. of Households with Twin Pit Toilets:	3,202
No. of Households with Insanitary Toilets:	0
No. of Households dependent on Community Toilets:	0

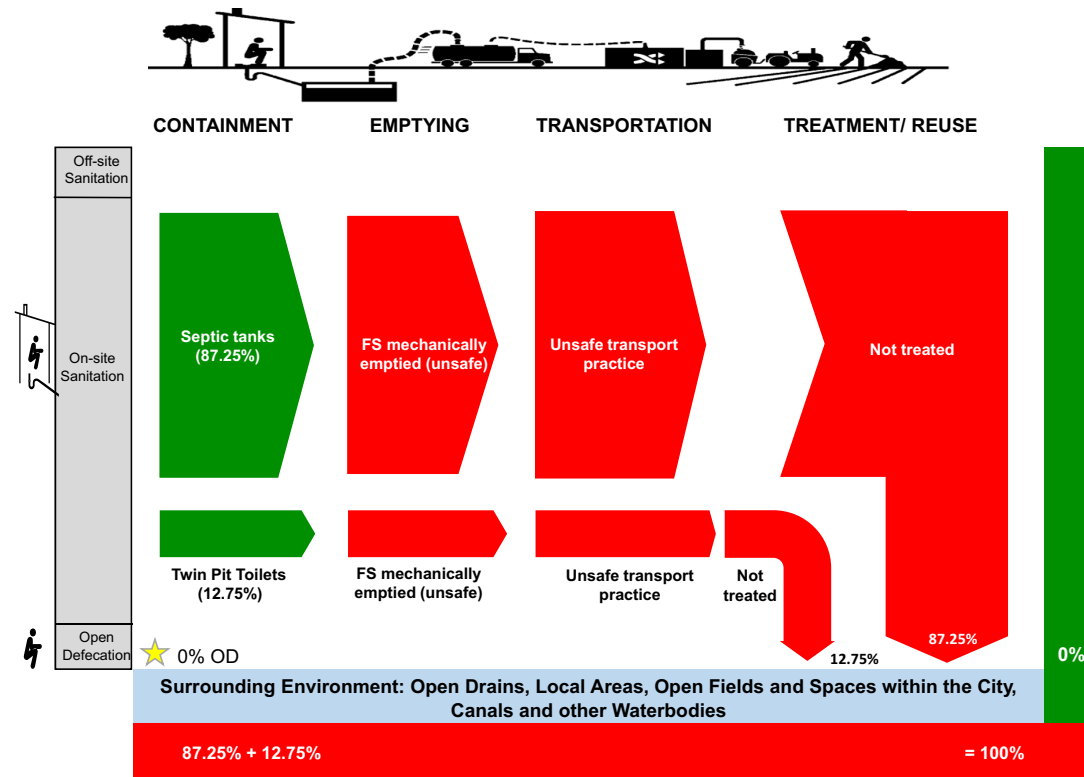


Shit Flow Diagram of Eluru

Population in 2017:	2,47,563
Area (Sq Km):	11.52
Total No. of Wards	50
No. of Households (2017):	55,014
No. of Households connected to Sewerage System:	0
No of Households with Septic Tanks:	37,747
No. of Households with Twin Pit Toilets:	16,822
No. of Households with Insanitary Toilets:	445
No. of Households dependent on Community Toilets:	0

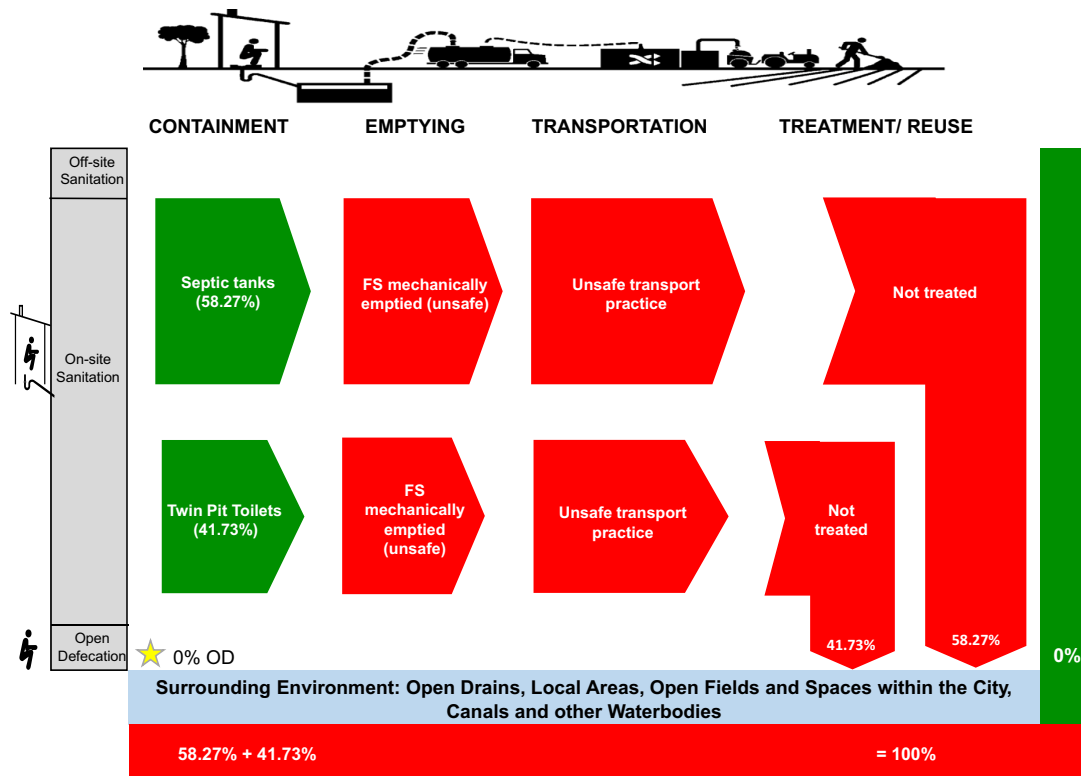
Sanitation Situation in Eluru

Sanitation Situation in Giddalur



Shit Flow Diagram of Giddalur

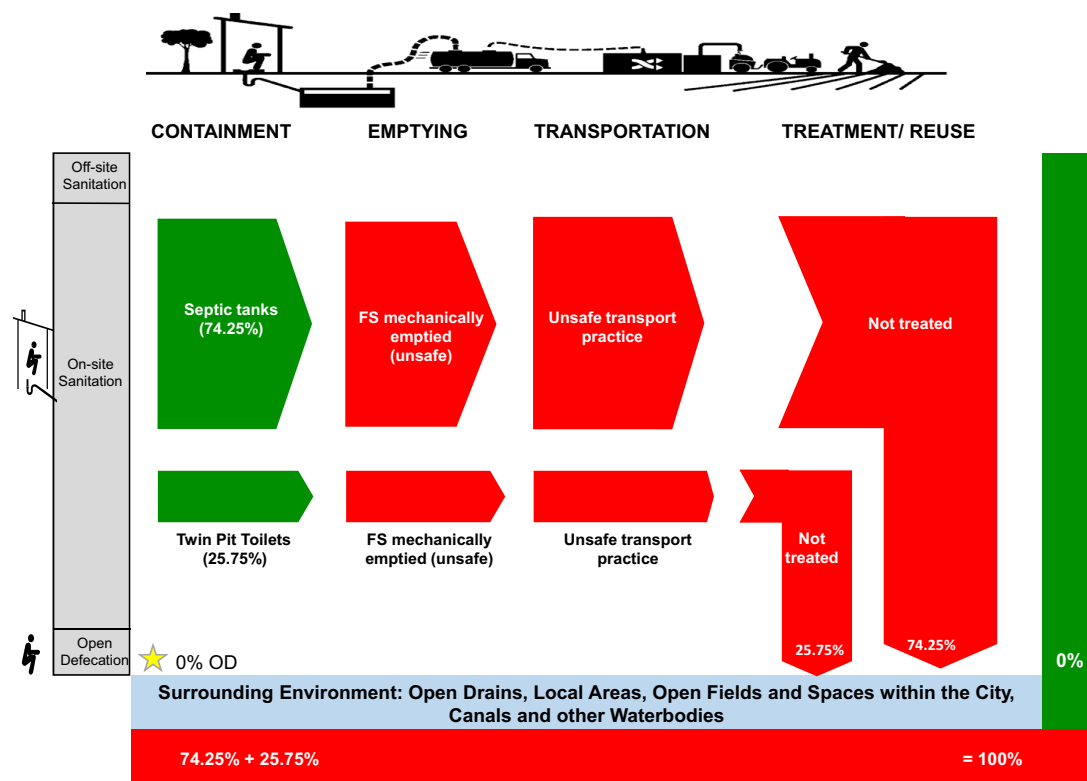
Population in 2017:	50,814
Area (Sq Km):	31.39
Total No. of Wards	20
No. of Households (2017):	11,292
No. of Households connected to Sewerage System:	0
No. of Households with Septic Tanks:	9,852
No. of Households with Twin Pit Toilets:	1,440
No. of Households with Insanitary Toilets:	0
No. of Households dependent on Community Toilets:	0



Shit Flow Diagram of Gollaprolu

Population in 2017:	30,528
Area (Sq Km):	6.40
Total No. of Wards	20
No. of Households (2017):	6,784
No. of Households connected to Sewerage System:	0
No of Households with Septic Tanks:	3,953
No. of Households with Twin Pit Toilets:	2,831
No. of Households with Insanitary Toilets:	0
No. of Households dependent on Community Toilets:	0

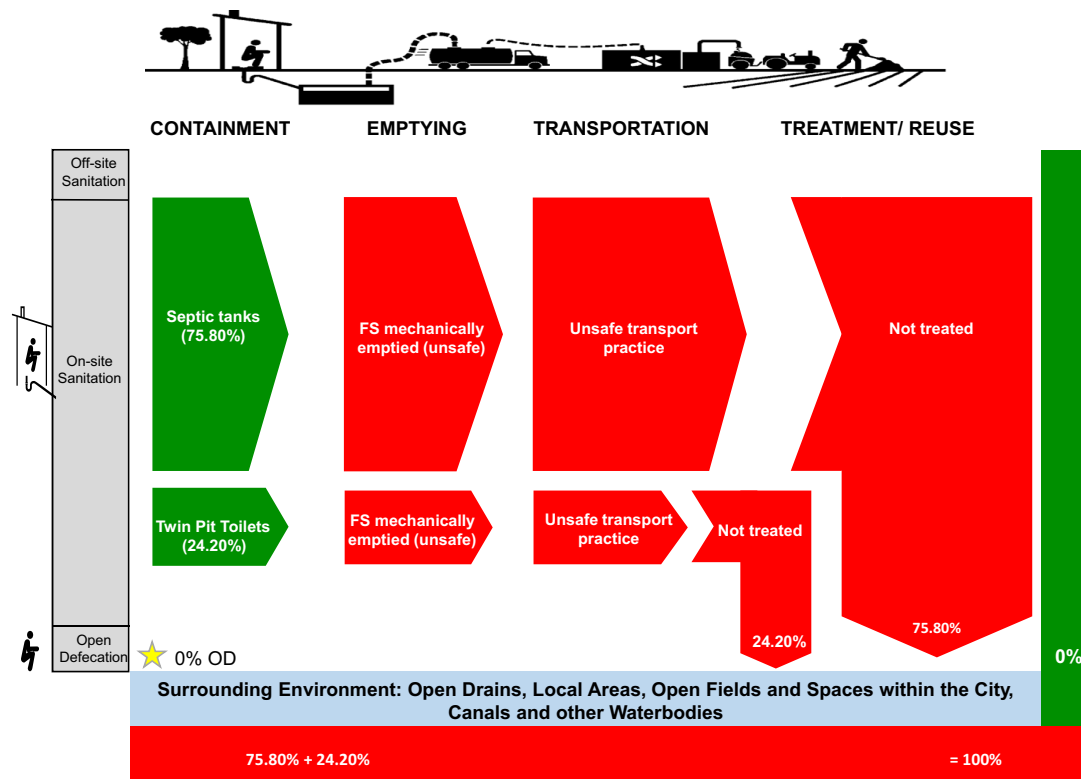
Sanitation Situation in Gooty



Shit Flow Diagram of Gooty

Population in 2017:	63,675
Area (Sq Km):	35.07
Total No. of Wards	24
No. of Households (2017):	14,150
No. of Households connected to Sewerage System:	0
No of Households with Septic Tanks:	10,507
No. of Households with Twin Pit Toilets:	3,643
No. of Households with Insanitary Toilets:	0
No. of Households dependent on Community Toilets:	0

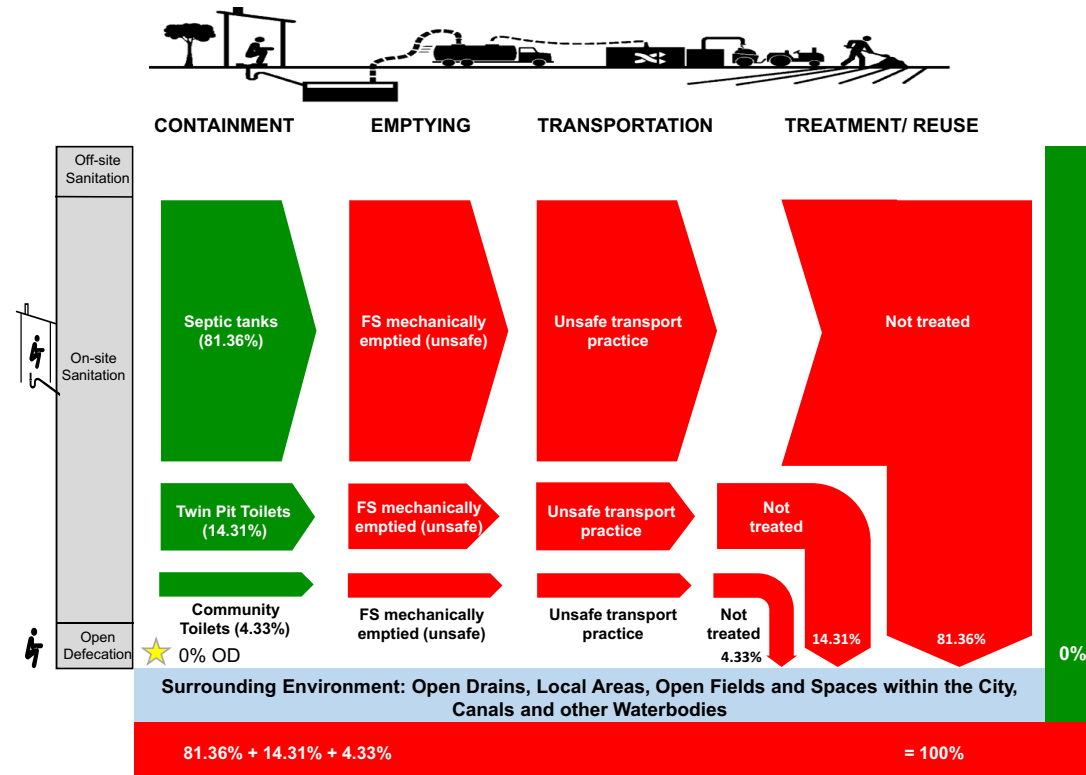
Sanitation Situation in Gudivada



Shit Flow Diagram of Gudivada

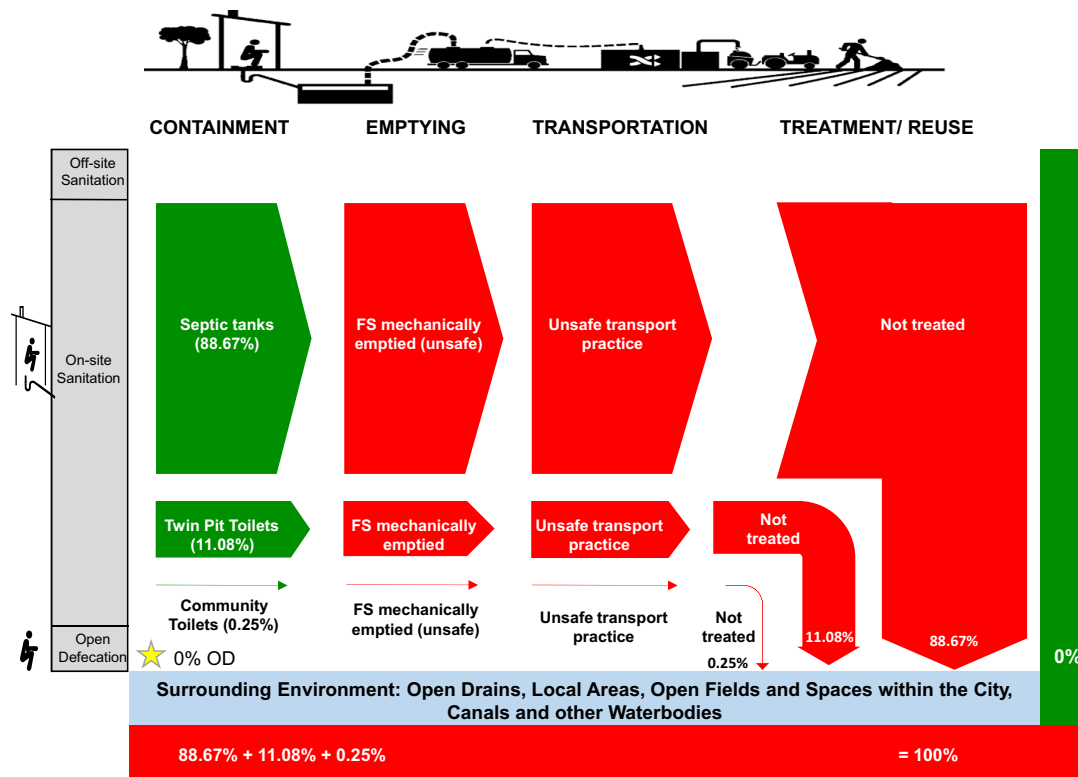
Population in 2017:	1,38,636
Area (Sq Km):	12.67
Total No. of Wards	36
No. of Households (2017):	30,808
No. of Households connected to Sewerage System:	0
No of Households with Septic Tanks:	23,351
No. of Households with Twin Pit Toilets:	7,457
No. of Households with Insanitary Toilets:	0
No. of Households dependent on Community Toilets:	0

Sanitation Situation in Gudur (K)



Shit Flow Diagram of Gudur (K)

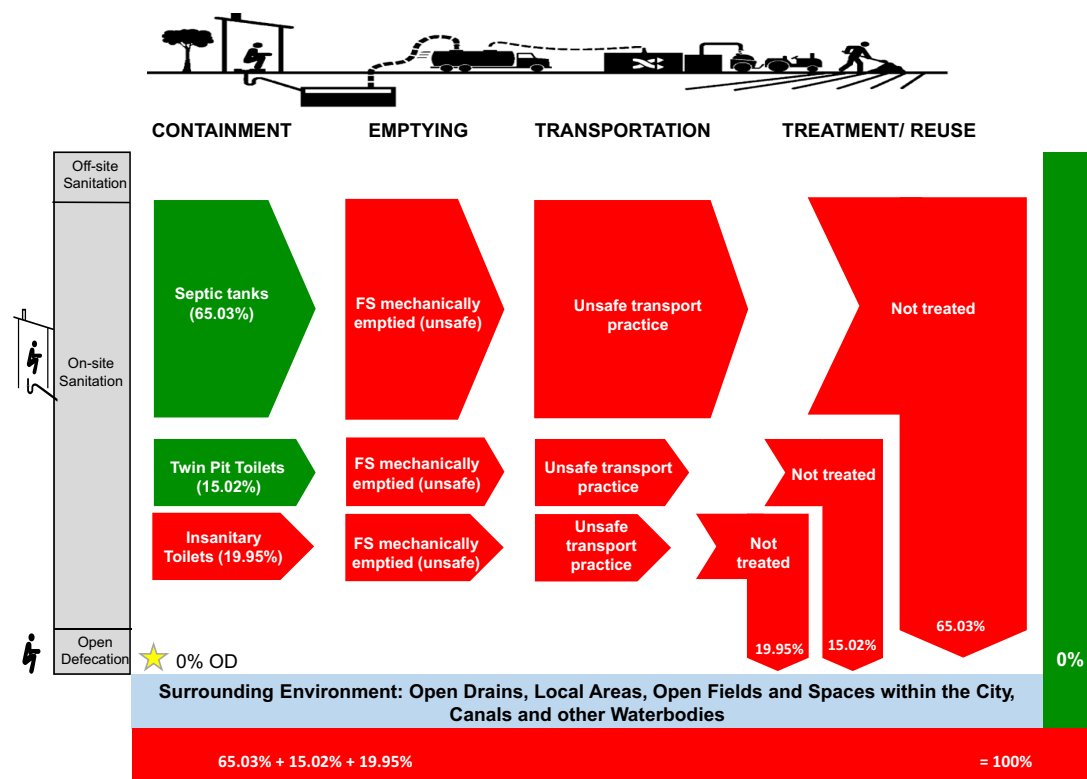
Population in 2017:	20,979
Area (Sq Km):	47.69
Total No. of Wards	20
No. of Households (2017):	4,662
No. of Households connected to Sewerage System:	0
No of Households with Septic Tanks:	3,793
No. of Households with Twin Pit Toilets:	667
No. of Households with Insanitary Toilets:	0
No. of Households dependent on Community Toilets:	202



Shit Flow Diagram of Gudur (N)

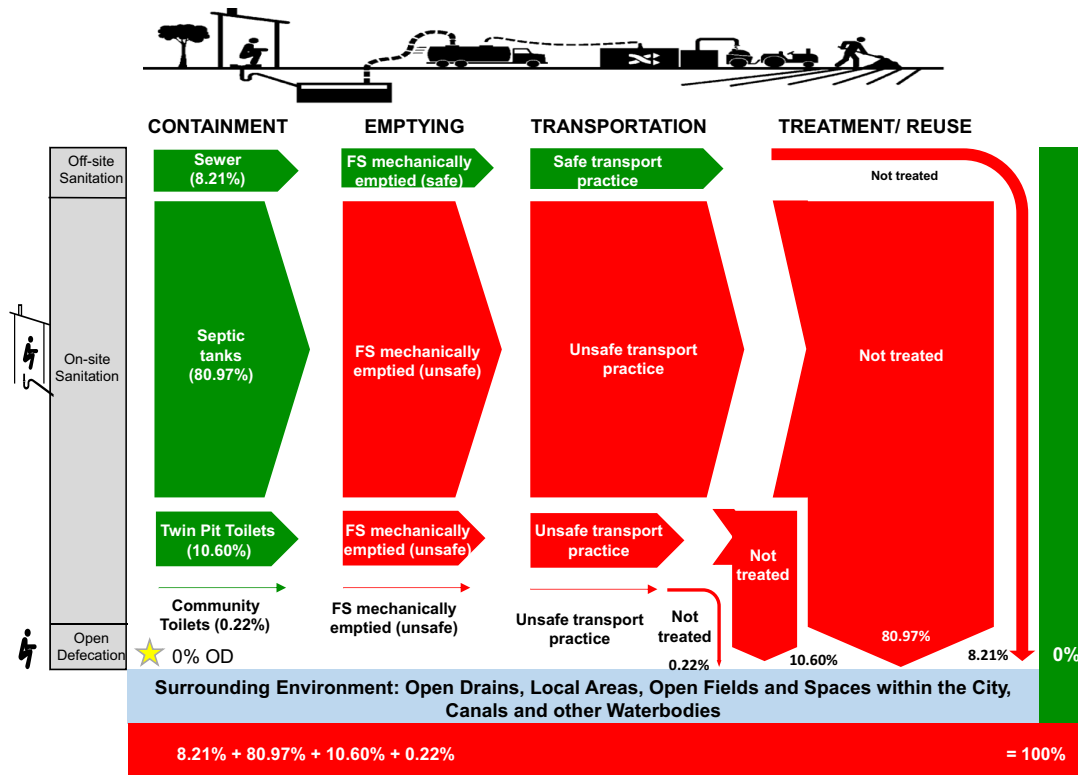
Population in 2017:	71,465
Area (Sq Km):	9.14
Total No. of Wards	33
No. of Households (2017):	15,881
No. of Households connected to Sewerage System:	0
No of Households with Septic Tanks:	14,081
No. of Households with Twin Pit Toilets:	1,760
No. of Households with Insanitary Toilets:	0
No. of Households dependent on Community Toilets:	40

Sanitation Situation in Guntakal



Shit Flow Diagram of Guntakal

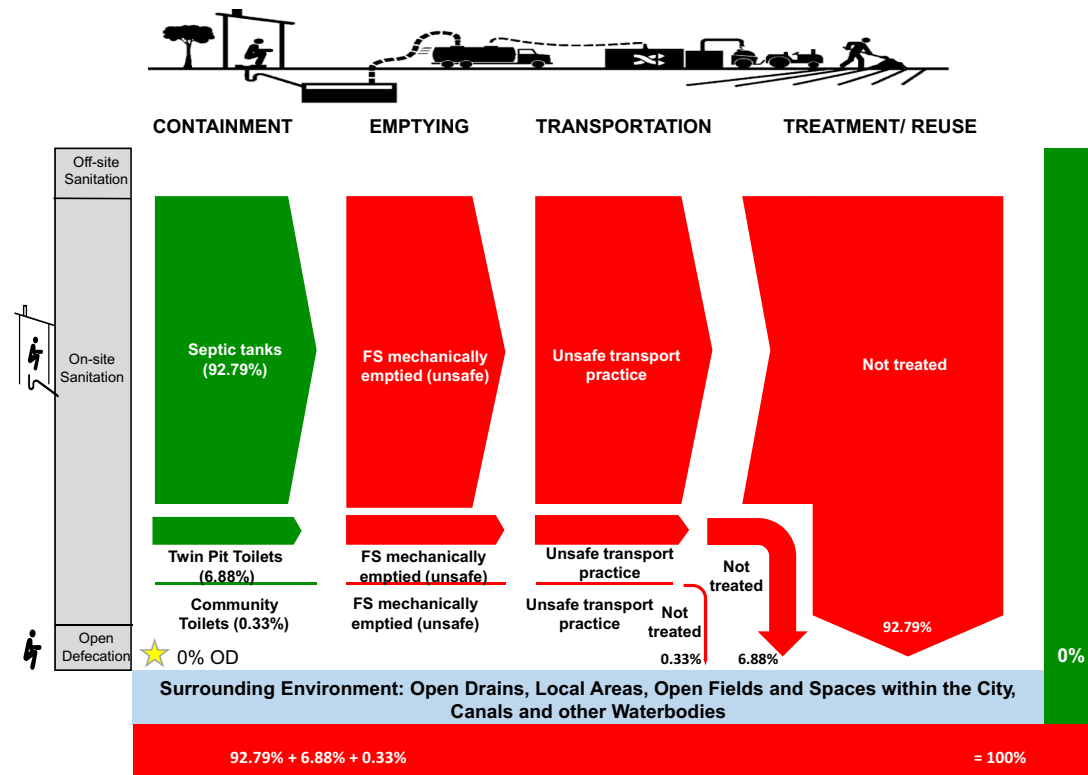
Population in 2017:	1,29,515
Area (Sq Km):	40.80
Total No. of Wards:	37
No. of Households (2017):	28,781
No. of Households connected to Sewerage System:	0
No of Households with Septic Tanks:	18,716
No. of Households with Twin Pit Toilets:	4,324
No. of Households with Insanitary Toilets:	5,741
No. of Households dependent on Community Toilets:	0



Shit Flow Diagram of Guntur

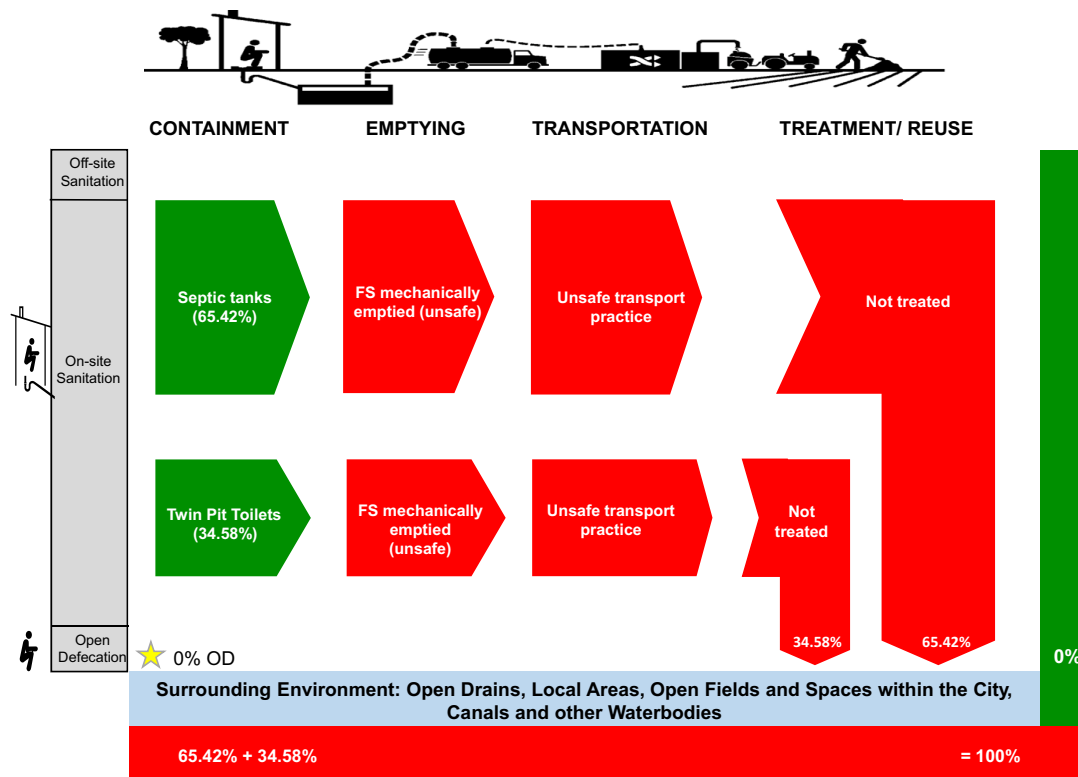
Population in 2017:	9,69,813
Area (Sq Km):	159.60
Total No. of Wards	57
No. of Households (2017):	197,829
No. of Households connected to Sewerage System:	17,685
No of Households with Septic Tanks:	174,505
No. of Households with Twin Pit Toilets:	22,848
No. of Households with Insanitary Toilets:	0
No. of Households dependent on Community Toilets:	476

Sanitation Situation in Hindupur



Shit Flow Diagram of Hindupur

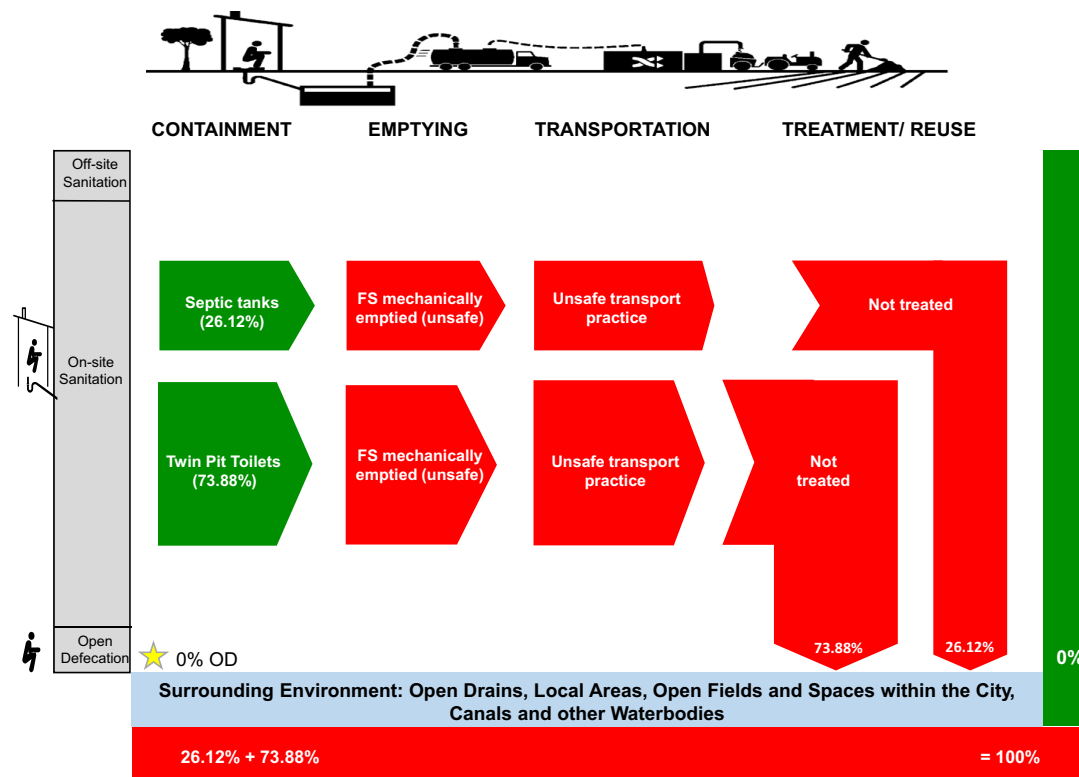
Population in 2017:	1,88,591
Area (Sq Km):	38.16
Total No. of Wards	38
No. of Households (2017):	41,909
No. of Households connected to Sewerage System:	0
No of Households with Septic Tanks:	38,887
No. of Households with Twin Pit Toilets:	2,883
No. of Households with Insanitary Toilets:	0
No. of Households dependent on Community Toilets:	139



Shit Flow Diagram of Ichapuram

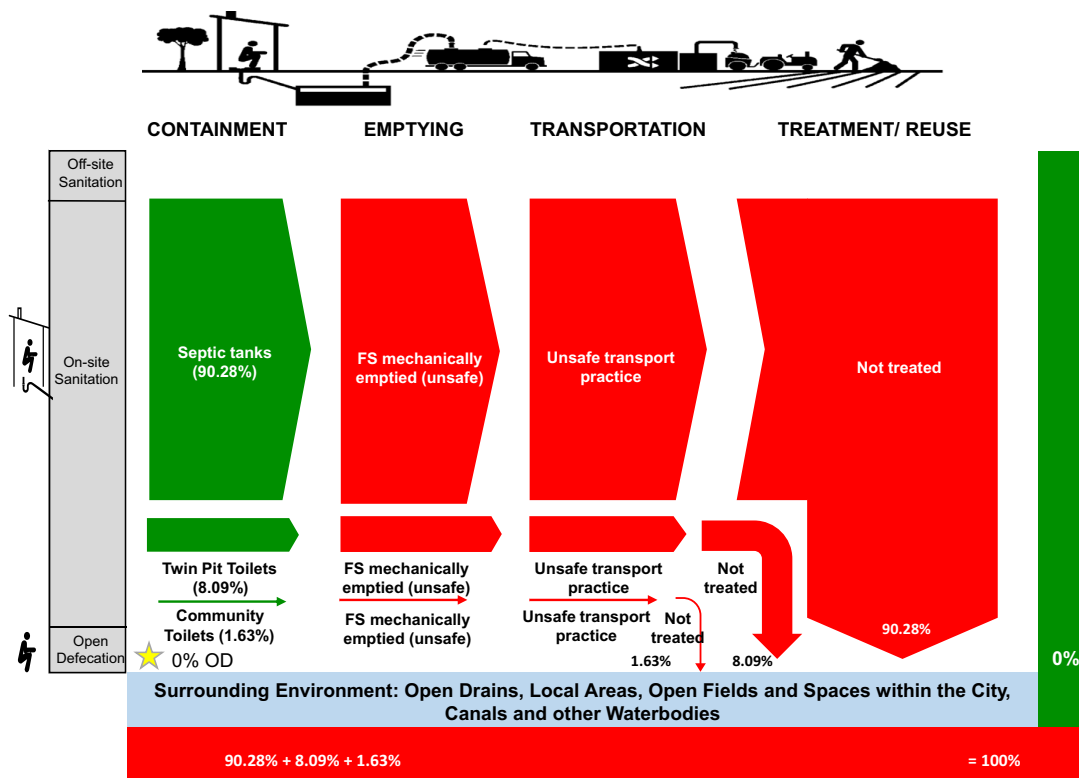
Population in 2017:	39,434
Area (Sq Km):	25.25
Total No. of Wards	23
No. of Households (2017):	8,763
No. of Households connected to Sewerage System:	0
No of Households with Septic Tanks:	5,733
No. of Households with Twin Pit Toilets:	3,030
No. of Households with Insanitary Toilets:	0
No. of Households dependent on Community Toilets:	0

