

REPORT ON
ADMINISTRATIVE MANAGEMENT SYSTEMS
OF THE MINISTRY OF
ENVIRONMENTAL PROTECTION,
NATURAL RESOURCES, AND FORESTRY
WARSAW, POLAND

Prepared by:
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INTRODUCTION

On September 7, 1990 William K. Reilly, Administrator, and the U.S. Environmental Protection Agency (EPA), signed a cooperative agreement with Poland to strengthen the environmental programs of that country. The following week Messrs. Stanley L. Laskowski and William T. Wisniewski of the EPA visited the Ministry of Environmental Protection, Natural Resources and Forestry (MOSZNL) to conduct a preliminary review of the administrative management systems of the Ministry in Warsaw, Poland. They were joined and assisted by Mr. Stephen Lintner of the World Bank. Based upon their preliminary review, they formed an eight-member, multi-disciplinary team who completed a two-week, on-site analysis in November 1990.

The team was composed of U.S. EPA representatives drawn from various offices throughout the United States. The names of the team members are:

Alexandra Smith	<i>Lead</i>	- Atlanta, Georgia
Georgianna Bishop	<i>Human Resources</i>	- Boston, Massachusetts
Frederick Garman	<i>Budget & Finance</i>	- Washington, DC
John Krakowiak	<i>Administrative Services</i>	- Philadelphia, Pennsylvania
Phyllis Kozub	<i>Information Resources</i>	- Washington, DC
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Robert Snelling	<i>Research & Development</i>	- Las Vegas, Nevada
Michael Kulik	<i>Human Resources</i>	- Philadelphia, Pennsylvania

The following is a report of their observations and recommendations. It is based on extensive personal interviews with managers and staff. It should be noted that at the request of the Ministry a separate section of the report is devoted to the Institute of Environmental Protection, an adjunct organization to the Ministry that is engaged in research and development, policy assessment, and technical support tasks.

The team members and the U.S. EPA offer this report in a spirit of cooperation and assistance in a shared mutual mission - the protection and restoration of our environment. They wish to thank the Ministry of Environmental Protection, Natural Resources and Forestry as well as the Institute of Environmental Protection for their many kindnesses and cooperation during their stay.

1991-1992

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HIGHLIGHTS

This report contains considerable information and recommendations to improve the operations of the Ministry of Environmental Protection, Natural Resources and Forestry. We urge that they be reviewed carefully by Ministry officials and managers who know the organizational culture, the realities of the workplace, and financial constraints, and can work towards developing a practical implementation plan. However, we want to offer a sense of the priority of the recommendations to address the most compelling needs in our view. The priorities are:

1. *Budget and Finance*

In any organization, under any circumstances, the accounting for funds is a critical management and fiduciary responsibility. The perception, let alone actual occurrence, of fraud, waste or abuse of official monies could destroy the credibility and then the effectiveness of the organization. In light of the increasing funding of the Ministry, it is critical that implementation of a sound and secure accounting system continue. We therefore urge priority attention to this area.

2. *Information Resources Management*

The advent of computer-based technology offers great potential for increases in productivity in the Ministry. Planning the office automation process (as opposed to piecemeal implementation) is the most rational, efficient, and cost-effective approach to the introduction of this technology. Standardization of hardware and software and common training in this planned approach will enable the Ministry to avoid many of the costly mistakes encountered under the patchwork trial and error approach that has been associated with office automation in countless organizations.

3. *Human Resources Management*

Acceptance of the principle that "people are our most important asset" is the foundation for an effective organization. Environmental pollution control agencies are not capital- or equipment-intensive organizations. Their largest operating costs are typically salaries. Internal communications, employee development, and modern employee-sensitive personnel systems should work towards empowering the staff to perform to their potential and set a tone that management cares about them as people and not parts of the machinery of work.

Organizational

History & Structure

ORGANIZATIONAL HISTORY AND STRUCTURE

The Ministry of Environmental Protection, Natural Resources and Forestry was created in 1983. Recent organizational additions in 1985 and 1989 incorporated responsibility for Forestry and Natural Resources.

At the time of the review, the Ministry has thirteen departments with Directors and Deputy Directors. Half of the Department Directors have been at the Ministry less than a year. The Ministry, like much of government in Poland, has recently undergone downsizing and presently employs approximately 250 employees.

The State Inspector's Office, a separate but related organizational unit, employs 250 people, 80 of whom are located in ten field offices. The State Inspector's Office is housed within the Ministry and the Chief Inspector is also one of the seven Vice Ministers who reports directly to the Minister. The seven Vice Ministers are all academicians who routinely have additional titles and functions beyond their work at the Ministry.

Recent political and philosophical changes have brought about tremendous shifts in all aspects of the workplace. The country's laws, administrative systems, policies, and practices are all undergoing massive rework. In the context of these enormous changes, we found that many practices have been indefinitely suspended to make way for new methods and new information. The ability to effectively communicate change and overcome resistance to change will be critical if the Ministry hopes to engage its entire workforce in the work of today and the challenges of tomorrow.

A copy of the organizational chart is displayed in Appendix A.

Budget and Finance



BUDGET AND FINANCE

Background

A brief summary of the national budgeting system in Poland follows. The basic structure of the National Budget is set by the Polish State Constitution, which also requires that the Cabinet Ministers submit budget requests to Parliament and that Parliament approve budgets on a yearly basis. The National Budget contains the budgets for each government organization, including not only the central organizations but also wojewodships and other self-governing units. The Ministry of Finance plays a key role in setting annual targets and instructions.

Each ministry prepares an annual budget proposal and submits this to the Ministry of Finance in August for the upcoming fiscal year (January - December). After a series of discussions and negotiations, and potential appeals by Ministers to the full Council of Ministers, the budget is submitted to Parliament on November 15th each year. The Parliament is then expected to analyze, review and approve the budget prior to the start of the year.

The MOSZNL budget appears in the National Budget as Part 28 and has many components (i.e., National Parks, Regional Water Management Boards, State Administration, etc.). The present Ministry budget includes the needs of 57 budgetary units, many of which are pass-through activities. The actual resources administered by the Ministry are relatively small and not designed to finance nationwide environmental protection, much of which is financed through industry, regional budgets, wojewodships or the National Fund for Environmental Protection. This chapter will primarily address the resources directly available for the MOSZNL operation and the processes utilized to develop and execute those resource needs.

Observations and Analysis

Interviews were conducted with a varied cross-section of the Ministry management and staff, and Ministry policy documents, organizational charts and functional statements were reviewed. A high level of quality and commitment of the employees engaged in carrying out the resource management functions was evident. In addition, the open and honest answers to our questions were an encouraging signal that those employees interviewed sincerely desire to help improve operations and program effectiveness of the Ministry.

However, the review found that many of the tools or processes necessary for the Ministry to perform effectively in this area were lacking. For instance, the Ministry is making a valid attempt to articulate a National Environmental Strategy. Due to ever-changing economic and political situations, it is difficult for them to address these issues adequately. In addition, there is a natural tension within the Ministry as to the overall mission, because part of its mission is protection of the environment and part is the development or commercial utilization of natural resources. Yet, few processes seemed to be in place to ensure that resources and environmental goals were well-coordinated and that programs and policies were consistent.

It was clear that responsibility for the Ministry's central resources were widely scattered throughout the various functions. One unit is responsible for preparing the Ministry's overall budget proposal; another unit disburses funds; another handles foreign fund accounts; still another is responsible for financial reports. Because of this approach it was difficult to get a clear and total picture of the resources available for the Ministry's use.

One of the most striking features we observed was the dynamic nature of Poland's laws, and everyone's expectations that new legislation would be approved shortly. This also seemed to apply, or could apply, to various regulations, Ministry of Finance guidelines, or MOSZNL rules and policies. A number of staff members mentioned that this might be an appropriate time to review the possibility of relaxing requirements on reprogramming funds from one budget category to another, and delegating the authority for financial and procurement decisions.

Ministry managers and staff also seemed eager to expand the computer capacity in resources management. Systems are being developed or re-designed, and plans are being made to acquire and utilize PCs. However, we were unable to find any effort to survey the information needs of management outside the finance offices. Since resource information is an important tool for all in a market-based economy, it would be useful to include the information needs of program managers when resource systems are designed. Some systems are already mandated by external organizations (World Bank, EEC, etc.), and there appeared to be little or no link between the systems planning for these areas and for overall systems. Little, if any, resource and procurement decision authority was found to have been delegated. With so many critical policy and strategic program decisions to make, senior executives need not be burdened with routine administrative decisions. This management style seems inconsistent with current efforts to decentralize controls.

Recommendations

1. Environmental goals can be integrated with budget and financial processes. For example, it would be possible to:
 - a) Establish a clear strategic vision for environmental goals and associated economic resources and instruments,
 - b) Articulate annual program goals and coordinate budget requests with these goals,
 - c) Consider expanding the internal budget proposal process to include detailed briefings on the proposals by the various department directors to the Minister and a council of departmental peers, and
 - d) Develop program work plans based on agreed-upon resource allocations and hold department directors accountable for ensuring that work plans can be accomplished with the resources provided.

2. A consolidated resources plan could be developed which would allow:
 - a) Consolidating responsibility for budget preparation, financial reporting, etc., in one department, and
 - b) Creating a system or process for tracking all resources and revenues available to the Ministry, including foreign funds, loans, pass-through accounts, etc.

3. The Ministry should examine resource flexibility in order to:
 - a) Determine added benefits of less restrictive reprogramming controls and decide on a method to elicit approval,
 - b) Seek out other resource restrictions that might be possible to change internally, or request changes from external sources, such as the ability to carry over from year to year any unspent resources, and

- c) Review level of authority realistically needed for resource and procurement decisions and consider delegating to the lowest level practical.
- 4. It would be helpful to ensure that any computer systems developed meet the needs of the clients:
 - a) Where possible, all resource systems are integrated,
 - b) Resource information needs of program managers and senior executives can be examined in beginning systems design,
 - c) Consider developing close to real-time financial data, and
 - d) Ensure consistency or reduce duplication of work with systems designed for external standards.

Next Steps and Estimated Costs

Many of the recommendations listed above will take a major commitment of time and resources to implement thoroughly. In many cases, they cannot be fully implemented without organizational and cultural changes outlined elsewhere in this report. However, some can and should be implemented quickly.

A critical goal that is achievable in the short term is the development of a consolidated resource data system. For the Ministry to properly plan and prioritize its programs it would be useful for the Minister and other senior executives to have complete and comprehensive resource information, whether from the Central State account, loans from external sources, National or other Fund resources, etc. This system should be able to identify and track these sources separately but have the capability of displaying all sources, and include a consistent accounting of expenditures for these sources.

Ideally, this system would be a fully-integrated data system. However, the short-term solution is a PC-based system utilizing either modification of existing off-the-shelf software or modification of a system already in use or development within the Ministry. A modification of this sort would require a relatively short period of time, based mainly on the complexity of the envisioned system. This would produce a simple resource tracking system; it would still need to rely on

external sources for information, and therefore would be totally dependent on these other sources for the quality and accuracy of the resource data contained within the system.

Obviously, designing a more sophisticated integrated data system would require a thorough needs analysis, including examining the information needs of non-finance personnel.

Another recommendation that could be implemented quickly is to examine resource flexibility and associated decision delegations. The initial phase could be an internal review of existing delegations and resource reprogramming processes. It could be conducted by Ministry staff and include employees outside the finance and administrative areas. A longer-term study will eventually need to work with other external organizations (e.g. Ministry of Finance), but many improvements can be accomplished with a short-term internal review. Its cost would be minimal, consisting only of staff time.

