# SFD Report
# Kargil, India

prepared by:

## Ladakh Ecological Developmental Group (LEDeG)

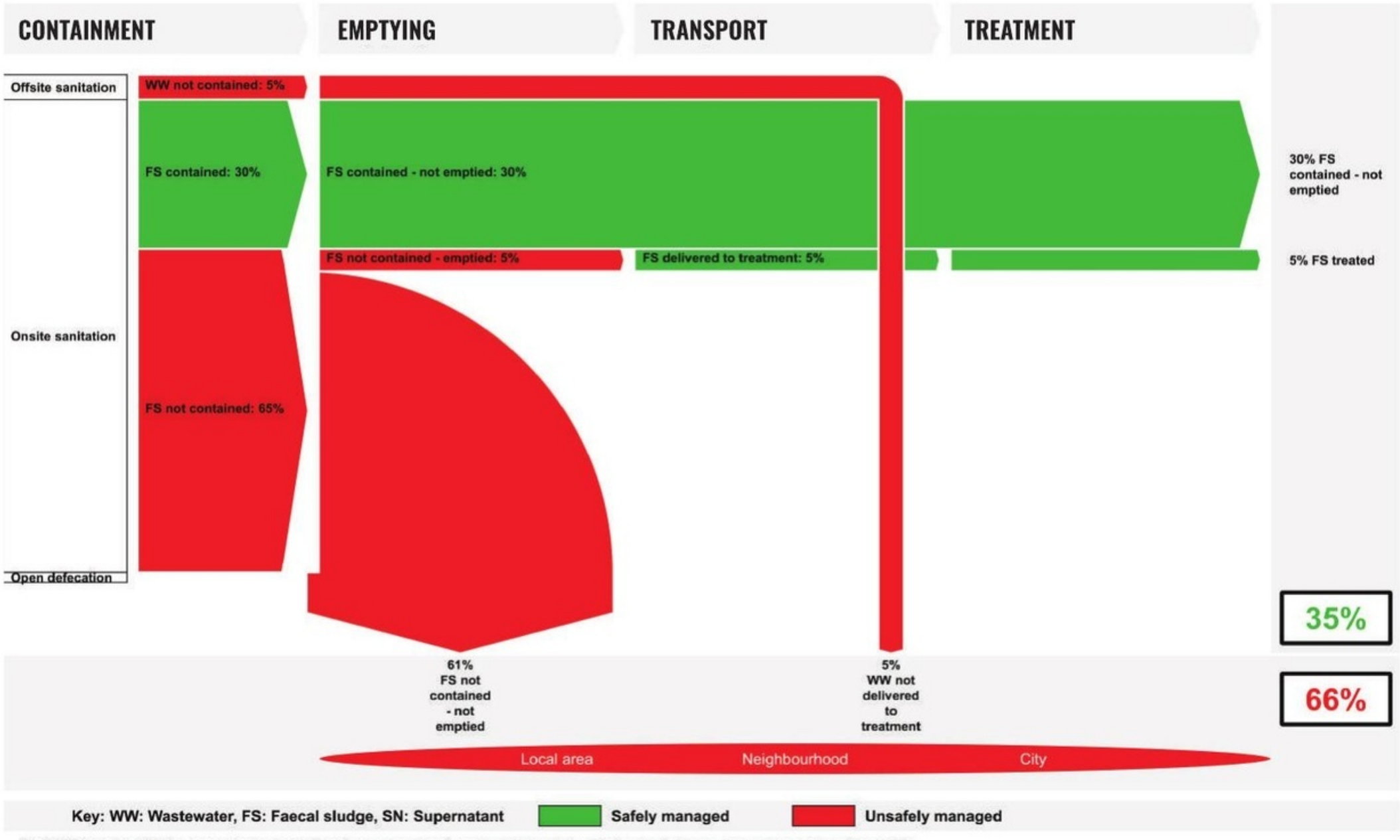
November 2021


**Kargil** is the joint capital and second largest town of the Union Territory of Ladakh. It is in the Suru River Valley and has a temperate climate. As per Census 2011, the population is 16,338 residing in 8.93 sq.km.

# SFD GRAPHIC

**Kargil**, Ladakh, India
Version: Draft
SFD Level: SFD Lite

Date prepared: **17 Jun, 2021**
Prepared by: **LEDeG**




**Key: WW: Wastewater, FS: Faecal sludge, SN: Supernatant** **Safely managed** **Unsafely managed**

The SFD Promotion Initiative recommends preparation of a report on the city context, the analysis carried out and data sources used to produce this graphic.
Full details on how to create an SFD Report are available at: sfd.susana.org

The SFD generated shows that 35% of the wastewater is being safely treated/disposed, while 66% of the wastewater is not being safely treated or disposed.

