



**ENVIRONMENTAL HEALTH PROJECT**

# **ACTIVITY REPORT**

**No. 53**

Formation of Community Working Groups  
in Transylvania  
to Reduce Lead Exposure

1997-1998

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## EHP TEAM MEMBER DESCRIPTIONS

**Kathy Alison**, team leader for the activity, is a senior management and institutional development consultant, trainer, and facilitator with Training Resources Group, Inc. She specializes in strategic planning processes and the design of public participation programs and team-building activities leading to the formation of cross-sectoral teams. She was a member of the team which worked on the EHP curriculum development activity in Cluj, Romania; she also facilitated the counseling workshop in May 1996 which was part of the EHP activity in Zlatna.

**Mihai Maracineanu** has been the local EHP Coordinator in Romania since 1995, beginning with the curriculum development and Zlatna activities and continuing in that role to the present. As the liaison between local collaborators and the EHP team, Mr. Maracineanu facilitated start-up and follow-up meetings with the local teams, provided periodic updates, and coordinated all of the visits and workshops of the expatriate EHP team. He has a Master's of Science degree from the Academy of Economics in Bucharest.

**Martin Silberschmidt** served as the environmental health specialist on this activity. He is a physician with extensive experience in environmental and occupational health throughout Western and Eastern Europe, Asia, and Africa. Dr. Silberschmidt specializes in the assessment, management, and prevention of environmental and occupational health risks. He served as an occupational health specialist on the EHP activity in Zlatna where he facilitated formation of the first intersectoral team that developed a worker health and safety program with the management and personnel of the copper smelter plant, Ampellum S.A.



## ACRONYMS / DEFINITIONS

CDC	U.S. Centers for Disease Control and Prevention
cross-sectoral teams	Working groups that include members from the regional and local health, environment, and education sectors as well as municipality, judet, NGO, industry, media, and community representatives
CMR	Center for Medical Research, Cluj, Romania
EH	environmental health
EHP	USAID-sponsored Environmental Health Project
EOH	environmental and occupational health
ENI	Europe and Newly Independent States (USAID Bureau)
EPA	Judet Environmental Protection Agency
GOR	Government of Romania
IPH	(Regional and National Level) Institute of Public Health
interdisciplinary approach	A purposefully mixed work team of representatives from various professions, such as medicine, engineering, biology, education, sociology, and psychology brought together to solve a specific problem.
Judet	Local government entity similar to a county in the United States
KAP	knowledge, attitudes, and practices (survey)
LEHAP	Local Environmental Health Action Plan. An outgrowth of the NEHAP, the local plans will include priorities identified by Romanian communities and regions.
NEHAP	National Environmental Health Action Plan. European nations, including Romania, agreed to elaborate National Environmental Health Action Plans during the Second European Conference on Environment and Health in Helsinki in 1994.
NGO	nongovernmental organization
OHS	occupational health and safety
OH	occupational health
REC	Regional Environment Center
stakeholders	Members of a community who are impacted by a problem, in this case, lead pollution.

S.O.	Strategic Objective (USAID policy objective)
USAID	U.S. Agency for International Development
WHO	World Health Organization
µg/dL	microgram (of lead) per deciliter (of blood)

## EXECUTIVE SUMMARY

In early 1998, the Environmental Health Project (EHP) began to disseminate lessons from an activity it conducted in Zlatna, a small community in the Transylvania region of Romania. The Zlatna activity introduced a cross-sectoral approach to environmental and occupational health improvements. The program included formation of three cross-sectoral teams that worked on 1) reducing the exposure of young children to lead; 2) improving air quality monitoring capacity and data management; and 3) improving occupational health and safety at the Ampellum smelter plant in the town. The three-year program provided both commodities and technical assistance.

At the end of the Zlatna program, limited funds were available for a small number of technical assistance interventions (no additional funds were available for purchase of commodities). The follow-on activity focused solely on the formation of local working groups in two other Transylvania communities (Baia Mare and Copsa Mica) to deal with environmental health problems related to lead exposure in women and children.

During the one-year follow-on activity, a three-person EHP team worked closely with stakeholders at the national, regional, and local levels to form community-based cross-sectoral teams in the two other communities. A cross-sectoral team is defined as a working group that includes members from the regional and local health, environment, and education sectors as well as municipality, judet, NGO, industry, media, and other community representatives.

All three of the communities (Zlatna, Baia Mare, and Copsa Mica) had been declared environmental “hot spots” during the Lucerne, Switzerland, conference in 1993. (“Hot spots” are areas with high levels of lead and other types of pollution that impact the air, soil, and water quality as well as the health of the citizens in a community.) Even though the communities were so designated five years ago, environmental health problems still persist in all of them. The EHP activity in Zlatna succeeded in mitigating the impact of lead exposure on children to some

extent. It seemed likely that the two other communities would be interested in collaborating in the follow-on activity, to learn what had been accomplished in Zlatna and how it had been done.

The objectives of the EHP follow-on activity were to:

- Develop a strategy to reduce lead exposure in children and women in high-risk areas,
- Transfer the capacity to address environmental health problems through the development of community-based, cross-sectoral, interdisciplinary teams, and
- Raise awareness of the severity of lead problems in Romania and share the results of a cross-sectoral approach that could be used to address lead intoxication as well as other environmental health problems.

## Results

### *Formation of Teams*

Cross-sectoral, interdisciplinary teams were successfully formed in Baia Mare and Copsa Mica.

- A majority of team members from the two communities participated in two workshops.

### *Development of Action Plans*

- Action plans were developed by both groups to work on lead pollution problems in their respective communities.
- Each team developed a specific proposal for future actions that incorporated what had been learned during the EHP activity. Teams are actively seeking funding for their proposals.

### *Increased Awareness of Health Impacts of Lead Exposure on Women and Children*

- Senior officials from the Institute of Public

Health (IPH), Ministry of Environment, and Ministry of Industry, donor representatives, and team members participated in a one-day seminar in Bucharest at the end of the activity. (IPH is interested in applying the EHP approach elsewhere.)

- Local and national media disseminated information about lead pollution and preventing lead exposure.

### **The major lessons learned from the activity include the following:**

#### *About Creating Teams*

- It is possible to build cross-sectoral, interdisciplinary teams at the community level to deal with specific public health problems, but it takes time, training, and patience.
- Although members of the teams have improved their skills in strategizing, designing, and implementing programs through participation in the activity, they will need additional support to sustain their efforts.
- Local team members have the requisite skills to design research projects, but they have only limited experience in using research results to design and implement actions to mitigate problems at the community level.
- Team members from Zlatna, Baia Mare, and Copsa Mica now believe that they are entitled to live in a healthy environment and that, if they work together, they can influence decision makers.
- Team members working on the lead pollution problem in Transylvania have many other pressing needs and preoccupations as well. This impacts the amount of time team members can spend on any one activity.

#### *About Availability of Funding*

- Lack of budget for commodities does not impede the formation of cross-sectoral, interdisciplinary teams.
- Even when teams are formed and working, communities and industries still need financial

support to purchase pollution prevention and monitoring equipment.

