

ANNEX 1 PROJECT DESIGN MATRIX: Human Resourced Development for Environmental Engineers at College of Dunaujváros, Hungary

Period of project: 3 years (from Jan. 15th 2002 to Jan. 14th 2005)

Target groups : Teaching staffs at College of Dunaujváros, Dunaferri company, citizens

Target area : Municipality of Dunaujváros

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Narrative Summary	Verifiable indicators	Means of verification	Important assumption
<p>Overall Goal :</p> <p>Human resources engaged in environmental issues in Hungary are developed and increased.</p>	<ol style="list-style-type: none"> 1. Number and technical level of graduate environmental engineers developed by the new course. 2. Number of citizens participating environmental protection activity. 	<ol style="list-style-type: none"> 1. Records of administration office of the college 2. Interviews to C/P personnel and companies 3. Japanese experts' reports 	<p>Developed human resources continuously work for environmental protection.</p>
<p>Project main purpose:</p> <p>Educational quality of the environmental engineering course at the college of Dunaujváros (hereinafter referred to as "the college") is improved.</p>	<ol style="list-style-type: none"> 1. Opening of environmental engineering main course in 2003 2. Quality of the new curriculum, textbooks and equipment provided 3. Increased number of students in the new course. 	<ol style="list-style-type: none"> 1. Records of administration office of the college 2. Interviews and/or questionnaire survey to students, C/P lecturers and other persons concerned 3. Japanese experts' reports 	<ol style="list-style-type: none"> 1. The College and other authorities concerned continue to support the new course. 2. Hungarian national policy keeps high priority on environment protection.
<p>Outputs:</p> <ol style="list-style-type: none"> 1. Lecturers necessary for the main course in environmental engineering (hereinafter referred to as "the course") are trained. 2. The curriculum of the course is developed and maintained. 3. Teaching materials and equipment necessary for the course are prepared / maintained. 4. The On-the-job Training (OJT) at Dunaferri company and other related organizations are incorporated for training C/P personnel. 5. Opinion and information exchange place among persons engaged in the environmental issues in the municipality is established. 	<ol style="list-style-type: none"> 1. Number of trained C/P personnel 2. Kind of educational contents newly introduced by the project 3. Quality of the new curriculum, textbooks and equipment provided 4. Opening of the OJT training at Dunaferri company and its quality 5-1. Number of the opinion and information exchange meeting 5-2. Outputs of the meeting 	<ol style="list-style-type: none"> 1. Interviews and/or questionnaire survey to students, C/P lecturers and other persons concerned 2. Japanese experts' reports 3. Interviews and/or questionnaire survey to C/P lecturers, participants of the seminars and other persons concerned 	<ol style="list-style-type: none"> 1. Sufficient number of student is secured. 2. The College keeps high priority on environment education.

<p>Activities:</p> <p>1-1. To do routine technical exchange with the C/P personnel in 3 fields (General environmental management, Water pollution, Energy saving and recycling).</p> <p>1-2. To introduce C/P personnel advanced environmental techniques in their related fields by training in Japan.</p> <p>1-3. To transfer specific environmental knowledge and techniques to C/P personnel mainly in 3 fields by Japanese short-term experts.</p> <p>1-4. To jointly study the current situation of environmental issues in the municipality and other areas in Hungary.</p> <p>2-1. To jointly examine educational contents required for the course.</p> <p>2-2. To reflect the opinions of the Project Steering Committee members on the new curriculum of the course.</p> <p>2-3. To reflect the opinions of environmental engineers working at companies on the new curriculum of the course</p> <p>2-4. To make up the new curriculum.</p> <p>3-1. To select necessary equipment according to the expected new curriculum contents.</p> <p>3-2. To procure and set up the selected equipment.</p> <p>3-3. To train C/P personnel to be able to operate the procured equipment.</p> <p>3-4. To make teaching materials corresponding to the new curriculum.</p> <p>4-1. To study the situation of environmental protection activities of Dunaferr company and other related organizations.</p> <p>4-2. To examine the possibilities of the OJT for C/P personnel at Dunaferr company and other related organizations.</p> <p>4-3. To implement the OJT training for C/P personnel.</p> <p>5-1. To examine and clarify the purpose of opinions and information exchange among persons engaged in the environmental issues of the municipality.</p> <p>5-2. To make regular opportunities of opinion and information exchange among them</p>	<p>Inputs from Japanese side:</p> <ul style="list-style-type: none"> - 3 long-term experts (General environmental management, Water pollution, Energy saving and recycling) - Short-term experts (as required) - C/P training in Japan - Provision of equipment 	<p>Inputs from Hungarian side:</p> <ul style="list-style-type: none"> - C/P personnel: - Office for Japanese experts - Laboratories - Lecture rooms - Local cost 	<p>1. C/P personnel continuously work for the Project.</p> <p>2. Dunaferr company's cooperation to the project is maintained.</p> <p>3. Active participation of the persons concerned is secured.</p>
<p>Preconditions:</p> <p>1. C/P personnel (prospective teachers in 3 fields) are assigned at the college.]</p> <p>2. Understanding of representatives of industry, the ministries concerned, and local government to the effect that they will be the members or observers of the steering committee is obtained.</p>			