# SERVICE OUTCOMES

## SFD MATRIX FOR KARGIL

Tabulated form of the grid selection for data entry

**Kargil**, Ladakh, India, 17 Jun 2021. SFD Level : SFD Lite
Population : 16338

Proportion of Tanks : Septic Tanks : 0%, Fully Lined Tanks : 30%, Lined, Open Bottom Tanks : 90%

| Containment | | | | | | |
|---|---|---|---|---|---|---|
| **System Type** | **Population** | **Transport** | **Treatment** | **FS Emptying** | **FS Transport** | **FS Treatment** |
| | Pop | W4c | W5c | F3 | F4 | F5 |
| System Label and Description | Proportion of population using this type of system (p) | Proportion of wastewater in open sewer or storm drain system, which is delivered to treatment plants | Proportion of wastewater delivered to treatment plants, which is treated | Proportion of this type of system from which faecal sludge is emptied | Proportion of faecal sludge emptied, which is delivered to treatment plants | Proportion of faecal sludge delivered to treatment plants, which is treated |
| T1A1C6<br>Toilet discharges directly to open drain or storm sewer | 5.0 | 0.0 | 0.0 | | | |
| T1A3C10<br>Fully lined tank (sealed), no outlet or overflow | 30.0 | | | 0.0 | 0.0 | 0.0 |
| T2A5C10<br>Lined pit with semi-permeable walls and open bottom, no outlet or overflow, where there is a 'significant risk' of groundwater pollution | 50.0 | | | 10.0 | 100.0 | 100.0 |
| T2B7C10<br>Pit (all types), never emptied but abandoned when full and covered with soil, no outlet or overflow, where there is a 'significant risk' of groundwater pollution | 15.0 | | | | | |

## OFFSITE SANITATION SYSTEM

Kargil has no centralised sewerage system, the Municipal Committee Kargil (MCK) is planning for a centralised sewerage system in Kargil and the DPR preparation is under process.

## ONSITE SANITATION SYSTEM

### CONTAINMENT:

The most prevalent on-site sanitation system (OSS) in Kargil is lined pit with semipermeable walls and open bottom, with no outlet and overflow, with a significant risk of ground water pollution (T2A5C10, 50%). This is the most prevalent practice in Kargil, people usually construct pits with stone masonry and the bottom is left open. The top is usually sealed with RCC. The faecal sludge (FS) from these containment systems is not emptied as it percolates into the ground. Further, in some areas the desludging trucks are not accessible. Due to these reasons only 10% of these types of containment system demand for emptying.

30% of the population have traditional dry toilets, the FS, bulking material, and cleansing water is contained in a chamber where it decomposes. After a certain period, the chamber is emptied where the decomposed material is collected and used in agricultural lands. These containment systems are accounted as lined tanks (sealed), with no outlets and overflow in the SFD (T1A3C10 30%).

Around 5% of the toilets in Kargil are connected to the open drains/natural drains or end up in open drains/natural drains. These are mostly from the slum areas of Kargil (Chanchik, Poyen and Baltibazar).

Around 15% of the population use pits which are never emptied but abandoned when full and covered with soil with no outlet and overflow, where there is a 'significant risk' of groundwater pollution (T2B7C10, 15%).

### EMPTYING:

The city is dependent on MCK owned desludging tankers for services for emptying of FS. MCK has four desludging tanker which is operational. City has narrow and congested roads and some households are inaccessible. Fees depends upon the size of the containment system and accessibility. Emptying of containments from Kargil is done on demand and most of the demand is from households with pits with semipermeable walls and open bottom.

### TRANSPORTATION:

The emptied faecal sludge is transported using a desludging tanker, owned by MCK. Vacuum tankers have a capacity of 2000 l. These vehicles cover 7 to 12 km per trip on an average after desludging from households and they empty their FS in the FSTP. There are on an average 20 trips in a month during the peak season.

Septage Treatment Plant, Kargil

### TREATMENT/DISPOSAL:

Kargil has a Faecal Sludge Treatment Plant (FSTP) of 10 KLD. FS is transported to the FSTP using 4 suction Trucks (run by MCK) with a capacity of 2000 l each. The FSTP is operated by UY Trienviro Pvt Ltd (Kanpur) on a turnkey basis. The FSTP is not functional during the winter months (November – April). The FSTP had a cost of Rs 3.04 Cr and an additional cost of 70 Lakhs was proposed for the transmission of electricity and other services. The treated water is proposed to be used in agriculture fields and the treated sludge to be composted and used as manure.