#### *About Local and Expatriate Technical Assistance*

- Excellent human resources exist in the Transylvania region, particularly in the Albamont NGO in Alba Iulia, to support the development of other NGOs in Romania.
- The interdisciplinary composition of the EHP team itself helped achieve results.

### **Recommendations**

The following recommendations suggest ways for donors and the Government of Romania to help sustain the results that have been achieved to date.

1. Continue to support the work, both technical assistance and commodity procurement, already begun in Zlatna, Baia Mare, and Copsa Mica. This support should include continued development of leadership and team-building skills, interpersonal communications skills, strategic planning, grant writing, collaborative decision making, and steps for forming and managing NGOs in Baia Mare and Copsa Mica.
2. Use the human resources already available in Transylvania to support lead pollution abatement activities and to introduce community based, cross-sectoral approaches to other regions in Romania.
3. Develop pamphlets or brochures to offer information and dietary advice to pregnant women during their regular pre-natal check-ups at health care facilities.
4. Develop pamphlets or brochures to help families protect young children (ages 0-6) from lead exposure. Provide such information during regularly scheduled post-natal check-ups at health care facilities.



# 1 BACKGROUND

## 1.1 Impact of Lead on Children and Women

Lead poisoning is the number one environmental health problem among young children in many countries. Pregnant women can seriously impact the health of their unborn child if they are lead exposed. The scope and nature of lead poisoning uncovered in recent studies are alarming.

- In recent years, it has become clear that exposure to even small amounts of lead can have long-term and measurable health impacts on children while at the same time causing no distinctive symptoms.
- Children are particularly susceptible to lead poisoning. Children's digestive system absorbs up to 50% of the lead they ingest. The highest retention occurs from birth to age 6 when the brain is developing and lead interferes with its development. By the time physical symptoms occur (e.g., headache, nausea, stomachaches, lethargy or hyperactivity, and vomiting), significant brain damage has already occurred.
- The fetuses of pregnant women are gravely affected by lead exposure since lead can pass through the umbilical cord directly into the baby. When an expectant mother maintains a poor diet, there is a great risk that she will pass lead from her own bones to her developing baby.

Lead is not biodegradable. It persists in the soil and the air, in drinking water, and in homes. It never disappears. It accumulates where it is deposited and can poison generations of children and adults unless properly removed. Children pick up lead dust from the floor, from their toys, and from playing in the dirt. They can ingest lead when they put their hands in their mouths, when they eat with their hands, and when they suck

their thumbs.

## 1.2 Lead Intoxication in the Transylvania Region of Romania

At the Lucerne, Switzerland, convention in 1993, a number of Romanian communities in the Transylvania region were identified as environmental "hot spots," i.e., communities with high levels of lead and other types of pollution that impact the air, soil, and water quality as well as the health of the citizens in the region. Three of the most polluted communities so identified were Zlatna, Baia Mare, and Copsa Mica. All three towns have nonferrous metal smelting industries.

The level of lead intoxication in children in these hot spot areas is alarmingly high. The mean blood lead levels of young children ( $\leq 6$  years old) are in the range of 35 to 40 micrograms of lead per deciliter of blood ( $\mu\text{g}/\text{dL}$ ). Few other populations or large groups of children anywhere in the world have documented average blood lead concentrations as high as that.

Currently, the U.S. Centers for Disease Control and Prevention (CDC) as well as the World Health Organization (WHO) consider 10  $\mu\text{g}/\text{dL}$  a "level of concern." Recent studies have shown that blood lead levels in children of even 10  $\mu\text{g}/\text{dL}$  are associated with disturbances in early physical and mental growth and in later intellectual functioning and academic achievement. These problems persist into adulthood and may be irreversible. Studies have found that IQ may decline by as much as 5.8 points (on a scale where 100 is average) for every 10  $\mu\text{g}$  increase of lead per deciliter of blood. (See Figure 1.1, Blood Lead Levels Associated with Adverse Health Effects.)

Some of the health consequences of high blood lead levels in women of child-bearing age

are decreased fertility; increased risk of spontaneous abortions and stillbirths; higher premature births; higher infant mortality rates; and lower birth weights. For the affected

communities in the Transylvania region of Romania, lead is a serious reproductive and child health issue.

**Figure 1.1  
Blood Lead Levels Associated with Adverse Health Effects**

CHILDREN	Lead Concentration in Blood (µg/dL)	ADULTS
	150	
Death →		← Encephalopathy ← Nephropathy
	100	
Encephalopathy →		← Frank Anemia
Nephropathy →		← Male Reproductive Effects
Frank Anemia →		
Colic →		
	50	← Hemoglobin Synthesis and Female Reproductive Effects
	40	
Hemoglobin Synthesis →		← Nerve Conduction Velocity
	30	
Vitamin D Metabolism →		← Elevated Blood Pressure
	20	← Erythrocyte Protoporphyrin ♂ ← Erythrocyte Protoporphyrin ♀
Nerve Conduction Velocity →		
Erythrocyte Protoporphyrin →		
Vitamin D Metabolism(?) →		
	10	
Developmental Toxicity →		
IQ, Hearing, Growth		
Transplacental Transfer →		

Source: U.S. Centers for Disease Control, 1991

### 1.3 USAID/EHP Involvement

Since 1994, USAID has provided support to the Government of Romania (GOR) to initiate local programs in the Transylvania region that would alleviate some of the impacts of lead and help communities begin to deal with the related environmental health issues.

USAID/Washington's Europe and Newly Independent States (ENI) Bureau provided funds for the Environmental Health Project (EHP) to design and implement environmental and occupational health-related activities in the Transylvania region.

Between 1994 and 1997, EHP teams worked with local counterparts in Transylvania on two major activities:

- Reducing lead exposure and improving treatment of lead intoxication for occupationally exposed adults and children exposed in the lead contaminated community of Zlatna
- Environmental health (EH) and occupational health (OH) curriculum development at the University of Medicine and Pharmacy and Center for Medical Research (CMR) in Cluj.

The first of these activities resulted in, among other things, the formation of cross-sectoral, interdisciplinary teams (working groups of local stakeholders who represent various disciplines and sectors and who work for various agencies and groups) in the Alba Iulia Judet. (Judet is the regional level of government). These local team members continue to advocate for the use of preventive approaches to improve both environmental health and occupational health in Romania.<sup>1</sup> The second activity brought the EHP team into contact with faculty and others at the University in Cluj, several of whom were resources for the workshops in this follow-on

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<sup>1</sup> For additional details about the earlier programs, please refer to EHP Activity Report 36, *Summary of EHP Activities under the "Promotion of Private Health Markets" Project in Slovakia, Poland, and Romania*, August 1997 and EHP Activity Report 45: *Summary of Activities in Zlatna, Romania 1994-1997: A Cross-Sectoral Approach to Environmental and Occupational Health Improvements*, January 1998.

activity.

In late 1997, a follow-on activity was designed to share the lessons learned from the two earlier EHP activities with other interested communities in the Transylvania region. The follow-on activity was implemented using funds remaining from the two earlier activities. The limited funds were used to design a one-year technical assistance activity, with no provision for procurement of commodities.