Sanitation Situation in Jaggiahpeta



Shit Flow Diagram of Jaggiahpeta

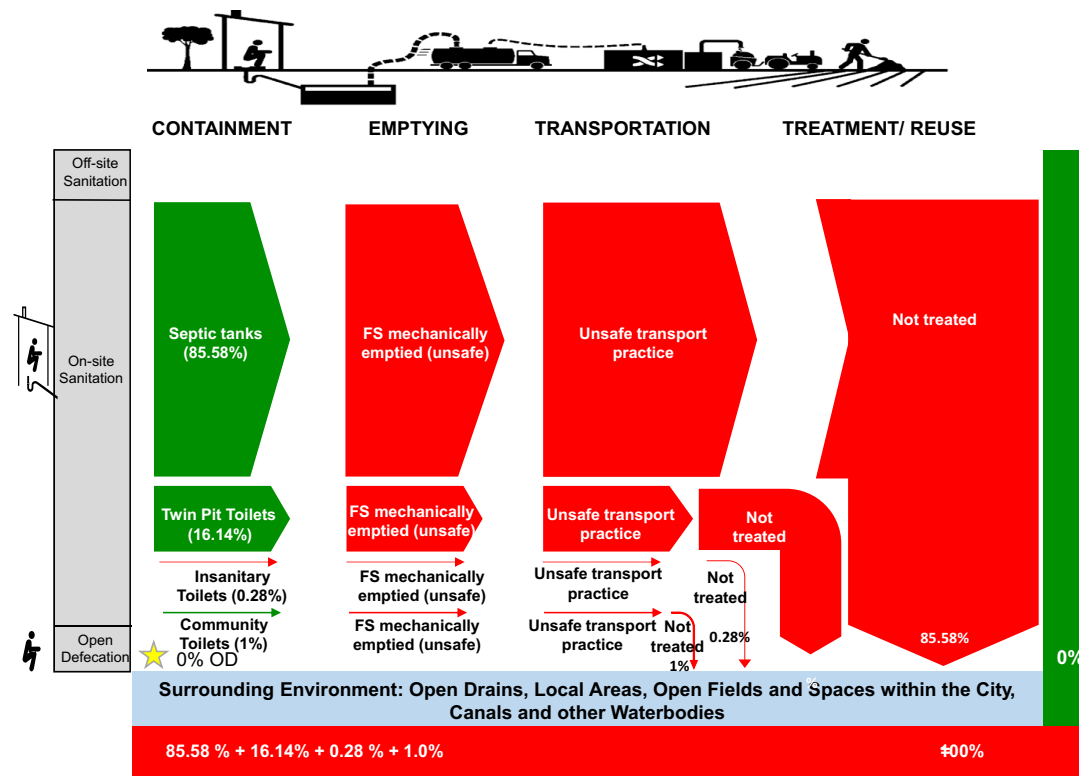
Population in 2017:	61,592
Area (Sq Km):	23.05
Total No. of Wards	27
No. of Households (2017):	13,687
No. of Households connected to Sewerage System:	0
No of Households with Septic Tanks:	3,575
No. of Households with Twin Pit Toilets:	10,112
No. of Households with Insanitary Toilets:	0
No. of Households dependent on Community Toilets:	0



Shit Flow Diagram of Jammalamadugu

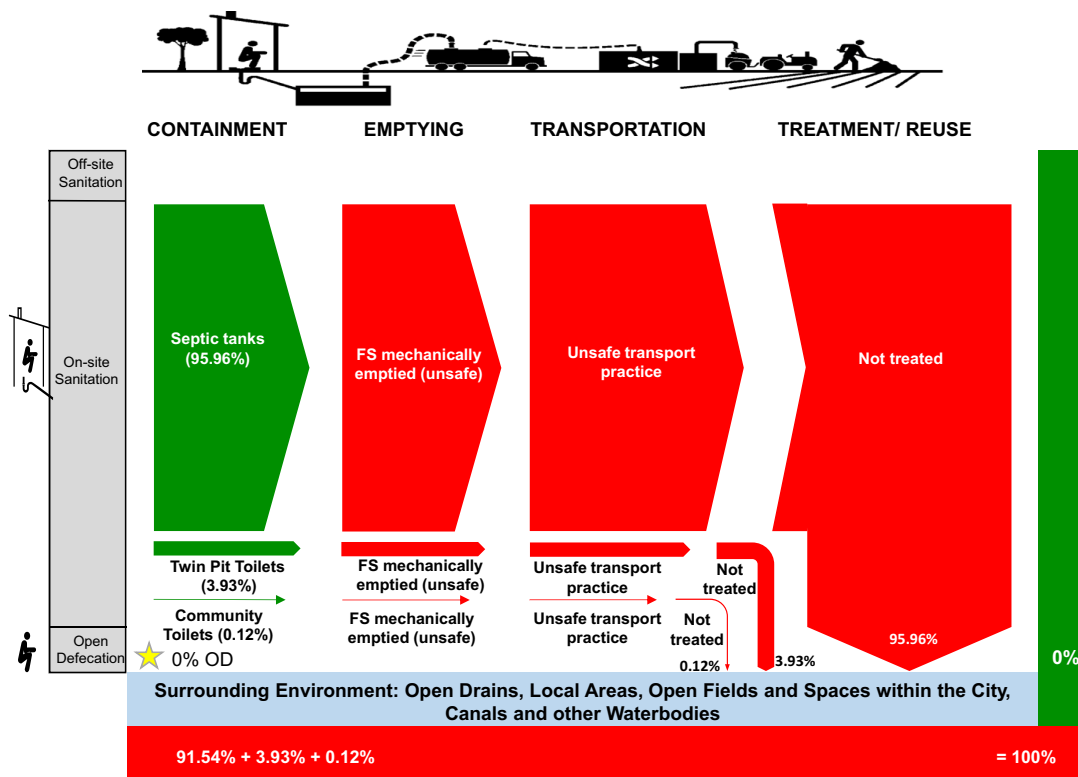
Population in 2017:	56,322
Area (Sq Km):	4.64
Total No. of Wards	20
No. of Households (2017):	12,516
No. of Households connected to Sewerage System:	0
No of Households with Septic Tanks:	11,300
No. of Households with Twin Pit Toilets:	1,012
No. of Households with Insanitary Toilets:	0
No. of Households dependent on Community Toilets:	204

Sanitation Situation in Jangareddygudem



Shit Flow Diagram of Jangareddygudem

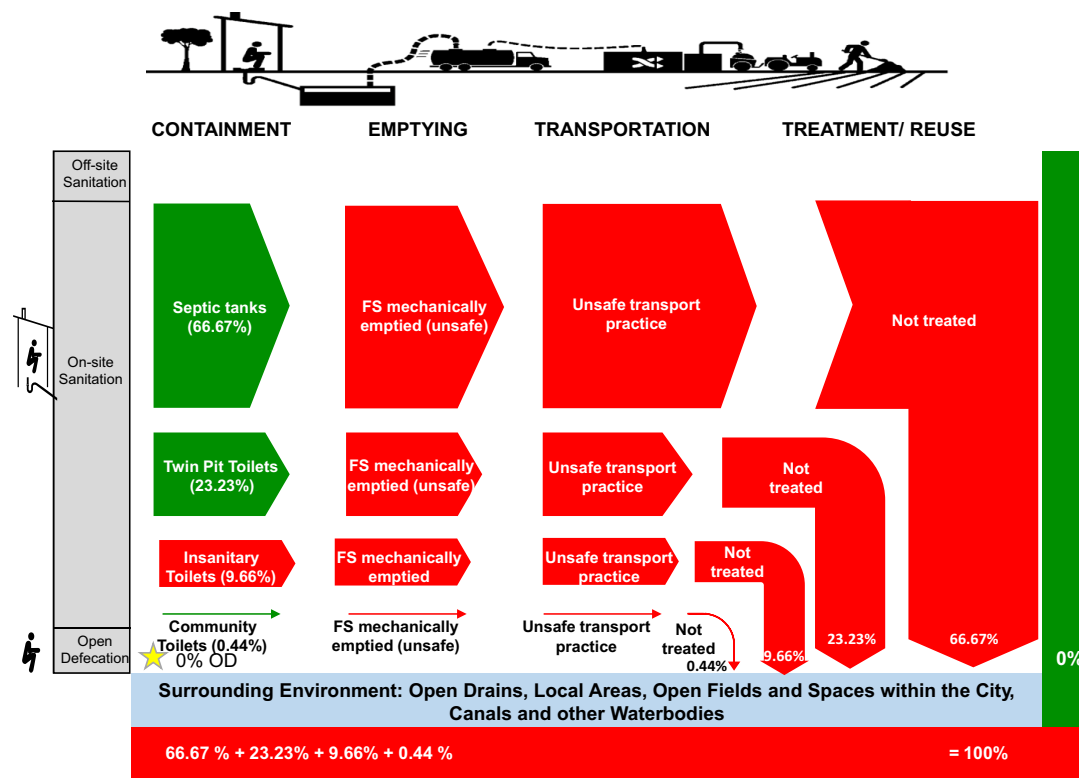
Population in 2017:	55,094
Area (Sq Km):	24.42
Total No. of Wards	20
No. of Households (2017):	12,243
No. of Households connected to Sewerage System:	0
No of Households with Septic Tanks:	10,110
No. of Households with Twin Pit Toilets:	1,976
No. of Households with Insanitary Toilets:	34
No. of Households dependent on Community Toilets:	123



Shit Flow Diagram of Kadapa

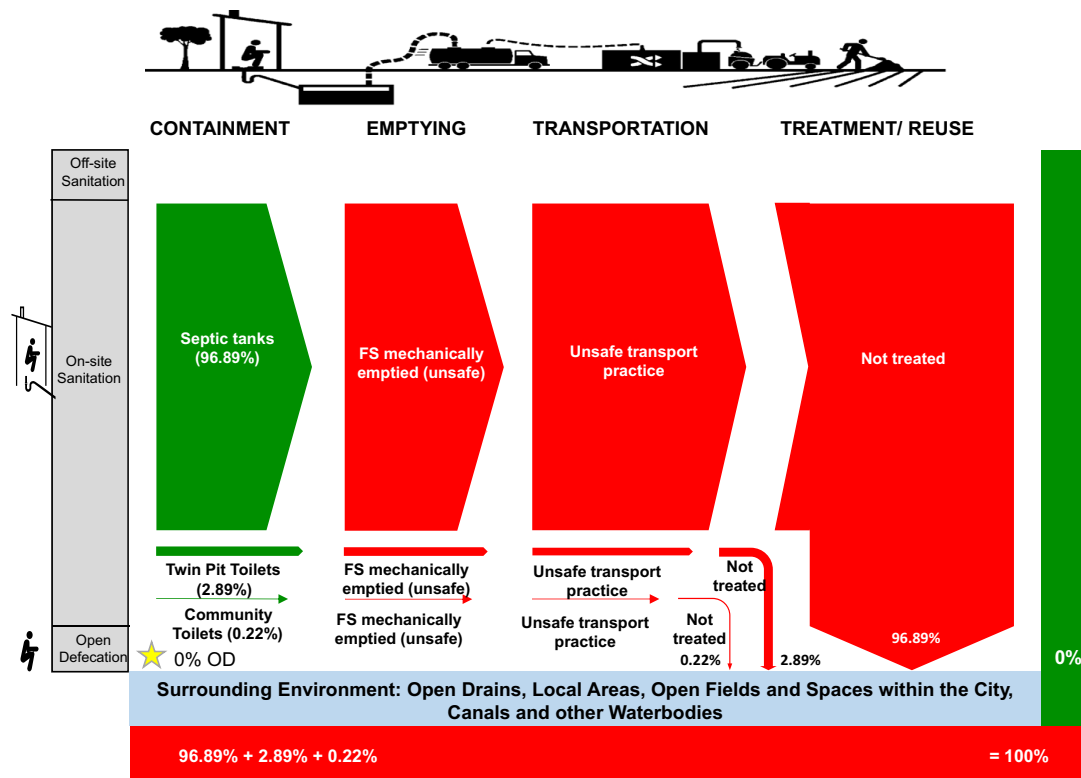
Population in 2017:	3,95,150
Area (Sq Km):	164.08
Total No. of Wards	50
No. of Households (2017):	87,811
No. of Households connected to Sewerage System:	0
No of Households with Septic Tanks:	84,260
No. of Households with Twin Pit Toilets:	3,448
No. of Households with Insanitary Toilets:	0
No. of Households dependent on Community Toilets:	103

Sanitation Situation in Kadiri



Shit Flow Diagram of Kadiri

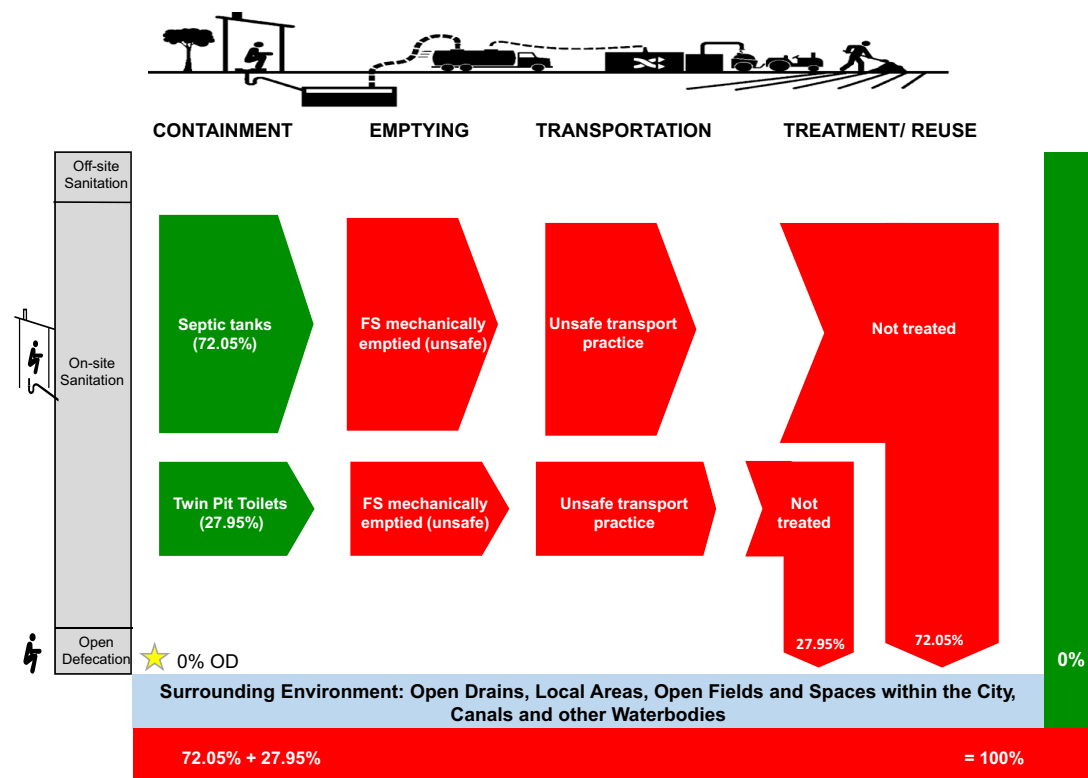
Population in 2017:	93,443
Area (Sq Km):	28.83
Total No. of Wards	36
No. of Households (2017):	20,765
No. of Households connected to Sewerage System:	0
No of Households with Septic Tanks:	13,844
No. of Households with Twin Pit Toilets:	4,823
No. of Households with Insanitary Toilets:	2,006
No. of Households dependent on Community Toilets:	92



Shit Flow Diagram of Kakinada

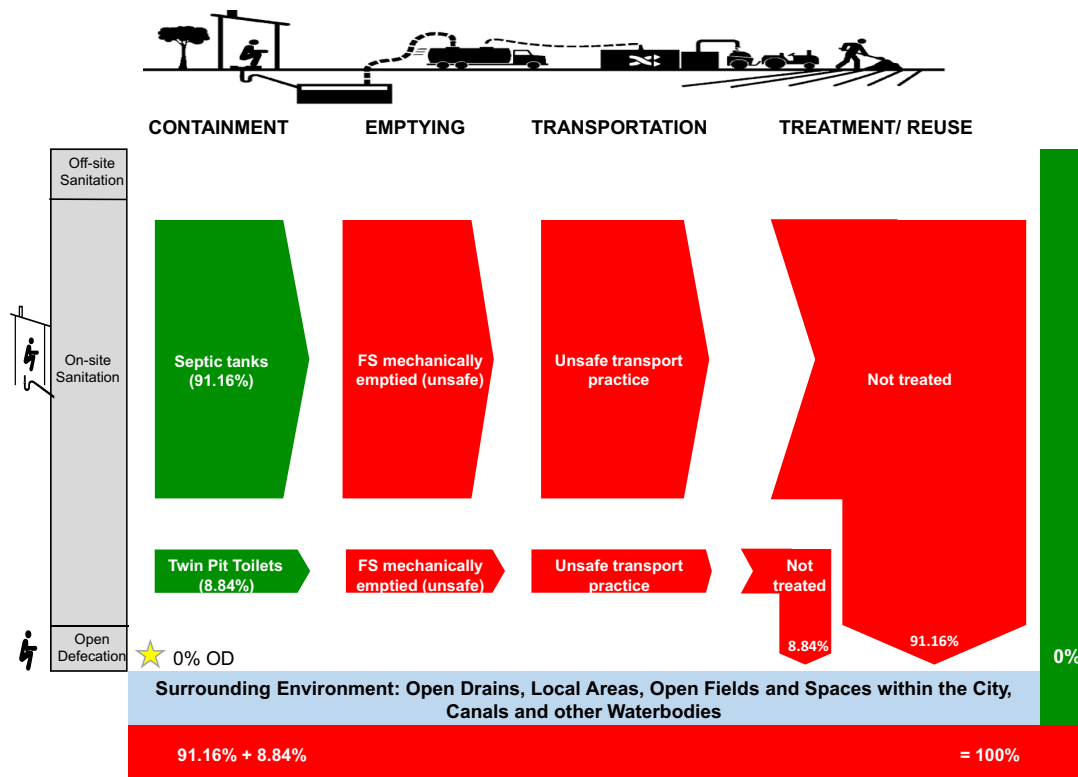
Population in 2017:	4,11,179
Area (Sq Km):	31.69
Total No. of Wards	50
No. of Households (2017):	91,373
No. of Households connected to Sewerage System:	0
No of Households with Septic Tanks:	88,535
No. of Households with Twin Pit Toilets:	2,638
No. of Households with Insanitary Toilets:	0
No. of Households dependent on Community Toilets:	200

Sanitation Situation in Kalyandurg



Shit Flow Diagram of Kalyandurg

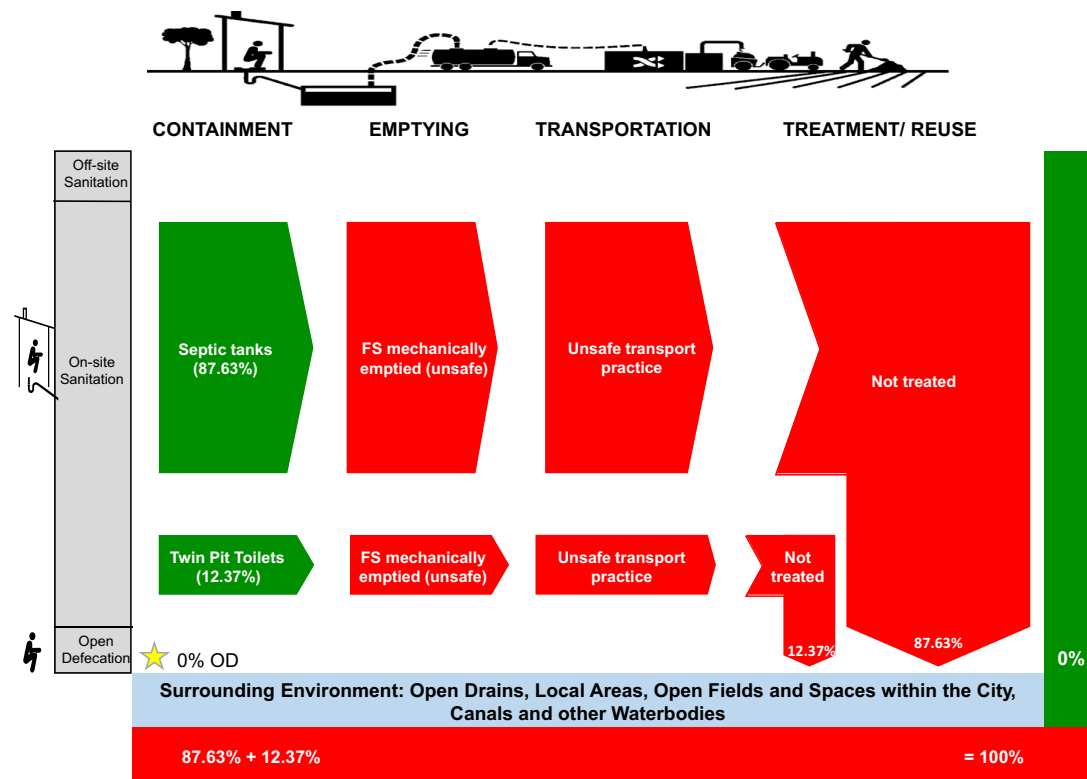
Population in 2017:	51,480
Area (Sq Km):	14.50
Total No. of Wards	23
No. of Households (2017):	11,440
No. of Households connected to Sewerage System:	0
No of Households with Septic Tanks:	8,242
No. of Households with Twin Pit Toilets:	3,198
No. of Households with Insanitary Toilets:	0
No. of Households dependent on Community Toilets:	0



Shit Flow Diagram of Kandukur

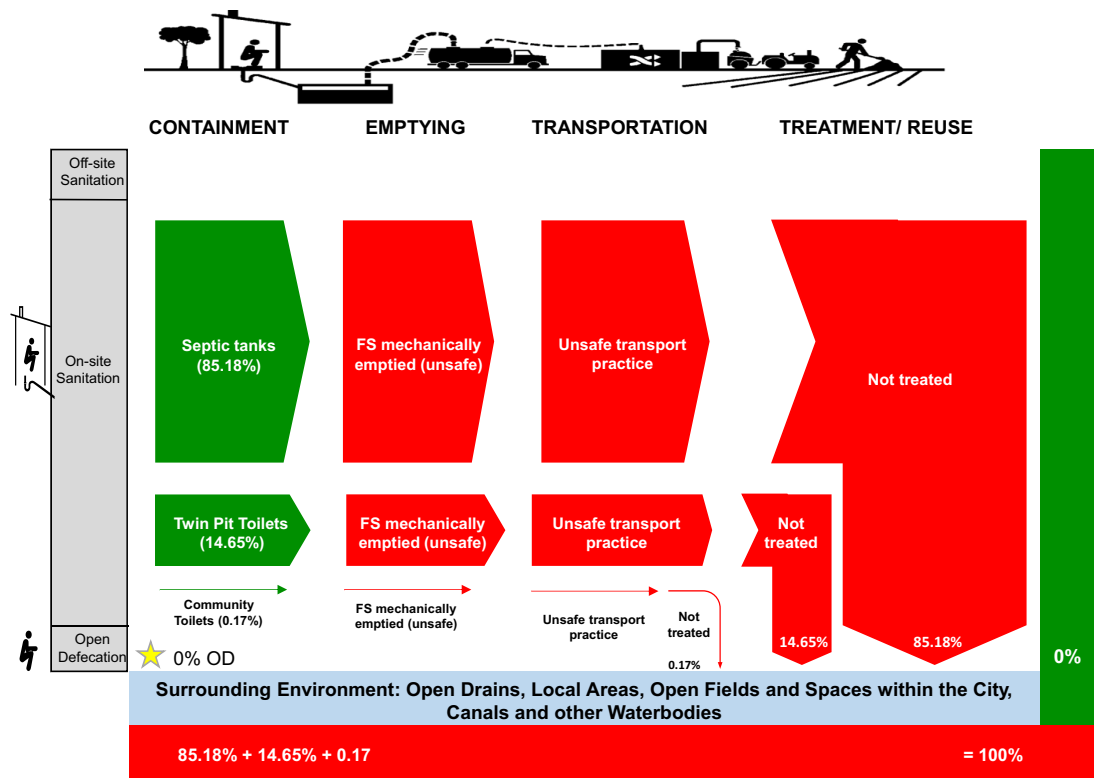
Population in 2017:	62,631
Area (Sq Km):	60.32
Total No. of Wards	30
No. of Households (2017):	13,918
No. of Households connected to Sewerage System:	0
No of Households with Septic Tanks:	12,687
No. of Households with Twin Pit Toilets:	1,231
No. of Households with Insanitary Toilets:	0
No. of Households dependent on Community Toilets:	0

Sanitation Situation in Kanigiri



Shit Flow Diagram of Kanigiri

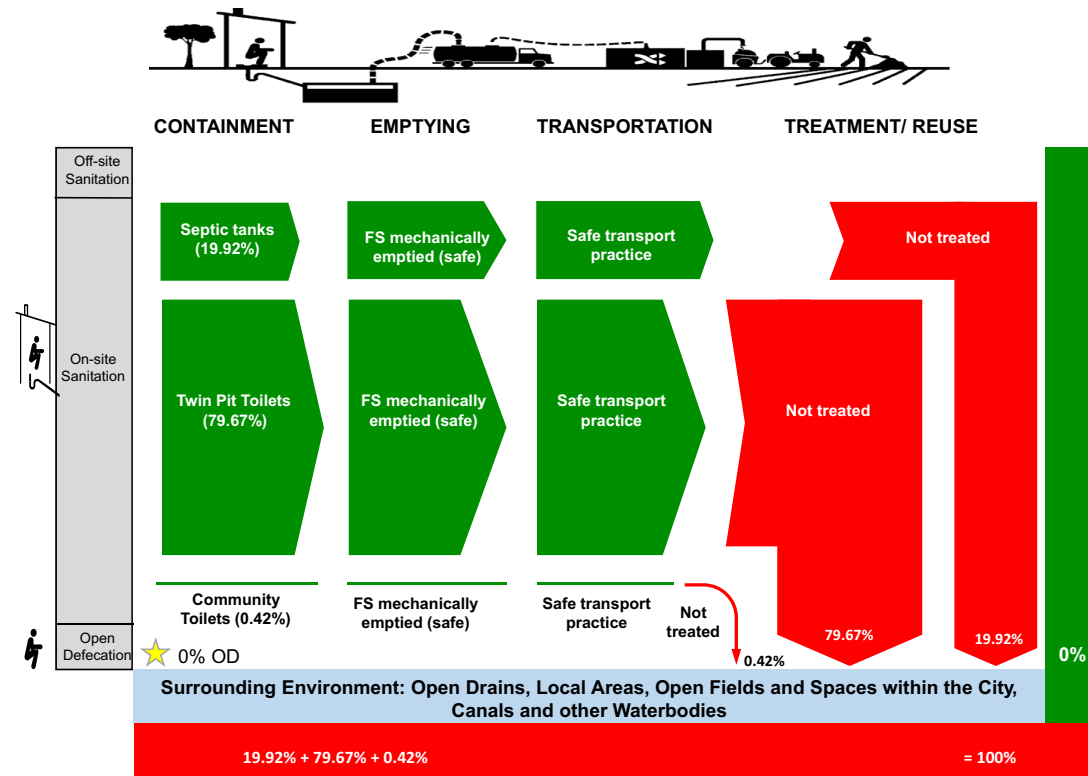
Population in 2017:	47,903
Area (Sq Km):	49.30
Total No. of Wards	20
No. of Households (2017):	10,645
No. of Households connected to Sewerage System:	0
No of Households with Septic Tanks:	9,328
No. of Households with Twin Pit Toilets:	1,317
No. of Households with Insanitary Toilets:	0
No. of Households dependent on Community Toilets:	0



Shit Flow Diagram of Kavali

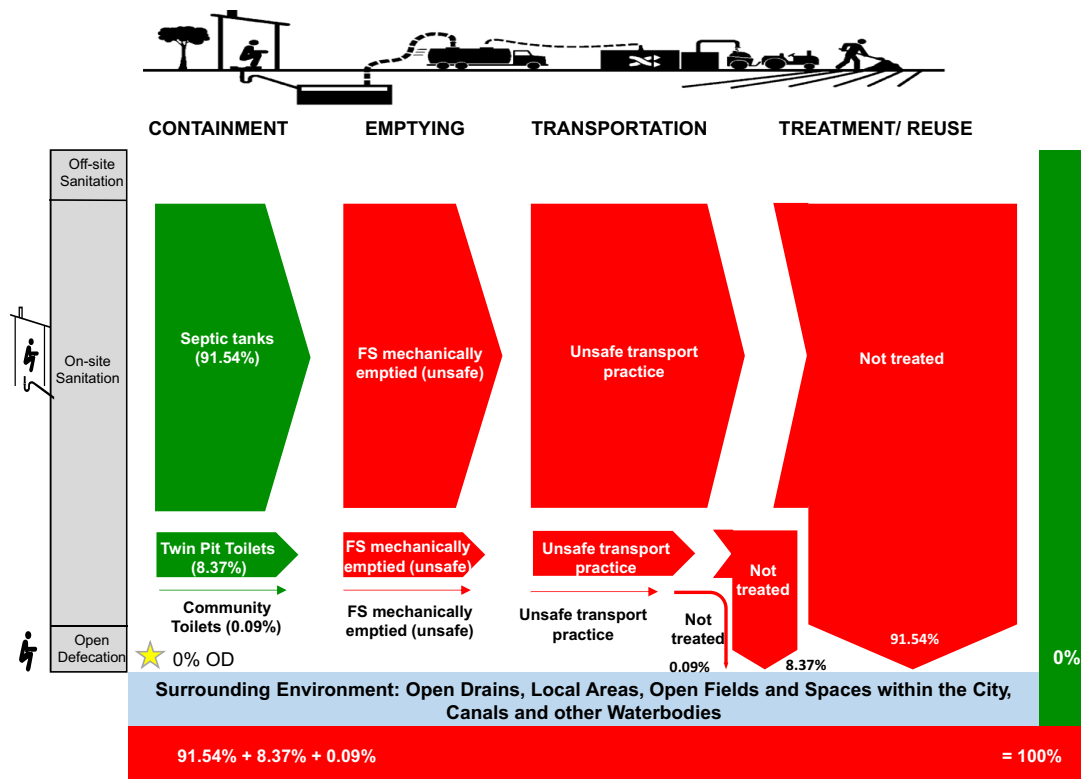
Population in 2017:	1,22,895
Area (Sq Km):	16.46
Total No. of Wards	40
No. of Households (2017):	27,310
No. of Households connected to Sewerage System:	0
No of Households with Septic Tanks:	23,263
No. of Households with Twin Pit Toilets:	4,000
No. of Households with Insanitary Toilets:	0
No. of Households dependent on Community Toilets:	47

Sanitation Situation in Kovvur



Shit Flow Diagram of Kovvur

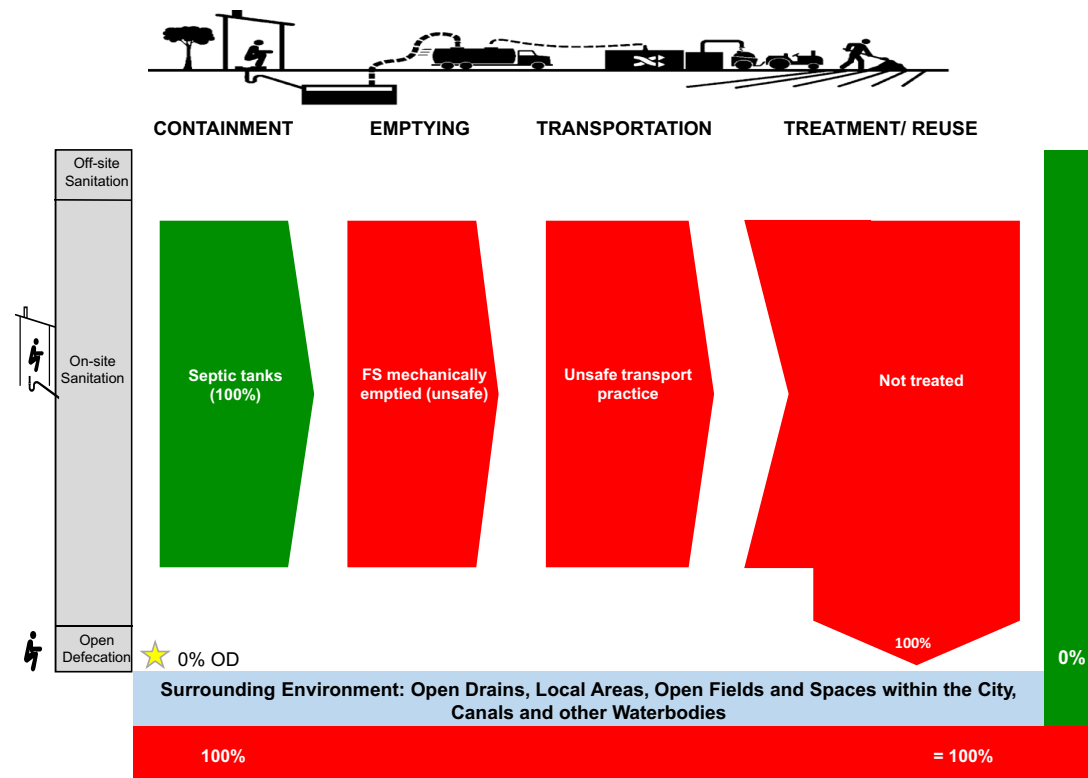
Population in 2017:	53,118
Area (Sq Km):	16.94
Total No. of Wards:	23
No. of Households (2017):	11,804
No. of Households connected to Sewerage System:	0
No of Households with Septic Tanks:	2,351
No. of Households with Twin Pit Toilets:	9,404
No. of Households with Insanitary Toilets:	0
No. of Households dependent on Community Toilets:	49



