

The Future of Sanitation Education

Farewell symposium Håkan Jönsson

The Future of Sanitation

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Teaching in sanitation so far

- When looking ahead, it is also good to look back
 - Who works in sanitation?
 - Civil engineers (“Concrete!”), Sanitary Engineers
 - Environmental engineers
 - Agricultural engineers; agronomists
 - Public health experts
 - Medical doctors
 - Architects
- Still difficult to study “Sanitation”..!

Teaching in sanitation so far

- When looking ahead, it is also good to look back



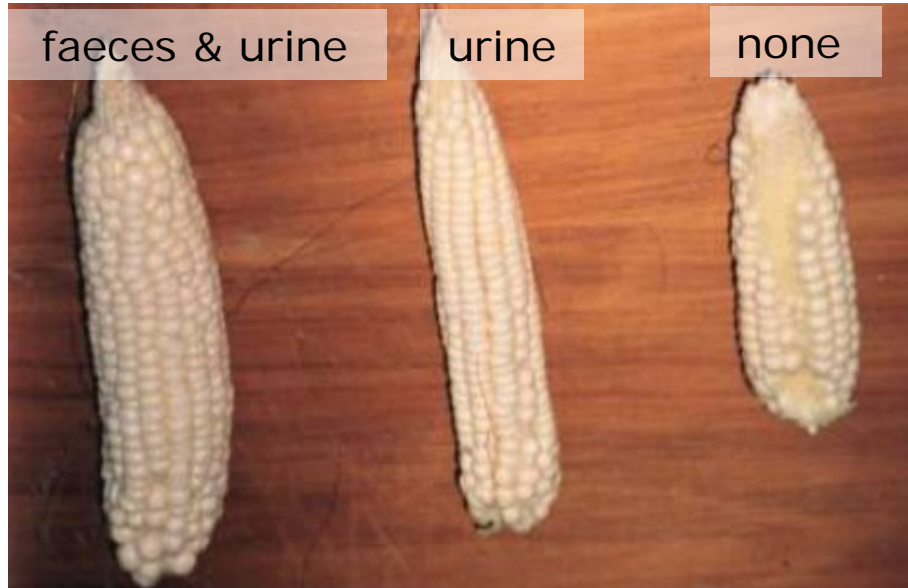
Borrowed from Grietje ☺



Sources of inspiration for teaching in New Sanitation

- Ecosan online course – Elisabeth von Münch
- In NL: New Sanitation working group
- Real push forward: International Year of Sanitation 2008
- SuSanA network..!
- Famous ecosan pics:

1: Agricultural value



Maize (corn)



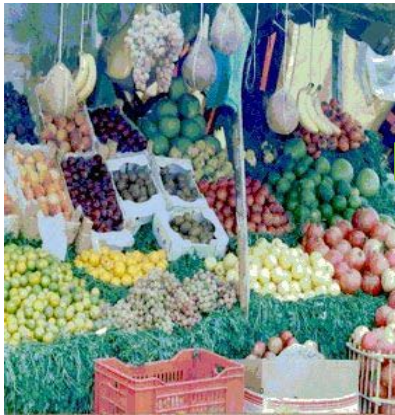
after one week without water



Also seems to help as insecticide:

<http://www.youtube.com/watch?v=5xo4hKEcFeM>

2: Exactly how valuable?