### 1.4 Rationale for a Follow-on Activity

The 1994-97 program in Zlatna produced significant reductions in blood lead levels in both children and plant workers due in part to the health promotion and outreach programs that were carried out by the community. In Zlatna, a cross-sectoral, interdisciplinary team took responsibility for designing and implementing health promotion and counseling activities within the community. The follow-on activity proposed to replicate that local effort in Baia Mare and Copsa Mica, the two other "hot spot" communities in Transylvania that are facing lead intoxication problems similar to those in Zlatna.

During a scoping visit conducted in December 1997, the EHP team interviewed a number of key contacts in Bucharest, including representatives from the Ministries of Health and Environment and Institute of Public Health, to determine their interest in a follow-on activity. Most of the Bucharest efforts in contacts had heard of EHP's work in Zlatna and Cluj and were supportive of additional other communities in Transylvania. The Institute of Public Health in Bucharest identified a member of its staff to be a liaison with EHP during the activity.

The EHP team also visited key stakeholders in Baia Mare, Sibiu, and Copsa Mica to discuss their interest in participating in a follow-on activity to build on the lessons learned in the two earlier EHP programs.

Baia Mare, with a population of 150,000, is the largest city as well as the county seat of the Maramures Judet. Copsa Mica is a smaller town of 7,600 inhabitants located approximately 50 miles from Sibiu, the county seat of the Sibiu Judet. Both Baia Mare and Copsa Mica have major lead polluting industries that provide most, but not all, of the employment in the two

communities. Baia Mare has two factories, Romplumb (lead smelter) and Phoenix (copper smelter). The Sometra factory in Copsa Mica is a lead smelter. (See Figure 1.2 for a description of each factory's technology.)

Both communities are actively seeking ways to reduce lead pollution, and some progress has been made. For example, Romplumb has installed filters on emission stacks; Phoenix has

installed flue gas monitors; and Sometra has invested in a water treatment facility to reduce the level of heavy metals such as lead and zinc in water that is discharged by the plant. The Sometra plant and Sibiu public health officials are also designing and implementing an occupational health and safety program for workers. Even with these

**Figure 1.2  
Comparison of Lead-Producing Industries in Zlatna,  
Baia Mare, and Copsa Mica**

Community	Name of Company	Technology	Level of Lead Pollution	Level of SO <sub>2</sub> Pollution
Zlatna	Ampellum	Copper smelter	++	+
Baia Mare	Phoenix	Copper Smelter and Refinery (electrolysis)	+	++
Baia Mare	Romplumb	Lead Smelter	+++	+
Copsa Mica	Sometra	Lead Smelter and Refinery (electrolysis)	+	+

The process at Ampellum is more old fashioned, slower, causes more lead emission to the environment than does the technology used at Phoenix (chemical electrolysis). On the other hand, the chemical process used by Phoenix causes more SO<sub>2</sub> pollution than does Ampellum's process (where the electrolysis unit is closed).

Phoenix uses copper produced at Ampellum in its production process.

The technology used for lead production at Romplumb is sintering, followed by smelting and finally thermal refining for removal of copper. This company has the most lead-polluting technology of the four.

The plus marks in two right hand columns indicate comparative amount of pollution, one being the least, three being the most.

efforts, however, severe air, soil, and water pollution continue to plague both communities, causing serious health and environmental problems for their citizens.<sup>2</sup>

During the scoping visit to Sibiu, Baia Mare, and Copsa Mica, the EHP team interviewed representatives from the mayors' offices, public health officials, sanitary police, local environmental protection agency officials, hospital administrators, local physicians, Institutes of Public Health staff, occupational health and safety staff from the local plants and factories, teachers, and NGO representatives to discuss their interest in participating in a follow-on activity.

In addition, the scoping team visited the Zlatna/Alba Iulia team members who had successfully implemented the earlier Zlatna project and representatives from the faculty at the University of Medicine and Pharmacy and Institute of Public Health (IPH) in Cluj. The purpose of these visits was to ascertain their willingness to share what they had learned with the other communities. All agreed to participate in the upcoming activity.

As a result of the initial discussions, Baia Mare and Copsa Mica asked to participate in the follow-on activity with EHP and the Zlatna/Alba Iulia team. The activity was called *Formation of Community Working Groups in Transylvania to Reduce Lead Exposure*.

The activity was designed to disseminate the lessons of Zlatna to other communities in the Transylvania region with similar lead pollution problems. Results of blood lead tests conducted on children in Baia Mare in 1992-93 and in Copsa Mica in 1997 by the IPH in Cluj were used as baseline data to identify health risks related to lead intoxication.

When designing the follow-on activity for

Baia Mare and Copsa Mica, the team took the following factors into account:

- Recent changes in the GOR (1996-97) had significantly increased the likelihood that local and regional efforts would influence national efforts to update and change policies in a variety of areas, including health. This increased awareness on the part of the GOR was due partly to the desire to harmonize current government policies with European Union (EU) policies and regulations, a prerequisite for entry into the EU in the future.
- There seemed to be a new spirit of openness and an acknowledged search for new approaches to a variety of problems, including health, at local and regional levels.
- The Zlatna experience had been very successful and the results well received at the national level and in other Transylvanian Judets. This "positive press" seemed to increase the likelihood that other local health and environmental authorities, NGOs, community leaders, and plant representatives might be willing to work together as cross-sectoral teams to design and implement similar local actions.
- Health and Environment Ministry officials in Bucharest were aware of EHP/USAID's efforts and had supported and attended earlier project activities. The change in government and the desire to harmonize with the EU seemed to bring increased support for such an activity. In addition, IPH staff in Bucharest were looking for participatory models that they could use to develop future health policies and programs. IPH is responsible for the development of the National Environmental Health Action Plan (NEHAP) which requires public participation in the planning stage.

This report summarizes the results and lessons learned from the EHP follow-on activity, "*Formation of Community Working Groups in Transylvania to Prevent Lead Exposure*," which focused on reduction in blood lead levels, particularly in women and children.

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<sup>2</sup> The plants in Baia Mare and Copsa Mica are currently being sold to private investors. The new owners must conduct environmental impact assessments and submit both environmental and health mitigation plans in order to complete the purchase agreements. The specific impact of privatization on the future environmental health situation for the communities of Copsa Mica and Baia Mare is unknown at present.

# 2 OVERVIEW OF THE ACTIVITY

## 2.1 Objectives and Approach

The USAID Mission to Romania had two strategic objectives that related to environmental and occupational health problems in the Transylvania region when the program began:

- S.O. 3.2 - Child Protection and Reproductive Health
- S.O. 3.3 - Reduced Exposure to Contaminants in Severely Polluted Areas

The overall goal of the EHP activity was to support the USAID strategic objectives by sharing lessons learned from the Zlatna activity with two other lead-polluted communities in the Transylvania region.

The objectives of this follow-on activity were to

- develop a strategy to reduce lead exposure in children and women in high risk areas,
- transfer the capacity to address environmental health problems through the development of community-based, cross-sectoral, interdisciplinary teams, and
- at the national level, raise awareness of the severity of lead problems in Romania and share the results of an interdisciplinary approach that could be used to address lead intoxication as well as other environmental health problems.