ANNEX 2. Achievement Grid

Inputs		Results			Rating
Descriptions	Source of Information	Focal subjects	Results	Rating	
Inputs from Japanese side					
1. Japanese long-term experts	Project monitoring reports, interview, etc.	To compare man-month and timing in aspects of planned and actual input	Three long-term experts (Team leader/General environmental management. Water pollution, Energy saving and recycling) were assigned to be provisionally specified between 60 and 108 man-months in the project plan document. As a result, Team leader/General environmental management and Energy saving and recycling had been assigned for the first two years, and Water pollution has been for three years. A total input will be of 84 man-months by the end of the project. Refer to Annex 2-1.	A	
2. Japanese short-term experts	Project monitoring reports, interview, etc.	To compare man-month and timing in aspects of planned and actual input	Total man-month input for the short-term experts were not specified in the project plan document. Their assignments were planned to cover the fields of ISO14000 series, noise and vibration control and air pollution. By December 2004, 12 experts in total were dispatched; 9 1man-days for ISO14000 series, 14 man-days for noise and vibration control, 63 man-days for air pollution, 50 man-days for energy saving and recycling, 66 man-days for other environmental engineering fields. These inputs correspond to 9.5 man-months in total. Refer to Annex 2-1.	A	
3. Educational or research equipment, materials and software	Project monitoring reports, interview, etc.	Amount of purchase and extent of utilization	In total, 13,599,000 Yen and 48,074,000 HUF were disbursed by JICA for purchasing various analytical and general equipment and materials that include GC-MS, atomic absorption analyzer, SPN analyzer and others. For the details, refer to Annex 2-4.	A	
4. Counterparts training in Japan	Project monitoring reports, interview, etc.	Time spent for training courses and appropriateness of course subjects	In the course of the project, 9 project counterparts in College of Dunaujváros (DF) have been sent to Japan for training as of December 2004; 62 man-days for measures of environmental pollution, 62 man-days for management of atmospheric environment, 60 man-days for environmental management, 60 man-days for waste water pollution control, 60 man-days for energy saving and recycle, and 30 man-days for ecology. In total, 334 man-days (11.1 man-months), were spent for training in Japan. Refer to Annex 2-3.	A	
5. Supplementary support for operation costs	Project monitoring reports, interview, etc.	How much the operation costs were supplemented by JICA if any	No financial support was made for lectures and practices in the environmental engineering field. Some of the project activities such as workshops and seminars were held outside the college. JICA supported a part of the necessary costs. For an example, for workshops held jointly with Ministry of Environment, JICA assisted with around 200,000HUF every time.	A	
Inputs from Hungarian side					
6. Assignment of the project counterparts	Project monitoring reports, interview, etc.	To confirm if necessary and timely inputs have been made	At the initial stage of the project, 7 full-time or part-time academic staff in the DF and one personnel from City Office of Dunaujváros and two personnel from Dunaferr company were assigned as Hungarian project counterpart. Refer to Annex 2-2. An extent to which the counterparts have been able to participate in the project differed depending on how much they were occupied with their duties (lecture and practice). The counterparts who have been able to receive, in daily basis for a long time, technical guidance and lessons conducted by the long-term experts are estimated approximately 2 to 3 persons.	B	
7. Preparation for the offices, laboratories and lecture rooms	Project monitoring reports, interview, etc.	To confirm if necessary and timely inputs were made	Since the autumn in 2002, the project office has been placed in a renovated building in the campus of the DF. This building has 4 floors and, in the basement and on the ground floor, offices for the experts and laboratories with the supplied equipment were provided. For renovation of the building, the DF disbursed some 240 Million HUF. Other floors are being used for the other departments of DF.	A	
8. Operation and running costs for the project	Questionnaire	To confirm if necessary and timely inputs were made	All the costs for illumination, fuel oil, water and maintenance of the building, as well as ordinary expenses for lectures and practices in the present environmental protection sub-course, have been fully born by the DF.	A	

Project Activities		Source of Information	Methods	Results	Rating
1.	1-1. To do routine technical exchange with the C/P personnel mainly in 3 fields (General environmental management, Water pollution, Energy saving and recycling).	Activity reports, interview, project monitoring reports, etc.	To which extent, the activity was achieved. How these activities could contribute to attain corresponding output.	First, academic competency of the counterparts was highly appreciated by all the Japanese experts who were involved in the project. However, laboratory technology especially on the field of environmental engineering was assessed not enough in the initial stage of the project. The activity has been focused to enhance or develop such technical skills of some of the counterparts. Second, the experts have also prioritized introduction of the newest environmental engineering technologies in Japan mainly by means of literature and training equipment where possible. This activity has also been supplemented with assistance of short-term experts and counterpart training in Japan.	A
	1-2. To introduce C/P personnel advanced environmental techniques in their related fields by training in Japan.				
	1-3. To transfer specific environmental knowledge and techniques to C/P personnel mainly in 3 fields by Japanese short-term experts.				
	1-4. To jointly study current situation of environmental issues in the municipality and other areas in Hungary				
2.	2-1. To jointly examine educational contents required for the course.			The activities 2-1 to 2-4 were planned by assuming that opinions of the stakeholders in Dunaujváros City, wherever appropriate, would be reflected on the new curriculum for a bachelor degree program for environmental engineer. Actually it was found that curricula are considerably bound to guidelines of the Ministry of Education. In case of the new bachelor programs for environmental engineer under the new Educational Law, the guideline was formulated through meetings participated in by universities and colleges concerned (which included the DF), as well as by Hungarian Accreditation Committee (MAB), that were first held in March 2004, and was finally approved by the ministry with several minor modifications. The new bachelor degree program for environmental engineer in the DF was prepared basically under this guideline. As a result, the experts were not directly involved in the above preparation of the curriculum of the new degree program in the DF. The steering committee was planned to review progress of the project and instruct or advise on the project activities if necessary. The committee was held three times (May 2002, January and December 2003) in the last three years. It seems that it would be difficult for the committee to contribute the project as it has been held only in annual basis. Actually there was no cases that opinion of the committee members could be reflected on the new curriculum. From the initial stage of the project, two counterparts, Dr. Laszlo Hari and Dr. Miklos Kovats, have been assigned from the Dunaferr company. Afterwards Dr. Laszlo Hari moved to the DF and has worked as a professor. Dr. Miklos Kovats is still working for the company as an Environmental Trustee, and also continues to give lectures in the DF. Hence, Dr. Miklos Kovats is well positioned to reflect professional knowledge in working experiences on his lectures and practices, as well as on the new curriculum. The curriculum and syllabus of the new bachelor program for environmental engineer were completed and the DF applied for accreditation of the environmental engineering course to MAB with necessary documents in September 2004. However, the planned bachelor degree program has not been accredited as of December 2004. The following summarizes the DF's understandings; 1) Total credits of basic subjects meet the guideline of the Ministry of Education. 2) The number of qualified academic staff required should be based on the number of the subjects, while the MAB assessment is based on the number of credits. 3) Explanation on the laboratories might have been insufficient. 4) For research activities, the guideline requires to refer to ten publicized research papers.	-
	2-2. To reflect the opinions of the Project steering committee members on the new curriculum of the course.				
	2-3. To reflect the opinion of environmental engineers working at companies on the new curriculum of the course				
	2-4. To make up the new curriculum.				