N = 2,8 kg
P = 0,4 kg
K ~ 1,3 kg
Per person
per year



N = 2,8 kg
P = 0,4 kg
K ~ 1,3 kg
Per person
per year



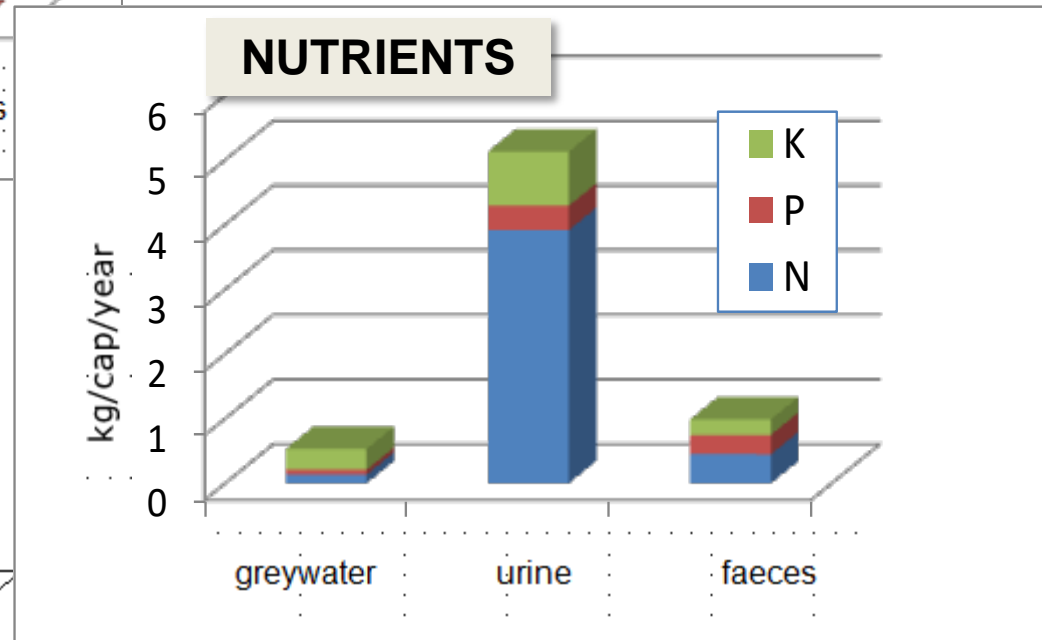
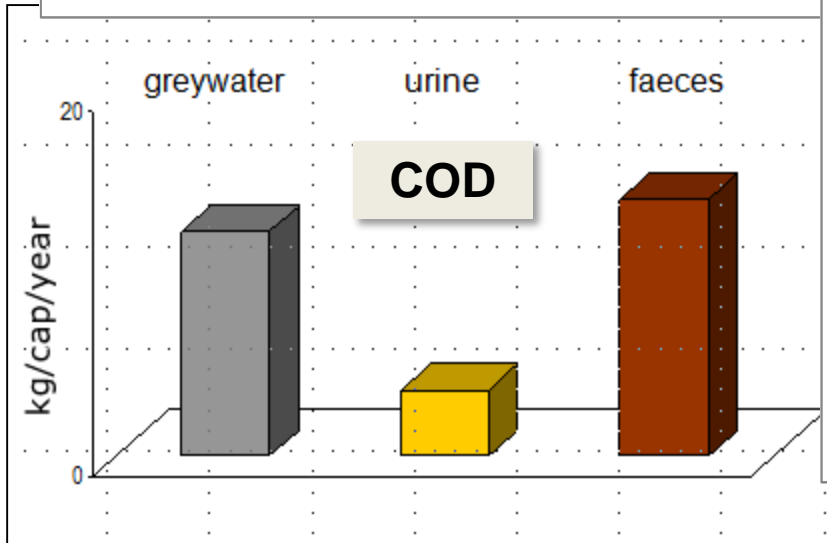
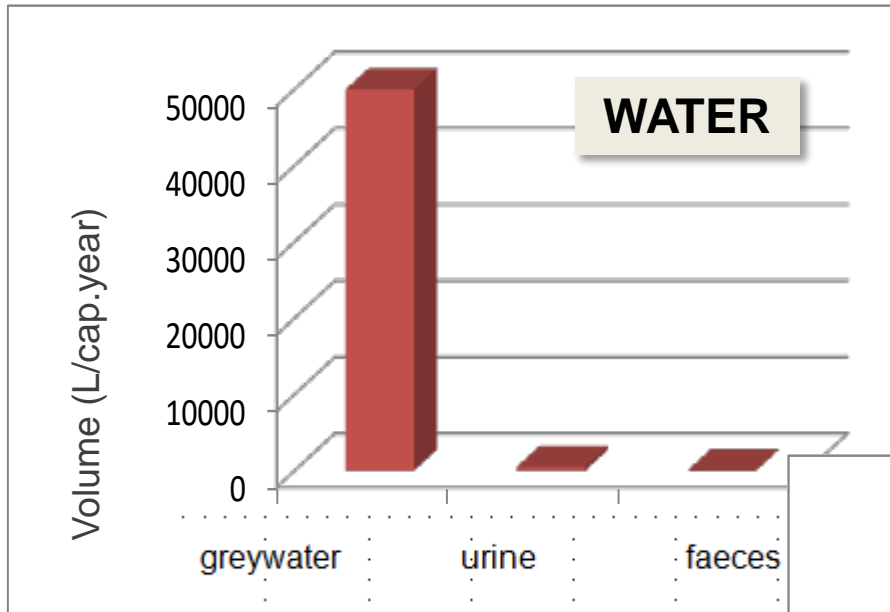
≈



