

G2G.nl-short Programme, including Environmental Facility
for New Member States (NMS), Candidate Countries (CC), Potential Candidate Countries (PCC) and other eligible countries

Final Report

Pathways to Solutions:
an integrated approach of soil and water problems in
Jiu River Basin

G2G 09/RM/6/1

Integrated Solutions for Soil and Water Problems (ISSWaP)
General Framework and Application to Jiu river basin in Romania

Taskgroup Soil+ , NL Agency
on behalf of

Ministry of Economy, Agriculture and Innovation - The Netherlands

in cooperation with

Ministry of Environment and Forests- Romania

October 2010

Colofon

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1. Background and introduction

Much knowledge exists in Romania on the soil and water systems from excellent different scientific backgrounds (geology, hydrology, soil sciences, ecology, etc.). This holds as well for the knowledge on how pollution problems can be tackled. In the field of matching the right technology with the nature, scale and scope of environmental problems the Romanian authorities search for practical examples and assistance from colleague member states in the EU. Member states like the Netherlands are willing to offer their experiences with the complex system of problem identification, research, definition of solution domains and choosing the proper solution pathways including the capacity of adapting these pathways based on proper monitoring mechanisms. The Dutch institutions involved have shown their willingness to integrate their national and international experiences in applications in the Netherlands and abroad.

In close cooperation between the involved Romanian and Netherlands organizations it is agreed that the institutionalized experience of the Netherlands is valuable in Romania to tackle integrated diffuse and point source pollution problems. The Romanian Ministry of Environment and Forestry requested their Dutch counterpart to cooperate in setting up the pilot project Integrated Solutions for Soil and Water Problems (ISSWaP) in the Jiu River basin (JRB) (see figure 1) where economic development is hampered amongst others due to diversity of environmental problems, one of them the ash depots of the power plants. The ISSWaP project has been financed by a G2G grant of Agentschap NL and in kind contributions of the Romanian counterparts. The project has been carried out in 2009-2010 to set up a general framework for integrated solutions of soil and water problems, including groundwater and surface water, sediment, mine tailings and soil pollution not only in Jiu river basin but also for equivalent other Romanian regions. The project coordinators would like to express their gratitude to all institutions and persons both from the private and public sector who contributed to the success of the project (see appendix 1).

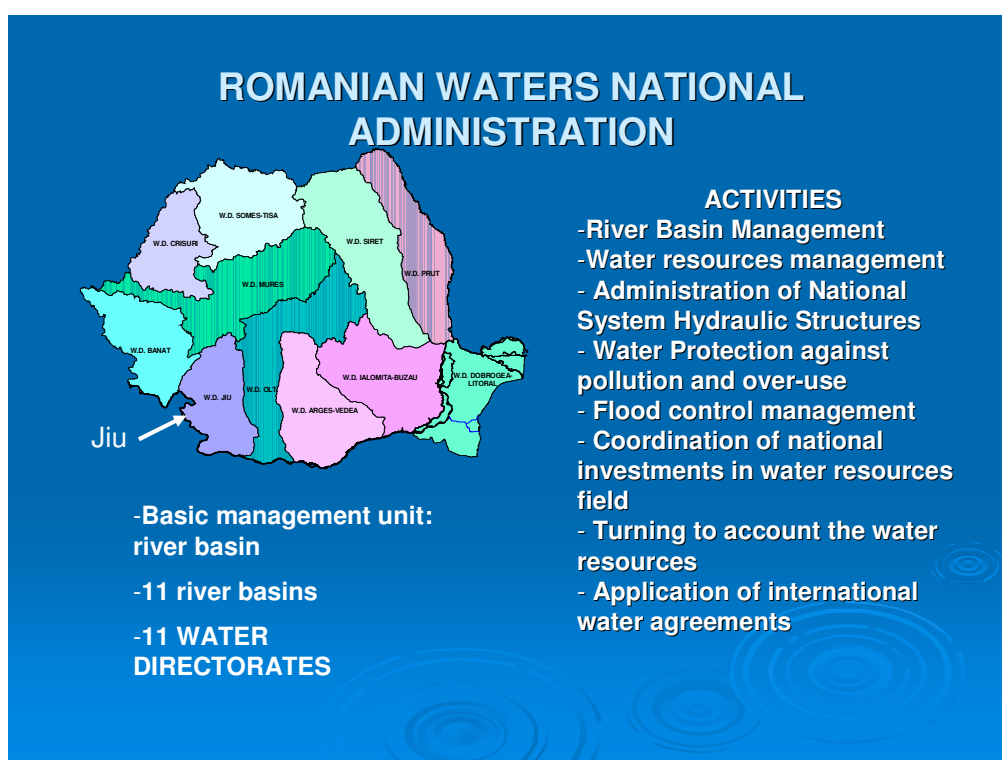


Figure 1. Location and activities of Romanian Water Directorates

The ISSWaP project has been executed at the background of:

- the Romanian strategy for the management of contaminant sites
- the Romanian implementation of the Water Framework Directive (WFD) and the Groundwater Directive (GWD).

The Romanian strategy for the management of contaminant sites recognizes that contaminated sites are a reality in Romania that is started to be taken into account due to the *risks for people and environment* and the *loss of functionality and availability of land* for future use. Economic activities in Romania during the past decades have produced a multitude of soil contaminations: crude oil and petroleum products, dangerous chemical substances, organic substances, fertilizers, pesticides, etc. All these substances can pollute soils, rivers, streams and groundwater (superficial and deep aquifers) limiting the abilities of these systems to provide Romania with goods and services for now and in the future. The management strategy has to be put in practice according to European and national legislative requirements.

