

4. Realization of the Project

The project, according to the rules of the NATO SfP Programme, was implemented in Hungary between 1999 and 2004. The tasks and responsibilities of the key participants were as follows:

University of Florida

- Dr. S. E. Smith the American project Co-director was responsible for the technical and financial management of the project. His responsibilities included the overall supervision of the task and the bi-annual reports.
- Dr. K. Hatfield revised all the detailed experimental programmes and the draft reports elaborated by the Living Planet Environmental Research Ltd.

Living Planet Environmental Research, Ltd.

- Dr. P. Princz the Hungarian project Co-Director was responsible for the activity the Hungarian research team and that of the end-users He organized and directed the work of the Hungarian project participants. Dr. Princz co-operating with the Hungarian and the invited experts elaborated the draft task and bi-annual reports. Taking into consideration the remarks of the American partner and the NATO consultant, he compiled the final version of reports and submit those to the NATO consultant and the NATO SfP Programme Office. He organized all the analytical work of the project.
- Dr. J. Oláh was responsible for the respirometric measurements and the pilot, as well as the industrial-scale experiments. He directed the experimental work at the WTPs.
- Dr. D. Kalló participated in the preparation of pilot and industrial -scale experiments and data assessment

Institute of General and Analytical Chemistry of Budapest Technical University (IGAC-BTU)

The IGAC-BTU was invited for the request of the NATO SfP Steering Group in the project as the subcontractor of Living Planet Environmental Research, Ltd. In the first project year IGAC-BTU was responsible for zeolite pre-treatment and modification, as well as the infrared examinations of modified zeolites.

Central Chemical Research Institute (CCRI)

CCRI was the subcontractor of the Living Planet Environmental Research, Ltd. in the first project year. CCRI was responsible for the determination of the properties of Hungarian zeolites.

NATO consultant and invited NATO experts

The NATO consultant (Dr. E. Vansant) and experts (Dr. R. Bowman and Dr. E. Vansant) reviewed and supervised every step of the R&D programme, assessed the data measured and gave useful advices to the successful project implementation.

In addition to the project participants mentioned above, the end-users had also important role in the project implementation. Four types of end-users were directly involved in the project. These are as follows:

- End-users representing wastewater treatment plant

Decision makers and operators of WTPs (1) ensured adequate conditions for the pilot- and industrial-scale experiments, (2) actively participated in the implementation of experiments, (3) determined the expected economic effects of the full-scale application of ZeoRap[®] WWTT at their WWTP.

- End-users representing zeolite mining in Hungary

Due to the success of the NATO project, zeolite mining companies in Hungary anticipated a

large and immediate demand for their product greatly increased the price by 600 % between 1999 and 2004. This compares with an overall inflation rate in Hungary of only 60 % during this period. Therefore, the relative competitiveness of the ZeoRap[®] WWTT decreased as the price of raw zeolites increased. However, there are ample opportunities for purchase of high quality raw zeolites in Slovakia, or Turkey, and so market will eventually force the price of Hungarian zeolites to drop.

- End-users representing chemical production

These companies have designed, built, installed and put into operation devices for zeolite modification, as well as started the industrial-scale production of modified zeolite.

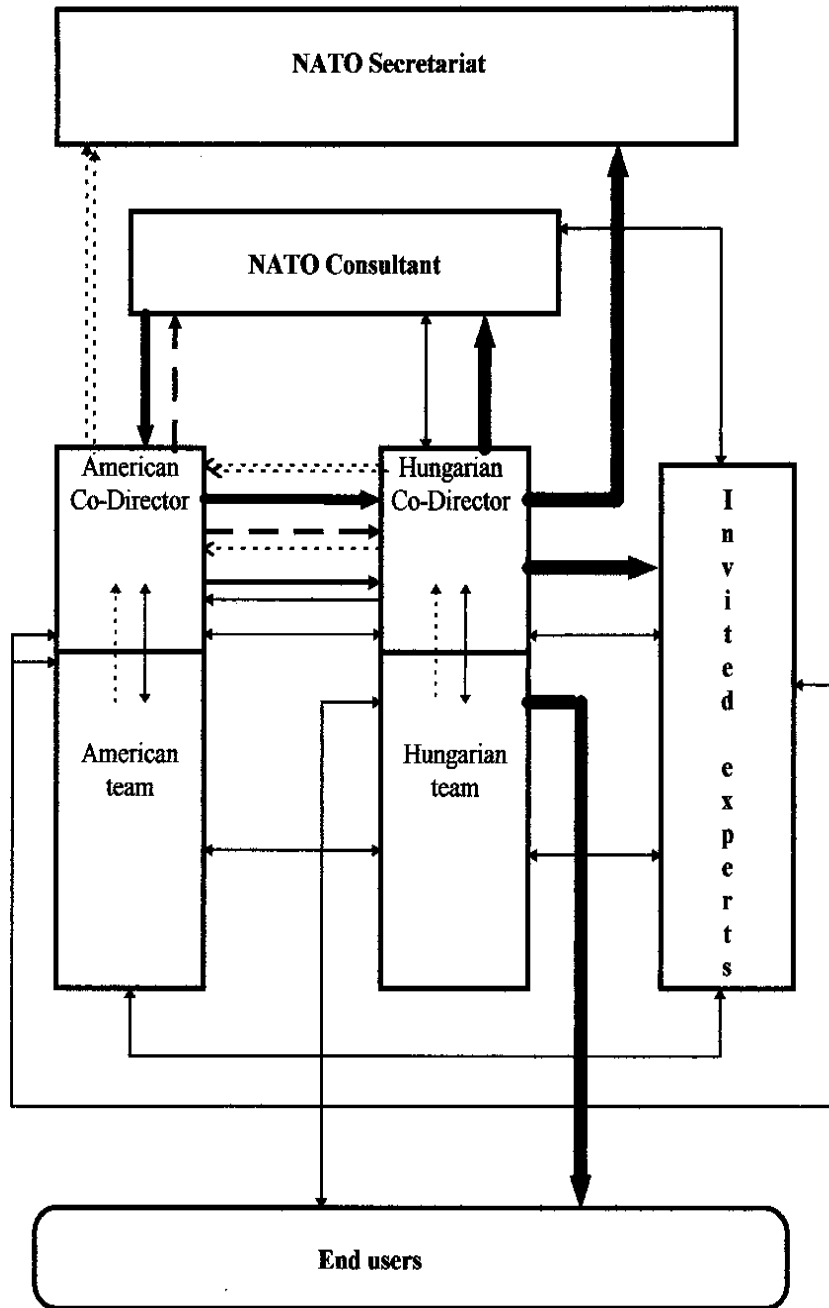
- End-users representing consultancy in the wastewater industry

The consultant companies have prepared technological pre-plans for the overloaded WTPs and worked out marketing strategy for the wide-range application of ZeoRap[®] WWTT.

Continuous communication was maintained with every end-user during the entire implementation period of the project. They received verbal and written information on the significant results of the project. Representatives of the end-users were invited to the project technical and scientific meetings.

The managerial organization of the project is illustrated on Figure A.

Figure A: Managerial Organization of the Project



Legend

Draft working programme	Revised Draft 2 reports	Financial report
←————→	- - - - ->>
Revised working programme	Aproved Draft 2 reports	
————→	————→	
Draft 1 and 2 reports	Final reports	Other information exchange
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