Shit Flow Diagram of Kurnool

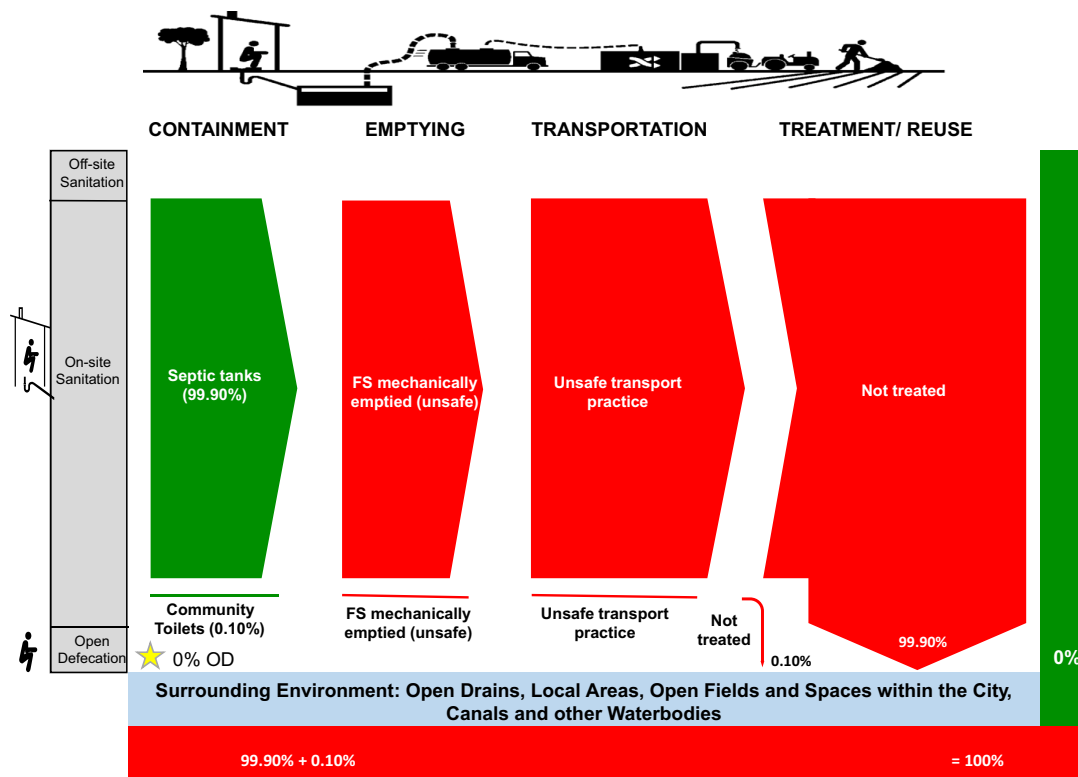
Population in 2017:	5,46,701
Area (Sq Km):	16.51
Total No. of Wards	51
No. of Households (2017):	121,489
No. of Households connected to Sewerage System:	0
No of Households with Septic Tanks:	111,208
No. of Households with Twin Pit Toilets:	10,173
No. of Households with Insanitary Toilets:	0
No. of Households dependent on Community Toilets:	108

Sanitation Situation in Macherla



Shit Flow Diagram of Macherla

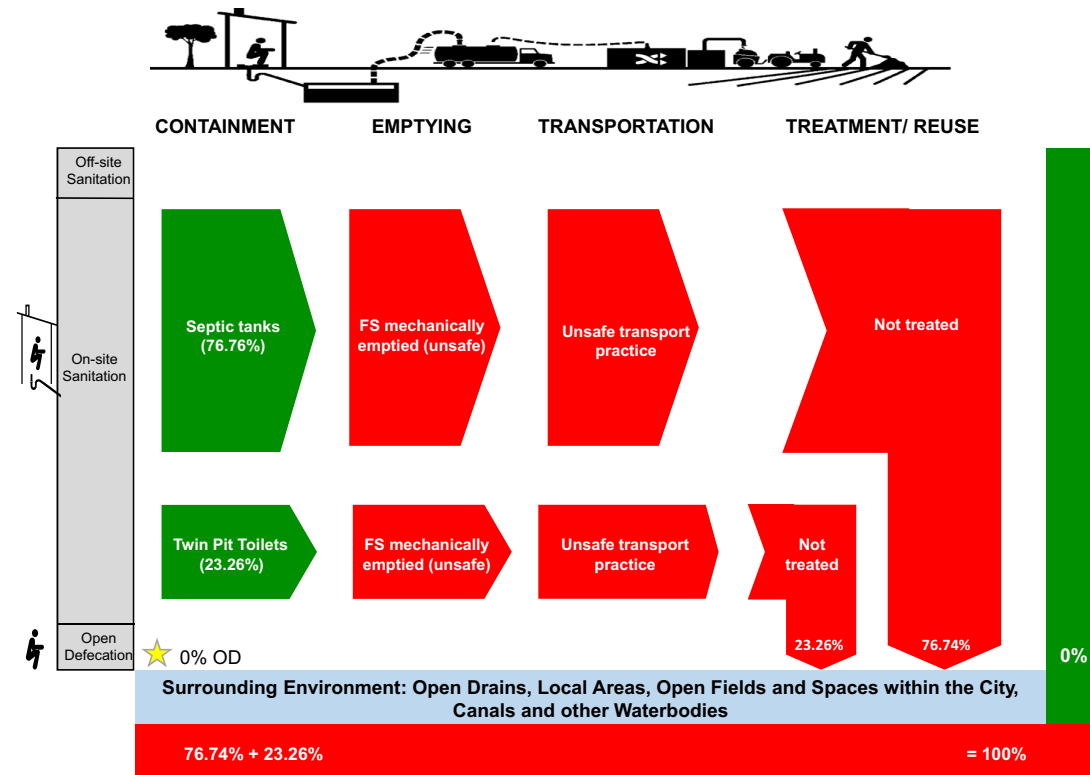
Population in 2017:	65,723
Area (Sq Km):	34.92
Total No. of Wards	29
No. of Households (2017):	14,605
No. of Households connected to Sewerage System:	0
No of Households with Septic Tanks:	14,605
No. of Households with Twin Pit Toilets:	0
No. of Households with Insanitary Toilets:	0
No. of Households dependent on Community Toilets:	0



Shit Flow Diagram of Machilipatnam

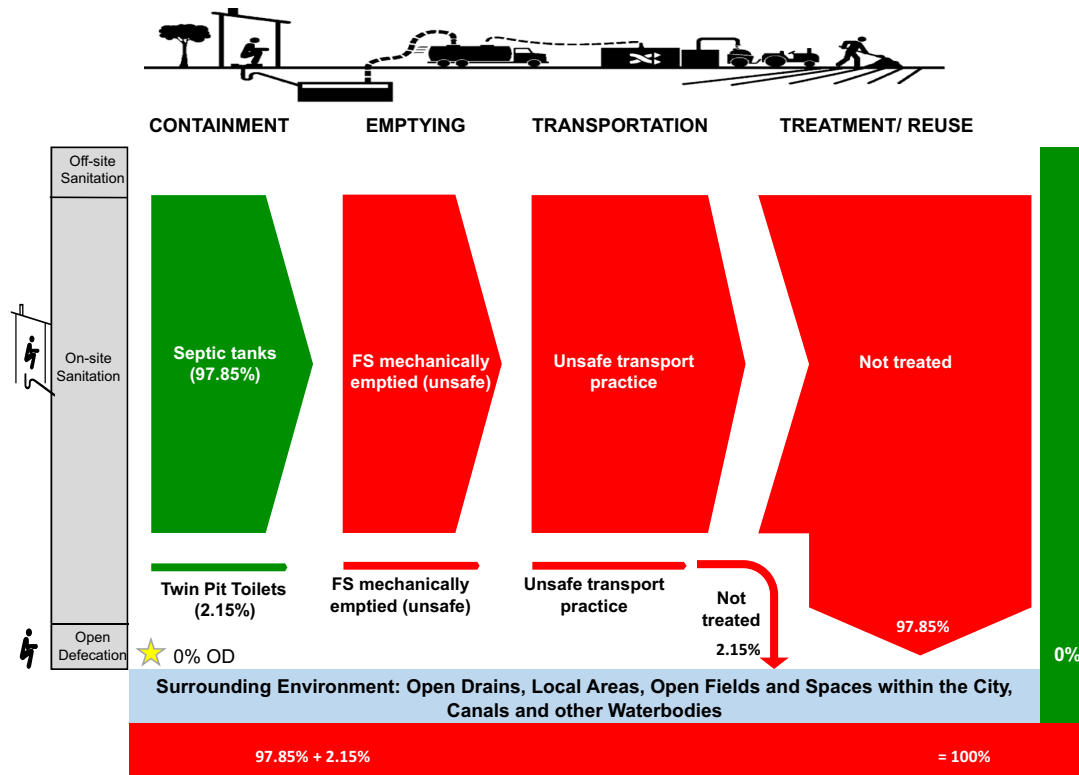
Population in 2017:	2,04,543
Area (Sq Km):	26.67
Total No. of Wards	42
No. of Households (2017):	45,454
No. of Households connected to Sewerage System:	0
No of Households with Septic Tanks:	45,410
No. of Households with Twin Pit Toilets:	0
No. of Households with Insanitary Toilets:	0
No. of Households dependent on Community Toilets:	44

Sanitation Situation in Madakasiri



Shit Flow Diagram of Madakasiri

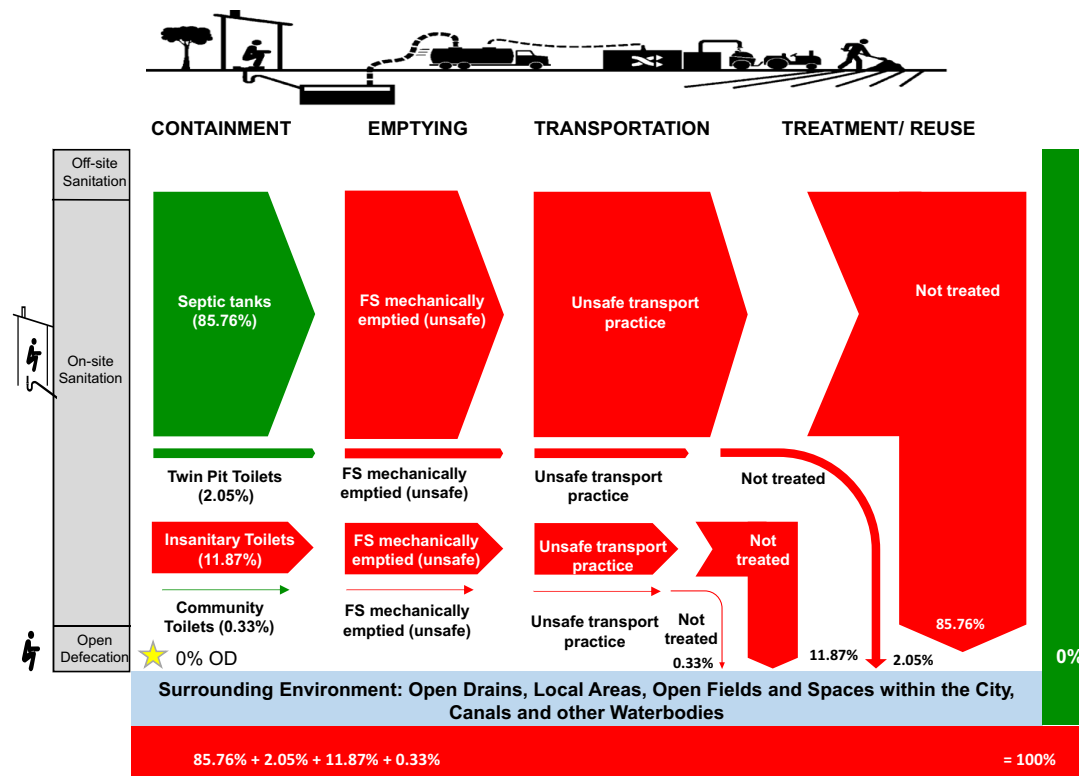
Population in 2017:	27,585
Area (Sq Km):	32.00
Total No. of Wards	20
No. of Households (2017):	6,130
No. of Households connected to Sewerage System:	0
No of Households with Septic Tanks:	4,704
No. of Households with Twin Pit Toilets:	1,426
No. of Households with Insanitary Toilets:	0
No. of Households dependent on Community Toilets:	0



Shit Flow Diagram of Madanapalle

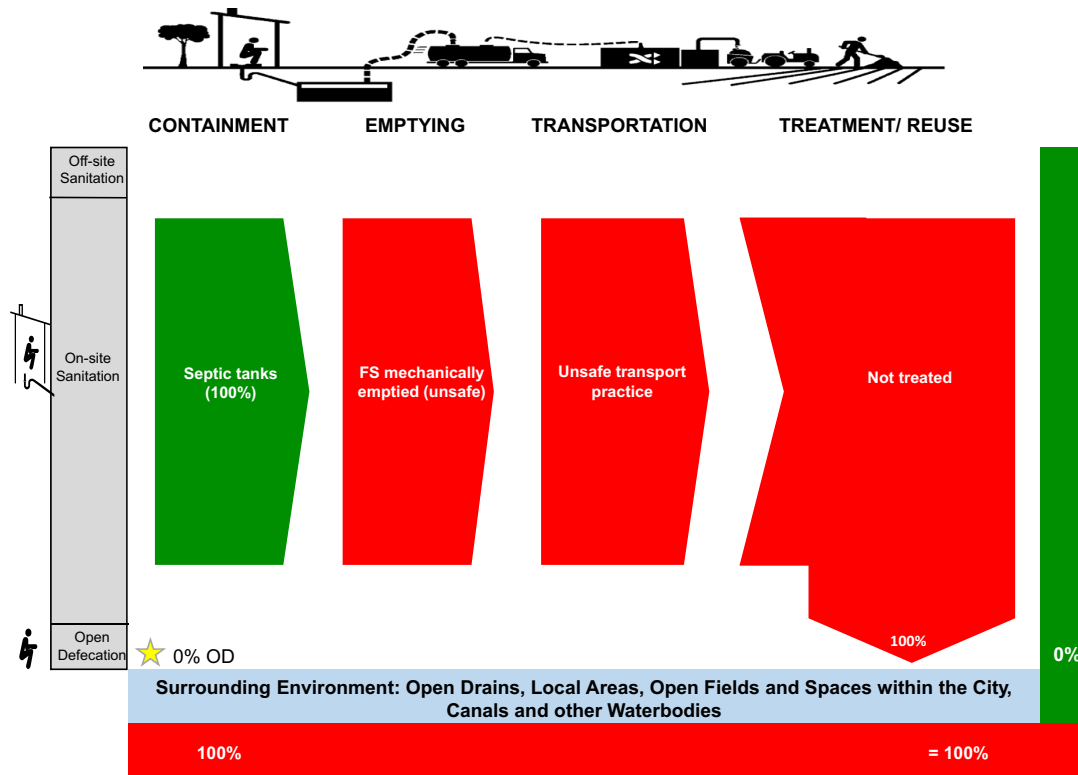
Population in 2017:	1,65,317
Area (Sq Km):	14.20
Total No. of Wards	35
No. of Households (2017):	36,737
No. of Households connected to Sewerage System:	0
No of Households with Septic Tanks:	35,947
No. of Households with Twin Pit Toilets:	790
No. of Households with Insanitary Toilets:	0
No. of Households dependent on Community Toilets:	0

Sanitation Situation in Mandapeta



Shit Flow Diagram of Mandapeta

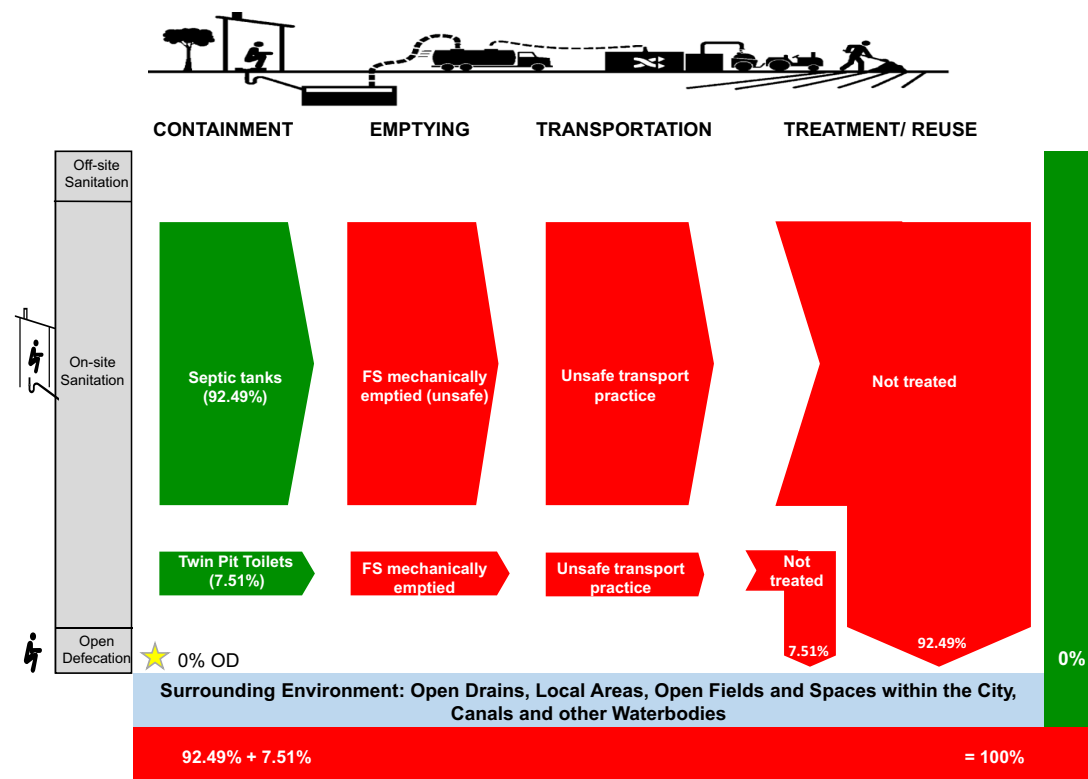
Population in 2017:	69,003
Area (Sq Km):	21.64
Total No. of Wards	29
No. of Households (2017):	15,334
No. of Households connected to Sewerage System:	0
No of Households with Septic Tanks:	13,150
No. of Households with Twin Pit Toilets:	314
No. of Households with Insanitary Toilets:	1,820
No. of Households dependent on Community Toilets:	50



Shit Flow Diagram of Mangalagiri

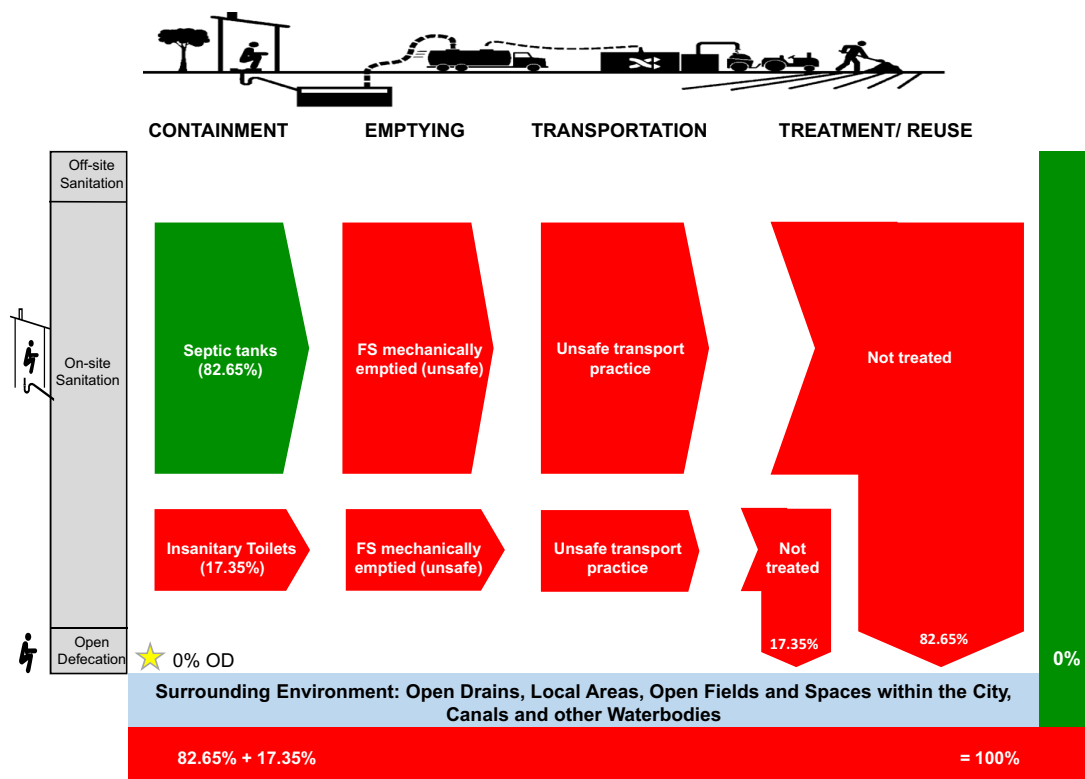
Population in 2017:	1,01,759
Area (Sq Km):	10.49
Total No. of Wards	31
No. of Households (2017):	22,613
No. of Households connected to Sewerage System:	0
No of Households with Septic Tanks:	22,613
No. of Households with Twin Pit Toilets:	0
No. of Households with Insanitary Toilets:	0
No. of Households dependent on Community Toilets:	0

Sanitation Situation in Markapur



Shit Flow Diagram of Markapur

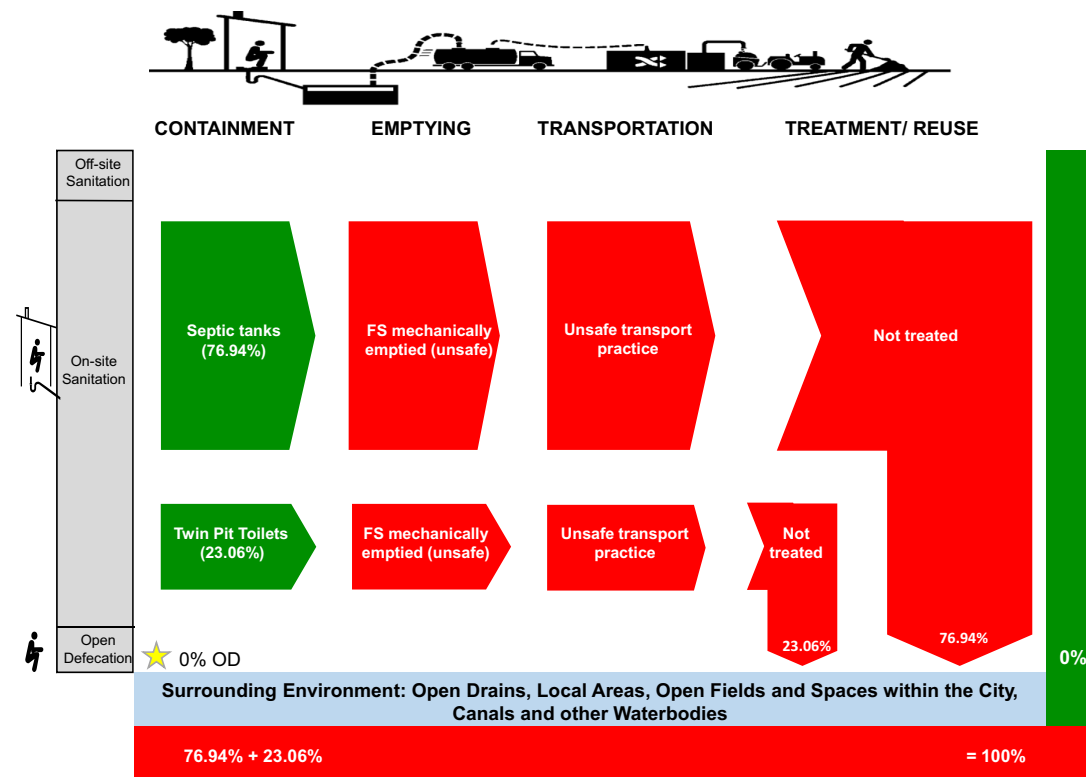
Population in 2017:	79,034
Area (Sq Km):	22.32
Total No. of Wards	32
No. of Households (2017):	17,563
No. of Households connected to Sewerage System:	0
No of Households with Septic Tanks:	16,244
No. of Households with Twin Pit Toilets:	1,319
No. of Households with Insanitary Toilets:	0
No. of Households dependent on Community Toilets:	0



Shit Flow Diagram of Mumidivaram

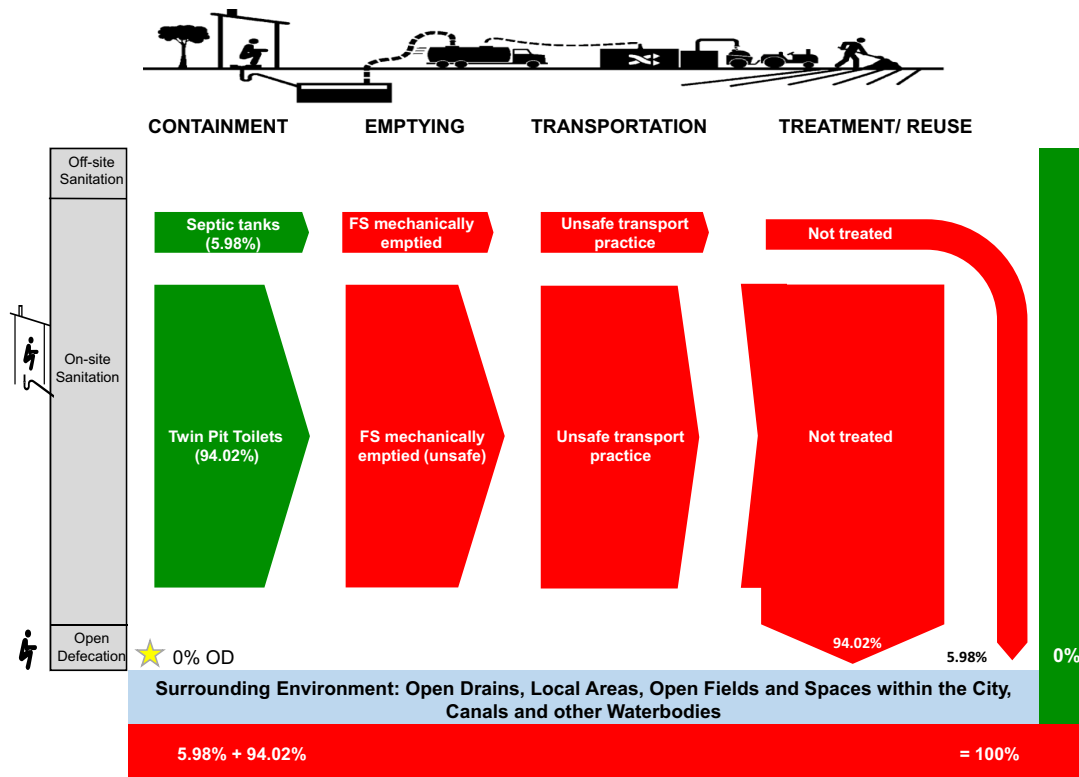
Population in 2017:	28,526
Area (Sq Km):	31.11
Total No. of Wards	20
No. of Households (2017):	6,339
No. of Households connected to Sewerage System:	0
No of Households with Septic Tanks:	5,239
No. of Households with Twin Pit Toilets:	0
No. of Households with Insanitary Toilets:	1,100
No. of Households dependent on Community Toilets:	0

Sanitation Situation in Mydukur



Shit Flow Diagram of Mydukur

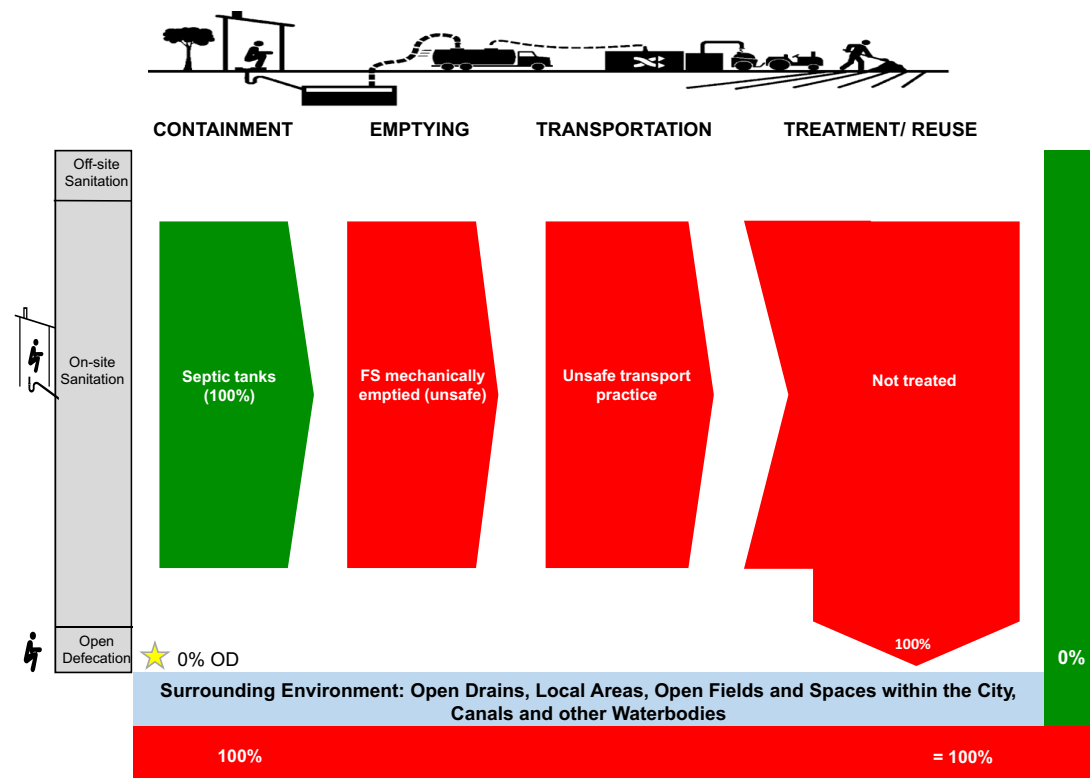
Population in 2017:	50,922
Area (Sq Km):	49.50
Total No. of Wards	23
No. of Households (2017):	11,316
No. of Households connected to Sewerage System:	0
No of Households with Septic Tanks:	8,707
No. of Households with Twin Pit Toilets:	2,609
No. of Households with Insanitary Toilets:	0
No. of Households dependent on Community Toilets:	0



Shit Flow Diagram of Nagiri

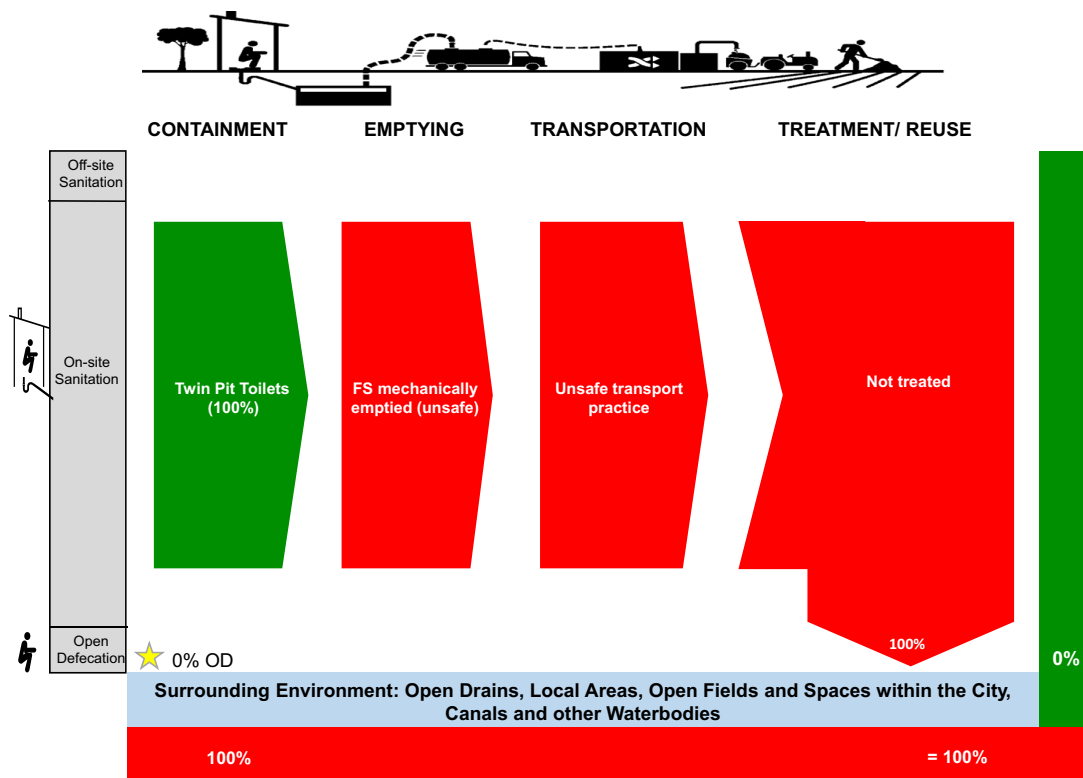
Population in 2017:	66,708
Area (Sq Km):	25.60
Total No. of Wards	27
No. of Households (2017):	14,824
No. of Households connected to Sewerage System:	0
No of Households with Septic Tanks:	886
No. of Households with Twin Pit Toilets:	13,938
No. of Households with Insanitary Toilets:	0
No. of Households dependent on Community Toilets:	0

Sanitation Situation in Naidupet



Shit Flow Diagram of Naidupet

Population in 2017:	56,966
Area (Sq Km):	19.40
Total No. of Wards	20
No. of Households (2017):	12,659
No. of Households connected to Sewerage System:	0
No of Households with Septic Tanks:	12,659
No. of Households with Twin Pit Toilets:	0
No. of Households with Insanitary Toilets:	0
No. of Households dependent on Community Toilets:	0

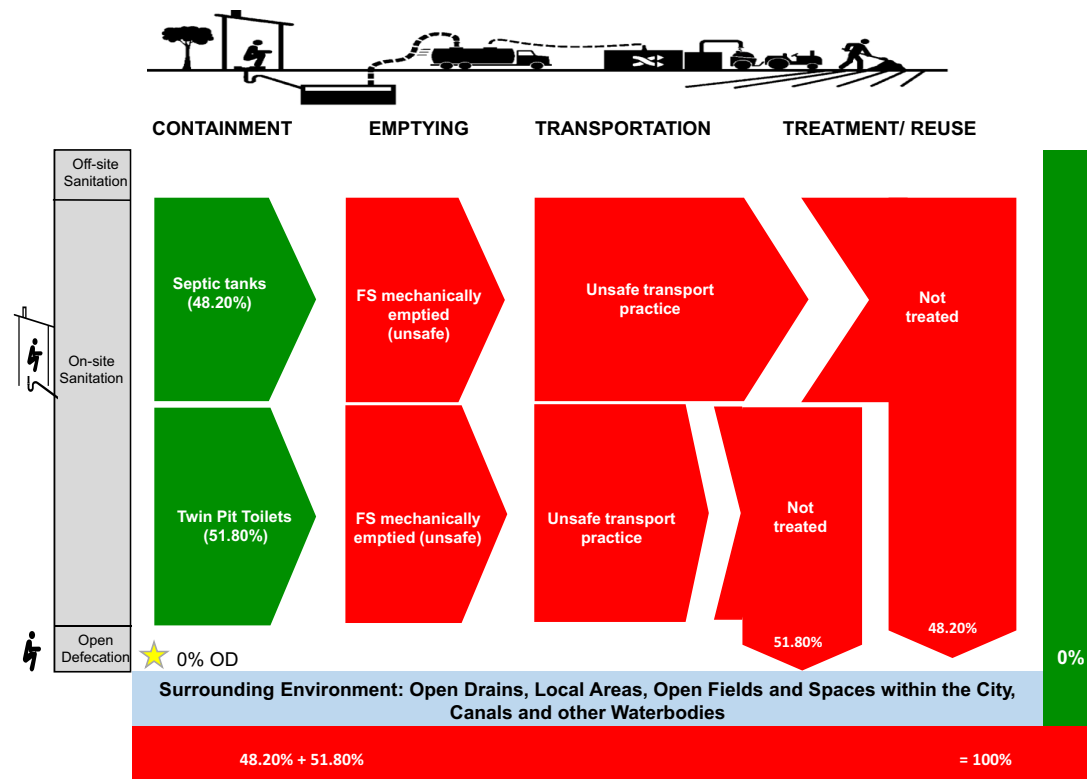


Shit Flow Diagram of Nandigama

Population in 2017:	54,000
Area (Sq Km):	28.70
Total No. of Wards	20
No. of Households (2017):	12,000
No. of Households connected to Sewerage System:	0
No of Households with Septic Tanks:	0
No. of Households with Twin Pit Toilets:	12,000
No. of Households with Insanitary Toilets:	0
No. of Households dependent on Community Toilets:	0