Information Resources

Management

INFORMATION RESOURCES MANAGEMENT

Observations and Analysis

At the time of the study, information resources management did not exist in the Ministry as a defined function. Due to resource constraints, it had not been supported since a similar type function was eliminated. During the period that an information manager worked in the Ministry, preliminary steps were taken to determine the information requirements of the Ministry's mission, and systems-related activities were also coordinated. The recent Ministry reorganization and abolishment of the information manager position have placed each of the departments in an independent operational mode for information resources management.

A component of the Ministry which has primary responsibility for information resources management is a Programming Center which is located in Plock. The Center has a staff of 38 employees who have primarily supported the State Inspector's activities. They also provide support to the Personnel and Payroll areas of the Ministry, and are currently developing a Personnel/ Payroll application system. Hardware at the Center includes a twelve-year-old mainframe, a minicomputer which is chiefly used for data entry, and two IBM PCs. A request for an equipment upgrade was submitted to the Ministry three years ago, but funds were unavailable. Although the request is made each year, funding has never been allocated.

The Programming Center follows standard system life cycle development procedures, and has also made proposals to the Ministry on integrating administrative data. The Ministry's Personnel and Payroll system was being developed as an integrated system flexible enough to be installed on a local area network (LAN). However, because the Ministry does not have a LAN, it will be installed on two separate PCs, and integration will be achieved by sharing data by changing diskettes.

When the Ministry had an information manager, systems-related activities were coordinated with the Center through this individual. Since his departure, all systems-related activities with the Programming Center have been independently handled by the requesting department. Staff interviewed at the Programming Center indicated that the resulting lack of coordination has negatively impacted their projects.

Departments which have independently pursued the use of automation have done so through staff initiative and personal knowledge of hardware and

software. Rather than following any defined standards or guidelines, those who make these purchasing decisions base them upon personal preference or department-specific requirements.

Various departments of the Ministry have independently contracted for the development of application systems. However, we found no written guidelines for what should be delivered in an independent computer contract (such as contractual agreements that the Ministry be given the source code and that the source code become the property of the Ministry, etc.).

As part of the agreement between the Ministry, the EPA, and the World Bank, the Ministry will be receiving an array of computer and technological equipment to collect environmental data from various media. We observed no plans for integrating this data. Likewise, the Ministry is missing a clearly defined information resources management plan which identifies the current environment, the desired environment, and a strategy to enhance the Ministry's information resource management.

Most departments provide introductory PC training to the staff, primarily only to those individuals who will use the PC. Due to resource constraints, little time is available for comprehensive training on the full range of hardware and software capabilities which reside in the Ministry. Some employees have assumed the responsibility themselves to learn more, but have done so on their own time. The real power and benefit behind the automated tools cannot be realized because the investment in training is not made in maximizing their use.

The World Bank recently installed a modem on one PC, which allows users to dial the World Bank connection in Warsaw, and from there connect via satellite to the World Bank computer in Washington, DC. Most of the other ministries have been connected to this network. "ALL-IN-1" communications software has been installed on the same PC allowing for electronic communications, including file transfer, among the ministries and the World Bank. This was the only external telecommunications link discovered at the Ministry. The World Bank menu system installed on this same PC allows users to access applications easily. We saw no other menu systems at the Ministry; instead, users must access their systems by using a complex series of commands.

The team made a side trip to the University of Warsaw and discovered it is currently negotiating with the Ministry of Education and IBM to establish an information center supported by an IBM 3090 mainframe, DB2, a relational database, and IBM PCs. The University of Warsaw is also Poland's central computer link to the PLEARN, an international academic research network.

A large number of users at the various academies access this network by dialing up the University.

Throughout the interviews the high level of individual technical expertise and initiative was extremely impressive. Examples include a sophisticated multi-user PC-based system in operation at the Institute for Environmental Protection. The programmers at the Computer Center at Plock have used the Clipper compiler to create programs that adhere to the very best modern standards of development and design. In one unit within the Ministry, staff knowledge of theories and techniques of computer application and design was evident from programs written for use in the unit.

Recommendations

1. The primary recommendation relative to all Ministry information is the establishment of a centralized information resources management function. A staff may not be necessary to perform this function; an individual who would serve as the information manager would suffice. This individual would coordinate and prioritize the information needs of the departments and the Ministry as a whole. Positioning of this function within the Ministry is crucial; it seems most advantageous to place it where:
 - a) Communication relative to Ministry priorities is available,
 - b) Information management is recognized as a key Ministry initiative, and
 - c) All departments recognize the function of the manager as essential in addressing Ministry objectives.
2. Comprehensive analyses of Ministry activities, objectives and priorities could be conducted to provide the information required to establish an information management plan. It is recommended that the analyses incorporate the following:
 - a) Mission of the Ministry and each of its departments,
 - b) Requirements as a result of environmental policy,

- c) Requirements as a result of administrative procedures or policies,
- d) Cooperative relationships outside the Ministry,
- e) Information and reporting requirements to support the environmental programs, including data integration requirements and geographical information system needs, and
- f) Information and reporting requirements to support non-environmental activities.

Two types of analysis are recommended: a Mission Needs Analysis, and a Requirements Analysis. These can be performed under contract by a private firm if clear specifications can be identified. A Mission Needs Analysis would provide a broad outline of the mission of the Ministry; activities in support of the mission; and relationships with other ministries, institutes, or organizations. The results could be used to identify programs, activities, or departments which would undergo a comprehensive Requirements Analysis. The Requirements Analysis would identify specific functions, processes, and data relationships which exist. Upon completion of these analyses, an Alternatives Analysis would identify what options would most efficiently support the information environment of the Ministry.

3. It is recommended that standards for hardware and software be identified and implemented throughout the Ministry. These standards could also be followed by any private firm or organization that designs and develops application systems for the Ministry.
 - a) The standards would minimize a proliferation of hardware and software which may have very little application in the Ministry. Standardization would also enhance integration capabilities, and minimize complications in enhancements of hardware and software. This process would involve selecting standard software packages suitable to the Ministry, including a standard menuing system.
 - b) Standards could also include guidelines on what should be included in contracts with independent firms. The Ministry's inexperience with private enterprise would warrant that firm guidelines be available to avoid contracts that are not written clearly or that would not protect their interests.

4. Establishment of a hardware and software inventory would make it far easier for the Ministry to keep track of its existing hardware and software base, assuring that update and upgrade information will be current.
5. The Ministry should consider a telecommunications plan to address both internal and external telecommunications. The internal plan would determine the feasibility and costs of implementing local area networks (LANs) or multi-user PC systems in the Ministry, and of upgrading the internal telephone system.
 - a) The configuration of this telecommunications network would be determined by a study of the functional requirements of the departments in the Ministry. Considerable cost savings and efficiency would result from shared computer resources rather than purchasing stand-alone systems. In addition, using a network would allow for extensive integration and information exchange. Equipment now in place could be integrated into this network, which could be expanded as the needs of the Ministry grew.
 - b) Options may be available to enhance internal telephone communications such as intercom systems, special purpose systems, etc. The plan would also address the need to communicate outside the Ministry. Certain technical staff have a need to communicate with their peers in other countries, and the PLEARN network could provide a communication mechanism.
 - c) The plan could also establish procedures for using the World Bank telecommunications network to provide a means of communicating among all the ministries in Poland.
6. The Ministry may wish to develop a computer awareness training program with several components or levels, such as:
 - a) Introduction to PCs and Computing - a basic introductory course designed to alleviate computer anxiety,
 - b) Word Processing - an introductory course on the standard word processor that would be used by the Ministry,

- c) Introductory software courses - on the standard PC software used for spreadsheets, databases, graphics, or other standard software installed on the PCs, and
- d) Advanced software courses - on sophisticated capabilities and techniques of the standard PC software.

A comprehensive training program would address needs that exist at the time of hardware or software installation, and provide an on-going plan to enhance computer expertise at the Ministry. This would maximize the use of the automation tools as upgrades are installed and/or new requirements are introduced.

- 7. In addition to training the Ministry staff, a similar type of training program is recommended for the staff at the Programming Center. The Center's training program would include courses on mainframe capabilities and software at the introductory and advanced levels, as well as PC and telecommunications courses.
- 8. The Ministry may decide to establish an information resources management plan which would include the following:
 - a) Hardware and software inventory information,
 - b) Priorities determined by environmental policy and administrative procedures,
 - c) Hardware and software standards,
 - d) PC Plan, addressing the number and configuration of personal computers at the Ministry, and
 - e) Telecommunications plan, to identify the Ministry's internal and external capabilities and requirements.

The plan would be used to identify and clarify how information resources management is addressed in the Ministry. It would also include a description of the function and role of the information resources manager and the position's relationship with the rest of the Ministry. The plan could be modified as information resources management matures in the Ministry.

Next Steps and Estimated Costs

Some steps which the Ministry can take immediately are the following:

1. Purchase additional PCs so that each organization in the Ministry has at least one PC. Those organizations which have a large staff and heavier workload may require additional hardware.
2. Decide on and purchase standard software packages to support basic organizational functions. Some of these functions and samples of available software are:
 - Word Processing (WordPerfect, Chiwriter)
 - Spreadsheet (Lotus 1-2-3, Microsoft Excel, Wingz)
 - Database (DBase3+, Foxbase)
 - Project Management (Project Workbench, Microsoft Project)
 - Menu System (Automaxx, etc.)

This is not to be construed as a recommendation of specific software packages or vendors, but simply as an illustration of software on the market (some of which was observed to be in place in locations visited).

3. Training on the hardware and each of the software packages should be provided for Ministry employees who will be users.
4. The PIU should consider seeking and selecting a project management software package to assist in managing their activities. This would help to establish work plans, identify major activities within projects, track funding, monitor resource utilization, and serve as a reporting tool.
5. The feasibility of the last recommendation would be relevant to the amount of funding available in the short term. Significant funding would allow the Ministry to move immediately into a LAN/multi-user environment. The advantages of such a step would be as follows:
 - Lower initial cost per workstation because of the sharing of large fixed disk drives, laser printers, software and communication,
 - More users have access to shared resources,

- Lower initial and future upgrade costs for PC software because fewer copies are needed and the cost per copy is reduced,
- Less staff time is required for software maintenance because the software is located on one machine, and
- Enhanced sharing of information because files may be kept on one machine, and machines may be able to communicate.

The installation of a LAN requires expertise in several areas. Cabling problems must be considered. An initial investment in cabling might be required. However, this investment would more than pay for itself by the decrease in costs per workstation, and the options for sharing information between departments becomes more numerous. Furthermore, a greater level of technical expertise is required to keep network systems operational. However, it would still be more efficient to maintain shared resources accessed by several hundred users than to provide technical support to several hundred machines, with a separate version of the software currently in use.