The strategy has been operationalised in the **Sector Operational Program Environment 2007-2013** (SOP ENV). The program targets, among other environmental priorities, the rehabilitation of contaminated sites, by applying adequate measures for specific categories of contaminated sites. This is achieved through financing provided for Priority Axis 2 – “Developing integrated waste management systems and rehabilitating historically contaminated sites”, Key Area of Intervention 2 – “Rehabilitating historically polluted areas”. For 2007-2013, SOP ENV allocates **176.7 mil EUR** for rehabilitating contaminated sites, out of which 141.4 mil EUR is provided by the European Regional Development Fund (ERDF) and 35.3 mil EUR is co-financed from national sources (state budget + local budgets). Applying five criterions a total of 1.865 sites have been analysed resulting in 6 urgent sites of which 3 have been selected to be executed in the period 2007-2013. The Romanian government decided recently an additional allocation of 25 million Euro up to 2012 from the Environmental Fund for closing and securing the mining ponds to avoid major environmental disasters (the program will be implemented by the Ministry of Economy and Business Environment).

The priority setting for other locations like the ones dealt with in the ISSWaP project will be performed in 2011-2013. The ISSWaP project aims at supporting this process.

Rehabilitation of contaminates sites and future prevention of soil pollution is directly linked to groundwater protection in many areas in Romania. Groundwater protection is essential because in most cases groundwater is the main resource for drinking water supply. In addition, groundwater is important for the support of dependent land use functions, like agriculture and natural ecosystems. The Water Framework Direction (WFD, 2000/60/EC) and the Groundwater Directive (GWD, 2006/118/EC) provide a legislative framework for the protection and sustainable use of groundwater systems. According to the WFD Member States have designated separate groundwater bodies (GWB) and ensure that each one achieves “good status” by 2015 (with a possibility to extend reaching environmental objectives until 2027, like considered for two GWB’s in JRB). Member States are required to make a classification of groundwater bodies based on an analysis of pressures and impacts of human activity in relation to the WFD environmental objectives, set up a monitoring system and report to the EU on the findings. The GWD complements the Water Framework Directive on the aspects related to groundwater quality. It requires groundwater quality standards to be established by the end of 2008, pollution trend studies to be carried out by using existing data and data which is mandatory by the Water Framework Directive (referred to as “baseline level” data obtained in 2007-2008) and pollution trends to be reversed so that environmental objectives are achieved by 2015 by using the measures set out in the WFD. In addition, measures have to be identified and implemented to prevent or limit inputs of pollutants into groundwater.

The GWD was transposed in the Romanian legislation by the Governmental Decision 53/2009 for the approval of the National Plan for groundwater protection against pollution and deterioration. The natural background levels and the threshold values for groundwater were established at groundwater body scale, based on the guidelines elaborated within another Dutch – Romanian bilateral project, namely the MATRA project no. 219369 “Establishing measures to rehabilitate the polluted groundwater altered due to landfill, in order to reach the environmental objectives required by the Water Framework Directive and the Groundwater Directive”. The threshold values were officially adopted by the Minister Order no. 137/2009. Using the threshold values adopted and the tests recommended by the European Guidelines on Groundwater status and trends, the National Institute

for Hydrology and Water Management assessed the status of all groundwater bodies in Romania. From the 142 groundwater bodies delineated in Romania, 19 are found to be in poor status, mainly due to nitrates.

In the Jiu River Basin, 8 groundwater bodies were delineated. All of them were found in good quantitative status although the mining works presented in this project are generating local, but important quantitative disturbances, and 2 of them, namely the shallow GWB of the *Terraces and meadow of Jiu River and its tributaries - ROJI 05* and of the *Terraces and meadow of Danube River - ROJI 06* were found in poor chemical status, due to nitrates and ammonia. The Jiu River Management Plan of 2009 and the associated Programme of Measures envisages the improvement of the status of these GWB's till 2027.

The groundwater monitoring programme was extended to include the heavy metals and other substances required by the GWD. The identification of trends in pollutants concentration is on going.

2. ISSWaP project: problem description and main deliverables

In the Jiu river basin (figure 1 and 2) large explorations of lignite take place, mainly in open pit mines. The overall issue at stake is the complex relationship between the natural, the social and the economic environment. These relations are intensively influenced by lignite production in open pits for use in producing electric power and thermal energy, which brings as a by-product residues of both bottom and fly-ashes. In terms of lignite production and volume of ashes the area can be classified as belonging to the largest producers in Europe. A total of 5 thermo-electrical power plants provide about 30% of Romania's power needs and thermal energy to the cities of Craiova (2-CET I and CET II), Gorj County (2- Rovinari and Turceni) and Drobeta-Turnu Severin (1-Romag TERMO). Near Motru there is also a thermo power plant present and a depot for ash, but it is relatively small, just for Motru town heating. The mining and energy industries belong to the largest employers in the Jiu river basin.