3-1. To select necessary equipment according to the expected new curriculum contents.	It was told by the expert that, since most of the equipment to be supplied by JICA were already planned in the preliminary study in 2001, there was no process to select the necessary equipment in a course of the project.	-
3-2. To procure and set up the selected equipment.	Renovation of the building that the project office accommodated was completed in the autumn in 2002. Upon the completion of the renovation, the offices and the equipment were moved from the main building of the DF, and the equipment that had been supplied under the project was installed in the present laboratories.	A
3. 3-3. To train C/P personnel to be able to operate the procured equipment.	As for analytical equipment for water and air pollution, Ms. Beata Farkas and Mr. Gabor Hajos have been main targets for technical guidance. Mr. Gabor Hajos received a month training for GC-MS by the manufacturer in Budapest. Relative to equipment for energy saving and recycle, Dr. Endre Kiss received technical guidance on training equipment for furnace. Ms. Eva Kovacs Bokoro, Mr. Hajos and Dr. Kiss on training equipment for power saving, and Mr. Hajos and Mr. Miklos Horvath on waste separator.	A
3-4. To make teaching materials corresponding to the new curriculum	Mainly manuals for operating the equipment were prepared first. Textbooks for individual subjects in the new curriculum were not prepared by the project. Though not corresponding to each of the subjects, two texts broadly covering water pollution and another two for energy saving and recycle were supplied by the long-term experts. 12 lecture notes on the different field were provided by the short-term experts. In addition, a series of literature on the environmental engineering compiled by Advanced Industry and Science and Technology (AIST) in Japan was supplied.	A
4-1. To study the situation of environmental protection activities of Dunaferr company and other related organizations	Studies on the steel plants in the Dunaferr company four times or more and other factories in the vicinity of Dunaujvaros for 7 times were conducted in the last three years. Through the studies, various facts were found in measures of these plants and factories for the environment protection that might need further improvement.	A
4-2. To examine the possibilities of the OJT training for C/P personnel at Dunaferr company and other related organizations.	For a long time, the Dunaferr company has provided facilities of practices for many students of the DF, especially for those in the Mechanical Engineer and other industry-related programs. Compared with this, students taking sub-course of environmental protection who have had such chance were less. One of the reasons is they are less in number; there are only 27 graduates from the environment-specialized sub-courses so far.	A
4-3. To implement the OJT training for C/P personnel	Generally in the DF, a main off-campus practice has been for graduate thesis (diploma work) that is undertaken by students for three months. During a term from 2002 to 2004, a student learning the environmental protection was engaged in the diploma work at Dunaferr company in June 2003. This was only a case during this term. Other students taking the sub-course were finding their places of practice in Environment Protection Department of the Municipality of Dunaujvaros, sewage plant, paper mill, sugar factory and power plant.	A
5. 5-1. To examine and clarify the purpose of opinions and information exchange among persons engaged in the environmental issues of the municipality.	Whenever planning a workshop or a seminar in Dunaujvaros or Győr, preliminary sessions were held with Ministry of Environment and Regional Environment Authority (Inspectorate) for discussing objectives of the workshop or seminar. Thus review and clarification on the purpose of workshop or seminar have been repeatedly made since the initial stage of the project.	B
5-2. To make regular opportunities of opinion and information exchange among them	From November 2002 to November 2004, the workshops or seminars on the environmental protection have been held 12 times with participation of municipalities, citizens, teachers, students, etc. in Dunaujvaros and other three cities in Hungary. This means the workshops or seminars were held once every two months in average in the last two years.	B
To which extent, the activity was achieved. How these activities could contribute to attain corresponding output.	Activity reports, interview, project monitoring reports, etc.	
To which extent, the activity was achieved. How these activities could contribute to attain corresponding output.	Activity reports, interview, project monitoring reports, etc.	

Project Outputs

Descriptions		Source of Information	OVI's in the FDM	Results	Rating
1.	1. Lecturers necessary for the main course in environmental engineering (hereinafter referred to as "the course") are trained.	1. Interviews and/or questionnaire survey to students, C/P lecturers and other persons concerned	1. Number of trained C/P personnel	Counterparts received lectures in daily basis for a long time from the long-term experts: 2 to 3 persons Counterparts received guidance to operate the main equipment: 6 persons Counterparts participated in on-site studies and off-campus workshops: 9 to 10 persons Counterparts participated in regular weekly meeting or lectures by the short-term experts: 9 to 10 persons	B
2.	2. The curriculum of the course is developed and established	2. Japanese experts' reports	2. Kind of educational contents newly introduced by the project	Fields covered by technical transfer by the long and short-term experts: General environmental management, Water pollution, Energy saving and recycling, ISO14000 series, Noise and vibration control, Air pollution, and other environmental engineering fields Among subjects in the new curriculum, those that were incorporated with technical knowledge transferred from the experts: Air pollution control (by Dr. Ohuchi and short term experts), Water pollution control (Mr. Kyushin), Waste management (Mr. Mizuta and short term experts), Environmental management and related subjects (Short term experts), Noise and vibration control (Dr. Inaizumi), Heat and fluid dynamics (Mr. Mizuta), and Measurements in general (Mr. Mizuta, Mr. Kyushin, and some short term experts) Among subjects in the new curriculum, those that were newly formulated through assistance by the experts: Energy saving related subjects (Mr. Mizuta and short term experts)	A
3.	3. Teaching materials and equipment necessary for the course are prepared/maintained	3. Interviews and/or questionnaire survey to C/P lecturers, participants of the seminars and other persons concerned	3. Quality of the new curriculum, textbooks and equipment provided	Quality Curriculum: Most parts of the formations construction for the new bachelor program is bound to the guideline by the Ministry of Education. The JICA experts indirectly contributed to making of curriculum through technical transfer to the counterparts. Text: Most updated reference materials and technical papers on the environmental protection were supplied in form of printouts and electronic files. Relevant publications in NIRE was also supplied. All these are in English and 60% of the NIRE publications were translated to Hungarian language. Laboratory equipment: Advanced laboratory equipment was supplied which include GC-MS, Atomic Gas Absorption Analyser and others.	A
4.	4. The On-the-Job training (OJT) at Dunaferri company and other related organizations are incorporated for training C/P personnel		4. Opening of the OJT training at Dunaferri company and its quality	Number Curriculum: 210 credits are given in the new curriculum, and it is same as curriculum for the environmental protection sub-course under the existing program Text: Those prepared by the long-term experts are 4 volumes, and those provided by the short-term experts are 11 volumes. In addition, 22 technical papers in English version of NIRE publications was supplied. Laboratory equipment: 45 units of the laboratory equipment and associated device and utensil were supplied	A
5.	5. Opinion and information exchange place among persons engaged in the environmental issues in the municipality is established		5-1. Number of the opinion and information exchange meeting 5-2. Outputs of the meeting	No OJT training for the counterparts has been secured in Dunaferri so far. For the graduation thesis by students in the environmental protection sub-course, Dunaferri once accepted a student for 3 months from June 2003. It seems that, after the new management system is stabilized, a process of the request or negotiation will be able to identify and on-site training in the company made possible. 5-1. Number of the opinion and information exchange meeting Meetings have been made in form of workshop or seminar. These have been held 7 times in Dunaújvaros in the last two years, participated with municipalities, citizens, teachers and students in the city. 5-2. Outputs of the meeting It seems that, through the workshops or seminars, citizens awareness on the environmental protection could have been built to some extent. Assisted with efforts by a project counterpart from the Municipality Office, five environment NGOs were organized. They started to give supports to relevant action programs by the municipality such as "Clean the Town".	B