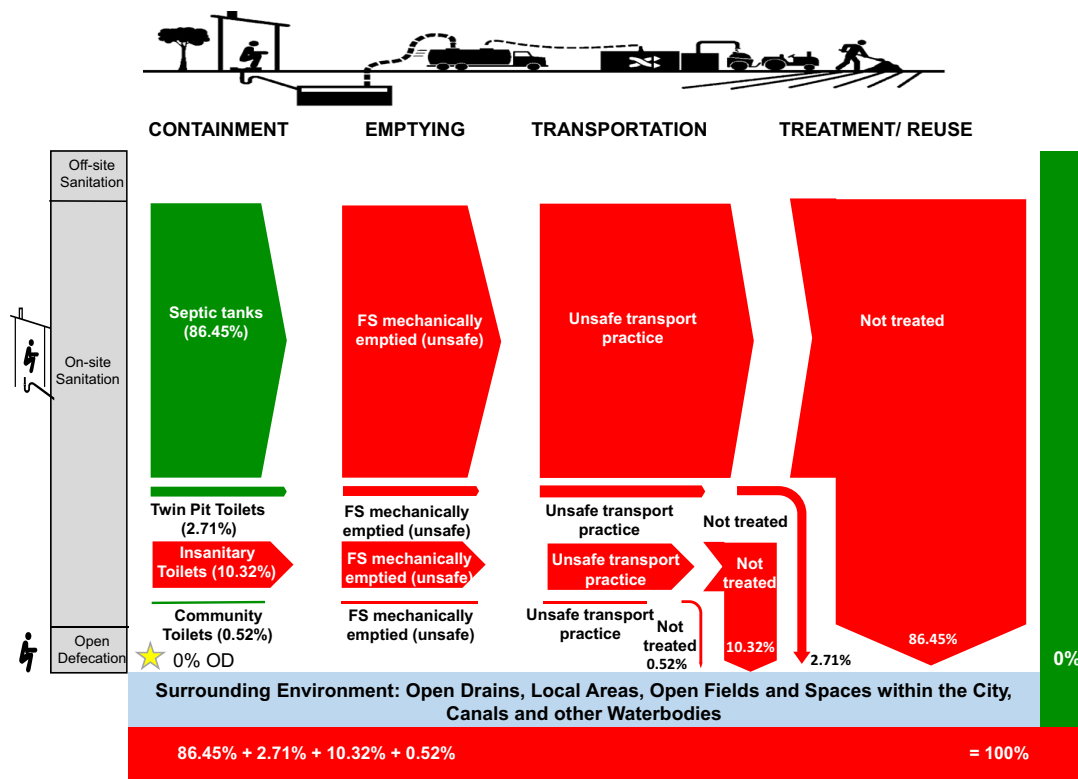
Sanitation Situation in Nandigama

Sanitation Situation in Nandikotur



Shit Flow Diagram of Nandikotur

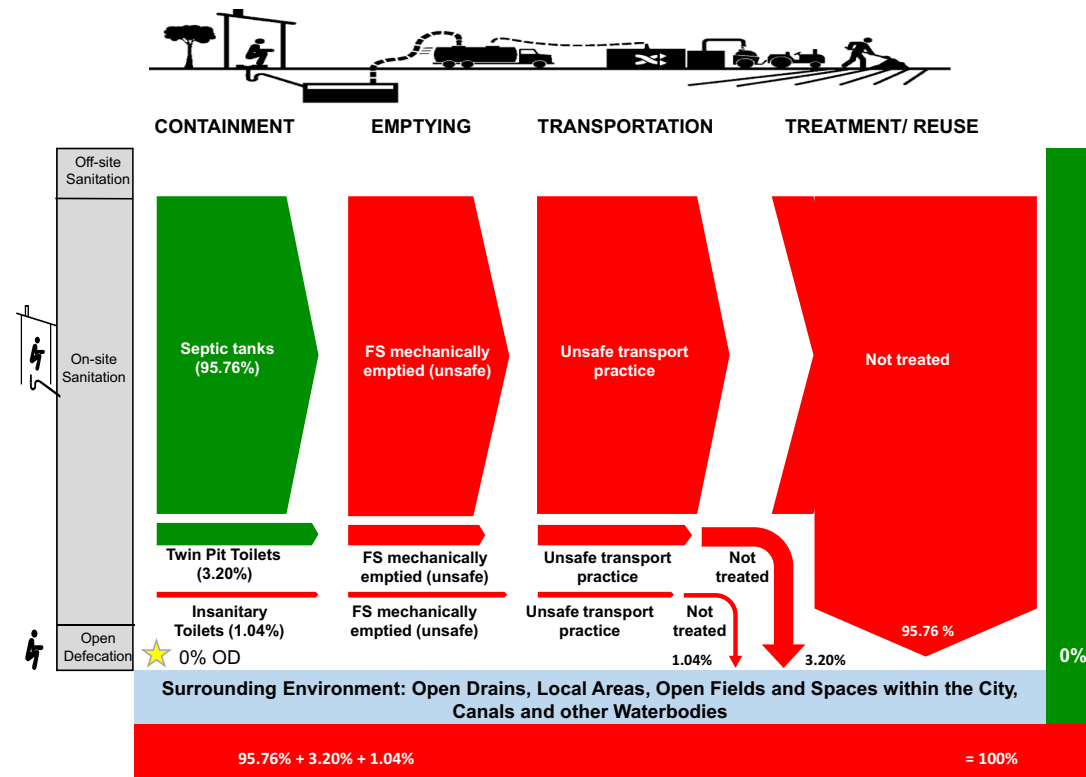
Population in 2017:	65,781
Area (Sq Km):	49.74
Total No. of Wards	23
No. of Households (2017):	14,618
No. of Households connected to Sewerage System:	0
No. of Households with Septic Tanks:	7,046
No. of Households with Twin Pit Toilets:	7,572
No. of Households with Insanitary Toilets:	0
No. of Households dependent on Community Toilets:	0



Shit Flow Diagram of Nandyal

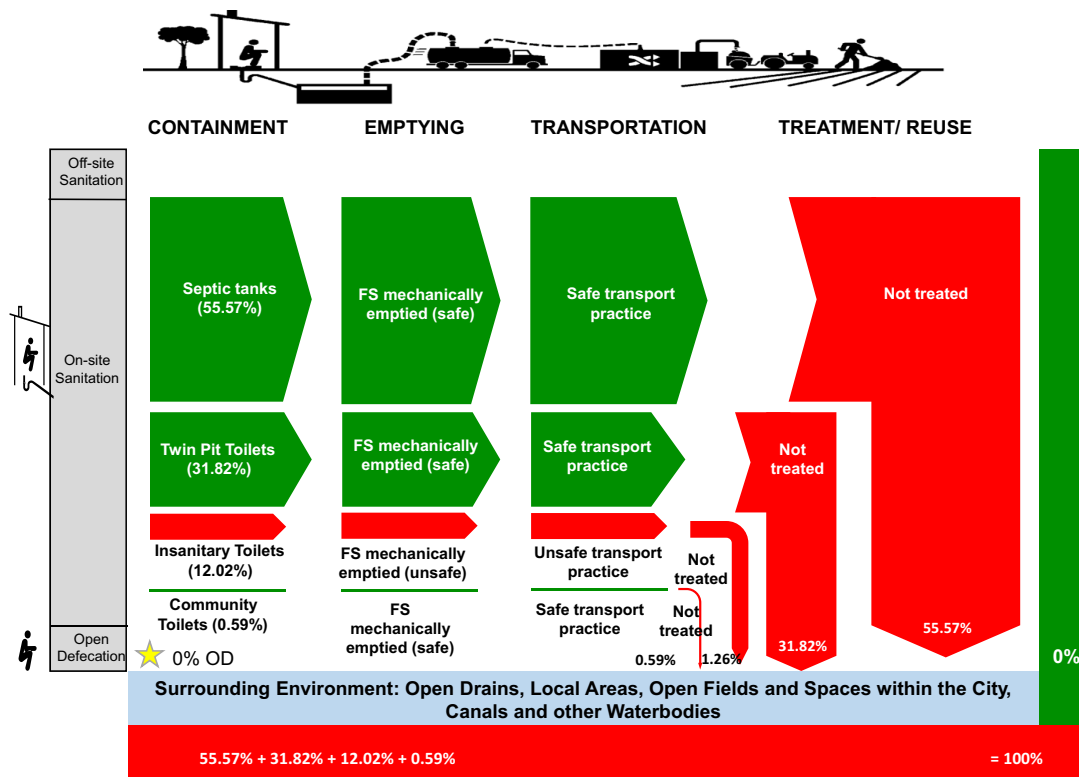
Population in 2017:	2,62,103
Area (Sq Km):	19.00
Total No. of Wards	42
No. of Households (2017):	58,245
No. of Households connected to Sewerage System:	0
No of Households with Septic Tanks:	50,353
No. of Households with Twin Pit Toilets:	1,579
No. of Households with Insanitary Toilets:	6,013
No. of Households dependent on Community Toilets:	300

Sanitation Situation in Narasaraopet



Shit Flow Diagram of Narasaraopet

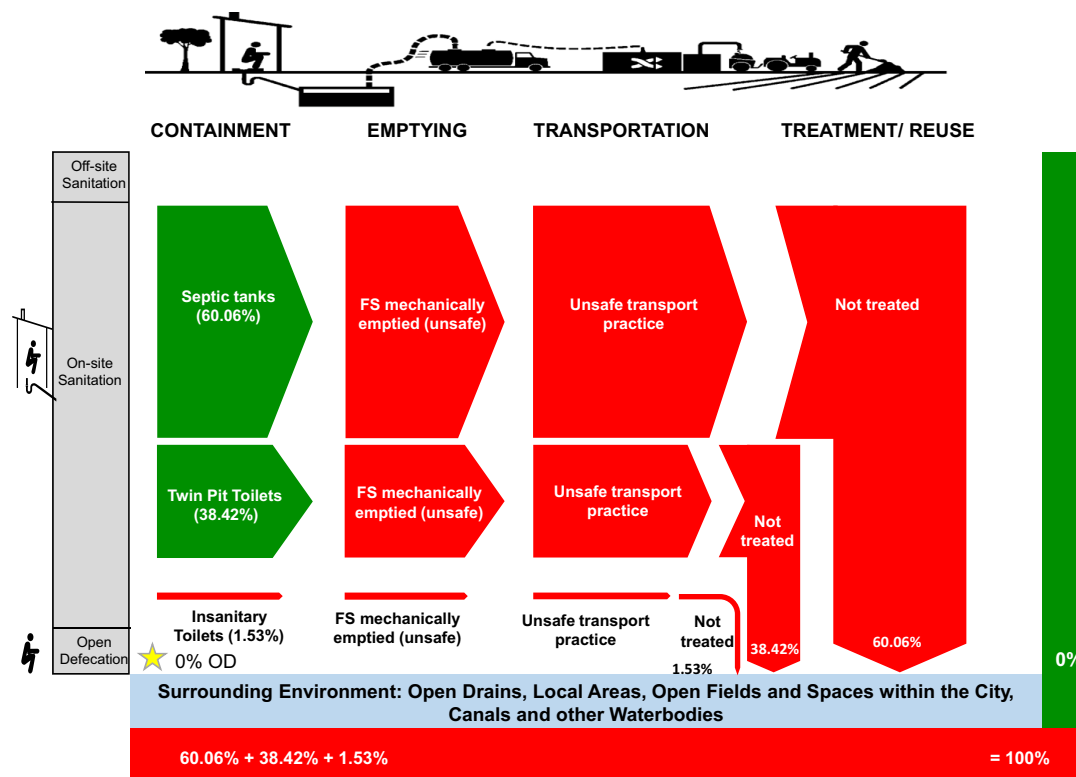
Population in 2017:	1,68,966
Area (Sq Km):	7.65
Total No. of Wards:	34
No. of Households (2017):	37,548
No. of Households connected to Sewerage System:	0
No of Households with Septic Tanks:	35,956
No. of Households with Twin Pit Toilets:	1,200
No. of Households with Insanitary Toilets:	392
No. of Households dependent on Community Toilets:	0



Shit Flow Diagram of Narsapur

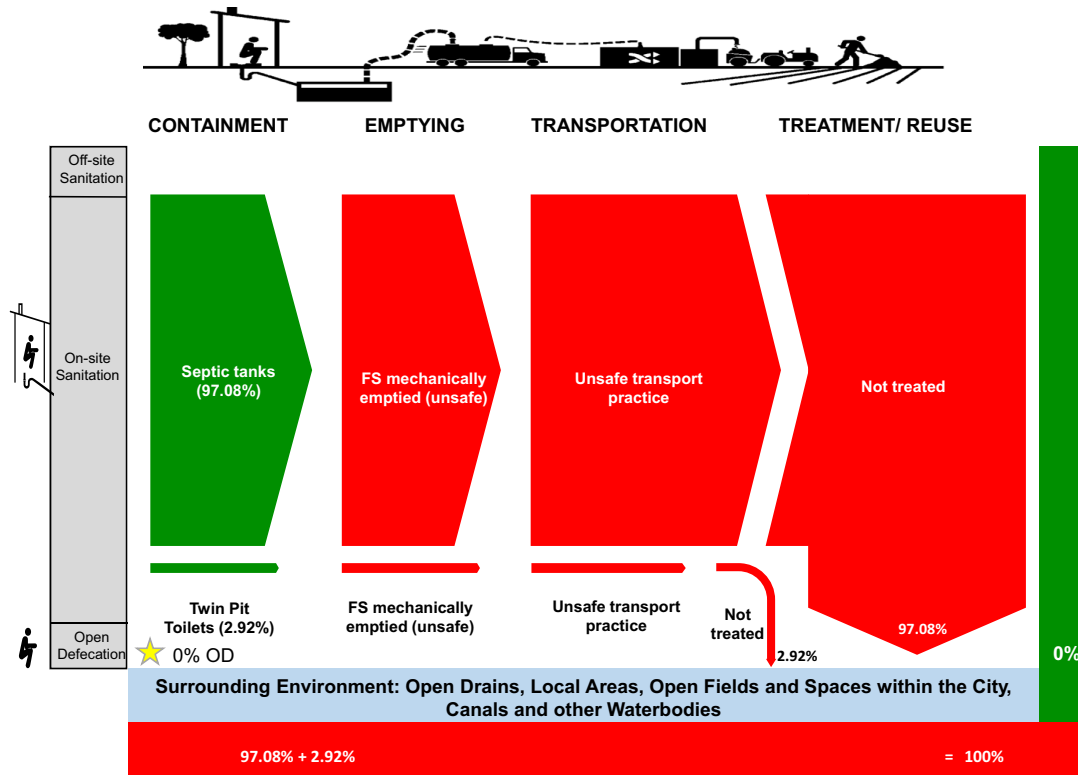
Population in 2017:	75,758
Area (Sq Km):	11.74
Total No. of Wards:	31
No. of Households (2017):	16,835
No. of Households connected to Sewerage System:	0
No of Households with Septic Tanks:	9,355
No. of Households with Twin Pit Toilets:	5,357
No. of Households with Insanitary Toilets:	2,023
No. of Households dependent on Community Toilets:	100

Sanitation Situation in Narsipatnam



Shit Flow Diagram of Narsipatnam

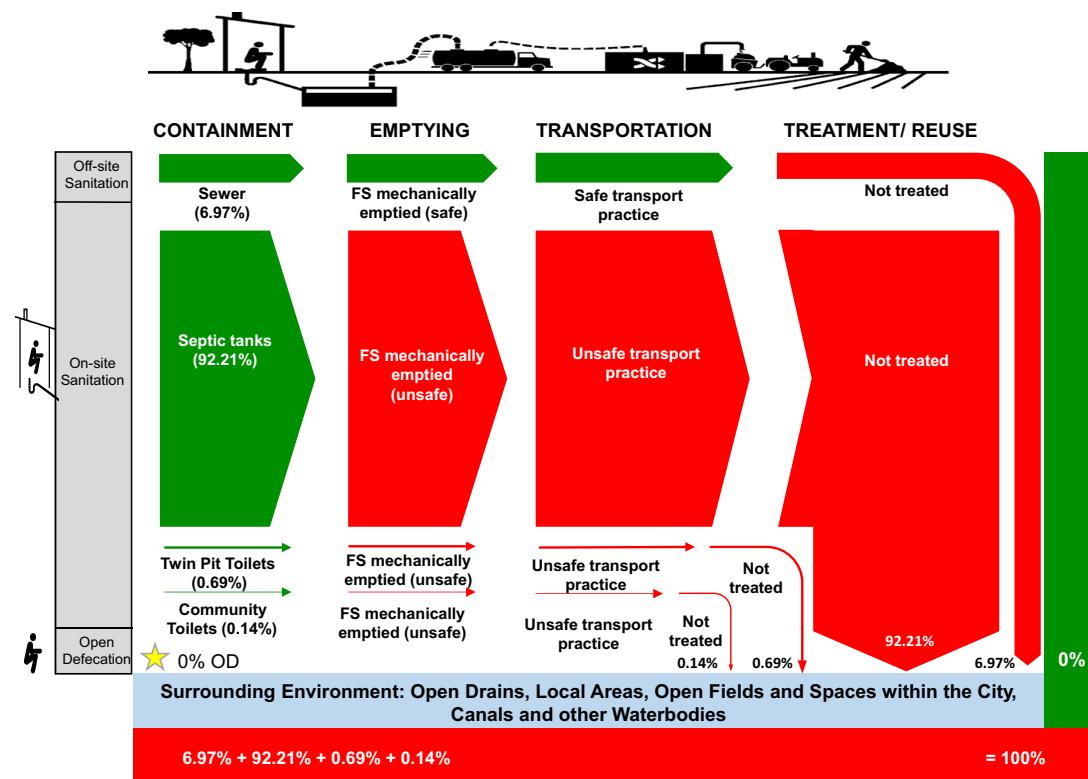
Population in 2017:	72,756
Area (Sq Km):	41.95
Total No. of Wards	27
No. of Households (2017):	16,168
No. of Households connected to Sewerage System:	0
No of Households with Septic Tanks:	9,710
No. of Households with Twin Pit Toilets:	6,211
No. of Households with Insanitary Toilets:	247
No. of Households dependent on Community Toilets:	0



Shit Flow Diagram of Nellimarla

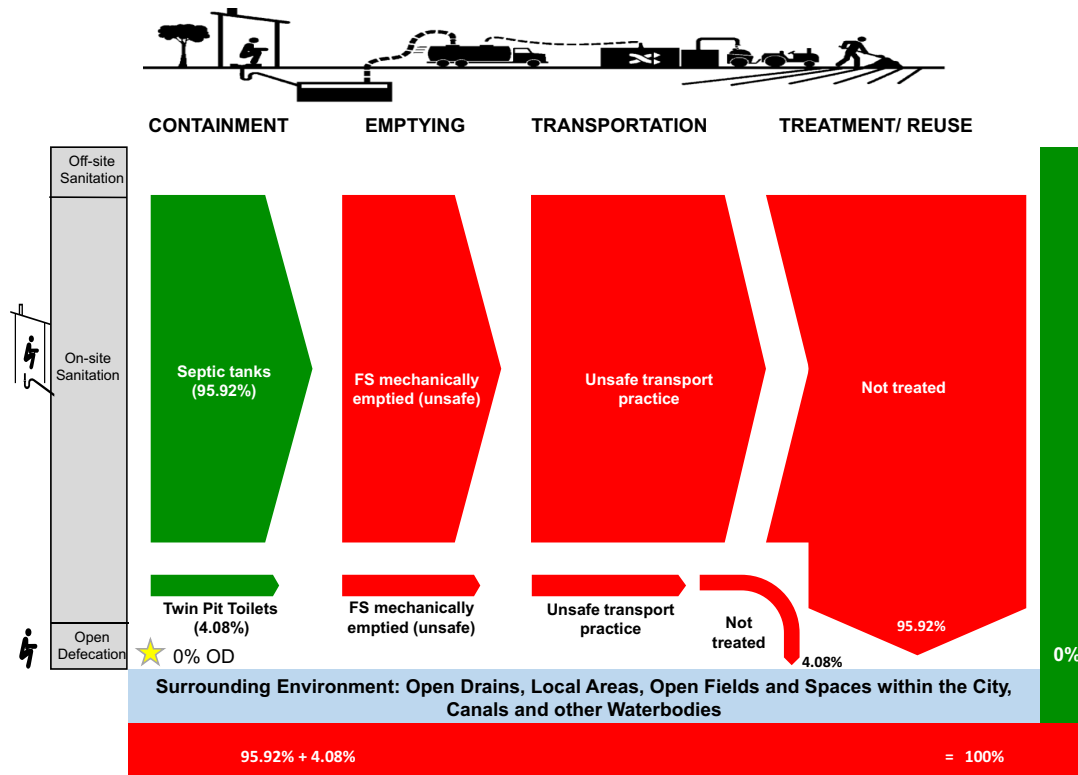
Population in 2017:	32,400
Area (Sq Km):	19.82
Total No. of Wards	20
No. of Households (2017):	7,200
No. of Households connected to Sewerage System:	0
No of Households with Septic Tanks:	6,990
No. of Households with Twin Pit Toilets:	210
No. of Households with Insanitary Toilets:	0
No. of Households dependent on Community Toilets:	0

Sanitation Situation in Nellore



Shit Flow Diagram of Nellore

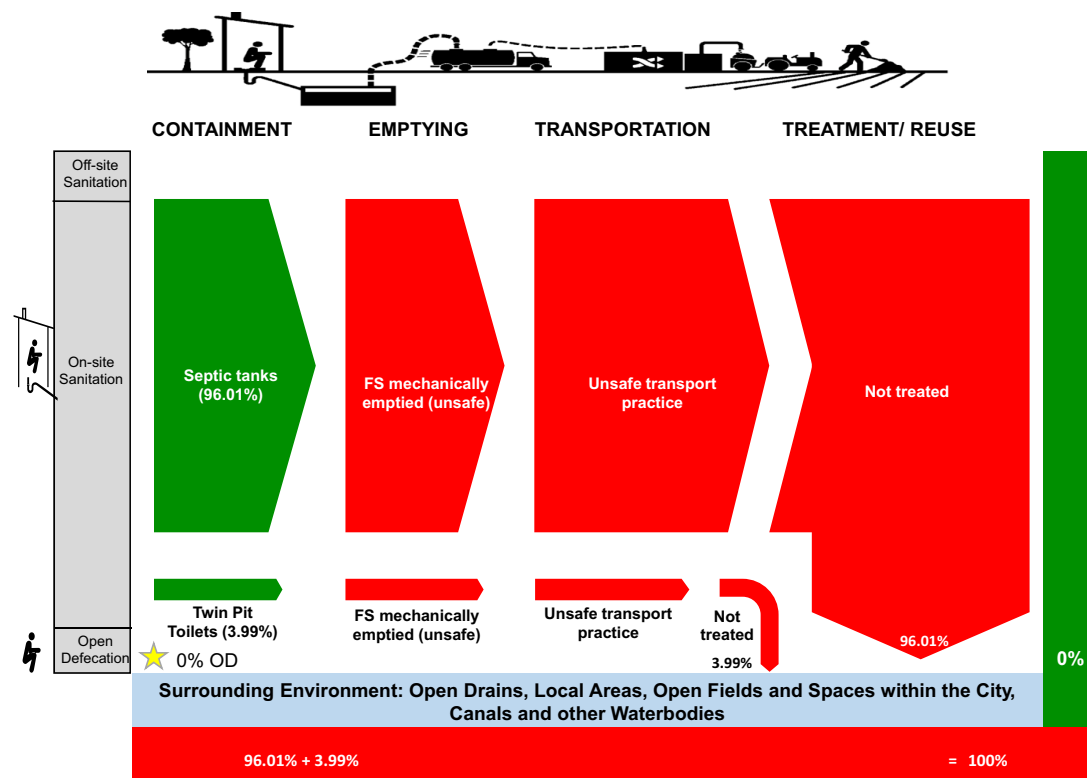
Population in 2017:	6,52,487
Area (Sq Km):	149.20
Total No. of Wards	54
No. of Households (2017):	134,895
No. of Households connected to Sewerage System:	10,102
No of Households with Septic Tanks:	133,695
No. of Households with Twin Pit Toilets:	1,000
No. of Households with Insanitary Toilets:	0
No. of Households dependent on Community Toilets:	200



Shit Flow Diagram of Nidadavole

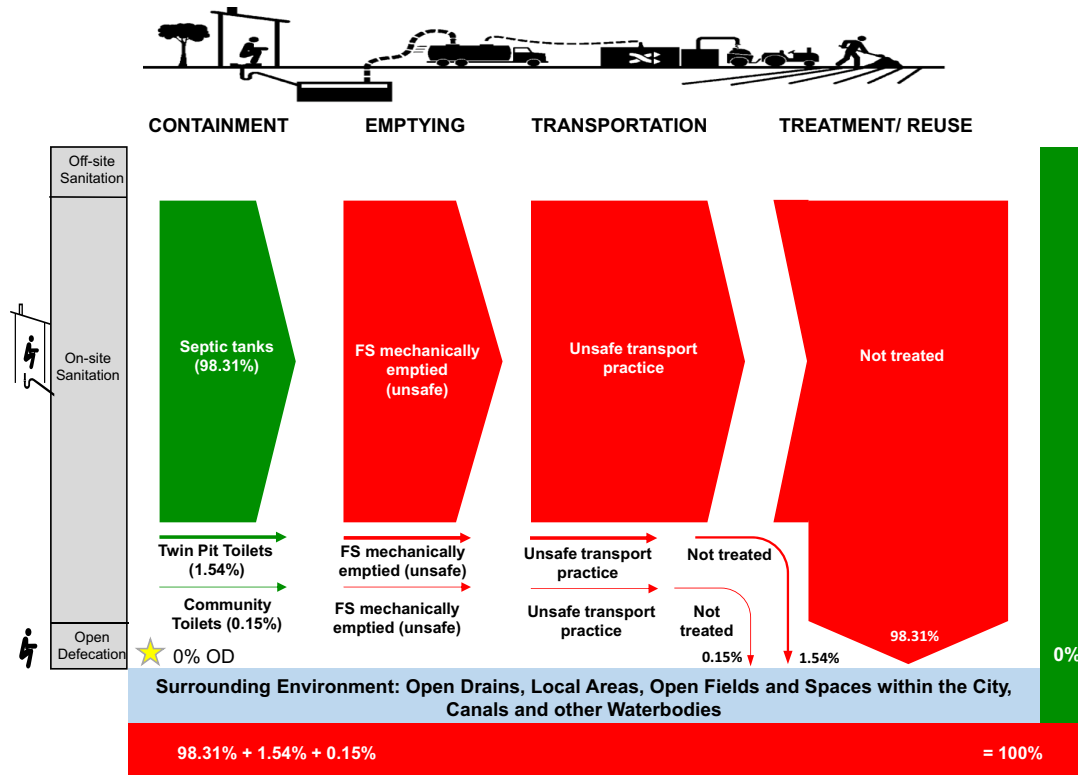
Population in 2017:	48,929
Area (Sq Km):	14.07
Total No. of Wards	28
No. of Households (2017):	10,873
No. of Households connected to Sewerage System:	0
No of Households with Septic Tanks:	10,429
No. of Households with Twin Pit Toilets:	444
No. of Households with Insanitary Toilets:	0
No. of Households dependent on Community Toilets:	0

Sanitation Situation in Nuzivid



Shit Flow Diagram of Nuzivid

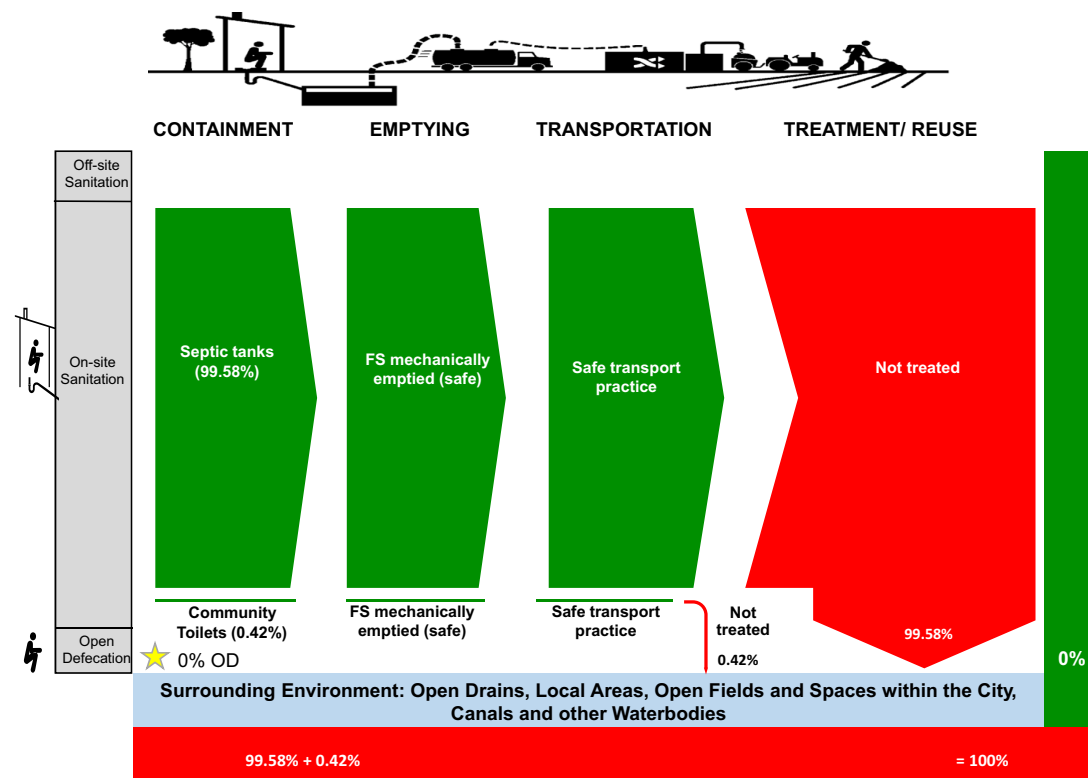
Population in 2017:	62,645
Area (Sq Km):	28.69
Total No. of Wards	30
No. of Households (2017):	13,921
No. of Households connected to Sewerage System:	0
No of Households with Septic Tanks:	13,365
No. of Households with Twin Pit Toilets:	556
No. of Households with Insanitary Toilets:	0
No. of Households dependent on Community Toilets:	0



Shit Flow Diagram of Ongole

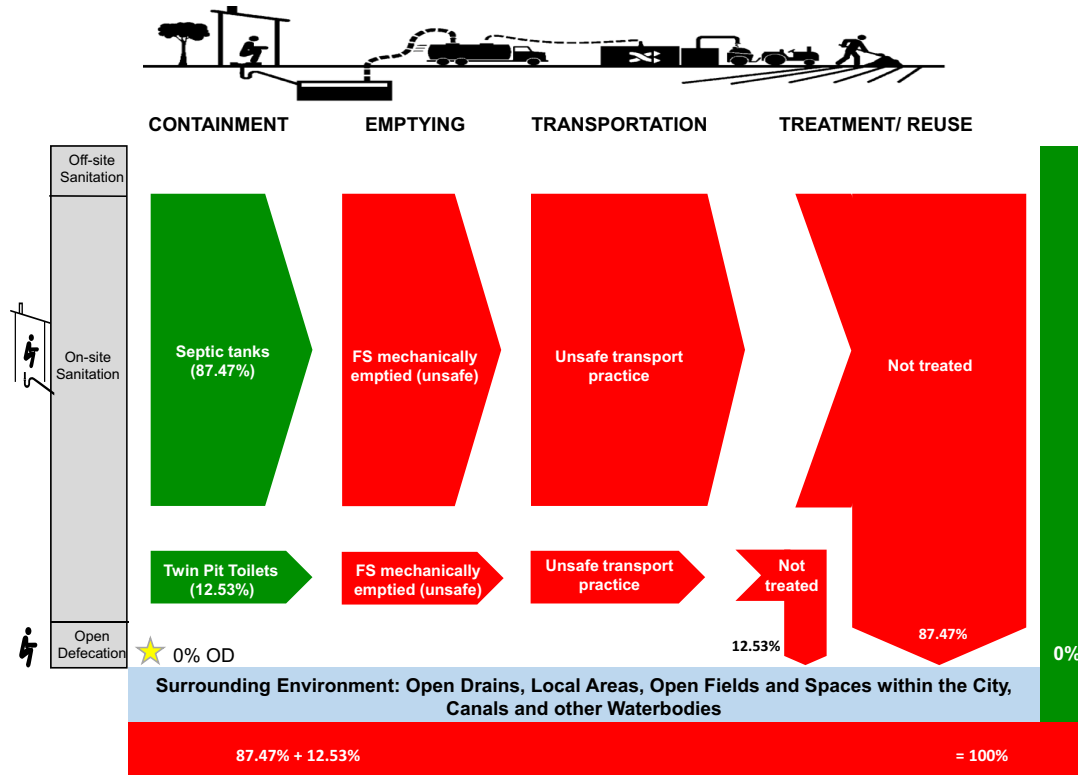
Population in 2017:	2,92,658
Area (Sq Km):	135.35
Total No. of Wards	50
No. of Households (2017):	65,035
No. of Households connected to Sewerage System:	0
No of Households with Septic Tanks:	63,935
No. of Households with Twin Pit Toilets:	1,000
No. of Households with Insanitary Toilets:	0
No. of Households dependent on Community Toilets:	100

Sanitation Situation in Palacolé



Shit Flow Diagram of Palacolé

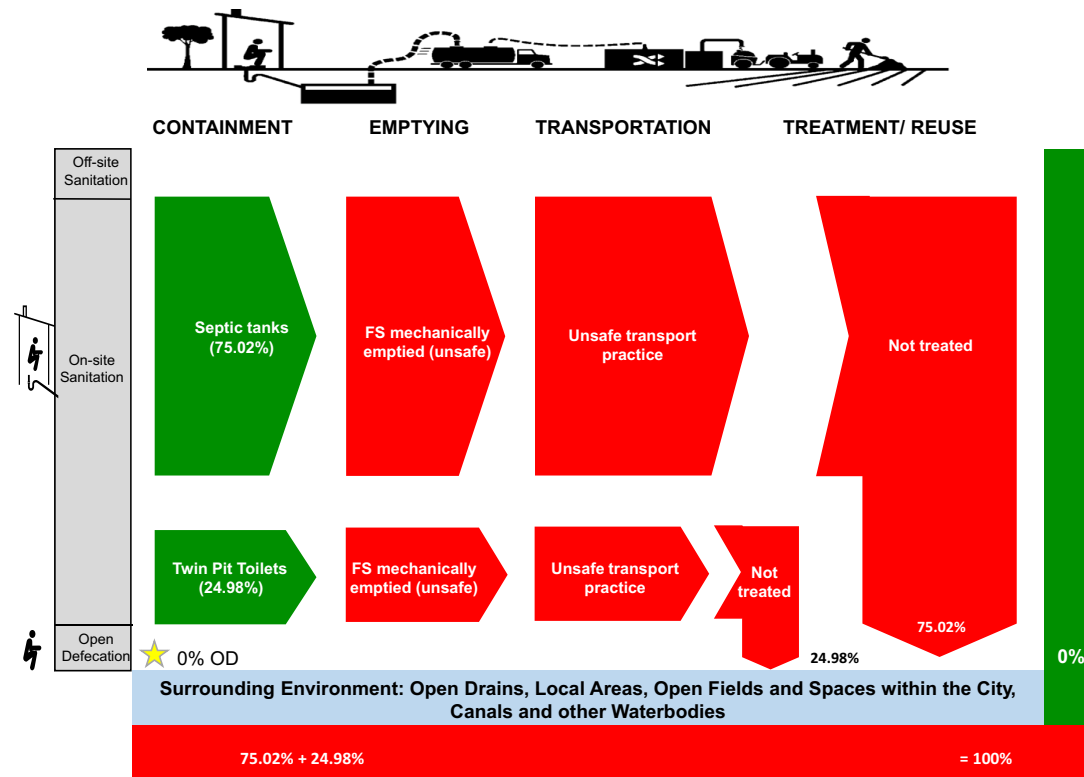
Population in 2017:	75,384
Area (Sq Km):	4.71
Total No. of Wards:	31
No. of Households (2017):	16,752
No. of Households connected to Sewerage System:	0
No of Households with Septic Tanks:	16,682
No. of Households with Twin Pit Toilets:	0
No. of Households with Insanitary Toilets:	0
No. of Households dependent on Community Toilets:	70