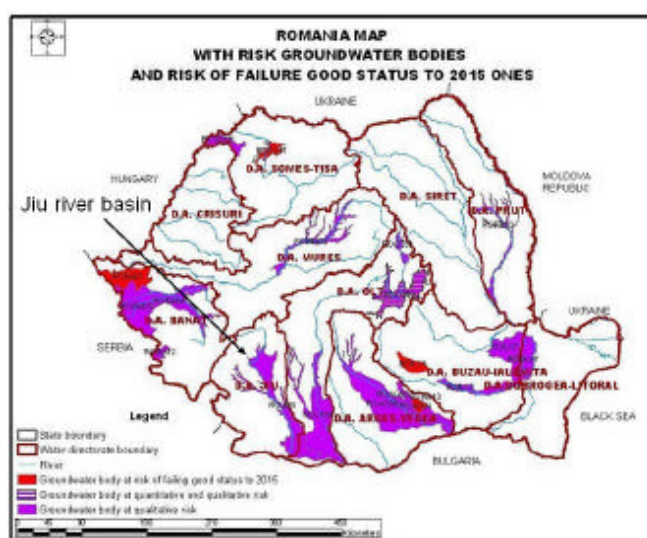


Figure 2. Groundwater bodies with risks in Romania

Open pit mining has modernized during the last 10 years resulting amongst others in refilling with sterile. Ecological rehabilitation programmes are executed by the mining companies on existing sterile dumps. The total area of the sterile covers hundreds to some thousands of hectares of potentially usable land. The volume of potentially usable material is estimated in the order of magnitude of hundreds to some thousands of million cubic meters. The important process of determining agreed and exact figures is moving forwards and stimulated by ISSWaP.

Each power plant has at least one fly and bottom ash dump site, some two like SE Turceni. The awareness of the reuse capacities of the fly-ash has been increased in the recent years by applied research and recently by the ISSWaP project. Based on rough and incomplete data the total volume of ashes is estimated by the project team at some tens to maximum hundred and fifty million cubic meters covering some hundreds of hectares which need environmental monitoring and rehabilitation. The project team estimates a yearly flow of one to three million m³ of ash as potential reusable material being actually deposited in dumps in the Jiu River Basin. The process of determining exact figures is expected to be finished soon. The main areas of the mining and energy production are shown in figure 3.

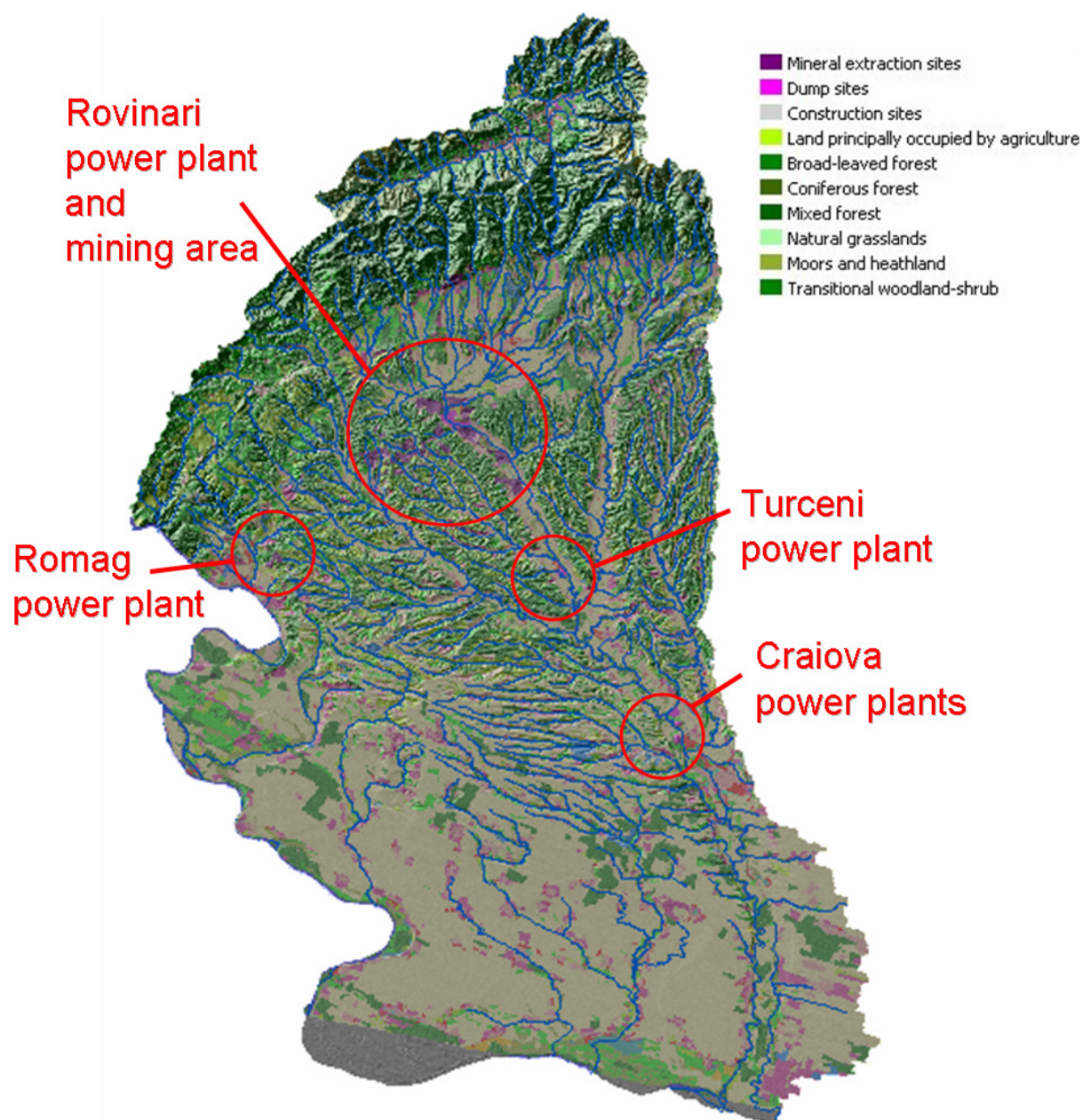


Figure 3 Areas of main interest for data collection in the Jiu river basin. The red circles indicate areas with power plants and ash dumps. Mines are present at Rovinari and around Drobeta-Turnu Severin (Romag). Introduce SNLO in the picture?