LAN COST ESTIMATE:

<u>Item</u>	<u>Number</u>	<u>Cost</u>	<u>Total</u>
<u>Hardware</u>			
Fileserver/monitor	1	\$6,800.00	\$6,800.00
380 meg disk	1	\$3,900.00	\$3,900.00
Operating system	1	\$2,077.00	\$2,077.00
MAU 1/12 workstations	8	\$560.00	\$4,480.00
Workstations/monitors	90	\$2,100.00	\$189,000.00
Network adapter cards	90	\$641.00	\$57,690.00
<u>Software</u>			
WordPerfect base	1	\$250.00	\$250.00
WordPerfect nodes	89	\$76.00	\$6,764.00
dBASE III +			\$0.00
15 concurrent users	15	\$530.00	\$7,950.00
Spreadsheet			\$0.00
15 concurrent users	15		\$370.00
Total Cost			\$279,281.00

STAND-ALONE WORKSTATIONS COST ESTIMATE:

<u>Item</u>	<u>Number</u>	<u>Cost</u>	<u>Total</u>
Workstation/monitor	90	\$3,500.00	\$315,000.00
Word Processing	90	\$270.00	\$24,300.00
dBASEIII	90	\$530.00	\$47,700.00
Spreadsheet	90	\$370.00	\$33,300.00
Total Cost			\$420,300.00

COMPARISON:

Cost for Stand-alone	\$420,300.00
Cost for LAN	\$279,281.00
Difference in price	\$141,019.00

NOTE: These figures include rough cost estimates of equipment available at the time of the study. Although prices should not be relied upon for purposes of purchase, they clearly indicate the cost-effectiveness of the LAN approach.

Human Resources

Management

HUMAN RESOURCES MANAGEMENT

Observations and Analysis

Training Issues

On-the-job and classroom training are not common at the Ministry. The Science Department is responsible for the development and delivery of external environmental training as well as training for Ministry employees. Three full-time employees are assigned to the training function. Most of their time is spent working on ecological education for the schools and the mass media. There was said to be no time for the development of training for Ministry employees. The volume of work was said to be overwhelming, and over 50% of the employees are women with substantial family responsibilities. There is a low level of management support for training during the work day; employees, on the other hand, have a low level of interest in after-hours training. Employees with degrees in engineering, science, and law are automatically held in high esteem, but the concept of life-long learning for all employees (degreed, non-degreed, all ages) would be a radical shift from what is presently practiced.

All of the Directors and Deputies interviewed are highly trained in their technical subject matter with virtually no formal management training. Several of the Directors have supervised employees for many years but state nevertheless they have much to learn about management.

At the time of the review, five on-site courses in English were being conducted. It was our understanding that such on-site sessions are unusual. The courses are attended by a total of approximately 100 employees and are scheduled for an hour before the workday and an hour during the workday (2-hour sessions).

Learning other languages as an alternative to English was also said to be extremely beneficial. The Ministry is reviewing the European Community's Environmental Laws and Standards. As a member of the European Community, the Poles want to understand and use existing training programs and regulations. In addition, direct involvement in Environmental Negotiations will be primarily with these European neighbors.

We also encountered several requests to review many of our laws, regulations, and enforcement procedures. The Ministry is already using enforcement examples from Germany, Denmark, and other European countries.

Interviews with members of the Economics Department and other members of the staff revealed that the training to do cost benefit analysis was not a part of the university curricula. The immediate need for these skills was said to be critical.

The need for negotiation skills training was acknowledged by several interviewees. The new environmental ethic requires members of the Ministry staff to become proficient in public speaking, briefing skills, persuasive writing, technical writing, risk communication, dealing with the media, etc.

Technology

The introduction of PCs, fax machines, copy machines, and satellite phones has already changed the way the Ministry does its work. Most departments have one computer with at least one person who has been formally trained. In most cases there are multiple users for the machines and complaints about having to wait in lines to use them.

Recruitment

The process of selection is presently unencumbered, with very few constraining rules but relatively low salaries. Department Directors said that they rarely seek recruitment assistance from the Personnel Section. They seem to have personal networks through universities or businesses to provide potential applicants. The greatest recruitment difficulty was said to be the hiring of attorneys; however, specific skills in shortage were said to be in the areas of economics, environmental negotiations, energy, office automation, waste management (hazardous and emergency response), ethics, conflict of interest, management skills, human resources development, and organizational development. For the first time in the Ministry's history, managers are hiring inexperienced employees right out of the universities. For many years, the public sector salaries were higher than those in other sectors. The Ministry had the luxury of hiring highly experienced (ten years or more) employees into most of their positions. The current salary situation has reversed this dramatically.

Position Management

A high number of professional employees said they are occupied with clerical tasks, such as copying, typing, and addressing envelopes. Teams of 26

employees with one secretary are not uncommon. The four employees assigned to the typing pool often work overtime without compensation. In addition, a number of new functional units have been added to the Ministry over the last three years.

Performance Reviews

According to government-wide policy, performance appraisals are to be conducted every two years. A copy of a performance review form was made available by the Deputy Director of the Cabinet Ministry. Interviews with department heads revealed that formal performance reviews had not been conducted in more than two years, and many Directors were unaware of the requirement to conduct formal appraisals.

Awards

The awards program in many ways resembled the EPA awards program. Discretion to make decisions as to how much money goes to each department rested with the Minister. The Minister gave larger portions of the award money to high performance departments. Department Directors seem to have full discretion over who would ultimately receive awards and are rarely, if ever, overturned.

Communications

A number of employees stated that the Minister had conducted annual meetings for the entire staff, but this practice seems to be temporarily suspended. Meetings of the Minister with all of the management staff (Vice-Ministers, Directors, Deputy Directors) do not seem to occur and were not, as far as could be discerned, a past practice. Some Department Directors conduct staff meetings and others rely on one-to-one interactions with the staff, but no consistent practice was found.

An internal newsletter did exist but has been discontinued for at least a year. We did not see many employee bulletin boards or message boards.

Orientation

The mandatory government-wide orientation for new employees continues to be conducted on-site during working hours. The training extends over several weeks and is taken seriously. The subject matter deals with generic government-wide policy and administrative systems.

Recommendations

1. The Minister, Vice-Ministers, Directors, and Deputy Directors might benefit from the study of the practices of model organizations. In particular, investments in training and career development would be highlighted as key building blocks for success.

A broad understanding of human resources development, such as understanding of rotational assignments or short-term work assignments might be beneficial. It would also be beneficial to have guest speakers from excellent organizations come to the Ministry and meet with the managers to share their experiences, and there are a large number of human resources development videos, periodicals, and books that would also help to raise the consciousness level.

2. The Ministry may want to offer on-the-job skill-building training for all of the supervisors. Topics should include: delegating, conducting performance appraisals, interviewing, overcoming resistance to change, etc. The program could be conducted with all of the Ministry managers as a group and designed to assimilate the new ideas and skills over a reasonable period of time.
3. All Ministry employees can be offered the opportunity to enroll in language training. Ideally, most would become comfortable with a second language within two years. Alternatives to traditional classroom training, such as training loaded onto PCs would be extremely efficient, and would allow people to progress at their own pace.

4. In providing needed enforcement training, translation of some enforcement cases and regulations could be very beneficial. The State Inspector's Office should be included in this training. A case study approach could be used beginning with the inspection and taking the trainees through each of the enforcement stages.
5. The immediate need for skills improvement in the drafting of legislation could be met by sending professionals to Poland who have both the economic and environmental skills to assist in writing environmental laws and policies. In the long term, change will come with the infusion of new economic curricula and training at the university level.
6. The Ministry should establish a focal point for all the technology introduced into the workplace. In addition to planning for its effective use, this person or group could also provide on-site assistance and training. Training could be done in a self-study area where video training or interactive disc training could be developed and used by individuals. Clearly, classroom training requires space and devoted PCs and trainers. The technology will continue to change, requiring on-going support. The most efficient use of the resources may require a multi-dimensional approach, using both classroom and self-study methods. One of the most important aspects of PC training is its accessibility and timeliness.
7. In improving communications skills, it is possible to design a curriculum beginning with an assessment of which skills are needed immediately. It would be worthwhile to assess the training needs of the managers and employees who have public contact first, since they have the greatest exposure and influence on the public.
8. In recruitment planning, the Ministry may find it practical to predict future skill needs. A useful plan would provide them with the skills and professions that are difficult to recruit or presently nonexistent. In cases where the domestic labor pool does not provide the needed skills, assignments from other countries might be a possible solution.

A complete work review of each department tied to the technology plans for the Ministry could be conducted to improve the methods of assigning work. Such a review would indicate, for example, how the support staff positions could be more effectively utilized and developed. The Minister's new goals and the country's new environmental policies will affect the work of each individual at the Ministry. These changes may need to be

incorporated in each individual position description.

9. Performance reviews for all employees might better be conducted annually, not necessarily all at the same time. The Minister could work with management team to clearly articulate his goals and to help them integrate these goals and directions into their performance management system. It would also be desirable for the new goals and values of the Ministry to be understood and reinforced in the awards program.
10. The Minister should consider reinstatement of an annual all-employee meeting. We would recommend that, during this period of rapid change, the Minister conduct these all-employee sessions more frequently than once a year. There is clearly a need for the management staff of the Ministry, the State Inspector's Office, and possibly the Institutes to meet on a routine basis. Introduction of PCs could provide a much needed communications network with electronic bulletin boards, automated directories, and electronic mail.
11. The orientation program should be redesigned to include information about the Ministry, the State Inspector's Office, and possibly the Institutes. At a minimum, the orientation to the Ministry should include an organizational chart with an explanation of the functions and responsibilities in each Department. Presentations by Department Directors would make it possible for employees to recognize colleagues and gain different perspectives. Employees could then be made aware of the Ministry's goals and any newly developed policy statements. A walking tour of the facility would also help to orient new members of the staff.

Next Steps and Estimated Costs

1. Create an organizational awareness of the importance of human resources development. Expose management to successful organizations and management practices.
2. Offer an on-the-job skill building training program for all of the supervisors. A number of programs exist with costs for 50 participants varying from \$20,000 to \$40,000, which includes initial program costs and train-the-trainer expenses.
3. The Ministry could develop its own Training Institute and self-study centers modeled after the EPA Regional Institutes and Centers. This would allow

them to deliver cost effective, on-site training using their own employees. Skill assessment and career development work could initially be done by staff outside of the Ministry. Over time, these career development counseling skills would be available through a training staff. With all of the technology and policy changes at the Ministry, there is a clear need for training to become a part of the Ministry's overall strategic plan for the future. Many of the employees at the Ministry may need to be retrained, and new employees who have less experience will also need assistance beyond what they are used to providing for new employees. To meet the enormous challenges ahead, training and human resources development programs will need to become areas of serious long-term investment.

4. Regular staff meetings should be resumed immediately. These have the obvious effect of improving internal communication; they also bring the benefits of team-building and a renewal of pride in the Ministry's mission and accomplishments, while allowing management a cost-free opportunity to state and clarify goals and provide employees a "big-picture" perspective.

General Administrative

GENERAL ADMINISTRATIVE

Observations and Analysis

The general administrative support for the Ministry is provided primarily by the Cabinet of the Ministry and the Administration and Budget Office. Procurement support is also provided by the Program Implementation Unit in the expenditures of foreign loans and grant funds.

The Cabinet Minister functions as the Chief of Staff for the Minister. All documents coming into the Ministry are first reviewed in his office to determine distribution. Correspondence handled by the Cabinet of the Ministry is logged and numbered. Correspondence forwarded to other departments in the Ministry is controlled by that particular department. Procedures exist for the distribution and control of correspondence and mail, but they ultimately require approval by the Minister. All outgoing mail is also reviewed by the Cabinet Minister. It appeared that virtually all substantive outgoing correspondence and documents require the personal signature of the Minister. All correspondence logs are manually maintained in the Cabinet of the Ministry and other departments. There seemed to be a strong desire for an automated correspondence tracking system for the entire Ministry.