Shit Flow Diagram of Palakonda

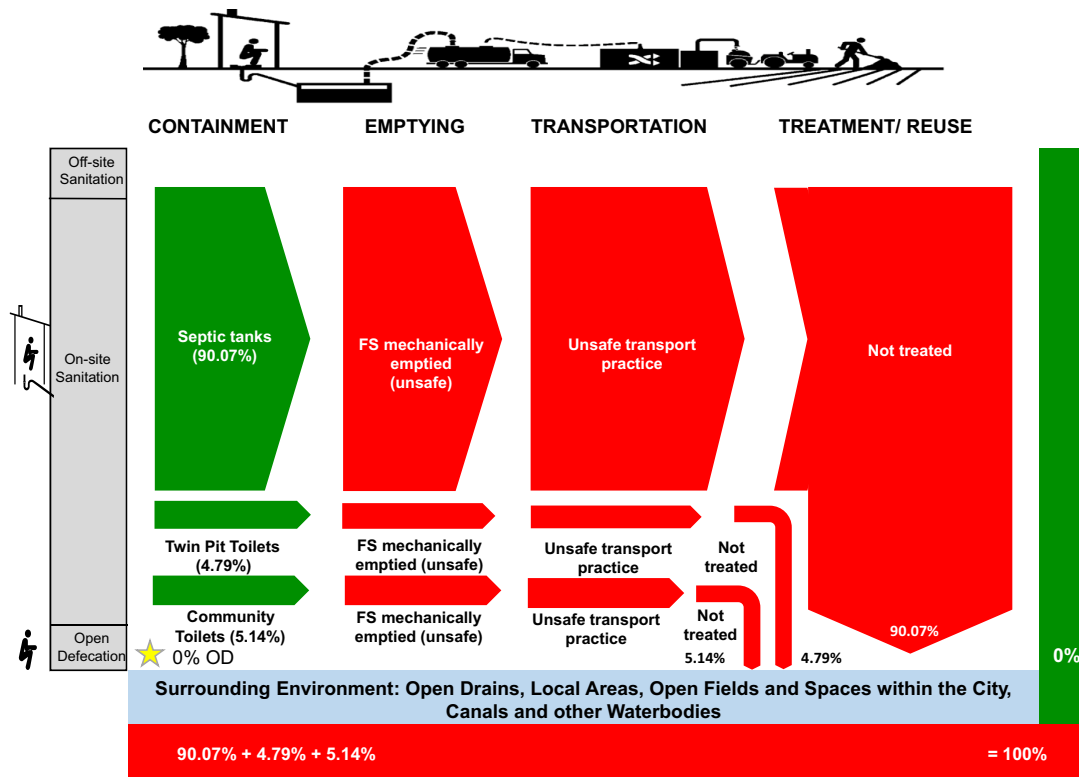
Population in 2017:	28,809
Area (Sq Km):	10.47
Total No. of Wards	20
No. of Households (2017):	6,402
No. of Households connected to Sewerage System:	0
No of Households with Septic Tanks:	5,600
No. of Households with Twin Pit Toilets:	802
No. of Households with Insanitary Toilets:	0
No. of Households dependent on Community Toilets:	0

Sanitation Situation in Palasa Kasibugga



Shit Flow Diagram of Palasa Kasibugga

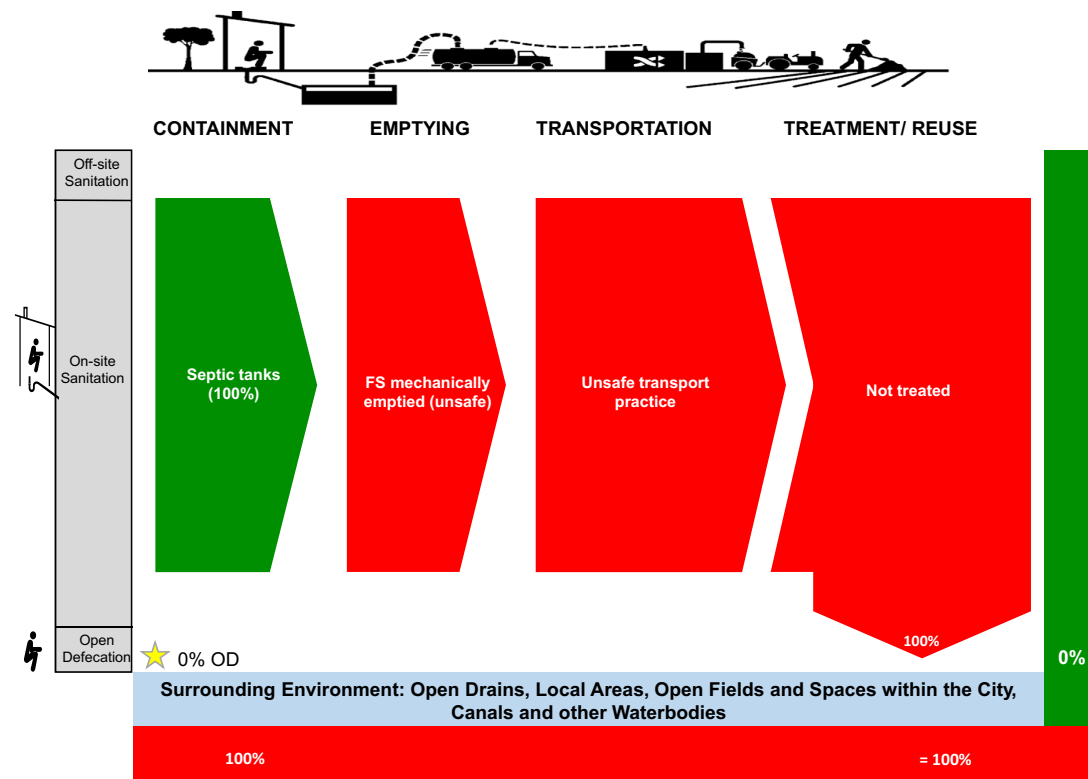
Population in 2017:	74,183
Area (Sq Km):	12.64
Total No. of Wards	25
No. of Households (2017):	16,485
No. of Households connected to Sewerage System:	0
No of Households with Septic Tanks:	12,367
No. of Households with Twin Pit Toilets:	4,118
No. of Households with Insanitary Toilets:	0
No. of Households dependent on Community Toilets:	0



Shit Flow Diagram of Palamaner

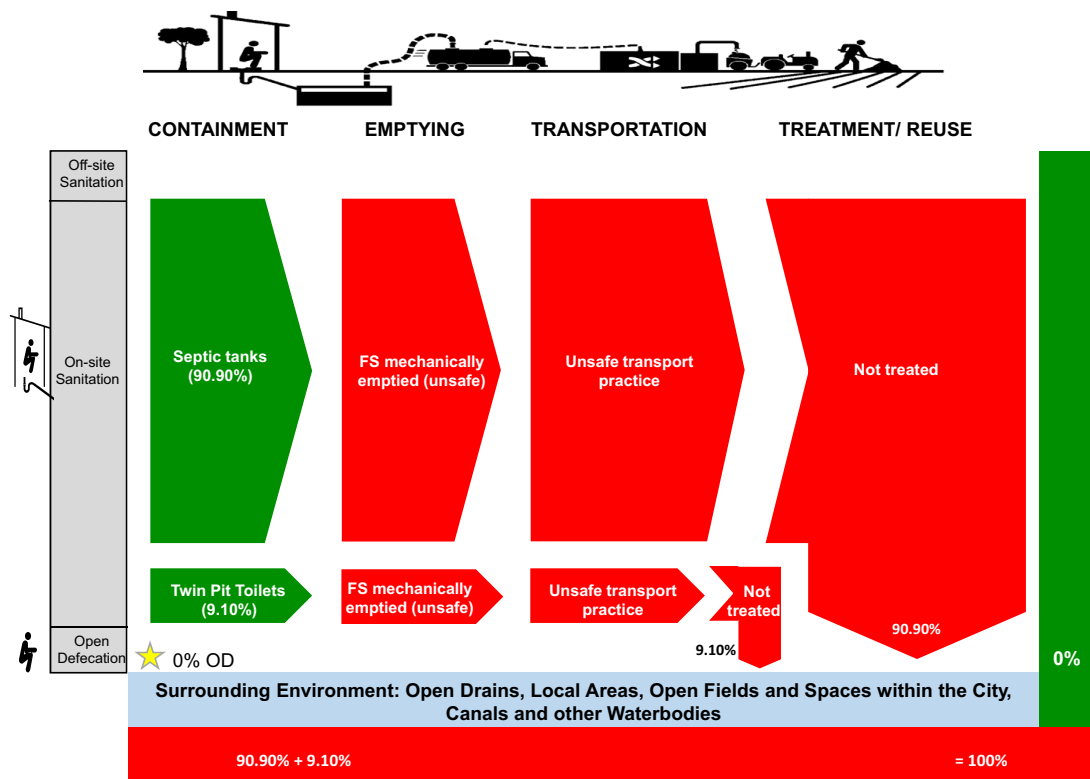
Population in 2017:	61,803
Area (Sq Km):	17.76
Total No. of Wards	24
No. of Households (2017):	13,734
No. of Households connected to Sewerage System:	0
No of Households with Septic Tanks:	12,370
No. of Households with Twin Pit Toilets:	658
No. of Households with Insanitary Toilets:	0
No. of Households dependent on Community Toilets:	706

Sanitation Situation in Pamidi



Shit Flow Diagram of Pamidi

Population in 2017:	46,359
Area (Sq Km):	31.56
Total No. of Wards	20
No. of Households (2017):	10,302
No. of Households connected to Sewerage System:	0
No of Households with Septic Tanks:	10,302
No. of Households with Twin Pit Toilets:	0
No. of Households with Insanitary Toilets:	0
No. of Households dependent on Community Toilets:	0

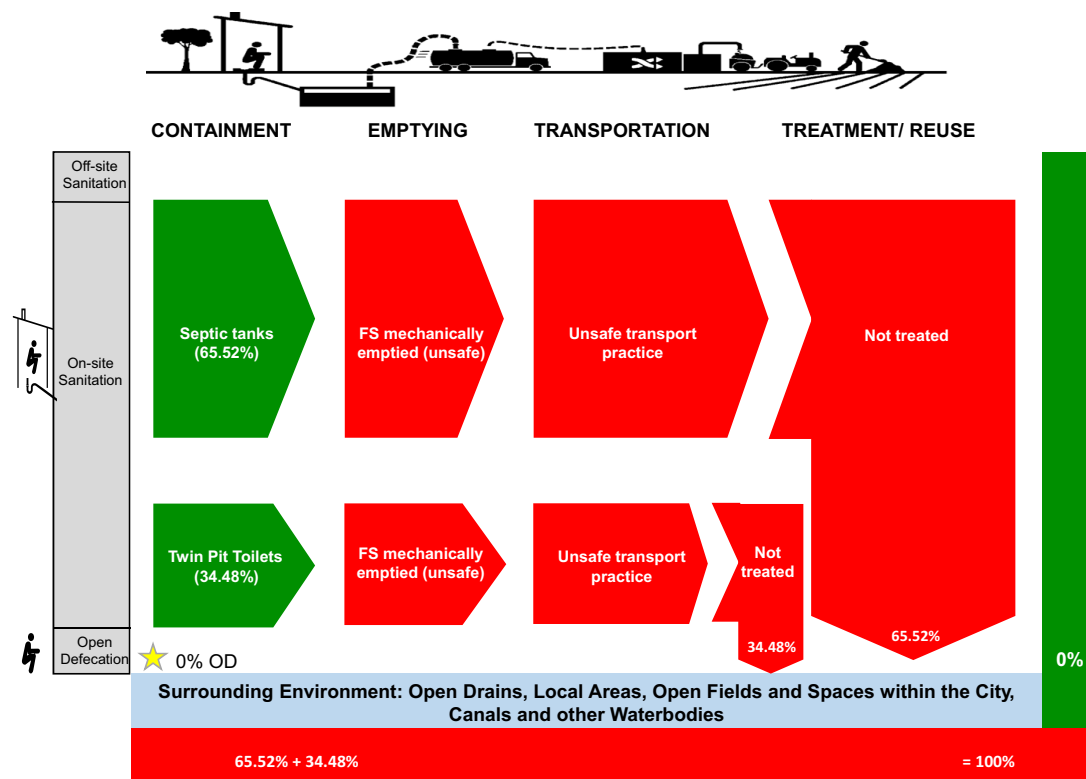


Shit Flow Diagram of Parvathipuram

Population in 2017:	64,292
Area (Sq Km):	11.28
Total No. of Wards	30
No. of Households (2017):	14,287
No. of Households connected to Sewerage System:	0
No of Households with Septic Tanks:	12,987
No. of Households with Twin Pit Toilets:	1,300
No. of Households with Insanitary Toilets:	0
No. of Households dependent on Community Toilets:	0

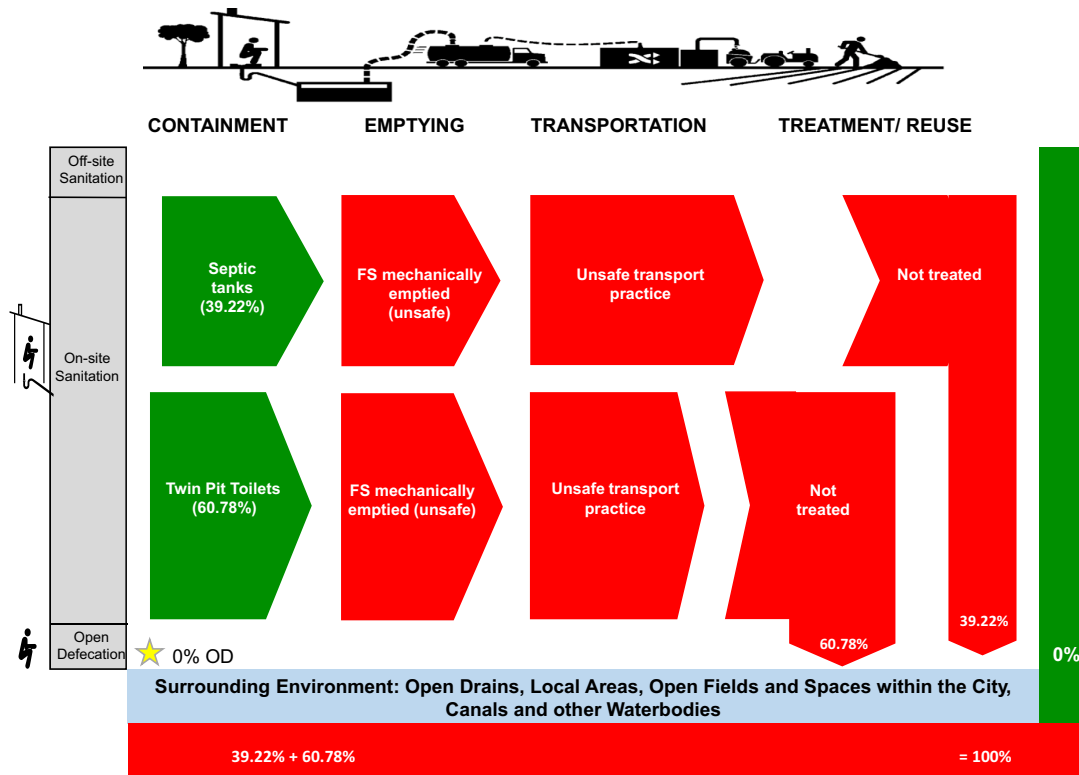
Sanitation Situation in Parvathipuram

Sanitation Situation in Pedana



Shit Flow Diagram of Pedana

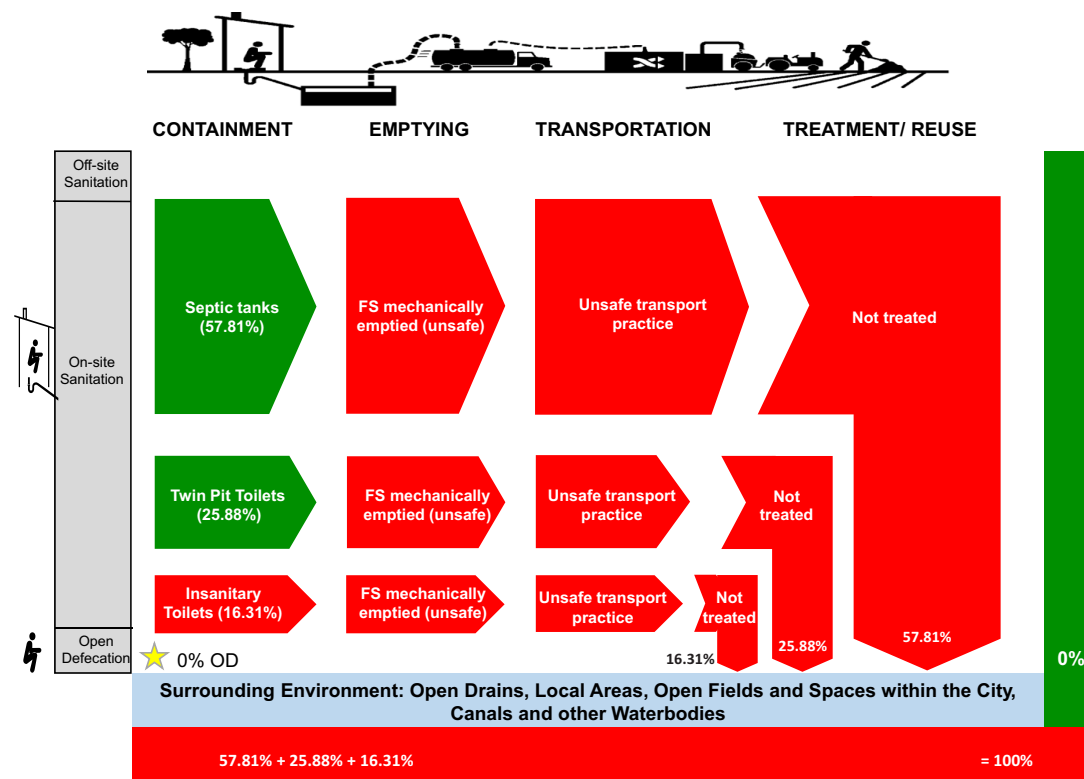
Population in 2017:	39,150
Area (Sq Km):	12.87
Total No. of Wards	23
No. of Households (2017):	8,700
No. of Households connected to Sewerage System:	0
No of Households with Septic Tanks:	5,700
No. of Households with Twin Pit Toilets:	3,000
No. of Households with Insanitary Toilets:	0
No. of Households dependent on Community Toilets:	0



Shit Flow Diagram of Peddapuram

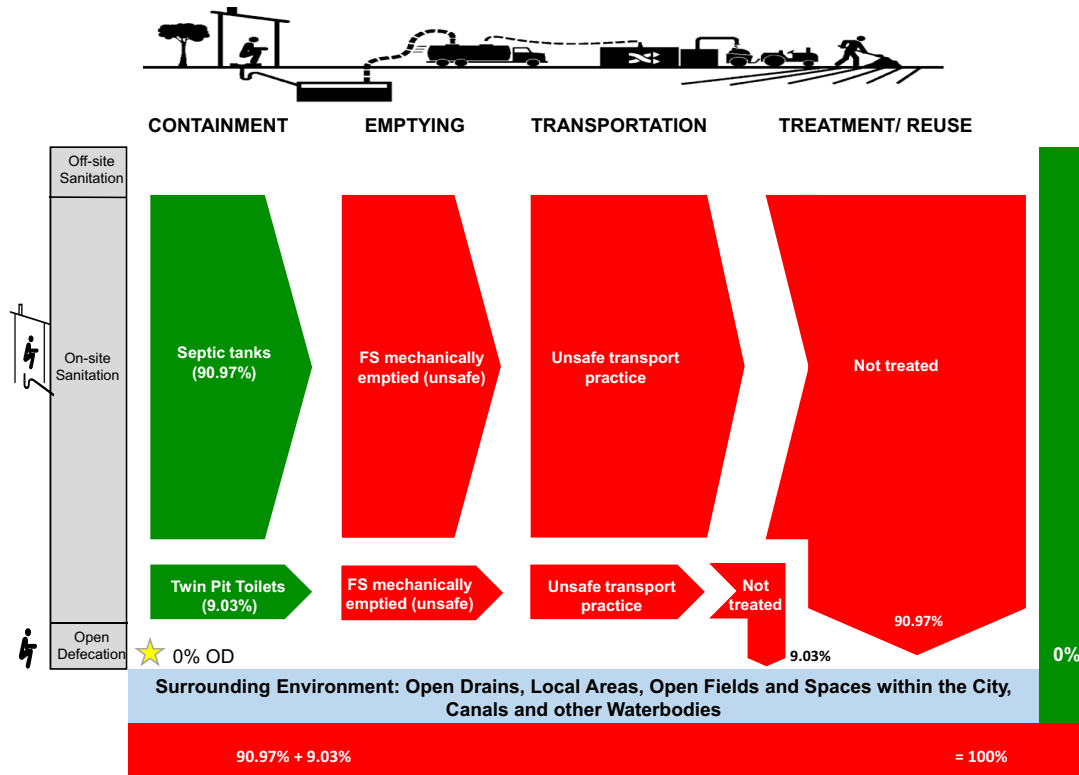
Population in 2017:	51,750
Area (Sq Km):	41.15
Total No. of Wards	28
No. of Households (2017):	11,500
No. of Households connected to Sewerage System:	0
No of Households with Septic Tanks:	4,510
No. of Households with Twin Pit Toilets:	6,990
No. of Households with Insanitary Toilets:	0
No. of Households dependent on Community Toilets:	0

Sanitation Situation in Piduguralla



Shit Flow Diagram of Piduguralla

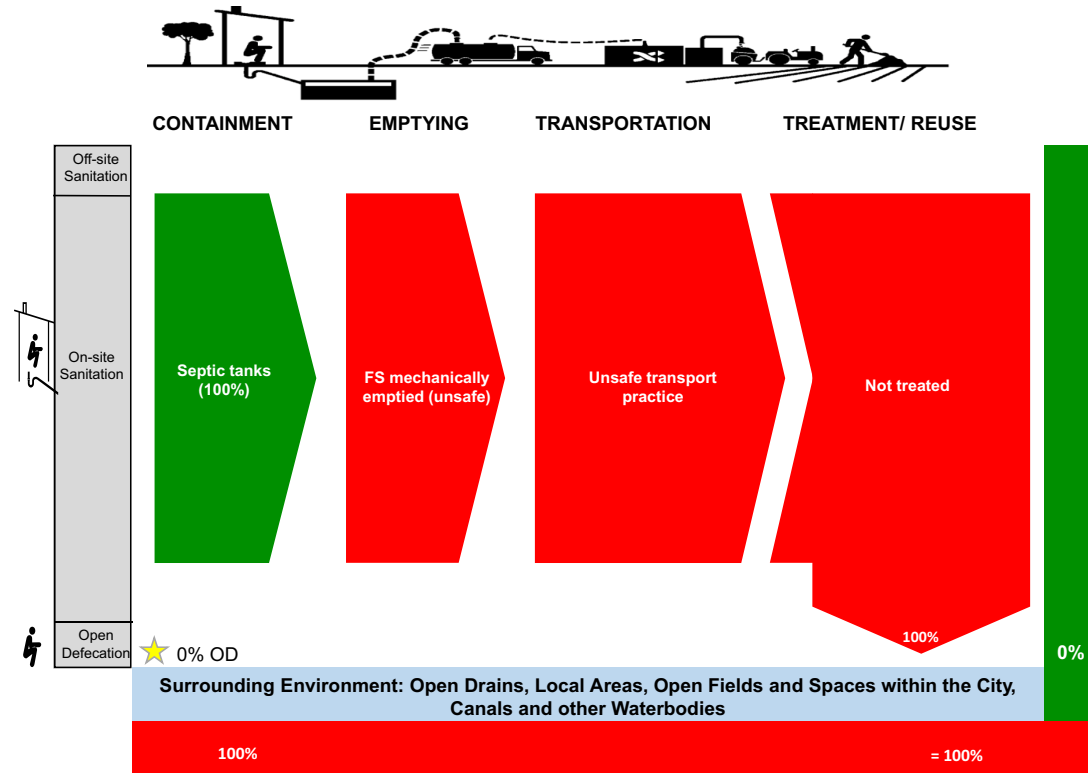
Population in 2017:	70,988
Area (Sq Km):	31.63
Total No. of Wards	30
No. of Households (2017):	15,775
No. of Households connected to Sewerage System:	0
No of Households with Septic Tanks:	9,120
No. of Households with Twin Pit Toilets:	4,082
No. of Households with Insanitary Toilets:	2,573
No. of Households dependent on Community Toilets:	0



Shit Flow Diagram of Pithapuram

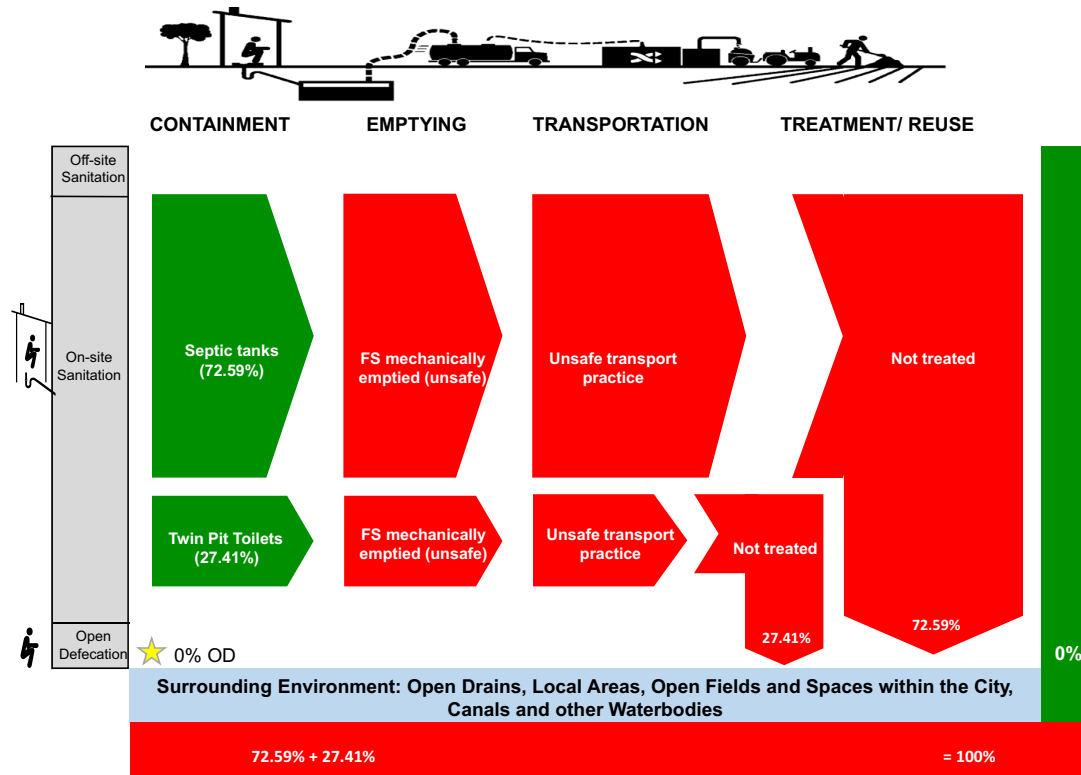
Population in 2017:	64,791
Area (Sq Km):	19.57
Total No. of Wards	30
No. of Households (2017):	14,398
No. of Households connected to Sewerage System:	0
No of Households with Septic Tanks:	13,098
No. of Households with Twin Pit Toilets:	1,300
No. of Households with Insanitary Toilets:	0
No. of Households dependent on Community Toilets:	0

Sanitation Situation in Ponnur



Shit Flow Diagram of Ponnur

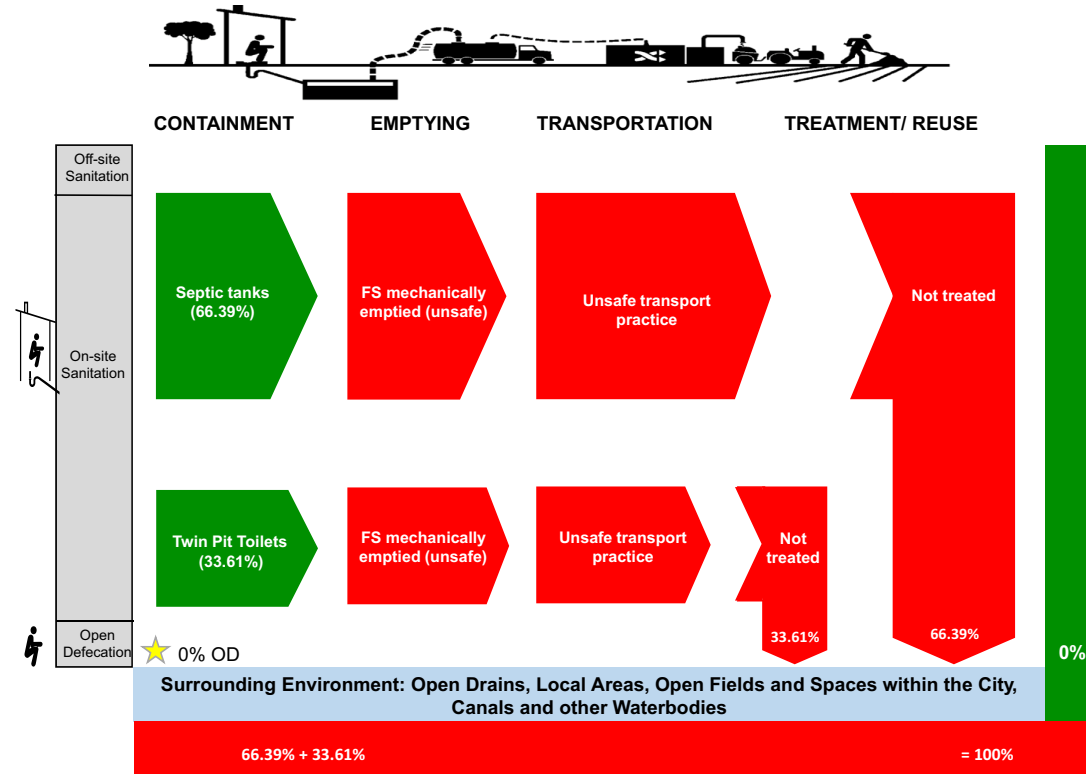
Population in 2017:	72,900
Area (Sq Km):	25.64
Total No. of Wards	31
No. of Households (2017):	16,200
No. of Households connected to Sewerage System:	0
No of Households with Septic Tanks:	16,200
No. of Households with Twin Pit Toilets:	0
No. of Households with Insanitary Toilets:	0
No. of Households dependent on Community Toilets:	0



Shit Flow Diagram of Proddatur

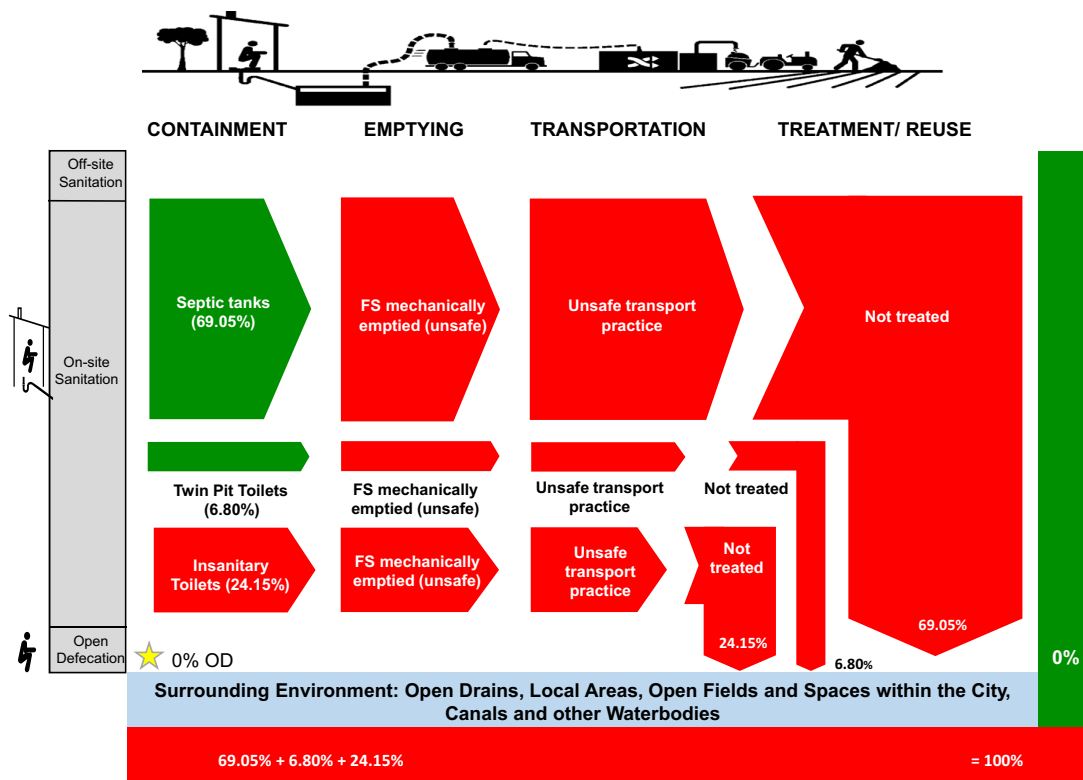
Population in 2017:	1,72,575
Area (Sq Km):	7.13
Total No. of Wards	40
No. of Households (2017):	38,350
No. of Households connected to Sewerage System:	0
No of Households with Septic Tanks:	27,837
No. of Households with Twin Pit Toilets:	10,513
No. of Households with Insanitary Toilets:	0
No. of Households dependent on Community Toilets:	0

Sanitation Situation in Pulivendula



Shit Flow Diagram of Pulivendula

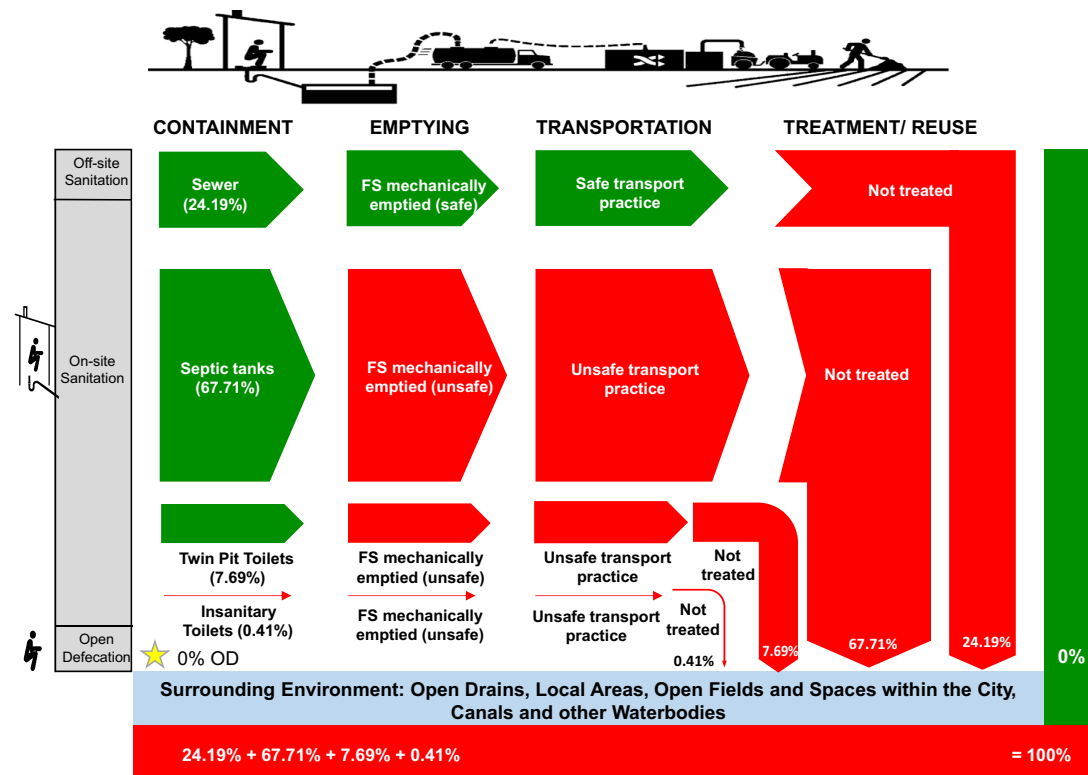
Population in 2017:	1,72,575
Area (Sq Km):	7.13
Total No. of Wards	40
No. of Households (2017):	38,350
No. of Households connected to Sewerage System:	0
No of Households with Septic Tanks:	27,837
No. of Households with Twin Pit Toilets:	10,513
No. of Households with Insanitary Toilets:	0
No. of Households dependent on Community Toilets:	0