The ISSWaP project was aimed at delivering five products that will be described in brief:

Product 1. Quick scan of problem and definition of main pressures

The basis of the ISSWaP-approach is the acknowledgement of a complex relation between environmental pressures, impacts and risks and the socio-economic domain. An overview of the most important pressures and impacts of the conceptual model is presented in figure 3.

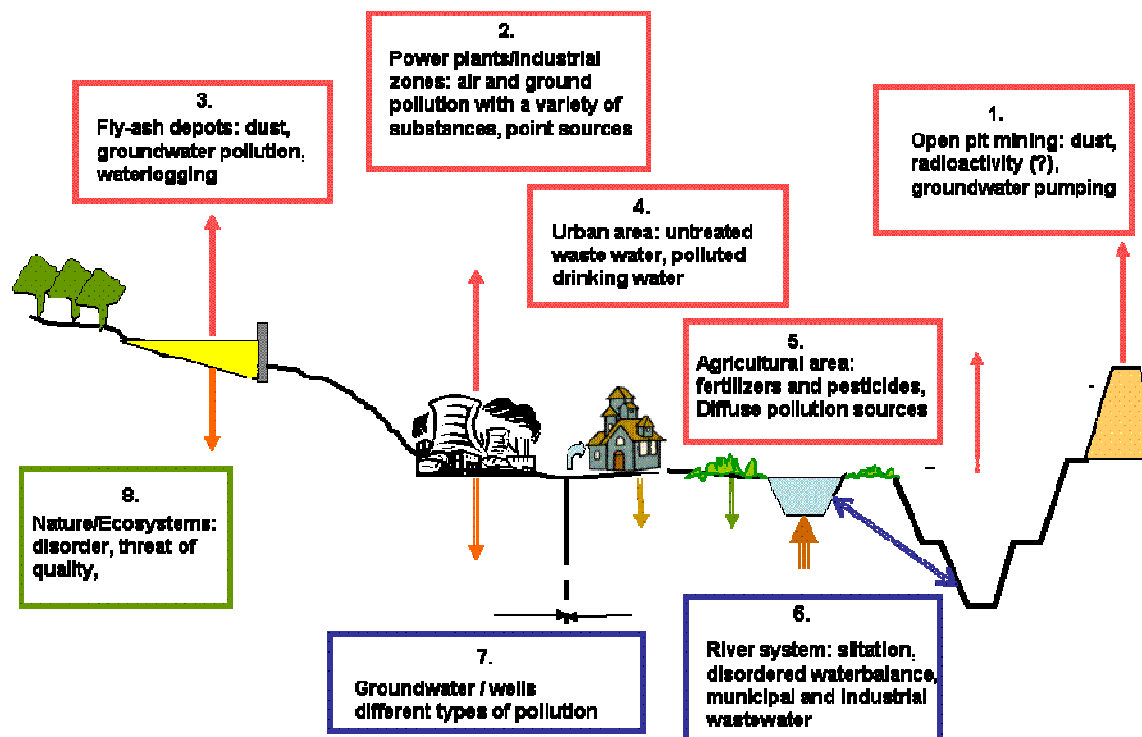


Figure 4 Main pressures and impacts for Jiu river basin

Eight main pressures and impacts are distinguished in a conceptual model for the Jiu area:

1. Open pit mining: dust, groundwater pumping and exposure
2. Power plants/industrial zones: air and soil pollution with a variety of substances, point sources
3. Fly and bottom ash depots: dust, groundwater pollution, locally water logging
4. Urban area: untreated waste water, locally polluted sources of drinking water requiring additional treatment
5. Agricultural area: fertilizers and pesticides, diffuse pollution sources
6. River system: siltation, disordered water balance, municipal and industrial wastewater
7. Groundwater / wells, different types of pollution
8. Nature/Ecosystems: disorder, threat of quality

The detailed elaboration on the data related to the conceptual model is presented in a separate data report.

Product 2. Improvement of institutional cooperation between different stakeholders

During the project two regional and one national workshop have been organized according to the project plan which consisted of five phases¹. The high number of participating organizations, the contents of the discussions and the proposals for follow up of the ISSWaP project, result into the conclusion is that the stakeholder approach has supported the process towards solutions for the environmental problems in the Jiu area.

Product 3. Training of Romanian experts in integrated and quick-scan analysis

The field visits, and the four main reports (inception report, data report, study visit report and final report) have contributed to the realization of this product.

Product 4. Exchange visits of Netherlands and Romanian experts

The results of the field missions of the Netherlands experts have been included in the different reports.