Urea = 6 kg
TSP = 2 kg
KCl ~ 2,6 kg

Birg Koom -> more in
next class

3: Distribution volume and concentrations



Sources of inspiration for teaching in New Sanitation

- We like to show examples, because they show the wide range of fields covered by sustainable sanitation
- One of my favourites – very much loved by the students as well – Human Excreta Index videos...

How much is education needed in this field?

- Very, if we want to reach SDGs!
- IWA Report for series of countries to identify capacity gaps:

IWA
2014

Dire need for sanitation experts

787,200

Shortage of trained water and sanitation professionals
in 10 countries reviewed

2X – 9X

Growth in staff numbers required per country



Even if coverage is already high, need more staff to
keep up with O&M



Women only make up 17% of the work force

How much is education needed in this field?

- Very, if we want to reach SDGs!
- IWA Report for series of countries to identify capacity gaps:

Impossible to reach with face to face teaching only!

New developments in [sanitation] teaching

- Massive Open Online Course ware – MOOCs
 - Initially used as advertisement
 - Now gaining more and more ground
 - Mainly introductory
- Online learning
- Blended courses / “flip the class room” / SPOC
- New products: smaller courses with a diploma (GPDP: graduate professional diploma programme) – ca. 20 ECTS
- Full online MSc



New developments in [sanitation] teaching

- Current initiative: IWA global online learning hub

ONE-STEP LEARNING MARKETPLACE

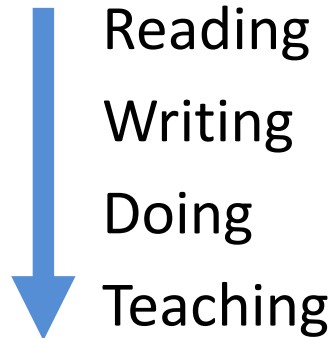


A screenshot of the IWA Learning Marketplace website. The top navigation bar is blue and contains the text 'International Water Association' on the left and 'The Source | IWA Connect | IWA Publishing' followed by social media icons for Facebook, Twitter, LinkedIn, and YouTube on the right. Below this is a white navigation bar with the IWA logo on the left and a menu of links: 'ABOUT US', 'OUR WORK', 'EVENTS', 'COMMUNITIES', 'IWA AWARDS', 'LEARNING', 'BLOG', 'MEDIA', 'RESOURCES', and a search icon. The main content area features three promotional cards. The first card, titled 'Emerging contaminants: Concepts and Solutions', is labeled 'WEBINAR' and includes a 'Register Now' button. The second card, titled 'Potable Water Reuse: Opportunities and Challenges', is labeled 'Webinar On-demand' and includes the text 'Available Now'. The third card, titled 'Energetic and material recovery issues in modern urban metabolism', is labeled 'Course' and includes the text 'Global Online Course' and '7 July-25 Aug'. A fourth card, titled 'Water Reform and Governance', is also labeled 'Course' and includes the text 'Global Online Course' and '7 July-25 Aug'. The background of the cards shows various water-related images, including water splashing and people in a meeting.