ANNEX 2-1 List of Japanese Experts

1. Long-term experts

General Environment	Ohuchi Hideo	2002.1.15-2004.1.14
Energy Saving/Recycle	Mizuta Yutaka	2002.1.15-2004.1.14
Waste Water Treatment	Kyushin Shozaburo	2002.1.15-2005.1.14

2. Short-term experts

(1) General environmental matters/Air Pollution control

ISO14001	Ando Ikuo	2002.9.15-2002.12.14
Diffusion / Prediction	Yamamoto Susumu	2002.11.9-2002.11.20
Reaction / Measurement	Kaneyasu Naoki	2002.11.9-2002.11.23
Stationary Sources	Kido Nobuo	2003.7.13-2003.8.3
Motor Vehicle Emission	Obuchi Akira	2003.8.16-2003.8.29

(2) Energy saving and recycle

Factory Diagnosis	Kazama Hisao	2003.8.16-2003.9.14
Melting for Waste Treatment	Shimamura Koichi	2004.7.10-2004.7.31
Energy Saving and Recycle	Horikawa Hiroshi	2004.8.11-2004.8.29
Life cycle assessment	Narita Nobuo	2004.9.4-2004.9.12

(3) Water pollution control

Measurement / Calculation	Takao Satoshi	2003.1.25-2003.2.15
Hazardous Waste Treatment	Urusigawa Yoshikini	2003.8.16-2003.8.29

(4) Vibration/Noise

Vibration/Noise	Imaizumi Hiroyuki	2004.6.27-2004.7.10
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ANNEX 2-2 List of Counterparts

No.	Name	Position	Date of Assignment
1	Dr. Endre Kiss	Professor, Head of Department, Department of Natural Resources and Environmental Protection, College of Dunaújváros	January, 2002
2	Mr. Mikrós Horváth	Associate Professor, College of Dunaújváros	January, 2002
3	Mr. István Jenei	Associate Professor, College of Dunaújváros	January, 2002
4	Mr. Gábor Hajós	Senior Lecturer, College of Dunaújváros	January, 2002
5	Ms. Beáta Farkas	Senior Lecturer, College of Dunaújváros	January, 2002
6	Dr. László Hári	Professor, College of Dunaújváros	January, 2002
7	Ms. Ildikó Petrovickijné Angerer	Head of Environmental Protection Department, Municipality of Dunaújváros Mayor's office	January, 2002
8	Dr. Mikrós Kovács	Environmental Manager, Dunaferr VoestAlpin Cold Rolling Mill Ltd.	January, 2002
9	Ms. Éva Kovács Bokor	Assistant, College of Dunaújváros	January, 2003

ANNEX 2-3 Counterparts Training in Japan

No.	Name	Position	Training course	Period		
				2002	2003	2004
1	Mr. Mikrós Horváth	Associate Professor, College of Dunaujvaros	Measures of Environmental Pollution	2002.6.10-2002.8.30		
2	Mr. Gábor Hajós	Senior Lecturer, College of Dunaujvaros	Measures of Environmental Pollution	2002.6.10-2002.8.30		
3	Mr. István Jenei	Associate Professor, College of Dunaujvaros	Environmental Management		2003.10.2-2003.10.31	
4	Dr. Mikrós Kovács	Environmental Manager, Dunaferr VoestAlpin Cold Rolling Mill Ltd.	Environmental Management		2003.10.2-2003.10.31	
5	Ms. Beáta Farkas	Senior Lecturer, College of Dunaujvaros	Waste Water Pollution Control		2003.10.2-2003.10.31	
6	Ms. Ildikó Petrovickijné Angerer	Head of Environmental Protection Department, Municipality of Dnaujvaros Mayor's office	Waste Water Pollution Control		2003.10.2-2003.10.31	
7	Dr. Endre Kiss	Professor, Head of Department, Department of Natural Resources and Environmental Protection, College of Dunaujvaros	Energy saving and Recycle			2004.9.30-2004.10.29
8	Dr. László Hári	Professor, College of Dunaujvaros	Energy saving and Recycle			2004.9.30-2004.10.29
9	Ms. Éva Kovács Bokor	Assistant, College of Dunaujvaros	Ecology			2004.9.30-2004.10.29

ANNEX 2-4 List of Provision of Machinery and Equipment

1. Procurement in Japan

No.	Equipment Name	pcs	unit	price (Yen)
1	Rap top personal computer, Printer, Soft wear	1	set	488,300
2	Tobacco Ash Tray	1,000	pcs	85,000
3	pH Electrode, ORP Electrode, Easy Analyzer chemicals, Pure Parts of Water Equipment	1	set	416,000
4	Total Organic Carbon Analyzer	1	pcs	2,340,000
5	Equipment of Pure Water Product	1	set	1,026,000
6	pH Meter	1	pcs	176,000
7	Jar-tester (Floatation Tester)	1	pcs	310,000
8	Gas Sampling Unit	1	pcs	1,014,000
9	Parts	1	set	496,000
10	Octave Band Real-time Analyzer	1	pcs	1,177,000
11	Video Camera	1	pcs	157,000
12	Combustion Gas Analyzer	1	pcs	245,000
13	Clamp on Power Tester	1	pcs	528,000
14	Parts	1	set	390,000
15	Personal Computer*3 pcs, Printer 2 pcs, Books	1	set	1,960,000
16	Noise Meter, Vibration Meter, Floatation Tester	1	set	890,000
17	IBM Notebook Computer	1	set	253,000
18	Canon Ptinter	1	set	37,000
19	Portable Ash Tray	1,000	pcs	85,000
20	Other parts	1	set	198,300
21	Septum (for TOC Analyzer)	1	set	38,500
22	Digital Illumino Meter	1	pcs	86,400
23	Infrared Thermmeter	1	pcs	52,800
24	Electromagnetic Sieve Shaker	1	set	390,950
25	Pump Head and Tube	1	set	95,640
26	pH Test paper	5		7,700
27	Safety Pippeter	20	pcs	25,000
28	Mini power relay	25	pcs	26,000
29	Socket	15	pcs	6,300
30	Memory card	3	pcs	60,000
31	Recording paper	2	set	10,800
32	BNC-PIN connector	1	set	3,600
33	Data logging system	1	set	454,300
34	Plastic Molded Packing (Tellerette), Type: S-II	100	liter	70,000
	Total (Yen)			13,599,590