The study tour to the Netherlands and Germany has resulted in a special report. Key findings of the exchange visit are:

- General information was provided on soil, water and waste management in the Netherlands. By using a land use function approach in combination with a risk assessment, costs of managing soil and waste are contained within manageable proportions. In the Netherlands brown field development is avoided by focusing on re-use of waste products and risk management of contaminated sites.
- The study visit was beneficial for the Romanian parties, as they received detailed information and specific examples for fly-ash depositing and utilization both in Germany and The Netherlands.
- The German model seems closer to the Romanian realities, as it follows the same circuit as the mining areas in the Oltenia coal basin. This model offers the best solution for rehabilitating mining sites in the area.
- Current solution for solving the problem of air pollution by dust spreading from ash deposits in Oltenia Region is the dense slam technology but a sustainable environmental future solution is the re-use of both fly and bottom ashes by the cement industry, building materials industry and in infrastructure projects.
- It is acknowledged that “waste” should be reconsidered as a resource. Lafarge Romania has already requested significant amounts of fly-ash (approx. 360,000 t/year, almost three times the amount requested in the Netherlands – 124,000 t/year, according to Eindhoven University). Lafarge has a series of contracts with Asian partners which request a type of cement which uses fly ash. The president of Lafarge Cement Holding GmbH has requested a visit to CET Isalnita in the near future.
- An organization can be set up, following the VLIEGASUNIE model, to collect both fly ash and gypsum and process them into marketable products (for construction sector). At the same time legislation needs adjustments accordingly. RAAN (Romag Thermo Power plant) is willing to take the initiative further as follow-up of the current project. The moment in time is suitable for initiation of such organization and action must be taken. Internationally operating knowledgeable firms in the reuse of fly-ash have shown interest via the ISSWaP contact persons. One company has visited the area and taken samples of the dump ashes and expressed interest in continuing the process.
- MoEF will further study needed alterations in the national strategy for waste management. The waste producer is responsible for waste research costs and improving technology. The waste producers are stimulated to set up joint waste management organizations.
- The Netherlands and Romania could focus on the continuation of the know-how transfer specifically with regards to modern techniques using ash for ecological rehabilitation of some deposits with focus on Jiu river basin.
- There is a desire to set up a program for institutional cooperation between the Netherlands and Romania focused on technology transfer and capacity building for local specialists, including the

¹ 1. Preparation and Quick scan visit (September – October 2009 , first stakeholder meeting;

2. Elaboration phase: Data collection and interpretation resulting into conceptual model (November 2009- March 2010): regional and national stakeholder discussions

3. Synthesis of conceptual modeling (April - May 2010), second regional stakeholder meeting

4. Scoping solution domain (a. preparation in Romania, b. Discussion visit Holland c. Solution workshop in Romania (May – June 2010)

5. Solution phase and final workshop in Romania (May – October 2010), third joint national and regional stakeholder meeting

support and coordination of stakeholder involvement. Such a program requires suitable financing and access to grant programs.

- Interreg IV/VC funds can be used to facilitate the use of best practices for environment quality improvement in river basins by better management of ash deposits and of the coal mining regions.

The study visit offered to the Romanian participants the opportunity to witness and understand the integrated approach and institutional setup in the Netherlands and Germany for solving (mining-related) pollution. Moreover, strong concepts that are not very familiar in Romania - such as re-use and commercialization of secondary materials - were introduced and illustrated. The participants' reactions reveal that the impact was considerable and opened new possibilities for further cooperation.

Product 5. Project plan ready for financing in format of funding organization (eg. EU), if the involved authorities can actively contribute and cooperate fruitfully with each other (see chapter 3).

3. Future projects

The findings and discussions of the study tour have been reflected in the priority setting for the follow-up of the ISSWaP project. Eight project-opportunities are identified which are relevant for the stakeholders in the ISSWaP project. Out of these 8 projects 3 have been granted or will be granted within 3 months after the finalization of the ISSWaP project (nr. 3, 5 and 6). Brief descriptions of these projects are included in table 1.

Table 1. Priority ranking for follow-up activities.

Next actions/projects	Who leads	Priority / comments
1. Integrated solutions for Isalnita area proximity of Craiova nearby CET1&2 (sludge reuse, active underground permeable barrier , protection of wells and prevention of ecological risks)	The preference is that Craiova City Council takes the initiative in cooperation with the Craiova Power Plants.	High. SOP funds for remediation (177 million Euro) are allocated for 3 projects. Investigate if there is political will at regional and national level to finance a feasibility study for the new regional approach started by ISSWaP. Due to size of the problem full budget will be hard to mobilize from the beginning therefore pieces of the puzzle should link together for a practical solution
2. Reuse of ash material	Private investor	High. In the aftermath of the study tour private initiatives have taken place resulting in concrete offers to Romanian stakeholders. This process takes place outside the public domain of the present G2G project. There is a link with another Dutch – Romanian Project (see 4)
3. Regulations / norms for soil quality and reuse of secondary material / policy development for risks assessments	Bodem+/MoEF	Granted. Dr. Honders and colleagues have executed a mission for this project in October (with RIVM). The approach aims at facilitating the implementation of soil and reuse strategies leading to efficient spending of SOP funds.
4. Integration and follow-up of 2. and projects like 1 within the overall Dutch program 2get@there	NSP/NWP	High Supported by MoEF in view of further knowledge transfer. Promotion or practical actions possible under the programme. Creates growth opportunities for public and private sector.
5. HOMBRE - knowledge and analysis for one or two dumps (brown field redevelopment)	Deltares with Romanian counterparts (Craiova University/ MoEF/others)	Granted: Case study in Romania still to be elaborated with MoEF (high priority) Contract will be signed in November Project will start in Jan 2011, results will substantiate further actions.
6. ATES (Aquifer Thermal Energy Storage), within Management of Aquifer Recharge and Energy Storage (MARES)	MARES consortium/Bodem+/MoEF/ Ministry of Development and Tourism)	High. Relevant for local authorities with access to programs for regional development and energy savings in housing
7. Equivalent of Ash organization	Power plants and MoEF	High – medium. Depends on initiatives at the Romanian side. Very important for local players therefore private initiative will be the lead. Further Dutch project initiative can connect and provide additional back-up
8. Regional cooperation	MoEF	Low. Not interesting for larger institutions financially. An attempt to formulate an INTEREG project for reuse of waste material has been done in February 2010, but failed due to limited financial resources available for co-financing the projects.

