

# New Sanitation

Moving from wastewater to resource recovery

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# Innovation in Sanitation

<1850

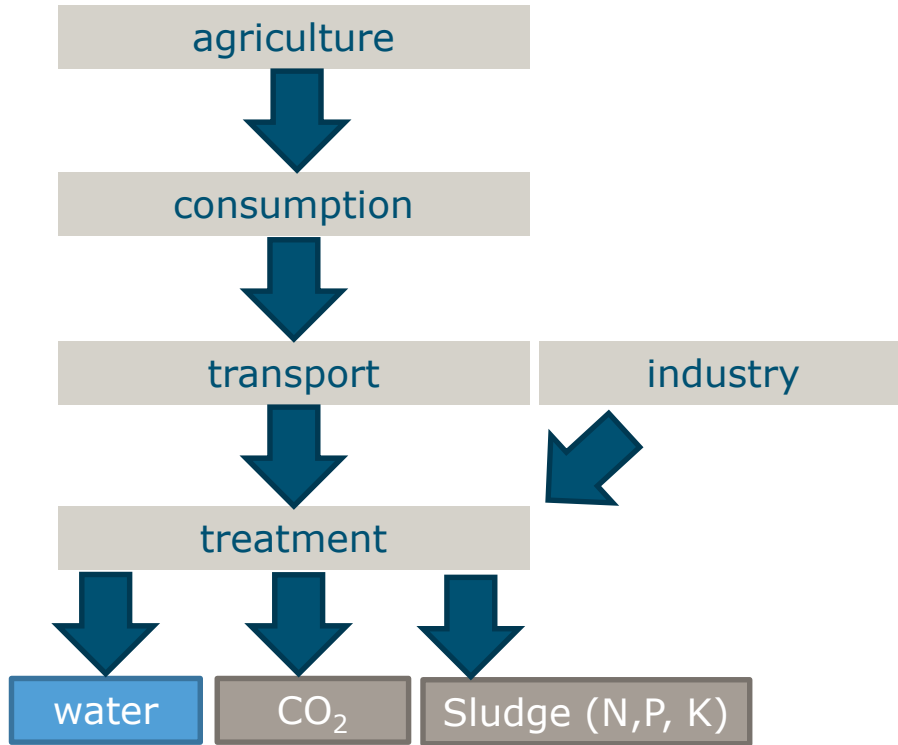


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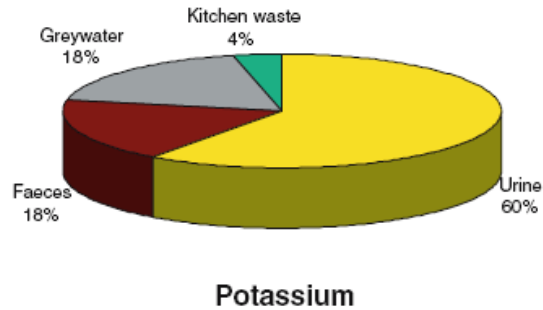
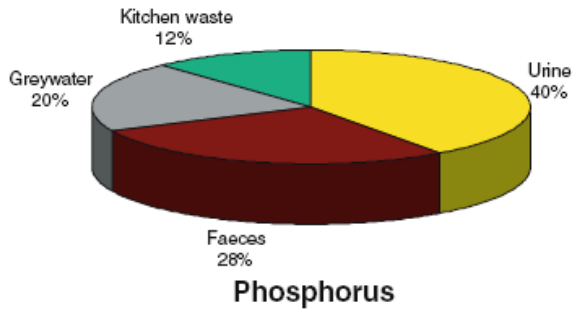
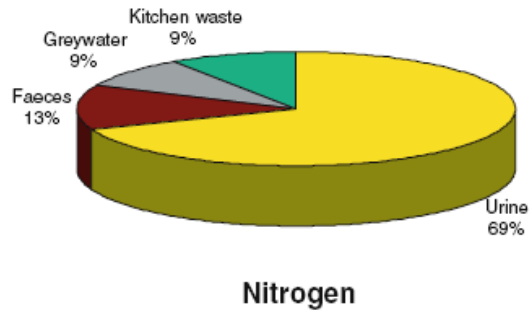
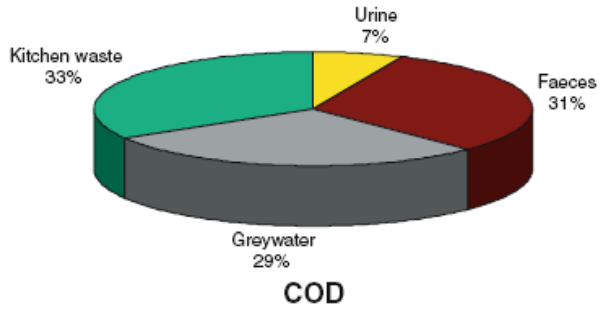