Other functions of the Cabinet of the Ministry include human resources, budget, records management, organizational review and several external coordination responsibilities. (The human resources and budget areas are discussed elsewhere.) Records management and organizational review functions are devoted the same high level of management involvement as noted in the correspondence function. Documentation on procedures exists, although major revisions are underway to reflect the changing structure and situation. It was not evident whether any analysis was taking place to guide the revision process. It was clear that many routine administrative decisions required the approval of a senior official, if not the Minister himself. As everywhere else in the Ministry, neither of these functions has the benefit of PCs to assist in tracking or word processing needed to efficiently perform the work.

The Administration and Budget Office performs a wide range of support services and facilities maintenance functions for the Ministry. A high level of quality and commitment of the employees engaged in providing these services was evident. Specific areas of responsibility include procurement, mail room, office supplies and furniture, transportation, accounting and cashier, copying,

typing pool, and telecommunications. Substantial efforts have been made to improve the Ministry building. In addition to exterior and interior painting, there have been electrical upgrades and security improvements.

The Administration and Budget Office is planning on upgrading the copier and telefax capabilities of the Ministry. Various machines have been identified for procurement over the next year. The primary criteria appear to be service availability and price rather than user needs and requirements.

While we were at the Ministry, three satellite phones were installed as part of the World Bank Project. These phones are in the Minister's Office, the Foreign Cooperation Department, and the Program Implementation Unit. (The phone number of the PIU satellite phone is 39120049.) The phone system is otherwise extremely antiquated and unreliable.

Additional discussions were held with support personnel, primarily secretaries, to determine the effectiveness of the various support services. Most said they were generally satisfied with the mail, copy, and supply services although all felt some improvements were necessary. Some of their stated concerns, such as unavailability and quality of supplies and outgoing mail procedures, are generally outside the control of the Ministry. Others, such as lack of adequate copiers or use of express mail service (i.e., DHL or Federal Express), are constrained mainly by internal budget considerations.

As in other areas of the Ministry, the Administration and Budget Office keeps primarily manual records. Some basic automation exists in the accounting/cashier functions. There was no evidence of user/client input into equipment purchases and most services provided.

The Cabinet of the Ministry and the Administration and Budget Office will both need to play a vital role in the modernization of the Ministry. Under normal circumstances, this would be an overwhelming task. However, without an integrated strategic plan, it will be a never-ending situation of one short-term remedy after another.

Recommendations

1. A review of Correspondence and Records Systems can be conducted to:
 - a) Determine areas with potential for simplification and standardization,

- b) Identify opportunities for delegation of authority to the lowest possible level, and
 - c) Identify a practical method for developing an integrated Ministry-wide correspondence tracking system.
- 2. A strategy for duplication of documents might be in order. Such a strategy would be based on a user survey and needs analysis to determine equipment requirements. This would enable identification of emerging equipment availabilities including vendor service commitments.
- 3. A user survey and needs analysis could be conducted to determine priority support services requirements. This process would identify client-based work groups and obtain their recommendations. Their input would be useful in simplifying procedures and identifying equipment needed to implement improvements.
- 4. Administrative procedures, once revised and written in easy-to-read and understandable language, should be distributed and publicized throughout the Ministry at all levels to all employees.
- 5. Exposure to new office equipment technology would be valuable. Methods for doing so include:
 - a) Subscribing to targeted office equipment/technology periodicals,
 - b) Maintaining a library of vendor catalogs and contacts,
 - c) Obtaining "trial use" of office equipment/technology, and
 - d) Attending trade shows and seminars to obtain new ideas.

Next Steps and Estimated Costs

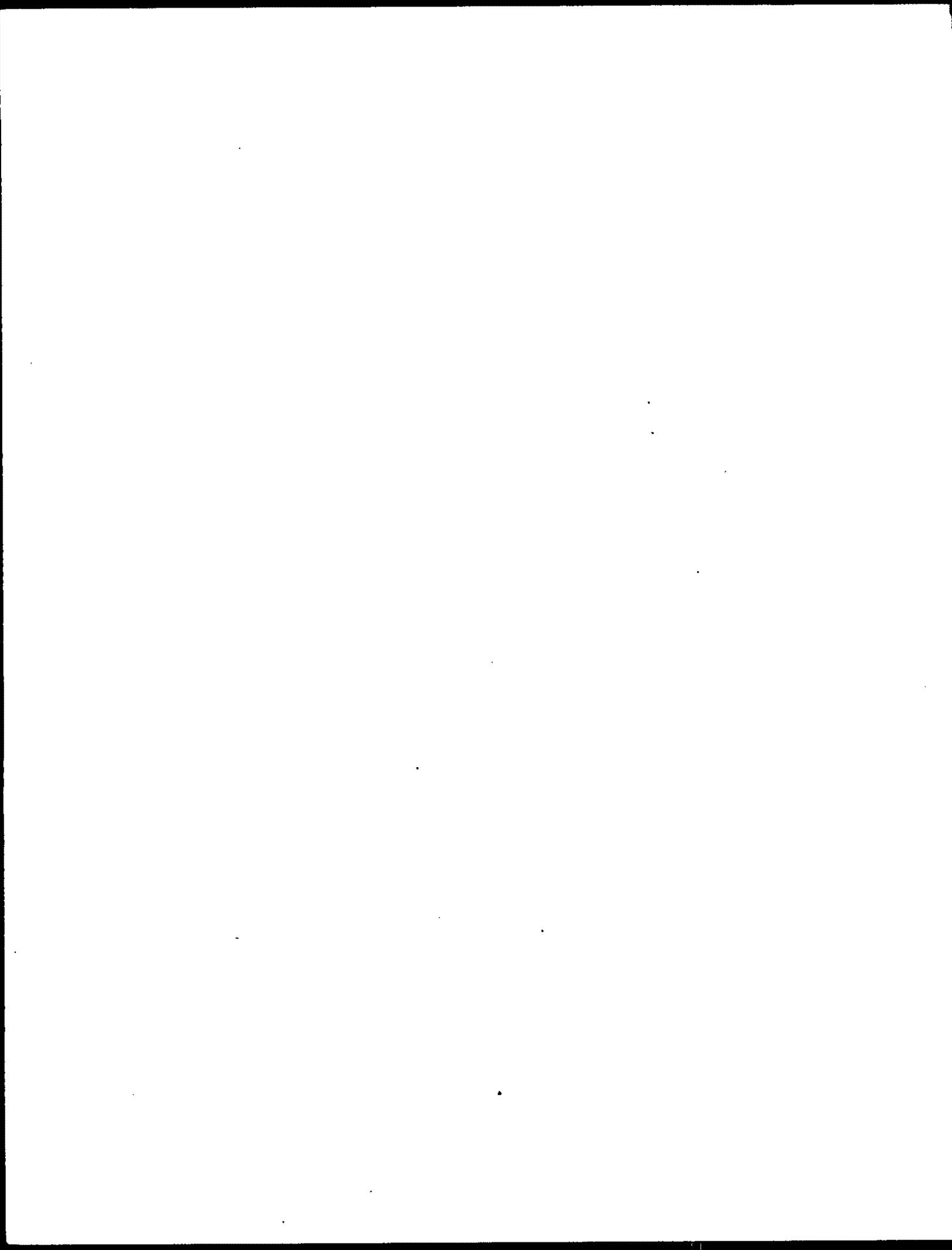
Many of these recommendations need a substantial time and resources commitment. Portions of others can be started and serve as the foundations for larger projects.

To improve the correspondence and records systems, develop a photocopying strategy, or evaluate administrative services, the Administration and Budget Office and the Cabinet of the Ministry need exposure to new ideas and

technologies in these areas. For a minimal investment in time and resources, they can begin implementing the fifth recommendation immediately. In any case, this information will be needed to ensure the success of the other four recommendations. Finally, it is most important to quickly identify within the departments people responsible for implementing these recommendations, so that they can all contribute to and benefit from exposure to new ideas and the latest technologies.

Report on the Institute of

Environmental Protection



INSTITUTE OF ENVIRONMENTAL PROTECTION

Background

History

The Institute of Environmental Protection (IEP) was established by disposition of the Minister of Environment and Natural Resources (the Minister) in April 1986. The IEP emerged from the Research Institute on Environmental Development (established in 1974) and the former Institute of Municipal Economy (established in 1951). The IEP is one of four institutes under the direct supervision of the Minister, the directors of the institutes being appointed by the Minister. The other institutes under the supervision of the Minister are:

The Institute of Meteorology and Water Management
The Geological Institute
The Research and Development Center for Geological Techniques

The relationship of these and other institutes to the Ministry is described in Appendix B.

Mission

The mission of the IEP, as defined in its enabling disposition, is "...to elaborate [the] scientific bases for the state strategy and policy in the field of environment protection and the technological, economic, legal and organizational grounds for the implementation of this policy."

The rather broad scope of activities of the Institute includes: policy assessment, research and development, and technical support tasks in the areas of water quality, air quality, soil surface quality, natural resources protection, and noise and vibration prevention. Specific programs also cover the areas of economics, treatment technologies, environmental processes and effects, and environmental monitoring.

Funding

The IEP receives funding from three sources: the Office of Progress and Scientific Application; the Ministry of Environmental Protection, Natural Resources, and Forestry; and other state and "industrial" institutions¹. A description of funding sources is shown in Appendix D.

The total 1990 IEP budget is approximately \$4.4M (U.S.) of which approximately \$2.0M (U.S.) is passed through to cooperating state institutions. Twenty-seven percent of funding comes directly from the state budget through the Office of Progress and Scientific Application. These resources are provided for broad areas of research and support and form, in essence, the "base" funding for the Institute. Approximately 30 percent of the budget comes directly from the Ministry on a "non-competitive contract" basis; i.e., for specific Ministry projects agreed to through a planning process. This is further discussed under Observations and Analysis.

An additional 44 percent is derived from other government institutions such as other ministries, institutes and wojewodships. Approximately 24 percent of the Institute budget comes from industrial institutions and other sources. The Branch organizations of the Institute negotiate much of their respective budgets independently with local government and industrial institutions.

A summary of in-house expenditures for the IEP (that is, those resources not passed through to other institutes) is shown in Appendix D.

Organization

The organization of the IEP is shown in Appendix C. It should be noted that the structure of the Institute at the time of the review was considered to be temporary, pending the appointment of a permanent director. The IEP employs approximately 470 people, with its main office in Warsaw. Satellite offices are located in Katowice, Gdansk, and Wroclaw, as well as at a separate site in Warsaw.

¹ The term "industrial institution" here needs some explanation. We have used the term to describe institutions which in the Western free enterprise system would be considered the "private sector"; for example, power plants and steel mills. In Poland, such industrial institutions are for the most part still state-owned. The term is used here to distinguish such institutions from other state "entities" such as wojewodships and other district organizations.

The Director of the Institute, appointed by the Minister, is served by four advisory bodies: the Scientific Council, a minority of whom are not Institute employees; an Administrative Board, which is concerned with basic questions about the existence of the Institute; the Trade Union Council; and an Employees Board of Delegates, which represents all employees.

The Institute Director appoints three Deputies: Scientific or Research Secretary; Vice-Director for Scientific Questions or Problems; and Vice-Director for Finance/Chief Accountant. Additionally, there are field office divisions in Gdansk, Katowice, and Wroclaw.

Two locations in Warsaw house the Headquarters function. Administrative work is performed at the main location, and another property comprises three buildings in which laboratory functions are conducted. The various responsibilities of these departments cover a typical range of environmental protection specializations (see Appendix C).

Although the Institute Director is appointed by the Minister, the Institute itself is not a "government agency" like the Ministry, and its employees are not "government employees," although they are said to work for the State. Presently, the Institute is therefore at most a quasi-governmental institution, and because of uncertainty about funding and functions in the future, the potential exists for even less of a governmental relationship.

