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Water and Sanitation in
Developing Countries

INTRODUCTION

Authors: Colin Demars and Philippe Reymond, Eawag-Sandec, 2014
Contact: philippe.reymond@eawag.ch, demars.colin@gmail.com

This model is the result of the combination and simplification of the materials developed by the ESRISS team during the four-year project in Egypt (www.sandec.ch/esriss). Its purpose is to help designers and consultants to estimate quickly (max. 3 days) the quantity and characteristics of the raw wastewater to be treated, on a site-specific basis, in settlements of up to 5,000 inhabitants, without industry, served or to be served by a sewer network. Upon entering site-specific data, this model provides automatically the range of wastewater quantity and characteristics to be expected, including the flow, BOD, COD, TS, TSS, TN and TP. It also delivers a factsheet for the village under investigation and an estimation of the residual flows which do not enter the sewer network (septage, greywater and liquid animal manure).

The model allows to predict village-specific design parameters without taking any samples. Sewage sampling was recognised as a bottleneck as it is very difficult, often even impossible, to be able to get representative samples; in all case, it is time-consuming and expensive. Instead, the model relies on the extensive data baseline developed by the project (cf. ESRISS *Baseline Data Report*) and requires the input of a minimal number of qualitative data to estimate values corresponding to the village under investigation.

This model is supported by several documents to be downloaded at www.sandec.ch/esriss :

- A **user manual** describing the model
- A **step-by-step procedure** on how to carry out the assessment of the initial situation in the field and how to use the model
- Clear guidance on which stakeholder to meet, and which relevant data to get, with the support of ready-made **interview guidelines and survey questionnaires**
- The **two detailed reports** “*Small-Scale Sanitation in the Nile Delta: Baseline Data and Current Practices*”, and “*Modelling Small-Scale Sanitation in the Nile delta: A Material Flow Analysis with Nutrient Reuse Perspective*”.

The tool is based both on the baseline data and the *Material Flow Analysis* model developed within the ESRISS project. In the two first steps, the site-specific data collected from the Village Council, village authorities, households, sanitation stakeholders and personal observation are entered in the model, which treats the data automatically. The model then helps the user to crosscheck the different data for each sensitive parameter in order to predict the more realistic value when the village will be served with a sewer network; thus, it is not a black box, but a decision-making support. Based on that, it calculates the range of values to be expected for the main design parameters.

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