The overall approach was based on the following assumptions:

- Individuals from Zlatna, Alba Iulia, and Cluj had the skills and expertise to share the lessons they had learned with the other two communities.

- The EHP team could provide a process that would encourage and facilitate information-sharing and learning from each other.
- The activities undertaken would be results-oriented and would foster the exchange of ideas between and among representatives from all three communities (Zlatna, Baia Mare, and Copsa Mica).
- The design would be flexible to accommodate the specific needs of each community.
- To enhance sustainability, the activity would include both local and expatriate team members who had worked on the two earlier EHP activities in the region (Zlatna and Cluj).

The EHP team included a specialist in training and public participation, an environmental and occupational health physician, and a local coordinator. All three had participated in the earlier EHP activities in Zlatna and/or Cluj, and had a basic understanding of the approach and results of the previous interventions. A brief description of the team members and their qualifications is provided at the beginning of this report (see About the Authors).

## 2.2 Critical Success Factors

The EHP team identified four critical factors that had to be in place in order to achieve the objectives of the program.

- Willingness of Baia Mare/Maramures Judet and Copsa Mica/Sibiu Judet officials to identify team members from various sectors within the community who would participate in workshops and implement the action plans

- Access to recent health and environmental data on lead exposure in Copsa Mica, Baia Mare, and Zlatna
- Willingness of the Zlatna team to share lessons learned and materials that were developed for community information
- Willingness of Ministry of Health officials in Bucharest to participate actively in the activity

## 2.3 Task Descriptions

The tasks for the follow-on activity included four interventions: a scoping visit, two structured workshops in the region, and one national-level seminar in Bucharest.

Following is a brief description of each intervention.

### *Scoping Visit*

The scoping visit was conducted December 1-12, 1997, and provided an opportunity for the EHP team to interview various individuals in Bucharest and the Transylvania region about the possibility of a follow-on activity. The team interviewed key stakeholders at the Institute of Public Health and Ministry of Health in Bucharest as well as Judet-level health and EPA representatives, representatives from mayors' offices, factory representatives, and NGO members in Sibiu, Alba Iulia, Cluj, Baia Mare, and Copsa Mica. The team assessed interest in the activity, identified lead as the environmental health issue to focus on, and discussed the composition of the cross-sectoral teams. Information gathered during the scoping visit was used to develop the detailed work plan for the activity.

### *Workshop 1 – Start-up Workshop*

The start-up workshop was held March 3-6, 1998 in Sibiu. Thirty-seven participants (plus the three members of the EHP team) attended in the 3 ½ day session.

The objectives were

- To present and discuss lessons learned from the USAID/EHP Zlatna activity, with particular emphasis on the design and implementation of the health promotion

activity.

- To discuss and compare current lead contamination data from Copsa Mica, Baia Mare, and Zlatna.
- To form the cross-sectoral teams and develop a vision and a strategic plan for designing and implementing local health promotion activities to alleviate health risks related to lead exposure.

Sessions included presentation of health and environmental data from the three communities (Baia Mare, Sibiu, and Zlatna) and an overview of the Zlatna/Alba program. The Zlatna/Alba team discussed the entire program, including their air monitoring and worker safety programs. Most of the presentation on Zlatna focused on how local health and environmental agencies and the community worked together on the program. Team members described the public awareness campaign, kindergarten program, summer camp, and counseling activities. The team also showed examples of brochures, coloring books, posters, and counseling material that was designed during the program. One of the major successes of the original program was the reduction of the average blood lead level of children in Zlatna by 25%, from 40 µg/dL to 28 µg/dL. The reduction can be attributed mainly to behavior change since most of the pollution prevention work at the factory has not yet been carried out.

Another session at the workshop focused on the impact of lead intoxication on IQ levels in children. The chief of the Alba Judet IPH, Dr. Stefan Cibian, explained the results of a 1997 study that was conducted by the IPH psychologist on the impact of lead on IQ.

The psychological study was conducted on two groups of schoolchildren, one from Zlatna and the other from Cugir. The two communities were comparable in terms of social and professional standards, nutritional standards, and geographic conditions. The major difference in the two communities was the environmental situation in each of the localities. Zlatna has a copper smelter which is the source of lead emissions. Cugir has no such industry and therefore no lead pollution.

The study showed that there was a significant difference between children from the two towns as documented by IQ values. Over

one-third of the children from the town of Cugir (37%) had IQ values below 100. In contrast, more than half of the children from Zlatna (58%) had IQ values below 100. These results are a clear indicator of a possible toxic impact of lead on psycho-intellectual development of children in Zlatna.

Other presentation/discussion sessions during the workshop included

- an overview of the health effects of lead exposure and chelation therapy by a representative from the Cluj Institute of Public Health
- an overview of the knowledge, attitudes, and practices (KAP) survey process and status reports from representatives of the two communities
- a discussion of how to establish an NGO by members of Albamont

The teams from Copsa Mica/Sibiu and Baia Mare spent most of the workshop planning how they would work together over the life of the project. Each team developed a mission statement for the work they wanted to do related to preventing lead exposure in women and children and then developed a plan to carry out their mission.

The Sibiu/Copsa Mica team decided that its mission was to improve health conditions for children living in the lead-contaminated environment through the development of a public health education program for the community. The team planned to develop a KAP questionnaire and interview guide for the parents of children in the community as part of their strategic plan.

The Baia Mare team identified its goal as improving the quality of life in Baia Mare through educational programs and mass media. The strategy included plans to organize a summer camp for exposed children and to form an NGO to work on the lead intoxication problem in the community.

During the workshop, participants suggested topics for the second workshop. Top choices included exposure pathways and proposal writing. The second workshop included sessions on both of these topics.

## *Workshop 2*

The second workshop, held in Baia Mare from June 23-26, 1998, had 24 participants (plus the EHP team), 18 of whom had attended the first workshop. (A number of public health representatives from Sibiu/Copsa Mica were unable to attend the second workshop because of a severe flood that had occurred in their Judet. (See Appendix 1 for a complete list of participants from workshops 1 and 2.)

The objectives of the second workshop were

- To develop a better understanding of how children are exposed to lead, the potential health effects, and methods for reducing exposure
- To develop a better understanding of how interviewing and counseling skills can be used with children and their families
- To discuss lessons learned from operating the Zlatna summer camp program for children with high blood lead levels
- To share ideas for developing effective proposals and identifying potential donor support.

The format of the second workshop was similar to the first. During the first session, the Baia Mare and Copsa Mica teams reported on the progress they had made since March. The Baia Mare team had successfully established an NGO, called "ECO-Start Maramures," and had developed a proposal to seek funding for a summer camp. The Copsa Mica team had continued development of the KAP questionnaire for families at risk in the community.