Shit Flow Diagram of Punganur

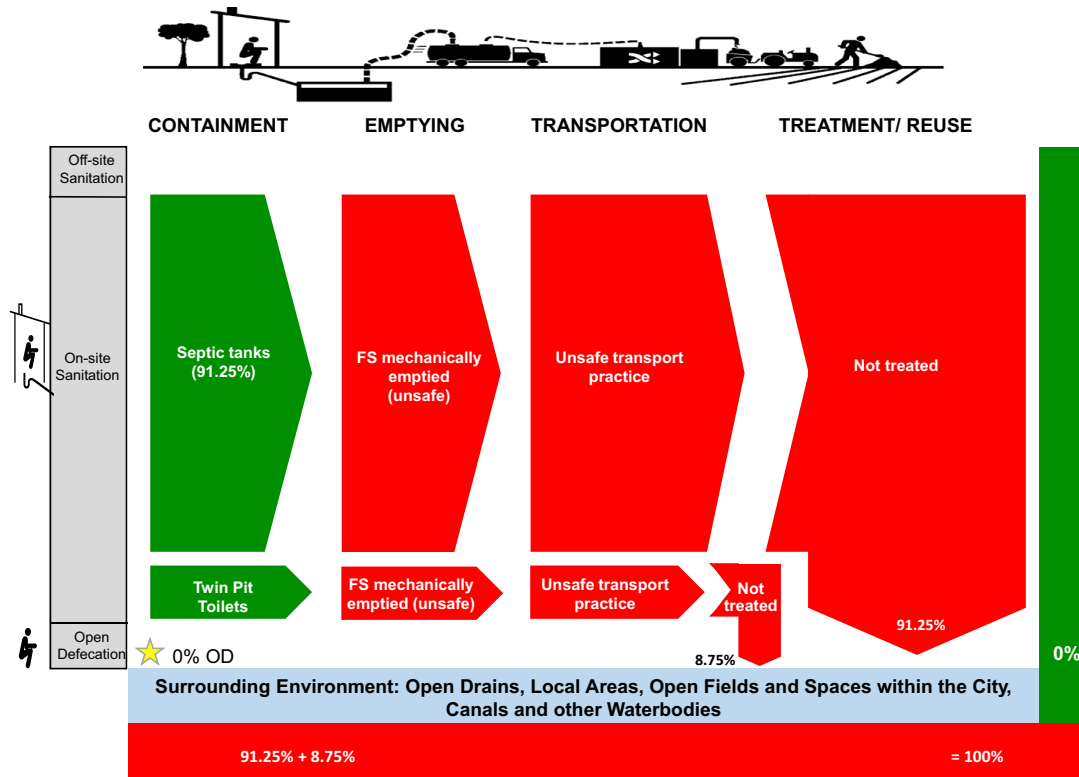
Population in 2017:	57,452
Area (Sq Km):	15.46
Total No. of Wards	24
No. of Households (2017):	12,767
No. of Households connected to Sewerage System:	0
No of Households with Septic Tanks:	8,816
No. of Households with Twin Pit Toilets:	868
No. of Households with Insanitary Toilets:	3,083
No. of Households dependent on Community Toilets:	0

Sanitation Situation in Puttaparthi



Shit Flow Diagram of Puttaparthi

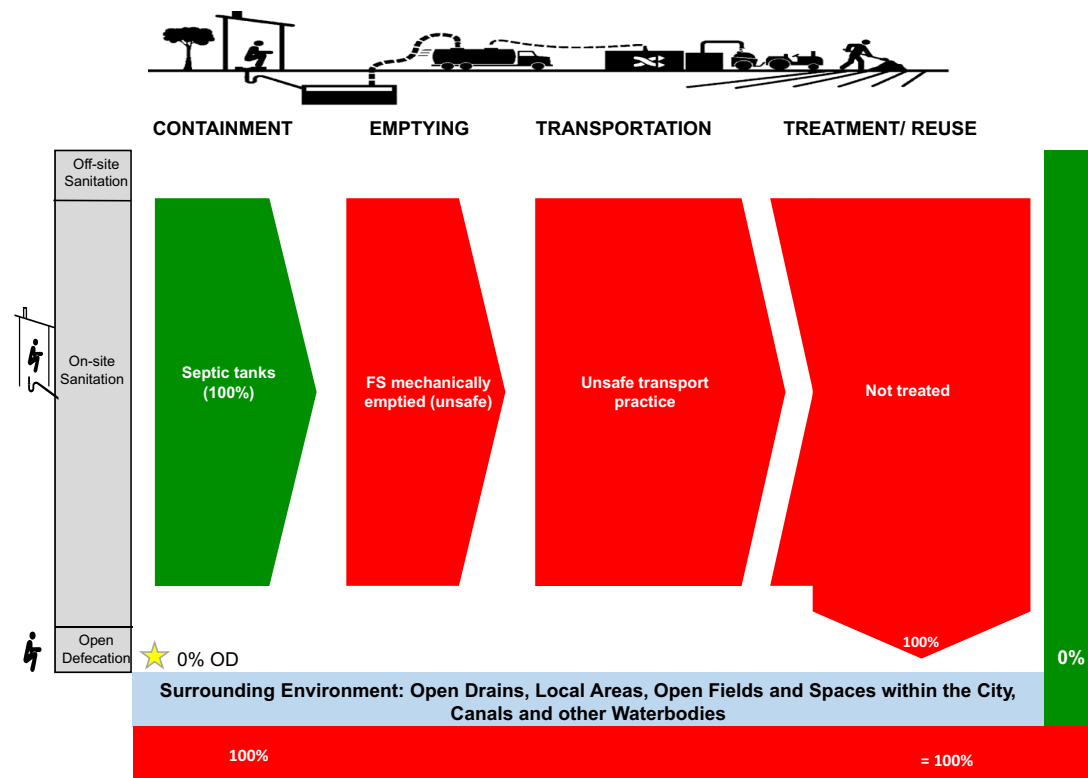
Population in 2017:	1,10,943
Area (Sq Km):	60.40
Total No. of Wards	20
No. of Households (2017):	24,654
No. of Households connected to Sewerage System:	0
No of Households with Septic Tanks:	5,965
No. of Households with Twin Pit Toilets:	16,692
No. of Households with Insanitary Toilets:	1,895
No. of Households dependent on Community Toilets:	102



Shit Flow Diagram of Puttur

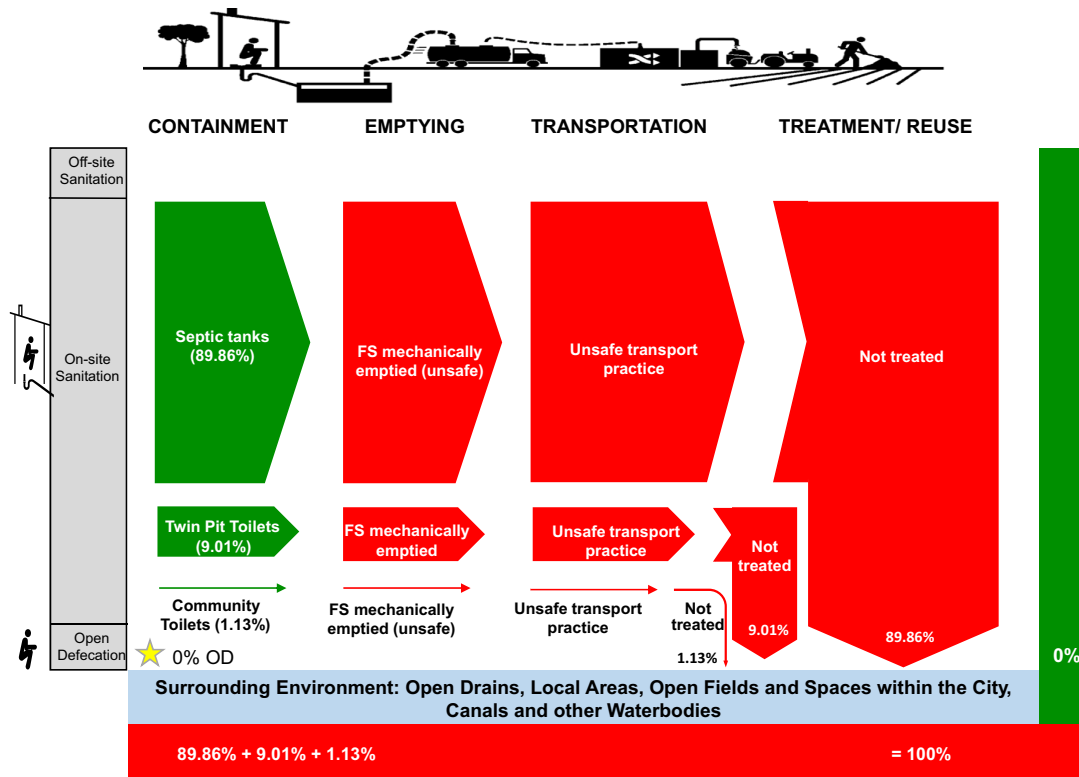
Population in 2017:	60,647
Area (Sq Km):	31.89
Total No. of Wards	24
No. of Households (2017):	13,477
No. of Households connected to Sewerage System:	0
No of Households with Septic Tanks:	12,298
No. of Households with Twin Pit Toilets:	1,179
No. of Households with Insanitary Toilets:	0
No. of Households dependent on Community Toilets:	0

Sanitation Situation in Rajam



Shit Flow Diagram of Rajam

Population in 2017:	50,211
Area (Sq Km):	25.76
Total No. of Wards	20
No. of Households (2017):	11,158
No. of Households connected to Sewerage System:	0
No of Households with Septic Tanks:	11,158
No. of Households with Twin Pit Toilets:	0
No. of Households with Insanitary Toilets:	0
No. of Households dependent on Community Toilets:	0

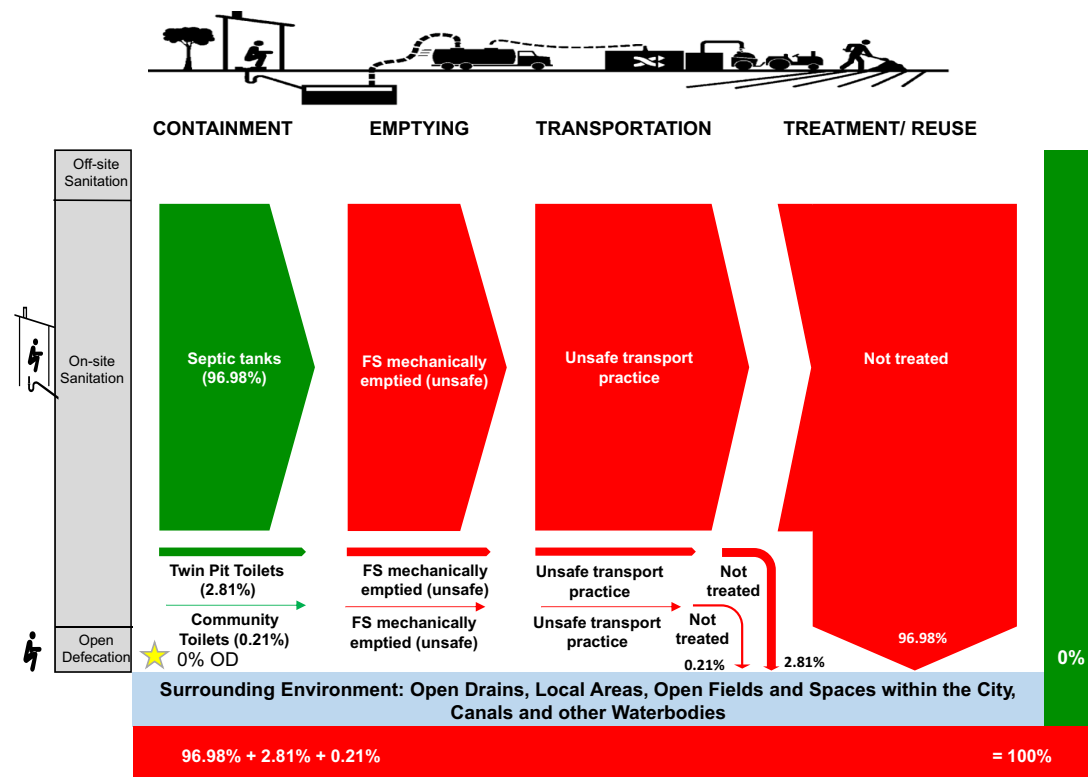


Shit Flow Diagram of Rajamahendravaram

Population in 2017:	4,27,473
Area (Sq Km):	44.50
Total No. of Wards	50
No. of Households (2017):	94,994
No. of Households connected to Sewerage System:	0
No of Households with Septic Tanks:	85,362
No. of Households with Twin Pit Toilets:	8,561
No. of Households with Insanitary Toilets:	0
No. of Households dependent on Community Toilets:	1,071

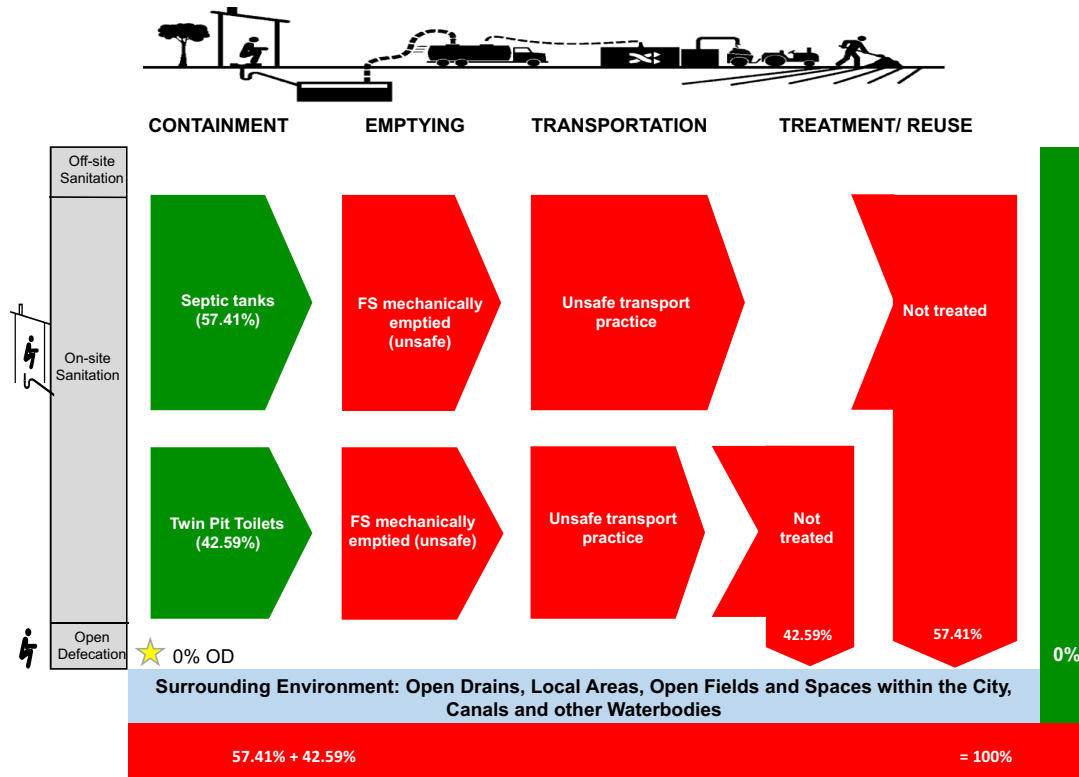
Sanitation Situation in Rajamahendravaram

Sanitation Situation in Rajampeta



Shit Flow Diagram of Rajampeta

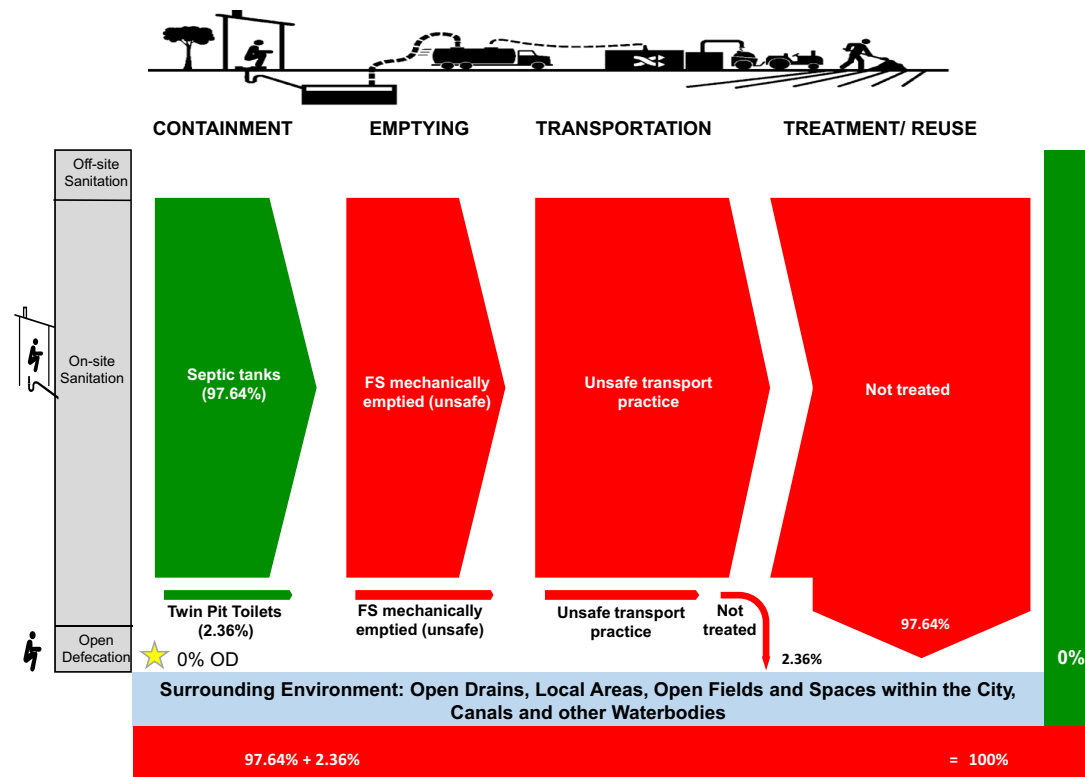
Population in 2017:	51,750
Area (Sq Km):	5.47
Total No. of Wards	20
No. of Households (2017):	11,500
No. of Households connected to Sewerage System:	0
No of Households with Septic Tanks:	11,153
No. of Households with Twin Pit Toilets:	323
No. of Households with Insanitary Toilets:	0
No. of Households dependent on Community Toilets:	24



Shit Flow Diagram of Ramachandrapuram

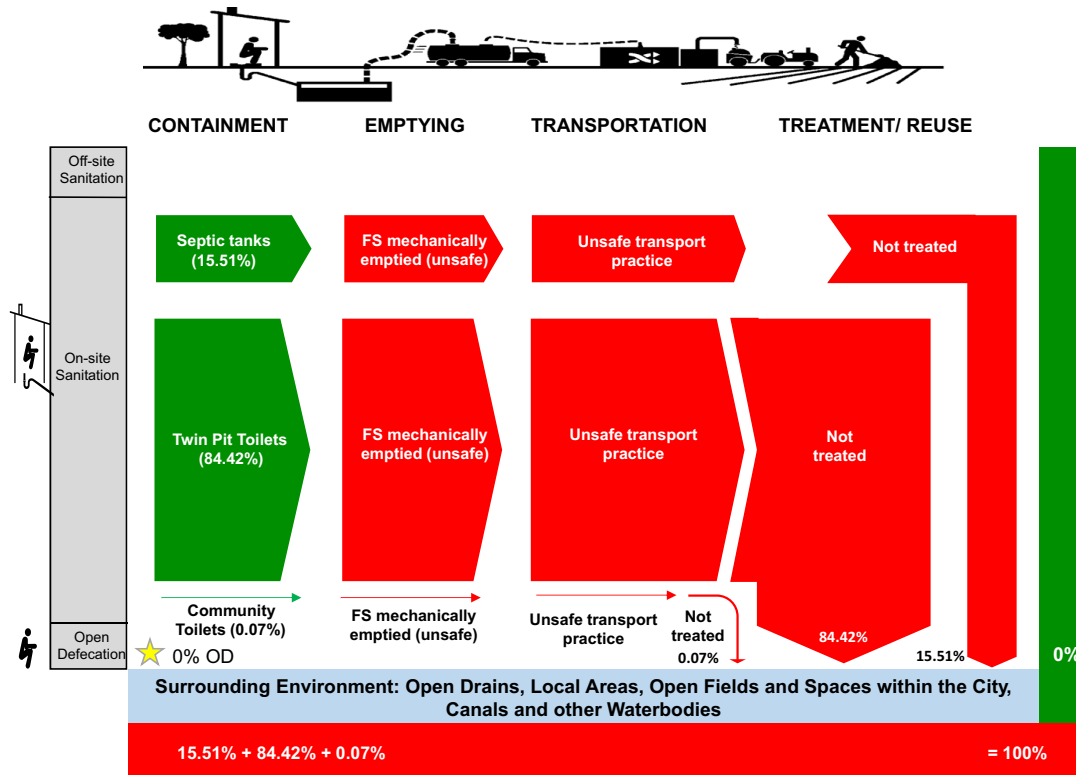
Population in 2017:	58,113
Area (Sq Km):	13.98
Total No. of Wards	27
No. of Households (2017):	12,914
No. of Households connected to Sewerage System:	0
No of Households with Septic Tanks:	7,414
No. of Households with Twin Pit Toilets:	5,500
No. of Households with Insanitary Toilets:	0
No. of Households dependent on Community Toilets:	0

Sanitation Situation in Rayachoty



Shit Flow Diagram of Rayachoty

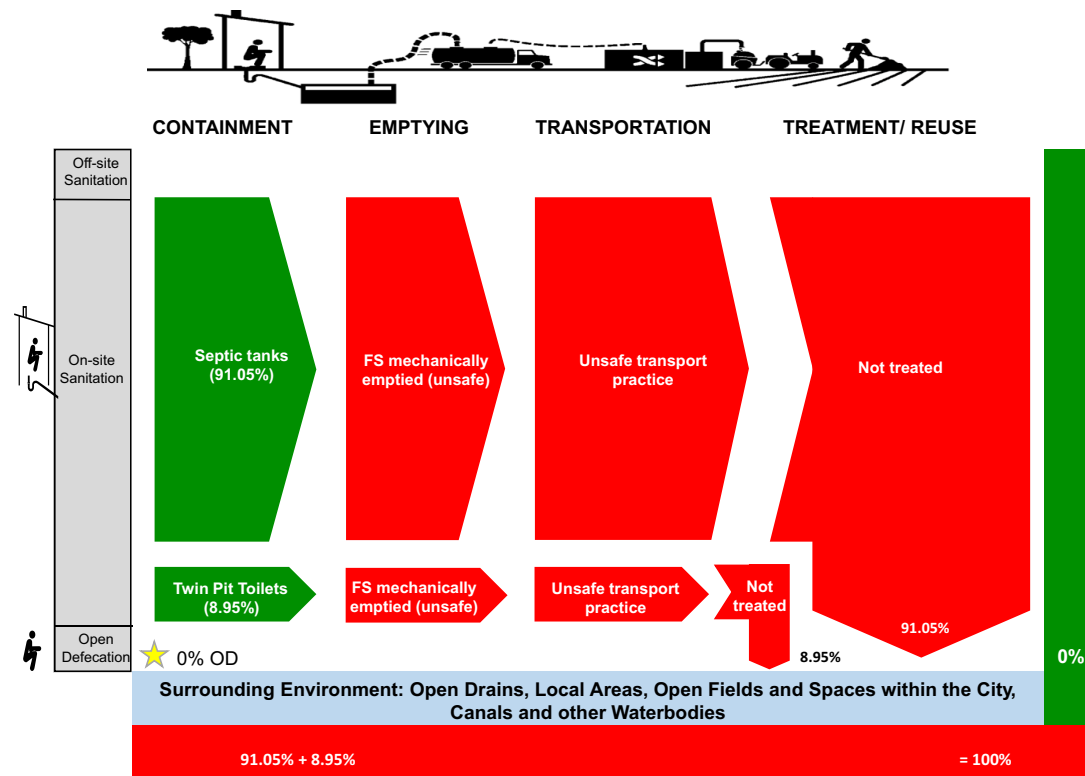
Population in 2017:	1,01,250
Area (Sq Km):	26.97
Total No. of Wards	31
No. of Households (2017):	22,500
No. of Households connected to Sewerage System:	0
No of Households with Septic Tanks:	21,970
No. of Households with Twin Pit Toilets:	530
No. of Households with Insanitary Toilets:	0
No. of Households dependent on Community Toilets:	0



Shit Flow Diagram of Rayadurg

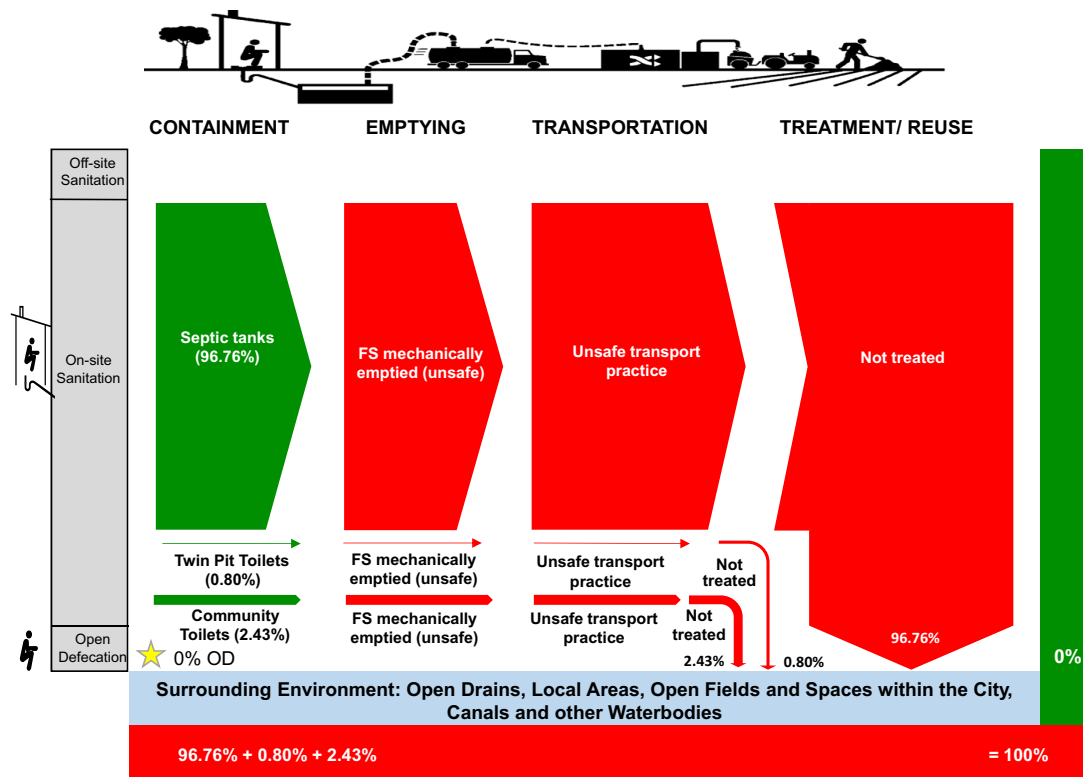
Population in 2017:	65,120
Area (Sq Km):	49.73
Total No. of Wards	31
No. of Households (2017):	14,471
No. of Households connected to Sewerage System:	0
No of Households with Septic Tanks:	2,244
No. of Households with Twin Pit Toilets:	12,217
No. of Households with Insanitary Toilets:	0
No. of Households dependent on Community Toilets:	10

Sanitation Situation in Repalle



Shit Flow Diagram of Repalle

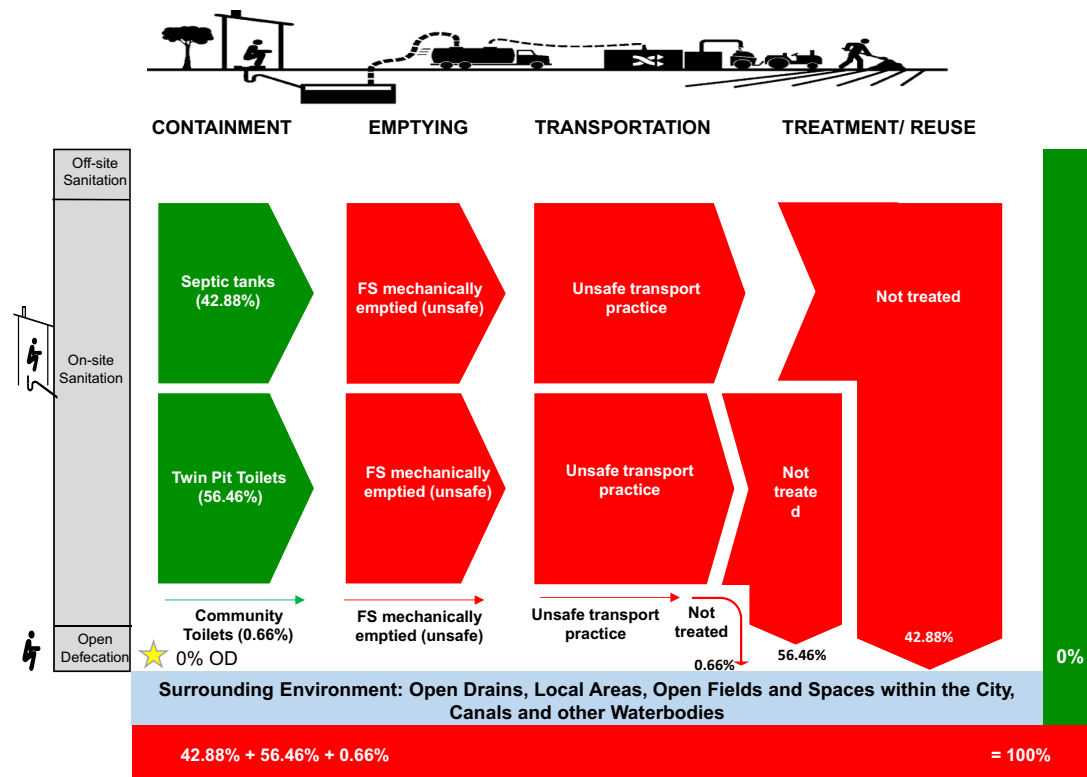
Population in 2017:	61,479
Area (Sq Km):	10.97
Total No. of Wards	28
No. of Households (2017):	13,662
No. of Households connected to Sewerage System:	0
No of Households with Septic Tanks:	12,439
No. of Households with Twin Pit Toilets:	1,223
No. of Households with Insanitary Toilets:	0
No. of Households dependent on Community Toilets:	0



Shit Flow Diagram of Saluru

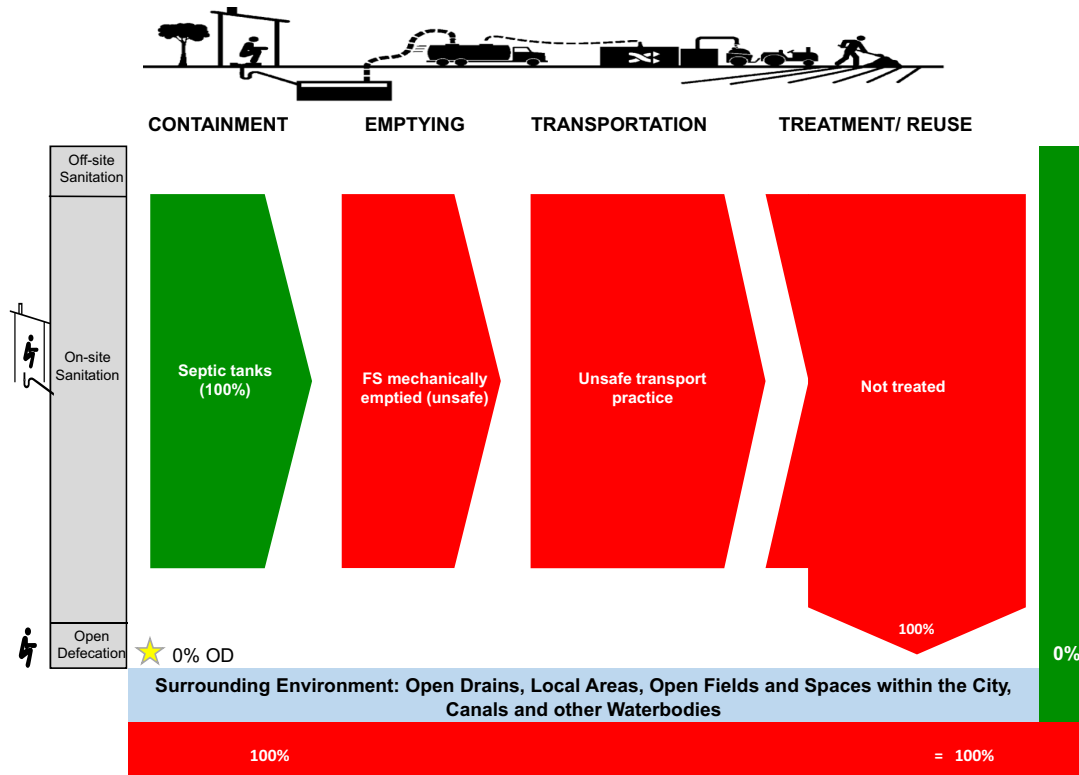
Population in 2017:	55,913
Area (Sq Km):	19.55
Total No. of Wards	29
No. of Households (2017):	12,425
No. of Households connected to Sewerage System:	0
No of Households with Septic Tanks:	12,023
No. of Households with Twin Pit Toilets:	100
No. of Households with Insanitary Toilets:	0
No. of Households dependent on Community Toilets:	302