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# Linear Sanitation



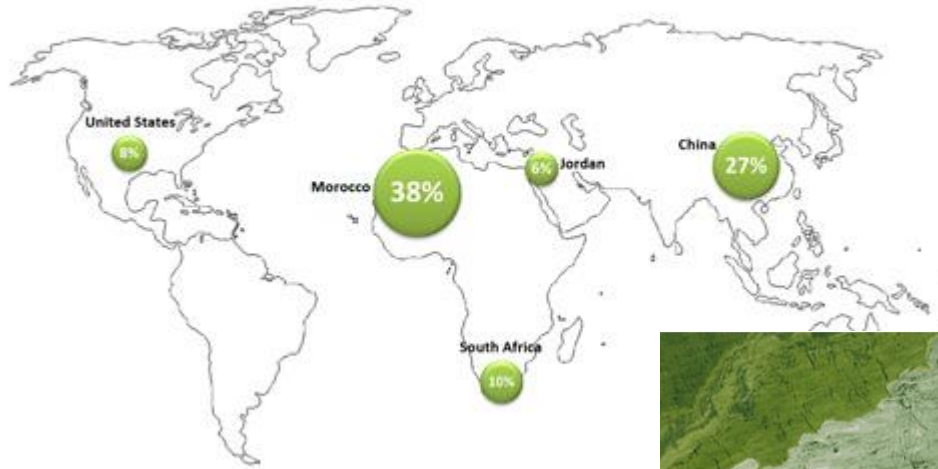
