

# The VIP Latrine in Lesotho: Addressing Technical Flaws From the Qachas' Nek District Experience

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**Abstract:** Developing countries face a dilemma regarding the provision of adequate sanitation, especially for the poor, who constitute by far a greater proportion of the population. This is particularly so in rural and peri-urban areas, where sanitation is far from optimal, exposing communities to a plethora of communicable and other diseases, thus compromising public health and safety. In Lesotho, measures to address issues of sanitation, in the midst of a general scarcity, have led to the adoption of the cost-effective Ventilated Improved Pit (VIP) latrine, a technology used by over 80% of the population. This is especially so because Lesotho is one of the poorest countries in the world and is faced with abject scarcity of manpower and financial means for construction and maintenance of complex sanitary modern fixtures. However, the VIP latrine technology, commonplace as it is, is bedevilled by technical flaws that largely compromise its adequacy to handle basic sanitation. This led to an intervention that was made in the Qachas' Nek District, one of the ten Districts of Lesotho, where technological drawbacks inherent in the design and construction of the VIP latrine were addressed. From the lessons learned from this intervention, an extension was made to the Maseru District and elsewhere, where similar technical flaws were indentified and requiring interventions for rectification. Such interventions will help educate the communities and improve sanitation drives in the country.

**Keywords:** Sanitation; VIP latrine Technology; Community intervention; Lesotho.

## 1. Introduction

The Ventilated Improved Pit (VIP) latrine technology is a common fixture in developing countries like Lesotho, where the economies are weak and the provision of complicated sanitation drives is generally lacking, being especially the case with the rural communities. So, as developing countries face that dilemma regarding the provision of adequate sanitation, especially for the poor, who constitute by far a greater proportion of the population, there is therefore that need for adequate basic sanitation, in order to prevent the environmental pollution of the soil, water and air, thereby protecting public health, together with providing admirable aesthetics.

Lesotho is a mountain kingdom in the Sub-Saharan Africa, surrounded by its only neighbouring country, South Africa. It has a surface area of just over 30,000km<sup>2</sup>, with a population of about 2 million inhabitants. It is one of poorest countries worldwide, with a mostly rural population that thrives mostly on subsistence survival through peasant agriculture and animal rearing. In the country, measures to address

issues of sanitation, in the midst of this general scarcity, have led to the adoption of the cost-effective Ventilated Improved Pit (VIP) latrine, a technology used by over 80% of the population. This is in line with no manpower and financial means for the construction and maintenance of complex sanitary modern fixtures. Therefore, there is tremendous need to develop cheap reliable technologies that ensure basic sanitation adequately [1], especially with growing urbanization [2], leading to the proliferation of VIPs. This VIP technology, commonplace as it is, is bedevilled by technical flaws that largely compromise its adequacy, as identified in Qachas' Nek through a past project experience [3], and elsewhere in other Districts of the country.

It was therefore, as the main objective of this study, to also check the technical adequacy of VIP toilets in the Maseru District of Lesotho, following the study and intervention by Aiyuk and Tsepa in the Qachas' Nek District [3].

Another objective was to recommend the same kind of intervention as in Qachas' Nek that would bring positive change to impact livelihoods through

improved sanitation in the Maseru District and elsewhere.

## 2. Materials and Methods

The method used here was mainly a 'walk-around' and observations of existing VIP toilets in the Manonyane community of Roma, a small town that houses the National University of Lesotho.

## 3. Results and Discussion

A well designed and functioning VIP is as shown in figure 1 [3].

According to the authors, the VIP toilet is essentially a pit (~1m<sup>3</sup>/capita and up to 4 meters deep) dug into the ground, above which a concrete slab is built. A raised part of the slab has a hole, around which there is a toilet seat with a cover. There is a black vent pipe, at least 30cm above lowest part of roof, capped with gauze (mesh) with openings not more than 3 mm, to serve as a fly screen. The side with pipe faces sunrise. Such should be well sited, to avoid or minimize soil & water pollution. This technology has also been described by other authors [e.g., 4].

A convection current is created at the vent pipe as it is heated by the sun and warm air leaves through the pipe opening. The warm air is continually replaced by

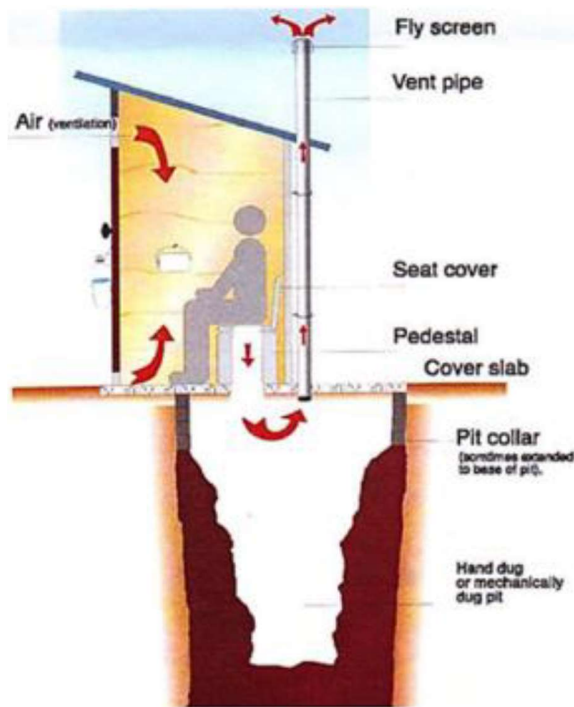


Figure 1. Typical VIP toilet cross section.



Figure 2. Back view of VIPs at a large hospital facility in Lesotho (note the white vent pipe and fly screen (capping pipe) with very large holes).

polluted air from inside the pit. The interior of the toilet thus remains smell free and cool.

With this study (figure 2), the following technical drawbacks were commonly observed:

- Most pipes are white in colour (not painted black) and are not high enough above the roof.
- Toilet walls were made of metal instead of hollow bricks, leading to a convection current flow in the opposite direction and rendering many of the toilets smelly inside.
- The mesh on the pipe vent has opening that are above 5mm, enabling flies and other vectors to move freely, posing thus a public health threat. Many other pipes in the District have no mesh at all.
- Back of superstructure with vent pipe not facing sunrise.
- Toilets not well sited in regard to water sources, leading to soil and water pollution.

There is thus the need to educate and train communities [5], and interact with decision makers, in order to reverse the problems with the VIP latrine technology and have a more long lasting effect.

## 4. Conclusion and recommendations

VIPs are on-plot sanitation systems that should keep the environment and public health protected, and also ensure aesthetics. The technology is admirable for basic sanitation as it presents simplicity, non-sophisticated equipment, high system output, minimal footprint size, and low capital and operational costs. However, in Lesotho, these toilets are not technologically sound and are usually not adequately sited vis-à-vis resources like water.

Therefore, from the Qachas' Nek experience, interventions should be made in the Maseru District and elsewhere, to redress the technological drawbacks. Such intervention will help educate the communities and improve sanitation drives in the country, saving the

environment, public health, and providing admirable aesthetics.

## 5. References

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