The 8 projects can be classified as:

- 1 mainly private sector initiative (nr 2.)
- 4 mixed private sector – public sector initiatives (nr. 1, 4, 5, 6)
- 2 mainly public sector initiative (nr. 3 and 7)
- 1 scientific project (nr. 5)

The result of having 3 follow up projects realized already - partly due to the ISSWaP project - is better than expected. Project forms apparently have been used for these projects which will further support the process to access SOP funds.

In the next sections some information is included about the 3 projects to be started soon.

G2G project soil standards

Romania's membership of the European Union increased awareness and concern about environmental issues, like the management of contaminated sites.

To strengthen the prevention of the adverse effects of soil contamination and to manage contaminated sites, the possibility will be created to develop a uniform procedure. This should have a sound scientific basis as well as being practical and cost-efficient. A first and feasible step could be the derivation of risk-based soil quality standards (SQSs).

Perspective: On the basis of a scientifically sound and uniform procedure, the Romanian decision makers and scientists will be able to derive SQSs on the basis of risk assessment tools and policy decisions.

Purpose of the joint Romanian – Dutch project is to investigate the feasibility and practicability of SQSs for Romania and definition of a conceptual design for Romanian SQSs and associated tools.

The products concern:

1. An evaluation of the practicability of risk-based SQSs for Romania
2. A conceptual design for Romanian SQSs and associated tools
3. The realization of a workshop on societal, political and technical aspects of the management of contaminated soils and the role of SQSs.

Finally, Romanian decision makers and scientists will be provided with a firm basis to be able to derive risk-based SQSs and decision tools.

Hombre (FP7 project 2011-2014, coordination Deltares)

The HOMBRE project is funded by the European Commission and the partners in the project under the SEVENTH FRAMEWORK PROGRAMME, THEME FP7 ENV.2010.3.1.5-2: Environmental technologies for brownfield regeneration.

HOMBRE will develop a holistic strategy for circular land management that will allow putting this, until now largely theoretical, concept into practice (*BF Roadmap and Framework for Zero Brownfields perspective*). Brownfield (BF) regeneration needs to be addressed through a paradigm shift. Urban sprawl creates an expensive infrastructure and ever increasing commuting population; prevention and re-use of BF's is paramount to reducing our carbon footprint while at the same time enhancing the well being of the population. BF regeneration should not be considered as a stand-alone negative issue, but as part of a more positive perspective on a closed land use cycle.

The projects' vision is to develop a Hlistic Management of Brownfield REgeneration (HOMBRE) to accomplish 'Zero Brownfield' development. The *BF Navigator* is developed to guide in the process, where better understanding of the urban life cycle will aid in early recognition and prevention of upcoming BF's, and better implementation of 'hard' technologies and more creative solutions based on 'soft' technologies will facilitate cost-effective, timely, and sustainable BF regeneration.

BF innovative Technology Trains will optimally combine existing hard technologies, not just from the in situ or ex situ remediation technology point of view, but in combination with subsurface heterogeneity, energy efficiency, aquifer thermal energy storage, waste and process water management, and re-use

of construction and bulk materials. Where economic drive for 'hard' solutions is weak or technologies still need to be developed, alternative or interim 'soft' re-use of BF's is explored. Such measures are focused on a sustainable environment, and create societal assets from the services offered by the regenerated BF's. The *BF Navigator* will explore different scenarios, taking into account land use, biodiversity, historical, cultural and social context. The BF Navigator and 'hard and soft' technologies are developed and tested in co-operation with stakeholders, in case studies in three main areas: urban, industrial and mining, to ensure social, economical and environmental cohesion and sustainability of the results of the HOMBRE project. The Jiu mining area has been listed in HOMBRE as a case study.

G2G – MARES / ATEs

Due to the geological and climatic setting Romania has good conditions for optimization of the buffering capacities of the natural groundwater reservoirs, called aquifers. The private sector is starting to use this type of energy for heating and cooling of houses and offices. However, the **actual problem** is that up to date knowledge on proper design of installations and regulations for protecting the environment are missing. In addition, aquifers are more managed from a drinking water and drainage point of view than from a heat buffering point of view. Technical know-how within the Ministry for the evaluation of applications needs further development. This will be a major win-win challenge for the Climate Change Action Plan, helping in drought mitigation and water scarcity.

The actual situation is characterized by on the one hand good possibilities for joint Public-Private Partnership (PPP's) in developing Management of Aquifer Recharge and Energy Storage (MARES) and on the other hand a possible uncontrolled growth of heat pump systems due to the favorable climate with extremes in winter and summer.

The overall output of the project will be the increase the capacity of the governmental agencies to manage the underground from an integrated sustainable water and energy point of view and create a stimulating environment for the private sector to invest and to form private-public partnerships.

