

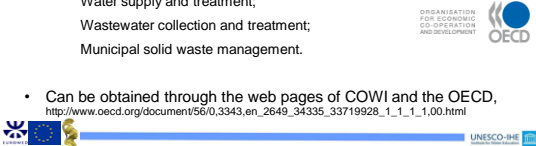
Decision Support Systems

Technology Selection Software




FEASIBLE Financing for Environmental, Affordable and Strategic Investments that Bring on Large-scale Expenditure

- A free software tool (developed by Danish COWI consultancy) to support the preparation of **environmental financing strategies** (2001)
- It can be used to facilitate the iterative process of balancing the required finance with the available finance
- FEASIBLE Version 2 enables analysis of the following sectors:
 - Water supply and treatment;
 - Wastewater collection and treatment;
 - Municipal solid waste management.
- Can be obtained through the web pages of COWI and the OECD, http://www.oecd.org/document/56/0,3343,en_2649_34335_33719928_1_1_1_1,00.html




Schematic overview of the iterative process of the FEASIBLE methodology.

Overview of the FEASIBLE Environmental Financing Strategy Methodology

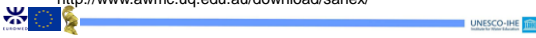


The diagram illustrates the iterative process of the FEASIBLE methodology. It starts with a 'Macro-economic forecast' (Production income, Taxes, Public revenues) which influences 'Environmental targets' (Level, Year). These targets, along with 'Existing environmental infrastructure and situation', inform the 'Expenditure forecast' (Investment expenditure, Operation and maintenance expenditure). Simultaneously, 'Policy governing' (Public benefits for investment, User charges, Private sector finance) and 'Source of finance' (User charges, Public budget, Private financial institutions, Donors and IFS) are considered. The expenditure forecast and source of finance lead to a 'Projection of available finances for' (Investment expenditure, Security expenditure, Technical assistance, etc.). The difference between the expenditure forecast and the available finances results in a 'Financing gap'. A 'Change' box indicates that the process is iterative, feeding back into the 'Existing environmental infrastructure and situation' and 'Policy governing' stages.

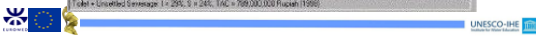
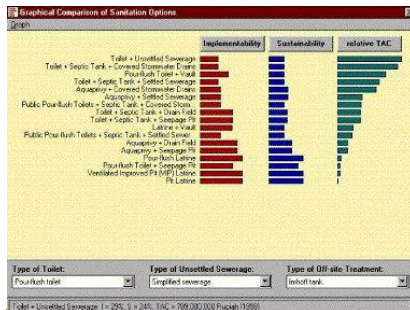


SANEX™ A Simple Expert System for Evaluating Sanitation Systems in Developing Countries

- A free software tool (developed by University of Queensland, Australia) to support planners in assessing the suitability of sanitation systems for communities in developing countries (2002)
- It uses socio-cultural, financial and technical criteria in connection with MCA techniques to assess 83 "treatment trains"
- It displays the implementability, the sustainability and total annual cost (TAC) for each feasible alternative
- It is useful for municipal officers that lack engineering and environmental skills, but have access to community data
- Less detailed and engineering approach than WAWTTAR
- Can be obtained at:
<http://www.awmc.uq.edu.au/download/sanex/>



SANEX™ Graphical comparison of sanitation options



WAWTTAR Water and Wastewater Treatment Technologies Appropriate for Reuse

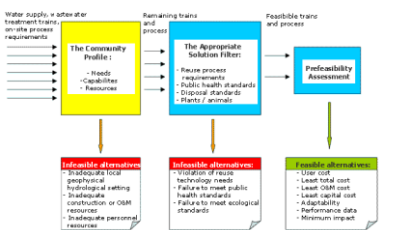
- A free software tool (developed by Humboldt State University, USA) to assist planners in selecting suitable water and wastewater treatment options throughout the world
- Released in nineties
- It can be used at the pre-feasibility step in facility planning and/or infrastructure investment. It has an extensive database of water and wastewater treatment processes (over 200 and user expandable) and a range of collection systems alternatives
- For engineers, planners, for evaluation of consultant or donor proposals