2. Procurement in Hungary

No.	Date	Name	Suppliers	Type	Unit Price	Price Unit	Number	Unit	Rate	合計 (Ft)
1	H14-1	GC-MS	Perkin Elmer	N651-000B (Clarus500)	72,459	USD	1	set(s)	124.1	17,095,365.
2	H14-2	Atomic Absorption Analyzer	Perkin Elmer	B314-0080A (AAAnalyst400)	30,156	USD	1	set(s)	124.1	7,114,752
3	H14-3	Flow Meter	Cole Palmer	3290880	900,000	HUF	1	piece(s)	0.526	900,000
4	H14-4	Gas Regulator	Messer	Spectron FM61	77,500	HUF	8	piece(s)	0.526	620,000
5	H14-5	COD Analyzer	Tintmeter GmbH	Lovibond	500,000	HUF	1	set(s)	0.526	500,000
6	H14-6	SPM Analyzer	Philips Oldham	AP-100	2,300,000	HUF	1	set(s)	0.526	2,300,000
7	H14-7	Projector	Mitsubishi	XL2XU 1500	1,360,600	HUF	1	set(s)	0.526	1,360,600
8	H14-8	Infrared Analyzer	CARL ZEISS JENA	Specord 75 IR	250,000	HUF	1	set(s)	0.526	250,000
9	H14-9	Ultra Sonic washer	Cole Palmer	A08891-26	320,000	HUF	1	piece(s)	0.526	320,000
10	H14-10	Extraction- Condensate Eq.	Heidolph	4001/G3	3,240,000	HUF	1	set(s)	0.526	3,240,000
11	H14-11	Furnace	Naberthem	L3/11/B170	900,000	HUF	1	set(s)	0.526	900,000
12	H14-12	Incinerator	TRIBO-SPRAY Bt		2,847,000	HUF	1	set(s)	0.532	2,847,000
13	H14-13	Energy Saveing Eq.	TRIBO-SPRAY Bt		438,000	HUF	1	set(s)	0.532	438,000
14	H14-14	Energy Save Eq.(for water)	TRIBO-SPRAY Bt		630,000	HUF	1	set(s)	0.532	630,000
15	H14-15	Waste Separator	TRIBO-SPRAY Bt		1,759,000	HUF	1	set(s)	0.532	1,759,000
16	H14-16	Neutralization Eq.	TRIBO-SPRAY Bt		1,508,000	HUF	1	set(s)	0.532	1,508,000
17	H14-17	Coagulation sedimentation Eq.	TRIBO-SPRAY Bt		3,002,000	HUF	1	set(s)	0.532	3,002,000
18	H14-18	Activated Sludge Eq.	TRIBO-SPRAY Bt		1,854,000	HUF	1	set(s)	0.532	1,854,000
19	H15-1	Infrasound Analyzer	Jozsa es Tarsai	SVAN 945 A-1	1,436,000	HUF	1	set(s)		1,436,000
20	H15-2	pH Meter etc	CONRAD Rt		406,525	HUF	1	set(s)		406,525
Total Price (Ft)										48,481,242

ANNEX 2-5 Budget of the Project**JAPANESE SIDE (1,000 JY)**

	FY 2002	FY 2003	FY2004	Total
Operating Expense, including Equipment	95,027	56,122	23,008	174,157
Equipment			40,836	
Total 1,000 JY				174,157

HUNGARIAN SIDE

	FY 2002	FY 2003	FY2004	Total
Building (1,000 HUF)	240,000			240,000
Total 1,000 HUF				240,000

Remarks;

Japanese Fiscal Year is from April 1 to March 31 of the following year.

Hungarian Fiscal Year is from September 1 to August 31 of the following year.

**ANNX 3. Project for Human Resource Development for Environmental Engineers at College of Dunaujváros
Draft Evaluation Grid**

Relevance

Questions for Evaluation		Criteria	Results of Study
Main Categories	Sub Categories		
Can the objectives of the project meet the relevant national policies in Hungary?	<p>Prioritized sectors in the environmental protection policy</p> <p>Qualification system for environmental trustees and the academic degree</p>		<ul style="list-style-type: none"> • Prioritized sectors in the environmental protection policy Air quality control, water quality control, waste management, environmental management • Qualification system for environmental trustees (experts) and the academic degree Environmental engineers are educated in colleges (bachelor of engineering level) and in universities with master of engineering level). As for postgraduate education, both the college and the university provide courses for college and university graduates, respectively. There are short non-degree courses provided by either the higher educational institutions or other (mostly private) institutions, but they can not give engineering degree.
	<p>The implementation organization was properly selected? College of Dunaujváros was an appropriate organization for achieving the overall goal of the project?</p> <p>Positioning of College of Dunaujváros in the country as a developer for the environmental engineering education; one of the main thrusts or a model institute?</p>	<ul style="list-style-type: none"> • Accreditation records by the MAB for environment engineering related degree programs in colleges and universities in Hungary Following 8 universities and 2 colleges have been accredited for environment engineering degree courses; Budapest University of Technology and Economics University of Debrecen University of Miskolc University of Pécs István Széchenyi University Szent István University University of West Hungary University of Veszprém Accredited Environmental Engineering degree courses at colleges Technical College of Budapest Eötvös József College • Numbers of the graduates from the similar degree programs in colleges and universities in the country <i>Altogether in Hungary the number of graduates from environmental engineering course is about 100 persons. Because of many student who can not graduate, exact figures are difficult to estimate.</i> • The implementation organization was properly selected? There is a great demand for environmental experts in the region, because there exists a 	