Sanitation Situation in Samalkot



Shit Flow Diagram of Samalkot

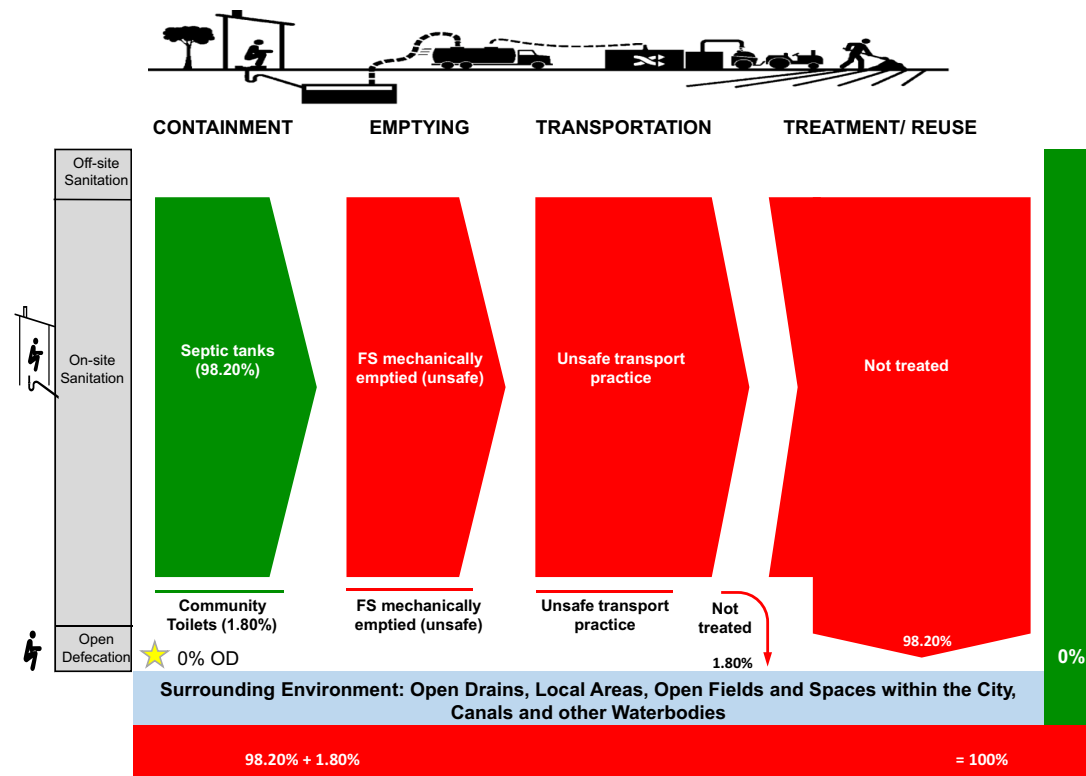
Population in 2017:	72,198
Area (Sq Km):	14.88
Total No. of Wards	30
No. of Households (2017):	16,044
No. of Households connected to Sewerage System:	0
No of Households with Septic Tanks:	6,880
No. of Households with Twin Pit Toilets:	9,058
No. of Households with Insanitary Toilets:	0
No. of Households dependent on Community Toilets:	106



Shit Flow Diagram of Sattenapalli

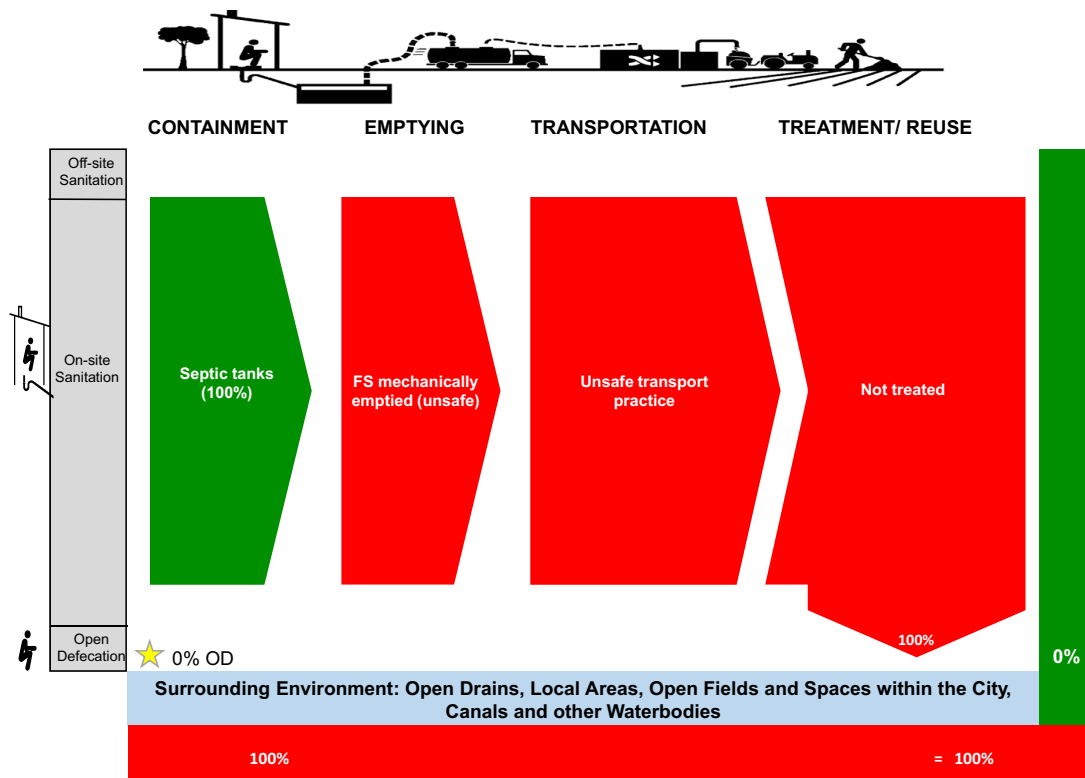
Population in 2017:	65,250
Area (Sq Km):	21.88
Total No. of Wards	30
No. of Households (2017):	14,500
No. of Households connected to Sewerage System:	0
No of Households with Septic Tanks:	14,500
No. of Households with Twin Pit Toilets:	0
No. of Households with Insanitary Toilets:	0
No. of Households dependent on Community Toilets:	0

Sanitation Situation in Srikakulam



Shit Flow Diagram of Srikakulam

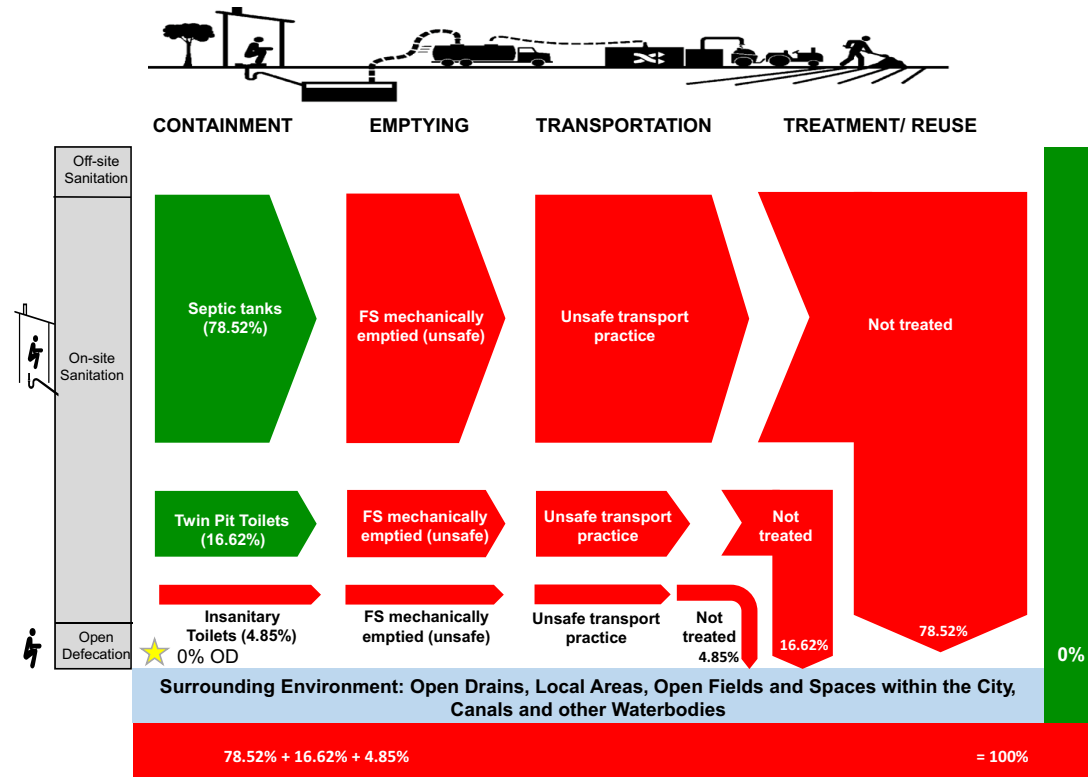
Population in 2017:	1,42,880
Area (Sq Km):	14.12
Total No. of Wards	50
No. of Households (2017):	31,751
No. of Households connected to Sewerage System:	0
No of Households with Septic Tanks:	31,181
No. of Households with Twin Pit Toilets:	0
No. of Households with Insanitary Toilets:	0
No. of Households dependent on Community Toilets:	570



Shit Flow Diagram of Srikalahasti

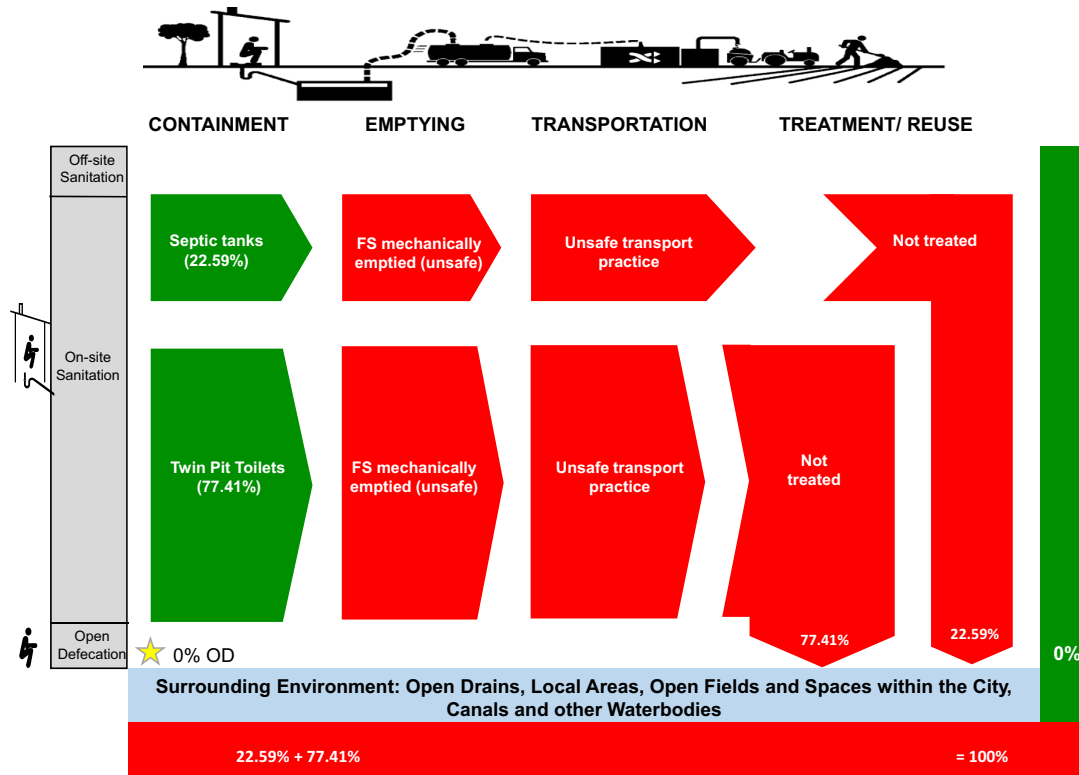
Population in 2017:	89,973
Area (Sq Km):	24.60
Total No. of Wards	35
No. of Households (2017):	19,994
No. of Households connected to Sewerage System:	0
No of Households with Septic Tanks:	19,994
No. of Households with Twin Pit Toilets:	0
No. of Households with Insanitary Toilets:	0
No. of Households dependent on Community Toilets:	0

Sanitation Situation in Sullurpet



Shit Flow Diagram of Sullurpet

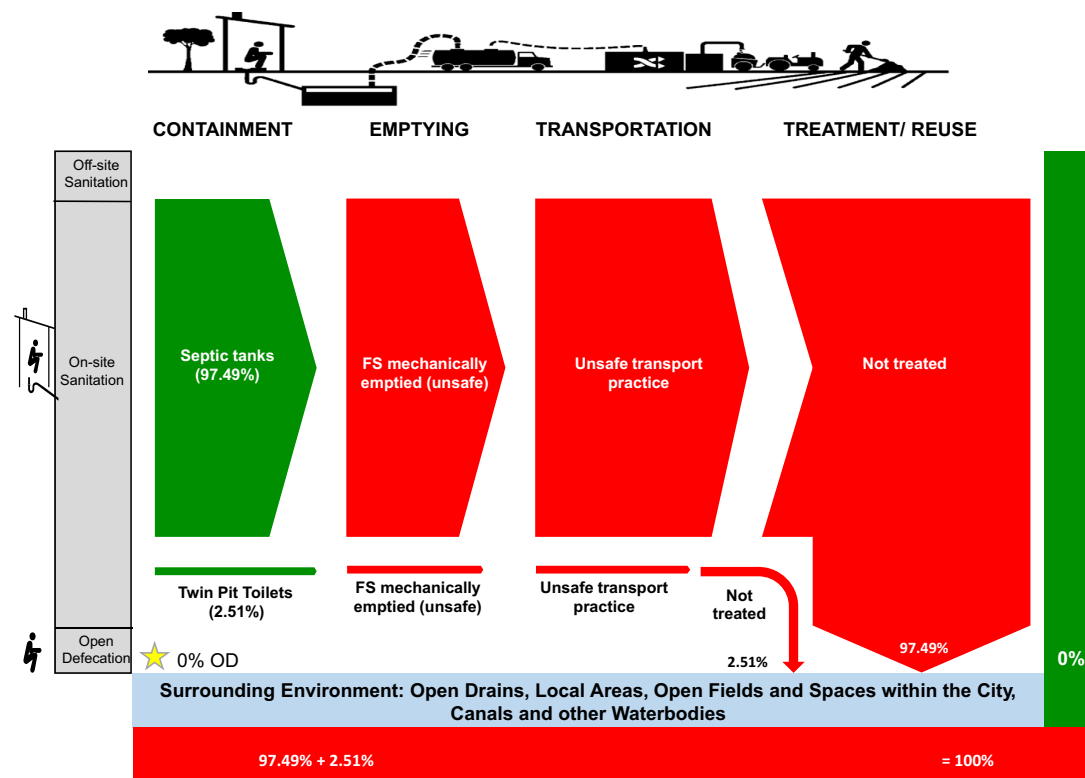
Population in 2017:	53,325
Area (Sq Km):	17.68
Total No. of Wards	23
No. of Households (2017):	11,850
No. of Households connected to Sewerage System:	0
No of Households with Septic Tanks:	9,305
No. of Households with Twin Pit Toilets:	1,970
No. of Households with Insanitary Toilets:	575
No. of Households dependent on Community Toilets:	0



Shit Flow Diagram of Tadepalli

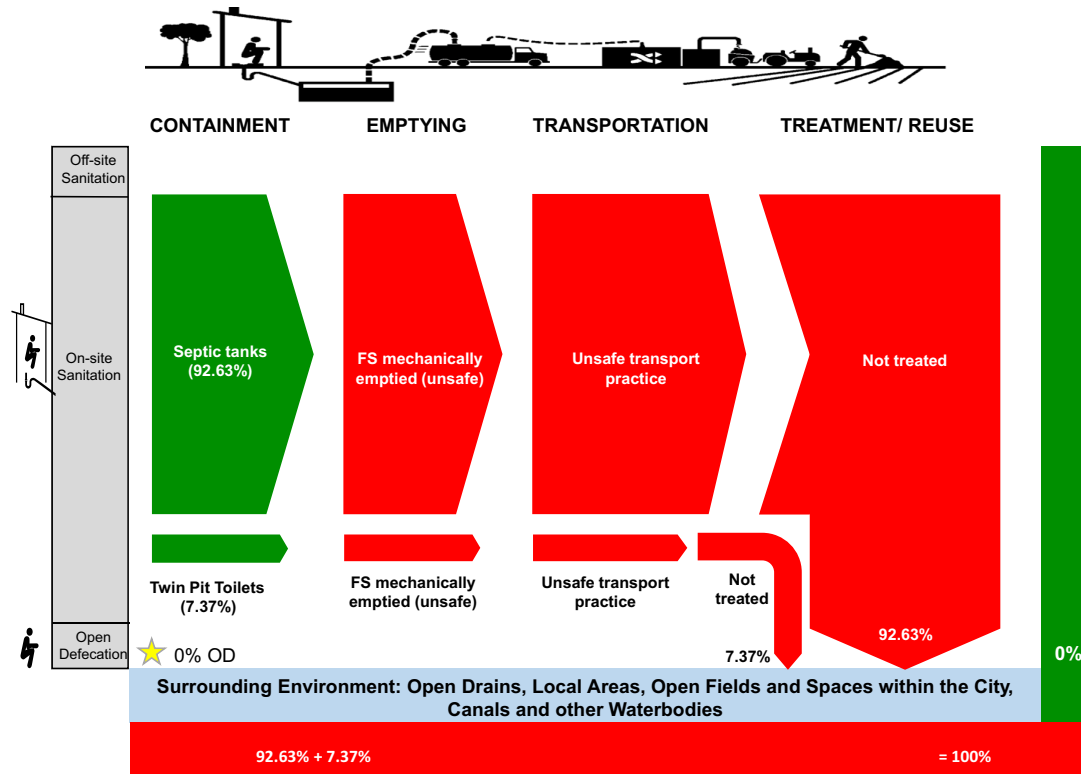
Population in 2017:	67,554
Area (Sq Km):	19.60
Total No. of Wards	23
No. of Households (2017):	15,012
No. of Households connected to Sewerage System:	0
No of Households with Septic Tanks:	3,391
No. of Households with Twin Pit Toilets:	11,621
No. of Households with Insanitary Toilets:	0
No. of Households dependent on Community Toilets:	0

Sanitation Situation in Tadepalligudem



Shit Flow Diagram of Tadepalligudem

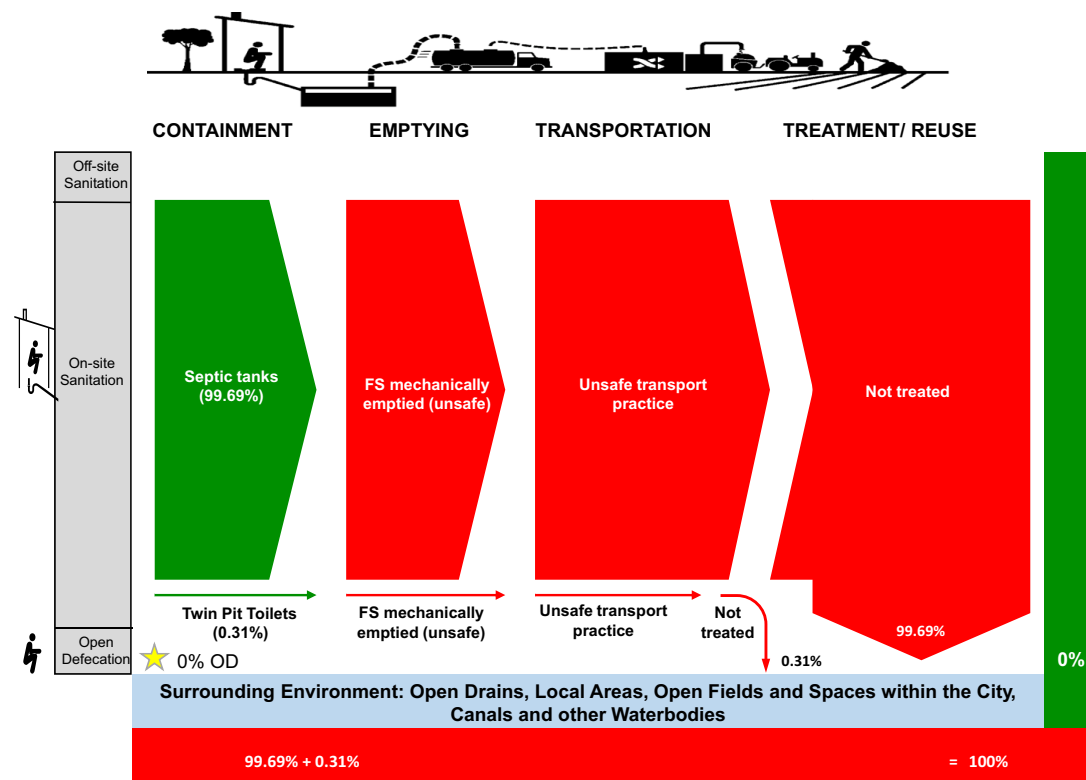
Population in 2017:	1,25,042
Area (Sq Km):	20.71
Total No. of Wards	35
No. of Households (2017):	27,787
No. of Households connected to Sewerage System:	0
No. of Households with Septic Tanks:	27,090
No. of Households with Twin Pit Toilets:	697
No. of Households with Insanitary Toilets:	0
No. of Households dependent on Community Toilets:	0



Shit Flow Diagram of Tadipatri

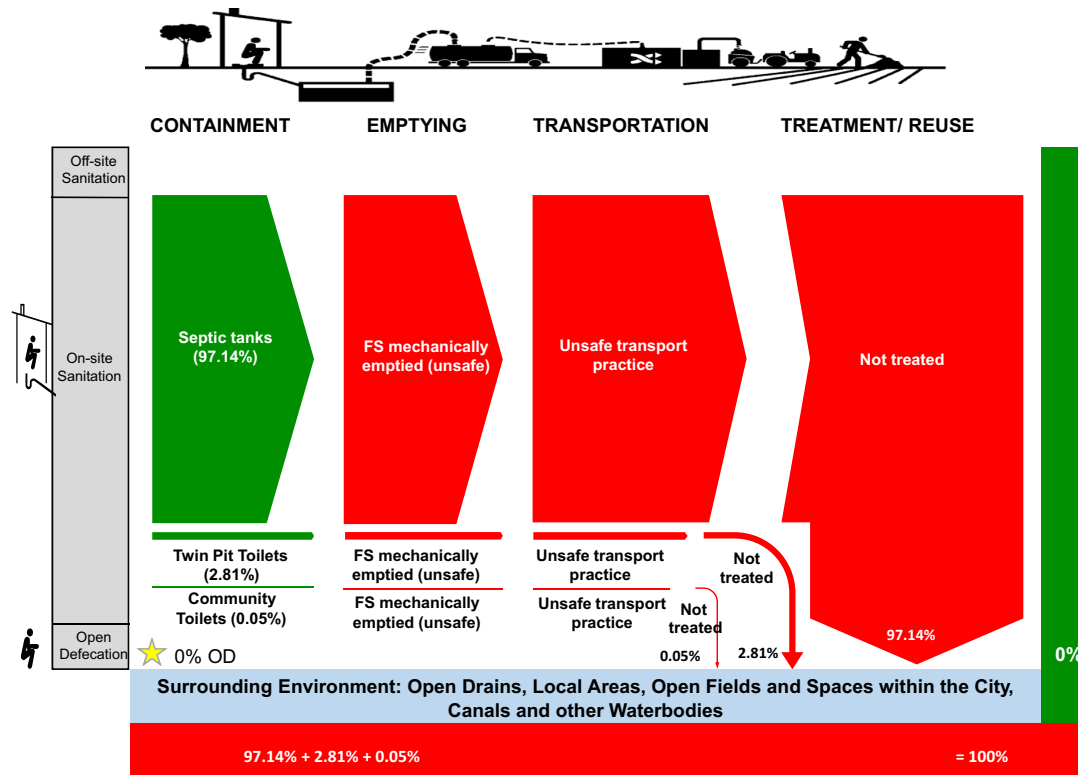
Population in 2017:	1,21,950
Area (Sq Km):	7.49
Total No. of Wards:	34
No. of Households (2017):	27,100
No. of Households connected to Sewerage System:	0
No of Households with Septic Tanks:	25,104
No. of Households with Twin Pit Toilets:	1,996
No. of Households with Insanitary Toilets:	0
No. of Households dependent on Community Toilets:	0

Sanitation Situation in Tanuku



Shit Flow Diagram of Tanuku

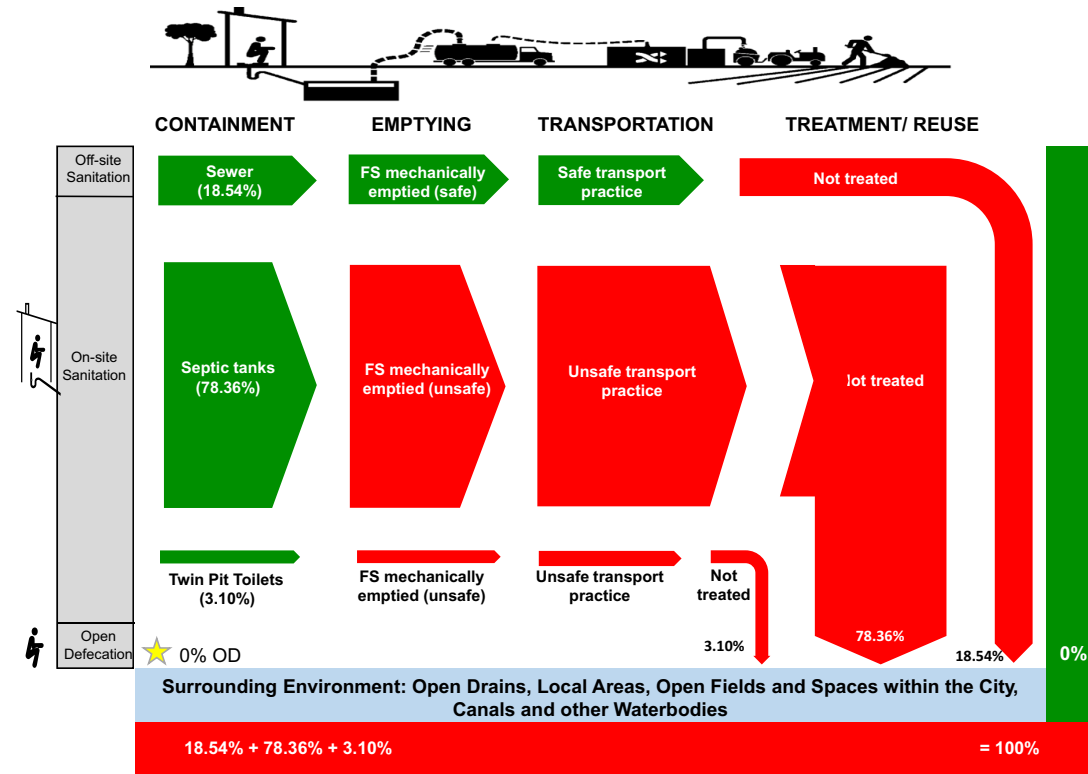
Population in 2017:	1,09,836
Area (Sq Km):	24.55
Total No. of Wards	34
No. of Households (2017):	24,408
No. of Households connected to Sewerage System:	0
No of Households with Septic Tanks:	24,332
No. of Households with Twin Pit Toilets:	76
No. of Households with Insanitary Toilets:	0
No. of Households dependent on Community Toilets:	0



Shit Flow Diagram of Tenali

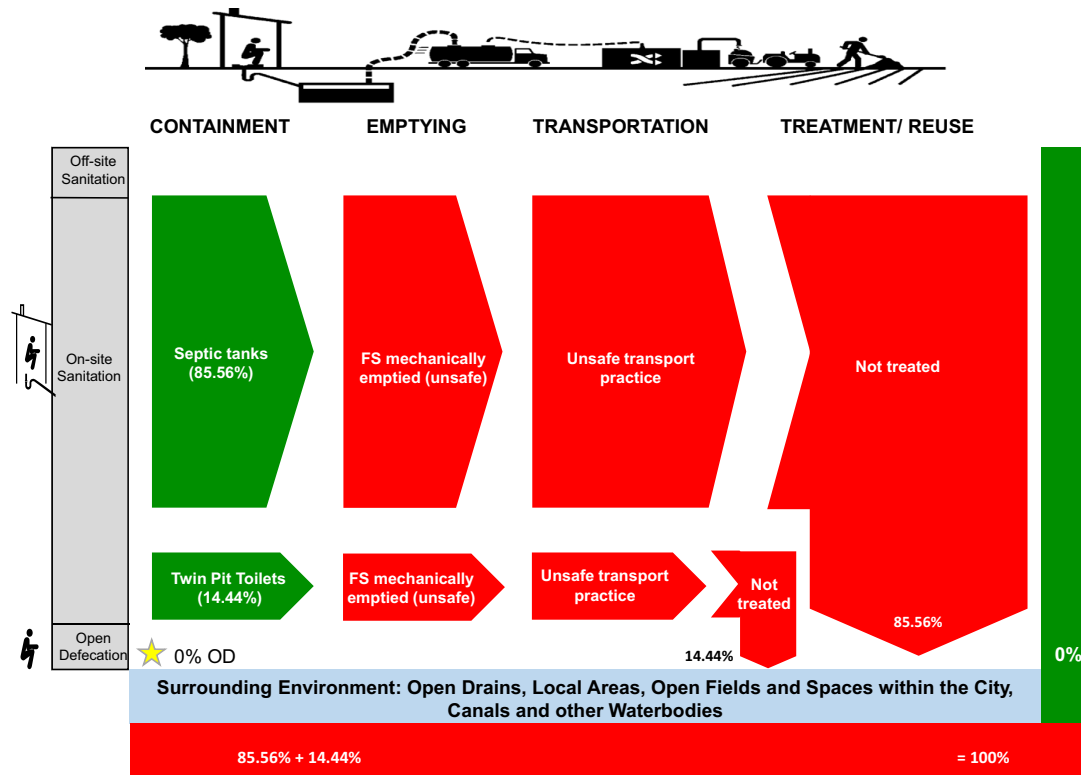
Population in 2017:	1,96,218
Area (Sq Km):	16.63
Total No. of Wards	40
No. of Households (2017):	43,604
No. of Households connected to Sewerage System:	0
No of Households with Septic Tanks:	42,356
No. of Households with Twin Pit Toilets:	1,226
No. of Households with Insanitary Toilets:	0
No. of Households dependent on Community Toilets:	22

Sanitation Situation in Tirupathi



Shit Flow Diagram of Tirupathi

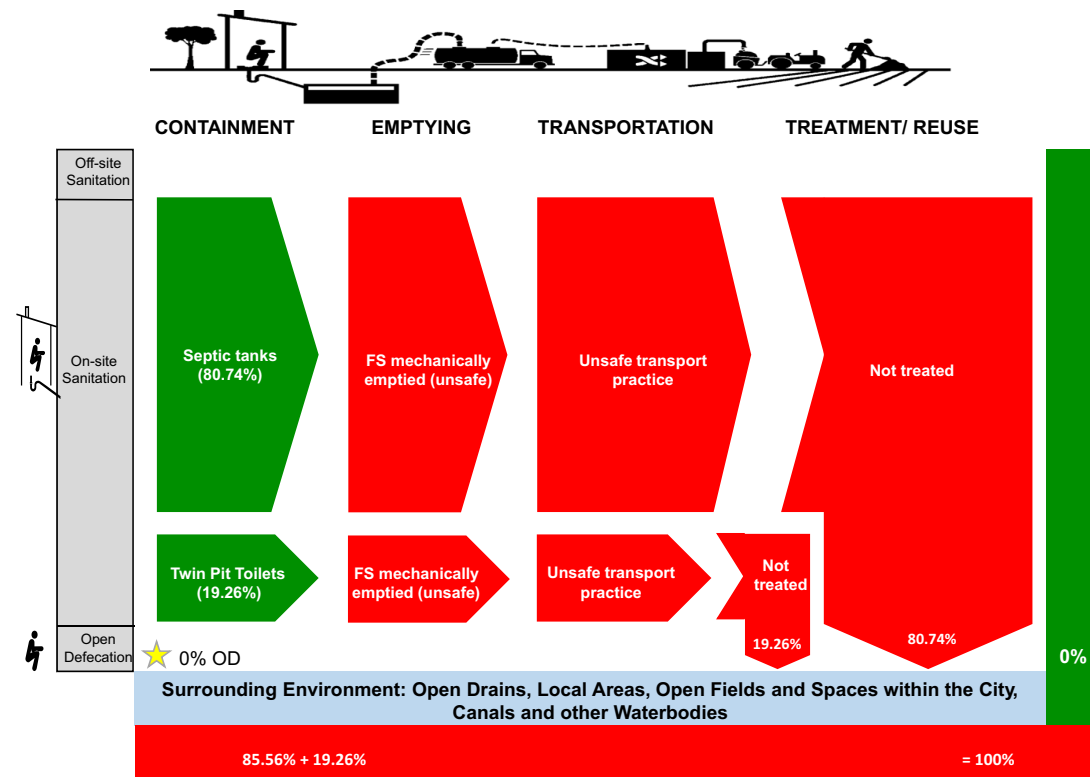
Population in 2017:	5,70,353
Area (Sq Km):	27.44
Total No. of Wards	50
No. of Households (2017):	1,26,745
No. of Households connected to Sewerage System:	23,500
No of Households with Septic Tanks:	99,316
No. of Households with Twin Pit Toilets:	3,929
No. of Households with Insanitary Toilets:	0
No. of Households dependent on Community Toilets:	0



Shit Flow Diagram of Tiruvuru

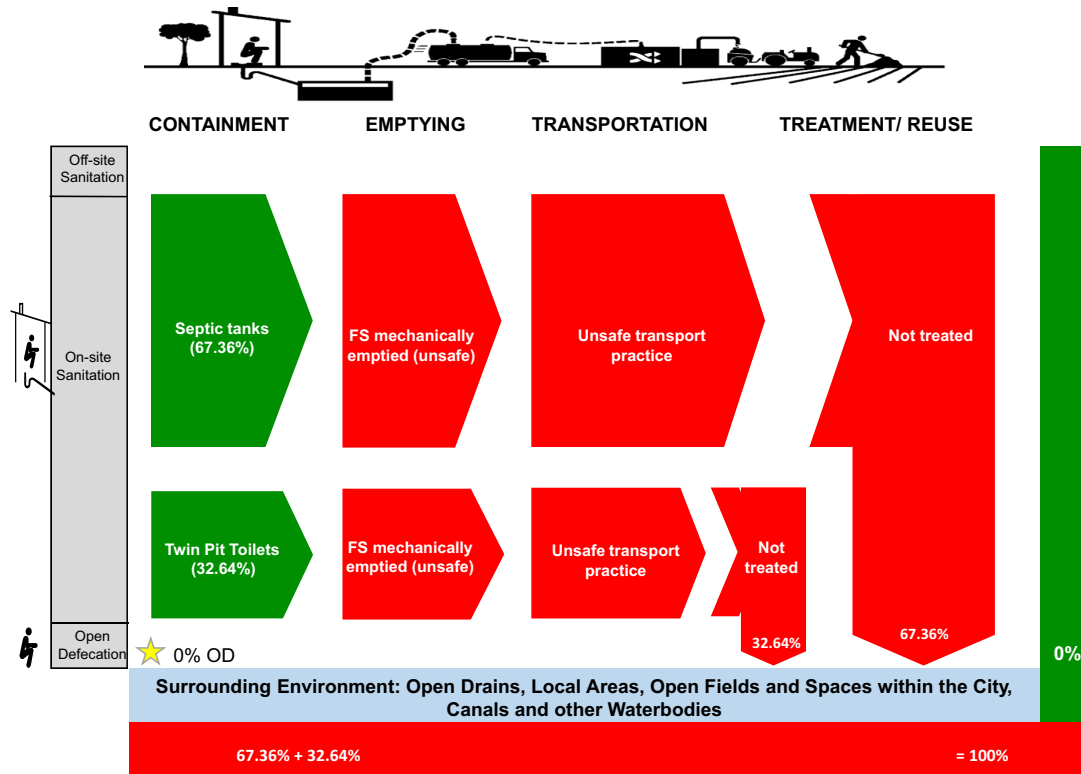
Population in 2017:	40,950
Area (Sq Km):	27.67
Total No. of Wards	20
No. of Households (2017):	9,100
No. of Households connected to Sewerage System:	0
No of Households with Septic Tanks:	7,786
No. of Households with Twin Pit Toilets:	1,314
No. of Households with Insanitary Toilets:	0
No. of Households dependent on Community Toilets:	0