WAWTTAR

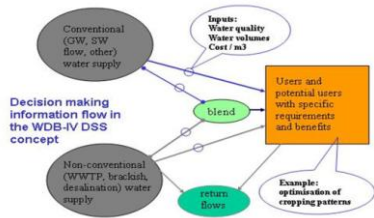
- WAWTTAR will be used in this course
- See Youtube presentation by Brad Finney from Humboldt State University, developer of WAWTTAR

Figure 3.2 Graphic: Overview of Program Calculations

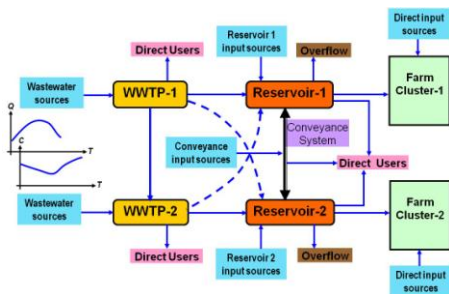


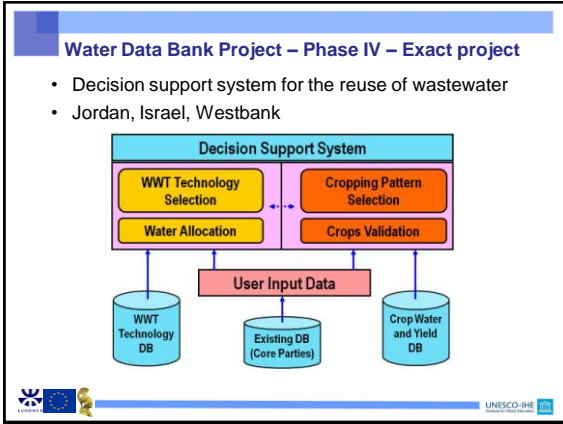
Water Data Bank Project – Phase IV – Exact project

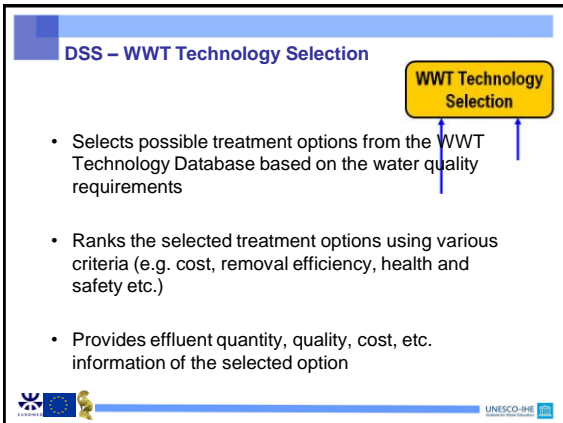
- Decision support system for the reuse of wastewater
- Jordan, Israel, Westbank

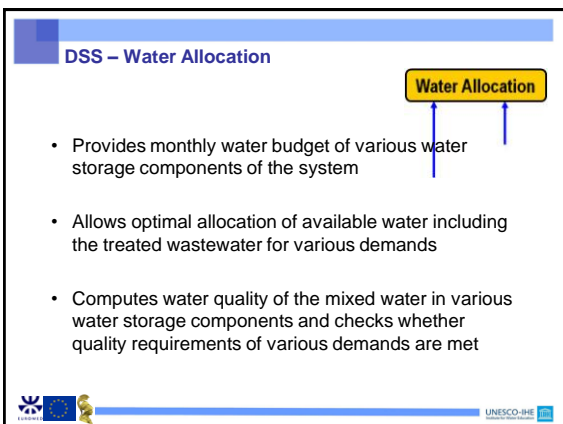


Water system representation in the DSS

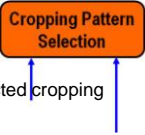









DSS – Cropping Pattern Selection



- Computes water demands for the selected cropping patterns
- Allows to select the optimal cropping pattern for the given availability of water
- Allows to save various scenarios of cropping patterns



DSS – In-build data bases

- Database of combination of various treatment technologies and their removal efficiency, cost, health and environment related parameters, etc.
- Database of crops, irrigation methods, crop water requirements, yields, etc.