Zlatna team members again participated in the workshop and presented a session on pathway identification that used the Zlatna experience as a case study. The Copsa Mica and Baia Mare teams then discussed how to apply this information to their communities. They subsequently developed action plans to gather both health and environmental data from all previous studies done by national and international specialists and to create an environmental and health database. The data would then be used to determine the exposure pathways for lead in women and children in the

communities. A representative from the Institute of Public Health in Cluj also demonstrated an XRF unit, available through the Institute, which is used to measure lead in soil. Both teams expressed an interest in having access to the equipment to help identify levels of high lead concentration so that some remedial action could be taken. Other sessions focused on discussion of the counseling program and the summer camp activity implemented by the Zlatna team.

The teams spent most of the workshop on proposal preparation. Members of Albamont and ECO-Start NGOs presented information on how to design and format proposals and shared information on potential donors. Each team then outlined a proposal that was related to reducing the effect of lead on health. The Baia Mare team outlined a proposal on ways to improve the low survival rate of newborns in a community near one of the factories. The Copsa Mica team outlined a proposal on improving children's health conditions in their community.

During the final morning of the workshop, the teams discussed possible topics, venues, and potential invitees for the final seminar in Bucharest.

### *Policy Seminar*

The final seminar was held in Bucharest on November 24, 1998. A total of 24 individuals participated in the one-day session. The objectives of the seminar were

- To provide an overview of the USAID/Environmental Health Project activity in Transylvania
- To raise awareness of the health impact of lead intoxication on women and children in Transylvania
- To provide an opportunity for representatives from Zlatna/Alba Iulia, Baia Mare, and Copsa Mica/Sibiu to discuss how they had begun to address the lead intoxication issue in their communities
- To present and discuss proposals to continue addressing lead intoxication issues in the three communities in the future
- To discuss the applicability of lessons learned during the EHP activity to the development of the Ministry of Health's National and Local Environmental Health Action Plans (NEHAP and LEHAP).

The following institutions were represented at the policy seminar (see Appendix 3 for the complete list of participants):

Institute of Public Health/Bucharest (MOH)	2
Ministry of Environment/Bucharest	1
Ministry of Industry/Bucharest	5
USAID/Bucharest	1
UNICEF/Bucharest	1
Environmental Action Programme Support Project (USAID-funded activity)	1
Environmental Health Center / Cluj (a private sector firm)	1
Institute of Public Health / Cluj	1
Alba / Zlatna Team	4
Baia Mare Team	2
Sibiu / Copsa Mica Team	2
EHP facilitators	3

The final workshop provided an excellent opportunity for working group representatives to explain Transylvania's lead intoxication problems to senior decision makers in Bucharest and to describe activities currently being undertaken and planned at the community level.

The seminar began with an overview on lead intoxication and its impact on women and children, presented by the EHP environmental health specialist. Each of the teams then highlighted its achievements and presented its proposals for the future. (See Appendix 2 for newspaper articles on the presentations.)

Following these presentations, the IPH representative from Bucharest explained how she had adopted the EHP approach using community-based, cross-sectoral teams in her work to develop the National Environmental Health Action Plan (NEHAP). She sponsored two roundtables for IPH physicians from around the country to encourage them to focus

more on preventive measures rather than curative. In addition, she introduced the EHP approach at two national-level workshops sponsored by WHO to introduce the NEHAP and LEHAP programs. She used the Alba health information specialist to present the Zlatna model at some of the sessions. Her plan is to integrate the EHP approach into the Romanian National Plan # 9 (Environmental Health section) being developed at the time to this writing. Resources have already been allocated for the plan, and she is in a position to decide how the resources are to be used.

The USAID representative also commended the teams for their work and stated that the EHP program is the only USAID activity in Romania that has successfully formed community-level working groups to deal with local problems. She plans to integrate some portions of the EHP approach into other USAID programs such as World Learning and EAPS.



# 3 RESULTS

The overall results of the follow-on activity have been very positive, given the short timeframe and limited financial resources available to implement the program.

During the initial planning stage, the team identified three key results that it hoped to accomplish. The following section reviews the expected results and indicators and identifies the actual results achieved over the life of the activity.

## 3.1 Formation of Teams

*Expected Result 1:*

*Development of the capacity of local stakeholders (physicians, teachers, city administrators, health care workers, plant representatives, NGO and community members) in Baia Mare and Copsa Mica to address environmental health problems through an interdisciplinary team approach.*

*Indicators:*

- *Two local level interdisciplinary teams will be formed.*
- *Three to four members of each interdisciplinary team will participate in both of the workshops.*

*Actual Results:*

- Cross-sectoral, interdisciplinary teams were successfully formed in both Baia Mare and Copsa Mica. Representatives from both communities recognized the necessity of working together and of using an interdisciplinary approach to define and resolve their problems related to lead intoxication. The teams officially organized themselves during the first workshop in Sibiu in March, 1998. They were composed of physicians, biologists, and engineers from the local EPA, Public Health Department, factories, mayor's office, and

NGOs. The Copsa Mica team also included a teacher from the local kindergarten. Each group agreed on its mandate, clarified leadership and membership roles, agreed on how they would work together, and developed a vision for their work. The Baia Mare group successfully incorporated themselves as a new NGO, ECO-Start Maramures.

- A majority of team members participated in both workshops. A total of 8 Baia Mare team members and 12 Copsa Mica team members participated in the first workshop, held in Sibiu in March 1998. Nine Baia Mare team members and seven Copsa Mica team members participated in the second workshop, held in Baia Mare in June 1998. Five of the Copsa Mica team and seven of the Baia Mare team participated in both workshops. Two representatives from each team participated in the final seminar in Bucharest to present what they had done and what they have planned for the future. (See Appendix 1 for a complete list of working group members from Zlatna, Baia Mare, Copsa Mica, and Bucharest.)

## 3.2 Development of Action Plans

*Expected Result 2:*

*Development of long-range action plans to mitigate the impact of lead intoxication on women and children by the two communities (Baia Mare and Copsa Mica).*

*Indicators:*

- *Concrete action plans will be agreed to by cross-sectoral, interdisciplinary teams.*
- *Work plans will include implementation plans, definition of roles and responsibilities, and a monitoring plan.*

*Actual Results:*

- Strategic plans were developed by both groups to work on lead pollution problems at the community level. Each team developed an action plan that included objectives, tasks, leadership roles, resources required, timeframes, and a monitoring plan. Baia Mare's strategy was to form an NGO, conduct a KAP survey in the community, design a mass media information campaign, and hold a two-week camp for children from high exposure areas in the community. Copsa Mica's main strategy was to conduct a KAP survey in order to develop an educational program for the children in the community.
- Each team developed a specific proposal for future actions that incorporated what had been learned during the EHP activity. During the second workshop in June 1998, Albamont and Eco-Start Maramures NGO members presented a session on proposal preparation and identification of potential donors. As a follow-up to that workshop, the Baia Mare team prepared a proposal to design a three-year social marketing program for their community. The Copsa Mica/Sibiu team designed a three- to five-year health education program for the children and parents in Copsa Mica. Both teams presented their proposals to donors and government officials during the final seminar in Bucharest, and both teams are actively seeking funding for their programs.