			<p>variety of pollution problems to be solved. There are an expertise in the field of the environmental protection and a capacity for basic and engineering sciences in College of Dunaújváros (DF). It is much better to train the engineers in the site or close to the site. The DF has a good research and educational experience in environmental protection and capacity to do that.</p>																					
<p>Can the project meet needs of the implementation organization?</p>	<p>Why the environmental engineering main course needed to establish?</p>		<p>There are demands for environmental engineers. The DF has an institutional capacity to open the BSc degree course, as there are expertise and equipment. Furthermore, the organization needs revenues.</p>																					
	<p>Why do students choose the present environmental engineering sub course?</p>		<ul style="list-style-type: none"> Academic degree that can be obtained by the sub course in College of Dunaújváros, Bachelor of Engineering in Mechanical Engineering or in Technical Management Annual change of numbers of the course enrollment and graduates (person) <table border="1" data-bbox="622 425 726 1198"> <thead> <tr> <th>Year</th> <th>1999</th> <th>2000</th> <th>2001</th> <th>2002</th> <th>2003</th> <th>2004</th> </tr> </thead> <tbody> <tr> <td>Enrollments</td> <td>8</td> <td>16</td> <td>22</td> <td>5</td> <td>4</td> <td>24</td> </tr> <tr> <td>Graduates</td> <td></td> <td></td> <td></td> <td>6</td> <td>14</td> <td>7</td> </tr> </tbody> </table> 	Year	1999	2000	2001	2002	2003	2004	Enrollments	8	16	22	5	4	24	Graduates				6	14	7
Year	1999	2000	2001	2002	2003	2004																		
Enrollments	8	16	22	5	4	24																		
Graduates				6	14	7																		
	<p>Why accreditation for the main course is delayed?</p>		<ul style="list-style-type: none"> Why do students choose the present environmental engineering sub course? The expertise is needed by the society and hence demand for graduates is high. It took time to fulfill requirements for lecturers. Since accreditation for the new BSc degree course under the New Educational Law has been started from 2004, the application under the old system was cancelled. Difference in curriculum, education facilities and lectures needed between the main course and the sub course The main course is containing subjects for the sub-course totally. Chemistry, biology and management related subjects are to be included in the new program. Requirements for the accreditation by the MAB for formulating and operating the main course <i>See attached sheets</i> 																					
<p>Does the project meet the aid policies of the Japanese government?</p>	<p>Relevance to the prioritized issues in the ODA</p> <p>Relevance to the JICA assistance plans classified by target countries</p>		<p>Sector priority of the ODA for Hungary by Japan <i>Environmental sector has represented one of prioritized sectors in the ODA by Japan for every recipient country.</i></p> <p>The priority to the environment field <i>The above ODA policy has also been applied to its technical cooperation for Hungary.</i></p>																					
<p>Is there any comparative advantage of the</p>	<p>Experience in Japan for the environmental engineering fields</p>		<p>This project was designed not only for improvement or enhancement of the higher education of the DF in the field of environmental engineering but for technology transfer in the field for contributing to overcoming environment problems often accompanied with industrial</p>																					

technology in Japan?			development.
	Necessity for revising the environmental education curriculum, as a result of joining EU		The environmental education system in Hungary and the EU standards <i>There is no such necessity to adapt in curriculum level, while harmonization with EU education system is going on.</i>
	Has there been any change of macro conditions (policy, economy, society and others) that could affect the project after the mid term evaluation in 2003?		None.

Effectiveness

Main Categories	Questions for the evaluation		Criteria	Results of Study
		Sub Categories		
Was the project purpose achieved?	General conclusion on achievement of the project purpose			The project purpose is substantially achieved. Since the new bachelor (BSc) degree program has not been accredited yet as of December 2004, two of the verifiable indicators are not satisfied. However, aside from the delayed accreditation, quality of the subjects for the environmental engineering in the DF has been improved by the project to a considerable extent. It seems that reasons given by the MAB for the failure were not related to quality of the planned subjects but to other sides of a course formulation.
Were the outputs achieved?	General conclusion on achievement of the project outputs			Output-1 was substantially achieved. Output-2 and 3 were highly achieved. Output-4 and 5 were substantially achieved.
Could the outputs contribute to the achievement of the project purpose?	Aside from delayed accreditation of the main course, with the output-1, could qualities of the education for the environmental engineering in College of Dunaujváros have been improved?			<ul style="list-style-type: none"> Number of the CPs who could have been continuously benefited from technical guidance by the experts <i>The DF answered nine persons could.</i> List of the subjects that were targeted for the technology transfer <i>Air pollution control (by Dr. Ohuchi and short term experts)</i> <i>Water pollution control (Mr. Kyushin)</i> <i>Waste management (Mr. Mizuta and short term experts)</i> <i>Energy saving related subjects (Mr. Mizuta and short term experts)</i> <i>Environmental management and related subjects (Short term experts)</i> <i>Noise and vibration control (Dr. Imaizumi)</i> <i>Heat and fluid dynamics (Mr. Mizuta)</i> <i>Measurements (Mr. Mizuta, Mr. Kyushin, and some short term experts)</i> Number of the lecturers that is necessary to operate the main course; by fulltime and part time lecturer <i>10-12 full time and 5-6 part time</i>

	<ul style="list-style-type: none"> • Competency assessment for the C/Ps See the attached • Those engaged in development of the curriculum for the main course, especially those marked with (*) gave main roles: Dr. Endre Kiss Dr. László Hári Mr. Miklós Horváth (*) Mr. István Jenei Mr. Gábor Hajós (*) Ms. Éva Kovács Bokor Dr. Miklós Kováts • Subjects supported by the project in a course of the above development There were eight subjects that had been contributed by the project. See under. • Any problems that have been caused in a course of the above development; necessary educational equipment, shortage of the lecturers and others, if any (No answer was obtained) • Improved points in the curriculum and syllabus Improvement was done simultaneously for both subjects of the present sub-course and of the new BSc degree course. This is because the present sub-course is planned to leave under the courses for Mechanical Engineering and Technical Management. • Necessity of the above improvement To keep quality of the courses in the international level • List of the subjects that were improved with the supplied equipment Water Pollution Control-II, Air Pollution, Waste management, Energy saving related subjects, Measurements in general • Necessity for such improvement Same as the above • List of the subjects that were improved with the supplied teaching and reference materials There were eight subjects that had been contributed by the project. See under. • List of the subjects that need practice facilities in real factories Off-campus practices are made mainly for graduate thesis (diploma work). 	<p>Before & after effects</p>	<p>Competency assessment for the C/Ps See the attached</p>
	<p>Contribution by developing the curriculum and syllabus for the main course</p>		
	<p>What contribution could have been made for improvement of the education if the main course was made available?</p>		
	<p>Contribution by the supplied educational equipment</p>		
	<p>Contribution by the supplied teaching and reference materials</p>		
	<p>Contribution by securing practice facilities in factories in Dunaferr</p>		
	<p>ISO 14000 acquisition</p>		<p>Progress in the ISO 14000 acquisition by College of Dunaujváros</p>

