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## Professionalizing latrine emptying services PuPu pump

Globally 3,5 billion people are served by on-site sanitation facilities such as septic tanks & pit latrines, but emptying services have not been planned for. Small scale portable desludging units can supplement the current gap in latrine emptying equipment. The PuPu pump (Pull/Push) is designed to provide a safe, affordable and portable service for household pits that are difficult to empty due to their composition and being located in low accessible areas.

## Our experience



A typical slum area, where the PuPu pump has been placed to empty a pit and pump sludge to a nearby truck.

For years, Practica has been working closely with African municipalities to advise on fecal sludge management chains. This catered for optimizing existing solutions and putting new ideas to the test. The design process of the PuPu pump, initiated in 2021, resulted from a thorough understanding of sanitation markets, technologies in use, and its human interface.

The speed of operation enables **more emptying jobs/day**, compared to manual emptying, resulting in better income opportunities in a **clean and dignified way**. The low investment cost of the equipment stimulates utilities and small businesses to invest and increase the service coverage.

After a deep dive into emptying over 500 pits during the iteration phase, it is now being introduced as market-ready product to small businesses, utilities and NGO's in Africa and Asia.

## Our design

The PuPu pump works with a compressor unit and a pump unit to pull sludge from pits. Water and air injection is used to facilitate the mixing of sludge prior to pumping. The combination of high vacuum and duckbill valves facilitates the pumping of thicker sludge and a level of debris.

At each pumping stroke, sludge is being pushed towards a tank on a vehicle nearby or parked at a distance. This way, **carrying drums is not needed**, likewise for the use of expensive vacuum tankers. Just use a simple storage unit like a plastic water tank on transport of choice.

We believe the linkage of pumping to simple transport is key to overcome the poor practices of local burying and dumping, polluting water resources and household premises.

### Specifications

|                           |   |
|---------------------------|---|
| Weight pump + compressor  | 45 KG + 45 KG                               |
| Pumping distance lay flat | 0-100 meters depending on viscosity         |
| Total head                | 28 meters                                   |
| Diameter pump hoses       | 100 mm (4")                                 |
| Yield                     | 1-7m <sup>3</sup> /h depending on viscosity |
| Operating pressure        | -0,8 to 2,5 bar                             |



## Our ambitions



A set of PuPu pump components

Our ambitions are geared towards the availability of equipment on local markets and the establishment of **PuPu service providers**. Technical training, business coaching, regulation and monitoring is linked to finance, equipment and performance.

With introduction in a few selected countries, we are now looking for partners that want to support the **professionalization trajectory** towards safely managed sanitation services in cities across Africa and Asia.



**Practica** - Innovative technologies managed by local entrepreneurs

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