www.iwa-network.org/iwa-learn

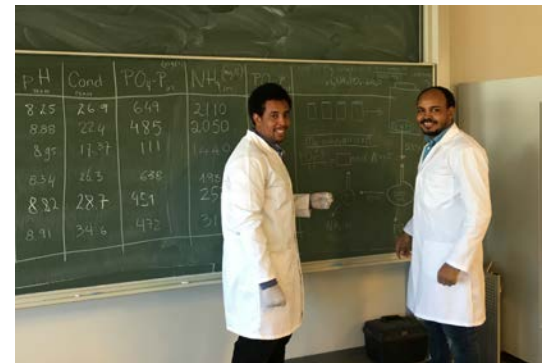
Also in the class room: activate

- Of what we hear: on average only 10% sticks long term..



Learning
Pyramid

- Active learning: blend in activities in the class room / mix with more active elements



Next to transferring knowledge: teach skills

1. Scientific ethics
2. Information literacy
3. Critical thinking
4. Scientific writing
5. Oral presenting, discussing and debating
6. Working in groups

One-year Masters Programme in Sanitation



April 2018

Masters of Science in Sanitation Course Content

1	Introduction week	1 week
2	Sanitation Systems and Services	2
3	Sanitation and Public Health	2
4	Characterization and Analysis of Liquid Wastes	1
5	Treatment processes and technologies	6
6	Sanitation Governance	3
7	Financing and Business Models for Sanitation	1
8	Behaviour change	2
9	Leadership	1
10	Project management, OM&M	2
11	WASH in emergencies	2
12	Groupwork	1
13	Advanced Laboratory Training or Social Science Methods	2

- MSc research phase: 3 months, abroad
- Defense and graduation

A few words on Håkan

- When googling for Håkan Jönsson Sanitation:

The screenshot shows a Google search results page for "hakan jonsson sanitation". The search bar at the top contains the query "hakan jonsson sanitation" and the URL "https://www.google.nl/search?client=firefox-b-ab&dcrc=0&biw=1760&bih=868&btm=isch&sa=1&q=hakan+jonsson+sanitation&oeq=hakan+jonsson+sanitation&gs_l=psy-ab.3...26087.27580.0.27801.11.11...". The search results are displayed in a grid format, featuring various documents, presentations, and reports. Key documents include:

- Importance of nutrient recycling & value of nutrients in sanitation sector**: A document by Håkan Jönsson, Professor at the Department of Energy and Technology, Swedish University of Agricultural Sciences (SLU).
- Organic wastes: Quantities, composition, collection and present treatment**: A document by Håkan Jönsson, Professor at the Swedish University of Agricultural Sciences (SLU).
- EU Waste hierarchy**: A document detailing the EU council's parliament compromise on 20/10/2008 and new waste directives, listing five key points: 1. Prevent generation, 2. Reuse product/components, 3. Recycle materials, 4. Other recovery, and 5. Safe and environmentally safe disposal.
- Waste - Swedish means**: A document discussing waste management practices in Sweden, including landfill and incineration.
- Biowaste - Sweden**: A document discussing biowaste management in Sweden, including composting and anaerobic digestion.
- Material recovery**: A table showing the requirements for various materials, such as newspaper, office print, paper packaging, metal packaging, gas packaging, plastic packaging, white goods, electric & electronic, and metals from households.
- Quality Assurance System**: A document detailing the requirements for compost plants, AD plants, and AD plants in voluntary agreement on minimizing methane emissions.
- Journal of Water, Sanitation and Hygiene for Development**: A journal cover featuring a portrait of Håkan Jönsson.

There are also several charts and graphs, such as a pie chart for "Treatment of household waste 2008" and a bar chart for "Biologically treated household waste, 1000 of ton/yr". The pie chart shows the following data:

Material	Percentage
Biological treatment	42%
Incineration	34%
Material recycling	10%
Landfill	14%

The bar chart shows the following data for biologically treated household waste (1000 of ton/yr):

Year	Home compost	Central compost	Digestion
2002	~150	~100	~100
2003	~150	~100	~100
2004	~150	~100	~100
2006	~150	~100	~100
2008	~150	~100	~100

Thanks....

- Håkan, many thanks for years of inspiration & research output!
- Thank you for listening..