Observations and Analysis

Mission

It is important to note immediately that the mission of the IEP and its relationship to the Ministry and to the Office of Progress and Scientific Implementation is in a state of flux. As with virtually all other state functions within Poland, basic science is going through a period of uncertainty as old institutions are abolished or redirected and new ones are created. In the science field, an effort is underway to restructure the state system for financing research and development. Specifically, it has been proposed to transfer funding control from the Polish Academy of Sciences to a semi-autonomous National Research Council. The Council would replace the present Office of Progress and Scientific Application and channel research funds directly to scientific institutions and universities without the involvement of ministries. It has been proposed that greater emphasis be placed on self-financing of research by individual enter-

prises, and on competition for funds. The impact of these changes, in terms of its relationship to the Ministry, could be significant.

Relationship to Ministry

Notwithstanding the above changes, a number of observations concerning the present relationship of the Institute to the Ministry warrant discussion.

As indicated above, the IEP is one of four institutes said to be under the supervision of the Minister. It is somewhat difficult to define exactly what "supervision" means under the current structure. Furthermore, the director of the IEP is "appointed" by the Minister. According to IEP staff, however, a director is nominated by the Institute's Scientific Council and the Administrative Board. The nominee is then approved (thus appointed) by the Minister. It is interesting to note that the IEP employees successfully petitioned the Minister to remove a former director. At the time of the review, the Institute was being led by an acting director, pending formal nomination by the Institute and appointment by the Minister.

A portion (30%) of the IEP budget is negotiated directly with the Ministry for specific programs/projects. This occurs through a planning process, discussed below.

Additional control on the Institute is exercised by the Office of Progress and Scientific Application in the form of a ceiling for salaries and wages. This ceiling cannot be exceeded irrespective of the level of negotiated work for the Ministry or other institutions.

On the other hand, the IEP functions as an independent institution. It pays taxes on funding it receives from the state. It is free to negotiate contracts with other organizations, including industrial institutions. As privatization of industry in Poland continues, this creates a sort of hybrid institution (i.e., state/private) and opens the door for potential conflict of interest issues.

Planning Process

Because of the current shift from a central planning concept to a more delegated process, together with the proposed changes for research funding discussed above, the planning process for the Institute is somewhat in limbo.

The Institute budget from the Office of Progress and Scientific Application has, in the past, been developed on a strategic level with a number of long-term (5-year) program objectives. This process and, in fact, the roles of the Institute in research, are presently being debated, and thus no budget planning is currently occurring.

The Ministry portion of the Institute budget has historically been negotiated directly with the Ministry on a non-competitive basis. Currently, this responsibility lies with the Director of Science, within the Ministry.

The process is as follows:

1. The Ministry departments, in coordination with Institute scientists, define their research/support needs.
2. The needs are aggregated and coordinated through the Department of Science.
3. The Institute prepares a research plan which is provided to the Ministry through the Department of Science.
4. After respective department review, the plan is approved by the Minister.

This process is initiated in September to fund the following fiscal year, which runs from January 1 to December 31.

According to the Institute, this process can take as long as 6 to 9 months: in other words, they may not receive approval or funding for a program until the last quarter of the year in which the work is to be done. In some cases, they have received approval of specific programs but no funding, in which case they must rely on carryover funds from previous years or other sources to cover program operating expenses. Additional unplanned requests, often with short turnaround requirements, are received during the year. It is often difficult for the IEP to meet the requested deadlines.

The process seems to limit efforts to projects of short-term duration. One official stated that long-term projects have been proposed by the Institute but not approved by the Ministry. He said further, though, that relatively ambitious projects are turned down due to lack of understanding of the project rather than because of money. The decision-makers are perceived as poorly equipped to

evaluate the need for research projects proposed by the Institute.

The process leaves the impression with the Ministry that the Institute is not responsive to its needs and that the Ministry does not have control over Institute activities. Conversely, the Institute feels that the Ministry cannot effectively and realistically define its needs.

The result is that there does not appear to be a timely or effective planning process in place.

Accountability

There does not appear to be any effective system in place for either scientific or fiscal accountability.

1. Scientific Accountability

Discussions with Institute personnel indicated there was no formal internal process or policy in place to insure the scientific quality of their work. For example, branch organizations can produce products (research reports) for clients, including the Ministry, without internal review at the Institute level. There are no guidelines in place for either internal or external peer review of research. The quality of Institute work, as viewed by the Ministry, was mixed; some of high quality, some of poor quality.

2. Fiscal Accountability

The Institute is in the process of installing a computerized cost accounting system for internal use. There is no requirement, however, for accountability of Institute expenditures back to the Ministry: in other words, once an agreement is reached between the Ministry and the Institute for a project and a projected budget, there is no requirement for the Institute to substantiate the expenditure of funds.

Mix of Science and Policy

The activities of the Institute range from environmental policy analysis (including socioeconomic considerations) to research and development and

technical support. The mix of science and policy analysis raises a question regarding independence and credibility. In the American academic community, the science of an issue is expected to stand independently on its own merits, with peer consensus being used as a measure of quality. Policy analysis can of necessity involve compromise between science and competing socioeconomic values. If a single organization is responsible for both the science and the policy analysis associated with an issue, it is open to criticism for altering or selecting the science to fit the policy recommendation. The mission of the Institute in this regard is unclear.

Conflict of Interest

As indicated above, the IEP functions as an independent institution in the sense that it can "contract" for work with other government and industrial institutions. In the past, most industries were state run, and one could argue that there was no explicit conflict of interest. As privatization continues, however, that situation changes. If the Institute is to continue its role in developing state environmental strategy and policy as indicated in its mission statement and, at the same time, contract for work with the industrial institutions at whom state policy may be directed, there is a clear potential for the appearance, if not the fact of, conflict of interest for the Institute.

Employment Issues

Salaries of Institute employees are, by all accounts, low; although wages are close to national averages, they are not nearly what private industry pays for comparable work. Salaries are calculated based on the Institute's income from the sources listed above and by an individual's work on a project. Each individual's salary is the total of several parts:

- Basic salary - stated in employment contract, and based on qualifications; plus
- Seniority amount - 1 percent per year up to 25 years; plus
- "Addition for function" - e.g., approximately 30 percent for position of Science Secretary; plus
- "Premium" for sale of Institute work - directly to researchers (2 percent) and quarterly payments to administrative staff, including directors.

Budget uncertainties, as currently encountered, result in salary uncertainties. As a consequence, many good employees have left in an effort to find more secure positions. It was also noted that those who get the best environmental education are unlikely to enter the environmental industry, due to poor salaries even on the outside. Nevertheless, turnover is relatively low, and the workforce relatively stagnant, according to both management and employees.

Recruitment was said to be difficult, especially for scientists, accountants, and economists. It is especially difficult to attract highly qualified young recruits who read and speak English. Good staff are even harder to find in areas where they are most needed, such as Katowice, because the living conditions are undesirable. Still, there tend to be more candidates than jobs to fill, and recruiting is done informally, through academic contacts.

The mechanics of time and attendance are an ambiguous combination of methods that are at the same time both progressive and antiquated. Institute employees may work on a flexible schedule, and in fact sign in and out to document their own time. A lack of further control seems to derive from a sense of trust, as well as an attitude among employees that "even when we are not at work, we are working." There is also a work-at-home policy, though limited to one or two days per month. These flexibilities, as progressive as they seem, are nonetheless due to cramped office conditions and transportation difficulties. In sharp contrast to progressive practices that exist, it should be noted that two-thirds of the employees are paid their salaries in cash, and one-third by check.

Outside Employment

A great number, if not the majority, of Institute employees appear to have part-time jobs outside the Institute, although some Divisions do not permit this arrangement.² Employee representatives indicated that this was necessary for people to be able to earn a living wage. There are conflicting views of the impact on the Institute; some interviewees stated that this actually was beneficial to the Institute, providing employees with additional independence, responsibility, and opportunities to network within the scientific community. It is a general perception that outside work is done strictly on private time and outside the Institute facility; however, given the attitude that many scientists consider

² It was stated at the Institute that Ministry employees are not permitted to hold any outside employment. This contradicted statements made at the Ministry that there was such permission.

themselves "on the job" around the clock makes it difficult to understand how a line is drawn. Measures to prevent conflict of interest are neither apparent nor perceived as necessary, and some of those questioned stated that they know when an employee is working outside. Even those who felt that the Institute is undermined by this practice said that those who worked outside teaching secondary and university students were actually engaging in work useful for purposes of educational advancement and recruiting. At any rate, those in authority seem resigned to the need for individuals to engage in outside work activities.

Training and Development

As difficult as it is to obtain equipment, acquiring training for employees is said to be even more difficult. The most common form of training seems to be informal, on-the-job training by managers for new employees to incorporate them into the work unit (more so than as a new member of the Institute as an organization). Beyond that, training is something rare, for a variety of reasons. Organizationally, each training opportunity or travel expenditure must relate to a specific research project to be approved. Training that is not project-related can be half-funded by the Institute. Culturally, there are few seminar-style training opportunities as we know them in the U.S.; most developmental activities are perceived to be long-term academic pursuits.

The most pressing and repeatedly noted training need appears to be for professional technological transfer conferences. It was mentioned often that the scientific professionals need opportunities to learn about models currently in use, to see how others use modern techniques, and to meet their counterparts from other countries. Critical obstacles to this, though, are language barriers, a lack of travel money, and reluctance on the part of supervisors to release employees during work time since there are no backups. The need is therefore great for broad-scale training in English and other languages. A training need brought up almost as often was in the area of computer training. Other areas included auditing; research evaluation; comparative economic practices; writing improvement (for which we were told no training currently exists in Poland); environmental impact assessment; and project officer training.

Management Training

As noted above, seminar-style training was said to be rare in Poland; for management development, it is almost an unknown throughout Europe. All managers at the Institute who were questioned said they need and would like to

take management training courses, and had never had any. It was stated by one official that Polish managers lack skills in team leading, evaluating results, interpersonal communication, and setting priorities - "they are scientists."

Facilities, Equipment, and Working Conditions

Space in the facilities inspected (i.e., both sites in Warsaw) is limited, and its quality was described by employee representatives as "hopeless," "substandard." One employee indicated that employees make use of the work-at-home policy just to get quiet time. The library, located at the administrative site, is described as small in size and holdings, equipped with only basic literature and very few western publications. The laboratory site in Warsaw consists of 3 buildings on the same property. It is fitted with equipment, some borrowed, and most out-of-date, a condition described by an employee representative as typical throughout Poland since funding for science was centralized. There is no room for additional people to perform "work that should be being done," although there is a plan to build a new Institute at the present lab site. Employees look to this as progress, since it will consolidate the two Warsaw sites and improve their access to colleagues and the library.

The few computers available are somewhat evenly distributed, although at least one division has none at all but has use for them. Those that are available are well utilized and in great demand; there is no time for word-processing use because of more sophisticated work needs. Except for one five-terminal multi-user system in the Finance Office, there is no internal PC network, nor any link with external sites. Telephone communication system is described as "unbelievable," even internally; it can take up to 2 days to complete a phone call to another location.

Duplicating equipment at the main office is limited to one operable photocopying machine. Another is awaiting repair, and a third is on order. A fourth, donated by UNESCO, awaits installation because there is no space. Upon availability of a now-occupied room, a photocopy center is planned which will house all 4 machines.