### RISK TO GROUNDWATER:

There is no data available regarding the groundwater level and the risk significance of the on-site sanitation system. However, MCK has issued a notice, stating that every household at least needs to have a fully lined tank, because of the risk to groundwater. Therefore, in the SFD matrix for the lined tanks with semipermeable walls and open bottom is considered to be of significant risk to ground water.

# GENERAL CITY INFORMATION

Kargil is a town in the Kargil district and the joint capital of the Union Territory (UT) of Ladakh. Kargil is the second largest town in Ladakh after Leh. It is located 204 km to the east of Srinagar and 234 km west of Leh to the east. Kargil is in the Suru river valley and has an average elevation of 2,676 metres. Like other areas in the Himalayas, Kargil has a temperate climate. Summers are hot with cool nights, while winters are long and chilly.

The town has a total population of 16,338 as per census 2011. In 2020 it had a population of 17,122 (the population used for preparation of SFD). The urban local body governing the town is Municipal Committee Kargil (MCK). MCK has an administrative area of 8.93 sq.km which is divided into 13 wards. The growth rate of Kargil town had shown significant change (53.31%) in last decade i.e., 2001-11. The main reason behind that is the central and state government's intervention against militancy. The peace formation has changed the scenario in manifold which ultimately promoted tourism, socio-economic activities, livelihood management etc.

The SFD was generated for the area in the administrative boundary of the Municipal Committee Kargil, as most of the urbanisation is in this area only. There is a great variation found in the gross population density in different parts of Kargil municipal committee area. The average gross population density of the developed area within the Master Plan Area is 34 persons per hectare. The estimated gross population density in total planning area is very low i.e., 9-persons per hectare. The low gross population density of Kargil planning area can be ascribed due to the presence of undevelopable, undulated hilly slopes making it unfavourable for habitation.

## WARD-WISE POPULATION, KARGIL

| Ward No. | No. of Households | Population |
|---|---|---|
| 1. | 177 | 1305 |
| 2. | 105 | 1173 |
| 3. | 166 | 1432 |
| 4. | 230 | 2011 |
| 5. | 332 | 1390 |
| 6. | 130 | 803 |
| 7. | 107 | 869 |
| 8. | 189 | 1326 |
| 9. | 235 | 1379 |
| 10. | 220 | 1508 |
| 11. | 79 | 560 |
| 12. | 60 | 551 |
| 13. | 416 | 2815 |
| **Total** | **2,446** | **17,122** |

Source: Municipal Committee Kargil, 2021

## DATA AND ASSUMPTIONS

No detailed survey has been carried out on estimating the number and type of containment units. Hence the data used in the SFD is mostly assumptions made by the MCK based on deductions and experience in the town.

- 50% of the population have lined pit with semi permeable walls and open bottom, no outlet or overflow, where there is a significant risk of groundwater pollution. Out of the 50%, 10% which is going to the FSTP and emptied and treated there (data given by Operators).
- 15% of the population use pits which are never emptied but abandoned when full and covered with soil with no outlet and overflow, where there is a 'significant risk' of groundwater pollution. These would be mostly comprising of guest houses and hotels.
- The fully lined pit (sealed) with no outlets or overflow, which is 30% is made up of all the dry toilets in the town, these dry toilets compost the FS in them until is safe to use as manure.
- 5% of the population in wards which have toilet discharge directly to open drain or storm water, these are the area in the slums of Kargil (Poyen, Chanchik and Baltibazar). The toilets here are either connected to the storm water drain or natural drain via pipes. These toilets are majorly used for urination only and faeces are collected in dry toilets most of the time.
- There is no data on the hydrogeology or groundwater levels in Kargil, hence it is assumed that any percolation from containment structure to the ground is consider as risk to groundwater.

## LIST OF DATA SOURCES

- Project Engineer, Municipal Committee Kargil
- Assistant Engineer, Public Health Engineering Department Kargil
- Executive officer, Municipal Committee Kargil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BMZ Federal Ministry for Economic Cooperation and Development

MCK Municipal Committee of Kargil

Prepared by :

LEDeG

BORDA

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**SFD Promotion Initiative**



**Ladakh Ecological Development Group (LEDeG)**
Karzoo, Leh, Ladakh 194101, J&K, India
+91-1982 253221, +91-1982 252284
mail@ledeg.org

**BORDA South Asia**
Tarana, #7, 1st Floor, Kambipura,
Kengeri, Bangalore – 560060,
Karnataka, India
tsephel@borda-sa.org
www.borda-sa.org


The Shit Flow Diagram was created using the **SFD Lite Graphic Generator** on the Susana website

**https://sfd.susana.org/**