Sanitation Situation in Tuni



Shit Flow Diagram of Tuni

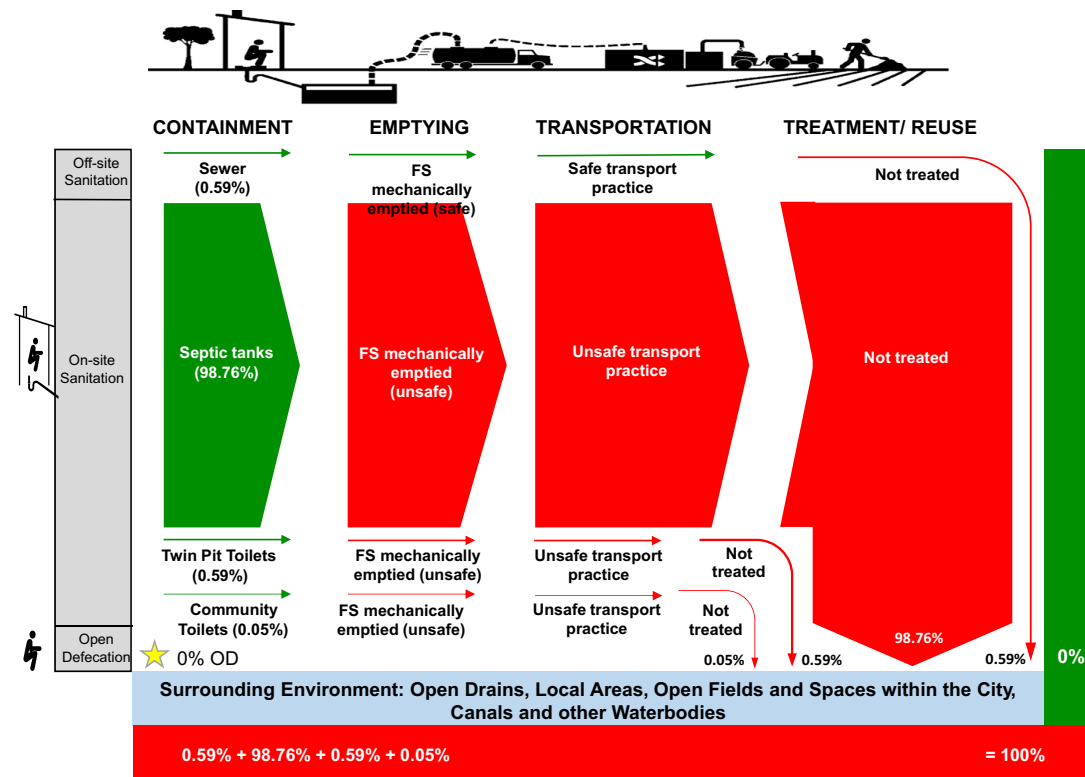
Population in 2017:	76,950
Area (Sq Km):	7.02
Total No. of Wards	30
No. of Households (2017):	17,100
No. of Households connected to Sewerage System:	0
No of Households with Septic Tanks:	13,807
No. of Households with Twin Pit Toilets:	3,293
No. of Households with Insanitary Toilets:	0
No. of Households dependent on Community Toilets:	0



Shit Flow Diagram of Venkatagiri

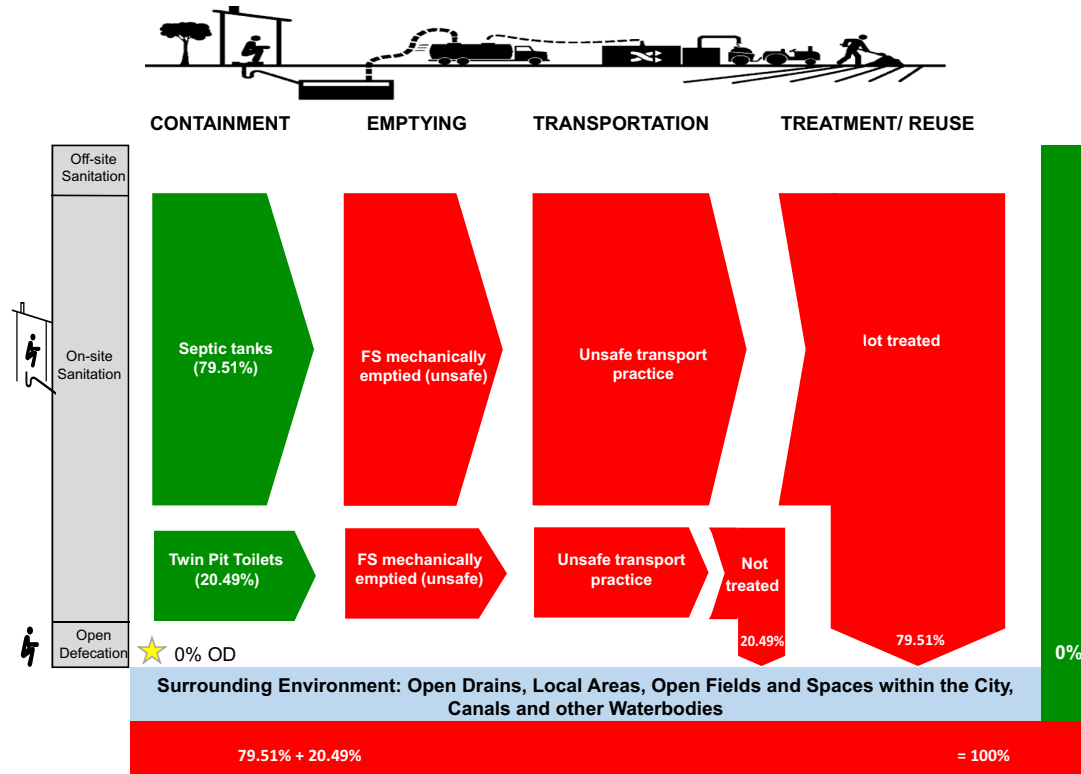
Population in 2017:	58,338
Area (Sq Km):	23.50
Total No. of Wards	25
No. of Households (2017):	12,964
No. of Households connected to Sewerage System:	0
No of Households with Septic Tanks:	8,733
No. of Households with Twin Pit Toilets:	4,231
No. of Households with Insanitary Toilets:	0
No. of Households dependent on Community Toilets:	0

Sanitation Situation in Vijayawada



Shit Flow Diagram of Vijayawada

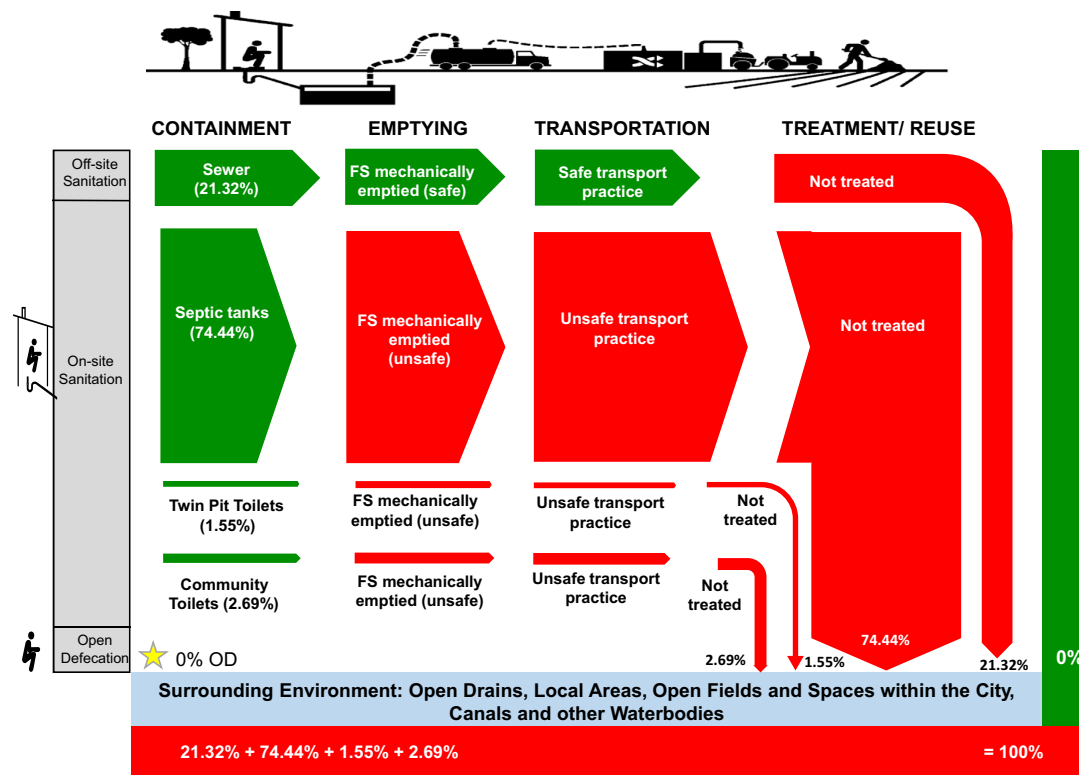
Population in 2017:	12,81,285
Area (Sq Km):	61.88
Total No. of Wards	59
No. of Households (2017):	2,84,730
No. of Households connected to Sewerage System:	1,680
No of Households with Septic Tanks:	281,212
No. of Households with Twin Pit Toilets:	1,680
No. of Households with Insanitary Toilets:	6
No. of Households dependent on Community Toilets:	152



Shit Flow Diagram of Vinukonda

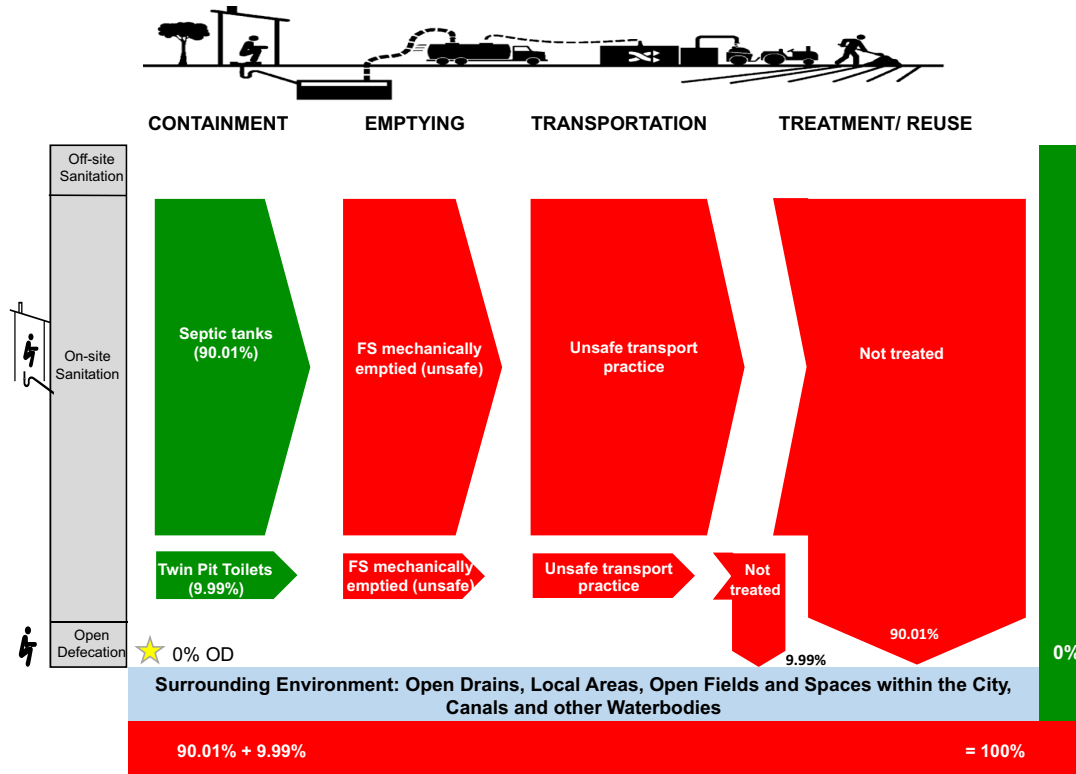
Population in 2017:	70,835
Area (Sq Km):	22.82
Total No. of Wards	26
No. of Households (2017):	15,741
No. of Households connected to Sewerage System:	0
No of Households with Septic Tanks:	12,515
No. of Households with Twin Pit Toilets:	3,226
No. of Households with Insanitary Toilets:	0
No. of Households dependent on Community Toilets:	0

Sanitation Situation in Visakhapatnam



Shit Flow Diagram of Visakhapatnam

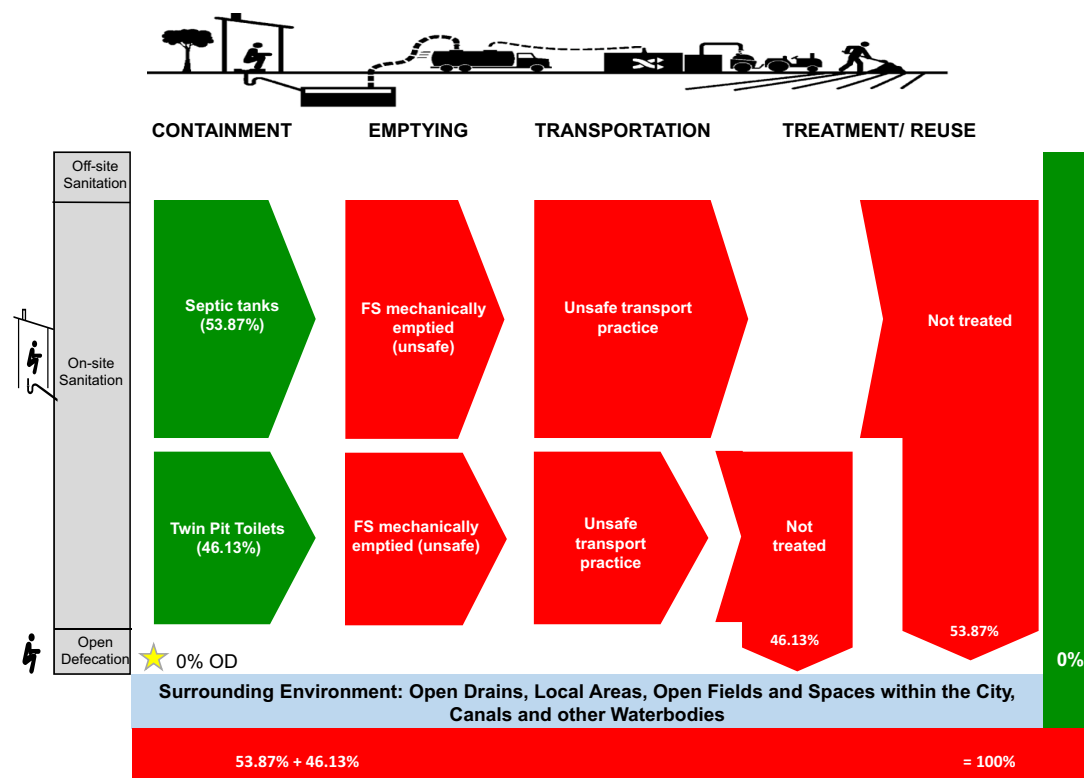
Population in 2017:	27,79,277
Area (Sq Km):	111.60
Total No. of Wards	75
No. of Households (2017):	498,349
No. of Households connected to Sewerage System:	131,663
No of Households with Septic Tanks:	459,783
No. of Households with Twin Pit Toilets:	9,568
No. of Households with Insanitary Toilets:	0
No. of Households dependent on Community Toilets:	16,603



Shit Flow Diagram of Vizianagaram

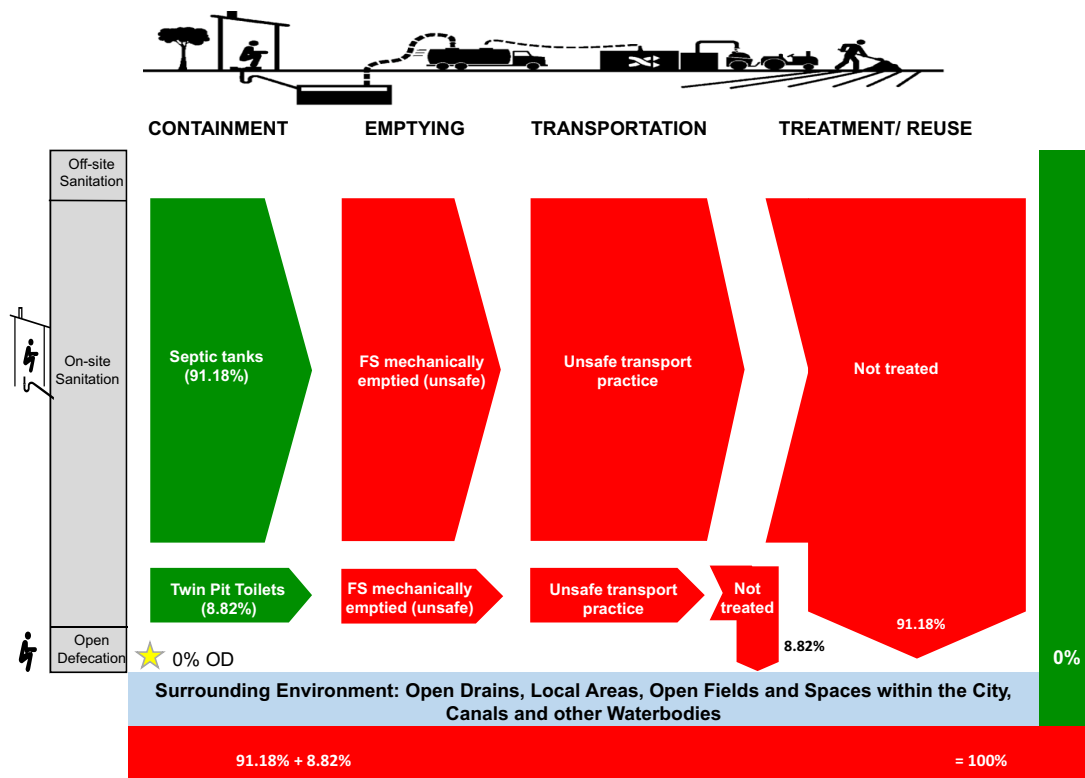
Population in 2017:	2,78,933
Area (Sq Km):	52.46
Total No. of Wards	40
No. of Households (2017):	61,985
No. of Households connected to Sewerage System:	0
No of Households with Septic Tanks:	55,793
No. of Households with Twin Pit Toilets:	6,192
No. of Households with Insanitary Toilets:	0
No. of Households dependent on Community Toilets:	0

Sanitation Situation in Vuyyuru



Shit Flow Diagram of Vuyyuru

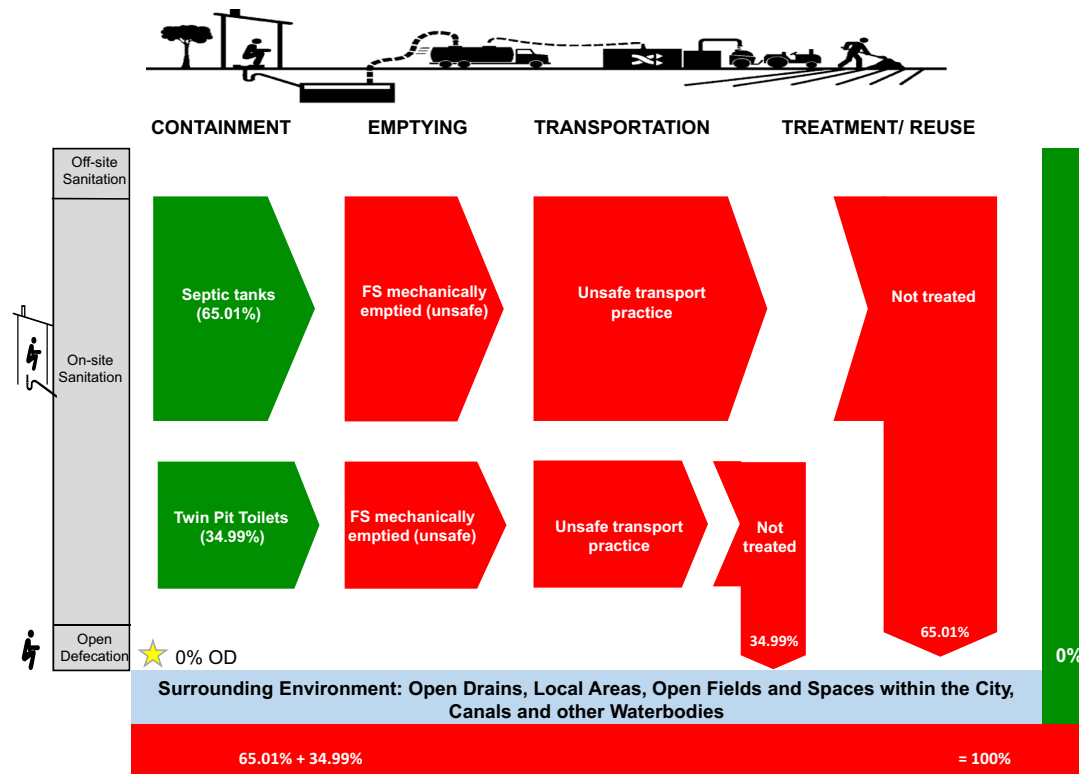
Population in 2017:	55,647
Area (Sq Km):	10.50
Total No. of Wards	20
No. of Households (2017):	12,366
No. of Households connected to Sewerage System:	0
No of Households with Septic Tanks:	6,661
No. of Households with Twin Pit Toilets:	5,705
No. of Households with Insanitary Toilets:	0
No. of Households dependent on Community Toilets:	0



Shit Flow Diagram of Yellamanchali

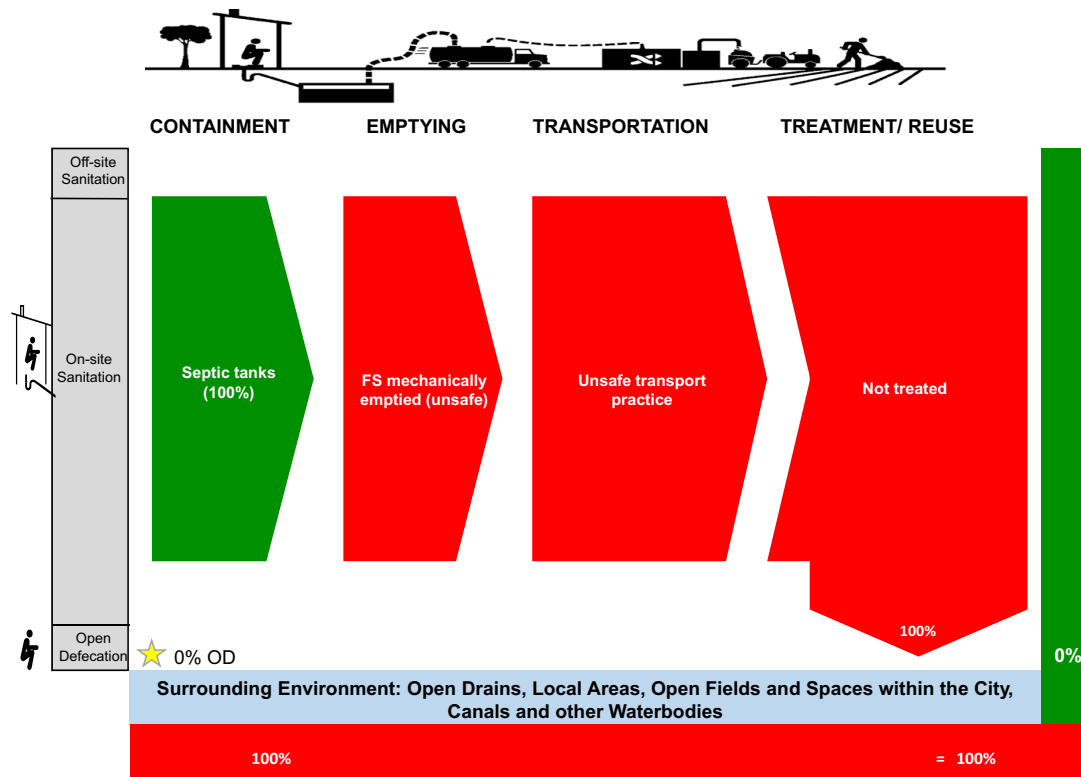
Population in 2017:	53,325
Area (Sq Km):	35.43
Total No. of Wards	24
No. of Households (2017):	11,850
No. of Households connected to Sewerage System:	0
No of Households with Septic Tanks:	10,805
No. of Households with Twin Pit Toilets:	1,045
No. of Households with Insanitary Toilets:	0
No. of Households dependent on Community Toilets:	0

Sanitation Situation in Yeleswaram



Shit Flow Diagram of Yeleswaram

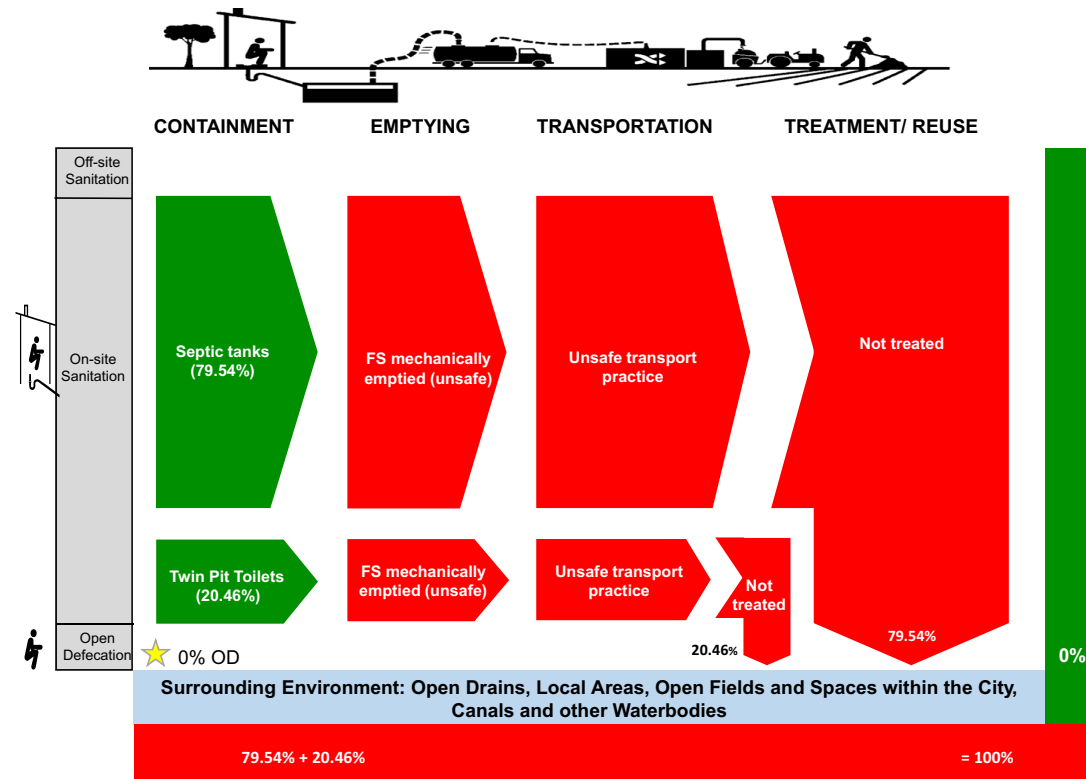
Population in 2017:	53,919
Area (Sq Km):	6.50
Total No. of Wards	20
No. of Households (2017):	11,982
No. of Households connected to Sewerage System:	0
No of Households with Septic Tanks:	7,789
No. of Households with Twin Pit Toilets:	4,193
No. of Households with Insanitary Toilets:	0
No. of Households dependent on Community Toilets:	0



Shit Flow Diagram of Yemmiganur

Population in 2017:	1,12,932
Area (Sq Km):	14.50
Total No. of Wards	33
No. of Households (2017):	25,096
No. of Households connected to Sewerage System:	0
No of Households with Septic Tanks:	25,096
No. of Households with Twin Pit Toilets:	0
No. of Households with Insanitary Toilets:	0
No. of Households dependent on Community Toilets:	0

Sanitation Situation in Yerraguntla



Shit Flow Diagram of Yerraguntla

Population in 2017:	47,250
Area (Sq Km):	5.32
Total No. of Wards	20
No. of Households (2017):	10,500
No. of Households connected to Sewerage System:	0
No of Households with Septic Tanks:	8,352
No. of Households with Twin Pit Toilets:	2,148
No. of Households with Insanitary Toilets:	0
No. of Households dependent on Community Toilets:	0

Andhra Pradesh has been focused on fighting the challenges in the sanitation space and even more so after the launch of Swachh Bharat Mission. Andhra Pradesh was the 2nd state in India to declare itself open defecation free. Unfortunately, even with all the efforts it can be seen that human excreta is still not being safely managed and the construction of more toilets simply is not the answer. The state needs to improve the other stages in the sanitation value chain. Giving even more attention to the emptying, transportation and treatment of the faecal sludge.

S3 Andhra has worked tirelessly with the Swachh Andhra Corporation and other wings of the Government of Andhra Pradesh to develop G.O 134 – Policy on Faecal Sludge and Septage Management as well as G.O. 135 – Policy on waste water re-use and recycle for urban local bodies in Andhra Pradesh. S3 Andhra has also been assisting the municipal administration in the towns of Narsapur, Palacole and Kovvur to implement these policies by operationalizing improved desludging operations and processes. G.O. 134 specifically targets the collection, disposal and treatment of faecal waste from which, the towns have found safe methods of collecting and transporting the waste. Leaving only the stage of treatment to be championed.

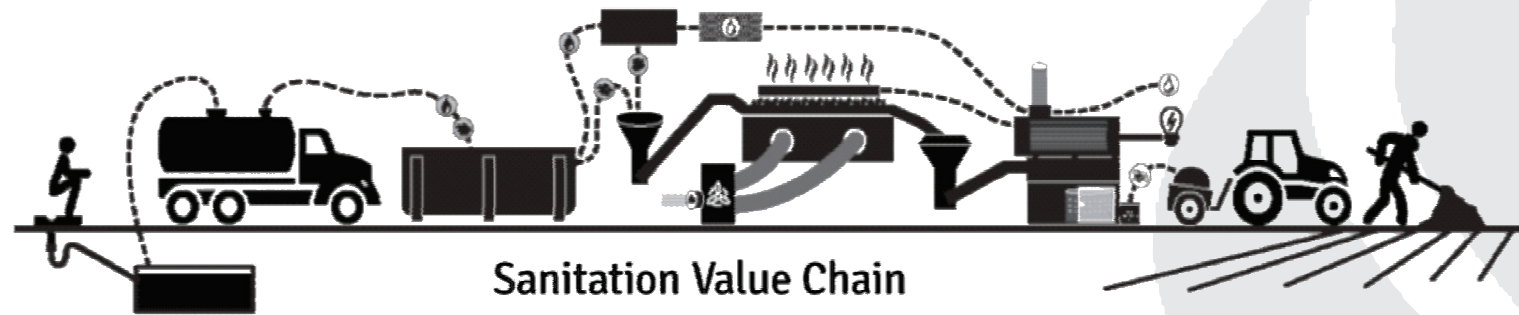
As mentioned earlier, Andhra Pradesh is in the process of commissioning its very first faecal sludge Treatment Plant in Narsapur. This treatment plant is the first of many to come. In addition 28 co-treatment plants coming up in AMRUT towns, 21 have recently been tendered out. There is a lot of momentum being gathered towards achieving not only safer management of faecal sludge in the state while moving from the status of an ODF state to ODF + state.



Moving towards ODF+



The way forward... FSTPs



The Narsapur FSTP

The Faecal Sludge Management Plant in Narsapur is being developed as a sanitation resource park on 1 acre of land which was gifted to the municipality by one of its residents. The plant on its own stands on 0.4 acres of land.

Key Features of the treatment plant:

- ◆ 15000 LPD Capacity
- ◆ Remote monitoring capability
- ◆ Bio-safe process in a modular/ scalable configuration
- ◆ Quick setup
- ◆ All weather systems

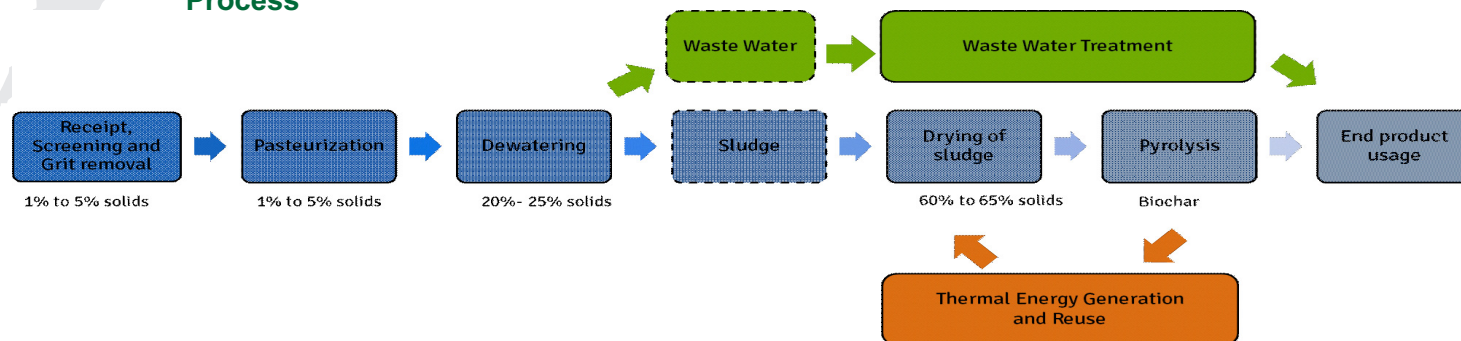


Process Output:

At the end of the treatment process two key outputs are obtained:

- ◆ Treated Water – which can be used for agriculture, urban greening and industry
- ◆ Biochar – which can be used as a soil amendment and in filtration process

Process





The Devanahalli FSTP

The Faecal Sludge Management Plant in Devanahalli, which is a small town 39 kms from Bangalore, Karnataka. The plant was developed by the town municipal council with support from Consortium of DEWATS Dissemination Society.

Key Features of the treatment plant:

- ◆ 6000 LPD design treatment capacity
- ◆ Gravity based system
- ◆ Treatment in the absence of chemical & electromechanical input
- ◆ Low operation and maintenance
- ◆ No skilled labour required

Process Output:

At the end of the treatment process two key outputs are obtained:

- ◆ Treated Wastewater – which can be used for irrigation
- ◆ Biogas – which can be used as fuel
- ◆ Dried processed sludge

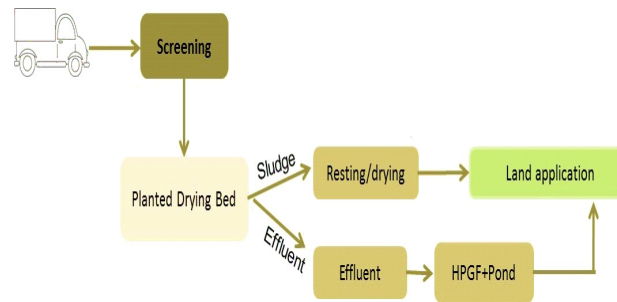




Key Features of the treatment plant:

- ◆ Capacity of 12000 LPD
- ◆ Gravity based aerobic stabilization using planted drying beds
- ◆ No direct human contact with faecal sludge
- ◆ No skilled operators required

Process:



Process Output:

- ◆ The treated percolate water will be used to grow the plants in the nursery developed on-site, which will be used for increasing the green area in Leh.
- ◆ The dried and treated compost will be used as soil conditioner for the nursery.

This document has been prepared by the Sampurna Swachhta Sankalp (S3) Andhra Team i.e., a consortium of Administrative Staff College of India, Ernst Young and International Innovation Corps - a part of University of Chicago. This consortium works alongwith the government of Andhra Pradesh at the city and state level with the support of the Swachh Andhra Corporation and the Commissioner and Director of Municipal Administration in all matters related to sanitation. This data was collected during Phase I of the consortium's functioning, with the objective of understanding the status of Faecal Sludge Management in the state.