### **3.3 Increased Awareness**

*Expected Result 3:*

*Awareness of the severity of lead intoxication will be increased at the national level, and an approach will be introduced that highlights the impact that local cross-sectoral, interdisciplinary teams can have on mitigating environmental health problems.*

*Indicators:*

*Two to three national-level policymakers from the Ministry of Health and the Ministry of Environment will participate in a policy seminar in Bucharest in late 1998.*

*Actual Results:*

- Senior officials from the Ministries of Health, Environment, and Industry, donor representatives, and team members from the community groups participated in a one-day seminar in Bucharest. A group of 24, including representatives from the IPH, Ministry of Environment, Ministry of Industry, USAID, UNICEF, and team representatives from Zlatna/Alba, Sibiu, and Baia Mare participated in the final seminar in Bucharest on November 24, 1998. One of the major outcomes was the announcement by the project counterpart from MOH that she is actively disseminating the model used by EHP to other parts of the country to continue the LEHAP process. She suggested that a brochure be developed to describe the step-by-step process that local communities should follow when forming cross-sectoral, interdisciplinary teams.
- Local and national media disseminated information about lead pollution and prevention of lead exposure. During the final EHP team visit to Baia Mare in November 1998, a special community meeting was held to update the public and local authorities in the Maramures Judet about the actions of the local working group. A total of 38 representatives from the local and Judet governments, health directorates and EPA, Romplumb and Phoenix, NGOs, and journalists and television reporters attended the meeting.

The session included presentations on the severity of the lead intoxication problem and a report on what the team had done and planned to do. The team showed a video tape of activities at the summer camp and had posters that the children had drawn during the camp. The meeting results were broadcast for several days on local television stations, and a number of local newspapers carried articles about the meeting. (See Appendix 2 for translations of three of the newspaper articles.)

### **3.4 Other Results**

The EHP team successfully introduced a participatory process that encouraged communities to share information and learn from each other. This has rarely, if ever, been done in Romania before. EHP's local coordinator conducted follow-up meetings with the teams, provided liaison, and monitored progress throughout the year-long program. The Zlatna/Alba Iulia team worked closely with the EHP team on the design of the workshops and the final seminar and willingly shared their expertise, products, and lessons learned with the other two community groups and national representatives. The Baia Mare and Copsa Mica teams actively participated in decisions about the content of the workshops and the final seminar and worked on proposals and presentations between the meetings.



# 4 CONCLUSIONS AND LESSONS LEARNED

The lessons learned during the activity fall under three major headings: creating teams; the availability of funding; and local and expatriate technical assistance.

## 4.1 Creating Cross-sectoral Teams

- It is possible to build cross-sectoral, interdisciplinary teams at the community level to deal with specific public health problems, but it takes time, training, and patience. By the end of the activity, the teams realized the benefits of working together and saw that they could succeed when they collaborated with each other. They still have difficulties, however, with leadership roles, interpersonal communications, and decision-making skills; they would benefit from additional capacity-building activities. There is also a need for additional training in how to organize and manage an NGO.
- Members of the teams have improved their skills in strategizing, designing, and implementing programs as a result of their participation in the EHP activity. There is still a tendency, however, to rely solely on the GOR to provide financial support for public health programs, rather than to explore additional funding possibilities. To promote sustainability, team members need further coaching in developing effective proposals and identifying potential funding sources for programs.
- Local team members have the requisite skills to design research projects, but they have limited experience in using research results to design and implement preventive actions to mitigate problems at the community level. The EHP program helped the local teams begin to integrate research results into strategic plans and targeted programs, rather than continuing to do

“research for research’s sake.” Some team members are more comfortable, however, with continuing to collect more data rather than actually designing and implementing programs to help change the behavior of women and children in the community.

- Team members from Zlatna, Baia Mare, and Copsa Mica now believe that they are entitled to live in a healthy environment and that if they work together, they can influence decision makers. The EHP program empowered team members in that they now see that they can make a difference if they work together. It is important to remember that those working on the lead pollution problem in Transylvania are also dealing with many other pressing needs and preoccupations. This activity targets only one of the many public health problems they are trying to solve in their communities. National and local authorities need to place increased emphasis on the problem of lead intoxication so that team members see it as a high-priority problem and have a mandate to work on the problem.

## 4.2 Availability of Funding

- Lack of budget for commodities does not impede the formation of cross-sectoral, interdisciplinary teams. Even though the EHP activity did not provide any commodity procurement, teams were formed and worked together well. To ensure sustainability, however, the teams will need access to a small budget to purchase computer hardware and software, printer, and photocopy equipment and to gain access to the Internet.

- Even though teams were formed and are working, communities and industries still need financial resources to purchase pollution prevention and monitoring equipment. Public awareness campaigns alone will not solve the lead problem. More effort is needed at the national and Judet level to clean up the environment. The new owners of the plants have a key role to play in this work.

### **4.3 Local and Expatriate Technical Assistance**

- Excellent human resources exist in the Transylvania region, particularly with the Albamont NGO in Alba Iulia, to support the development of other NGOs in Romania. The Albamont NGO can provide training on how to organize and manage NGOs as well as fund-raising and

proposal-writing. These skills can be utilized in any future program focused on developing NGOs and other community action groups.

- The multidisciplinary composition of the EHP team helped achieve results. Successful characteristics of the EHP team composition included expertise in public participation processes and environmental and occupational health; previous experience with the EHP programs in Zlatna and Cluj; previous good relationships with Zlatna, Alba Iulia, and Cluj team members; expertise and knowledge of efforts in other Eastern European countries to deal with occupational and environmental health issues related to EU membership; and the local coordinator's ability to work effectively with local team members.

# 5 RECOMMENDATIONS

## 5.1 Prospects for Sustainability

There are several good indications that the working groups will continue after the EHP program ends. These became apparent during the final visit of the EHP team to Romania, November 14-25, 1998.

- Each of the working groups has developed a proposal for future activities related to public awareness, education, and social marketing; each team is actively searching for funding.
- The Baia Mare team successfully ran a summer camp program for 47 youngsters and plans to do so again in 1999. The camp is part of the proposal to develop a social marketing project.
- The Baia Mare team arranged a meeting with local officials and the press to report on its work and future program. The team received positive responses from the press and the politicians for its work. This high visibility should give the group incentive to continue its endeavors.
- Representatives from the Ministry of Health, Ministry of Environment, and Ministry of Industries as well as USAID and UNICEF actively participated in the final seminar in Bucharest on November 24, 1998. Many of the participants identified specific next steps they plan to take, based on the topics discussed at the seminar.
- In her closing remarks at the end of the seminar, Randal Thompson, a USAID program officer in Bucharest, commended the working groups for their hard work and successes. She noted that the EHP activity was the only USAID program in Romania that has successfully formed local cross-sectoral teams that are working together to solve local problems. She discussed the possibility of identifying funding through other USAID programs such as World Learning and a new World Bank fund that has recently trained local Judet members as possibilities for disseminating the results of the program to other communities in Romania.
- Anca Dumitrescu, IPH representative, also participated in the final seminar and commended the groups on their success. She described her efforts to disseminate the EHP model to other communities in Romania as part of her work on the NEHAP. She stated that the EHP program was a good model for other communities and that her intention is to continue pushing the ministry to adopt the methods used in the EHP program. She also suggested that a brochure be developed to capture the critical steps needed to form community-based, cross-sectoral teams. These brochures could then be disseminated to other communities in Romania.
- Emilia Niciu, one of the members of the IPH Cluj team who worked closely with EHP on the Zlatna activity, has now taken a position as head of the Environmental Health Department at the National Institute of Public Health in Bucharest. She is currently developing projects on environmental health (including traffic and lead emissions) as part of the NEHAP. She attended the final EHP seminar and plans to follow up on the lessons learned in the EHP activity in her work at the Institute.
- The Environmental Health Center in Cluj is now doing environmental health scanning for several of the factories in Transylvania. This private sector firm is also licensed in Romania to sell new blood lead kits that

can provide immediate results. (Several kits have already been purchased by Baia Mare and Sibiu groups.) The availability of these resources in the private sector will help occupational and environmental health care workers in the communities take immediate steps to help those individuals who are exposed to lead.