4. Conclusion and recommendations

Finding sustainable solutions for the complex environmental and socio-economic problems of the Jiu river basin is a long term process in which the ISSWaP project has played a fruitful role by demonstration and applying concepts of Dutch regional process management in integrated soil, waste and water management. Complex problems in the Netherlands which are more or less comparable, like the regional heavy metal pollution in the Kempen area have been successfully tackled in a period of about 30-40 years. The “experience and adaptation - speed” in cases as the dump ashes in the Jiu river basin can be increased by international cooperation. In order to enhance this acceleration process it is recommended to:

1. Actively stimulate private sector involvement in the reuse of ashes. The foundation of a Romanian Ash organization which can seek advice and cooperation with counterparts in other European countries belongs to the domain of no regret measures. The present initiative from the Power Plant sector deserves full support from the Ministry of Environment and Forests and other involved ministries. It is advised to further involve other European counterparts to actively assist in finding possibilities for supporting existing Romanian initiatives in this domain. The final conference of the project has clearly indicated that both fly and bottom ashes produced by the power plants in Romania can safely be reused in building materials. According to the research done by Ceprochim and cement producers the fly ash can be used for various types of cement without any danger of radioactivity of the cement as is below the level accepted by law. The cement produced with fly ash is also according to accepted standards as regard the quality. The bottom ash instead is not accepted for cement production due to the quality of the final products but is successfully used for road infrastructure. INCERTRANS and Ecobeton made several trials and all roads where the bottom ash was used are according to the standards².
2. To assist private sector partners that have expressed interest in reusing fly-ashes. The ISSWaP project has led to the interest of European players operating in the domain of the reuse of secondary material.
3. To continue the support to the Romanian governmental agencies responsible for the development of guidelines for soil and groundwater protection and reuse of secondary material on a risk assessment basis. To stimulate the reuse of material (amongst others fly-ashes) research will be needed into the needs for adaptation of the present regulations. This study needs a multi-sectoral approach between the environment and energy sector and the relevant industries;
4. To support local and regional initiatives in Jiu river basin to apply integrated or specialized solutions. In particular the area of Isalnita near Craiova could be a focus area combining the use of sludge and sediment to cover fly-ash dumps, experimenting with a permeable underground active barrier to treat a groundwater pollution originating from a fertilizer company and applying a regional process approach in dealing with the environmental problems. SOP funding for an integrated approach in this area seems interesting.
5. Include the Jiu river basin or specific dumpsites and its surroundings in European research and exchange projects like the Hombre project in order to increase the quantity and quality of monitoring data. These projects will also result into improved implementation strategies of the WFD and GWD in the area.

² Ref. Presentations at final conference: Ceprochim (Fly ash resulted from power plants- a valuable material for cement industry); Incertrans (“Bottom ash-environmental friendly and good quality material for reinforcement of road infrastructure”)

5. Appendix 1 Project Team

Ton Honders – Project Director -Ministry of Economic Affairs, Agriculture and Innovation –
AgentschapNL – taskgroup Soil+

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Remco van Ek – Deltares

Frank Vliegthart - Grontmij

Florentina Nanu – Business Development Group – Bucharest

Appendix 2 Acknowledgements

The project team would like to thank the following institutions that were interviewed in the project or contributed to it in various ways:

A. In Romania

Ministry of Economy, Commerce and Business Environment

Department of Mineral Resources

Conversmin
ICSITPML Craiova

CEN Craiova

Power Plant Isalnita - CET I
Power Plant Craiova – CETII

Power Plant Turceni

Power Plant Rovinari

Power Plant Romag Termo

SNLO

Ministry of Environment and Forests

Environment Protection Agency Dolj
Environment Protection Agency Gorj
National Institute of Hydrology and Water Management

Ministry of Agriculture and Rural Development

Regional Office of Pedological and Agrochemical Studies Dolj
Regional Office of Pedological and Agrochemical Studies Gorj

County Council Dolj
County Council Gorj

University of Craiova
Technical University for Construction Bucharest
University of Petrosani

ISPE

B. In the Netherlands and Germany

Main contributors to the Study Tour were:

Actief Bodembeheer de Kempen
DCMR
Deltares
ENCI/Heidelberg
Essent
Netherlands Soil Partnership
Netherlands Waste Management Partnership
RWE
Technical University of Eindhoven
Fly-ash Union (Vliegasunie)

Appendix 3 Agenda of the Final Conference

ROMANIAN-DUTCH BILATERAL COOPERATION ON INTEGRATED SOIL AND (GROUND)WATER PROBLEMS (ISSWAP)

CONFERENCE

“THE PATHWAYS TO SOLUTIONS”