# Resources



Heat

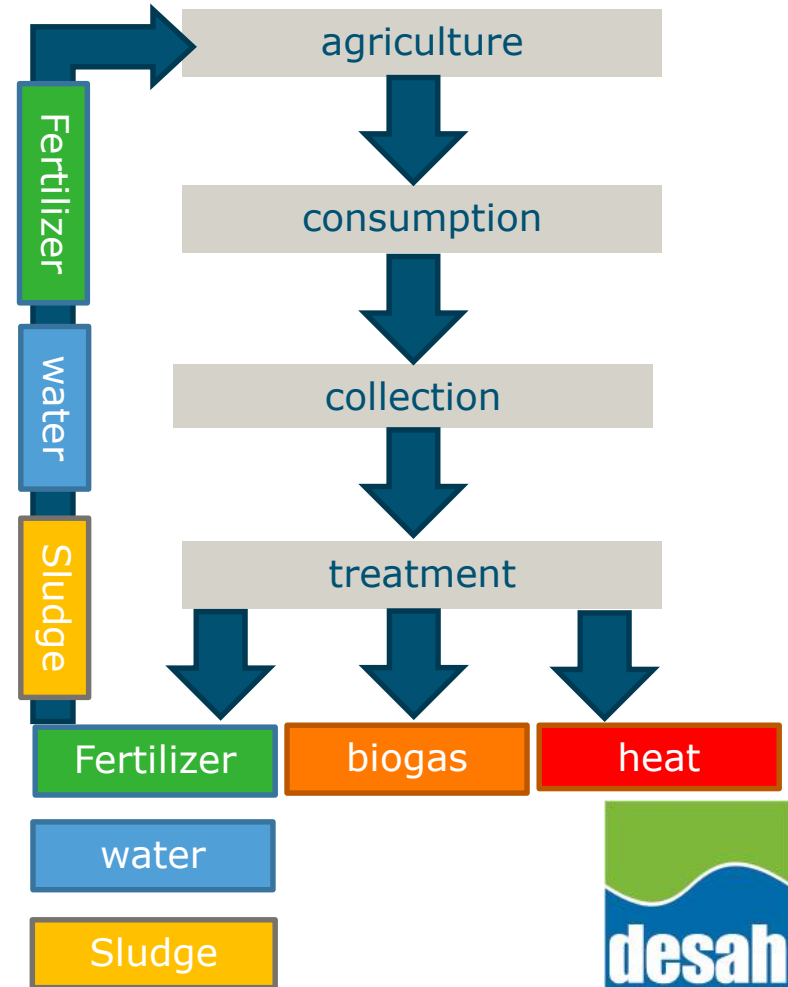
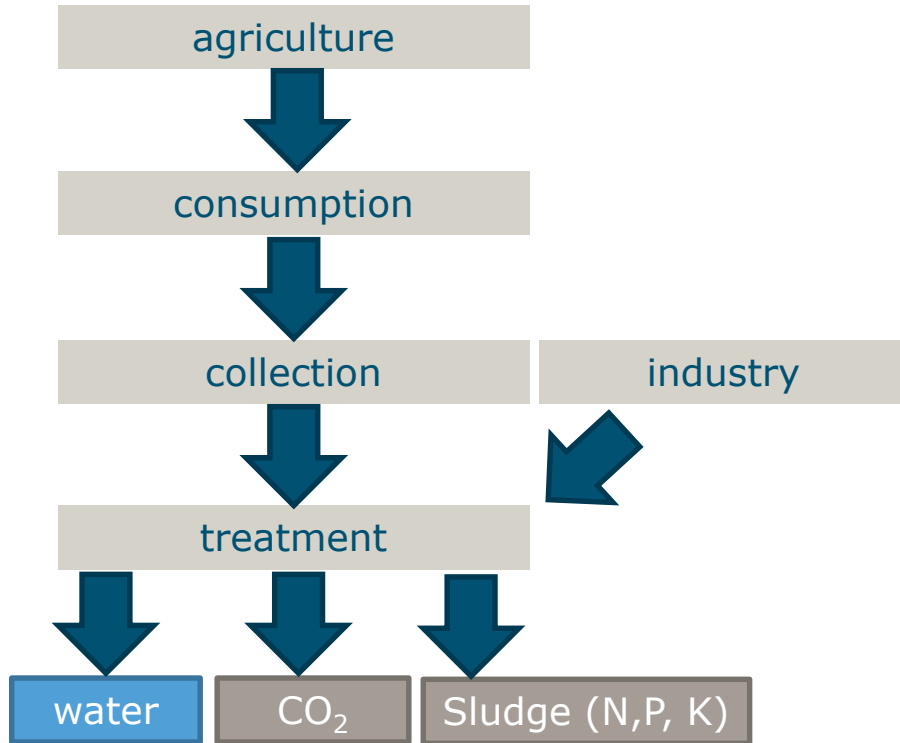
# Resources or pollution?