Organizational Design and Infrastructure

Clerical support is extremely limited; it was reported that few people are available and willing to take the simplest jobs. There is great difficulty in finding qualified typists, especially for correspondence in foreign languages. A ratio of one secretary to 22 other staff members is common. Although this is described

as "typical in Poland," it leads to a critical lack of administrative support. Scientists are doing purchasing and photocopying; chemists log in samples manually; division chiefs do administrative work. In one division, employees said that scientists must typically organize their own projects to extreme detail: find a typist, obtain a copy service, order supplies. There is no requirement to look for the best price nor, it was said, time to do so. As a shortcut, many employees use their own phones, cars, and money for work-related uses.

Scientists complain that they feel like technicians, not professionals. This is compounded by a perception that individual employees don't understand their role in the "big picture", and sometimes don't know to what use their research will be put. It was also stated that projects are sometimes contracted out because there is no management awareness of the expertise within the Institute.

Employee Participation

The level of influence that employees have is high; as noted earlier, employees successfully petitioned the Minister to replace a former Institute director. Recent layoffs that reduced the size of the workforce by approximately one-fourth had to be certified by the Trade Union Council and the Employees Board of Delegates (also called the Employee Council).

The more representative organization, the Employees Board, consists of three at-large members and members who each represent one of the Branches. The Board represents all occupations. Members are elected every six months and can be re-elected without limit. The goal of the organization is to advise management on ways to improve the Institute; for example, they were successful in an effort to improve the representation of the Institute on the Scientific Council to influence Institute policy (previously, 80 percent were outsiders).

Social Context

Any of the above observations must be considered, we were told, within the context of social conditions in Poland, and the impact of living conditions on employment. Several factors were brought out in discussions. As previously noted, many individuals have more than one job. "Free time" is rare - even shopping for food and basic supplies can take up many hours each week - and any time left after the typical day is spent with family, at recreation, or at rest. After-hours training was therefore characterized as out of the question for most people.

The extent to which after-hours activities can sap personal energy is a source of extreme stress for most employees. It was pointed out further that women especially are so loaded down in private life that they decline management positions - they would be too stressful.

In employment terms, some shortages are attributed to the move to a free market economy. It was stated that many individuals in the country find that a combination of welfare and self-employment, on which no taxes are collected, is easier and far more profitable than holding down a regular job; they can set their own hours and working conditions, and supplement irregular earnings with welfare payments. In addition, there are few, if any, restrictions that require individuals who take over enterprises or open businesses to have even basic qualifications; taxi drivers, for instance, and even pharmacists need no licenses.

Recommendations

1. The Ministry needs to clearly define its relationship to the IEP; i.e., does it want the Institute to be, in effect, an extension of the Ministry (a state organization) or does it view the IEP as an independent Institute with whom it would contract for required services? A number of models are available for state/institute relationships which have been successful in different situations. In the United States, examples are: the Department of Energy National Laboratories; The National Institutes of Health; the National Climatological Research Center of the National Oceanographic and Atmospheric Administration; and the Environmental Protection Agency's Research Laboratories.

It would be beneficial for appropriate Ministry personnel to review the models or, preferably, visit a number of these or European Economic Community institutions to better define the type of relationship which best fits their needs.

2. The Ministry and the Institute need to address the issue of conflict of interest both on an individual and institutional level. This issue will become more important as privatization proceeds.
3. The Ministry might find it useful to develop a formal structured planning and budgeting process between itself and the Institute. There needs to be a clear delegation of authority from the Minister to effectuate this plan. The Ministry may also wish to delegate authority through lower levels of

its administration so that those who negotiate with the Institute have more decision-making ability. This would facilitate more effective interaction between the Ministry and the Institute.

4. The Ministry could require financial accountability of the Institute beyond the program negotiation process.
5. In considering the desired relationship between the Ministry and the Institute, the Ministry needs to address the issue of separation of policy analysis and science.
6. The Institute needs to establish internal policies and procedures to insure quality of science.
7. The Institute should consider formulating a central travel and training budget to fund non-project-related training. This would enable professional development opportunities that would strengthen the Institute's level of expertise. The budget could be derived from a surcharge arrangement on each project.
8. The Institute should consider establishing a position whose responsibility would be to survey training needs and locate and bring in training courses in areas of general need such as English language, writing improvement, computer applications, and management. This individual could also keep track of professional conferences and other networking opportunities and communicate these to the staff, and even arrange for them to attend.
9. The Institute should consider establishing a policy on outside employment, which might be as simple as requiring employees to report annually on their outside work interests. This would help to assure that employees are as productive as possible while they are performing Institute work.
10. The Institute should consider designating individuals to coordinate certain developing areas such as: computer systems planning and implementation; administrative automation; library and technical resources; lab equipment planning, purchasing and installation; and as previously mentioned, training and development. This would eliminate duplication of effort, enhance compatibility of systems, and allow an organized approach to these pursuits. If not implemented immediately, this would be beneficial later in designing the envisioned new facility.
11. The Institute should consider ways in which to improve the internal telecommunications system. More and better telephone extensions,

intercom equipment, and other hardware available should be considered, although the national telecommunications situation will continue to be a constraint.

12. The Institute might also take advantage of the power of the Employees Board to stimulate effective informal communication with and to the workforce.
13. The Institute should anticipate and assess how salary and recruiting issues will play out in the future, and may need to plan ways to address them. Training and equipping employees with needed skills will make them valuable human commodities as private employers enter the national scene on a large scale.
14. The Institute should continue efforts to facilitate basic service improvements, such as the initiative to provide sufficient well-located copying equipment. Similar initiatives might be the establishment of a courier system between the Ministry and the Institute to speed communication, or the procurement of computer equipment appropriate to enhance word-processing capability. The possibility of gaining Institute access to the network installed by the World Bank for the Ministries should also be explored. The basic goal of such improvements would be to free up staff time from mundane tasks to maximize efficiency and productivity without a corresponding need to hire more people.

People Interviewed

PEOPLE INTERVIEWED

MINISTRY OF ENVIRONMENT

Bronislaw Kaminski
Dr. Stanislaw Sitnicki
Dr. Tomasz Zylicz
Janusz Paradysz
Krzysztof Sobkow
Mr. Bogdanowicz
Ms. Ciecierska
Ms. Valentine Kopcinska
Stanislaw Moczulski
Eugeniusz Derda
Bogdan Sibilski
Mr. Nowicki
Michael Gientka
Andrzej Deja
Wojciech Stodulski
Jan Smardzewski
Mr. Mierzewski
Mr. Krzeminski
Kazimierz Podlaski
Dr. Rajmund Wisniewski
Dr. Andrzej Kamienski
Czeslaw Wieckowski
Sophia Wasek
Dr. Andrzej Rdeja
Ms. Lewandowska
Ms. Ciolkowska
Mr. Trawinski
Zbigniew Kamienski

Waclaw Listkowski
Dr. Krzysztof Fleming
Mr. Perlinski
Joanna Sacharewicz
Hanna Ziarek
(Name Unknown)

Minister
Director, PIU
Director, Economics Dept.
Economics Unit Chief
Director Cabinet of Minister
Correspondence Chief
Organization Chief
Chief Finance (Chief Accountant)
Deputy Director, Economics Department
Director, Administration (and Budget, Facilities)
Deputy Director, Administration
Chief Accountant (payroll, etc.)
Director, Geology
Deputy Director, Science Dept.
Component Coordinator, PIU
Director, Forestry Department
Unit Director Monitoring - Inspection
Deputy Director, Nature Protection
Director, Water
Director, Science and Programming
PIU (Computer) World Bank, Procurement
PIU Procurement (*fin. arrangements)
Training Staff
Environmental Impact Assessment
Research Coordinator
Senior Specialist, Air Monitoring
Analysis and Assessment Section
Director, Supervision Department,
State Inspectorate
Director, Geology
Director, Computer Center, Plock
Computer Center, Plock
Secretary, PIU
Secretary, Economics Department
Secretary, Water Uses Department

INSTITUTE OF ENVIRONMENTAL PROTECTION

Dr. Pawel Blaszczyk
Jozef Jablonski
Elizbieta Polak
Dr. Jan Siuta
Dr. Marcin Kazmierczuk
Ewa Gacka-Grzesikiewicz

Andrej Krolukowski
Janusz Rodzejowski

Dr. Wojciech Jaworski
Witold Domek
Dr. Janusz Zurek
Sylwia Ramatowska

Acting Director
Vice Director, Scientific Secretary
Vice Director, Finance, Chief Accountant
Vice Director, Science
Director, Water Uses Department
Landscape Preservation/President,
Employees' Board
Water Uses Department/Employees' Board
Director, Nature Protection & Landscape
Department
Director, Air Protection
Director, Environmental Monitoring Laboratory
Director, Ecological Policy
Special Assistant to the Institute
Director