October 21, 2010 JW Marriott Hotel, Calea 13 Septembrie 90, Bucharest Salon C

#	Time		Activities	Speaker(s)
	Begin	End		
	09.00	09.30	<i>Welcome, coffee</i>	
A	09.30	11.00	Opening and key-note speeches	
2	09.30	09.35	Official opening of the conference by Chairperson and Co-chairperson	Mr. Dan Carlan <i>Director, National Authority for Floods and Water Management</i> Mr. dr. Ton Honders <i>Agentschap NL Taskgroup Soil+</i>
3	09.35	09.50	Environmental Challenges, opening speech on behalf of the Minister of Environment and Forests	Mr. Marin Anton <i>State Secretary</i> <i>Ministry of Environment and Forestry</i>
4	09.50	10.05	Framework of Dutch-Romanian cooperation in the environmental sector, opening speech by HE the Ambassador of the Netherlands	Mrs. Tanya van Gool <i>Ambassador of the Kingdom of the Netherlands</i>
5	10.05	10.20	European and Dutch developments on soil and groundwater management, keynote speech by the representative of Ministry Infrastructure and Environment	Mr. Ruud Cino <i>Director, Ministry of Infrastructure and Environment</i>
6	10.20	10.45	Practical, legal and institutional challenges for Romanian soil and groundwater management, keynote speech by MoEF representative	Mrs. dr. Mary-Jeanne Adler <i>Director, Ministry of Environment and Forestry</i> Mr. Ionut Georgescu <i>Director, Department for Waste Management and Hazardous Substances</i>
7	10.45	11.15	Coffee break	
B	11.15	13.00	ISSWaP Project results	
8	11.15	11.30	ISSWaP Approach and methodologies – path to sustainable results?	Mr. Ebel Smidt and Mrs. Daniela Dudau
9	11.30	12.15	Environmental impacts of mining and energy production in Jiu River basin	Mr. Remco van Ek and Mr. Constantin Carlan
10	12.15	13.00	Future projects to resolve the identified economic and environmental problems in Jiu River Basin	Mr. Costica Paunescu and Mrs. Dana Popa Mr. Frank Vliegthart Mrs Lelia Dobjanschi
11	13.00	14.00	Lunch	
C.	14.00	15.30	Practice and policies of reuse of waste material and soil remediation	
12	14.00	14.45	Dutch policy and practice of reuse of waste material	Mr. Ton Honders
13	14.45	15.05	Romanian legal and institutional challenges for reuse of waste material	Mrs. Cristiana Neagu Mrs. Marinela Dracea – CIROM
14	15.05	15.20	Objectives and practices of Netherlands Soil Partnership and Netherlands Waste Management Partnership	Mr. John Jansse <i>Director Netherlands Soil Partnership (NSP) and Netherlands Waste Management Partnership (NWMP)</i>
15	15.20	15.35	New technologies for rehabilitation of waste dumps in Romania	Ceprocim Incertrans
16	15.35	15.45	Plenary discussion	
D.	15.45	16.00	Conclusions and closing	
17	15.45	16.00	Concluding remarks by the chairpersons	

Appendix 4 Participants at the Final Conference

No.	Institution/Company	Contact person
1	Embassy of the Kingdom of the Netherlands	Tanya van Gool
2	Embassy of the Kingdom of the Netherlands	Violeta Cozianu
3	Ministry of Environment and Forests	Marin Anton
4	Ministry of Environment and Forests	Mary-Jeanne Adler
5	Ministry of Environment and Forests	Ruxandra Balaet
6	Ministry of Environment and Forests	Ionut Georgescu
7	Ministry of Environment and Forests	Cosmin Teodoru
8	Ministry of Environment and Forests	Adina Ionescu
9	Ministry of Environment and Forests	Cristiana Neagu
10	Ministry of Environment and Forests	Carmen Neagu
11	Ministry of Economy	Grigore Pop
12	Ministry of Economy	Costica Dimofte
13	Ministry of Economy	Adela Capota
14	Ministry of Economy	Ion Brezeanu
15	Ministry of Economy	Felicia Zelinschi
16	National Administration Apele Romane	Dragos Cazan
17	National Administration Apele Romane	Daniela Sacuiu
18	National Institute of Hydrology and Water Management	Dumitru Neagu
19	Water Directorate Jiu	Costica Paunescu
20	Water Directorate Jiu	Constantin Carlan
21	Water Directorate Jiu	Daniela Dudau
22	Power Plant Isalnita	Adrian Popescu
23	Power Plant Turceni	Valerica Banica
24	Power Plant Turceni	Gabriela Prunariu
25	Power Plant Rovinari	Cecilia Frincu
26	Power Plant Rovinari	Flavia Pasareanu
27	Power Plant Romag Termo	Lelia Dobjanschi
28	National Company of Lignite Oltenia	Marius Berca
29	National Company of Lignite Oltenia	Ion Popescu
30	County Council Gorj	Ion Calinoiu
31	County Council Dolj	Carmen Florentina Deaconu
32	Institute for Studies and Power Engineering	Adela Badescu
33	Research Institute in Transports- INCETRANS	Nicoleta Ionescu
34	University of Agronomic Studies Craiova	Daniela Popa
35	Ceprocim	Adriana Moanta
36	Ceprocim	Ionela Petre
37	Ownership Association in Construction Sector	Tiberiu Andrioaiei
38	Holcim	Oana Dicu
39	Holcim	Anna Maria Schiau
40	Cirom	Marinela Dracea
41	Carpatcement Holding	Cristinel Moraru
42	Carpatcement Holding	Florin Ghica
43	Lafarge Ciment Romania	Marin Mustata
44	Royal Haskoning	Cristina Angheluta
45	SG Consultancy & Mediation	Ebel Smidt

46	Grontmij Nederland	Frank Vliengenhart
47	Ministry of Economy, Agriculture and Innovation, NL Agency, Taskgroup Soil+	Ton Honders
48	Deltares	Remco van Eck
49	Ministry of Infrastructure and Environment	Ruud Cino
50	Business Development Group	Florentina Nanu
51	Business Development Group	Ioana Groza
52	Quality Cert SA	Anisoara Beatrise Mitroi
53	Regional Environmental Protection Agency Craiova	Ion Petrisor
54	Energy Auditor for Buildings (Ministry of Regional Development and Tourism)	Mihai Iosif
55	Hidrotehnica Iasi	Ioan Cojocaru
56	The Association of the Constructions Materials Producers from Romania	Claudiu Georgescu
57	Business Design	Virgil Dragoiescu