Obstacle or contributable factors for achieving the project purpose	Can delay in accreditation of the main course badly influence operation of the sub course in any aspects? In case that the sub course has to be continued furthermore as a result of the delay of accreditation for the main course, is there clear benefits in improvement of the environment engineering education? Negative influence that was left by the delayed accreditation of the main course	Started but not scheduled yet Not at all. The present sub-course will be continued even if the new BSc degree course of environmental engineering is started. Furthermore, new sub-courses will be established under the new course for environmental engineering. • Influence on number of the students: 60-70 students • Influence on number of lecturers: Not yet caused • Lay off by Dunaferri and its influence on the city economics Employment before the privatization has been kept under a five year contract. Presently, there in no significant effect. • Influence on related industries Same as the above • Change in the budgets for environment protection for Dunauivaros City 2003: 29 Million HUF, 2004: 26 Million HUF, 2005: 23 Million HUT (prospected) The budgets have been decreased year to year. This was caused by reduction of the national budgets.	Policy of the new management body of Dunaferri for supporting the project: The new management system of the Dunaferri company has not been stabilized yet. Contact and collaboration with them is expected to resume in due course.
Likewise, are there any influences on their provision of part-time lecturers and finance support by means of joint research and others?	Accompanied with stagnation of Dunaferri and followed bought up, did consciousness of the citizen for environment protection decline?		

Efficiency

Questions for the evaluation		Criteria	Results of Study
Main Categories	Sub Categories	Planned vs. actual	
Achievement of the inputs			Most of the activities were highly achieved. A few were not performed as planned.
Compared with the achieved results of the outputs, were quality, quantity and	1. Were the fields of expertise of the long-term experts appropriate for the subjects in the environmental engineering education at College of		1. Air pollution control (by Dr. Ohuchi and short term experts) Water pollution control (Mr. Kyushin) Waste management (Mr. Mizuta and short term experts) Energy saving related subjects (Mr. Mizuta and short term experts)

<p>timing of the inputs appropriate? (Japanese side)</p>	<p>Dunaújváros?</p> <p>2. Timing of sending them was appropriate?</p>	<p>Environmental management and related subjects (Short term experts) Noise and vibration control (Dr. Imaizumi) Heat and fluid dynamics (Mr. Mizuta) Measurements (Mr. Mizuta, Mr. Kyushin, and some short term experts)</p> <p>2. Yes</p> <p>There was no lack in the fields. The short term experts widened and deepened the fields. The expertise of the long term experts did not need to be supplemented. After Mr. Mizuta returned early in 2004, the DF invited him in expenses of the college. It is said that his expertise was needed.</p> <p>There was no opinion on the equipment supplied with the project that indicated inappropriate specifications or quantities of the equipment. Most of the equipment was delivered timely by 2003.</p> <p>It seems that the equipment supplied by JICA is well utilized and maintained. There is no problem for procurement of the consumables and spare parts for the equipment that was purchased locally.</p> <p>All the counterparts who were interviewed answered that training in Japan was useful to their speciality, and the experiences in Japan are able to apply to or be used for education for their students.</p>	<p>2. Timing of sending them was appropriate?</p> <p>If there were any lacks in the above fields supported, the short-term experts could supplement them?</p> <p>Was the supplied equipment appropriate, in terms of specification, quantity, and timing of delivery?</p> <p>Utilization of the supplied equipment and materials</p> <p>Did the counterparts training in Japan properly executed in terms of number of trainees, area and course of training, and timing of its implementation?</p>	<p>Compared with the achieved results of the outputs, were the quality, quantity and timing of the inputs appropriate? (Hungarian side)</p>	<p>Were assignments of the CP's appropriate, in terms of number of person, extent of involvement in the present and planned course, extent of involvement in the project activities and their competency?</p>	<p>No. of lectures: 20 to 30 times in week?</p>	<ul style="list-style-type: none"> Total times of lectures/practices per week for each of the Hungarian counterparts As an average: 12-14 hours/week. Some say 24 hours/week in the busy semesters in case of the fulltime senior lecturers and associate professors. List of the subjects that the CPs are in charge Physics (8 kinds) Heat and fluid dynamics Environmental protection Air pollution control Water pollution control Artificial environment Measurement practices Waste management Environmental management Design of environmental management systems Metallurgy Foundry Metallurgical equipment
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			Records of the technical guidance for the C/Ps There are no detailed records left on the guidance or instruction by the JICA experts. In the first two years of the project, on every Wednesday, regular meetings were held between the experts and the counterparts, and presentations or discussions on the related issues were made.
	Were there any problems in space, quality, security usefulness of the building and facilities provided?		<ul style="list-style-type: none"> • Present situation of the building and facilities The building was renovated 2002 and appears to have been well maintained. A plan for the ground floor was provided by the DF. • Ventilation and air condition facilities for the rooms where the main equipment is provided A draft chamber and fans on the outer walls are provided in laboratories.
	Was there any shortage in the project operation costs?		<ul style="list-style-type: none"> • Operation costs for the sub course The Department of Natural Science and Environmental Protection (DNSEP) told they have always shortage in the budgets. • Operation and maintenance cost for the main equipment Same as the above
	Was there any influence by the important assumptions as shown in PDM in a process from the activities to the outputs?		<ul style="list-style-type: none"> • Percentage of CP who left the college None • Dunaferr's policy to support the project Privatization of the company has hindered progress in some of the activities. The new management system has not been stabilized yet. Contact and collaboration with them is expected to resume in due course.

Impacts		Criteria	Results of Study
Main Categories	Sub Categories		
Probability of achievement of the overall goal	Will graduates from the environmental engineering in the College of Dunaujváros be more able to get jobs in the environmental engineering or other related fields?		<ul style="list-style-type: none"> • Number of relevant job offers for the DF 20 or some annually. • Trend of employment of the graduates from the sub course <i>Among 27 graduates by 2004,</i> <ul style="list-style-type: none"> a) <i>About half of them are studying in universities for master degrees</i> b) <i>2 are working in a job needs no higher education</i> c) <i>6 in environmental related job</i> d) <i>others are not known</i>
	Will College of Dunaujváros be able to develop more its contribution in the environmental engineering education		Officers in charge of the Ministry of Education answered to this question that the DF will be able to do with no doubt.