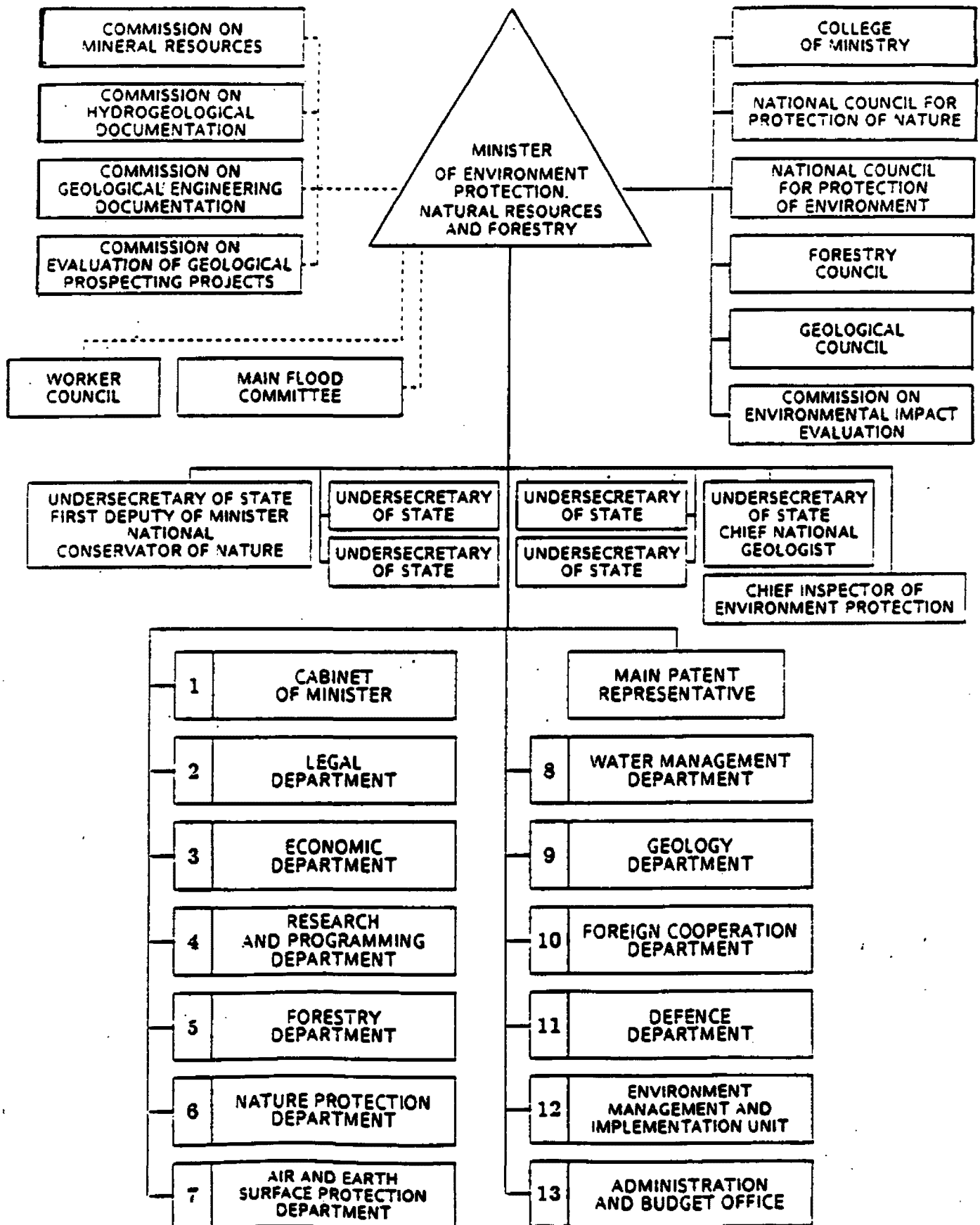
EEC Consultants

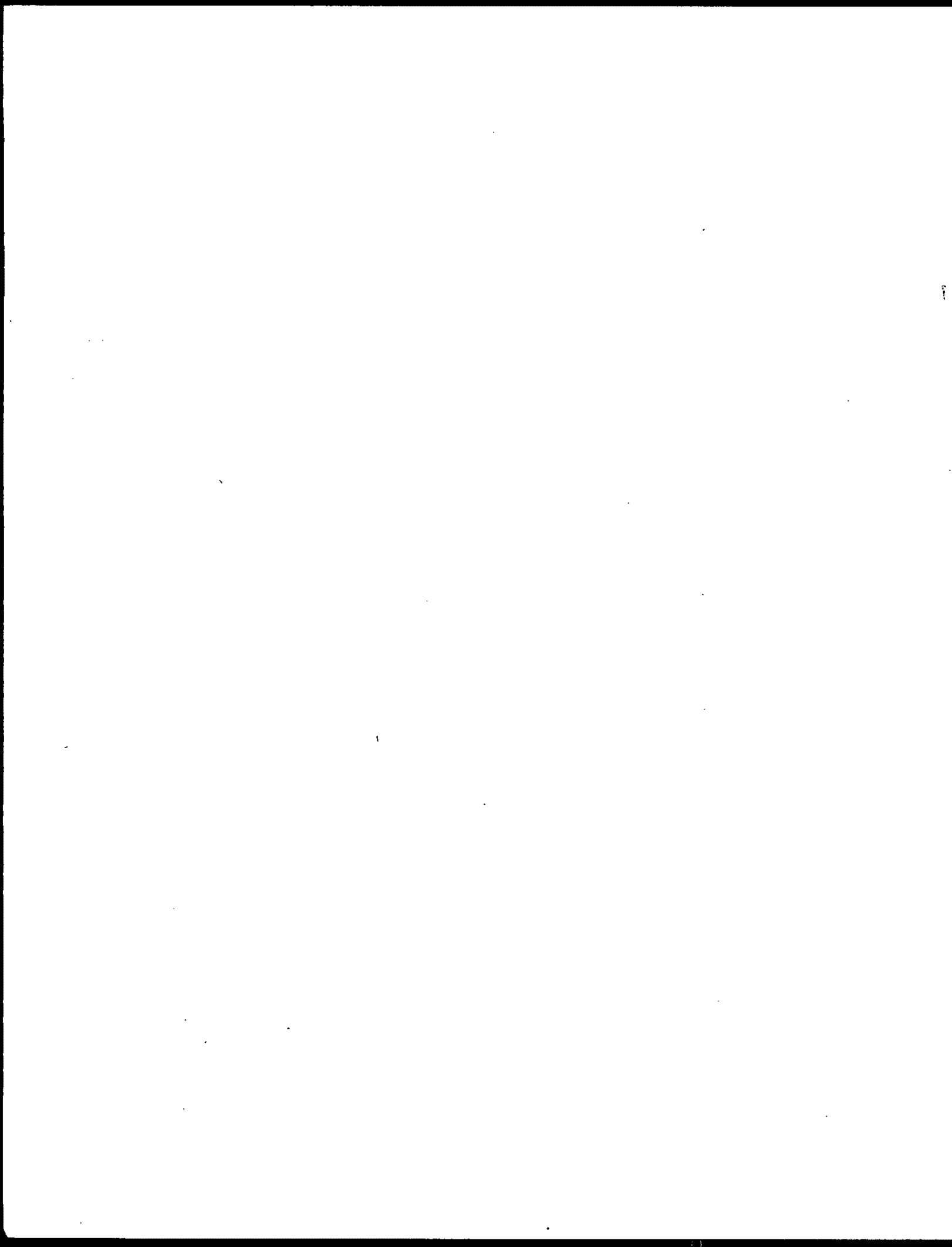
Ewa Matuszewska
Dr. Marcel Seyppel
Mr. Coulson
Daniel Ivarsson