Global distribution of phosphate reserves

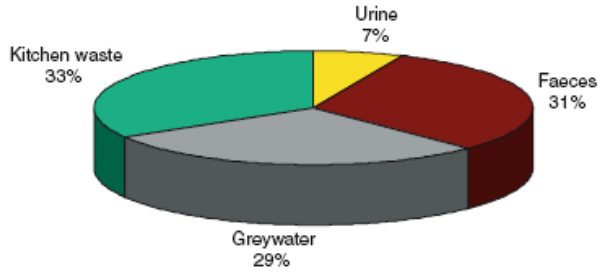


Meador et al 2017

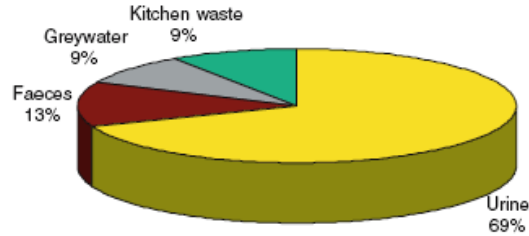
# From linear to circular



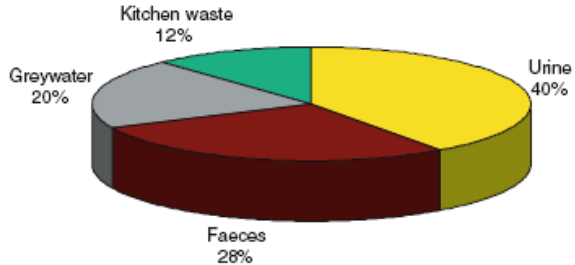
# New sanitation



**COD**



**Nitrogen**



**Phosphorus**



**Potassium**



**FAECES: 5 L/CAP.M**



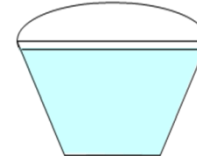
**URINE: 50 L/CAP.M**



**FLUSH TOILET: 1000 L/CAP.M**

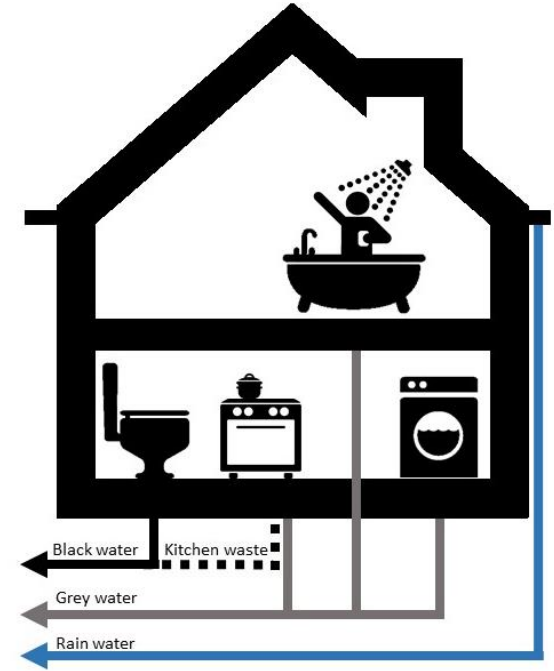
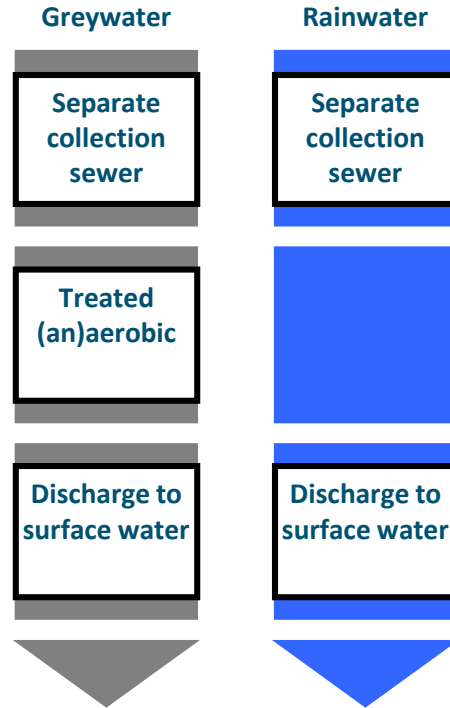
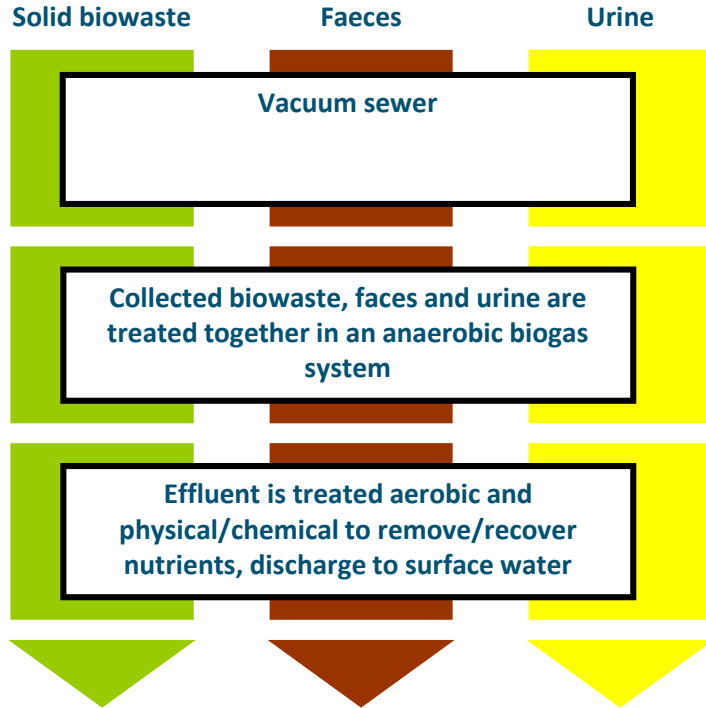


**GREY WATER: 2000 /CAP.M**



**RAIN WATER: 1500 – 6000 L/CAP.M**

# New sanitation





# Noorderhoek Sneek



# More examples



# Urban use



# Urban use



Wielmaker et al 2016

# Many thanks