Any other unexpected effects by the project?	in the country?	
	Could the project remove any ones of the factors that have hindered the accreditation of the main course?	<p>Although by the application in September 2004 the proposed BSc degree program was not accredited, it seems there are no serious problems in the program; that is to say, in the curriculum and laboratory equipment, at least in those that the project could have contributed. In other words, there would be no hindrance factors that the project could have removed, if any.</p> <ul style="list-style-type: none"> • Present situation to use the floors
	How the building that was built for the main course has been used?	<p>Three offices and all the laboratories in the ground and basement floors are being used by the project.</p> <ul style="list-style-type: none"> • Space utilized <p>Office: 14.75 + 13.00 + 12.63 = 40.38 sq.m Laboratories: 41.24 + 38.82 + 13.36 = 93.42 sq.m</p>
	Has the supplied scientific instrument occasionally been used for other degree programs?	(No answer)
	Interchange events in the environmental engineering with other universities and colleges has been increasing?	<ul style="list-style-type: none"> • Participation in workshops and other events in other universities and colleges <p>The counterparts have presented papers one time in the seminar held at the University of Veszprem, and College Baja was visited by most of the counterparts and the experts to exchange opinions.</p>
	Driven by seminars and workshops held by College of Dunaujváros, have environmental protection activities in the city been activated?	<ul style="list-style-type: none"> • Present and past situation in the environmental protection activities <p>By a counterpart from the Municipality Office of Dunaujváros, five NGOs related to environmental protection were organized in the city. At a ward level in the city, an action program called "Clean the Town" was conducted twice so far. With assistance from NGOs, this program delivered people (20 to 23 participants a time) plastic bags and gloves, and encouraged them to collect debris from streets in their ward.</p> <ul style="list-style-type: none"> • Number of citizen participating in the environmental protection activities <p>More than several dozen persons.</p>
	Others cities or towns received any effects from the project?	<ul style="list-style-type: none"> • Activity an environment NGO in a city nearby <p>Since sometime before the project was started, an environment NGO organized in Győr had been active against a waste treatment plant in the city that was failed to control emission of hazardous materials. The project assisted the citizen and the NGO by means of seminars and workshops three times so far.</p>
	Was ISO 9001 acquired?	<ul style="list-style-type: none"> • Date of the acquisition: March 31, 2003 • Advantages by the acquisition: The organization is working in a more organized manner. <p>This certification was not related to the project</p>

	Are there any other effects by the project?		Positive or negative impacts of the project that were not expected <i>The reputation of the college and the department increased.</i>
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Sustainability

Main Categories	Questions for the evaluation		Results of Study
	Criteria	Sub Categories	
Institutional capability		Positioning of College of Dunaujváros as a college for education of environmental engineering	<ul style="list-style-type: none"> • Status of College of Dunaujváros in the accreditation system for degree programs of the environmental engineering; in the recent list of accreditation by HAC, there are no categories of college faculties in the college. <i>There is no college faculty at the College of Dunaujváros. There are Initiutions and departments. In the BSc-MSc system there is no difference between the requirements for colleges and universities in starting and running courses.</i> • Prospect of the accreditation for programs in the college in the next renewal time (February 2007). <i>There is no negative information at present that suggests that accreditation of the institutions in the next renewal time might be difficult.</i> • Numbers of the graduates from the similar degree programs in colleges and universities in the country <i>Altogether in Hungary the number of graduates in environmental engineers is about 100 persons.</i>
		Available lecturers	<p>Number of the lecturers in the maximum that is necessary to operate the Environmental Engineering with specialization for Environment Management;</p> <p>Basic (1st and 2nd semester): Fulltime: 15 for lectures and 11 for practices Part time: None Sub-course (3rd to 7th semester): Fulltime: 33 for lectures and 4 for practices Part time: 14 for lectures and 2 for practices</p>
			<p>Possibility to secure the lecturers required The DF told that the lecturers are secured as necessary.</p>

	<p>Experts are assigned for Institute of Natural Science, and the sub course is managed by Institute of Mechanical Engineering. Why?</p> <p>Ability to manage the main course</p> <p>Will Dunaferri continue to provide the practice facilities in the future?</p> <p>Network infrastructure conjoining industry, government and college</p>		<ul style="list-style-type: none"> The latest organization chart of the college See ANNEX 4. Responsible faculties for the sub and main course for environment engineering The responsible unit is the Department of Natural Sciences and Environmental Protection. The department is becoming an institution if the main course is starting. <p>Experience and ability to manage degree programs of a similar level Same as the environmental engineering sub-course</p> <p>Policy of Dunaferri company for supporting the project (Refer to the above)</p> <p>(No information)</p>
Financial capability	Prospects on the financial capability		<ul style="list-style-type: none"> The college budget Budget allocation for the institute in charge of the sub course about 3-5 million HUF/year
	<p>The college is bearable for the project operation costs?</p> <p>% of outer resource to total revenue</p>		<ul style="list-style-type: none"> Estimated operation costs for the main course It depends on the number of students Equipment maintenance costs 1-2 million HUF Is a fund prepared for the future renovation or renewal of the main equipment? The DF answered that they have, but it is small yet Actions for contracted or sponsored researches and future plan, if any The DF obtained recently 55 million HUF research support for 3 years, and it seems that another 10-20 million HUF can be achieved. This year a support of 1.8 million HUF already received for computers. Extent of dependence on and securing of the outer financial sources; for an example those form Dunaferri Without outer sources none of the Hungarian universities can survive. 20-55% of the budget is coming from other sources, as revenue
Technological capability	<p>Can CPs operate and manage the main equipment supplied?</p> <p>Is the main equipment properly maintained?</p>		<ul style="list-style-type: none"> Extent of use in practice for the relevant subjects and others Main equipment and corresponding subjects for which the equipment is used are listed in Annex 2-4. <p>There is no logbook for the laboratory equipment. The equipment supplied has been maintained well, and a counterpart noted she did not have any problem with consumables and</p>

	<p>parts for the laboratory equipment under her responsibility.</p> <ul style="list-style-type: none"> Percentage of the CPs who left the college: None <p>As workforce, academic staffs in the DF seem to be stable. There was no project counterparts who left the college in the last three years.</p>
<p>Will scientific knowledge of lecture and practice that were transferred to the CPs be sustained in the college?</p>	

ANNEX 4. Organogram, College of Dunaujváros 2004.