Project Officer, EEC
Exchange Consultant EEC
EEC Consultant
EEC Consultant

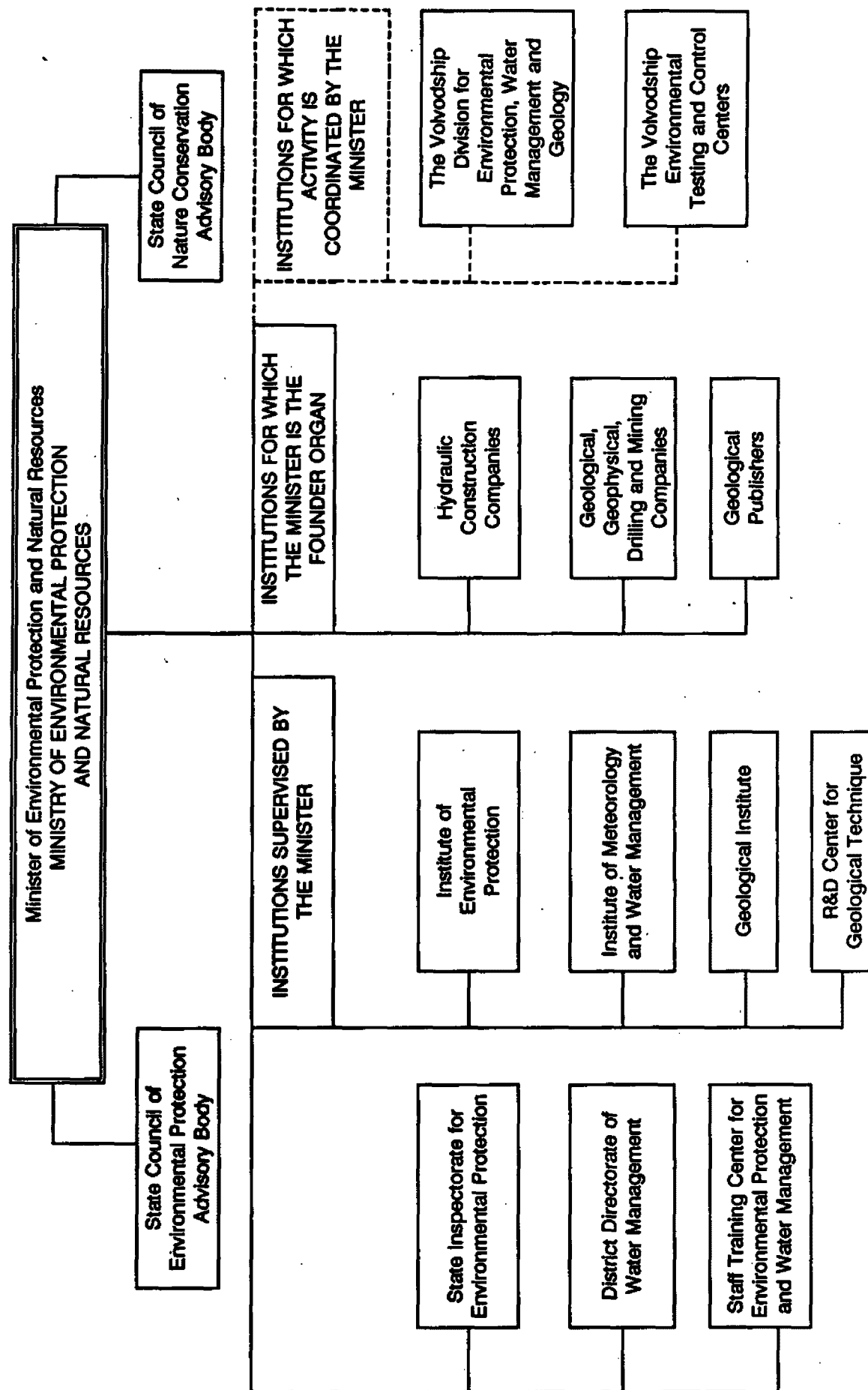
Appendix

ORGANIZATION CHART OF THE MINISTRY OF ENVIRONMENT PROTECTION, NATURAL RESOURCES AND FORESTRY

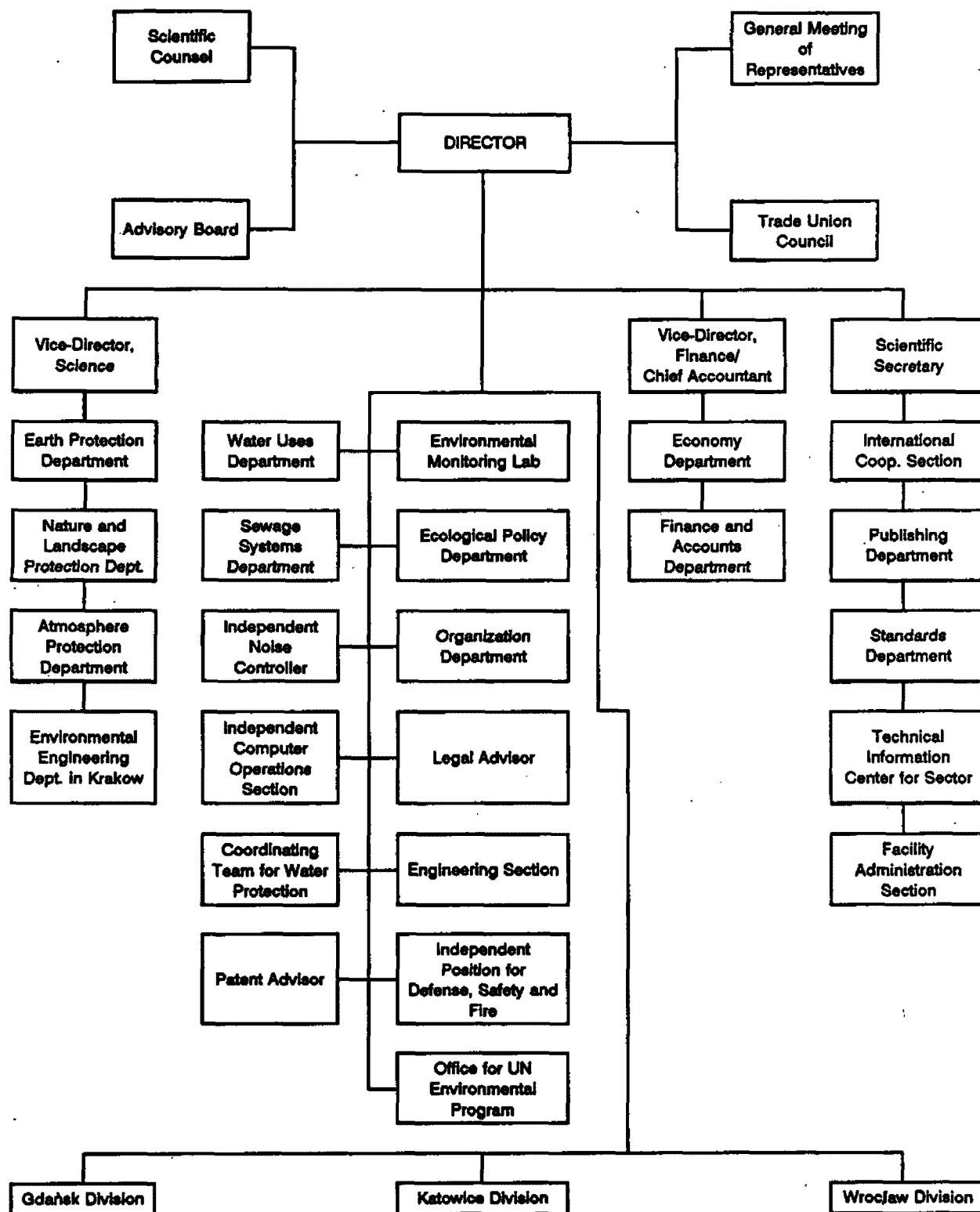


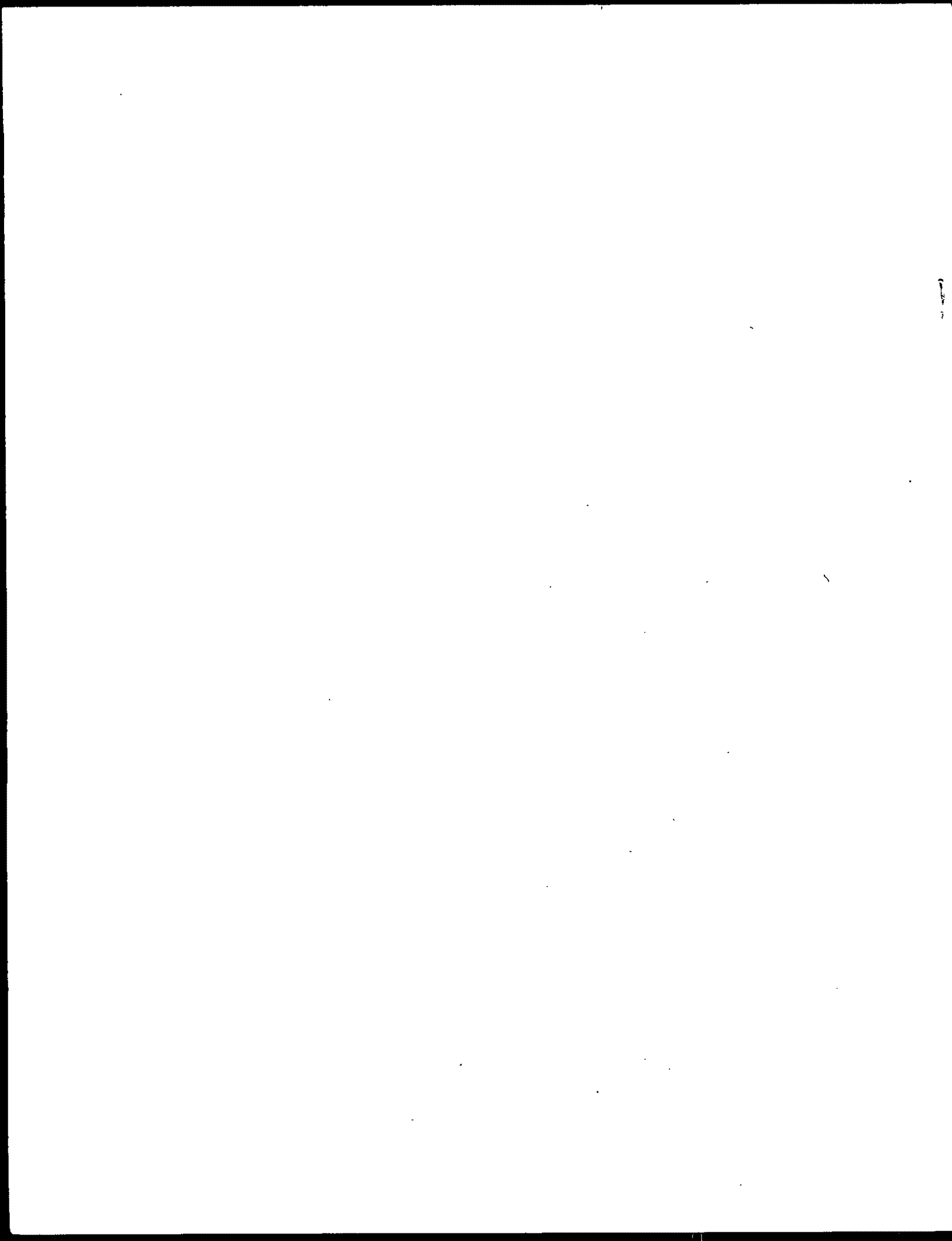


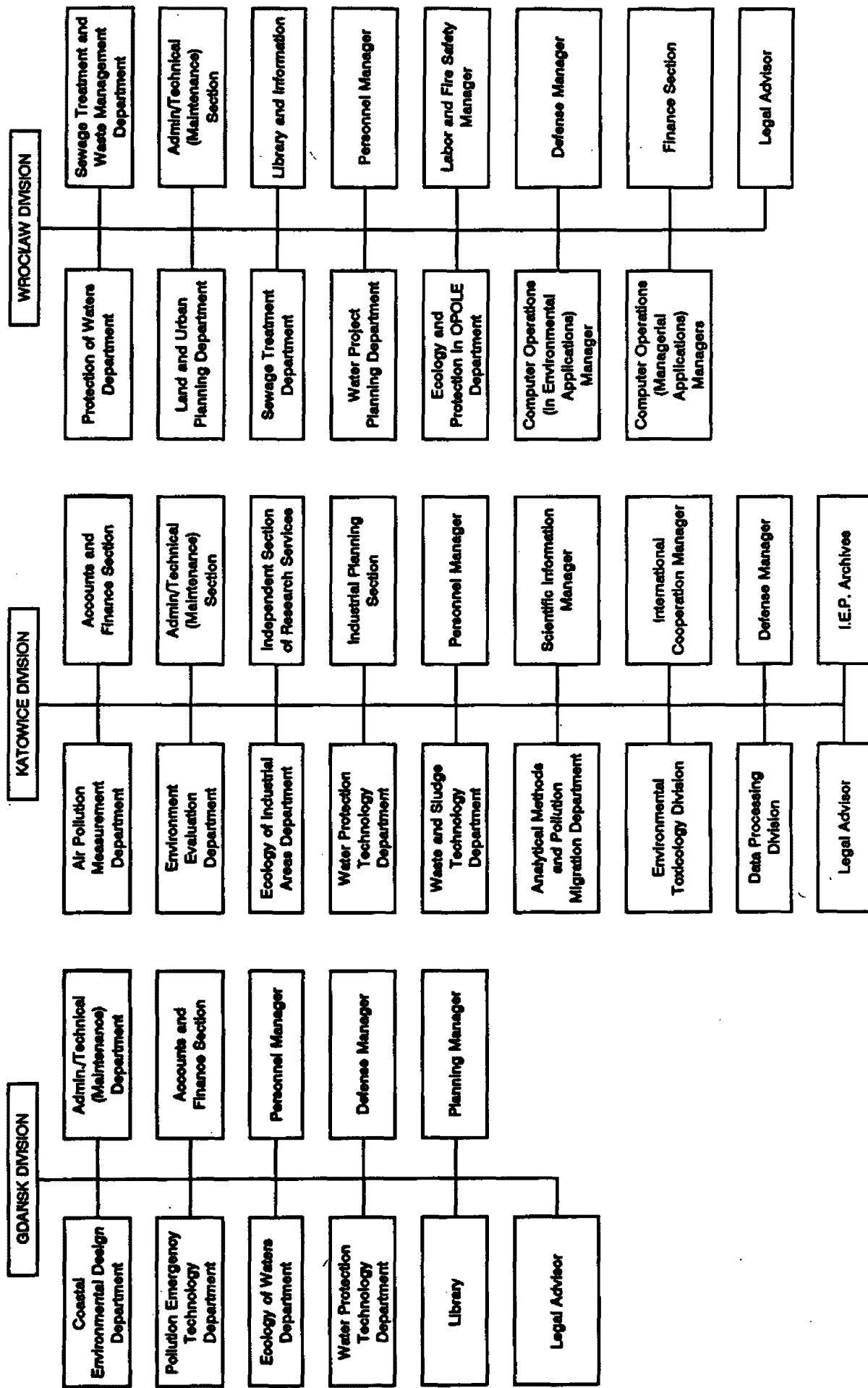
ORGANIZATION CHART OF ENVIRONMENTAL AUTHORITIES IN POLAND



APPENDIX C







Zróżna finansowania Instytutu
(Sources of financing of the Institute of Environmental Protection)

tys. zł
(thous. Polish Zloties)

Zróżna finansowania (Sources of financing)	Ogółem (Total) 5 4.44M	Z tego środki przeznaczone na: (division of financial means)		
		kooperacje (for cooperation with other institutions)	dla Instytutu (for IEP)	
			kwota (amount)	%
Ogółem { 1 + 2 + 3 } Total { 1 + 2 + 3 }	44.145.161	19.918.234	24.226.927	100,0
1. Budżet centralny 1. Central budget	35.432.684	18.316.867	17.115.817	70,6
2.1.1. Programy centralne 1.1. Central Research Programs	17.614.063	11.171.997	6.442.066	26,6
1.2. Programy resortowe 1.2. Ministerial Research Programs	13.373.896	6.231.806	7.142.090	29,5
1.3. Pozostałe 1.3. Other Programs	4.444.725	913.064	3.531.661	14,6
2. Budżety lokalne 2. Local budgets	1.444.000	-	1.444.000	6,0
3. Pozostałe (jednostki gospodarcze -przeds.) 3. Other (industry, private enterprises, individual receivers, etc.)	7.268.477	1.601.367	5.667.110	23,4

Struktura kosztów działalności Instytutu
IEP - Structure of Costs of Activity

Rodzaj kosztów Specification of Costs	Kwota tys. zł Amount thous. Zloties	Struktura w % Structure in %	
1. Płace Salaries and Wages	6.539.755	27,0	
2. Składki ZUS Social insurance premium	2.942.890	12,1	
3. Podatek do budżetu centraln. Tax for central budget	1.307.951	5,4	
4. Koszty osobowe - razem Personal Costs - total	10.790.596	44,5	
5. Koszty stałe utrzymania Instytut. (baza lokalowa, koszty biurowe) Constant costs of maintenance of IEP (buildings, office expenditures)	4.243.938	17,5	
6. Koszty materialne realizacji zadań badawczych - razem Material costs of realization of research tasks - total	4.601.988	19,0	
6.1. Aparatura badawcza Apparatus	2.067.572	8,6	
6.2. Materiały Materials	903.726	3,7	
6.3. Podróże służbowe, różne usługi Business travels, various services	1.629.790	6,7	
7. Koszty - razem Total Costs	19.635.622	81,0	
8. Przewidywany zysk Forecast profit	4.591.305	19,0	
9. Dochody Instytutu z zawartych umów Income of IEP from contracts	24.226.927	100,0	

B.2.4M

Zatrudnienie
Employment

540

Średnia płaca tys. zł/m-c
Average salary thous. Zloties/month

1 010,0
B.113.4

J-e

1990.11.08.

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