## **5.2 Recommendations for the Future**

### ***5.2.1 Donors and the GOR should continue to support the work that has begun in Zlatna, Copsa Mica, and Baia Mare.***

Follow-up is needed to sustain the progress that has been made in Zlatna. It is imperative that resources be found to assist Ampellum in emissions reduction as well as to maintain the air monitoring equipment purchased by USAID during the first EHP activity. One of Zlatna's most pressing needs is for filters for the equipment in order to continue the monitoring of air quality.

Support is needed to sustain Zlatna's efforts in the following areas:

- The air monitoring program, so that the community can be informed about air quality levels.
- School-teacher training so that all school children receive similar health education programs.
- Summer camps for exposed children.
- Family counselor training for additional individuals to continue the family counseling activity.
- Periodic blood lead measurements of children as a preventive measure.
- Pre-natal and post-natal screening and counseling for women in Zlatna.

The Zlatna activities can continue only if a stable funding and management source is found. Special funds must be secured from the Ministry of Health and/or outside donors. A

program for sustainability will consist mostly of additional software (i.e., training) and, to a lesser degree, the purchase of hardware (i.e., modern equipment for blood lead testing, supplies for the air monitoring equipment).

The communities of Baia Mare and Copsa Mica need further training and capacity-building in the "processes" to sustain working teams. These skills include team-building; design and implementation of KAP surveys; family counseling; social marketing, communications and public awareness; formation of NGOs; NGO management; community participation; exposure and risk assessment; proposal development; and identification of potential donors.

### ***5.2.2 National institutions should use the human resources available in Transylvania to support lead pollution abatement activities and the introduction of community-based cross-sectoral approaches to other regions in Romania.***

The success of using cross-sectoral, interdisciplinary working groups for planning and implementing community-based environmental health activities demonstrates new ways for reaching public health solutions. This example should be replicated in other parts of the country to address environmental health problems. The Transylvanian region should be used as a resource center to demonstrate the power of community-based activities. The region has a comparative advantage in the implementation of lead pollution abatement activities and community-based, cross-sectoral approaches.

This experience can be used in three ways:

- providing technical assistance (environmental health),
- strengthening institutional collaboration between stakeholders, and
- enhancing community and NGO participation.

Several centers of technical expertise exist in Cluj, including the Center of Environmental Health (a private company owned by Dr. Eugen Gurzau) and the Institute of Public Health. Both can provide epidemiological studies, environmental health surveys, and child-mother health program planning and implementation. As mentioned earlier, the Center of Environmental Health is also licensed to sell the new blood lead kit that can determine blood lead levels immediately, rather than requiring the long wait for results from an atomic absorption spectrometer.

Institution-building expertise is available through the network of individuals who collaborated on the Zlatna project, particularly staff from the Public Health Inspectorate and EPA in Alba Judet. This group could present its "recipe" to other regions of the country.

In order to sustain the development of working groups in other communities, training will be needed in the following skills: leadership and team building, communications skills, strategic planning, grant-writing, workshop planning, collaborative decision making, and steps for forming and managing NGOs. Albamont, the NGO that worked closely with EHP over the life of the project, has a great deal of practical experience and would be able to train NGOs and community groups in other regions in these and other skills.

GOR, USAID, and other donors should use the Transylvanian resources to build similar community teams in other regions of the country.

### ***5.2.3 National health institutions should develop materials that will offer dietary advice to pregnant women during their regular pre-natal checkups.***

Protection of the life of children starts during pregnancy. Women heavily exposed to lead have a lot of lead in their bones (in addition to calcium). During pregnancy, the baby needs

calcium for its own bone structure. This calcium has to come either from the mother's calcium-rich diet or from the mother's natural calcium depot, i.e., her bones. In addition to calcium being drawn from the mother's bones, lead is also "mobilized" and goes directly into the baby's bones, nervous system, tissues, etc. Pregnant women exposed to lead pollution who can not afford a diet rich in vitamins and minerals often give birth to babies with elevated blood lead levels. This is a serious public health concern.

A special prenatal program is needed to offer information and dietary advice to pregnant women during their regular pre-natal check-ups at health care facilities. Simple brochures or pamphlets could be developed to be given to pregnant women during their initial pre-natal examination.

### ***5.2.4 National health agencies should develop information to help families protect children ages 0-6 from lead exposure. Informative pamphlets or brochures could be given out during regular post-natal check-ups.***

Young children (ages 0-6) are the most vulnerable population regarding the toxic effects of lead on the nervous system. This age group is also difficult for public health authorities to reach because those children spend most of their time at home. Among children, the highest-risk groups are infants whose parents work in lead smelter plants and infants in low-income families.

A program is needed to provide information and active support during routine post-natal check-ups. Simple brochures or pamphlets could be developed that would help make mothers aware of the dangers of lead poisoning and encourage families to take preventive measures immediately after birth.

# Appendix 1

## Team Members Participating in the Activity

### ***Baia Mare / Maramures***

Dr. Violeta Bindea	Mayor's Office, Baia Mare/ECO – Center NGO
Cristian Ieremia	Transylvania Business Center, ECO Tourism
Eniko Marton	EPA, Maramures
Isidor Sefciuc	Eco Carpatica NGO
Dr. Pop Constantina	Sanitary Directorate, Head of Pediatrics, Baia Mare Hospital
Ion Radulescu	Head of Environmental Dept., Romplumb
Eva Neuschli	Phoenix S.A.
Ludovic Polereczki	SC Phoenix Baia Mare
Dr. Alexandu Ilies	Health Education Laboratory, IPH, Baia Mare
Dr. Corina Tertan	Head, Health Education Laboratory, IPH, Maramures

### ***Copsa Mica / Sibiu***

Dr. Iuliu Fodor	IPH, Sibiu, Medias Lab
Dr. Dorin Marchean	Copsa Mica Dispensary
Dr. Delia Bancila	Psychologist, Head, Health Education Laboratory, IPH, Sibiu
Dr. Cristina Obadau	IPH, Sibiu, Medias Branch
Dr. Anton Szasz	IPH, Sibiu, Medias Branch
Dr. Carmen Brezai	IPH, Sibiu
Adrian Georgescu	EPA, Sibiu
Ruxandra Hasegan	EPA, Sibiu
Ion Mercurean	EPA, Sibiu
Dr. Hasegan	EPA, Sibiu
Dr. Anica Istrate	Plant Physician, SC Sometra SA, Copsa Mica
Eng. Adrian Muica	Head of Environment Department, SC Sometra SA
Matefy Tunde	Mayor's Office, Copsa Mica
Ana Bortan	Teacher, Copsa Mica
Monica Taco	Prefecture, Sibiu
Dr. Claudia Munteanu	Head of Occupational Health Laboratory, IPH, Sibiu
Dr. Dorin Bardac	Director, IPH, Sibiu
Eng. Adrian Georgescu	Director, EPA, Sibiu

### **Zlatna / Alba Iulia**

Dr. Stefan Cibian  
Dr. Olimpia Candrea

Marioara Puscas  
Simina Baci  
Eng. Adriana Stoica  
Elena Puiulet  
Vladimir Filimon  
Doru Hatagan

Director, IPH, Alba Iulia  
Head of Health Education Laboratory, IPH, Alba Iulia  
President, Albamont  
Member Albamont, Translator  
EPA, Alba Iulia  
Zlatna Kindergarten Teacher, member EcoZlatna  
SC Ampellum SA  
EcoZlatna

### **Cluj**

Dr. Didi Surcel  
Dr. Emilia Niciu  
Dr. Dana Faraian  
Prof. Carmen Ionut  
Dr. Viorica Ionut  
Dr. Sanda Popa

IPH, Cluj Napoca  
IPH, Cluj Napoca  
IPH, Cluj Napoca  
UMP, Cluj Napoca  
UMP, Cluj Napoca  
IPH, Cluj Napoca

### **Bucharest**

Dr. Anca Dumitrescu

IPH, Bucharest

# Appendix 2

## Baia Mare Newspaper Articles

### ***Glusul Maramuresului, Nov. 18, 1998***

“Lead Contamination Risks Can Be Reduced with Good Information”

The Environmental Health Project, a program funded by USAID, implemented from 1994 to 1997, was a project about reducing health risks related to lead exposure in Zlatna area, Alba County. In 1998, USAID wanted to verify the project results in two other counties facing the same problem: Sibiu and Maramures.

As part of the program, several workshops were organized during the year, including one in Sibiu and one in Baia Mare. One conclusion was a need to develop project proposals concerning lead exposure abatement that could be presented for funding to internal and international donors. These are based on EHP Zlatna experiences, taking also into consideration the local situation.

Yesterday, November 17, at the Baia Mare Prefect’s Office, the closing meeting of the Baia Mare Program was held. The meeting included discussions about future projects. EHP was represented by Kathy Alison, Dr. Martin Silberschmidt (public health specialist), and Mihai Maracineanu, program coordinator in Romania. Local officials, NGOs, Public Health Inspectorate representatives, and others were present. The EHP specialists stressed the health effects related to lead exposure for women and children, who are the most affected groups. Studies show that lead in blood, even in small quantities, is related to problems concerning growth, hearing, and intelligence of children. Some of the effects on pregnant women are premature birth, abortions, and stillbirth, all of which lead to lower birth rates. At the end of the meeting it was decided to continue the educational programs through involving the community. There will be camps organized, like the one that Eco-Center did this summer, where children were trained to become messengers of the program to reduce lead exposure. At the meeting, a project written by Eco-Center and the Environmental Health Institute in Cluj was presented. The project is a community action program for the long term that includes educational and informational aspects. This project will also be presented next week in Bucharest, to Health Ministry and Environmental Ministry representatives.

Andrea Dobos

### ***Graiul Maramuresului, November 18, 1998***

“Lead Is a Dangerous Enemy for Health”

Between 1995 and 1997, the EHP Project, funded by USAID, was a project to reduce lead exposure in Zlatna area, Alba county. Since Baia Mare is also considered a “hot-spot” of lead pollution, USAID organized a series of workshops, to disseminate the program in Baia Mare and Sibiu. The final purpose of these meetings is to write proposal drafts concerning lead exposure abatement, to be presented to local and foreign donors.

The project “risk evaluation and health impact on groups with increased susceptibility to lead exposure” was presented yesterday in Baia Mare. The program includes risk perception, communication strategies, counseling, and social marketing. The project was written by the Environmental Health Center in Cluj and Eco-Center in Baia Mare, starting with the idea that more than 150,000 people are living in a polluted environment, with lead being the most dangerous enemy of health. Dr. Martin Silberschmidt from Denmark spoke about this subject.

For a group of 41 children tested for blood lead levels, results speak for themselves: 38% had blood lead levels of 10 –20 µg/dL, 21% with 20-30 µg/dL, 14% with 30-40 µg/dL, 9.7% with 40-50 µg/dL lead in blood. Only 6 of the children who were tested had less than 10 µg/dL of lead in their blood. The Eco-Center project not only presents the situation, but also focuses on educational aspects. Children are also included in Eco-Center's educational program Eco-Start (a summer camp, part of a longer term educational program in Baia Mare). What happened yesterday in Baia Mare should become a permanent activity, because until recently, people had not been talking about Baia Mare's pollution. Some even thought that the pollution problem had already been solved. The last pollution bulletin, however, showed lead concentrations there were 3 to 3.2 times higher than the admissible limit. Lead does not smell or have other discernible characteristics, but it has a tremendous impact on our health.

Viorica Parja

### ***Opinia, November 18, 1998***

“Lead Pollution – Effects on People”

Between 1994 and 1997, USAID initiated the Project for Reducing Risks of Lead Exposure in Zlatna area, Alba county. During this year the same program came to our county.

Yesterday, at the Prefect Office, the final workshop of this project was held. The participants were representatives of institutions involved in pollution problems (Romplumb, Phoenix, PHI, and environmental NGOs). Kathy Alison, representing the American assistance, presented the activities for the last year. “The purpose of this project was to disseminate information about lead exposure, especially about children and pregnant women.” Dr. Martin Silberschmidt, a public health specialist from Denmark, presented a report about lead exposure in Baia Mare. “I know about this problem, because I have been involved since 1992, when Baia Mare was declared a ‘hot-spot’ on Europe’s map.” The initiators of the program hope to use information and gather data to develop other projects concerning lead exposure abatement and to submit them to local and international donors.

# Appendix 3

## Final Seminar PARTICIPANT LIST

No	Name	Institution	Position	Phone/Fax
1.	Delia Bancila	Public Health Inspectorate Sibiu	Psychologist, Health Communications	069-427633 069-214977
2.	Iuliu Fodor	Public Health Inspectorate, Medias	Doctor	
3.	Violeta Bindea	Eco-Center NGO, Baia Mare	Doctor	062-226585 062-424146
4.	Cristian Ieremia	Transylvania Business Center, Baia Mare	President	062-226585 094582425
5.	Adriana Stoica	EPA, Alba Iulia	Monitoring Dept.	058-816834 058-826796
6.	Stefan Cibian	Public Health Inspectorate, Alba	Director	094229658
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